

Common
Native
Grasses
of South-west WA



Uru Bell

ACKNOWLEDGEMENTS

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ABOUT THE AUTHOR

The author has a B.A. (Social Science) (Hons.) and a Graduate Diploma in Landcare, and is a Research Associate at the Western Australian Herbarium with an interest in native grasses, particularly in South-West W.A.

DEDICATION

In memory of my son, Ivor Russell Bell
3rd March, 1970 – 10th August, 2008

Front cover: Wallaby Grass is one of the most common native grasses in the South-West.

Back cover: Little Amphipogon
(*Amphipogon amphipogonoides*)

Abbreviation: * introduced species

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INTRODUCTION

Early accounts by European explorers describe a landscape in the South-West of Western Australia that had extensive areas of native grasslands. Stipa or Speargrass (*Austrostipa spp.*) and Wallaby Grass (*Austrodanthonia spp.*) are the most common native grasses but there are many lesser known ones. Today about 140 species of native grass in over 40 genera occur in the South-West. Unfortunately there are more species of introduced grasses, and many of these are invasive weeds.

Native grasses can be found in patches on open ground, under trees, along road verges and firebreaks. Many even prefer disturbed and degraded sites. Some grow on the fringes of wetlands, creeks, on granite outcrops, as forest understorey, or along the coast.

This booklet covers more than 40 species of native grass. Learning to recognize native grasses may be challenging but it is essential for those involved in bushcare, landcare and similar activities. Remember, not all grasses are weeds.

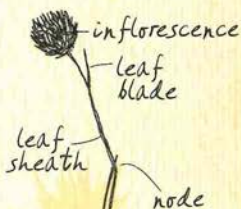
Photo: Native grasses, including Wallaby Grass and Stipa, at Greenhills in the Avon Valley.



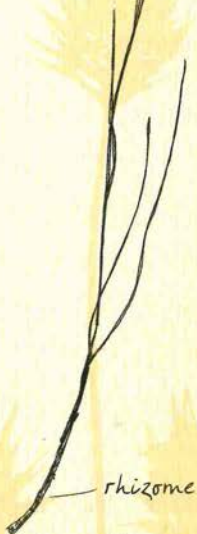
GLOSSARY

Many native grasses are perennial clumps, but there are also annual grasses and spreading wetland grasses such as Matgrass and Marine Couch.

Smallflower Wallaby Grass (*Austrodanthonia setacea*)



Half-bearded Stipa (*Austrostipa hemipogon*)



FLOWERING STEM

Little Amphipogon
(*Amphipogon amphipogonoides*)

GLOSSARY

Most grasses have a ligule between the leaf-blade and the leaf-sheath. The ligule can be a membrane or hairy, or a mix of both.

Swamp Wallaby Grass (*Amphibromus nervosus*)
has a membranous ligule



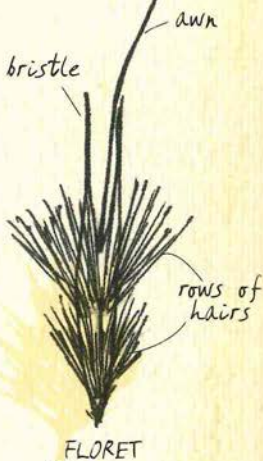
Common Wallaby Grass (*Austrodanthonia caespitosa*)
has a distinctive circle of hairs at the ligule



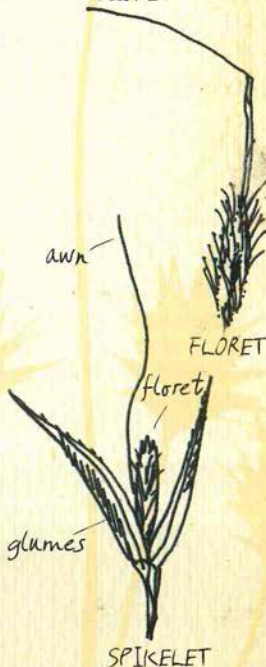
GLOSSARY

Mature spikelets are important for grass identification. A spikelet consists of the glumes and the floret. A panicle is the classic form of a grass inflorescence, and has secondary branching.

Common Wallaby Grass spikelet
(*Austrodanthonia caespitosa*)



Blowngrass panicle
(*Lachnagrostis filiformis*)



GLOSSARY

Most grasses have 3 stamens (male) and 2 feathery stigmas (female), but some grasses vary in the number of stamens. Grass flowers can be male, sterile, female or bisexual. Beach Spinifex has male and female flowers on separate plants. Grass flowers do not have petals.

Swamp Greybeard Grass (*Amphipogon debilis*) in flower



Forest Rice Grass (*Tetrarrhena laevis*) in flower

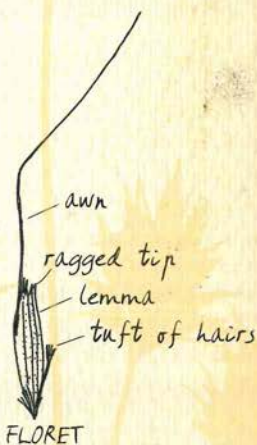


AMPHIBROMUS

Amphi is from Greek meaning *about* and *bromus* means *oats*, and may refer to the genus *Bromus*. There is 1 common species of *Amphibromus* in the South-West plus other historical and unusual collections. *Amphibromus vickeryae* used to grow in swamps around Perth but is now probably extinct. *Amphibromus* have an awn on the lemma coming from the mid to upper back.

Swamp Wallaby Grass (*Amphibromus nervosus*)

Nervosus means *nerves* and refers to the prominent veins on the lemma. Winter-active perennial grass, forming leafy clumps. Ligule is a membrane (see Glossary). Flowering stems to 1.25 m high with a long, delicate inflorescence. From 4 to 6 florets in each spikelet, and each floret has an awn. Grows in wetlands and damp areas, and will grow in water over winter. Can also be found in pools on granite outcrops. Flowers June to November. Widespread, as far north as Geraldton.

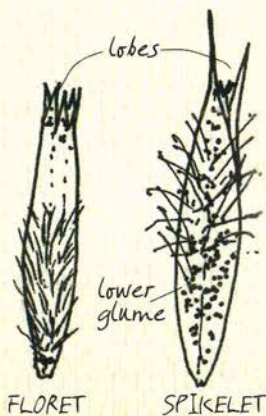


AMPHIPOGON

Amphi is from Greek meaning *about* and *pogon* meaning *beard*, which describes the 5 awned lobes on the floret. Ligule is a fringe of hairs. *Amphipogon* are only found in Australia. Eight species are found in the South-West, and 6 of these do not occur elsewhere. The only other species, Silky Greybeard Grass (*Amphipogon sericeus*), grows across northern Australia. It has flat leaves and the lemma is hairy.

