Keeping a pond or aquarium without harmful invasive plants

A guide to plants you can use in place of invasive non-native species
Keeping a pond or aquarium without harmful invasive plants

Help protect the environment by using these plants in place of invasive non-native species

Plants are vital for our health and the environment, they improve air quality, boost our mood, help to offer climate change resilience and provide a home for wildlife.

Many of the plants in our ponds and aquaria are not native to the UK – they have been introduced from all over the world by people. While non-native plants can help us to create beautiful ornamental displays to enjoy, some become invasive and can cause problems for you and the environment.

Although only a small minority of non-native plants are invasive, the impact they can have is extensive and may be irreversible. Aquatic plants are a particular problem due to the speed at which they can spread and the impact they can have on important aquatic habitats, such as lakes and rivers.

Here are a few examples of the impacts of invasive non-native aquatic plants:

- Crowding out native plants impacting on other species which rely on them for food or shelter
- Competing for space, light and nutrients
- Removing oxygen from the water, harming fish and other wildlife
- Blocking up waterways interfering with fishing, boating, and other activities
- Increasing the risk of flooding

Aquatic plants can quickly outgrow their space and cause problems in your pond, and the environment. They may re-grow from tiny fragments, so that no matter how hard you try to eliminate them, they keep on appearing.

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 millions of pounds are spent each year to limit their spread.

Find more information about non-native species at nonnativespecies.org (GB) and invasivespeciesni.co.uk (NI), including:

- Information on non-native species
- ID sheets for over 60 species
- More guidance on preventing the spread of invasive plants
- Information on volunteering to help manage invasive plants in the wild
How to use this guide

Choose the plants in this booklet to help prevent future invasions.

The plants you choose will often reflect what you want them 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.

This booklet provides examples of plants that can do the same, or similar, ‘jobs’ as invasive plants and can be used in their place. 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.

Each section includes an example of a damaging invasive non-native plant that should be avoided.

Gardening for wildlife

Help to make your garden a haven for wildlife – look out for species with these symbols.

Contents

- Plants for pond edges
- Submerged & oxygenating plants
- Bog garden plants
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- Table of characteristics
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Key to symbols

- Tolerant of shade / low light levels
- Needs sun
- Needs alkaline conditions
- Neutral conditions
- Needs acidic conditions
- Needs drier soils
- Moist but well drained soils
- Needs wetter soils
- Needs sheltered position
- Attractive flowers
- Attractive foliage
- Fine autumn colours
- Bears ornamental fruit
- Structural feature or screening / hedging
- Windbreak
- Berries for birds
- RHS Plants for Pollinators
- Provides shelter/cover for wildlife
- Submerged aquatic plant
- Floating aquatic plant
- Marginal/emergent aquatic plant
- Bog garden plant
- Native to UK

Did you know that it’s against the law to share or sell some garden and pond plants?

Find more information at nonnativespecies.org (GB) and invasivespeciesni.co.uk (NI)

A plant with no symbols is able to cope with a broad range of conditions. These characteristics are summarised in a table at the back of this booklet. UK native plant classifications are taken from the Botanical Society of Britain & Ireland’s Online Atlas of the British and Irish Flora, 2022.
Caring for your pond or aquarium

Know what you grow
Choose the right plants for your garden, pond, aquarium and water features.

Research plants before you buy them to make sure they are suitable for your needs, easy to dispose of, and won’t be invasive. Keep aquarium plants out of your pond.

Consider native plants or choose non-invasive alternatives. If your pond is near a wetland or waterbody avoid using any plants which aren’t native to the local area.

Take care before giving or accepting cuttings, as you may accidentally pass on invasive plants, pests or plant diseases.

Stop the spread
Keep your plants in your pond and aquarium, don’t plant them, or allow them to grow, in the wild.

Locate your pond away from natural waterbodies and drains to stop plants spreading into the wild.

When you buy a new plant, remove the surface layer of compost and wash the plant in a bucket before positioning it your pond to remove any seeds or unwanted plant fragments.

Use this, and any waste water from your pond or aquarium, on your lawn or to water the plants in your garden, in areas that are a good distance from waterbodies or drains that flow into them.

Compost with care
Dispose of your unwanted plants, roots, weeds, seeds, and water responsibly.

Make sure nothing you remove from your pond or aquarium gets into the wild, you could be breaking the law if it does.

