

Floating Pennywort

(*Hydrocotyle ranunculoides*)



Family name: Araliaceae (Ivy family)

Common name/s: Floating Pennywort, Water Pennywort, Marsh Pennywort



Floating Pennywort (*Hydrocotyle ranunculoides*) is a fast-growing aquatic plant native to the Americas, known for its rapid spread and ability to form dense mats on water bodies. In Ireland, it is a high-risk invasive species that threatens native biodiversity, water quality, and recreational use of lakes, rivers, and canals.

The plant spreads primarily through vegetative propagation, making management challenging. Control strategies include mechanical removal, herbicide application, and preventative measures to limit the spread. If left unmanaged, Floating Pennywort can significantly impact aquatic ecosystems and waterway management.

Description - Floating Pennywort is a fast-growing, perennial aquatic plant that can form dense mats on the surface of water bodies. It has become a problematic invasive species in various parts of the world, including Ireland.

The plant's rapid growth rate and ability to spread through fragments make it a significant concern for water management, impacting both biodiversity and water quality.

Key characteristics include:



Size: The plant has stems that can grow up to 20 cm above the water surface, but it often spreads out horizontally, forming mats that float on the water.

Leaves: The leaves are rounded or kidney-shaped, with a deeply lobed edge, measuring 2-7 cm in diameter. They are bright green, have a glossy surface, and grow on long petioles that attach at the centre of the leaf.

The leaves float on the water surface or extend slightly above it.

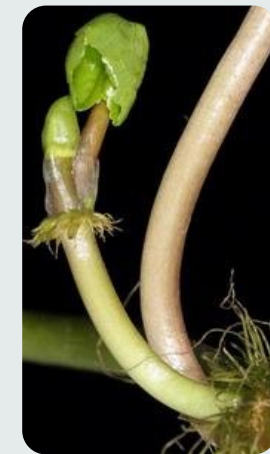


Flowers: Produces small, inconspicuous white to greenish flowers in clusters, although the plant's primary mode of spread is vegetative rather than through seeds.

Fruit: Fruits are small, flattened, disc-shaped structures, typically around 2-4 mm in diameter. It is divided into two sections, each containing a single seed, with a slightly ridged or ribbed surface that aids in floating and water dispersal.



The fruit matures in late summer to autumn and is adapted to spread via water currents.



Stems: The stems are hollow, trailing, and can grow several metres long, rooting at the nodes when they come into contact with soil or sediment.

Root: Has a fibrous root system that can anchor the plant to the substrate, although it often grows as a free-floating mat. The roots are fine and grow from the nodes along the stem.



Habitat - Floating Pennywort is native to North and South America, where it grows in a variety of freshwater environments.

Floating Pennywort has become invasive in other regions, such as Europe, Australia, and parts of Asia. It thrives in:

- **Slow-Moving or Still Water Bodies:** Commonly found in ponds, lakes, canals, and slow-flowing rivers, where it can form dense mats on the water surface.
- **Wetlands and Marshes:** Can grow in marshy areas or along riverbanks, often spreading out over the water.
- **Ditches and Drainage Channels:** Often found in drainage ditches and irrigation channels, where its growth can impede water flow.

The plant prefers nutrient-rich waters, ranging from slightly acidic to neutral conditions, and can tolerate a variety of substrates, including mud, sand, and organic-rich soils.

Status in Ireland - In Ireland, Floating Pennywort is considered a high-risk invasive species, particularly in lakes, canals, and slow-moving rivers, where it can quickly outcompete native aquatic plants.

Floating Pennywort's ability to form dense mats can lead to significant ecological and economic impacts, affecting water flow, navigation, and recreational activities.

Reproduction and Spread - Floating Pennywort spreads primarily through vegetative propagation, with the ability to grow from small fragments:

- **Fragmentation:** The plant readily spreads through stem fragments, which can root and form new plants if they come into contact with suitable conditions.

This allows it to spread quickly in water bodies, especially through human activity or water currents.

- **Limited Seed Production:** Although the plant can produce seeds, seed-based reproduction is rare in introduced populations.

The plant's main mode of spread is through fragmentation.

Management and Control - Controlling Floating Pennywort is challenging due to its rapid growth and ability to regenerate from small fragments:

- **Mechanical Control:** Manual removal, cutting, or dredging can help reduce biomass, but care must be taken to remove all plant fragments to prevent regrowth.

Repeated efforts may be necessary to manage established populations.

- **Chemical Control:** Herbicides approved for aquatic use may be applied to manage infestations, but care should be taken to minimise impacts on non-target species.

Multiple treatments may be needed to achieve effective control.

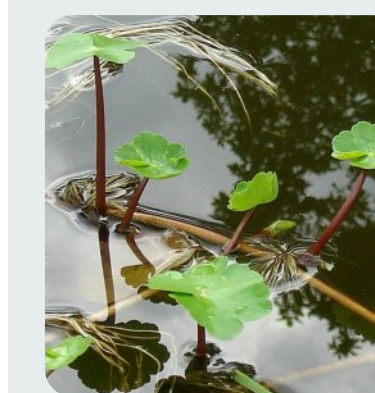
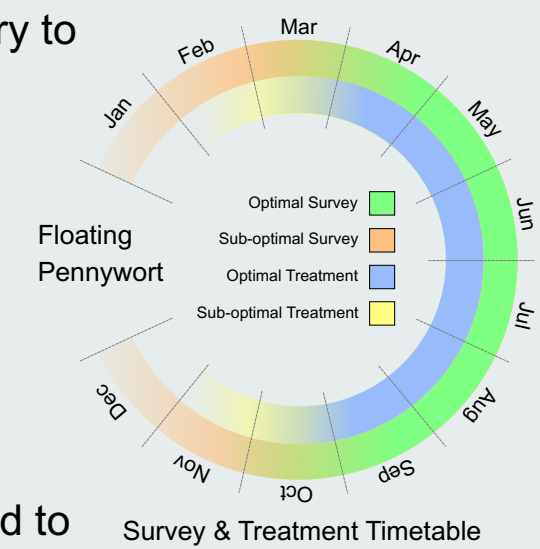
- **Biological Control:** Research is ongoing to explore biological control methods, such as introducing herbivorous insects that feed on the plant, but these are not widely used at present.

- **Preventative Measures:** Cleaning boats, fishing gear, and other equipment before moving between water bodies can help prevent the spread of plant fragments.

Monitoring water bodies for early detection is also crucial.

Ecological Impact - Floating Pennywort can have significant ecological impacts, especially in areas where it becomes invasive:

- **Competition with Native Species:** Forms dense mats that block light, outcompeting native aquatic plants and reducing biodiversity.
- **Impact on Water Quality and Flow:** The mats can impede water flow, reduce oxygen levels, and increase sedimentation, negatively affecting fish and other aquatic life.
- **Recreational and Economic Impacts:** Can hinder boating, fishing, and swimming by creating dense growth on the water surface. It can also increase the cost of water management and maintenance of waterways.



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