Aristida hygrometrica R. Br.

Northern Kerosene Grass; Corkscrew Grass

This species is widespread across northern Australia. A tufted annual or short-lived perennial to around 80 cm high, with narrow leaves (Fig. 1a & b). The basic flowering units or spikelets are usually arranged singly or in pairs along the flowering culm and held well above the leaves. Each spikelet contains one floret (modified grass flower) which when fertilised gives rise to one seed (Fig. 2). The florets and subsequently seeds in *Aristida hygrometrica* are characterised by the presence of a long column which separates into three long bristles or awns at the apex. These awns can lie parallel in young florets and become quite divergent in mature seed. Probably useful in dispersal.

Fig. 1a. Habit of *Aristida hygrometrica*

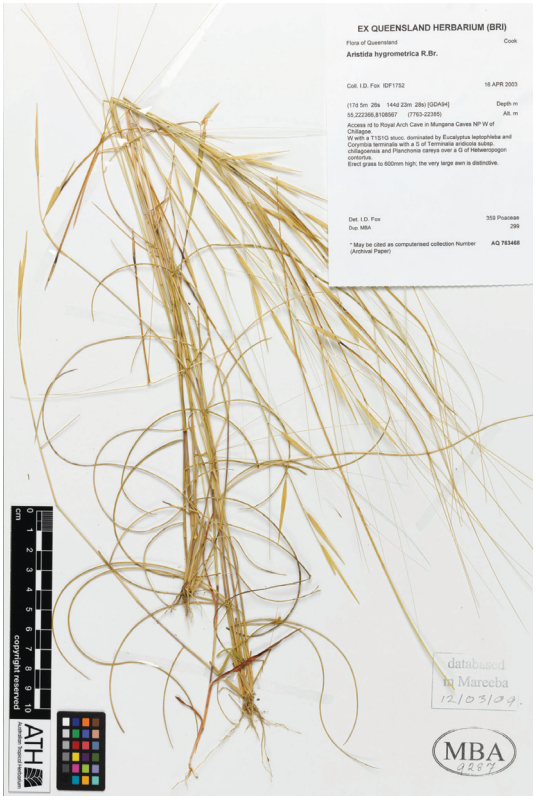

Fig. 1b. Sheet of pressed A. *hygrometrica*

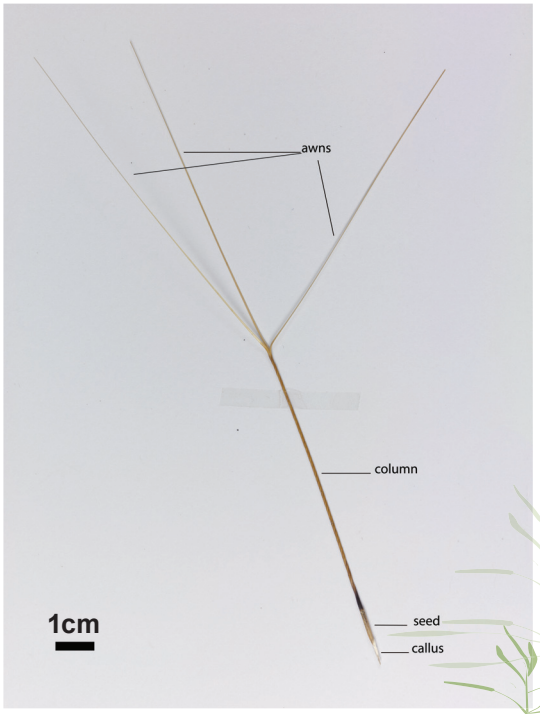

Fig. 2. Seed with column and spreading awns

> BOTANICAL DESCRIPTION

Culms terete; internodes glabrous. Leaf blade conduplicate (folded together along longitudinal axis) or involute (with leaf margins curled inwards), along longitudinal axis curled or flexuous (bent in a loose zig zag form), to 27 cm long and 1.2 mm wide, with bristly hairs. Inflorescence a panicle, more or less open, 14.4-35 cm long, 7-15 cm wide. Spikelets solitary or occasionally paired (with one short and one long stalked spikelet), 1 flowered. Glumes normal (with upper glume longer than the lower) (Fig. 3) notched, glabrous and smooth; lower glume 13.5-23.1 mm long, obtuse, 3-nerved, upper glume 25-42.6 mm long, aristulate or awned, 1-nerved. Lemma 8-16 mm long, with a distinct articulation (seen as a sharp line) with the column (Fig. 4). Column large, 53-85 mm long, 1 mm thick, rough to touch, often twisted in the seed. Awns originating from end of column more or less equal in length, 81-150 mm long, straight, often appressed when in flower and becoming divergent as mature seed. Callus (hardened base of seed or floret) 4-6 mm long, sharp and easily embedded in clothing or wool.