Use unwanted aquatic plants as mulch in dry borders in your garden, away from waterbodies or drains.

Leave any plants you’ve removed on the edge of the pond to drain for a few hours before disposing of them, to allow any wildlife to return to the water.

Find out more about disposing of plants safely at nonnativespecies.org/beplantwise.

Help to prevent future invasions

You can help to prevent future invasions simply by reporting plants which are spreading in your garden and proving hard to control.

Do you have a plant in your garden that is spreading and proving hard to control? Submit your records at www.plantalert.org to help scientists identify which species are likely to become a problem in the wild in the future.

If you think you’ve spotted an invasive plant in the wild, you can report it online through iRecord. Find out more at nonnativespecies.org/recording (GB) and invasivespeciesni.co.uk/report-sighting (NI).
Plants for pond edges

**Ludwigia grandisflora**

Water primrose

Originally introduced as an ornamental pond plant, but a number of wild populations have been recorded since 1998. Water primrose quickly covers water bodies restricting recreational use and harming native wildlife. Help prevent future invasions by choosing one of the following plants.

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**Alisma plantago-aquatica**

Water-plantain

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

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**Butomus umbellatus**

Flowering rush

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

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**Iris pseudacorus**

Yellow Flag Iris

Vigorous, rhizomatous perennial up to 1.5 m tall with lance-shaped, greyish leaves and bright yellow flowers with darker markings. For large ponds only.

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**Juncus articulatus**

Jointed Rush

A clump forming British wild native marginal jointed rush with very attractive dark brown-black seed heads.

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Plants for pond edges

**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.

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**Caltha palustris**

Marsh-marigold

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

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**Canna ‘Endeavour’**

Water Canna ‘Endeavour’

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

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**Canna ‘Erebus’**

Water Canna ‘Erebus’

Tender, rhizomatous perennial to 1.2 m 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.

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**Submerged & oxygenating plants**

**Canna Ra’**

*Water Canna ‘Ra’*

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

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**Fontinalis antipyretica**

*Water Moss*

Attractive evergreen slow growing moss with pretty leaves that can help hide aquaria pumps. Much liked by aquatic wildlife and provides an excellent site for spawning fish. Useful for improving water quality. Thrives in sun and shade, prefers moving water and cooler conditions.

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**Lysichiton americanus**

*American skunk-cabbage INVASIVE!*

Widely planted in bog gardens, first reported in the wild in 1947. American skunk-cabbage threatens other species in important wet woodland habitats and has a strong odour. Help prevent future invasions by choosing one of the following plants.

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**Carex acuta**

*Slender tufted Sedge*

A clump forming native sedge up to 90 cm, ideal for pond margins.

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**Carex elata ‘Aurea’**

*Bowles’s Golden Sedge*

Rhizomatous, perennial sedge, to 70 cm, dying back in winter with leaves that bear a central, golden variegation and small flowers in spring and early summer to 45 cm.

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**Ceratophyllum demersum**

*Rigid Hornwort*

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

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**Chrysosplenium davidianum**

*David’s Golden-saxifrage*

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

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**Eleocharis acicularis**

*Needle Spike-rush*

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

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**Eriophorum angustifolium**

*Common Cottongrass*

A spreading, perennial member of the sedge family growing to about 40 cm and producing in summer spikes of cottonlike flowers. Survives in water to 5 cm deep.
Plants for ponds & bog gardens

**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.

**Hottonia palustris**

Water-violet

Perennial oxygenator with whorled, pinnate leaves. Whorls of lilac, yellow-throated flowers to 2.5 cm across appear on upright stems above the surface of the water in spring. Grow in the muddy bottom of a pool in clear, shallow water in full sun.

**Lysimachia nummularia 'Aurea'**

Golden Creeping-Jenny

Vigorous prostrate perennial forming a mat of creeping stems with rounded, golden leaves in opposite pairs, bearing yellow, cup-shaped flowers in summer.

**Astilboides tabularis**

Common Astilboids

A strong statement perennial. Forming clumps of large, round leaves to 100 cm across. Small, white flowers are borne on long stalks in summer. Can cope with wet but not waterlogged soils. Up to 1.5 m tall.

**Lychnis flos-cuculi**

Ragged-robin

An upright dainty perennial to 70 cm, with branched stems bearing terminal clusters of star-shaped rose-pink flowers in late spring and early summer. Well suited to moist meadows or wildlife gardens.

