



UPPER RIVER TORRENS
LANDCARE GROUP

Data Sheet

Watercourse

Revegetation

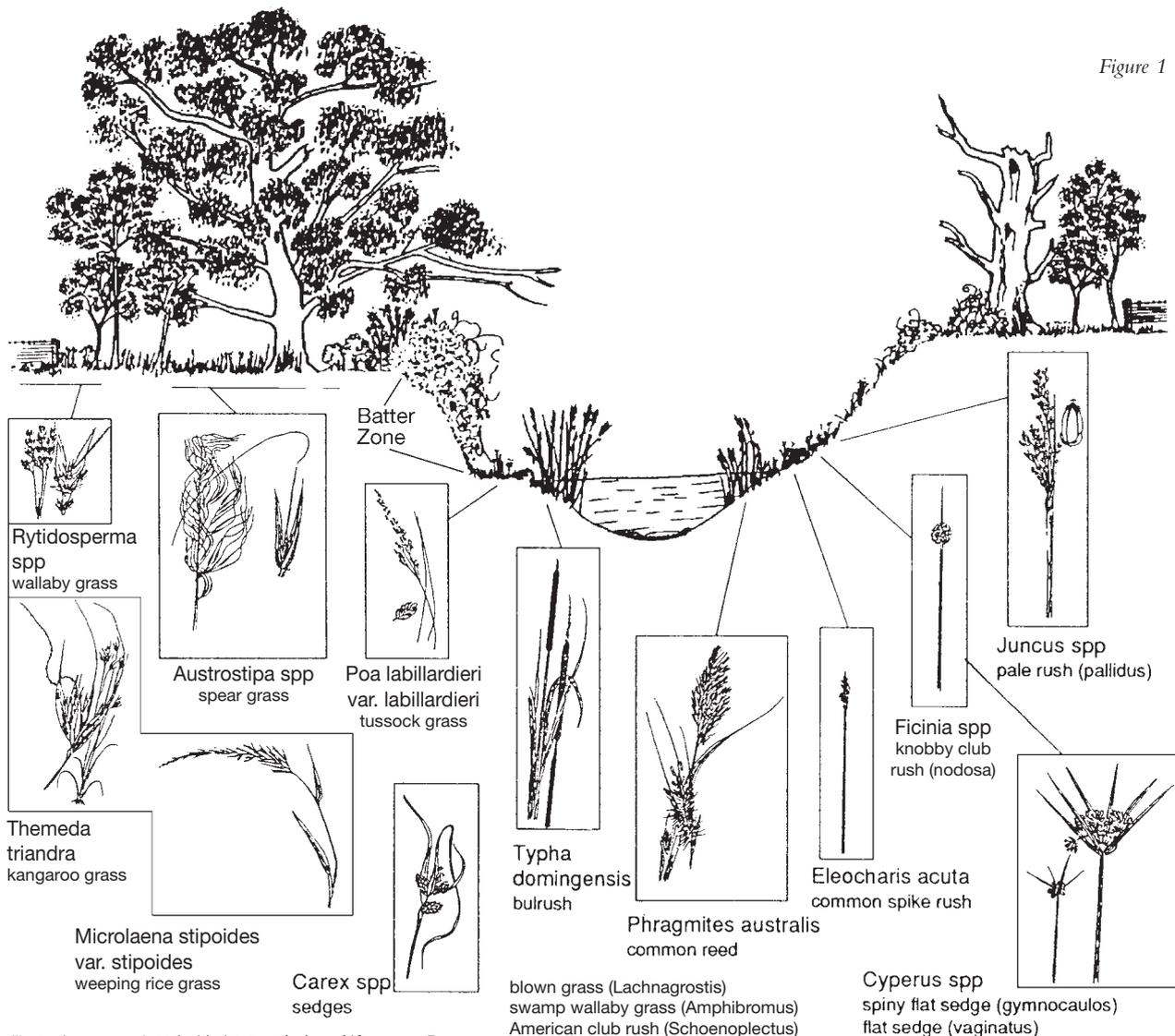
Native sedges, rushes, reeds and grasses

From the first edition of the Field Guide in 1993, we noted the crucial role that watercourses play in supporting bird species' diversity. In a seminal thesis, completed at the University of Adelaide in 2016, we read that "reconstructing habitat along drainage lines will be important in reversing the declines of species of conservation concern, and further emphasises the importance of these areas as valuable places to reconstruct habitat" (Joel Allan 2016).