> DIAGNOSTIC FEATURES

Aristida hygrometrica is readily identified by the very long awns, 80 to 150 mm long, and the very long and thick column 53-85 mm long and 1 mm thick (Fig. 2). This species is quite distinct and is unlikely to be confused with other grass species. *Aristida holathera* and *Aristida contorta* are superficially similar as they also possess three large awns and a column, but *A. hygrometrica* can be readily identified from them by the much larger dimensions of the spikelet, especially the length and thickness of the column. In *A. holathera* and *A. contorta* the column is usually less than 50 mm long, occasionally longer (to 65 mm) but then thinner (to 0.3 mm thick).

> NATURAL VALUES

Considered an increaser species, encouraged by burning and overgrazing (Rolfe *et al.* 1997; Lazarides 2002; Milson 2000). The sharp callus at the end of the seed likely to be problematic to stock, especially sheep (Lazarides 2002; Milson 2000).

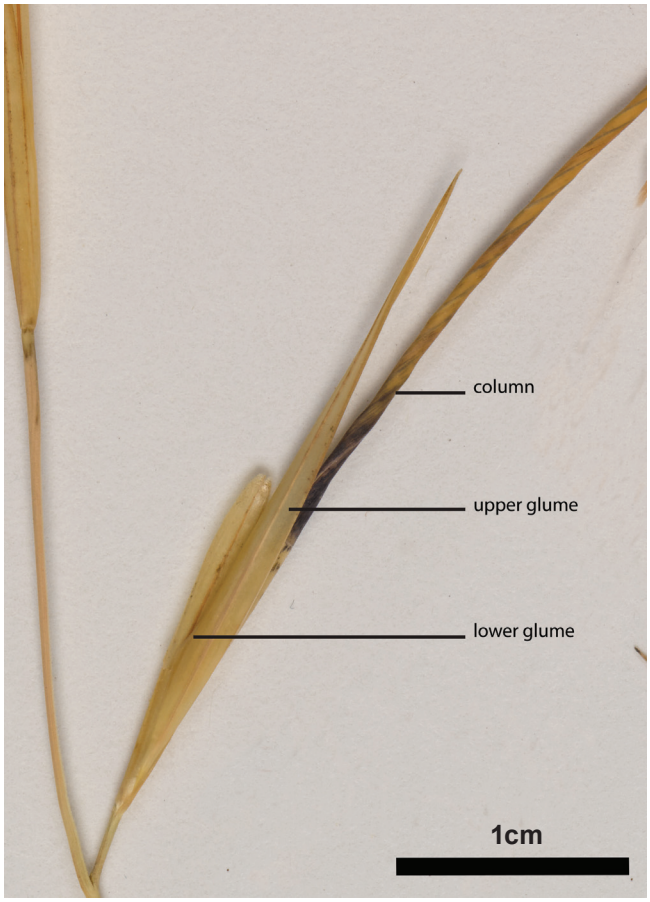

Fig. 3. Glumes of spikelet

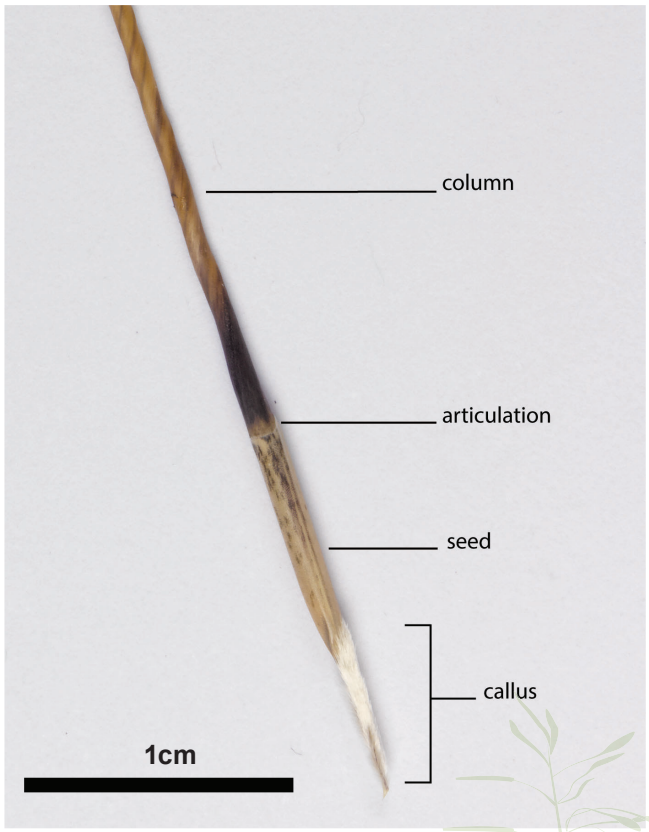

Fig. 4. Seed showing articulation and spiralling column

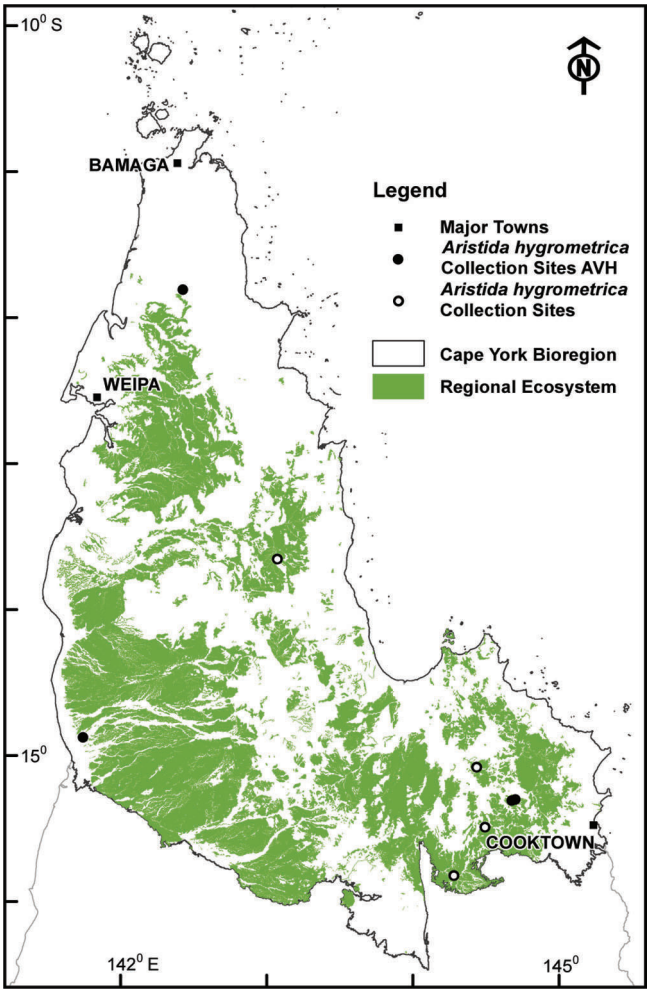

Fig 5. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Aristida hygrometrica*. The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution

> HABITAT

Usually found on sandy and alluvial soils in *Eucalyptus* and *Melaleuca* woodland and often the dominant grass on extensive river levees (Simon & Alfonso 2011).

> LAND MANAGEMENT NOTES

Considered unpalatable to stock (Milson 2000) with the sharp callus on the basal end of seeds likely to cause irritation.

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Milson, J. (2000) Pasture plants of north-west Queensland. Information Series Q100015. Queensland Department of Primary Industries.

Rolfe, J., Golding, T. and Cowan, D. (1997) Is your pasture past it? The glove box guide to native pasture identification in north Queensland. Information Series Q197083. Queensland Department of Primary Industries.

Simon, B.K. (1992) A revision of the genus *Aristida* (Poaceae) in Australia. Austral. Syst. Bot. 5:129-226.

