

## New aquatic weed threats in northern Victoria

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**Summary** Case studies on three significant weed threats in irrigation canals and riverine ecosystems in northern Victoria are discussed. Whilst two of these, Senegal tea and salvinia, have been eradicated, parrot's feather is spreading at an alarming rate and opportunities for its eradication have passed.

### INTRODUCTION

Waterways are an important resource worldwide for multiple purposes. The threat of introduced aquatic weeds is reaching alarming proportions in many parts of the Southeast Asia, such as Sri Lanka. Aquatic weeds affect waterways adversely by blocking canals and pumps in irrigation projects and waste water; interfering with hydroelectricity production, hindering boat traffic, increasing the potential for the spread of waterborne diseases, interfering with recreational fishing and fish farming, clogging rivers and canals that result in flood. There are also documented threats to nature conservation at various levels of ecosystem functioning, e.g. plant communities and macro-invertebrates.

Despite attempts to eradicate some serious aquatic weeds in Victorian waterways (Gunasekera and Bonila 2001) recent observations and reports demonstrate that three alien invasive aquatic plants are emerging as serious new weeds in Victorian water resources; Senegal tea, salvinia and parrot's feather.

### CASE STUDIES

**Senegal tea or temple plant (*Gymnocoronis spilanthoides*)** A perennial, semi-aquatic herb native to Mexico and South America. Senegal tea is a potentially serious waterweed that has recently (December 2000) been found for the first time in Victoria at Lake Nagambie. A second infestation was located in private land at Cranbourne South and the third infestation appeared in a farm dam near Castlemaine. All three places have been treated with herbicides and a monitoring program is being continued. Each of these infestations appears to have come from garden plants probably a batch sold in Melbourne five years ago. It forms dense floating mats which can quickly cover water bodies, excluding other life forms, as well as impeding water flow, navigation and recreational activities. Senegal

tea has a variety of forms. The soft leaves are 5–20 cm in length, shiny dark green with serrated margins and the leaves are borne in opposite pairs. Flowering commences in late spring or early summer and continues until falling temperatures prevent further growth. Attractive flowers are white and seeds are ribbed and yellow-brown in colour.

**Salvinia (*Salvinia molesta*)** Salvinia is a prolific aquatic fern that has been spread from its native habitat in Southern Brazil to many other tropical countries around the world with sub-tropical climates, including Australia. Salvinia is a declared noxious weed throughout Australia (except the ACT), is a prohibited weed in Victoria and listed as a Weed of National Significance (Thorp 1999).

A recent discovery of salvinia infestation at Wodonga is approximately one hectare, the largest salvinia infestation ever found in Victoria. A management plan for the infestation in Wodonga was prepared and implemented, commencing with herbicide treatments to eradicate the populations. So far these control measures have been very successful.

Salvinia is a free-floating aquatic fern and its dominant features are its tremendous growth and reproductive rates. A single plant is said to be capable of multiplying to cover 25 km<sup>2</sup> in three months. During early growth stages, plants are smaller and the leaves lie flat on the water surface. As plants grow larger the leaves curl at the edges in response to self-competition. Plants in dense colonies have closely spaced, overlapping leaves that completely obscure the water surface.

**Parrot's feather (*Myriophyllum aquaticum*)** Parrot's feather also known as Brazilian water milfoil or thread of life, is a plant introduced around the world by the aquarium industry. Parrot's feather was first recorded as naturalised in Sydney in 1908 and has since spread to the other parts of Australia (except the Northern Territory). It is declared noxious weed in Western Australia and Tasmania, but it is widely available for sale in many aquarium shops and garden centres in Victoria.

Recent investigations found that parrot's feather is spreading at an alarming rate in some of the channels and creeks in northern Victoria and some lakes in the Melbourne metropolitan area. It is our view that parrot's feather is a big threat to irrigation systems in that area and will soon become a cost to industry and government.

Parrot's feather is a perennial herb native to the Amazon River in South America. The plant grows in submerged or emergent situations. It grows in slowly moving water on and near the banks of rivers and the mud of shallow ponds. The stems can grow up to two meters long and form a tangled mass in the water. Propagation is mainly by stem fragments. Male plants have not been recorded outside South America which explain why no fertile seeds have been found in Australian populations of parrot's feather. The leaves are whorled and each leaf is feather like and about 2–4 cm long. The flowers are born in the leaf axils but are rarely seen except in the plant's native range.

#### CONCLUSIONS

- Early intervention and eradication are essential for these weeds, although it may be too late for parrot's feather. Victoria now has a statewide project to eradicate new and emerging weeds rated as a high priority by its risk assessment process.
- Cooperation among a number of interested organisations may be required to promote new developments, as well as coordinate public awareness programs and research priorities.
- Better national coordination is required to improve state and federal cooperation on issues of aquatic weed management.

#### REFERENCES

- Gunasekera, L. and Bonilla, J. (2001). Alligator weed: tasty vegetable in Australian backyards? *Journal of Aquatic Plant Management* 39, 17-20.
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