

### *Sagittaria platyphylla* (Alismataceae), a new aquatic weed threat in Western Australia

*Sagittaria* L. (Alismataceae) is a genus of approximately 25 species, predominantly from the Americas with up to four species occurring in Europe and Asia (Haynes & Holm-Nielsen 1994). Two species, *Sagittaria platyphylla* and *S. montevidensis* Cham. & Schlecht, have been recorded as naturalized in eastern and southern Australia, but neither in Western Australia (Parsons & Cuthbertson 1992; Jacobs 1993). Recently a naturalized population of *S. platyphylla*, a weed of rising concern in eastern Australia (Sainty & Jacobs 1994), was discovered in the Canning River south of Perth. It is currently a Declared Plant under the Western Australian Agriculture and Related Resources Protection Act (1998) of the highest priority for control, i.e. for which eradication is mandatory.

The purpose of this paper is to draw attention to the presence of *S. platyphylla* in Western Australia and to facilitate recognition of further occurrences.

***Sagittaria platyphylla*** (Engelmann) J.G. Smith, *Missouri Bot. Gard. Rep.* 6: 29 (1894). – *Sagittaria graminea* var. *platyphylla* Engelmann in A. Gray, *Man. Bot.*, ed. 5: 494 (1867).

Descriptions and illustrations of *Sagittaria platyphylla* can be found in Soerjani *et al.* (1987), Parsons & Cuthbertson (1992) [as *S. graminea*] and Sainty & Jacobs (1994) [as *S. graminea* var. *platyphylla*]. One of these illustrations is reproduced here. (Figure 1)

*Specimens examined.* WESTERN AUSTRALIA: Canning River, S of the Nicholson Rd bridge, 9 Feb. 1999, *S. Lloyd & D. Dean s.n.* (PERTH, CANB, MEL, NSW); Canning River, 18 Mar. 1997, *W. Vincent s.n.* (PERTH).

*Distribution.* *Sagittaria platyphylla* is native to eastern United States of America, Mexico and Panama and has been introduced into numerous countries as an ornamental aquatic plant (Parsons & Cuthbertson 1992). *S. platyphylla* was first recorded (Parsons & Cuthbertson 1992) as naturalized in Australia in Queensland in 1959; it is also recorded as naturalized in New South Wales, Victoria and South Australia (Swarbrick & Skarratt 1994).

*Habitat.* *Sagittaria platyphylla* grows in shallow, slow-moving or static aquatic environments such as the banks of rivers and streams and periodically inundated areas (Parsons & Cuthbertson 1992). *W. Vincent* 18 Mar. 1997 was collected from static water in the Canning River, just south of the Nicholson road bridge in Ferndale, while *S. Lloyd & D. Dean* 9 Feb. 1999 was collected a few hundred metres further south from a drain emptying into the Canning River. Associated with this collection was *Eclipta* sp. Perth (*S. Lloyd s.n.* 3 Apr. 1998), *Typhus orientalis* and *Rubus* aff. *selmeri*.

*Notes.* *Sagittaria platyphylla* is a rhizomatous perennial herb to c. 80 cm with a basal rosette of emergent leaves that are narrowly elliptic to lanceolate in shape (Sainty & Jacobs 1994; Soerjani *et al.* 1987). Flowers are actinomorphic, up to 2 cm in diameter and arranged in whorls to form a raceme (Soerjani *et al.* 1987).

Leaves of *Sagittaria platyphylla* can be confused with those of *Alisma lanceolatum* With. (Sainty & Jacobs 1994), an aquatic weed of the same family (Alismataceae) occurring in Western Australia, though the two taxa are easily distinguished by their inflorescences.

