LowerLakesPLANTGUIDE

A field guide of common plant species in the Lower Lakes, South Australia

Australian Government
Department of Agriculture, Fisheries and Forestry
National Landcare Program

Government of South Australia

GOOLWA TO WELLINGTON
LOCAL ACTION PLANNING BOARD INC

COORONG
DISTRICT COUNCIL

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INTRODUCTION

Livestock grazing is a major land use around the Lower Lakes region of South Australia, and has traditionally provided graziers with ideal conditions to establish their properties due to the availability of permanently fresh water.

This 'plant guide' has been developed to assist landholders with identifying the most common native and introduced plant species that occur around the Lower Lakes. Plant species are listed in alphabetical order by scientific name. Species description, distinguishing features and photographs of each plant are provided along with management, feed and habitat value information.

The information and data detailed in this 'plant guide' has been collected since 2005, through a Sustainable Grazing Trial project established by the Coorong District LAP and the Goolwa to Wellington LAP, with support from the South Australian Murray-Darling Basin NRM Board and Department of Environment and Heritage.

The trial consists of 11 sites surrounding lakes Alexandrina and Albert, and investigates the effect of various grazing regimes on the lake edge and floodplain. The species selected for inclusion in this 'plant guide' were those most commonly observed at the 11 trial sites, and around the Lower Lakes area. Forage analysis was only undertaken for selected plant species which were recorded as having significant contributions to the pasture biomass.

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CREEPING SALTBUSH

Common name: Creeping Saltbush
Other Common names: Mat Saltbush, Hastate Orache
Species name: **Atriplex prostrata*
Description: Sprawling plant, grows along creek lines and other damp sites
Distinguishing features:

- o Annual
- o Arrow-shaped leaves 1.5-5 cm long
- o Flowers mixed, clustered

Height: Up to 50 cm
Flowering time: Mostly summer
Similar species: Native Orache (*Atriplex australasica)* which has narrower leaves
Management:

- o **Grazing:** Generally considered unimportant pastorally (Cunningham *et al*. 1981)

Forage value: Very good feed in both summer and winter
Crude protein (%): Winter: 20.4% of dry matter
Summer: 19.1% of dry matter
Digestibility (%): Winter: 86.2% of dry matter
Summer: 76.9% of dry matter
Tolerance to water logging: Moderate tolerance
Status: Introduced

Creeping Saltbush growing on lake bed

Arrow shaped leaves characterise Creeping Saltbush

Clustered flowers of Creeping Saltbush

BERRY SALTBUSH

Common name: Berry Saltbush
Other Common names: Creeping Saltbush
Species name: *Atriplex semibaccata*
Description: Prostrate herb with woody taproot and slender spreading branches, spreading to 1 metre or more
Distinguishing features:

- o Perennial
- o Blue-green thin leaves with flaky white patches, 1-2 cm long
- o Inconspicuous flowers
- o Fruit is red and succulent with a flat green top edge

Height: Up to 30 cm
Flowering time: Summer
Similar species: Lagoon Saltbush (*Atriplex suberecta*) is similar but has coarsely toothed leaves
Management:

- o **Grazing:** Readily eaten by stock, rarely seen in a grazed paddock. Suspected of stock poisoning in a few cases, the oxalate content in young plants can reach toxic levels but it is rarely a problem (Bozon and Matters 1995).

Habitat value to fauna/flora: Used as caterpillar and butterfly food for the Saltbush Blue butterfly (Hunt *et al*. 2007). Habitat for other insects and small reptiles.
Tolerance to water logging: Low tolerance to water logging
Salinity tolerance: Tolerates areas of low level salting (EC 1:5 less than 600-1400 mScm) (Bozon and Matters 1995)
Status: Native, common and widespread
Other Notes: Found in woodlands, grasslands, and mallee areas


Berry Saltbush


Red succulent fruit of Berry Saltbush


Blue-green leaves of Berry Saltbush

WALLABY-GRASS

Common name: Wallaby-grass
Other Common names: White Top Grass
Species name: *Austrodanthonia* spp.
Description: A tufted grass that has fine leaves and remains green all year
Distinguishing features:

- Perennial
- Fine leaves. Leaf blade is folded in the bud and there are parallel lines of thickening on the leaf blade
- Seed heads have a fluffy appearance at maturity

Height: 30-80 cm
Flowering time: Spring to autumn
Frost/drought tolerance: High drought and frost tolerance (Mitchell 2002; Kahn *et al.* 2003)
Similar species: Nineawn Grass, similar seed heads but different leaves; Red anther Wallaby Grass, much bigger and more tussocky; Tall Spear Grass similar when grazed but has strongly ribbed leaves; Wheatgrass lacks the 2 parallel grooves and basal hair tufts (Eddy *et al.* 1998)
Management:

- **Fertility:** Increased growth in response to fertility (Mitchell 2002)
- **Grazing:** Increased growth in response to grazing, even at fairly high stocking rates (Mitchell 2002)

Habitat value to fauna/flora: Used as caterpillar food for the White-banded Grass Dart and the Marbled Xenica butterflies (Hunt *et al.* 2007). Grazed by Kangaroos, Wallabies, and other native herbivores.
Forage value: Moderate to high (Mitchell 2002)
Crude protein (%): 10-25% (Mitchell 2002)
Digestibility (%): 45-82% (Mitchell 2002)
Status: Native, widespread


Perennial Wallaby-grass tussock


Fluffy seed heads of Wallaby-grass


Distinctive seeds of Wallaby-grass

COAST SPEAR-GRASS

Common name: Coast Spear-grass
Other Common names: Spear-grass, Yellow Spear-grass
Species name: *Austrostipa stipoides*
Description: Native grass which is tufted or shortly rhizomatous in nature
Distinguishing features:

- o Perennial
- o Leaves have firm and leathery ligules, with a tuft of hairs below. Leaf blades are tightly rolled to expanded, 7 mm wide, and are covered with fine hairs to smooth or slightly rough feeling. The blades are also ribbed on the upper surface.
- o Flower heads are loosely spreading and start out greenish in colour and mature to brownish yellow