Simon, B.K. (2005) *Aristida*. Flora of Australia 44B: 9-18.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [20 March 2017].

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Chrysopogon fallax S.T.Blake

This grass is an erect tufted deep rooted perennial, between 30-120 cm high (Fig. 1a). The narrow leaves are mostly basal with leaf sheaths tightly overlapping and forming a fibrous base (Fig. 1b). The basic flowering units or spikelets are arranged in clusters in an open inflorescence or flowering head. The branches of the flowering head are arranged in several whorls along a central stem, each whorl with branches arising from the stem like the spokes of a wheel (Fig. 2). There are usually 1 or 2 spikelet clusters along each branch of the whorl. The spikelet clusters consist of three spikelets, a sessile spikelet 9-14 mm long, which has a prominent twisted awn or bristle 20-45 mm long, and a tuft of often golden hairs on the sharp tipped base (callus), and two spikelets at the end of a stalk or pedicel which are sterile or male, 9-14 mm long (Fig. 3) and sometimes shortly awned.

> BOTANICAL DESCRIPTION

A perennial grass with culms 30-120 cm high (Fig. 1). Rhizomatous, with rhizome often shallowly constricted into short segments and usually pale yellow in colour (Fig. 4). Leaf sheaths tightly overlapping and forming a distinct white to pale yellow fibrous base (Fig.1b).Leaf blades held erect, 5-45 cm long, 2-7 mm wide, smooth or rough to the touch. The inflorescence is an open panicle, comprised of numerous raceme or spike-like branches arranged in whorls along a central stem (Fig. 2). Spikelets are arranged in clusters of three along each branch, each branch up to 6 cm long, with 2 or 3 spikelet clusters per branch. Each spikelet cluster consists of a prominent bisexual sessile spikelet and two pedicelled spikelets which are either sterile or male (Fig. 3). The sessile spikelets are 9-14 mm long and are conspicuously awned, the awn 20-45 mm long with a twisted column, the pedicelled spikelets are usually 9-14 mm long and sometimes shortly awned, 2-15 mm long.

