GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Pistia stratiotes***

Pistia stratiotes 简体中文 正體中文 **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Arales	Araceae

Common name Lechuguilla de agua (English), tropical duckweed (English), laitue d'eau (French), pistie (French), repollo de agua (Spanish), water lettuce (English), lechuguita de agua (Spanish), salade d'eau (French, Burkina Faso)

Synonym

Similar species *Eichhornia crassipes*

Summary Pistia stratiotes is a freshwater invasive weed that is found throughout the tropics and subtropics. It is a free-floating plant that is capable of forming dense mats on the surfaces of lakes, ponds, rivers and other bodies of water. Pistia stratiotes is a popular garden pond plant and is often spread by the dumping of aquarium or ornamental pond plants. Fragments, or whole plants, can be spread via boats or fishing equipment from an infested area to a clean body of water.

view this species on IUCN Red List

Species Description
Glazier (1996) describes *P. stratiotes* as a free-floating perennial of quiet ponds. It is stoloniferous, forms colonies, and has rosettes up to 15cms across. It has long, feathery, hanging roots. Its leaves are obovate to spathulate-oblong, truncate to emarginate at the apex, and long-cuneate at the base. Leaves are light green and velvety-hairy with many prominent longitudinal veins. Inflorescences are inconspicuous and up to 1.5cms long. Flowers are few, unisexual, and enclosed in a leaflike spathe.

Uses
According to Rivers (2002), *P. stratiotes* is a popular ornamental plant, used in ponds and aquariums.

Habitat Description
Rivers (2002) notes that for *P. stratiotes* to survive, it requires a wet, temperate habitat. It is usually found in lakes and rivers, however, it can survive in mud. *P. stratiotes* can endure temperature extremes of 15° C (59° F) and 35° C (95°). The optimal growth temperature range for the plant is 22-30° C (72-86° F). *P. stratiotes* prefers slightly acidic waters (6.5 - 7.2 pH) and moderate hardness (5 - 20 KH).

Reproduction
Rivers (2002) states that *P. stratiotes* reproduces vegetatively and by seed. Vegetative reproduction involves daughter vegetative offshoots of mother plants on short, brittle stolons. Rapid vegetative reproduction allows water lettuce to cover an entire lake, from shore to shore, with a dense mat of connected rosettes in a short period of time.

General Impacts
According to Rivers (2002), *P. stratiotes* can inflict a severe impact on the environment and economy of infested areas. The dense mats created by connected rosettes of the plant lead to the majority of problems encountered with water lettuce. These mats can have a negative economic effect by blocking waterways, thus increasing the difficulty of navigation and hindering flood control efforts. Mats of *P. stratiotes* can also disrupt natural ecosystems. They can lead to a lower concentration of oxygen in covered waters and sediments by blocking air-water interface and root respiration. Extremely thick mats of *P. stratiotes* can prevent sunlight from reaching underlying water. The cumulative effect of these negative characteristics of the plant is a loss of biodiversity in invaded habitats. *P. stratiotes* mats can also serve as a breeding place for mosquitoes.

Management Info
Preventative measures: A Risk assessment of \r\r\n*Pistia stratiotes* for Australia was prepared by Pacific Island Ecosystems at Risk (PIER) \rusing the Australian risk assessment system (Pheloung, 1995). The result is a score of 18 and a recommendation of: reject the plant for import (Australia) or \r\r\nspecies likely to be a pest (Pacific).
\r\nPhysical: The most common physical control method is raking or seining it (using a large fishing net) from the pond's surface. In the United States, raking is done by mechanical harvesters. The plant is then removed from waterways to the shore where it is cut up by chopping machines and disposed of by spraying across the water (Ramey, 2001).
\r\nChemical: Chemical control methods that have been successful in treating *P. stratiotes* include the herbicide endothall, which can act quickly and kill all plant cells that it contacts.
\r\nBiological: According to Rivers (2002), water lettuce leaf weevil (*Neohydronomus affinis*) is a native species of South America and was first introduced into Australia in the early 1980's for biocontrol of *P. stratiotes*. Additional releases of this weevil for research are currently being conducted. These weevils have a very short life cycle (approximately 30 days), which allows for quick establishment of populations. Adult weevils feed on the leaf, while the larvae attack the inside of the leaf. The other effective method of controlling *P. stratiotes* is the introduction of the water lettuce leaf moth (*Spodoptera pectinicornis*). The moth is native to Thailand and was imported into Florida for the biological control of water lettuce. The moth has a very short life cycle (approximately 35 days), with the larval stage lasting 17-20 days. The adult moth does not feed on water lettuce, however, moth larvae are capable of inflicting significant damage to *P. stratiotes*. The larvae are fairly large, which means that fewer larvae can provide a greater effect.

Pathway
P. stratiotes can spread from broken-off pieces or whole plants being moved on boats or fishing equipment from an infested to a clean body of water (Rivers, 2002).According to Ramey (2001), *P. Stratiotes* continues to be sold through aquarium supply dealers and through the internet. Rivers (2002) cites that dumping of aquarium or ornamental pond plants is often the means of spread for *P. stratiotes*.

Principal source: Water Lettuce (*Pistia stratiotes*) (Rivers, 2002)

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

Review: Dr John Clayton NIWA, National Institute of Water and Atmospheric Research. Hamilton, New Zealand

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ALIEN RANGE

[1] AUSTRALIA
[1] BURKINA FASO
[1] CHINA
[1] BERMUDA
[1] CAMBODIA
[1] COOK ISLANDS

[1] FRENCH POLYNESIA
[1] GUAM
[1] MALAYSIA
[1] NEW CALEDONIA
[1] NEW ZEALAND
[1] PAPUA NEW GUINEA
[1] PUERTO RICO
[1] SAINT LUCIA
[1] SOLOMON ISLANDS
[1] THAILAND
[1] VANUATU
[1] VIRGIN ISLANDS, U.S.
[2] GUADELOUPE
[1] INDONESIA
[1] MARTINIQUE
[1] NEW GUINEA
[1] NORTHERN MARIANA ISLANDS
[1] PHILIPPINES
[1] REUNION
[1] SEYCHELLES
[1] SWAZILAND
[15] UNITED STATES
[1] VIET NAM

Red List assessed species 2: CR = 1; NT = 1;

Oxyura maccoa **NT**

Terpsiphone corvina **CR**

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General information

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Summary: English:
The species list sheet for the Mexican information system on invasive species currently provides information related to Scientific names, family, group and common names, as well as habitat, status of invasion in Mexico, pathways of introduction and links to other specialised websites. Some of the higher risk species already have a direct link to the alert page. It is important to notice that these lists are constantly being updated, please refer to the main page (http://www.conabio.gob.mx/invasoras/index.php/Portada), under the section Novedades for information on updates.
Invasive species - Plants is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Plantas [Accessed 30 July 2008]
Spanish:
La lista de especies del Sistema de informaci�n sobre especies invasoras de m�xico cuenta actualmente con informaci�n aceca de nombre cient�fico, familia, grupo y nombre com�n, as� como h�bitat, estado de la invasi�n en M�xico, rutas de introducci�n y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la p�gina de alertas. Es importante resaltar que estas listas se encuentran en constante proceso de actualizaci�n, por favor consulte la portada (http://www.conabio.gob.mx/invasoras/index.php/Portada), en la secci�n novedades, para conocer los cambios.
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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.
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