Height: To 1.2 m
Flowering time: October - December; March
Similar species: Similar to many other *Austrostipa* species, identification may require an expert
Management:

- o **Fertility:** Decreased frequency in response to fertility
- o **Grazing:** Decreased frequency in response to grazing

Habitat value to fauna/flora: Used as caterpillar food for the Southern Grass-dart, the White-banded Grass-dart, the Common Brown, and the Marbled Xenica butterflies (Hunt *et al.* 2007). Also provides habitat for other insects and reptiles, and feed for mammals such as kangaroos.
Frost/drought tolerance: Tolerant of frosts and drought
Status: Native, Uncommon in the Murray-Darling Basin (Berkinshaw 2006)

Tufty nature of Coast Spear-grass

Seeds of Coast Spear-grass

Loosely spreading flower heads of Coast Spear-grass

SALT CLUB-RUSH

Common name: Salt Club-rush
Other Common names: Sea Club-rush
Species name: *Bolboschoenus caldwellii*

Description: : A sedge with creeping rhizomes, usually bearing hard ovoid tubers. The lime-green stems are three-sided, grass-like and the plant is leafy throughout.

Distinguishing features:

- o Perennial
- o Leaves 2.5-4 mm broad, flat and grass-like
- o Stems are three-sided
- o The flower-spike is compact head of 3-7 spikelets. The spikelets are golden or red-brown

Height: 30-90 cm tall

Flowering time: Throughout the year but usually October - April

Habitat value to fauna/flora: Used by several wetland bird species as a breeding, roosting, and feeding site

Tolerance to water logging: Usually grows in fresh or brackish water

Status: Native, widespread

Rhizomes of Salt Club-rush

Salt Club-rush growing around the Lower Lakes

Golden or red-brown flower spike

COTULA

Common name: Cotula
Other Common names: Bachelors Buttons, Carrot Weed
Species name: *Cotula australis*
Description: Small, slender more or less hairy forb
Distinguishing features:

- o Annual or perennial
- o Leaves alternate, shortly stalked and divided into segments, which may be dissected again into three or more lobes.
- o Flowers are white to pale yellow half spheres without petals

Height: Up to 8 cm tall
Flowering time: Mainly spring
Similar species: Ferny Cotula (**Cotula bipinnata)* which is taller and has cream flower heads with dark yellow centres
Management:

- o **Grazing:** Does not appear to be readily eaten by stock (Cunningham *et al.* 1981)

Status: Native, widespread

White to pale yellow flowers of Cotula

Flowering Cotula growing on the lake bed

WATER BUTTONS

Common name: Water Buttons
Other Common names: Button Weed
Species name: **Cotula coronopifolia*

Description: Erect perennial, older plants creeping. Stout and succulent stems. Often growing in water or mud.

Distinguishing features:

- o Perennial
- o Lower leaves oblong 1-8 cm long, 2-10 mm wide, fern-like, sheathing stem at the base. Upper leaves smaller and not lobed
- o Flower heads yellow, without petals, half spheres, 5-12 mm in diameter on leafless stalks 2-8 cm long

Height: Up to 20 cm

Flowering time: July to November

Similar species: Various Cotula species both native and introduced

Management

- o **Grazing:** Rarely eaten by stock. Suspected of poisoning grazing animals (Cunningham *et al*. 1981)

Forage value: Low in fibre, lacks protein in summer, but good for finishing stock in winter
Crude protein (%): Winter: 21.3% of dry matter
Summer: 5.7% of dry matter
Digestibility (%): Winter: 81.9% of dry matter
Summer: 65.2% of dry matter

Tolerance to water logging: Water buttons can grow at the edges of pools and streams; in fresh and saline water; and as smaller plants on marshy ground (Blood 2001; Moerkerk *et al.* n.d)

Status: Introduced

Flowering Water Buttons

Creeping characteristic of Water Buttons

Water Buttons are common around the Lower Lakes

SEA BARLEY-GRASS

Common name: Sea Barley-grass
Species name: **Critesion marinum*
Description: Leafy grass with distinctive flower heads. Spreading or erect with smooth cylindrical stems.
Distinguishing features:

- o Annual
- o Soft leaves tapering to the tip, incurled with a soft covering of hairs.
- o Flower head is a distinctive, compact, slightly flattened, bristled cluster, containing spikelets in groups of three. All spikelets have bristles, which are slightly barbed.

Height: Up to 25 cm
Flowering time: Spring to early summer
Similar species: Barley Grass *(Hordeum leporinum)* but tends to be smaller
Forage value: Poor summer feed, low digestibility, energy and protein
Crude protein (%): Winter: 12.3% of dry matter
Summer: 5.6% of dry matter
Digestibility (%): Winter: 63.4% of dry matter
Summer: 46.3% of dry matter
Tolerance to water logging: Low to moderate tolerance to water logging
Salinity tolerance: Will tolerate areas of low to moderate salting
Status: Introduced
Other Notes: Found growing in a range of soil types from loams, clay-loams, clays, and, sometimes, sandy loams. A colonizer of disturbed low-lying situations associated with pasture plants and some native communities. Widespread in saline areas.

Sea Barley Grass common around the Lower Lakes

Distinctive flower heads of Sea Barley Grass

ARTICHOKE THISTLE

Common name: Artichoke Thistle
Other Common names: Cardoon, Scotch Thistle
Species name: **Cynara cardunculus*

Description: Perennial herb; stems branched, basal leaves forming a rosette

Distinguishing features:

- o Perennial
- o The spiny leaves are grey or blue-green above, white below. Forming a large rosette at the base of the plant. Leaves grow along the stem to 75 cm long decreasing in size up the stem.
- o Flowers blue to purple, sometimes white

Height: Up to 2 m

Flowering time: November to February

Management:

- o **Grazing:** Stock have been reported to eat the leaves but generally not grazed (Cunningham *et al.* 1981)

Status: Introduced

Artichoke Thistle forms a distinctive rosette

Immature flowers of Artichoke Thistle

Artichoke Thistle common around the Lower Lakes

COUCH

Common name: Couch
Other Common names: Bermuda Grass, Swamp Couch Grass, Common Couch
Species name: **Cynodon dactylon*

Description: Mat-forming grass with rhizomes or stolons

Distinguishing features:

- o Perennial
- o Leaves are short with tufts of hair at base
- o Seed heads are comprised of three or four purplish branches that spread from a central stem

Height: Up to 35 cm

Flowering time: Summer and autumn

Similar species: Windmill grass *(Chloris truncata)* has a larger seed head, longer leaves that are folded lengthwise, is taller, and does not form mats

Management:

- o **Fertility:** Increases growth in response to improved soil fertility (Kahn *et al.* 2003)
- o **Grazing:** Rhizomes allow Couch to withstand heavy grazing to bind soil to prevent erosion. Favoured by grazing systems that promote short pastures (Kahn *et al.* 2003).