Fig. 1a. Habit of *Chrysopogon fallax*

Fig. 1b. Leaf bases of *Chrysopogon fallax*

> DIAGNOSTIC FEATURES

Species of this genus that occur in Cape York Peninsula can be identified when flowering by the whorled branches of the open panicle (Fig. 2), the awned sessile spikelet and the spikelet clusters occurring with one sessile spikelet and one or two stalked or pedicelled spikelets (Fig. 3). This species can be difficult to separate from other species within the genus but with careful examination of the inflorescence it is distinguished by the combination of the following characters: the deep rooted habit and fibrous leaf base, the number of spikelet clusters per branch of inflorescence i.e. 2 or 3, the two companion spikelets and the narrow leaf blades < 1 cm wide. It is most likely to be confused with *Chrysopogon pallidus* but can be distinguished from that species by the smaller callus or tip at the base of the sessile spikelet or seed, 1.5-3.5 mm long in C. *fallax*, compared with 4-6 mm long in C. *pallidus* (Fig. 5). Take care with this character as sometimes it can be difficult to delineate where the callus stops especially when obscured by long hairs. Spear grass species from the genus *Sorghum/Sarga* although usually easily recognisable may cause confusion as they have a similar inflorescence structure to *Chrysopogon*, with branches of the inflorescence often in whorls and spikelets in clusters or pairs of awned sessile spikelets and stalked spikelets. The common spear grass species in the region generally have more robust spikelets, longer awns and quite pungent tips on the end of the sessile spikelet which spear into clothing (see figures under C. *filipes*).

