

Pacific Pests, Pathogens and Weeds - Online edition

Salvinia (463)

Summary

- Widespread. Asia, Africa, North, South and Central America, Europe, Oceania. In Australia, Fiji, French Polynesia, New Caledonia, New Zealand, PNG, Vanuatu.
- Invasive weed of lakes, rivers, streams, rice paddies, thriving in slow-moving, nutrient-rich, warm freshwater, doubling in under 10 days, forming dense, floating mats, reducing water-flow, lowering light and oxygen levels. Impacts biodiversity (plants and fish), transport, clogs irrigation and power-generating systems, harbours mosquitoes.
- Free-floating, aquatic fern, with horizontal stems just below water. Leaves, from buds along stem. Different forms: at first, leaves, small, flat, green or yellowish-green, 2-6 cm long, with hairs aiding buoyancy; later, larger slightly folded and closer together along stems; eventually, very folded and compact. Sterile, hairy, spore sacs hang from feathery roots (modified frond), beneath water surface.
- Spread: by wind and water; floods; fur of animals; clothing; mud on vehicles, boats; garden waste; use as aquatic ornamental.
- Biosecurity: high risk of introduction via aquarium trade. In Australia, 'restricted invasive plant': *do not release into environment, give away or sell*. Among 100 of World's Worst Invasive Alien Species (IUCN, 2020). Available on internet.
- Biocontrol: success with weevil, *Cyrtobagous salviniae*, in Australia, PNG, parts of Africa.
- Cultural control: check nutrient levels (important); floating booms; manual removal or mechanical harvesting; vehicle hygiene.
- Chemical control: in Australia: glyphosate; carfentrazone-ethyl; orange oil. In Fiji, MCPA.

Common Name

Salvinia. CABI prefers the name kariba weed.

Scientific Name

Salvinia molesta. It was previously confused with *Salvinia auriculata*. It is one of four closely related species; the other species being *Salvia herzogii* and *Salvinia biloba*. As identification is complicated, because of the similarity of the species, it should be done by specialists. It is a member of the Salviniaceae.



Photo 1. Salvinia, *Salvinia molesta*, causing extensive blockage of a river in the USA.



Photo 2. Leaves (fronds) and roots of salvinia, *Salvinia molesta*, growing at low density.



Photo 3. Leaves (fronds) of salvinia, *Salvinia molesta*, become folded when growing at high density.



Photo 4. Hairs on the upper surface of a leaf of salvinia, *Salvinia molesta*.



Photo 5. Weevil, *Cyrtobagous singularis*, walking on the hairs on the upper surface of a salvinia leaf, *Salvinia molesta*. This species is similar in its biology to *Cyrtobagous salviniae*, and is also a biocontrol of salvinia.

Press, Melbourne; and Weeds of national significance (2006) Management and control options for salvinia (*Salvinia molesta*) in Australia. NSW Department of Primary Industries. Published by The State of New South Wales. (https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0008/425807/Salvinia-biological-control-field-guide.pdf); and from Ensley R (2010) Salvinia. Primefact. Department of Primary Industries, NSW Government. (http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0006/81789/Salvinia.pdf). Photo 1 Scott Robinson, Georgia Department of Natural Resources, Bugwood.org. Photo 2 Leslie J. Mehrhoff, University of Connecticut, Bugwood.org. Photo 3 Troy Evans, Great Smoky Mountains National Park, Bugwood.org. Photo 4 Barry Rice, sarracenia.com, Bugwood.org. Photo 5 Scott Bauer, USDA Agricultural Research Service, Bugwood.org.

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