

Weed Risk Assessment: *Eleocharis parodii*

1. Plant Details

Taxonomy: *Eleocharis parodii* Barros. Family Cyperaceae.

Common names: parodi spike rush

Origins: Native to South America (Argentina)

Naturalised Distribution: Naturalised in New South Wales (Griffith)

Description: *E. parodii* is a perennial aquatic herb that grows to around 45cm high. It is tuberous and has a rush-like form with reduced leaves and small flowers (Cunningham et al., 2003). Flowers occur in terminal, cylindrical heads at the end of pith filled stems 2-5mm wide. It has tightly packed glumes each about 2mm long, membranous and wider toward the top. Nuts are three angled and bristled at the base (Weeds Australia database).

Biology and ecology:

Habitat. *E. parodii* occurs mostly at the margins of fresh water bodies below 2000m asl. In Australia it has colonised irrigation supply channels (Cunningham et al., 2003).

Life cycle.

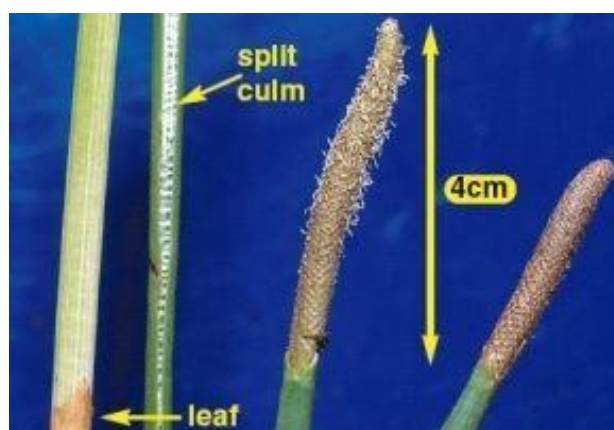
Reproduction and dispersal. Reproduction in many *Eleocharis* species occurs via seeds and rhizomatous stolons. Pollination occurs via wind. Seeds are long lived and can germinate in water. Some species reproduce primarily by rhizomes (Cunningham et al, 2003). Dispersal occurs when seed or rhizomes are moved in water or contaminated vehicles, machinery, mud.

Hybridisation. There is limited information about hybridisation of *E. parodii*.

Competition. A large number of species in this genus have become serious weeds mostly due to their ability to spread rapidly by seeds and stolons and, due to their long lived seeds.

Harmful properties. Limited information.

Economic benefit: *E. parodii* appears to have little economic benefit.



2. Weed Risk

World weed status.

Not known

Australian weed status

E. parodii is naturalised in NSW, being recorded in 1977 in a Griffith rice crop. It is only known from this location but appears to be spreading to an adjoining property. It is not regulated in any state or territory and is permitted entry to Australia. Cunningham et al. (2003) list it as one of 17 potentially significant weeds of Australian agriculture for which eradication is feasible.

Weed potential in Tasmania.

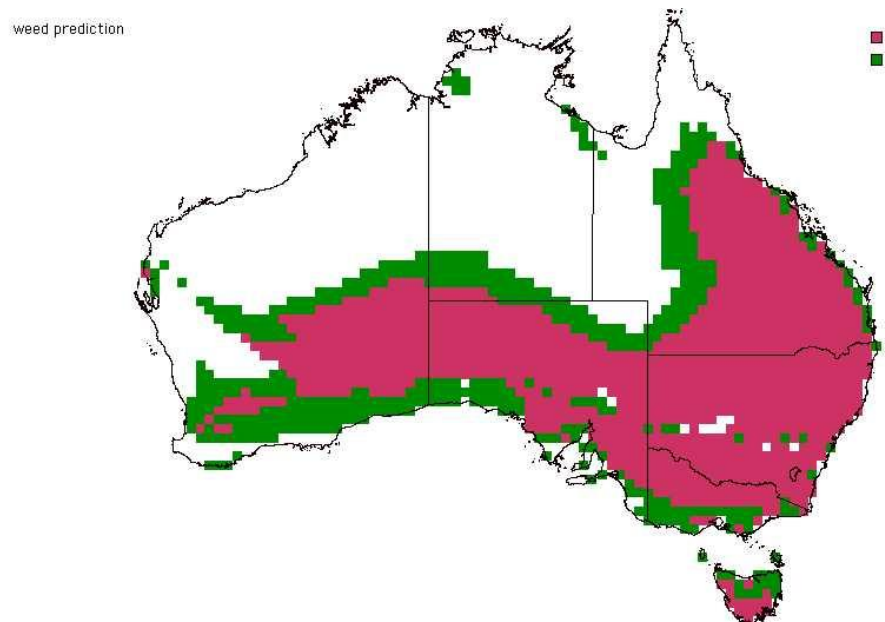
E. parodii is not naturalised in Tasmania at this time.