Fig. 2. Inflorescence of *Chrysopogon fallax*

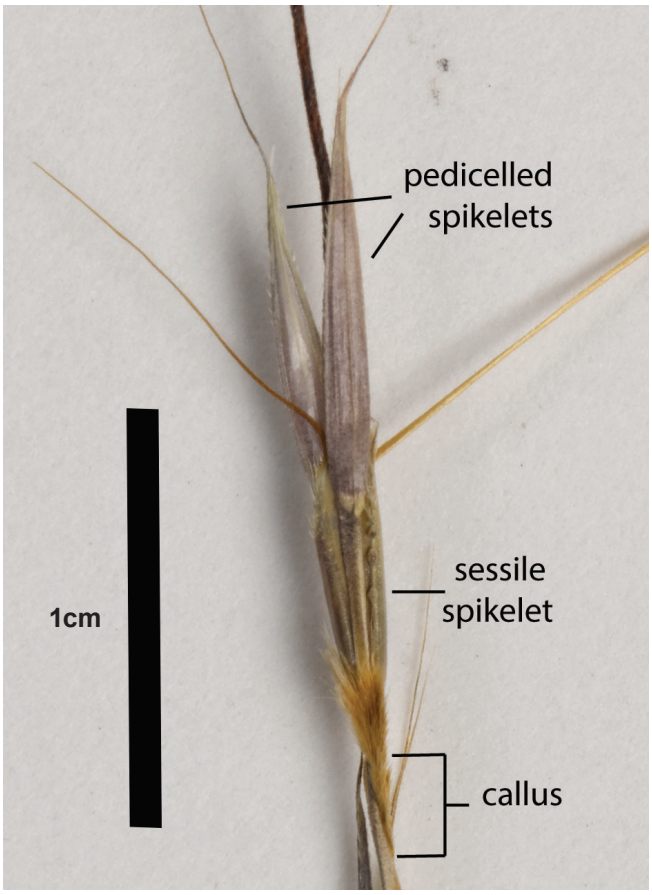

Fig. 3. Spikelet cluster of *Chrysopogon fallax*

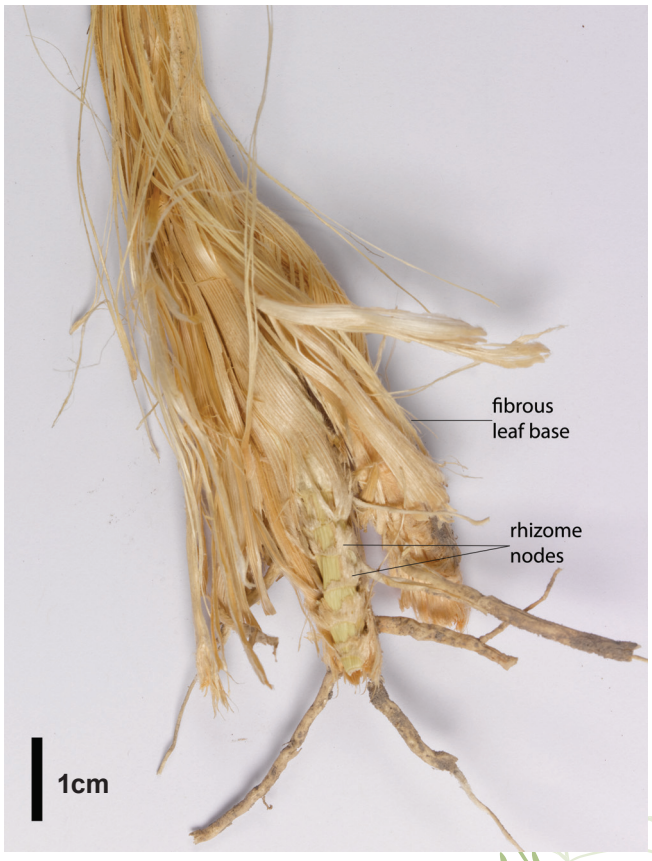

Fig. 4. Rhizome nodes of *Chrysopogon fallax*

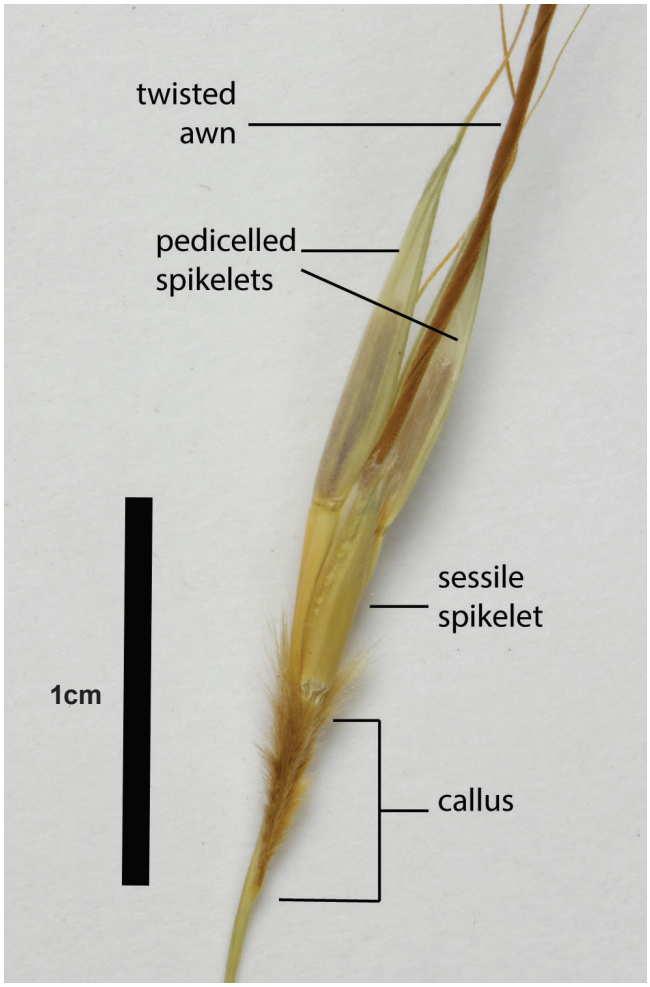

Fig. 5. Callus of *Chrysopogon pallidus*

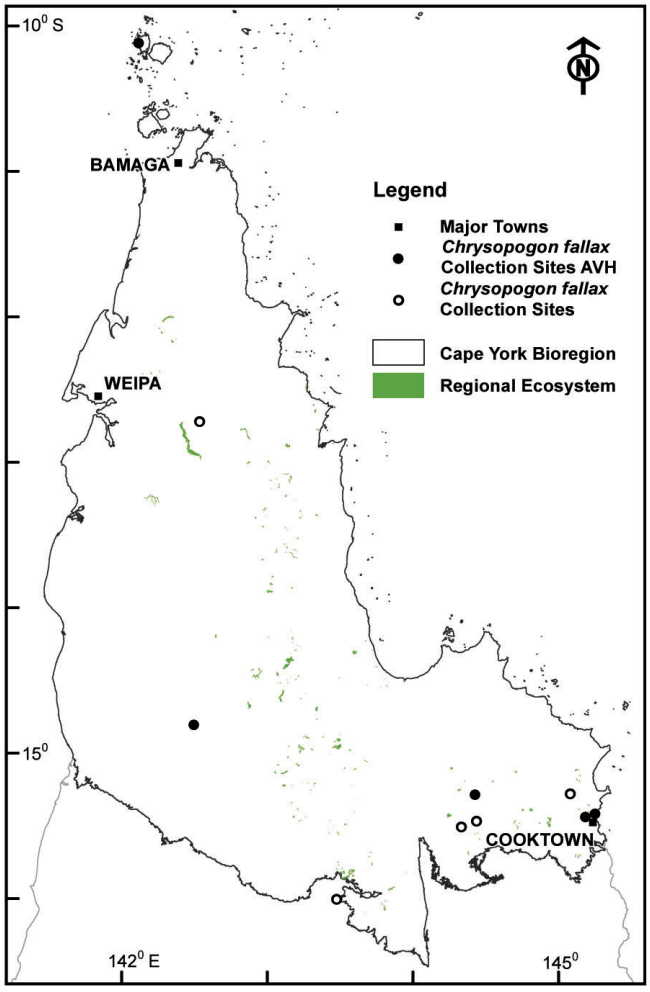

Fig. 6. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Chrysopogon fallax*. The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

> NATURAL VALUES

A rhizomatous deep rooted perennial probably useful in stabilising soils, providing habitat for fauna, and seed for granivorous species.