Little Amphipogon (*Amphipogon amphipogonoides*)

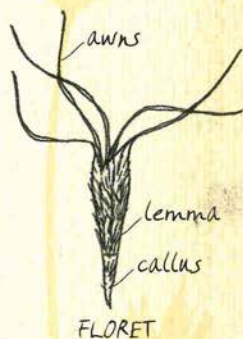
Amphipogonoides means *like an Amphipogon*; it was originally named in another genus. Winter-active, perennial clump with a rhizome. Flowering stems 10 to 50 cm high, with a round or oval inflorescence which is grey, mauve or white. It is the least typical *Amphipogon*, as the 5 floret lobes do not have awns and are shorter than the glumes. Flowers September to January (see back cover). Only grows from north of Perth to Albany, usually as forest understorey or near swamps.



AMPHIPOGON

Wallaby Greybeard Grass (*Amphipogon avenaceus*)

Avenaceus means *like the genus Avena*, from *wild oats*. Winter-active perennial clump, has a rhizome, and looks like a short Wallaby Grass (*Austrodanthonia* spp.). It has narrow leaves. Flowering stems are up to 35 cm high, and the inflorescence is often purple and green. The point or callus on the lemma is sharp, c. 2 mm long. Flowers December to January. Only grows from Denmark to Esperance in dry or wet areas such as swamps.

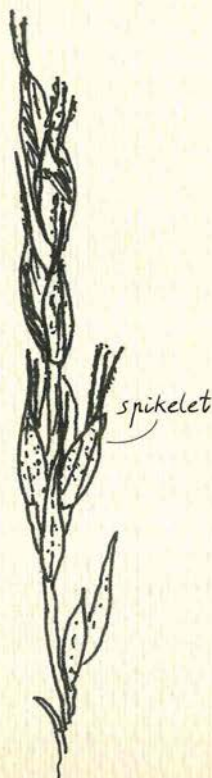


AMPHIPOGON

Long Greybeard Grass (*Amphipogon caricinus*)

Caricinus means like a rush (*Carex*). Winter-active, perennial clump with a rhizome. Flowering stems from 30 to 60 cm high. Inflorescence is green and then matures to grey. The rhizome grows at an angle obliquely upwards. The glumes have short hairs which do not have a wart-like base. Flowers August to November. Grows in dry areas and is the most widespread *Amphipogon* in Australia.

Greybeard Grass (*Amphipogon strictus*) is very similar. There are some areas in the Wheatbelt where specimens have features of both species.



INFLORESCENCE

AMPHIPOGON

Swamp Greybeard Grass (*Amphipogon debilis*)

Debilis means *feeble*. Winter-active perennial clump with a rhizome, and flowering stems to 60 cm high. The glumes have three lobes (trifid) and it is the only *Amphipogon* to have this feature. Flowers November to December. Grows as far north as Eneabba and east to Bremer Bay, usually in damp areas, near swamps and creeks.



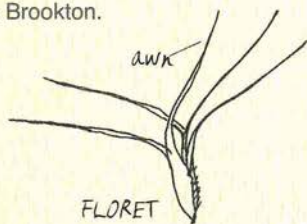
AMPHIPOGON

Haretail Amphipogon

(*Amphipogon laguroides* subsp. *laguroides*)

Laguroides means like the genus *Lagurus*, that is, hare's tail. Winter-active perennial clump with a rhizome, and flowering stems from 40 cm to 1 m high. Inflorescence is purple (see inside back cover), green or brown, changing to straw colour. The awns are up to 20 mm long and extend beyond the glumes. Flowers December. Grows from Perth to Albany, often near areas that are damp in winter.

The other subspecies, Havel's Amphipogon (subsp. *havelii*), is uncommon. It has awns to 25 mm long, a large purple inflorescence when fresh, and only grows as forest understorey on dry lateritic soils in the Darling Range, from Perth Hills to Brookton.

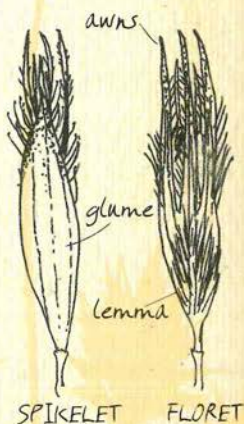


AMPHIPOGON

Greybeard Grass (*Amphipogon strictus*)

Strictus means *straight*, it has a well developed rhizome which is straight and horizontal. Winter-active perennial clump with flowering stems to 50 cm high. Inflorescence is green changing to grey or straw colour when mature. Hairs on the upper back of the glumes have a wart-like base. Usually grows on or near granite outcrops (see photograph for *Spartochloa*). Can also be found in woodland and heath. Flowers November to December. Grows throughout the South-West as far north as Perth, and as far east as Esperance. It does not grow on the Nullabor Plain but is found from South Australia to Queensland.

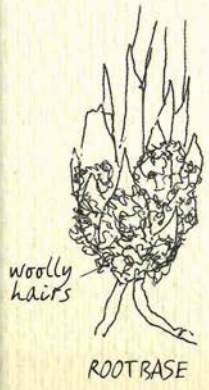
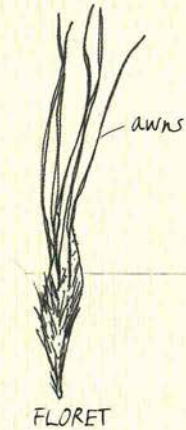
Long Greybeard Grass (*Amphipogon caricinus*) is similar.



AMPHIPOGON

Top Greybeard Grass (*Amphipogon turbinatus*)

Turbinatus means *spinning top*, a description of the inflorescence. Winter-active perennial clump with a rhizome. Flowering stems to 80 cm high. Leaves are stiff, narrow, dark green and often decoratively curled. Inflorescence is grey with woolly hairs. The rootbase also has woolly hairs. Flowers July to December. Widespread, usually in sandy soils with heathland and Banksia woodland.



ARISTIDA

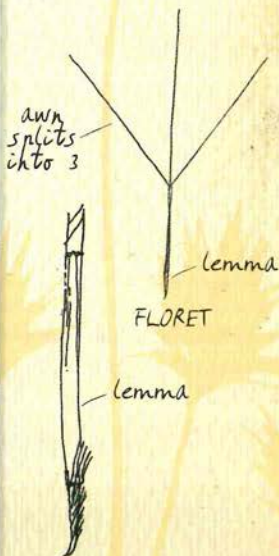
Aristida is from Latin meaning *an awn*. *Aristida* have 1 awn which splits into 3. They are summer-active with a unique form of leaf anatomy. There are 2 native species in the South-West plus Purple Wire Grass (**A. ramosa*) which has been introduced from the eastern states.

Bunch Kerosene Grass (*Aristida contorta*)

Contorta means *twisted*. Annual or a short-lived perennial, grows in small clumps and usually has wavy stems. Flowering stems to 44 cm high. Flowers February to July, but can flower after rain. Lemma is brown when mature.

Kerosene Grass (*Aristida holathera*) is similar but is usually taller, has straight stems, longer floret, and the mature lemma is yellow with purple spots.

Both grow along road verges and degraded areas in dry, even arid, regions. Often have a purple sheen which is particularly noticeable when blown by the wind. Other common names are Bunch Grass, Wind Grass, and Three Awn Grass.