Forage value: Good maintenance feed in summer. Poor winter feed.

Crude protein (%): Winter: 9.3% of dry matter
Summer: 13.6% of dry matter

Digestibility (%): Winter: 41.5% of dry matter
Summer: 62.6% of dry matter

Tolerance to water logging: Prefers moist sites which are occasionally flooded. Will also tolerate dry conditions (Bozon and Matters 1995).

Salinity tolerance: Tolerates areas of low level salting (EC 1:5 less than 600-1400 mScm) to areas of moderate salting (EC 1:5 1400-3500 mScm) (Bozon and Matters 1995)

Status: Introduced

Other Notes: Commonly found in disturbed areas. Green growth may cause prussic acid poisoning if consumed in large amounts, but the condition is rare (Kahn *et al.* 2003).

Couch is a common mat-forming grass around the Lower Lakes

Seed heads of Couch are made up of three or four branches

Short leaves of Couch are distinctive

SPINY FLAT-SEDGE

Common name: Spiny Flat-sedge
Other Common names: Spiny Sedge
Species name: *Cyperus gymnocaulos*

Description: Densely tufted perennial, with a short, stout, horizontal rhizome. The stems are erect or spreading, 15-70 cm long, cylindrical or somewhat triangular particularly at the top, and are rather prominently and closely striped.

Distinguishing features:

- o Perennial
- o The leaves are reduced to thin membranous sheaths, very rigid with a sharp edge.
- o Flower reddish to chestnut brown

Height: 15-70 cm

Flowering time: Throughout the year

Management:

- o **Grazing:** Rarely grazed by stock but may be utilized by cattle when other feed sources are scarce (Cunningham *et al.* 1981)

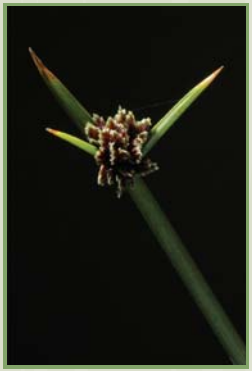
Habitat value to fauna/flora: Provides a feeding ground for many species of birds, mammals, such as Water Rats, amphibians, and reptiles. Also provides a nesting site and shelter from predators for small birds, such as the Little Grassbird. When inundated, may provide habitat for fish. Also utilised by insects.

Forage value: Poor digestibility and low in energy
Crude protein (%): Winter: 14.8% of dry matter
Summer: 6.7% of dry matter
Digestibility (%): Winter: 50.8% of dry matter
Summer: 53.6% of dry matter

Tolerance to water logging: Tolerates fresh to saline conditions

Status: Native, widespread

Dense tufts of Spiny Flat-sedge are common around the Lower Lakes



Reddish to chesnut brown flowers of the Spiny Flat-sedge

Older seed heads of the Spiny Flat-sedge

ROUND-LEAF PIGFACE

Common name: Round-leaf Pigface
Other Common names: Rounded Noonflower
Species name: *Disphyma crassifolium* ssp. *clavellatum*
Description: Succulent with leaves growing in clusters on a horizontal creeping stem
Distinguishing features:

- o Perennial
- o More or less cylindrical leaves 2-5 cm long and 4-6 mm thick with a pointed tip. Inward facing sides of the leaves are often slightly flattened. Sometimes have a reddish-yellow tinge.
- o Flowers are pink or purple with numerous linear petals, about 3 cm in diameter when open

Height: Horizontal stems to 1m long
Flowering time: Spring and summer
Management:

- o **Grazing:** The leaves contain a lot of salt and are not grazed much (Bozon and Matters 1995)

Frost/drought tolerance: Frost and drought tolerant (Bozon and Matters 1995)
Status: Native, widespread


Round-leaf Pigface grows in clusters


Round-leaf Pigface has pink or purple flowers


Succulent leaves of Round-leaf Pigface

EMU GRASS

Common name: Emu Grass
Other Common names: Australian Salt Grass, Native Couch
Species name: *Distichlis distichophylla*
Description: Coarse prickly grass with two rows of narrow pointed leaves on opposite sides of the stem
Distinguishing features:

- o Perennial
- o Leaves are regularly spaced and grow outwards away from the stem
- o Flowers with groups of 2-5 pale spikelets at the end of each stem

Height: 10-30 cm
Flowering time: Mainly in spring but may continue into summer
Similar species: Couch *(*Cynodon dactylon)* may appear similar to *Distichlis distichophylla* when not flowering, *Distichlis distichophylla* leaves narrow to a point. Also similar in habit to Salt Couch (*Sporobolus virginicus)*.
Forage value: Very poor feed, low in digestibility, metabolisable energy and protein, plus high in fibre
Crude protein (%): Winter: 6.9% of dry matter
Summer: 7.9% of dry matter
Digestibility (%): Winter: 37.1% of dry matter
Summer: 41.5% of dry matter
Tolerance to water logging: High tolerance to water logged situations
Salinity tolerance: Will tolerate areas of moderate salting (EC 1:5, 1400-3500 mScm) (Bozon and Matters 1995)
Status: Native, Uncommon in the Murray-Darling Basin (Berkinshaw 2006)


Leaves of Emu Grass grow outwards from the stem


Leaves of Emu Grass have narrow pointed leaves

COMMON SPIKE-RUSH

Common name: Common Spike-rush
Species name: *Eleocharis acuta*
Description: Leafless sedge with green flowering stems
Distinguishing features:

- Perennial
- Stem to 90 cm tall, 3 mm broad, erect, cylindrical or more or less flattened when dry, always triangular under the flower head, usually striped
- Flowers usually dark brown, 15-30 mm long, 3-7 mm broad, more or less tapering

Height: Up to 90 cm tall
Flowering time: Mainly September- April
Management:

- **Grazing:** Appears to be unpalatable by stock but will be eaten when there are no other palatable species present (Cunningham *et al.* 1981)

Habitat value to fauna/flora: *Eleocharis* swamps provide a feeding ground for many species of birds, mammals, such as Water Rats, amphibians, and reptiles. Also provides a nesting site and shelter from predators for small birds, such as the Little Grassbird. When inundated, these areas may provide habitat for fish. Also utilised by insects.