> HABITAT

Widespread throughout subtropical and tropical areas of Australia, including the arid zones of most mainland states; mainly recorded in open forests.

> LAND MANAGEMENT NOTES

This species is considered to have some forage value especially when shoots are young and green but not considered especially productive regarding amount of fodder produced or nutritive value. The deep roots are considered to make it resistant to drought and heavy grazing. (Anderson 2003, Lazarides 2002, Milson 2000, Rolfe *et al*. 1997, Simon & Alfonso 2011).

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Anderson, E.R. (2003) Plants of Central Queensland their identification and uses. Information Series Q103069, Queensland Department of Primary Industries.

Lazarides, M. (2002) Economic attributes of Australian grasses. Flora of Australia 43: 213-245.

Milson, J. (2000) Pasture plants of north-west Queensland. Information Series Q100015. Queensland Department of Primary Industries.

Rolfe, J., Golding, T. and Cowan, D. (1997) Is your pasture past it? The glove box guide to native pasture identification in north Queensland. Information Series Q197083. Queensland Department of Primary Industries.

Sharp, D. & Simon, B.K. (2002) Ausgrass: Grasses of Australia. CD-Rom. Version 1.0 (Australian Biological Resources Study, Canberra, and Environmental Protection Authority, Queensland).

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [date 29 March 2017].

Simon, B.K. (1992) Chrysopogon. In J.R. Wheeler (ed.), B.L. Rye, B.L. Koch & A.J.G. Wilson. Flora of the Kimberley Region. (Western Australian Herbarium, Dept. of Conservation and Land Management Como, W.A.), pp. 1141-1142.

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Chrysopogon filipes (Benth.) Reeder

This grass is an erect tufted perennial between 70-100 cm tall, usually found forming large clumps along stream banks and flood plains (Fig. 1a). The leaves are mostly basal with leaf sheaths tightly overlapping at the base (Fig. 1b). The basic flowering units or spikelets are arranged in pairs in a slender open inflorescence or flowering head. The branches of the flowering head are arranged in several whorls along a central stem, each whorl with branches arising from the stem like the spokes of a wheel, branches spreading becoming almost perpendicular to the central stem (Fig. 2). There are usually several spikelet pairs along each branch of the whorl. The spikelet pairs consist of a sessile spikelet which has a prominent awn, 13-26 mm long, and a tuft of often brown hairs at the base, and a much smaller reduced awnless spikelet at the end of a slender stalk (Fig. 3).

> BOTANICAL DESCRIPTION

A perennial grass with culms 70-100 cm high (Fig. 1a). Rhizomatous and forming large clumps. Leaf sheaths tightly overlapping at base, leaf blades held erect (Fig. 1b), 15-45 cm long, 3-6 mm wide, and a leaf surface more or less rough to the touch. The inflorescence is an open panicle, comprised of numerous raceme or spike-like branches arranged in whorls along a central stem (Fig. 2). Spikelets are arranged in pairs along each branch, each branch 3.5-9 cm long, with 3-many pairs per branch. Each spikelet pairs consists of a prominent sessile spikelet and a much smaller sterile pedicelled spikelet (Fig. 3). The sessile spikelets are 8-10 mm long and are conspicuously awned, the awn 13-26 mm long, the pedicelled spikelets are usually 3-8.3 mm long and awnless.

Fig. 1a. Habit of *Chrysopogon filipes*

Fig. 1b. Overlapping leaf sheaths of *Chrysopogon filipes*

> DIAGNOSTIC FEATURES

Species of this genus that occur in Cape York Peninsula can be identified when flowering by the whorled branches of the open panicle (Fig. 2), the awned sessile spikelet and the spikelet clusters occurring with one sessile spikelet and one or two stalked or pedicelled spikelets (Fig. 3). This species can be difficult to separate from other species within the genus but with careful examination of the inflorescence it can be identified by the combination of the following characters: the number of spikelet clusters per branch of inflorescence (3-many), the sessile spikelet more than 8 mm long, the companion spikelet present but sterile and the inflorescence branches weak and thin, 3.5-9 cm long. It is most likely to be confused with *Chrysopogon rigidus* a more robust species found in only a few localities on Cape York Peninsula (Fig. 4 & 5). The branches of the inflorescence in *Chyrsopogon rigidus* are shorter and more rigid, 1.5-4 cm long. It occurs in similar habitats to *Chrysopogon filipes* but is only known from a few localities on the northern tip of Cape York Peninsula. Spear grass species from the genus *Sorghum/Sarga* although usually easily recognisable may also cause confusion as they have a similar inflorescence structure to *Chrysopogon*, with branches of the inflorescence often in whorls and spikelets in clusters or pairs of awned sessile spikelets and stalked spikelets. The common spear grass species in the region have generally much more robust spikelet clusters, longer awns and quite pungent tips on the end of the sessile spikelet which spear into clothing (Fig. 6).