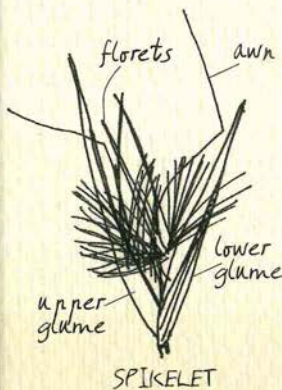


AUSTRODANTHONIA

Austrodanthonia is from Latin from *austro* meaning southern and *Danthonie* the name of a French botanist. There are 7 species in the South-West. All are perennial winter-active clumps, with more than 3 florets in each spikelet, and a hairy ligule (see Glossary). They are important native pasture grasses. The inflorescence changes from green, often with purple, to straw colour as it matures, hence another common name, White Top. Three species are only found in the South-West. They are Needle Wallaby Grass (*A. acerosa*), Western Wallaby Grass (*A. occidentalis*), and a new recently found species, *Austrodanthonia* sp. Goomalling which grows in the Wheatbelt.

Needle Wallaby Grass (*Austrodanthonia acerosa*)

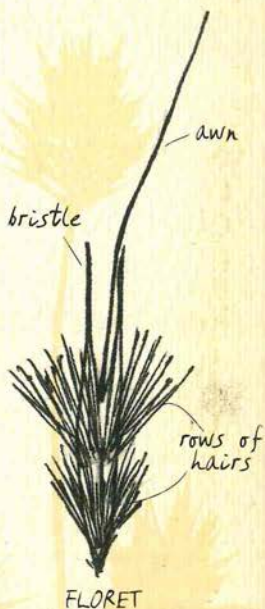
Acerosa means *needle-shaped*; spikelet features are elongated. Flowering stems to 80 cm high. Inflorescence has small florets in long thin glumes which taper into fine points. Grows in the shade or part-shade. Flowers September to December. Only grows in the South-West, mostly from near Geraldton to Albany, but has also been collected at Esperance.



AUSTRODANTHONIA

Common Wallaby Grass *Austrodanthonia caespitosa*

Caespes means *tufted*. A very variable species, with flowering stems from 20 to 90 cm high. The inflorescence has large florets in large glumes. Flowers from October to January. Often grows in dry areas. Common and widespread, it is one of the main native pasture grasses across southern Australia.

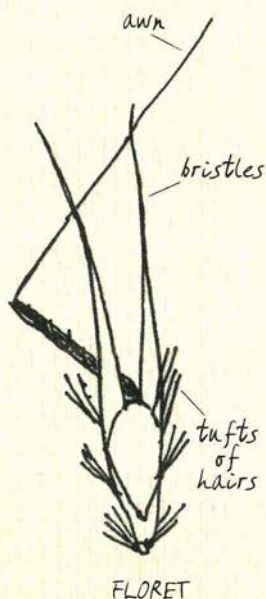


AUSTRODANTHONIA

Velvet Wallaby Grass (*Austrodanthonia pilosa*)

Pilosa means *hairy*. Leaves can be hairy, or flat and smooth, and it can look like a weed when not in flower. Flowering stems to 90 cm high. Inflorescence is often compact. Easy to identify as the lemma has separate tufts of hairs. Flowers from October to February. Often grows in shade, as forest understorey, and along tracks through bushland. Also grows in the eastern states.

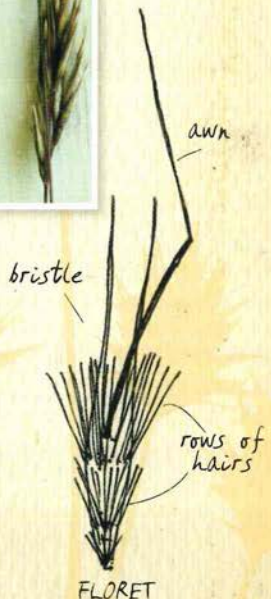
Austrodanthonia racemosa is similar, but rarely collected.



AUSTRODANTHONIA

Smallflower Wallaby Grass (*Austrodanthonia setacea*)

Setacea means *bristle* or *stiff hair*. The bristles or lobes on the lemma are usually long, although there is a sub-species with short bristles. Perennial clump (see Glossary) with flowering stems from 15 to 60 cm high. The inflorescence has small glumes containing small, even tiny, florets. Despite being the smallest and most delicate looking of the Wallaby Grasses, it is very hardy and can cope with heavy soils and full sun. Flowers September to December. Common and widespread, it grows across southern Australia.

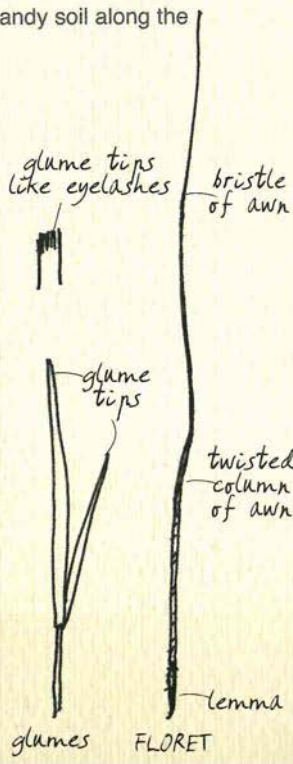


AUSTROSTIPA

Austro is from Latin *australis* meaning *southern*; *stipa* is Greek for *tow* or *hemp* after the fibre from esparto grasses found in Spain and North Africa and used for making paper and rope. Awn comes directly from the end of the lemma and can be straight, bent, sickle-shaped, smooth or hairy. Column of the awn is twisted and untwists when wet. About 32 species of *Stipa* grow in the South-West and are divided into 10 subgenera groups. All are winter-active, most perennial, some annual.

Graceful Speargrass (*Austrostipa acrociliata*)

Acrociliata is from *acros* meaning *at the top end* and *cilium* meaning *having fine hairs*. It has hairs like eyelashes on the tip of the glumes. Belongs in the subgenus *Arbuscula* (meaning *a small tree or shrub*). Perennial, large clump, with a rhizome and flowering stems to 1.5 m high. Stems branch at the nodes. Ligule is a long membrane. Flowers September to February. Grows in sandy soil along the southern coast, as well as inland.

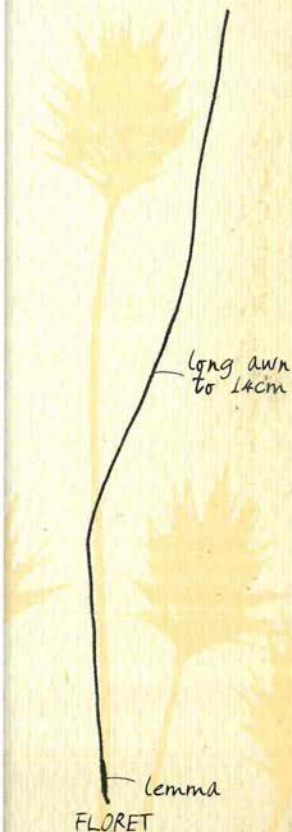


AUSTROSTIPA

Compact Needlegrass (*Austrostipa compressa*)

Compressa means *pressed together*. Belongs in the subgenus *Longiaristatea* (meaning *long awned*). Annual or short-lived perennial, has a short tuft, with flowering stems to 80 cm high. Ligule is a long membrane. Leaf-sheath is smooth. Long, straight awns often green or yellow, shine golden in the sun. Flowers September to December. Comes up after a fire, track grading or other disturbance. Widespread but only grows in the South-West.

