

Mini data sheet on *Gymnocoronis spilanthoides* (Asteraceae)

Added in 2009 - Deleted in 2012

Reasons for deletion:

Gymnocoronis spilanthoides was added to the EPPO Alert List in 2009 but as no immediate risk was perceived, it was transferred to the Observation List in 2012.

Why

Gymnocoronis spilanthoides (Asteraceae, common name Senegal tea) is a semi-aquatic emergent perennial plant native to South America. The species is used in aquarium trade. Within the EPPO region, it is not recorded as naturalized. Because this plant has shown invasive behaviour where it has been introduced elsewhere in the world, it can be considered a potential future invader in Europe.

Geographical distribution

Oceania: Australia (Queensland, New South Wales, South Australia, Tasmania, Victoria, Western Australia), New Zealand.

Asia: India, Japan (Kyushu, Honshu).

North America (native): Mexico.

South America (native): Argentina (listed as a main weed), Bolivia, Brazil, Paraguay, Peru, Uruguay.

Note: the species is casual in Hungary. The species is classified as unwanted in South-Africa.

Morphology

G. spilanthoides is a freshwater or marsh-growing emergent perennial herb forming rounded bushes up to 1 to 1.5 m tall or mats of stems extending from the banks. Young stems are 5-10 mm in diameter, increasing to 20 mm with age. Thin and numerous roots can develop from leaf veins or from any node in contact with moist soil or water. Young stems are 5 to 10 mm in diameter, mature stems 20 mm in diameter. Larger stems are hollow between the nodes, and float on water, reaching 1.5 m in length. The leaves are opposite, dark green, 50 to 200 mm long. Flowers are numerous and occur at the end of stems, they are white, ball shaped and 15 to 20 mm in diameter. The seeds are 0.8-1.2 mm in diameter, ribbed, yellow-brown.

Biology and ecology

G. spilanthoides is a perennial that lives for several years. Most seeds germinate in spring, although some germination may continue into summer. A germination rate of 83% has been reported. Seedling growth is rapid. Flowering starts in late spring or early summer and lasts until the cooler weather of late autumn. *G. spilanthoides* reproduces both vegetatively and by seeds. Seed formation occurs one month after flowering. Vegetative reproduction occurs when any part of the stem that includes a node breaks, or even when a leaf breaks away from the main plant. Broken stem fragments or leaves are spread by water currents, and can also be accidentally spread by machinery (e. g. boats, trailers, etc.) or animal hooves, and grow into a new plant when settling in a stream bed, and then form new colonies. Seeds are relatively heavy and are usually dropped near the parent plant, but they can also be spread by water currents, or by mud attached to machinery and animals. Plants are dormant during winter and new growth reshoots from the crown and nodes during the following spring. The species is recorded to be very hardy, and to be able to have a growth rate exceeding 15 cm per week. Although it is shade tolerant, it requires light to colonize a new location.

In which habitats

The species occurs in lakes, water courses, wetlands, and prefers still or very slow flowing waters. According to the Corine Land Cover nomenclature, the following habitats are invaded: coastal wetlands, banks of continental water, riverbanks/canalsides (dry river beds).

Pathways

The plant is imported and used for aquaria. It is recorded to have been introduced into Australia and India by the aquarium industry. Imports are reported in small quantities in Austria, Estonia, France,

Hungary, the Netherlands and Switzerland, but their quantities may increase in the future. In Japan, the species has also been sold as a "water purification plant", although there is no scientific evidence of this fact. Moreover, the fragrant flowers of the plant attract butterflies (Monarchs in particular), and the plant may therefore be intentionally spread by butterfly enthusiasts. Additionally, natural spread occurs through water, machinery and animals.

Impacts

As *G. spilanthisoides* grows very quickly, floating mats rapidly cover water bodies, excluding other plants and animals such as wetland birds. The plant is known to be particularly detrimental to wetland ecosystems. Infestations block drainage channels and worsen flooding; this may also affect recreational activities and irrigation. When large quantities of the plant die off and rot under water, this may also alter water quality.

Control

The species is difficult to manage, and long term experience with glyphosate alone has proven to be ineffective. In general, herbicides only kill the upper part of the plant, and material below the water line can regrow. Hand pulling also results in regeneration and further spread. A combined management strategy has given good results in Australia. Herbicide was applied first, and 7 to 10 days later, all silt and plant material down to 1 m depth was mechanically removed, dried and burnt. Considering the invasive behaviour of this species elsewhere in the world, including in its native range, it is considered that slow flowing water bodies of the whole EPPO region are at risk, and that the species should usefully be monitored, particularly in countries currently importing this species as an aquarium plant (Austria, Estonia, France, Hungary, the Netherlands and Switzerland). *G. spilanthisoides* is therefore added to the Alert List.

Sources

Victoria Department of Primary Industries (2009) Impact Assessment - Senegal Tea Plant (*Gymnocoronis spilanthisoides*) in Victoria. http://www.land.vic.gov.au/dpi/vro/vrosite.nsf/pages/impact_senegal_tea_plant
Global invasive species database (2009) *Gymnocoronis spilanthisoides*.
<http://www.issg.org/database/species/distribution.asp?si=863&fr=1&sts=&lang=EN>
Weed Science Society of America (2009) Fact sheet on *Gymnocoronis spilanthisoides*.
<http://www.wssa.net/Weeds/Invasive/FactSheets/Gymnocoronis%20spilanthisoides.pdf>