Fig. 2. Inflorescence of *Chrysopogon filipes*

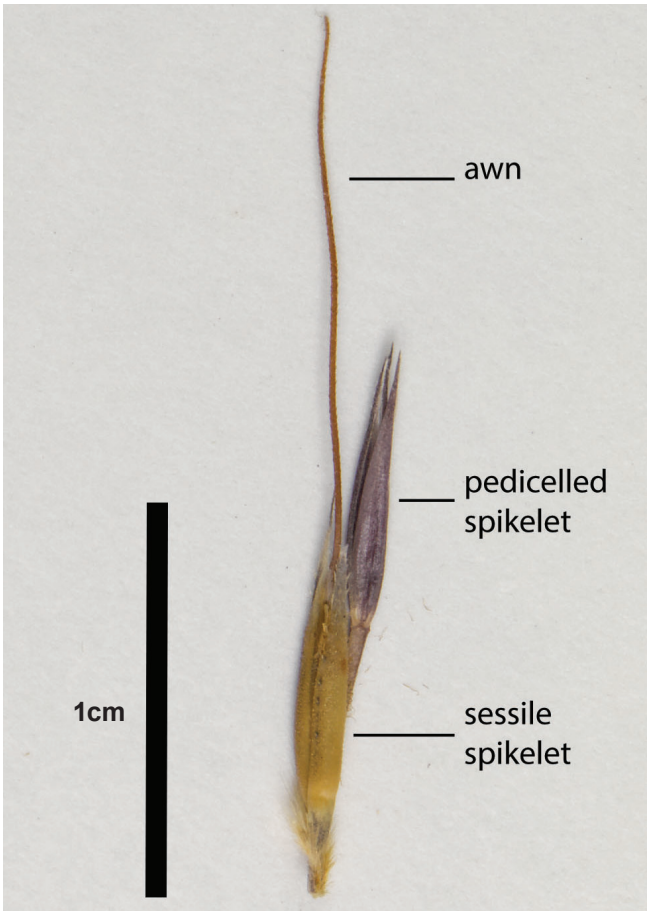

Fig. 3. Spikelet cluster of *Chrysopogon filipes*

Fig. 4. Herbarium sheet of *Chrysopogon rigidus*

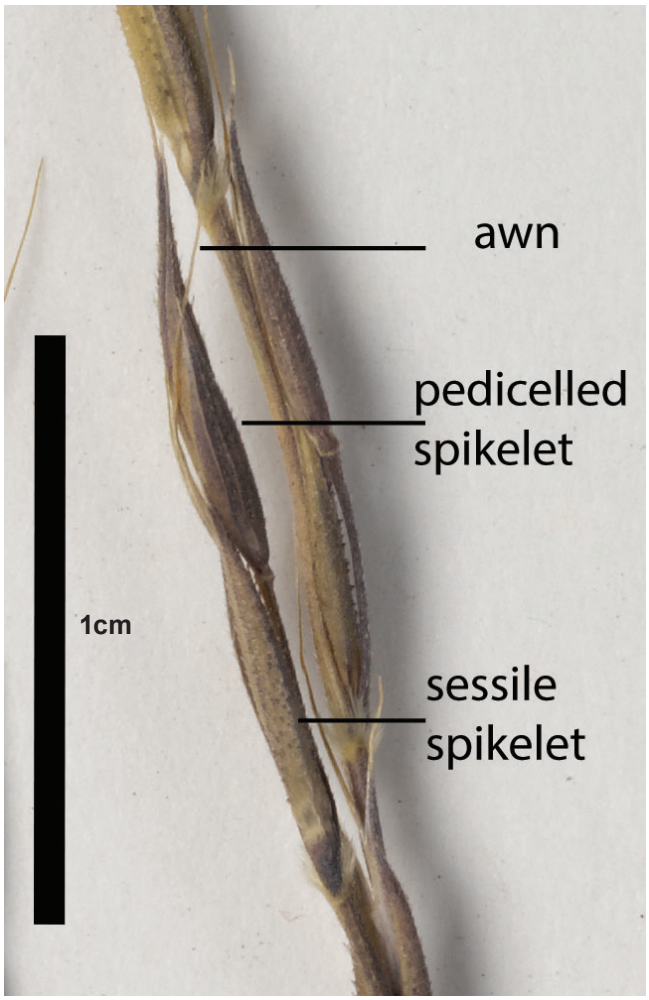

Fig. 5. *Chrysopogon rigidus* spikelet cluster

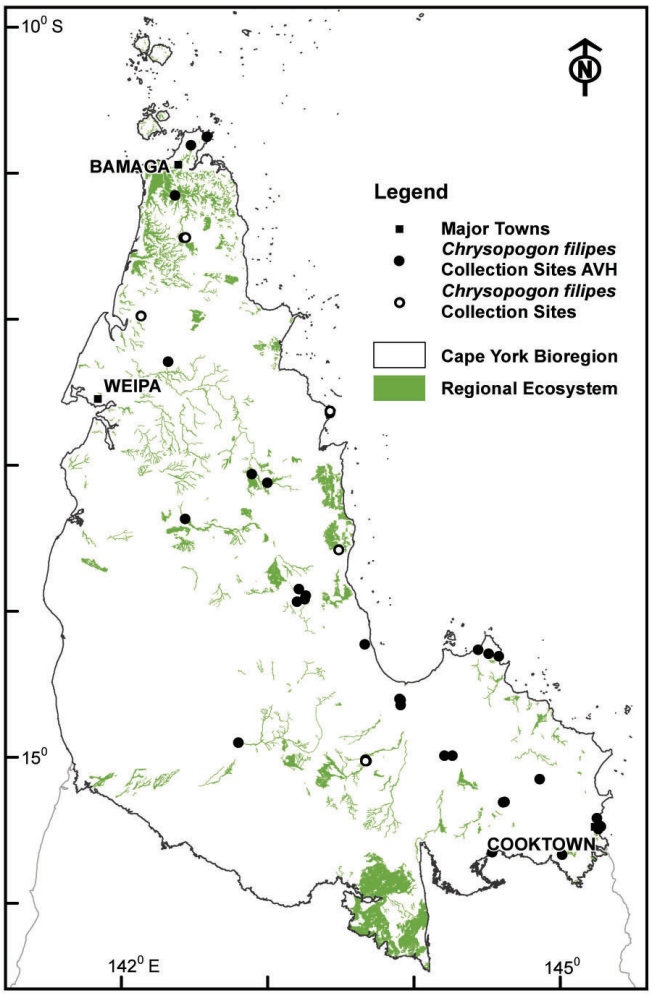

Fig. 7. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Chrysopogon filipes*. The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

> NATURAL VALUES

A rhizomatous perennial probably useful in stabilising soils along seasonal streambanks and floodplains.

> HABITAT

In Australia this species is found from northern New South Wales through to the tip of Cape York Peninsula extending as far inland as Winton and Longreach, and in the Top End of the Northern Territory. Usually grows along stream banks and floodplains.

> LAND MANAGEMENT NOTES

Apparently readily grazed (Lazarides 2002, Simon & Alfonso 2011).

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Lazarides, M. (2002) Economic attributes of Australian grasses. Flora of Australia 43: 213-245.

Sharp, D. & Simon, B.K. (2002) Ausgrass: Grasses of Australia. CD-Rom. Version 1.0 (Australian Biological Resources Study, Canberra, and Environmental Protection Authority, Queensland).

Simon, B.K. (1989) Studies in Australian Grasses 4. Taxonomic and nomenclatural studies in Australian Andropogoneae. Austrobaileya 3(1): 95.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [date 29 March 2017].

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Chrysopogon pallidus (Benth.) Reeder