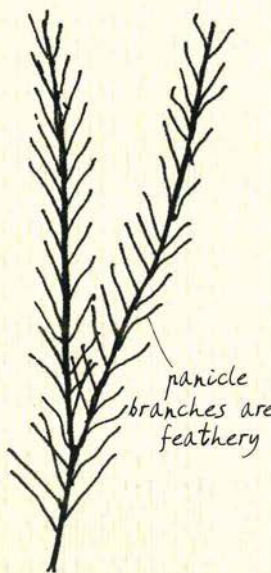
Golden Stipa (*A. macalpinei*) is similar but has a hairy lower leaf-sheath. It also grows in South Australia and Victoria.



AUSTROSTIPA

Feather Speargrass (*Austrostipa elegantissima*)

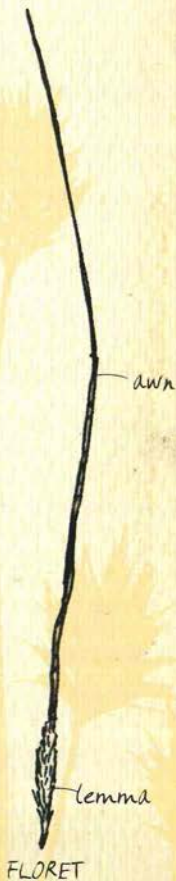
Elegantissima means *the most elegant*. Belongs in the subgenus *Petaurista* (meaning *tumbler* or *acrobat*). Mature seed-heads break off and blow or tumble away. Sprawling perennial with a rhizome and branching stems. Ligule is a long membrane. Often grows to under 1m but can grow to 2 m when supported by surrounding shrubs. Attractive silver-grey feathery panicles. Flowers August to January. Widespread from coastal sand dunes to dry inland areas. Other common names are Spider Grass and Santa Claus Grass.



AUSTROSTIPA

Yellow Stipa (*Austrostipa flavescens*)

Flavescens means *pale yellow*. Belongs in the subgenus *Lancea* (meaning *a lance*). This describes the short, straight awn up to 70 mm long. Perennial clumps with flowering stems to 1 m high. Ligule is a short membrane. Flowers September to October. Grows along the coast in sandy soils as well as further inland. Common from Geraldton to Esperance.



AUSTROSTIPA

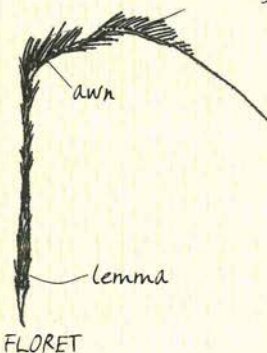
Half-bearded Stipa (*Austrostipa hemipogon*)

Hemi means *half* and *pogon* means *beard*. Belongs in the subgenus *Austrostipa* which has twice bent, hairy awns. This species has awns hairy along one side only, so the hairs appear to spiral where the awn twists. Perennial tuft with long flowering stems to 1m high (see Glossary). Ligule is a short membrane. Flowers October to February. Widespread.

Soft Speargrass (*Austrostipa mollis*) is similar but the hairs on the awn are usually shorter, and the lemma and awn are longer.



hairs on one side only

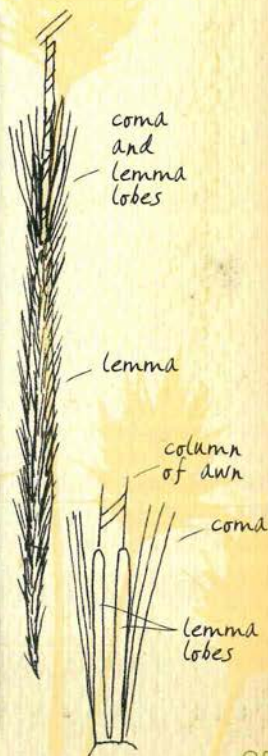


AUSTROSTIPA

Rush-leaved Stipa (*Austrostipa juncifolia*)

Juncus means a type of rush, and *folium* means leaf. Belongs in the subgenus Lobatae, named for the lemma lobes. May also have a coma, a circle of hairs at the lemma top or apex. Perennial clump with a rhizome, smooth narrow leaves like rushes. Ligule is a long membrane. Flowering stems to 1m high. Flowers September to October. Only grows in the lower South-West as far east as Esperance. Grows inland and along the coast, as well as estuaries, river banks, usually in or near saline, damp areas.

There are two other similar, closely related species which are endangered flora. Geoffrey's Stipa (*A. geoffreyi*) grows to 1.8m high, and is only found at Lake King and Lake Grace. As well, two small populations on the Swan Coastal Plain have recently been separated as a new species.

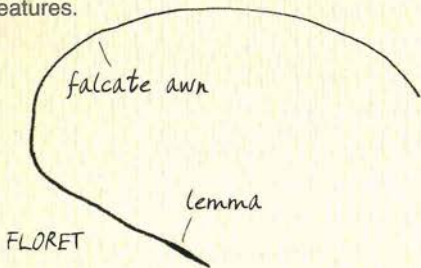


AUSTROSTIPA

Slender-leaved Stipa (*Austrostipa tenuifolia*)

Tenuifolia means *slender leaf*. Belongs in the subgenus *Falcatae* (meaning a *sickle* or *scythe*, a description of the awns). Perennial clump to 1.2 m high. Ligule is a short membrane. Flowers July to November. Widespread, often on road verges, and on dry degraded sites.

Variable Stipa (*Austrostipa variabilis*) is similar but has smaller features.

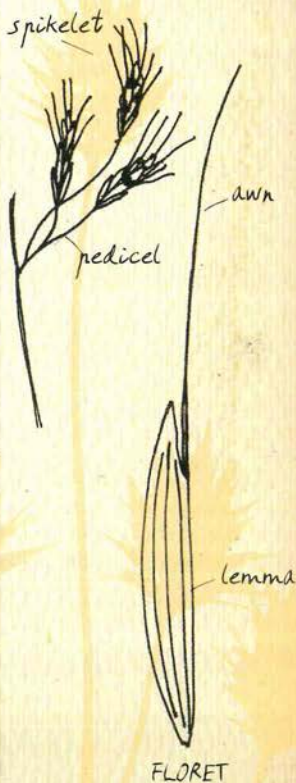


BROMUS

Bromus is from Greek for *oats*, and is from an ancient name for food. *Bromus* are annual tufts with a panicle of large spikelets. The leaf-sheath is not split but joins to form a tube. Most species are introduced, but 1 species is native.

