

## **Curly-leaf Pondweed: An Invasive Aquatic Plant**

*Potamogeton crispus L.*

Common Name: Curly-leaf pondweed, Curly cabbage, Crisp pondweed

### **Biology**

Curly-leaf pondweed is a submersed, rooted, perennial plant that grows to 2.5 ft. in length. Its flattened, light-colored stems may be simple or branches and serve as central axis to green, oblong leaves. The leaves are arranged in an alternating pattern around the stem and their density increases from the base to the tip. Its name is attributed to its wavy, toothed leaf margin, which gives it a curly appearance. Mature leaves have a prominent midvein, parallel lateral veins, and a rounded tip. Some leaves harbor spindle-shaped structures at their base called turions. In late spring to early summer, small, inconspicuous flowers are produced and arranged in whorls of 3-5 on a dense, emergent spike. Fertilized flowers produce small oval, brown-colored seeds.

### **Reproduction**

Curly-leaf pondweed can reproduce asexually by vegetative reproduction. The vegetative reproduction mechanisms this species utilizes are rhizome fragmentation and production of turions. Beginning in July, Curly-leaf pondweed dies back. During fall and winter, the original stand is replaced by the germination and development of turions into of new plants. The production of turions is the most common means of vegetative reproduction. Though this species can produce seeds, but there is uncertainty regarding the seed's viability.

### **Habitat**

Historically, this plant species is native to Eurasia, Africa, and Australia. However, it is suspected that human introduction through fisheries or aquarium trade led to the first invasion in the US. Currently, Curly-leaf pondweed has invaded all US states with the exception of Alaska, Hawaii, Maine, and South Carolina. Curly-leaf pondweed has a wide range of environmental tolerances. It is commonly found in lakes, ponds, streams, and salt marshes. It tolerates a wide range of water chemistry conditions, but prefers high nutrient and alkaline waters. It can withstand a range of climatic regimes, including low temperatures and low light conditions.

### **Impacts and Threats Posed by Curly-leaf pondweed**

An early growing season allows this species to quickly grow dense monostands without competition from native plants. The formation of dense monostands will displace the native vegetation. Species dependent on the native vegetation must relocate or perish; thereby, leading to a reduction in the local biodiversity. In July, the dense mats fall back. This decaying event causes a reduction in the oxygen levels. Substantial depletion of oxygen can result in anoxic conditions, which kill fish and other organisms in the waterbody. Also, the nutrients released from the decay event may trigger algal blooms. Furthermore, invasions impose limitations on water use for recreational purposes, such as boating and fishing, which leads to negative impacts on real estate values and tourism.

## Management Methods

General management methods include:

- Drawdowns
- Herbicides
- Benthic barrier

## Literature Cited

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