

*Limnophila sessiliflora* [简体中文](#) [正體中文](#)

**System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Scrophulariales	Scrophulariaceae

**Common name** Asian marshweed (English), ambulia (English), limnophila (English), shi long wei (Chinese)

**Synonym** *Hottonia sessiliflora* , (Vahl)  
*Terebinthina sessiliflora* , (Vahl) Kuntze

**Similar species** *Cabomba caroliniana*

**Summary** *Limnophila sessiliflora* is an aquatic perennial herb that can exist in a variety of aquatic habitats. It is fast growing and exhibits re-growth from fragments. *Limnophila sessiliflora* is also able to shade out and out compete other submersed species. 2-4,D reportedly kills this species.



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## Species Description

*L. sessiliflora* is described as an aquatic, or nearly aquatic, perennial herb with two kinds of whorled leaves. The submerged stems are smooth and have leaves to 30mm long, which are repeatedly dissected. Emergent stems, on the other hand are covered with flat shiny hairs and have leaves up to 3cm long with toothed margins. The emergent stems are usually 2-15cm above the surface of the water. The flowers are stalkless and borne in the leaf axis. The lower portion (sepals) have five, green, hairy lobes, each 4-5mm long. The upper portion is purple and composed of five fused petals forming a tube with two lips. The lips have distinct purple lines on the undersides. The fruit is a capsule containing up to 150 seeds (Hall and Vandiver, 2003). In the course of studying *Limnophila* of Taiwan, [Yang and Yen \(1997\)](#) describe *L. sessiliflora*. Descriptions and line drawings are provided.

## Notes

Hall and Vandiver (2003) state that, "L. sessiliflora is derived from a Latin word which means pond-loving and refers to its aquatic existence. Sessiliflora, also Latin, means sessile-flowered and refers to this plant's stalkless flowers." The authors also report that, "A toxin present in the stem tissue may prevent herbivorous fish from eating the plant."

## Lifecycle Stages

Hall and Vandiver (2003) state that, "In late fall *L. sessiliflora* mats break loose from the hydrosol. Since the fruit is mature in the late fall the floating mats spread the seeds as they move."

## Habitat Description

*L. sessiliflora* will grow in a variety of aquatic habitats and can withstand a minimum temperature of 15°C, with an optimum temperature between 20-26°C (IFAS, 2001).

## Reproduction

Hall and Vandiver (2003) state that, "L. sessiliflora reproduces by fragmentation of the stem or by seeds."

## Nutrition

Hall and Vandiver (2003) state that, "*L. sessiliflora* is found in or near organically stained, acidic or clear, slightly alkaline water. It also tolerates low temperatures." IFAS (2003) state that, "The best light intensity for growth is around 215 micro-einsteins/metre squared/hour. It is an efficient photosynthesizer and has low light compensation point for long periods of photosynthesis, making it a competitive plant because it can start growing in low light before other plants do." The authors go on to state that *L. sessiliflora*'s minimum temperature tolerance is 15°C, and its maximum tolerance is 28°C. The optimum temperature for *L. sessiliflora* is 20-26°C.

## General Impacts

IFAS (2001) reports that, "*L. sessiliflora* is fast-growing and able to regrow from fragments. It is also able to shade out, and thus, out-compete totally submersed species. This species also clogs irrigation and flood-control canals, and pumping and power stations. *L. sessiliflora* is a major weed problem in paddy rice fields of India, China, Japan and the Philippines." The authors also state that, "*L. sessiliflora* is an efficient photosynthesizer and has a low light compensation point for long periods of photosynthesis, making it a competitive plant because it can start growing in low light before other plants do."

## Management Info

**Mechanical:** IFAS (2001) reports that, "The action of mechanical harvesters and chopping machines serves to help spread *L. sessiliflora*, which re-grows from leaf fragments.

**Chemical:** IFAS (2001) reports that, "Registered aquatic herbicides provide very limited control of this species; however, high levels of 2-4,D reportedly kills this plant." Wang *et al.* (2000) report that, "Daily spraying for 8 days with 1000 ppm paraquat gave excellent control of *L. sessiliflora*." In Japan, Wang *et al.* (2000) state that, "Sulfonylurea (SU) herbicides, known for their high herbicidal activity and low mammalian toxicity, were used since 1988 to control *L. sessiliflora* and other broadleaf weeds on rice fields at Sennan Village, Akita Prefecture, Japan. Since 1996, control of *L. sessiliflora* with the SU herbicides was no longer satisfactory. Two greenhouse studies at Tohoku National Agricultural Experiment Station and one experiment in the rice fields at Sennan Village were conducted in 1997 to confirm *L. sessiliflora* resistance to SU herbicides and to compare herbicide treatments for control of SU-resistant *L. sessiliflora*." The study conducted in Wang *et al.* (2000) hope to identify if *L. sessiliflora* was resistant to other herbicides that use different modes of action from SU's. The authors state that, "In particular, amide or phenoxy herbicides were effective control measures."

