Invasive Species

Identification guides – Table of Contents

This list is by no means exhaustive. Please refer to pages 233-237 of the Lincolnshire Biodiversity Action Plan (3rd Edition) for a list of priority non-native invasive species for our area.

Floating pennywort

Hydrocotyle ranunculoides

Invasive species identification guide

GLNP
GREATER LINCOLNSHIRE NATURE PARTNERSHIP

Where is it found?

Floating on the surface or emerging from still or slowly moving freshwater. Can be free floating or rooted.

Similar to……

Marsh pennywort (see bottom left photo) – this has a smaller more rounded leaf that attaches to the stem in the centre rather than between two lobes. Will always be rooted and never free floating.

Key features

- Lobed leaves
- Fleshy green or red stems
- Floating or rooted
- Forms dense interwoven mats

Leaf

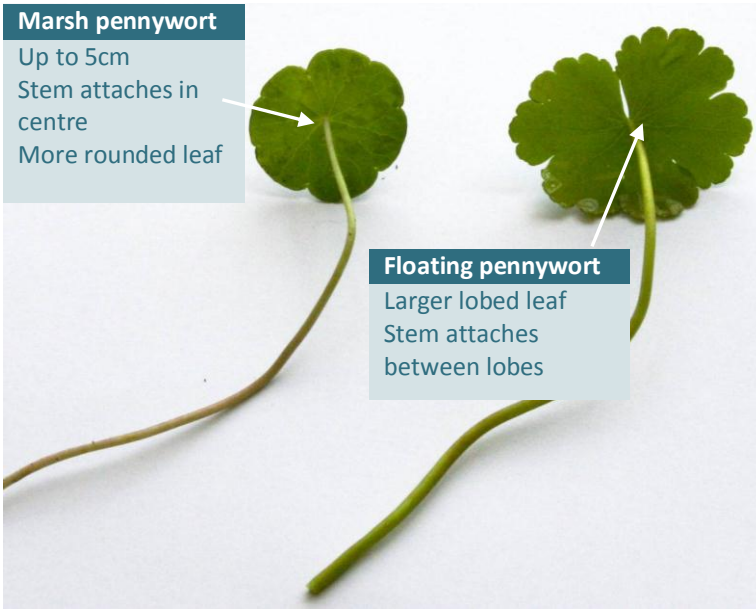
Leaves can be up to 7cm in diameter. Lobed leaves can float on or stand above the water.

Marsh pennywort

Up to 5cm
Stem attaches in centre
More rounded leaf

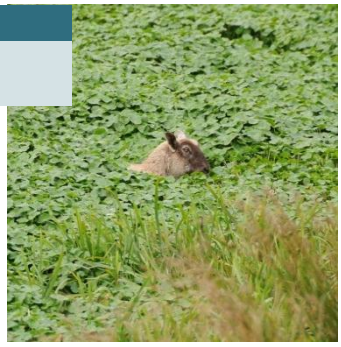
Floating pennywort

Larger lobed leaf
Stem attaches between lobes



Roots

Fine white roots



Photos

© GBNNSS

Invasive species ID guide: Floating pennywort

Management

Floating pennywort is extremely difficult to control due to rapid growth rates (up to 20cm from the bank each day).

Chemical control: Can use glyphosphate but plant does not rot down very quickly after treatment so vegetation should be removed after two to three weeks in flood risk areas. Regular treatment necessary throughout the growing season.

Mechanical control: Regular cutting from May-October will prevent complete dominance. Cut material needs to be removed from the water immediately. Hand pulling or spot chemical treatment should follow cutting to reduce re-growth. Pulling can work well on small infestations.

Environmental control: Shading on southern banks may limit the growth of floating pennywort in specific areas, and Increasing rooting depth to below 1m may reduce the ability of *H. ranunculoides* to root at the margins.

Biological control: A weevil (*Listronotus elongatus*) has been found to be a floating pennywort specialist and is currently assumed not to pose a threat to the native European species – marsh pennywort (*H. vulgaris*). Further work is being done to explore the effectiveness of this method.

