

Plantlife



Royal
Horticultural
Society



Keeping ponds and aquaria without harmful invasive plants

A guide to plants you can use
in place of invasive non-natives



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Keeping ponds and aquaria without harmful invasive plants

Some aquatic plants can quickly outgrow their space and cause you and our environment problems. As they are not native here and lack the normal controls that keep plants in check, they can spread quickly and become invasive. The impact they can have on aquatic habitats, like rivers and lakes, and their wildlife, is extensive and can be irreversible.

Some of these invasive non-native plants might be straightforward for you to keep in check in your pond or aquarium if you can tend to them frequently, but in the wider countryside, where such weeding effort is not feasible, these plants can cause problems for native plants and animals. Trying to get rid of problem plants from natural habitats, especially important nature conservation sites, is expensive and difficult. Often complete eradication of such plants from the wild becomes impossible, and many hundreds of thousands of pounds are spent each year in an effort to limit their spread.

Other invasive non-native plants can cause you difficulties too. They may quickly outgrow their space and re-grow from tiny fragments, so that no matter how hard you try to eliminate them, they keep on appearing.

This guide, produced by the wild plant conservation charity Plantlife and the Royal Horticultural Society, can help you choose plants that are less likely to cause problems to the environment should they escape from your pond or aquarium. Even the most diligent fish- or pond-keeper cannot ensure that their plants do not escape into the wild (as some non-native invasive plants can re-grow from a tiny fragment of plant just 5mm long), so we hope you will find this helpful.



The invasive plant Floating Pennywort completely smothers the River Wandle in 2008

There are laws surrounding invasive non-native plants. Dumping unwanted plants in local streams or ponds is an offence. Government also has powers to ban the sale of invasive plants. At the time of producing this booklet there were no sales bans, but it is worth checking on the websites below to find the latest legislation that may be relevant to you:

**Department for Environment
Food and Rural Affairs** - www.defra.gov.uk
Scottish Government -
www.scotland.gov.uk/invasivespecies

At the moment, invasive plants are still available to buy from some garden centres, aquatics centres and other plant retailers. Well-meaning friends giving you their excess pond plants may also pass invasive species to you.

Make sure you know what you are buying and take care before accepting plants from friends!

These websites provide more information about invasive plants that you may have in your garden pond or aquarium and how to remove them if you wish to:

Plantlife - www.plantlife.org.uk

Royal Horticultural Society - www.rhs.org.uk

Non-Native Species Secretariat - www.nonnativespecies.org

Alternatively, you can contact Plantlife on 01722 342730.





Caring for your pond or aquarium

Ponds in the wild gradually become overgrown by native plants and turn into marsh, wet meadows, or bogs, as part of a natural process (succession). So, no matter which plants you use, you should expect to have to manage your pond/aquarium by weeding and thinning at regular intervals. Plants for pond edges in particular should be planted in a basket, and may need regular thinning.

ALL unwanted plant matter should be disposed of responsibly. Compost or throw unwanted plant matter into your green waste bin collection or take it to your local recycling centre. The *Be Plant Wise* website has more information about safe disposal of excess plant matter:

www.nonnativespecies.org/beplantwise

How to use this guide

Your choice of plants will often reflect what you want the plant to do – for example, provide oxygen or cover for fish, hide pond liners or aquaria pumps, or add a splash of colour to pond margins. We have identified plants that will do the jobs you need but that are less likely to cause problems to the environment, should they escape there, than invasive non-native plants.









Each section is illustrated with an example of a damaging invasive non-native plant that should be avoided. The recommended plants can do the same, or similar, ‘jobs’ to these (and other) invasive plants and we hope you’ll be able to try the recommended plants instead.

Some of the plants we suggest may be available only in the peak season from May until September. We appreciate that this may not be ideal for your needs, but if you are able to wait you can help to protect our environment.