Sand Brome (*Bromus arenarius*)

Arenarius means *growing in sand*. Annual, winter-active small tuft with flowering stems to 50 cm high. Ligule is a membrane. Inflorescence usually droops, and the spikelets have pedicels more than 10 mm long. Flowers July to October. Widespread across southern Australia, grows as far north as Shark Bay. Often found in sandy soils, coastal and inland.

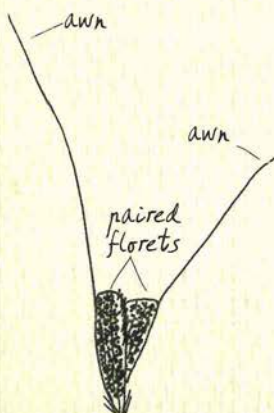


CHLORIS

Chloris is derived from Greek for *green* and also refers to Flora, the Greek goddess of flowers. *Chloris* are summer-active grasses and grow mostly in the tropical and warm temperate regions. Several introduced and 1 native species grow in the South-West.

Windmill Grass (*Chloris truncata*)

Truncata means *cut off*; the end of the lemma is blunt or truncated. The florets are usually in pairs, with 1 fertile and 1 reduced, and change from green to black and white as they mature. Both florets have an awn. Perennial summer active tuft with flowering stems to 45 cm high. Ligule is a membrane. Flowers mostly March to July. Digitate inflorescence breaks off and blows away when mature. Used as a native pasture grass at Merredin. Can often be seen on road verges in the warmer months.

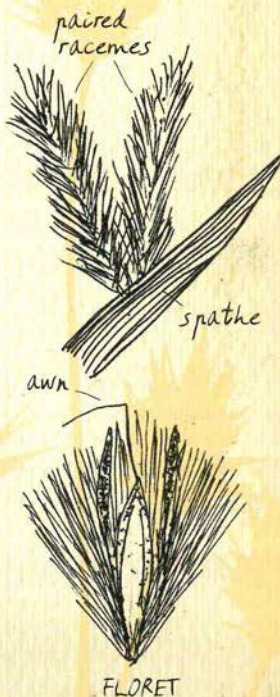


CYMBOPOGON

Cymbopogon is from Greek *cymbe* meaning *boat* or *hollow* and *pogon* meaning *beard*. Panicle has leaf-like bracts known as spathes and paired racemes of hairy spikelets. There are 2 native species of *Cymbopogon* in the South-West, of which Scentgrass (*C. ambiguus*) is the less common. Several species are grown as ornamentals.

Native Lemon Grass (*Cymbopogon obtectus*)

Obtectus means *covered over* or *protected*, a description of the spathes protecting the spikelets. Perennial summer-active clump, with flowering stems 1 m high. Leaves are blue-green and have a lemon scent when crushed. Ligule is a membrane. Inflorescence is green then spathes change colour to brown, open out, and hold the soft, white, fluffy florets. Flowers September to April. Scattered through the South-West, it can be found along the Darling Scarp and in red loamy soils. Another common name is Silkyheads.



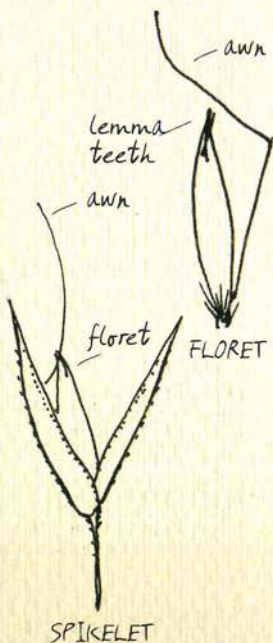
DEYEUXIA

Deyeuxia was named after Nicholas Deyeux, a French Professor of Pharmacy and Medicine. *Deyeuxia* have the awn from the lower back of the lemma, and a toothed lemma apex. Two rare species of *Deyeuxia* are native in the South-West. Drummond's Grass (*D. drummondii*) was presumed extinct as it had not been collected since 1867. It was discovered in 1997 on a peak in the Stirling Range. Another rare species (*D. inaequalis*) has been collected from near Manjimup and the Stirling Range.

Reed Bentgrass (*Deyeuxia quadriseta*)

Quadri means 4, while *seta* means *stiff hair or bristle*.

The lemma has 4 nerves extending into short teeth, and an awn from the lower back. Perennial winter-active tufts with long flowering stems up to 150 cm high. Stems bend at the nodes. Ligule is a membrane. Green inflorescence matures to straw colour. Flowers August to January. Grows as far north as Perth in damp or wet areas, further south as forest understorey and on or near granite outcrops.



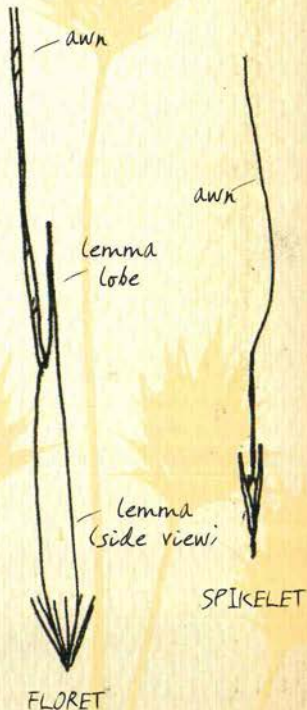
DICHELACHNE

Dichelos is Greek for *cloven footed* and *achne* meaning *chaff*, as the lemma has 2 lobes. The awn is attached near the end of the lemma, and not from the end as in *Austrostipa*.

Longhair Plumegrass (*Dichelachne crinita*)

Crinitus means *long hair* as it has awns at least 20 mm long. Perennial winter-active tufts with straight flowering stems up to 70 cm high. Ligule is a membrane. Inflorescence is green, may have a purple or dark tinge at the edges, and matures to straw coloured. Awns can be crinkly and stay on the plant for some time. Flowers September to December. Grows in a range of soils and habitats, including coastal heath and forest understorey, from north of Perth to Hopetoun.

Shorthair Plumegrass (*D. micrantha*) has shorter awns and has been collected only a few times in the lower South-West.



ERAGROSTIS

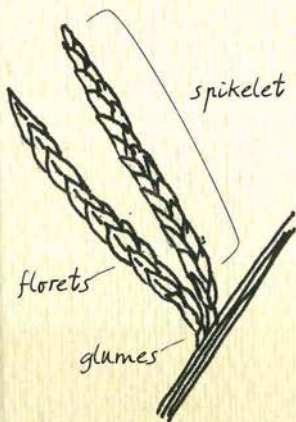
Eragrostis is from Greek *era* meaning *earth* or from *eros* meaning *love*, and Latinised Greek *agrostis* meaning *grass*. *Eragrostis* spikelets are linear and have from 3 to 100 florets. Glumes have 1 nerve, lemma has 3 nerves. Over 70 species in Australia and most are native. African Lovegrass (**Eragrostis curvula*) is a weedy introduced species.