If using chemicals near a watercourse or conservation area you will need permission from the relevant authority (Environment Agency or Natural England).

Report sightings

All sightings of floating pennywort should be reported to the Lincolnshire Environmental Records Centre (LERC).
www.glnp.org.uk/getting-involved/your-sightings/

Reporting and management of non-native invasive species contributes to the Lincolnshire Biodiversity Action Plan (LBAP).
www.glnp.org.uk/partnership/nature-strategy/

For further information on control of non-native invasive species please visit the GLNP website and go to the 'Getting involved' pages.
www.glnp.org.uk/getting-involved/

Giant Hogweed

Heracleum mantegazzianum

Invasive species identification guide

GLNP
GREATER LINCOLNSHIRE NATURE PARTNERSHIP

Where is it found?

This species is found in a variety of habitats but is most common on river banks.

Similar to……

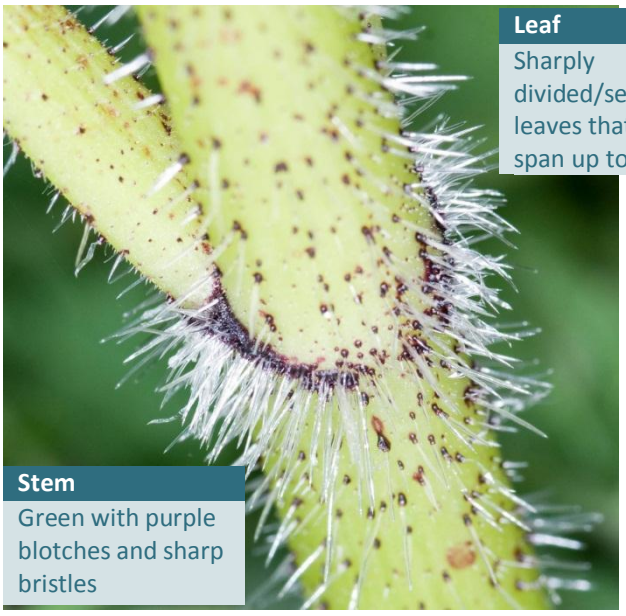
Native hogweed, which is much smaller when mature and only grows up to 2m with flower heads spanning up to 15cm.

Key features

- Can grow up to 5m in height
- Leaves can span up to 3m in width
- **Sap can cause blistering of skin after exposure to sunlight**

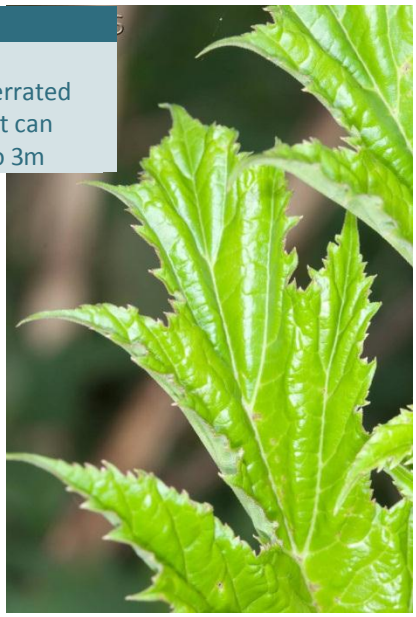
Flower

Small white flowers
Umbrella shaped flower heads can span up to 80cm



Leaf

Sharply divided/serrated leaves that can span up to 3m



Stem

Green with purple blotches and sharp bristles

Photos

© GBNNSS

Invasive species ID guide: Giant Hogweed

Seeds and Seedlings

Seeds have dark stripes (oil ducts) 2 on one side, 4 on the reverse.

Appearance

Up to 5m high

Management

Warning The sap of giant hogweed contains a toxic chemical which sensitises the skin and leads to severe blistering when exposed to sunlight. **This reaction can recur for many years.**

The seeds of this plant are thought to remain viable for up to seven years, and possibly as long as 15 years. Once a plant has produced seed, it should be assumed that the seeds will be present in the surrounding area for at least this length of time. Seeds will also be washed downstream. Regular checks will be required to keep the plant under control.