CONTENTS Our suggested plants are divided into four sections PAGE

Submerged & oxygenating plants - food, shelter and oxygen for fish and invertebrates	6
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Plants for pond edges - plants for colourful margins and hiding pond liners	9
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KEY TO SYMBOLS

							
Tolerant of shade / low light levels	Needs sun	Needs alkaline conditions	Needs acid conditions	Needs nutrient rich conditions	Needs nutrient poor conditions	Produces attractive flowers	Produces attractive foliage

Symbols under each plant entry highlight particular conditions the plant requires (for example, nutrient rich water) or is able to withstand (such as low light conditions). A plant with no symbols is able to cope with a range of conditions. Flowers and foliage symbols indicate particularly attractive features of the plant.

The index at the back of this booklet provides full details of each plant’s cultivation tolerances.



©Tim Pankhurst/Plantlife

INVASIVE- AVOID ME!

Myriophyllum aquaticum Parrot's-Feather

N.B. sold under a number of other names too, including:

Myriophyllum brasiliense, Myriophyllum proserpinacoides, Brazilian Water-milfoil

This invasive 'oxygenator' harms native aquatic plants and animals by cutting out light and causing large fluctuations in oxygen levels. It can also increase the risk of local flooding by blocking watercourses and drainage channels.



©Andrew Gagg/Plantlife

Callitriche stagnalis

Common Water-starwort

Perennial with narrow, opposite submerged leaves that become broader in the open air. The flowers are small and insignificant, borne in summer.



©Bob Gibbons/Natural Image

Ceratophyllum demersum

Rigid Hornwort

Low light requirements make this a good choice for aquaria. Perennial with stiff stems eventually growing to 1m if left unchecked. Leaves dark green and forked into linear, toothed segments. Prefers quite nutrient rich water.



©Nick Stewart/Plantlife

Eleocharis acicularis

Needle Spike-rush

Rhizomatous perennial to 10cm with rush-like leaves and flowers in spikelets to 5mm (not produced when submerged). Provides good hiding places for fish fry.



©Kurt Stueber

Fontinalis antipyretica

Willow Moss

Attractive evergreen moss lacking proper roots with shoots to 15cm long and tightly packed leaves to 5mm. Its pretty leaves can help hide aquaria pumps.



Hottonia palustris

Water-violet

Perennial with whorled, pinnate, narrow-lobed leaves and whorls of lilac, yellow-throated flowers to 2.5cm across borne on upright stems that appear above the surface of the water in spring.



©A. S. Kers

Myriophyllum spicatum

Spiked Water-milfoil

Perennial with whorls of deeply divided leaves borne on stems to 1m or more. In summer small reddish flowers are carried just above the water. Stems may not die back in every winter, and so may provide year-round cover for fish.

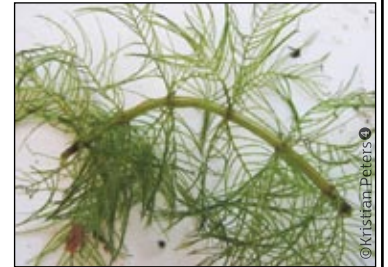


©Ben Goldsmith

Myriophyllum verticillatum

Whorled Water-milfoil

Perennial with whorls of deeply divided leaves and linear leaflets are borne on stems to 1m or more. In summer very small yellowish flowers are carried just above the surface of the water.



©Kristian Peters

Potamogeton crispus

Curled Pondweed

Perennial bearing submerged, dissected, almost translucent leaves and leathery, floating leaves with undulating margins. The flowers are tiny and whitish, carried just above the water.



©Andrew Gagg/Plantlife

Ranunculus aquatilis

Common Water-crowfoot

Pretty annual/short-lived perennial with submerged branching stems and finely divided leaves and floating lobed, kidney-shaped leaves. Produces white flowers (2cm) at the water's surface in summer. Prefers shallow water with good nutrient levels.



©Bob Gibbons/Natural Image



INVASIVE- AVOID ME!

Ludwigia grandiflora, *L. hexapetala*

Water Primrose

N.B. May also be sold as *Jussiaea grandiflora*, *Ludwigia uruguayensis*

The government is trying to eradicate this plant from the wild in Great Britain before it becomes widespread and causes significant damage like that seen in France.