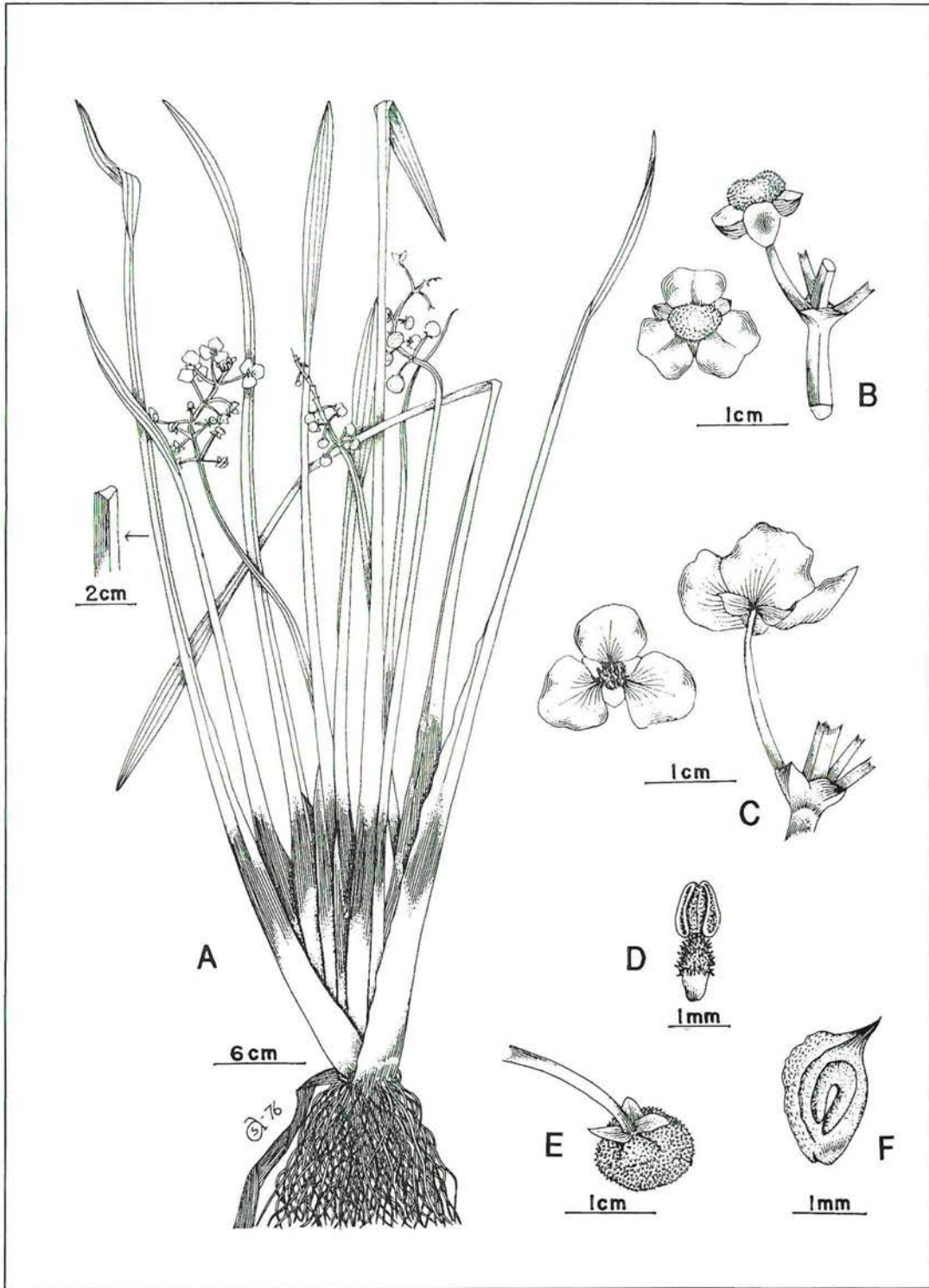


Figure 1. *Sagittaria platyphylla*. A – habit and enlargement of leaf, B – female flowers, C – male flowers, D – stamen, E – fruiting head, F – achene. Reproduced with permission from Soerjani *et al.* (1987: Figure 4.3)

Sainty & Jacobs (1994) state that *S. platyphylla* is "of increasing concern as a weed of rice crops and associated channels and drains" in south-eastern Australia. Parsons & Cuthbertson (1992) note that *S. platyphylla* (as *S. graminea* var. *platyphylla*) can block water flow in its preferred habitat. In Western Australia the dairy farming irrigation system around Harvey about 100 km south of Perth is similar to this and suitable for invasion by *S. platyphylla*. *S. platyphylla* has previously been recorded from the area (and Midvale, metropolitan Perth) as deliberately cultivated and not naturalized. The occurrence of naturalized *S. platyphylla* in the Canning River (part of the Swan River system) is of great concern in a disturbed area already heavily affected by weed invasion and algal blooms. It also poses an environmental threat to other slow moving fresh waterways in the south west of the state.

The recommended method of control is the spot application of approved herbicides, as manual or mechanical removal is likely to leave rhizomes, resulting in further spread of the plant (Sainty & Jacobs 1994; Parsons & Cuthbertson 1992).

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