Mechanical control: Hand cutting should never be undertaken unless the operator is wearing full protective clothing to prevent skin contamination by the sap. Machine operators should take similar precautions because the sap can be spread onto machinery and subsequently come into contact with skin. Cutting before flowering will, at best, produce only temporary control and ensures that the plant regrows in the following season. Cutting after flowering has no benefit once the seeds have been formed, except to clear away the dying vegetation. Small infestations can be controlled by digging out the whole plant.

Chemical control: In April and May will be effective with the use of appropriate substances. Expert advice and further information should be sought.

If using chemicals near a watercourse or conservation area you will need permission from the relevant authority (Environment Agency or Natural England).

Report sightings

All sightings of giant hogweed should be reported to the Lincolnshire Environmental Records Centre (LERC).
www.glnp.org.uk/getting-involved/your-sightings/

Reporting and management of non-native invasive species contributes to the Lincolnshire Biodiversity Action Plan (LBAP).
www.glnp.org.uk/partnership/nature-strategy/

For further information on control of non-native invasive species please visit the GLNP website and go to the 'Getting involved' pages.
www.glnp.org.uk/getting-involved/

Himalayan balsam

Impatiens glandulifera

Invasive species identification guide

GLNP
GREATER LINCOLNSHIRE NATURE PARTNERSHIP

Where is it found?

Mostly on river banks and in damp woodland, but can grow in any damp habitat.

Similar to...

Rosebay willowherb - the only plant that may be confused with Himalayan balsam, can easily be told apart at a distance as these plants are arranged like a spear. Himalayan balsam has a less regular, drooping appearance.

Key features

- Distinctive large pinkish flowers from June to August
- Grows up to 2m tall
- Large narrow leaves with serrated edges up to 15cm long
- Hollow fleshy stems and exploding seed pods

Stem

Hollow, sappy, fleshy and brittle
Up to 2m high
Green to red

Flowers

Pink (rarely white)
2.5-4cm long
June to August

Leaves

Serrated edge
Up to 15cm long
May have red mid-rib

Photos

© GBNNSS

Invasive species ID guide: Himalayan balsam

Management

Himalayan balsam has a two to three year eradication period with an annual, short lived seed bank.

Mechanical control: As an annual plant the best method of controlling Himalayan balsam is removal:

- This is most effective during June or July before the plant has produced its exploding seed heads (shown with a flower in the top left image).
- If the plant is removed earlier in the season re-growth is likely.
- Plants should be cut below the lowest node (above right) to avoid re-growth.
- Plants can easily be pulled by hand as the roots are shallow (above left).
- Cut or pulled plants can be safely left on site to decompose if they have not produced seed heads, though this must be done in a dry open area.
- Make sure you carry on checking for re-growth after removal, if possible once a fortnight until August / September when the plant would have seeded.

Report sightings

All sightings of Himalayan balsam should be reported to the Lincolnshire Environmental Records Centre (LERC).
www.glnp.org.uk/getting-involved/your-sightings/

Reporting and management of non-native invasive species contributes to the Lincolnshire Biodiversity Action Plan (LBAP).
www.glnp.org.uk/partnership/nature-strategy/

For further information on control of non-native invasive species please visit the GLNP website and go to the 'Getting involved' pages.
www.glnp.org.uk/getting-involved/

Japanese knotweed

Fallopia japonica

Invasive species identification guide

GLNP
GREATER LINCOLNSHIRE NATURE PARTNERSHIP

Where is it found?

Common in urban areas, particularly on waste ground, railways, road sides and river banks.

Similar to…

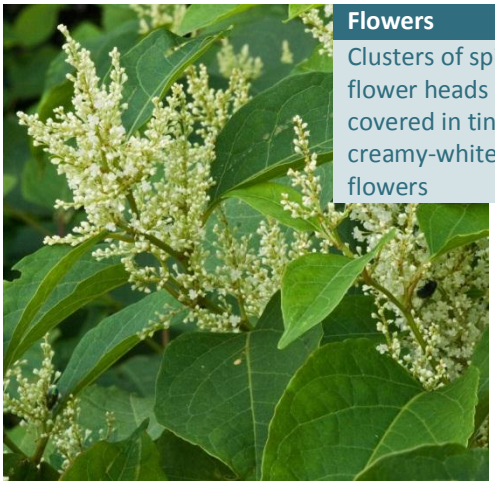
Species with which it is closely related: giant knotweed and its hybrid. Both are relatively uncommon in the UK but have much larger leaves.