Hydrocharis morsus-ranae

Frogbit

Stoloniferous perennial spreading on the surface of water and producing rounded, glossy leaves to 3cm long. White, bowl-shaped flowers, 2cm across, yellow at the centre are borne in the summer. Less vigorous in deeper water.



Nuphar lutea

Yellow Water-lily

Perennial bearing floating, rounded, thick-textured, hairless leaves to 40cm long. Above these in the summer are carried almost spherical yellow flowers to 6cm across singly on stems. FOR LARGE PONDS ONLY.



Nymphaea alba

White Water-lily

Perennial with floating, rounded, dark green, often red-tinted leaves to about 30cm across. The starburst flowers to 20cm or more across are white with yellow centres. FOR LARGE PONDS ONLY.



Nymphaea hardy hybrids

Garden Water-lily

There are many hybrids to choose from. *Nymphaea 'Marliacea Albida'* (pictured) has cup-shaped flowers to 15cm across that are white with yellow centres.



INVASIVE- AVOID ME!

Hydrocotyle ranunculoides

Floating Pennywort

N.B. May also be sold as Water Pennywort

Invasive Floating Pennywort can grow up to 20cm per day, quickly smothering aquatic habitats with a dense mat that can look like dry land to unsuspecting livestock and people.



Alisma plantago-aquatica

Water-plantain

Perennial to 1m bearing linear submerged leaves and rosettes of long-stalked, lance-shaped, greyish leaves above the water. Produces very pale pink flowers to 1.5cm on much-branched inflorescences in summer. Best in water 15-30cm deep.



Butomus umbellatus

Flowering-rush

Perennial to 1.5m with rush-like, twisted leaves emerging purple and turning green. Umbels of fragrant pink flowers to 2.5cm across are borne in late summer on tall stems. Grow in mud or water to 25cm deep.



Caltha palustris

Marsh-marigold

Rhizomatous perennial bearing kidney-shaped leaves to 10cm long. Open, waxy, yellow flowers are carried on stems to 45cm in spring.



Canna 'Endeavour'

Water Canna 'Endeavour'

Tender, rhizomatous perennial to 1.8m with erect, glaucous, paddle-shaped leaves and spikes of narrow-petalled red flowers to 5cm across in summer and autumn. Lift tubers and overwinter in frost-free conditions.





©Tony Road

Canna 'Erebus'

Water Canna 'Erebus'

Tender, rhizomatous perennial to 1.2m with erect, dark green, paddle-shaped leaves and spikes of exotic salmon flowers to 8cm across in summer and autumn. Lift tubers and overwinter in frost-free conditions.



©Carrol Sheppard/RHS

Canna 'Ra'

Water Canna 'Ra'

Tender, rhizomatous perennial to 1.8m with erect, slender, green leaves and spikes of exotic lemon yellow flowers in summer and autumn. Lift tubers and overwinter in frost-free conditions.



©Hedi De Dobbelaere

Chrysosplenium davidianum

David's Golden-saxifrage

Mat-forming perennial to 8cm tall with hairy, rounded, dark green leaves and greenish yellow, cup-shaped flowers above leafy bracts.



©Christopher Whitehouse

Lysimachia nummularia 'Aurea'

Golden Creeping-Jenny

Prostrate perennial grown for its rounded, golden leaves in opposite pairs but also bearing yellow, cup-shaped flowers in summer.



©Phil Sellens

Mentha aquatica

Water Mint

Rhizomatous perennial to 90cm with purple stems and narrow, toothed, hairy and aromatic leaves. In summer dense spheres of tubular lilac flowers are produced. Grows in water to 15cm deep. Plant in baskets to contain spread.



Menyanthes trifoliata

Bogbean

Rhizomatous perennial forming floating mats of three-parted leaves with leaflets to 6cm long. Erect inflorescences of white, star-shaped flowers are sometimes produced in summer. WILL NEED REGULAR TRIMMING; FOR LARGE PONDS ONLY.



©Christopher Whitehouse

Myosotis scorpioides

Water Forget-me-not

Creeping, rhizomatous perennial with leaves to 10cm and, in summer, a profusion of bright blue, very open flowers to 8mm across with a paler eye. Grows best in water to 10cm deep.