Forage value: Poor summer feed but good in winter
Crude protein (%): Winter: 14.4% of dry matter
Summer: 7.6% of dry matter
Digestibility (%): Winter: 69.5% of dry matter
Summer: 45.2% of dry matter
Tolerance to water logging: Restricted to shallow water or wet soil
Status: Native, widespread

Common Spike-rush

Triangular stems of Common Spike-rush

TALL WHEAT-GRASS

Common name: Tall Wheat-grass
Species name: **Elymus elongatus*
Description: Smooth and robust stemmed, tufted perennial, without creeping rhizomes
Distinguishing features:

- o Perennial
- o Leaf blades flat or rolled in, with a few robust hairs
- o Flower heads are an unbranched, erect spike with single stalkless spikelets

Height: 60-100 cm or more
Flowering time: Spring and autumn
Management:

- o **Grazing:** Palatable and productive species (Cunningham *et al.* 1981)

Forage value: Low digestibility, better suited to cattle than sheep
Crude protein (%): Winter: 15.6% of dry matter
Summer: 8.2% of dry matter
Digestibility (%): Winter: 57.8% of dry matter
Summer: 52.4% of dry matter
Tolerance to water logging: Grows in soils which remain wet in the winter months but dry out during the summer months (Cunningham *et al.* 1981)
Status: Introduced


Tufted Tall Wheat-grass


Tall Wheat-grass flower head


Flower heads of Tall Wheat-grass

SMOOTH CUTTING-GRASS

Common name: Smooth Cutting-grass
Other Common names: Chaffy Saw-sedge, Thatching Grass
Species name: *Gahnia filum*
Description: Tussock forming, leafy, with several-noded tall stems
Distinguishing features:

- o Annual
- o Long leaves, tapering into points
- o The flower head is long, narrow and erect with dense clusters of spikelets.

Height: 40-150 cm tall
Flowering time: Throughout the year
Habitat value to fauna/flora: Used as caterpillar food for the Golden-haired Sedge-skipper and the Donnysa Sedge-skipper butterflies (Hunt *et al.* 2007). Important habitat for wetland birds. Utilised for breeding, feeding and roosting. Also used as habitat for other insects and reptiles.
Tolerance to water logging: Grows in water, but also in drier areas
Status: Native, common in South-Eastern


Tussock nature of Smooth Cutting-grass


Long, narrow flower heads of Smooth Cutting-grass


Smooth Cutting-grass is used as habitat for a variety of animals and insects

SAMPHIRE

Common name: Samphire
Species name: *Halosarcia* spp.
Description: A dense succulent shrub with numerous woody stems and short segmented branchlets
Distinguishing features:

- o Perennial
- o No leaves present, short, succulent, segmented branchlets instead of leaves
- o Flowers are minute, in rows at the base of the fruiting segments of the stems

Height: Can grow up to 1 m tall but often low-growing
Flowering time: Spring to early summer
Similar species: Other species of samphires are found in the lower lakes area such as *Sarcocornia sp.*
Habitat value to fauna/flora: Used as habitat for insects, reptiles, and low nesting birds (such as chats). Provides shelter for smaller growing plants. Provides food for Orange Bellied Parrots.
Forage value: Excellent feed test result but poor palatability
Crude protein (%): Winter: 16.6% of dry matter
Summer: 11.5% of dry matter
Digestibility (%): Winter: 84.1% of dry matter
Summer: 72.5% of dry matter
Tolerance to water logging: Tolerates water logged situations
Salinity tolerance: Can tolerate areas of high level salting (EC 1:5, 3500+ mScm) (Bozon and Matters 1995)
Status: Native, 23 species native to Australia


Samphire is a dense succulent shrub


The minute flowers of Samphire


The short, succulent branchlets of leaves

SPINY RUSH

Common name: Spiny Rush
Other Common names: Sharp Rush
Species name: **Juncus acutus*

Description: Large, tough rush in distinctive clumps, with hard, narrow, cylindrical leaves

Distinguishing features:

- o Perennial
- o Leaves are hard, narrow, cylindrical leaves, about 130 cm long and 4 mm wide. Dark green with a sharp spike at the tip.
- o Small reddish-brown flowers near the tops of the stems

Height: Up to 130 cm tall

Flowering time: Throughout the year

Similar species: Other species of Rushes are found in the Lower Lakes area, many of these are native to the region. May be confused with Sea Rush (*Juncus kraussii*).

Management:

- o **Grazing:** Unpalatable to livestock

Tolerance to water logging: Thrives in inundated situation

Salinity tolerance: Can tolerate areas of low level salting (EC 1:5 less than 600-1400 mScm) to areas of moderate salting (EC 1:5 1400-3500 mScm) (Bozon and Matters 1995).