**Principal source:** [Limnophila sessiliflora \(Vahl\) Blume \(IFAS, 2001\)](#)  
[Limnophila, Limnophila sessiliflora \(Vahl\) \(Hall and Vandiver, 2003\)](#)

**Compiler:** National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

**Review:** Expert review underway

**Publication date:** 2006-08-25

## ALIEN RANGE

[3] UNITED STATES

## BIBLIOGRAPHY

10 references found for *Limnophila sessiliflora*

Management information

Hall, D. W., and V. V. Vandiver. 2003. *Limnophila*, *Limnophila sessiliflora* (Vahl). Florida Cooperative Extension Service: Institute of Food and Agricultural Sciences: University of Florida.

**Summary:** Information on description, economic importance, distribution, habitat, history, growth, and impacts and management of species.

Available from: [http://edis.ifas.ufl.edu/BODY\\_FW025](http://edis.ifas.ufl.edu/BODY_FW025) [Accessed 31 December 2003]

Takematsu, T., Konnai, M., Takeuchi, Y., and Ichizen, N. 1976. Weeds of cultivated field and herbicides in China. *Bulletin of the College of Agriculture, Utsunomiya University*. 9 (3): 91-107.

**Summary:** Information on weeds of paddy fields in China and the herbicides used to control them.

Wang, G., H. Watanabe, A. Uchino, & K. Itoh. 2000. *Response of a Sulfonylurea (SU) - Resistant Biotype of Limnophila sessiliflora to Selected SU and Alternative Herbicides*. Pesticide Biochemistry and Physiology. 68:59-66.

**Summary:** Information on description, economic importance, distribution, habitat, history, growth, and impacts and management of species.

## General information

[Atlas of Florida Vascular Plants \(AFVP\). 2004. \*Limnophila sessiliflora\*. Institute for Systematic Botany.](#)

**Summary:** Information on taxonomy and synonyms.

Available from: <http://www.plantatlas.usf.edu/main.asp?plantID=1975> [Accessed 6 July 2004]

[IFAS \(Institute of Food and Agricultural Sciences\). 2001. \*Limnophila sessiliflora\* \(Vahl\) Blume. University of Florida, IFAS, Center for Aquatic and Invasive Plants.](#)

**Summary:** Information on description, economic importance, distribution, habitat, history, growth, and impacts and management of species.

Available from: <http://aquat1.ifas.ufl.edu/seagrant/limes2.html> [Accessed 31 December 2003]

[ITIS \(Integrated Taxonomic Information System\). 2005. Online Database \*Limnophila sessiliflora\*](#)

**Summary:** An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

Available from:

[http://www.cbif.gc.ca/pls/itiscat/taxastep?king=every&p\\_action=containing&taxa=Limnophila+sessiliflora&p\\_format=&p\\_ifx=plgt&p\\_lang=](http://www.cbif.gc.ca/pls/itiscat/taxastep?king=every&p_action=containing&taxa=Limnophila+sessiliflora&p_format=&p_ifx=plgt&p_lang=) [Accessed March 2005]

Spencer, W., and Bowes, G. 1985. *Limnophila* and *Hygrophila*: a review and physiological assessment of their weed potential in Florida, USA. *Journal of Aquatic Plant Management*. 23: 7-16.

**Summary:** Comparison between the invasive potential of *Limnophila sessiliflora* and *Hygrophila polysperma* in Florida, USA.

[USDA-GRIN \(Germplasm Resources Information Network\). 2003. \*Limnophila sessiliflora\*. National Genetic Resources Program \[Online Database\] National Germplasm Resources Laboratory, Beltsville, Maryland.](#)

**Summary:** Information on common names, synonyms, and the distributional range of species.

Available from: <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?316416> [Accessed 31 December 2003]

[USDA-NRCS \(Natural Resource Conservation Service\). 2002. \*Limnophila sessiliflora\*. The PLANTS Database Version 3.5 \[Online Database\] National Plant Data Center, Baton Rouge, LA.](#)

**Summary:** Available from: <http://plants.usda.gov/java/nameSearch?mode=Scientific+Name&keywordquery=Limnophila+sessiliflora> [Accessed 31 December 2005]

[Yang, Yuen-Po and Shen-Horn Yen, 1997. Notes on \*Limnophila\* \(Scrophulariaceae\) of Taiwan. Bot. Bull. Acad. Sin. \(1997\) 38: 285-295](#)

**Summary:** Available from: <http://ejournal.sinica.edu.tw/bbas/content/1997/4/bot384-11.html> [Accessed 25 August 2006]