This sheet outlines STAGE 3 of the Watercourse Revegetation process:

1. Eradication of woody weeds (including exotic trees) and watercourse stabilisation
2. Fencing to exclude stock (and vermin if they are a problem)
3. Re-establishment of sedges, rushes, reeds and grasses in the Batter and Buffer zones (see Revegetation of Watercourses and Zones sheets)
4. Establish the Understorey and Canopy

In this riparian zone cross-section we focus on identifying these plants and where they can be found. A representative selection of grasses, sedges and rushes is illustrated.



Illustrations reproduced with the permission of Kangaroo Press.

This datasheet focusses on the Batter and Buffer zones (Figure 1) and three key family plant groups that evolved in wet environments – the sedges, rushes and grasses (common reed is a grass). The sedges (Cyperaceae), with 79 species, is the biggest family group found in watercourses and wetlands across the Mt Lofty Ranges. There are 27 other family groups which helps explain plant richness in riparian zones. Many, however, are becoming uncommon or rare. Four sedge members are illustrated: *Ficinia nodosa*, *Eleocharis acuta*, *Cyperus* spp & *Carex* spp.

In general once we eradicate woody weeds and exotic trees from our watercourses and fence to exclude stock, some native grasses, sedges and rushes will begin to re-establish naturally and others will need to be introduced.

They play a vital role in forming the bank batter and its water edge extremity, the toe of the batter.

In re-establishing, they will be competing with a variety of aggressive non-native grasses and herbs. Many of these require annual herbicide treatment or hand weeding.

If we choose to return the watercourse to a state where it will be a regenerating native plant ecosystem, a different strategy will be needed.

This would be the beginning of a long-term stabilisation program and commitment to habitat diversity. Bird and aquatic life will benefit greatly.

Bank batter strategy

A combination of manual, chemical, slashing and burning activities will aid in the re-establishment of sedges and rushes in this zone.

With the exclusion of stock, both rhizomatous bulrush (*Typha domingensis*) and common reed (*Phragmites australis*) – growing in the water, at the water's edge and up into the Batter – will regenerate rapidly. NB Neither are suited to small dams and creek lines due to their aggressive growth. On rivers, *Phragmites* is excellent for bank stabilisation as it grows from the stream bed edge and batter and up through the buffer zone.

Most riverside plants in *Figure 1* grow most vigorously after the winter water levels subside.

Being spring-into-summer-growing, many of the grasses, sedges and rushes can be established when weeds and perennial grasses are at the end of their growing period. Summer-green vegetation at ground level has obvious advantages.

Bank buffer strategy

We now have the local experience to detail the establishment of native grasses in this zone – please contact our group www.torrenslandcare.org

We first instituted trials on John Stafford's advice from spring of 1992 with *Themeda triandra* (kangaroo grass) and *Microlaena stipoides* var. *stipoides* (weeping rice grass). Poisoning and burning of perennial and woody weeds has shown that *Austrostipa* spp and *Rytidosperma* spp will re-establish on non-grazed, infertile, acidic sandy banks.

Poa labillardieri var. *labillardieri*, *Microlaena*, *Rytidosperma* species and *Austrostipa* species can easily be established from seed into a weed-free area. (*seed dormancy period.)

One-off observations

- Until 1839 native grasslands thrived in a managed environment of no fertilisers, no disturbance (except fire), no heavy grazing, no hard-footed animals.
- Hardy summer-active perennials, *Rytidosperma* spp and *Microlaena stipoides* var. *stipoides*, properly managed, can improve the quality of grazing land (NSW trials).
- Nil cultivation is best in native grass stands. Burning and slashing are beneficial.
- Native grasses are tolerant of broad-leaf herbicides used to control exotic weeds. Further information available from the website: www.torrenslandcare.org
- Though clearly a nuisance in pasture and grazing land, *Cyperus* and *Juncus* do a definite service along the watercourses.
- Masses of *Cyperus* and *Juncus* spp are a fair indication of waterlogged land, infertile soil and sandy soil.
- Many of the rushes and sedges are quite striking and have potential for wet area landscaping and water gardens.
- Sedges and rushes:- Though you can propagate by division, most can easily be grown from seed. There are a few exceptions.
- Local provenance protocols **do not apply to native grasses**. Australian native grasses have a wide variety of breeding systems and a high degree of flexibility. Any variations come from mutational changes under climatic influences. Much research has been done since the nineties until today, explaining the positive implications of their evolutionary strengths (See Whalley 2000&2003).