Status: Introduced, widespread in areas, potential to invade various habitats

The distinctive clumps of Spiny Rush

Sharp spikes at leaves of juvenile Spiny Rush

Distinctive seed heads of Spiny Rush (I. Clarke, Rural Solutions SA)

SEA RUSH

Common name: Sea Rush
Species name: *Juncus kraussii*
Description: Stems from a creeping rootstock, 2-4 mm diameter, rigid and cylindrical; with few leaves
Distinguishing features:

- o Perennial
- o Stem-like leaves are almost as long as stems, with pointed tips
- o Flowers dark-brown, in small few-flowered clusters

Height: About 1 m tall
Flowering time: Throughout the year but especially in summer
Habitat value to fauna/flora: Most likely utilised by water birds for nest material and food source as other Juncus species are. Also likely to be used by insects and reptiles.
Similar species: Other species of Rushes are found in the Lower Lakes area, including Spiny Rush *(Juncus acutus)*
Forage value: Very poor feed, stock would just survive on
Crude protein (%): Winter: 5.0% of dry matter
Summer: 6.8% of dry matter
Digestibility (%): Winter: 33.5% of dry matter
Summer: 37.3% of dry matter
Tolerance to water logging: Grows in water
Status: Native, widespread


Tusssocks of Sea Rush


Flowers of Sea Rush

WIMMERA RYEGRASS

Common name: Wimmera Ryegrass
Other Common names: Annual Ryegrass
Species name: **Lolium rigidum*

Description: Prostrate or sprawling plant with reddish-purple colouration towards base of stem

Distinguishing features:

- Annual
- Leaves are hairless, narrow, ribbed on the upper surface, very shiny on the lower surface
- Seed heads are narrow flattened spikes up to 30 cm long. Each spike has 3-9 flowered spikelets that are spaced alternately on either side of the spike. Usually without awns and the husks are almost the same length or longer than the spikelet.

Height: Up to 1 m

Flowering time: August to December

Management:

- **Grazing:** : Produces large quantities of highly palatable foliage, which may be used green or dry. Also makes excellent hay (Cunningham *et al.* 1981)

Forage value: Very good winter feed, can finish stock
Crude protein (%): Winter: 17.8% of dry matter
Summer: 6.2% of dry matter
Digestibility (%): Winter: 76.7% of dry matter
Summer: 59.7% of dry matter

Tolerance to water logging: Will not survive extended periods of water logging

Status: Introduced

Other Notes: Suspected of causing staggers in young sheep, usually when the plant has been attacked by bacterial or nematode parasites (Cunningham *et al.* 1981)

Narrow flattened spikes of Wimmera Ryegrass

Spikelets arranged alternately on Wimmera Ryegrass

SWAMP PAPERBARK

Common name: Swamp Paperbark
Other Common names: Kangaroo Honey-myrtle; Salt Paperbark, Sandhill Honey-myrtle
Species name: *Melaleuca halmaturorum*
Description: Large shrub to small, crooked, papery-barked tree
Distinguishing features:

- Perennial
- The leaves are a dull green colour; small, narrow, and blunt. They are crowded in opposite pairs at right angles to preceding pairs on regularly dividing branchlets. The leaves grow to 8 mm long by 2 mm wide.
- Creamy-white flower heads in clusters

Height: 2-8 m tall
Flowering time: Spring to early summer
Management:

- **Grazing:** Only sparingly grazed by stock, if at all (Cunningham *et al.* 1981)

Habitat value to fauna/flora: Used by butterflies and other insects as a food source. Also used as a feeding ground and nesting site for waterbirds as well as terrestrial birds. Utilised by several species of mammals for shelter including kangaroos as well as many species of bats that roost in hollows and under bark. Swamp Paperbark is also inhabited by many species of reptiles including Bearded Dragons, skinks, and snakes.
Similar species: Mallee Honey-myrtle *(Melaleuca brevifolia)* usually smaller and grows in drier areas
Status: Native, uncommon


Swamp Paperbark is either a large shrub to a small tree


Swamp Paperbark is used as food source for insects and butterflies


Creamy-white flower heads of Swamp Paperbark

CURLY RYEGRASS

Common name: Curly Ryegrass
Other Common names: Curved Hard-grass; Sickle Grass; Coast Barb-grass
Species name: **Parapholis incurva*

Description: Sprawling tuft grass, which is quite thick and curved

Distinguishing features:

- o Annual
- o Leaves can grow up to 30 cm long, rounded, pointed and typically curled
- o Numerous flower heads. Flower heads are a slim spike, up to 8 cm long. Florets are alternating up opposite sides of the spike. Flowers are purple/brown.

Height: Up to 30 cm

Flowering time: Spring

Management:

- o **Grazing:** Grazed by stock but usually only when more palatable species are absent (Cunningham *et al*. 1981)

Forage value: Good winter feed, maintenance feed in summer

Crude protein (%): Winter: 11.2% of dry matter
Summer: 7.5% of dry matter

Digestibility (%): Winter: 74.5% of dry matter
Summer: 55.4% of dry matter

Tolerance to water logging: Will continue to grow when water logged for extended periods in winter and spring

Status: Introduced

Tufted nature of Curly Ryegrass

Slim spike flower heads of Curly Ryegrass

WATER COUCH

Common name: Water Couch
Other Common names: Water Grass, Salt-water Couch
Species name: **Paspalum distichum*
Description: Perennial, with a creeping rhizome or stolons and ascending stems
Distinguishing features:

- o Perennial
- o The leaves are 2-5 mm wide
- o Seed heads consist of two (rarely three or four) branches with few hairs at the junction with stems. Spikelets occur in two rows along the branches.

Height: Usually less than 45 cm high
Flowering time: February - May
Similar species: Paspalum *(*Paspalum dilatatum)* is taller and has more than two branches forming the seed head
Management:

- o **Grazing:** Readily grazed by stock, moderate to high nutritional value

Forage value: Good summer maintenance feed
Crude protein (%): Winter: 6% of dry matter
Summer: 11.6% of dry matter
Digestibility (%): Winter: 59.8% of dry matter
Summer: 65.1% of dry matter
Status: Introduced
Other Notes: Commonly found with other plants such as Saltwater Couch *(Paspalum vaginatum)*


Creeping nature of Water Couch


Leaves of Water Couch


Seed heads of Water Couch

SALT-WATER COUCH

Common name: Salt-water Couch
Other Common names: Salt Couch, Salt Couch Turf, Seashore Paspalum
Species name: **Paspalum vaginatum*
Description: Perennial, with long creeping rhizomes or stolons and ascending stems
Distinguishing features:

- o Perennial
- o The leaves are 1-3 mm wide.
- o Seed heads consist of two (rarely three) branches. Usually 2-4 cm long

Height: Less than 60 cm high
Flowering time: Throughout the year
Forage value: Maintenance feed in summer and winter
Crude protein (%): Winter: 6.7% of dry matter
Summer: 7.3% of dry matter
Digestibility (%): Winter: 56.8% of dry matter
Summer: 56.5% of dry matter
Tolerance to water logging: High tolerance to water logging
Status: Introduced


The long creeping rhizomes or stolons of Salt-water Couch


Flower heads of Salt-Water Couch


Salt-water Couch

KIKUYU

Common name: Kikuyu
Other Common names: Kikuyu Grass
Species name: **Pennisetum clandestinum*
Description: Perennial, with creeping rhizomes and stolons (lawn grass)
Distinguishing features:

- o Perennial
- o Leaf blades linear, 3-4 mm broad, smooth or slightly hairy
- o Flower heads are on short shoots, reduced to a small cluster of 2-4 spikelets enclosed in sheaths. The terminal spikelet has up to fifteen delicate bristles.

Height: Up to 50 cm
Flowering time: Summer
Management:

- o **Fertility:** Responds to the application of fertiliser
- o **Grazing:** Able to withstand close grazing and trampling, likely to be better value in autumn if hard grazed in summer

Frost/drought tolerance: Capable of withstanding moderate frosts
Forage value: Maintenance feed in summer and winter
Crude protein (%): Winter: 10.7% of dry matter
Summer: 9.3% of dry matter
Digestibility (%): Winter: 56.7% of dry matter
Summer: 61% of dry matter
Tolerance to water logging: Moderate tolerance to water logging
Status: Introduced


Kikuyu


Creeping rhizomes and stolons of Kikuyu

COMMON REED

Common name: Common Reed
Other Common names: Bamboo Reed, Phragmites, Cane Grass
Species name: *Phragmites australis*
Description: Medium to large tussock, leafy, and shortly spreading
Distinguishing features:

- Perennial
- The leaves are narrow and long-tapering. They are smooth, flat to cupped, pale green to blue-green, 6-12 mm wide and up to 40 cm long.
- Seed head is plume-like, usually white to pale brown

Height: 1-3 m
Flowering time: December - April
Management:

- **Grazing:** : Older growth is unpalatable to stock but new, young growth can be a useful feed source for stock

Habitat value to fauna/flora: Provides habitat for a variety of fish. Also provides habitat for other aquatic animals, such as yabbies, shrimp, and frogs. Reeds may also provide habitat for many different species of insects, both aquatic and terrestrial. Many species of waterbirds may also utilise reeds as roosting sites, protection from predators and for feeding. Several species of mammals and reptiles may also use these areas for habitat.
Forage value: Low in energy and protein in winter
Crude protein (%): Winter: 5.8% of dry matter
Summer: 10.6% of dry matter
Digestibility (%): Winter: 43.6% of dry matter
Summer: 53.7% of dry matter
Tolerance to water logging: Grows where periodic flooding occurs, including lagoons and along the banks of watercourses
Status: Native, widespread


Narrow and long-tapering leaves of Common Reed


Plume-like seed heads of Common Reed


Common Reed growing around the Lower Lakes

BUCKS-HORN PLANTAIN

Common name: Bucks-horn Plantain
Other Common names: Plantain, Plantago
Species name: **Plantago coronopus*

Description: Perennial with leaves in a basal rosette from a tough rootstock with a pronounced taproot

Distinguishing features:

- o Perennial
- o The dark green leaves are without stalks, narrow at the base and widening towards the tip, 10 to 70 mm long, 10 to 20 mm wide, deeply lobed or with prominent linear teeth along the margins, forming a rosette.
- o The flowers are small and green in dense compact cylindrical spikes to 100 mm long, at the end of stout stalks no longer than the leaves

Height: Up to 20 cm

Flowering time: September to February

Management:

- o **Fertility:** Responds well to fertiliser
- o **Grazing:** Acceptable to stock but not a major component of pastures (Cunningham *et al.* 1981)

Forage value: Very low in protein in summer, good winter feed

Crude protein (%): Winter: 12.5% of dry matter
Summer: 3.9% of dry matter

Digestibility (%): Winter: 76% of dry matter
Summer: 57% of dry matter

Tolerance to water logging: Moderate tolerance to water logging but can not survive extended periods submerged

Salinity tolerance: Can tolerate areas of low level salting (EC 1:5 less than 600-1400 mScm) to areas of moderate salting (EC 1:5 1400-3500 mScm) (Bozon and Matters 1995).

Status: Introduced

The rosette of Bucks-horn Plantain

Cylindrical spikes of Busk-horn Plantain

BORRER'S SALTMARSH-GRASS

Common name: Borrer's Saltmarsh-grass
Species name: **Puccinellia fasciculata*
Description: A tufted perennial grass
Distinguishing features:

- o Perennial
- o Leaf blades are slightly rough, narrow, flat, and very short
- o Flower heads start dense and narrow and then the branches spread out in maturity. The length of the flower heads are 2.5-10 cm. Spikelets are three to seven flowered.