**Astillbe 'Fanal' (x arendsii)**

Astillbe Fanal

Herbaceous perennial with attractive leaves and erect plume-like panicles of tiny white, pink or purple flowers in summer. Grow in moist, fertile, humus-rich soil in full sun or grow in partial shade where soil is likely to dry out in the summer.

**Geum rivale**

Water avens

A herbaceous perennial with bright green, lobed basal leaves. The flower stems and sepals are flushed with dark red, and the dusky pink or pale orange, drooping flowers appear from late spring to midsummer.

**Hosta (Tardiana Group) 'Halcyon'**

Plantain lily 'Halcyon'

A compact herbaceous perennial with thick-textured, vivid blue-grey leaves to 20 cm in length. Light greyish-lavender, bell-shaped flowers are carried on stems to 40 cm tall. Prefers partial shade in moist soil. Best in slightly acidic or neutral soils.

Keep your plants in your pond or aquarium, don’t plant them, or allow them to grow, in the wild. Even native plants can cause a problem if they are planted in the wrong place. Find more gardening tips on page 6.
Plants for ponds & bog gardens

**Lobelia cardinalis 'Queen Victoria'**

Lobelia 'Queen Victoria'

A short-lived herbaceous perennial to 90 cm tall, with beetroot-coloured, oblong leaves and bright scarlet, two-lipped flowers in long terminal racemes in summer. Requires reliably wet soil such as in a bog garden.

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**Hydrocotyle ranunculoides**

Floating pennywort

Introduced as an ornamental pond plant, but has since spread into the wild and become widely established in parts of the UK. Floating pennywort can grow up to 20 cm a day under the right conditions, quickly covering whole waterbodies where it replaces native plants, interferes with recreational activities and can increase the flood risk. Help to prevent future invasions by choosing one of the following plants.

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**Hydrocharis morsus-ranae**

Frogbit

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

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**Mentha aquatica**

Water Mint

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

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**Menyanthes trifoliata**

Bogbean

Rhizomatous perennial forming floating mats of three-parted leaves with leaflets to 6 cm long. Erect inflorescences of white, star-shaped flowers are sometimes produced in summer. Will need regular trimming, for large ponds only.

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**Myosotis scorpioides**

Water Forget-me-not

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

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Use unwanted aquatic plants as mulch in dry borders in your garden, away from waterbodies or drains.
**Floating plants**

### Myriophyllum spicatum
**Spiked Water-milfoil**
Perennial with whorls of deeply divided leaves on stems which grow to 1 m 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.

### Myriophyllum verticillatum
**Whorled Water-milfoil**
UK native perennial oxygenator with whorls of deeply divided leaves and linear leaflets borne on stems to 1m or more. In summer very small yellowish flowers are carried just above the surface of the water.

### Nuphar lutea
**Yellow Water-lily**
Perennial bearing floating, rounded, thick-textured, hairless leaves to 40 cm long. Above these in the summer are carried almost spherical yellow flowers to 6 cm across singly on stems. For large ponds only.

### Nymphaea ‘Pygmaea Helvola’
**White Water-lily**
Perennials with floating, rounded, variegated leaves to about 6 cm across. This miniature water lily with pale yellow flowers to 3 to 5 cm across is ideal for water tubs or small ponds.

### Myriophyllum verticillatum
**Old World Arrowhead**
Spreading perennial bearing arrow-shaped leaves with long lobes at the base and 1m tall inflorescences carrying white flowers to 2.5 cm across. In deep water long, floating leaves may also be produced. For large ponds only.

### Thalia dealbata
**Powdery Alligator-flag**
Perennial to 2.5 m 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.

### 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.
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### About the list

This list is based on a previous list developed by the RHS and Plantlife, published in 2010, and was updated in 2021 by the Plant Alert Team at Coventry University.

The list includes only ornamental plants where evidence is available providing some assurance that future invasions from these species are less likely. Coventry University have checked that these plants have not been frequently found outside gardens, or have been recorded as invasive in other countries. The list does not include any species identified in scientific horizon scanning activities designed to identify potential future invasive species. Furthermore, recently introduced ornamental plants or plants not widely available in the trade were not included as there is not enough evidence to assess their potential to escape from cultivation. Both species which have remained on the list, and any species replacing excluded species from the previous list, have been selected according to these criteria.

### Other titles in this series

- **Gardening without harmful invasive plants**
- **Landscaping without harmful invasive plants**

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