References

- Allan, Joel** (2016), Habitat reconstruction guidelines for woodland birds: A detailed focussed bird-oriented approach (Thesis submitted for PhD). Department of Ecology & Environment Sciences, The University of Adelaide.
- Broadhurst, L et al.** (2008), Seed supply for broadscale restoration: Maximizing evolutionary potential. CSIRO doi:10.1111/j. 1752-4571. 2008.00045.x
- Brown, Nadine** (1986), *Grasses of the Adelaide Region*, Salisbury Campus, USA
- Chivers, Ian.** When Emotion Beats Science in WME Magazine, page 4, September 2011
- Dashorst, G. and Jessop J.P.** (2006) (3rd ed), *Plants of the Adelaide Plains and Hills*, Kangaroo Press
- Gibbs, J** (2005), (2nd ed). Grass Identification Manual – for Everyone. Native Grass Resources Group Inc South Australia, University of South Australia Underdale. (Out of print)
- Gilbert, John Jessop, Dashorst, R. M. & James, Fiona** (2006), *Grasses of South Australia – an illustrated guide to the native and naturalized species*. Botanic Gardens of Adelaide and State Herbarium.
- Jessop J.P and Toelken, H.R.** (1986), *Flora of South Australia*, Govt. Printer

References

O'Malley, Martin (1988), *Revegetating with Native Grasses*. Salisbury Campus, USA

Native Grass Resources Group: <https://nativegrassresourcesgroup.wordpress.com> Numerous identification sheets – free (download), postage only or charge & postage

Natural Resources Northern & Yorke: https://www.naturalresources.sa.gov.au/northernandyorke/water/managing-water-resources/watercourses/Revegetating_watercourses

Pedler, J. A. (2002), From Watercourse Weeds to Native Revegetation – A Planning Guide.

Prescott, A. (2012). (2nd ed). *Its Blue with 5 Petals as a reference: wildflowers of the Adelaide Region*. Printed by Hyde Park Press, South Australia.

Stafford, John (1990), *Greening Australia, Sowing the Seeds*, Specialty Printers. (*Kangaroo Grass in the Adelaide Hills*; pages 89-94)

Whalley, R.D.B. (2000). The Sex Life of Grasses, presented at NGRG AGM 1999, in *Journal: Native Grass South Australia Vol 1 No 5*

Whalley, R.D.B. Chivers, I.H and Waters, C.M. (2003). The Assumptions behind the Recommended Use of Local Provenances of Australian Native Grasses for Revegetation, Third Stipa National Native Grasses Conference November 2003, Cooma NSW

Contacts

Sheree Bowman (TS Environmental Consulting)
<https://www.facebook.com/TSEConsulting/>

Andrew Fairney, Seeding Natives Incorporated,
Mt Pleasant, SA 5235 <https://www.seedingnatives.org.au>

Future Generation Natives: PO Box 24,
Mt Torrens SA 5244 <http://www.futurenatives.com.au>

Dermott Kelly, Formerly of the Australian Grasses Study Group

Peter Lang, Botanist, Department for Environment and Water, SA Herbarium

McLaren Vale Natives plant nursery,
McLaren Vale, SA 5171
<https://www.facebook.com/mclarenvalenatives/>

John Stafford, Vegetation Management Services

Dr Wal Whalley, Adjunct Associate Professor, School of Environmental & Rural Science

Upper River Torrens Landcare Group Inc. (URLG), Mt Pleasant, SA 5235
<http://www.torrenslandcare.org/>

Acknowledgements

Robert (Bob) Myers OAM & Chairperson Seeding Natives Incorporated (2020 updates)