Mallee Lovegrass (*Eragrostis dielsii*)

Ludwig Diels collected botanical specimens in W.A. from 1900 to 1901 in conjunction with Ernst Pritzel. In 1906 Diels published the original German edition of "The Plant World of Western Australia South of the Tropics" which included vegetation maps.

Mallee Lovegrass is a perennial or sometimes annual summer-active clump, growing to 55 cm high or flat on the ground like a rosette. Ligule is a fringe of hairs. Narrow, brown inflorescence with up to 81 florets in each spikelet, and a sparsely hairy rootbase. Can flower all year. Grows on winter wet and saline sites. Widespread in drier and more northerly regions.

Sickle Lovegrass (*E. falcata*) is similar but this is perennial, has very narrow leaves and a hairy rootbase.



ERAGROSTIS

Clustered Lovegrass (*Eragrostis elongata*)

Elongata means *lengthened*. Perennial summer-active leafy clumps to 90 cm high. Ligule is a fringe of hairs. Inflorescence is elongated with clusters of green and purple spikelets along the stem. Flowers November to May. Grows in damp areas such as roadside drains, winter creeks and in or near wetlands. Grows from Geraldton to Albany. Other common names are Common Lovegrass and Lavender Grass.

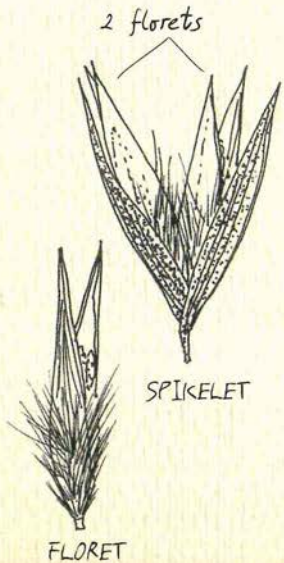


ERLACHNE

Erion is from Greek for *wool*, and *achne* for *chaff*.
Eriachne have 2 hairy florets in each spikelet. There are 48 species in Australia. All are native.

Granite Wanderrie Grass (*Eriachne ovata*)

Ovata means *egg-shaped*, which describes the shape of the inflorescence. Perennial summer-active clump with flowering stems to 40 cm high. Ligule is a hairy membrane. Blue-green or dark purple glumes contain 2 white fluffy florets. Flowers September to November. Grows on granite outcrops through the Wheatbelt, along the Darling Scarp, and near wetlands. Common in the 1950's on granite rocks around York, Toodyay and Yorkrakine but many of these sites are now overtaken by weedy grasses.



HEMARTHRIA

Hemi is Greek for *half* and *arthron* for *joint*. The seed-head breaks into sections. The one species of *Hemarthria* in Australia has 2 subspecies, one of which only grows in the eastern states. *Hemarthria* has a hooked upper glume.

Matgrass (*Hemarthria uncinata*)

Uncinatus means *hooked* or *barbed*; this describes the upper glume. Perennial summer-active grass that spreads and can form a dense thicket with stems from 30 to 80 cm long. Ligule is a hairy membrane. Inflorescence is an elongated, green spear. Flowers December to April. Grows in damp areas, coastal areas and inland, often with seasonal flooding, in shade, along creeks, wetlands and estuaries. Mostly lower South-West and the Perth region, but further north on the coast.

Kikuyu (**Pennisetum clandestinum*) is similar but *Hemarthria* can be distinguished by the inflorescence, and by the hooked upper glume.



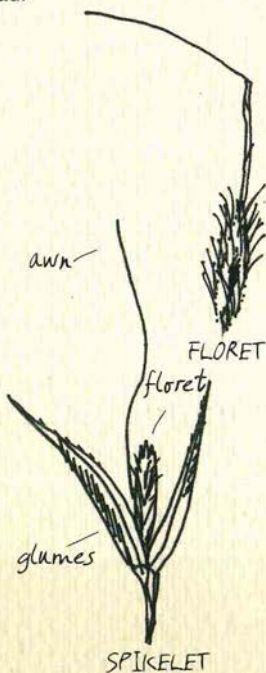
INFLORESCENCE

LACHNAGROSTIS

Lachne is from Greek for *soft wool*, and *agrostis* from Latinised Greek for *grass*. *Lachnagrostis* have one awned floret per spikelet so only 1 awn protrudes from the glumes. Six species in the South-West and all are native. The most recently recognised new species is Rottnest Island Blown Grass (*L. nesomytica* from Greek *neso* meaning *island* and *mys* for *mouse* or *rat*) and this has a subspecies only found on Garden Island.

Blowngrass (*Lachnagrostis filiformis*)

Filiformis is from *filum* meaning *thread* and *formis* meaning *shape* or *form*; this describes the delicate panicle. Winter-active, annual or short-lived perennial clump. Ligule is a membrane. Flowering stems to 80 cm high. Young plants are green (see Glossary), purple or straw-coloured. The inflorescence can droop but matures to an open straw coloured panicle which breaks off and blows away. Flowers August to February. Grows in damp areas, roadside drains, near lakes and wetlands. Widespread.

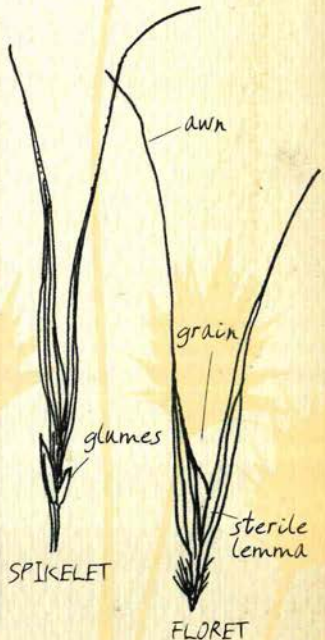


MICROLAENA

Micros is from Greek for *small*, and *chlaina* for *cloak*; this describes the tiny glumes. *Microlaena* have 3 lemmas. The outer sterile lemmas taper into long, fine awns. The inner fertile lemma contains the rice-like grain.

Weeping Grass (*Microlaena stipoides*)

Stipoides means *like Stipa*. Perennial spreading, winter-active grass with a rhizome. Low growing tufts to 20 cm high. Leaf-sheath is tightly wrapped around the stem. Ligule is a membrane, usually with some hairs, plus auricles which are ear-like extensions that wrap around the stem. Flowering stems up to 1 m long with a drooping inflorescence. Flowers August to December. Grows in shade or part shade, often found along creeks where it can form a natural lawn (see p. 56), or as forest understorey. It is a valuable native pasture grass and is also being investigated as a possible grain crop because of its large seeds. Grows throughout the South-West from Dongara to Albany, and along the south coast to Esperance.



MONACHATHER

Monarchos is from Greek meaning *solitary* and *ather* means *a spike*. *Monachather* has 1 species which is only found in Australia. It is related to Wallaby Grass (*Austrodanthonia* spp.).

Bandicoot Grass (*Monachather paradoxus*)

Paradoxus means *unexpected, strange or marvellous*. Perennial, winter-active clump with flowering stems to 50 cm high. Ligule is a membrane and may be hairy. Rootbase is swollen and has woolly hairs. Flowers September to November. Grows in drier areas north and east of Goomalling.



