

Giant Salvinia

(*Salvinia molesta*)



Family name: Salviniaceae (Salvinia family)
Common name/s: Giant Salvinia, Kariba Weed, Aquarium Watermoss



Giant Salvinia (*Salvinia molesta*) is an aquatic fern known for its rapid growth and potential to form dense mats on the surface of water bodies. While not yet widespread in Ireland, it is considered a high-risk invasive species due to its ability to outcompete native aquatic plants, reduce water quality, and block waterways.

The plant spreads entirely through vegetative propagation, making management difficult. Control measures include mechanical removal, herbicide application, and biological control using Salvinia weevils. Strict preventive measures are necessary to avoid introduction and establishment.

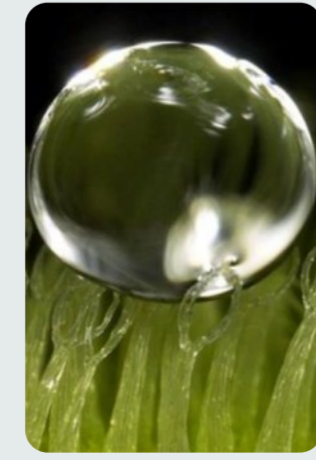
Description - Giant Salvinia is a free-floating aquatic fern noted for its ability to form thick mats on the surface of water bodies. It has become a highly invasive species in many parts of the world, where it disrupts aquatic ecosystems, impedes water flow, and affects recreational activities. The plant's rapid growth and vegetative reproduction make it difficult to control once established.

Key characteristics include:



Size: Typically forms mats on the water surface, with individual plants consisting of floating leaves and submerged root-like structures. The plant may form mats up to 30 cm thick on the water surface.

Leaves: The leaves are oval to oblong, measuring 1-4 cm in length. The upper surface is covered in water-repellent hairs that create a distinctive "egg-beater" shape when viewed under magnification.



Paired leaves float on the water, while a third, modified leaf hangs underwater, resembling a root.

Reproductive Structures: Giant Salvinia does not produce viable spores; instead, it spreads entirely through vegetative propagation, with small fragments capable of forming new plants.



Stems: The stems are short and branching, with plants forming chains of connected leaf pairs. New growth occurs at the tips, allowing the plant to spread rapidly across the water surface.

Roots: The submerged structures are actually modified leaves that function like roots, providing anchorage and nutrient absorption.



Habitat - Giant Salvinia is native to southeastern Brazil but has been introduced to many tropical and subtropical regions around the world, including North America, Asia, Africa, and Australia. It thrives in:

- Lakes, Ponds, and Canals: Prefers still or slow-moving freshwater, where it can form dense surface mats.
- Wetlands and Marshes: Can establish in shallow wetlands, where nutrient levels may be high.
- Reservoirs and Drainage Ditches: Frequently found in artificial or disturbed water bodies, particularly where nutrients are abundant.

The plant grows best in warm, nutrient-rich waters, with temperatures ranging from 20°C to 30°C. It can tolerate a wide range of water conditions but is sensitive to cold temperatures.

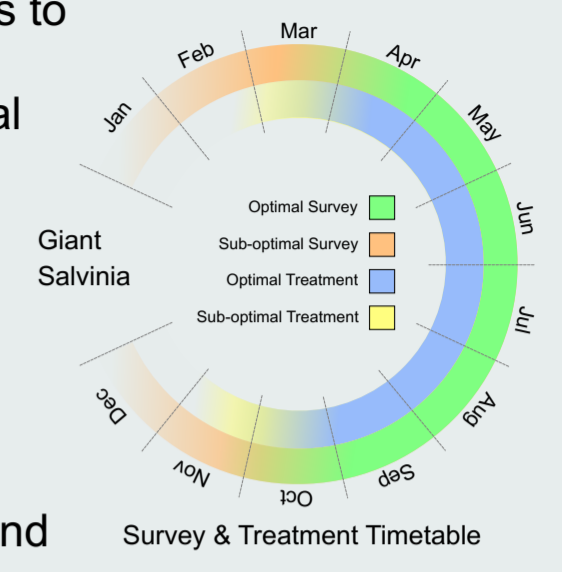
Status in Ireland - In Ireland, Giant Salvinia is not currently widespread but is considered a potentially high-risk invasive species if introduced, especially in still or slow-moving water bodies. Strict regulations are in place to prevent its importation and spread, given the severe ecological impacts it can have in suitable climates.

Reproduction and Spread - Giant Salvinia spreads exclusively through vegetative propagation, as it does not produce viable spores:

- Fragmentation: The plant spreads rapidly through fragments, with even small pieces able to grow into new plants. This makes it easy for the plant to colonise new areas, especially through human activities, such as boating or aquarium disposal.
- Rapid Growth: Under favourable conditions, the plant can double its biomass in as little as 2-10 days, allowing it to quickly cover large areas of water.

Management and Control - Controlling Giant Salvinia is challenging due to its rapid growth and vegetative reproduction. Effective management often requires an integrated approach:

- Mechanical Control: Manual removal, cutting, or skimming can help reduce biomass, but care must be taken to remove all fragments to prevent regrowth. Regular monitoring and repeated removal may be necessary for control.



- Chemical Control: Herbicides approved for aquatic use can be applied to manage infestations, but they must be used with caution to minimise impacts on non-target species and water quality.

- Biological Control: Salvinia weevils (*Cyrtobagous salviniae*) have been used successfully in some regions as a biological control agent. The weevils feed on the plant, reducing its growth and spread.
- Preventative Measures: Strict regulations on the sale, import, and transport of Giant Salvinia are essential. Proper disposal of aquarium plants and cleaning boats and equipment before moving between water bodies can help prevent accidental introduction.

Ecological Impact - Giant Salvinia can have severe ecological impacts in areas where it becomes invasive:

- Competition with Native Species: Forms dense mats that block sunlight, preventing photosynthesis in submerged aquatic plants and reducing biodiversity.
- Impact on Water Quality: The thick mats can reduce oxygen levels in the water, leading to fish kills and poor water quality.
- Impediment to Water Flow: Can block waterways, affecting irrigation, navigation, and recreational activities. The mats can also increase the risk of flooding by restricting water flow in drainage channels.



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