Height: 5-50 cm
Flowering time: November - February
Status: Introduced

Tufted perennial nature of Borrer's Saltmarsh-grass

Flower heads of Borrer's Saltmarsh-grass

AUSTRALIAN SALTMARSH-GRASS

Common name: Australian Saltmarsh-grass
Other Common names: Marshgrass
Species name: *Puccinellia stricta* var. *stricta*
Description: A tufted smooth annual, leaves erect, the sheaths rather loose, the uppermost usually clasping the base of the particle
Distinguishing features:

- Annual
- Slender blue-green leaves, blades bristly, lying close to the stem up to the flower head or in a bushy growth at the base of the plant
- The flower head has a slender stem with fine branches

Height: 15-60 cm high
Flowering time: September - January
Similar species: Reflexed Poa *(*Puccinellia distans)* usually has smaller spikelets
Forage value: Good winter feed
Crude protein (%): Winter: 16.4% of dry matter
Summer: 6.0% of dry matter
Digestibility (%): Winter: 69.9% of dry matter
Summer: 45.2% of dry matter
Salinity tolerance: Can tolerate areas of low level salting (EC 1:5 less than 600-1400 mScm) to areas of moderate salting (EC 1:5 1400-3500 mScm) (Bozon and Matters 1995)
Status: Native, widespread

Tufted nature of Australian Saltmarsh-grass

Flower head of Australian Saltmarsh-grass

CREEPING BROOKWEED

Common name: Creeping Brookweed
Species name: *Samolus repens*
Description: Smooth multi-stemmed plant growing from creeping stems
Distinguishing features:

- o Perennial
- o Basal leaves narrow at the base and widening at the tip. The leaves are smooth, fleshy, pointed and glossy in appearance. Leaves arranged alternately.
- o Flowers are grouped on a central stalk, small and white

Height: 60 cm high
Flowering time: July - November
Management:

- o **Grazing:** Generally not eaten by stock

Forage value: Good winter feed, average summer feed
Crude protein (%): Winter: 11.2% of dry matter
Summer: 5.2% of dry matter
Digestibility (%): Winter: 61.6% of dry matter
Summer: 49.1% of dry matter
Tolerance to water logging: High tolerance to water logging
Salinity tolerance: Can tolerate areas of moderate salting (EC 1:5 1400-3500 mScm) (Bozon and Matters 1995)
Status: Native, rare in Murray-Darling Basin (Berkinshaw 2006)


Smooth, glossy leaves of Creeping Brookweed


Small, white flowers of Creeping Brookweed


Creeping Brookweeed

GLASSWORT

Common name: Glasswort
Other Common names: Beaded Glasswort, Samphire
Species name: *Sarcocornia quinqueflora*
Description: Leafless, fleshy succulent plant with erect or sprawling cylindrical stems
Distinguishing features:

- o Perennial
- o Stems are made up of many segments, each up to 2 cm long, with slightly v shaped joints
- o Flowers are inconspicuous, and are enclosed in the stems with yellow anthers protruding from tiny slits

Height: To 50 cm tall
Flowering time: All months
Similar species: Other species of samphires are found in the Lower Lakes area such as *Halosarcia* species
Habitat value to fauna/flora: When inundated with water, samphire swamps provide a feeding ground for waterbirds and fish. When dry, they provide feeding and nesting sites for waterbirds while also providing a feeding ground for insects, reptiles, and mammals. Samphire swamps also provide shelter for smaller plant species.
Forage value: Average feed quality
Crude protein (%): Winter: 15.7% of dry matter
Summer: 9.3% of dry matter
Digestibility (%): Winter: 66.1% of dry matter
Summer: 67% of dry matter
Tolerance to water logging: High tolerance to water logging
Salinity tolerance: Can tolerate areas of moderate salting (EC 1:5 1400-3500 mScm) to areas of high level salting (EC 1:5, 3500+ mScm) (Bozon and Matters 1995)
Status: Native, common


Glasswort swamps provide feeding ground for a variety of animals


Stems made up of many segments of Glasswort


Glasswort is a fleshy succulent plant

SPIKY CLUB-RUSH

Common name: Spiky Club-rush
Other Common names: American Club-rush; Sharp-leaved Rush
Species name: *Schoenoplectus pungens*
Description: Perennial sedge with long rhizomes
Distinguishing features:

- o Perennial
- o Leaves basal, with long sheaths, shorter than the stems
- o Flower heads are a cluster of 1-5 dark red-brown spikelets

Height: 30-60 cm high
Flowering time: Usually October - March
Similar species: *Schoenoplectus validus* has a rounded stem, whereas *Schoenoplectus pungens* has a triangular shaped stem.
Forage value: Maintenance feed
Crude protein (%): Winter: 8.7% of dry matter
Summer: 8.4% of dry matter
Digestibility (%): Winter: 60.9% of dry matter
Summer: 49.1% of dry matter
Tolerance to water logging: Grows in fresh and brackish water
Status: Native, uncommon in the Murray-Darling Basin (Berkinshaw 2006)

Basal leaves of Spiky Club-rush

The distinctive triangular nature of Spiky Club-rush on the left (A) compared to rounded stem of River Club-rush on the right (B)

Flower heads of Spiky Club-rush

RIVER CLUB-RUSH

Common name: River Club-rush
Species name: *Schoenoplectus validus*
Description: Tall grass-like rhizomatous sedge
Distinguishing features:

- o Perennial
- o Leaves almost reduced to the sheathing bases
- o Flower heads are umbel-like with branches 1-8 cm long. There are 1-4 red-brown spikelets per branch.

Height: To 2 m tall or higher
Flowering time: November - April
Similar species: There is a strong superficial similarity with *Schoenoplectus litoralis*
Habitat value to fauna/flora: Provides habitat for small fish, yabbies, shrimp, and frogs. Provides shelter and nesting for birds.
Forage value: Very poor quality in winter, average summer feed
Crude protein (%): Winter: 4.2% of dry matter
Summer: 6.5% of dry matter
Digestibility (%): Winter: 40.2% of dry matter
Summer: 60.4% of dry matter
Tolerance to water logging: Grows in water
Status: Native, common


River Club-rush grows in water


Flower heads of River Club-rush


River Club-rush growing around Lower Lakes

SALT COUCH

Common name: Salt Couch
Other Common names: Sand Couch, Marine Couch, Mud-grass, Broomsedge
Species name: *Sporobolus virginicus*
Description: Stems leafy, ascending from a thick creeping, scaly rhizome
Distinguishing features:

- o Perennial
- o Leaves more or less spreading, rigid, appear opposite owing to the alternate long and short nodes
- o Flower heads are 1-6 cm long with branches rigidly erect and pressed closely together

Height: 7-50 cm
Flowering time: Throughout the year
Similar species: In growth often like Emu grass *(Distichlis distichophylla)*
Tolerance to water logging: High tolerance to water logging
Status: Native, widespread