Key features

- Hollow pink/red speckled stem (1-2.5m high)
- Young leaves can be red, whilst mature leaves (10-15cm) are green
- White clustered flowers in September/October

Stem

In the early spring red/purple shoots appear from the ground and grow rapidly forming canes.



Flowers

Clusters of spiky flower heads covered in tiny creamy-white flowers

Leaves

Young leaves are red and more pointed, mature leaves are green and rounder.

Photos

Invasive species ID guide: Japanese knotweed

Management

As a perennial plant with extensive underground rhizomes Japanese knotweed is particularly difficult to eradicate. Seeking professional advice will be appropriate in most circumstances.

Chemical control: Spraying with herbicide is a common technique. Multiple applications are needed in a year, and over several years, for success. This should be followed by a monitoring period to ensure there is no regrowth.

Mechanical control: Cutting back can be used in conjunction with herbicide spraying. However there are several points to note:

- The plant can grow back from pieces that weigh less than 1g so care must be taken to ensure that cutting back does not actually spread the plant.
- As the plant can grow back from such small pieces garden composting or natural decomposition is not adequate. Cut material should be burnt.
- The plant is listed on Schedule 9 of the Wildlife and Countryside Act. This means that any disposal offsite has to be at a licensed hazardous waste site.

Other methods used by professionals include stem injection of herbicide and digging out the rhizomes. There are established working practices that professionals will follow, and it is recommended that their advice is sought.

If using chemicals near a watercourse or conservation area you will need permission from the relevant authority (Environment Agency or Natural England).

Report sightings

All sightings of Japanese knotweed should be reported to the Lincolnshire Environmental Records Centre (LERC).
www.glnp.org.uk/getting-involved/your-sightings/

Reporting and management of non-native invasive species contributes to the Lincolnshire Biodiversity Action Plan (LBAP).
www.glnp.org.uk/partnership/nature-strategy/

For further information on control of non-native invasive species please visit the GLNP website and go to the 'Getting involved' pages.
www.glnp.org.uk/getting-involved/

New Zealand pigmyweed

Crassula helmsii

Invasive species identification guide

GLNP
GREATER LINCOLNSHIRE NATURE PARTNERSHIP

Where is it found?

Aquatic habitats up to 3m deep, in still or slow flowing water bodies or on land around ponds and lakes.

Similar to……

Native water-starworts, these have non-fleshy leaves that are usually notched at the tip.

Key features

- Small white flowers with four petals (July to September) - not present on submerged plants
- Narrow leaves up to 2cm long, that are fleshy and succulent-like when standing out of the water

Leaf

Up to 2cm
Fleshy when out of water and will be more straggly in the water

Flowers

Four white petals, appearing on plants growing out of the water between July and September

Photos

© GBNNSS

Invasive species ID guide: New Zealand pigmyweed

Source

Garden centres and domestic ponds

Management

Mechanical control: Removal of plant material after chemical treatment is recommended; this is beneficial to prevent the negative impacts of rotting vegetation. However fragments of New Zealand pigmyweed as small as 5mm can regrow. Therefore it may not be advisable to attempt mechanical control methods without chemical treatment first. Small sections can easily break off and cause infestations elsewhere on the watercourse.

Chemical control: This is effective, but different substances may be required to treat plants on land and those submerged in water. Infestations will require regular treatment and dead plant matter should be removed.

Environmental control: This can be effective for small patches. Shading with black plastic or carpet may work if left in place for a sufficient length of time (eight weeks to six months)

If using chemicals near a watercourse or conservation area you will need permission from the relevant authority (Environment Agency or Natural England).