INFLORESCENCE

NEURACHNE

Neurachne is from Greek *neuron* meaning *nerves* and *achne* meaning *chaff*, this describes the conspicuous nerves on the glumes. *Neurachne* only grow in Australia. They are unusual in that some species are summer-active while others are winter-active. The glumes are longer than the floret.

Foxtail Mulga Grass (*Neurachne alopecuroidea*)

Alopecuroidea means *foxtail*. Perennial winter-active low spreading tuft, often nibbled back by kangaroos. Has a rhizome. Flat or slightly twisted leaves may have scattered hairs along the edge. Ligule is hairy. Flowering stems to 50 cm high, straight, with a grey inflorescence. Flowers July to November. Common and widespread. Other common names are Mulga Grass and Cat's Tail.

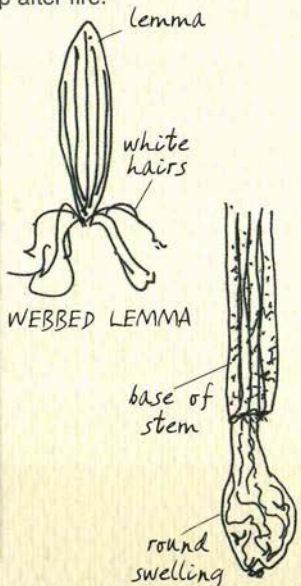


POA

Poa is from Greek for *grass*. The grass family is known as *Poaceae* or *Gramineae* (Latin for *grain-bearing*). *Poa* spikelets have several florets and they do not have an awn. In most *Poa* the base of the lemma has a web of tangled, white hairs, rather like cobwebs. Some species have a hairy ligule and others have a membranous ligule; it is unusual for different ligules to occur in the same genus. Some native *Poa* have a rhizome. They are winter-active.

Knotted *Poa* (*Poa drummondiana*)

Named for James Drummond who was the first government botanist in W.A. Perennial tuft with 1 or 2 flowering stems up to 80 cm high. Can be found growing singly, in groups, or emerging through shrubs. Base of stem has round swellings or 'knots'. Ligule is a membrane. Leaf-sheath is closed towards the base and opens further up the stem. Inflorescence is green and purple then dries to a straw colour. Lemma is broad and the hairs may be few or absent. Glumes remain after the florets have fallen. Flowers September to November. Widespread in forest, heathland and coastal sands. It can come up after fire.



POA

Coastal Poa (*Poa poiformis*)

First named *Arundo poaeformis* meaning the *Poa*-like *Arundo* by French botanist Labillardiere, it was later included with the *Poa*. Grows in large perennial clumps, with flowering stems to 90 cm high. It does not have a rhizome. The leaves can be blue-grey. The ligule is a short hairy fringe. Hairs on the lemma are usually well developed. Flowers October to November. Grows in coastal areas within range of salt sea spray, such as sand dunes, estuaries and sea side cliffs from Kalbarri to Esperance.



WEBBED
LEMMAS



SPIKELETS

POA

Purple Poa (*Poa porphyroclados*)

Porphyreos means purple or dark red, and *clados* means young shoot or branch. Perennial large clump with flowering stems to 1m high. Does not have a rhizome. Ligule is a short hairy fringe. Flowers October to November. Only grows in the South-West from near Jurien Bay to Esperance. Grows along the Darling Scarp, can be found on the edge of wetlands, and is common in the southern forests. Similar to Coastal Poa.



LEMMA



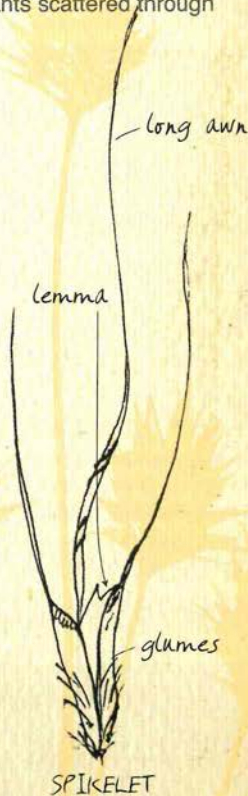
SPIKELET

POLYPOGON

Polypogon is from Greek *poly* meaning *many*, and *pogon* meaning *beard*. Several introduced and 1 native species occur in the South-West. All are annual grasses and have spikelets with 1 floret; the entire spikelet is shed when mature.

Native *Polypogon* (*Polypogon tenellus*)

Tenellus means *somewhat tender* or *dainty*. Winter-active, tufted, short-lived, annual grass with straight stems to 50cm high. Purple and green inflorescence up to 12 cm long. It is most noticeable at this stage of development as it progresses quickly through its life cycle. Lemma has a long awn. Flowers October to November. Only grows in the South-West from Kalbarri to Esperance, including off-shore islands. Grows in winter wet areas, in sandy and clayey soils. There are often hundreds of plants scattered through areas fringing wetlands.



SPARTOCHLOA

Spartochloa is from Greek *sparto* meaning rope or tough, and *chloa* meaning grass. There is only 1 species of *Spartochloa* and this only occurs in the South-West. It is a unique, ancient grass that has survived from Tertiary times.

Spartochloa (*Spartochloa scirpoidea*)

Scirpoidea means like a sedge; *Scirpus* is a genus of sedges. Winter-active perennial grass in large clumps that look like rushes. Stems to 1.5 m high are solid and do not have nodes. Has a rhizome, and a small brown grass leaf at the base of the stem. Ligule is a hairy rim. Flowers September to February. Grows on or around granite outcrops, or in granitic often shallow soils from near Geraldton to Esperance. Photograph also includes small clumps of Greybeard Grass (*Amphipogon strictus*) in front of *Spartochloa* on the edge of a granite outcrop.



SPINIFEX

Spinifex is Latin for *thorn maker*. Named from the sharp leaves of *Spinifex littoreus* which grows in South-East Asia and is found in Australia on the Ashmore Islands. *Spinifex* have male and female flowers on separate plants. More *Spinifex* species grow along the coast in the South-West than anywhere else in Australia. The native Perth hybrid (*S. x alterniflorus*) has narrow channelled leaves, hairy underneath but smooth on top. Silky Spinifex (**S. sericeus*) has been introduced from the eastern states. It is similar to Hairy Spinifex (*S. hirsutus*).

This is the Beach Spinifex, and not to be confused with the inland genus *Triodia*, which has the common name Spinifex.

Hairy Spinifex (*Spinifex hirsutus*)

Hirsutus means *having long hairs*. Perennial, spreading, summer-active grass with stems to 90 cm long. Flat, silvery grey-green leaves are hairy on both sides. Female or bisexual inflorescence is round. Male inflorescence is hemispherical. Stems are thicker and more robust than the introduced Silky Spinifex. Flowers October to January. Can be found on beaches from Perth southwards and extends along the coast into South Australia.