Creeping rhizomes of Salt Couch

Flower heads of Salt Couch

SEABLITE

Common name: Seablite
Other Common names: Austral seablite
Species name: *Suaeda australis*
Description: Rounded perennial branching from the base, hairless. Species varies in colour
Distinguishing features:

- o Perennial
- o The leaves are alternate, narrow and succulent
- o Flowers in clusters of 1-3 or more

Height: 10-90 cm
Flowering time: All months, especially January to June
Management:

- o **Grazing:** Rarely grazed (Cunningham *et al.* 1981)

Forage value: Ideal fibre, good digestibility, energy and protein
Crude protein (%): Winter: 14.1% of dry matter
Summer: 11.1% of dry matter
Digestibility (%): Winter: 72% of dry matter
Summer: 77.9% of dry matter
Tolerance to water logging: Found in coastal saltmarshes
Status: Native, common


Seablite varies in colour


Narrow alternate leaves of Seablite


Perennial Seablite

STRAWBERRY CLOVER

Common name: Strawberry Clover
Species name: **Trifolium fragiferum*
Description: Mature plant prostrate and mainly hairless with a deep-rooted stolon system. Strawberry clover is a typical clover with a group of 3 leaflets held at the end of a leaf stalk.
Distinguishing features:

- Perennial
- The leaves are trifoliate, leaflets borne on short stalks, veins close together and highly branched
- The sphere-shaped flower heads are on stalks and consist of many small, white or pink pea like flowers with a base covered in shining white hairs. At maturity the flowers have a characteristic 'bladdery' or strawberry-like appearance.

Height: Prostrate up to 50 cm
Flowering time: November - April
Forage value: Very good feed in summer and winter, use for finishing stock
Crude protein (%): Winter: 27.7% of dry matter
Summer: 13.9% of dry matter
Digestibility (%): Winter: 77.8% of dry matter
Summer: 33.9% of dry matter
Tolerance to water logging: One of the most water logging tolerant legumes available
Salinity tolerance: Can tolerate areas of low level salting (EC 1:5 less than 600-1400 mScm) to areas of moderate salting (EC 1:5 1400-3500 mScm) (Bozon and Matters 1995)
Status: Introduced

Trifoliate leaves of Strawberry Clover

Mature flowers of Strawberry Clover

WATER-RIBBONS

Common name: Water-ribbons
Species name: *Triglochin procerum*
Description: Robust aquatic perennial; rhizome thick (c. 0.8 cm), bearing roots which ends in tubers.
Distinguishing features:

- Perennial
- The leaves are long (to 2 m), flattened, 0.5-4 cm broad, sheathed at the somewhat fleshy base, with the upper blade erect or floating
- Flowers small (1-2 mm), green, numerous (60-100) on a long spike to 30 cm

Height: 10-50 cm or more
Flowering time: Spring - Autumn
Tolerance to water logging: Grows in fresh water to 1.5 m deep. In swift-flowing streams the leaves float; in shallow still waters they are erect.
Status: Native, common

Water-ribbons with flower spikes

Water Ribbons fruits August to April

Long leaves of Water-Ribbons

STREAKED ARROWGRASS

Common name: Streaked Arrowgrass
Species name: *Triglochin striatum*
Description: Slender rush-like rhizomatous perennial of salt and fresh marshes, green or brownish in colour
Distinguishing features:

- Perennial
- There are several leaves together in tufts spaced along the rhizome. The leaves are erect, sheathed at the base, 10-20 cm long, narrow, cylindrical and hairless.
- The small, round, green flowers are numerous on a central stem, which varies in height from 3-30 cm

Height: 10-30 cm tall
Flowering time: Fruits August - May
Management:

- **Grazing:** Palatable, but recovers slowly after grazing

Tolerance to water logging: Prefers damp, waterlogged locations (Bozon and Matters 1995)
Salinity tolerance: Can tolerate areas of moderate salting (EC 1:5 1400-3500 mScm) (Bozon and Matters 1995)
Status: Native, common


Streaked Arrowgrass is green or brownish in colour


Small green flowers of Streaked Arrowgrass

NARROW-LEAF BULRUSH

Common name: Narrow-leaf Bulrush
Other Common names: Bulrush, Cat's tail, Reed-mace
Species name: *Typha domingensis*
Description: Robust semi-aquatic plant, with stiff stems rising from stout rhizomes
Distinguishing features:

- o Perennial
- o Leaves usually 4-10 mm broad
- o The flower head is a dense cylindrical spike to 30 cm long

Height: Stems to 2 or rarely 3 m high
Flowering time: Summer
Similar species: Similar to *Typha orientalis, T. domingensis* has a narrower spike (flower head)
Management:

- o **Grazing:** Very young growth may be grazed by cattle (Cunningham *et al.* 1981)

Habitat value to fauna/flora: Provides shelter and nesting sites for water fowl. Also provides habitat for small fish, yabbies, shrimp, frogs and insects.
Frost/drought tolerance: The rhizomes are capable of surviving in the soil without inundation for considerable periods of time
Forage value: Very poor winter feed high in fibre, average summer feed with good protein
Crude protein (%): Winter: 4.1% of dry matter
Summer: 12.1% of dry matter
Digestibility (%): Winter: 36.4% of dry matter
Summer: 55.8% of dry matter
Tolerance to water logging: Semi-aquatic
Status: Native, common


Narrow-leaf Bulrush is a semi aquatic plant


Stiff stems of Narrow-leaf Bulrush


The dense cylindrical spike of Narrow-leaf Bulrush

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INDEX

INDEX

The Lower Lakes and Coorong Project started in 1998 and is a joint initiative between the Goolwa to Wellington LAP (GWLAP) and the Coorong District LAP (CDLAP). These groups are made up of community representatives from across the Local Action Planning areas and have exceptional track records with managing community projects. The combined expertise and local knowledge represented on these groups is considerable and has contributed greatly to their success.

The LAP groups work with the local community to protect and restore biodiversity and sustainably manage natural resources, so as to create an environment where human activity and natural ecosystems can sustainably co-exist.

For further information about the LAP groups and the services they provide please contact:

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