Aquatic herb, floating, with swollen leaves and very flashy blue/violet flowers.

Scientific name: *Eichhornia crassipes* (Mart.) Solms.

Common names: water hyacinth, common water hyacinth, water orchid

Family: *Pontederiaceae*

Status in Portugal: invasive species (listed in the annex I of Decreto-Lei nº 565/99, 21 December)

Risk Assessment score: 30


Last update: 14/04/2014

**How to recognise**

Rhizomatous aquatic herb, generally floating.

Leaves: aerial, growing in tufts, with a blade from 8 x 9 cm, rhomboid to suborbicular; petioles of variable length, where the shortest are very swollen on the lower half, and all of them have a spongy aerenchyma.

Flowers: blue/violet, of 5-7 cm diameter, arranged (8-12 flowers) in spikes with around 15 cm, yellow anthers, variegated with blue.

Fruits: capsules with 3 valves that have numerous small seeds (from 3 to 450).

Flowering: March to July with a very short flowering period (2 to 3 days).
**Eichhornia crassipes (water hyacinth)**

Characteristics that aid invasion

*Eichhornia crassipes* has an extremely rapid growth: in adequate conditions, the species may double its population in 5 days. The growth rate is higher in springtime, reducing in autumn due the decrease in temperature and formation of frost. It may survive on land if there is a large amount of water available.

It may easily propagate vegetatively, through rhizomes or small fragments from which a new plant may generate. Each fragment may be dragged by the water flow and originate new invasion foci far from the original population.

It also propagates by seed. The seeds can be viable for a long time (up to 20 years) and due to their small size, they are easily swept up by the current. The seeds are also dispersed by aquatic birds.

**ORIGIN AND DISTRIBUTION**

**Native distribution area**

South America, in the Amazon Basin.

**Distribution in Portugal**

Maitland Portugal (Douro Litoral, Beira Litoral, Estremadura, Ribatejo, Alto Alentejo)), Azores archipelago (islands of Flores, Faial, Graciosa, Terceira and São Miguel).

**Other places where the species in invasive**

Invasive in all continents.

**Introduction reasons**

For ornamental purposes.

**Preferential invasion environments**

Irrigation channels, lagoons, ponds and dam bays.

It doesn’t thrive in brackish water and salinity limits its distribution. It prefers waters rich in nutrients, mainly nitrogen, phosphorus and potassium. It may endure drastic fluctuations in the water level, acidity and low levels of nutrients.

**IMPACTS**

It is considered one of the worst aquatic invasive species of the world.

**Impacts on ecosystems**

It may grow into mats that completely cover the water surface, leading to the aquatic environments’ change. In that case it reduces the water quality, biodiversity (aquatic fauna and flora), light availability and the water flow, besides enhancing eutrophication.

**Economic impacts**

It may clog channels and prevent navigation, diminishing recreational use, fishing or other activities. Where its colonization becomes effective, elevated costs in the application of control methodologies and
irrigation equipment maintenance are to be expected.

**Natura 2000 network habitats more subject to impacts**

- Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. (3140);
- Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation (3150);
- Natural dystrophic lakes and ponds (3160).

**CONTROL**

Controlling an invasive species demands a well-planned management, which includes the determination of the invaded area, identifying the causes of invasion, assessing the impacts, defining the intervention priorities, selecting the adequate control methodologies and their application. Afterwards it is fundamental to monitor the efficiency of the methodologies and recuperation of the intervened area as to perform, whenever necessary, the follow-up control.

The control methodologies used for *Eichhornia crassipes* include:

**Physical control**

**Manual/mechanical removal (preferential methodology).** Manual removal with or without mechanical “sawboats” or “vacuums”. Sometimes, floating barriers are used to contain the species inside a small area. For the success of this method it’s important not to leave large fragments in the water.

Since 2006, this method has been successfully applied in Pateira de Fermentelos using a mechanical sawboat to eliminate water hyacinth.

**Chemical control**

**Foliar application of herbicides.** Herbicide spray (active substance: glyphosate or 2,4-D in formulas adapted for aquatic environments). It is expensive and provides only a temporary effect. It affects non-target species and its efficiency is very dependent on the age and phenological state of the plants and temperature, so it may result in very low success rates.

**Biological control**

There are several biological control agents (arthropods and fungi) successfully released in several countries to control *E. crassipes*: *Eccritotarsus catarinensis* (Carvalho) (Hemiptera: Miridae), sap-feeding; *Neochetina bruchi* Hustache and *N. eichhorniae* Warner (Coleoptera: Curculionidae) that feed in the inside of the stems; *Niphograpta albiguttalis* Warren (Lepidoptera: Pyralidae), that feed in the petiole; *Orthogalumna terebrantis* Wallwork (Acari: Scarcoptiformes: Galumnidae) leaf-miner, and the fungus *Cercospora rodmanii* (Mycosphaerellales: Mycosphaerellaceae).

Tests made in Portugal with *Neochetina* sp. showed good results. However, the impossibility to use it in our country determines that this type of control is not yet an alternative.

For additional information, visit the webpage [www.invasoras.pt](http://www.invasoras.pt) and/or contact us at invader@uc.pt.

**REFERENCES**

**Eichhornia crassipes (water hyacinth)**

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