SPINIFEX

Long-leaved Spinifex (*Spinifex longifolius*)

Longifolius means *long leaf*. Leaves are long, narrow, deeply channelled, smooth and hairless on both sides. Perennial, summer-active large clumps to 1 m high and 2 m wide. Flowers April to January. Male inflorescence is smaller than the round female or bisexual inflorescence. Found further back in the sand dunes than Hairy Spinifex, except on sheltered shorelines such as Rottnest and Garden Islands where it grows down to the high-water mark. Grows from Augusta northwards. North of the Perth region, it is usually the only Spinifex on the beach, unless Silky Spinifex has been introduced.



SPINIFEX

Beach Spinifex has male (above) and female (below) flowers on separate plants. This is Long-leaved Spinifex.



SPOROBOLUS

Sporobolus is from Greek meaning to throw the seed like dice, as the seeds are shed rapidly after ripening, or sowing a crop into a clod of earth. *Sporobolus* has a seed-coat which is loose and not attached to the ovary wall, which is unusual for a grass. About 20 species of *Sporobolus* grow in Australia and most are native.

Marine Couch (*Sporobolus virginicus*)

Virginicus means of, or from, Virginia, USA. Perennial summer-active, spreading grass with rhizomes and above ground runners. Has a single grey or brown spike-like inflorescence on flowering stems to 50 cm high. It is a resurrection plant which will regrow after drying out, is salt-tolerant and can cope with being flooded. Flowers January to December.

Occurs almost all the way around the Australian coastline. Grows in wet or damp areas, along estuaries, coastal sand dunes, marshes, and river banks. Can be found among granite boulders along W.A.'s south coast shoreline. A population at Greenough River Mouth has small plantlets instead of a normal inflorescence. Also grows in some inland areas. Inland plants usually have thinner leaves (up to 1mm wide).



SPIKELETS

TETARRHENA

Tetra is from Greek meaning 4 and *arrhen* meaning male. It has 4 stamens which is unusual as most grasses have 3 (see Glossary). *Tetrarrhena* only occur in Australia. The single species that grows in W.A. is only found in the South-West.

Forest Ricegrass (*Tetrarrhena laevis*)

Laevis means *smooth*. Winter-active, clumped perennial with a rhizome. Flowering stems to 60 cm high. Has rice-like grains which are shed rapidly when ripe. The glumes remain on the stem after the grain has fallen. Leaves stay bright green all year and are noticeable in bushland in summer, along with the straw coloured flowering stems with the glumes still attached. Flowers September to November. Grows as forest understorey from Perth to Albany. Closely related to Weeping Grass (*Microlaena stipoides*).



INFLORESCENCE

THEMEDA

Themeda is from the Arabic *themed*, a depression which collects water after rain and then dries up, the habitat of some species. *Themeda* have leaf-like bracts called spathes as well as a complex arrangement of spikelets in the inflorescence. An earlier botanical name was *Anthistria*, derived from a Greek name for *grass*, thought to refer to the month of the year (February–March) when the Feast of Flowers was held.

Kangaroo Grass (*Themeda triandra*)

Triandra is from Greek *treis* meaning the number 3, and *andros* meaning *male*, as it has 3 stamens. Perennial summer-active clumps with flowering stems to 1 m high. Distinctive inflorescence changes from green to reddish-brown as it matures. Flowers December to February. It is probably the most widespread native grass in Australia, although there is a lot of variation in different populations. Often grows around rocky outcrops, and in red brown soils, such as along the Darling Scarp and the Avon Valley. Formerly known as *Themeda australis* (meaning *southern*).



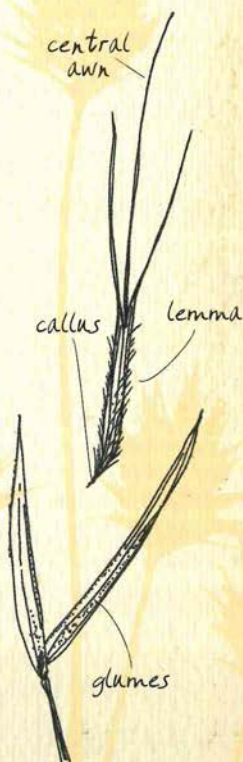
INFLORESCENCE

TRIDIA

Triodia is from Greek *treis* meaning 3 and *odous* meaning tooth, describing the lemma. *Triodia* are the inland Spinifex. Most grow further north, but there are a few, including rare species, in the South-West. *Triodia* may or may not be resinous and the lemma usually has 2 or 3 lobes. They are summer-active.

Wallaby Spinifex (*Triodia danthonioides*)

Danthonioides means like *Danthonia* or Wallaby Grass. Forms large hummocks to 2 m high, with flowering stems up to 2.5 m high. Not resinous. Lemma deeply 3-lobed and 3 awned, central awn is much longer. Pointed lower end of the lemma, known as the callus, is prominent. Glumes are often purple. Flowers July to November. Grows from near Enneaba to Shark Bay along the coast as well as inland.



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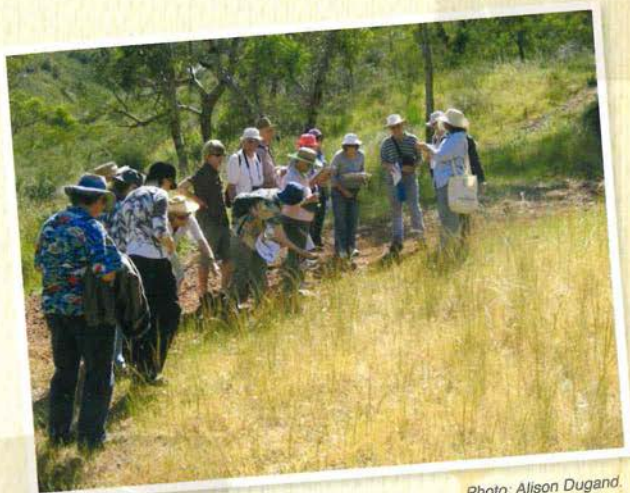


Photo: Alison Dugand.

A good way to learn more about native grasses is to go on a native grass walk. The author leads a walk at Lower Lesmurdie Falls (November 2007).

The grass in the foreground is Variable Stipa (*Austrostipa variabilis*). There are many other native grasses on site.



Photo: Renata Zelinova

At Bugle Tree Gully Park in Mundaring (November 2007), where we are looking at a Weeping Grass (*Microlaena stipoides*) lawn. Open grassy patches like this occur naturally along creeklines. Other native grasses on site include Blowngrass (*Lachnagrostis filiformis*), Clustered Lovegrass (*Eragrostis elongata*), Smallflower Wallaby Grass (*Austrodanthonia setacea*), Velvet Wallaby Grass (*Austrodanthonia pilosa*), Matgrass (*Hemarthria uncinata*) and Foxtail Mulga Grass (*Neurachne alopecuroidea*). There are also many native grasses in the adjacent bushland reserve.



Haretail Amphipogon (*Amphipogon laguroides* subsp. *laguroides*) grows near wetlands and is only found in the South-West.



not all grasses
are weeds



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