©Tuovi Kurtti

Sagittaria sagittifolia

Arrowhead

Spreading perennial bearing arrow-shaped leaves with long lobes at the base and 1m tall inflorescences carrying white flowers to 2.5cm across. In deep water long, floating leaves may also be produced. FOR LARGE PONDS ONLY.



©Ben Goldsmith

Thalia dealbata

Powdery Alligator-flag

Perennial to 2.5m bearing lanceolate grey-green leaves on long stalks. Striking, violet flowers are borne in slender spikes in summer. Not fully hardy and may be deciduous in cold weather.



©Lu Weese/Moll

Veronica beccabunga

Brooklime

Creeping perennial bearing fleshy stems and leaves which are rounded and can be entire or toothed. Racemes of blue flowers with a white eye are produced in spring and summer. Will tolerate shallow water only.



©Bastiaan Brak



INVASIVE- AVOID ME!

Crassula helmsii New Zealand Pigmyweed, Australian Swamp-stonecrop

N.B. May also be sold as *Tillaea recurva*, *Tillaea helmsii*, or *Crassula recurva*

This invasive plant can grow as a submerged oxygenator and on land in boggy areas. This plant is considered so damaging and difficult to remove that some land managers fill in ponds where it is found in order to protect other nearby ponds.



Carex elata 'Aurea'
Bowles's Golden Sedge

Rhizomatous, perennial sedge, to 70cm, dying back in winter with leaves that bear a central, golden variegation and small flowers in spring and early summer.



Darmera peltata
Indian-rhubarb

Slow-spreading rhizomatous perennial bearing umbrella-like leaves to 60cm across preceded by heads of bright pink flowers on long stalks. Will tolerate drier conditions in a shady position.



Eriophorum angustifolium
Common Cottongrass

A spreading, perennial member of the sedge family growing to about 40cm and producing in summer spikes of cotton-like flowers. Survives in water to 5cm deep.



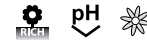
Hosta 'Sum and Substance'
Plantain Lily 'Sum and Substance'

Large, ribbed, heart-shaped yellow or green leaves and spikes of bell-shaped lilac flowers in summer. Perennial.



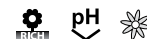
Iris ensata
Japanese Iris

Rhizomatous iris to 90cm with narrow leaves and purple or reddish flowers borne in midsummer.



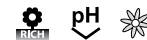
Iris pseudacorus
Yellow Iris

Vigorous, rhizomatous perennial to 1.5m tall with lance-shaped, greyish leaves and bright yellow flowers with darker markings. FOR LARGE PONDS ONLY.



Iris sibirica
Siberian Iris

Rhizomatous iris to 120cm tall with narrow leaves and bluish flowers. A parent of many fine cultivars.



Ligularia 'Gregynog Gold'
Leopard Plant 'Gregynog Gold'

Award-winning hybrid with rounded leaves to 35cm long and bearing in late summer and autumn pyramids to 1.8m tall of golden daisy flowers 10cm across. Perennial. Needs protection from very hot sun.



Zantedeschia aethiopica
Altar-lily

Rhizomatous perennial with large, arrow-shaped, glossy green leaves and big, white, arum-like flowers on stems to 1m or more. May need winter protection with fleece or a mulch.



Cultivation chart & index

CONDITIONS ▶		Submerged	Emergent	Marginal	Floating	Bog garden	Wet soils	Nutrient rich	Nutrient poor	Alkaline	Acid	Full sun	Partial sun	Shade	Fast growing	Hardy
PLANT	PAGE															
<i>Callitriche stagnalis</i>	6															
<i>Ceratophyllum demersum</i>	6															
<i>Eleocharis acicularis</i>	6															
<i>Fontinalis antipyretica</i>	6															
<i>Hottonia palustris</i>	7															
<i>Myriophyllum spicatum</i>	7															
<i>Myriophyllum verticillatum</i>	7															
<i>Potamogeton crispus</i>	7															
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<i>Hydrocharis morsus-ranae</i>	8															
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<i>Canna 'Endeavour'</i>	9															
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