Report sightings

All sightings of New Zealand pigmyweed should be reported to the Lincolnshire Environmental Records Centre (LERC).
www.glnp.org.uk/getting-involved/your-sightings/

Reporting and management of non-native invasive species contributes to the Lincolnshire Biodiversity Action Plan (LBAP).
www.glnp.org.uk/partnership/nature-strategy/

For further information on control of non-native invasive species please visit the GLNP website and go to the 'Getting involved' pages.
www.glnp.org.uk/getting-involved/

Water fern

Azolla filiculoides

Invasive species identification guide

GLNP
GREATER LINCOLNSHIRE NATURE PARTNERSHIP

Where is it found?

Still and slow flowing water bodies (e.g. ponds, drainage channels, ditches, canals)

Similar to...

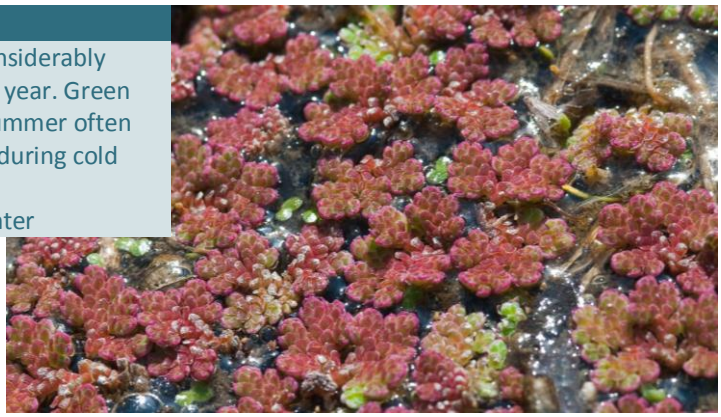
Duckweed - this has much smaller single round leaves and the roots attached to each single leaf are light green to white. Some species of duckweed are invasive and may be found alongside water fern.

Key features

- Small free-floating water plant that forms dense green or red mats
- Plants can be present year round, but often die back in winter

Colour

Can vary considerably through the year. Green in spring/ summer often turning red during cold weather in autumn/winter

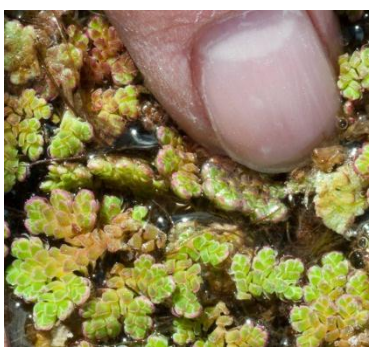


Roots

Black / brown roots hang beneath floating leaves, easily break off

Leaves

Up to 2.5cm long and fern like, rough granular appearance, water repellent surface



Photos

Invasive species ID guide: Water fern

Management

Chemical control: Spraying with herbicides containing glyphosate is widespread, although expert advice may be necessary to ensure safe and successful application

Biological control: A small North American weevil, *Stenopelmus rufinasus*, has been very effective in South Africa against this species and it is now available for use in the UK. The weevil is only known to feed on this plant species,so it should not pose a threat to any of our native plant species. Contact professionals for further advice on using this method.

Mechanical control: Plant removal can be effective if repeated frequently. However the plant easily propagates from small residual particles that break off during removal. Once a dense mat has formed the plant releases spores into the water due to stress if removal is attempted. These spores can overwinter so even if the main plant/mat is physically removed further removal and monitoring is necessary.

If using chemicals near a watercourse or conservation area you will need permission from the relevant authority (Environment Agency or Natural England).

Report sightings

All sightings of water fern should be reported to the Lincolnshire Environmental Records Centre (LERC).
www.glnp.org.uk/getting-involved/your-sightings/

Reporting and management of non-native invasive species contributes to the Lincolnshire Biodiversity Action Plan (LBAP).
www.glnp.org.uk/partnership/nature-strategy/

For further information on control of non-native invasive species please visit the GLNP website and go to the 'Getting involved' pages.
www.glnp.org.uk/getting-involved/

Photos ©Martin Redding