Climate matching indicates the plant is likely to grow well in a range of Tasmanian environments, mostly in the southern and central part of the state. The following analyses describe the weed potential of *E. parodii* in Tasmania.

Weed risk assessment

Weed risk assessment undertaken by DPIWE involves use of a point scoring system devised by Pheloung (1996). *E. parodii* scores 18 on a scale that is positively correlated to weediness. The nominal score for rejection of a plant on this scale is 7 or greater (see Appendix 1 for risk assessment scoring).

Potential distribution of
Eleocharis parodii in
Australia using CLIMATE
(Pheloung, 1995)



3. Weed Impact Assessment

Weed impact assessment is based on the DPIWE scoring system designed for that purpose. *E. parodii* scores 4 points on a scale where 4 points or more indicates a plant has significant potential impact. The impact scoring system requires that questions be answered with a particular land use and density in mind. *E. parodii* was assessed for its potential impacts upon agriculture, in particular, irrigated agriculture at moderate densities.

Economic impact. The economic impact of *E. parodii* in Tasmania is mostly relevant to irrigated agricultural situations, including cropping, grazing and horticulture.

Environmental impact: Potential environmental impacts of *E. parodii* are difficult to estimate as so little is known about the plant. Groves et al., (2003) list it as primarily a weed of agriculture or a ruderal weed.

Social impact. *E. parodii* is unlikely to have significant social impacts in Tasmania.

4. Management Feasibility.

Since this plant is not naturalised in Tasmania at this time, management feasibility is not an issue. However, maintaining freedom from *E. parodii* is highly dependent upon effective import prohibition, early detection and reporting of any occurrences and, community and industry education.

5. Declaration Recommendation.

E. parodii appears to have potential to establish, reach moderate densities and threaten Tasmanian agriculture. Therefore it should be nominated for declaration under the *Weed Management Act 1999*. This will support early detection efforts and timely eradication of any occurrences. It will also assist national efforts to reduce the distribution and burden of this plant.

6. References.

Cunningham, D.C, Woldendorp, G, Burgess, M.B. and Barry, S.C., 2003, *Prioritising sleeper weeds for eradication: Selection of species based on potential impacts on agriculture and feasibility of eradication*. Bureau of Rural Sciences, Canberra.

Groves, R.H. (Convenor), Hosking, J.R., Batianoff, G.N., Cooke, D.A., Cowie, I.D., Johnson, R.W., Keighery, G.J., Lepschi, B.J., Mitchell, A.A., Moerkerk, M., Randall, R.P., Rozefelds, A.C., Walsh, N.G. and Waterhouse, B.M., 2003, *Weed categories for natural and agricultural ecosystem management*. Bureau of Rural Sciences, Canberra.

Pheloung, P.C., 1995, *Determining the weed potential of new plant introductions to Australia*. A report commissioned by the Australian Weeds Committee. Agriculture Western Australia.

Pheloung, P.C., 1996, *Climate. A system to predict the distribution of an organism based on climate preference*. Agriculture Western Australia.

Weeds Australia Database at www.weeds.org.au