This grass is an erect tufted deep rooted perennial, between 100-150 cm high (Fig. 1a). The narrow leaves are mostly basal with leaf sheaths tightly overlapping and forming a fibrous base (Fig. 1b). The basic flowering units or spikelets are arranged in clusters in an open inflorescence or flowering head. The branches of the flowering head are arranged in several whorls along a central stem, each whorl with branches arising from the stem like the spokes of a wheel (Fig. 2). There is usually 1 spikelet cluster on each branch of the whorl. The spikelet clusters consist of a sessile spikelet which has a prominent twisted awn or bristle, 42-70 mm long, and a tuft of often golden hairs on the sharp tipped base (callus), and two spikelets on short stalks or pedicels, male, with a short awn (Fig. 3).

Fig. 1a. Herbarium sheet of *Chrysopogon pallidus*

> BOTANICAL DESCRIPTION

A perennial grass with culms 100-150 cm high (Fig. 1a). Rhizomatous, with the rhizome often shallowly constricted into short segments and usually pale yellow in colour (Fig. 4). Leaf sheaths tightly overlapping and forming a distinct white to pale yellow fibrous base (Fig. 1b). Leaf blades held erect, conduplicate or convolute, 20-40 cm long, 3-6 mm wide, papillose, glabrous or indumented. The inflorescence is an open panicle, comprised of numerous racemes or spike-like branches arranged in whorls along a central stem (Fig. 2). Spikelets are arranged in clusters of three along each branch, each branch up to 6 cm long, with usually 1 spikelet cluster per branch. Each spikelet cluster consists of a prominent sessile spikelet and two pedicelled spikelets, male (Fig. 3). The sessile spikelets are 10-13 mm long and are conspicuously awned, the awn 42-70 mm long with a twisted column, the pedicelled spikelets are usually 11-14 mm long and shortly awned.

Fig. 1b. Fibrous leaf bases *Chrysopogon pallidus*

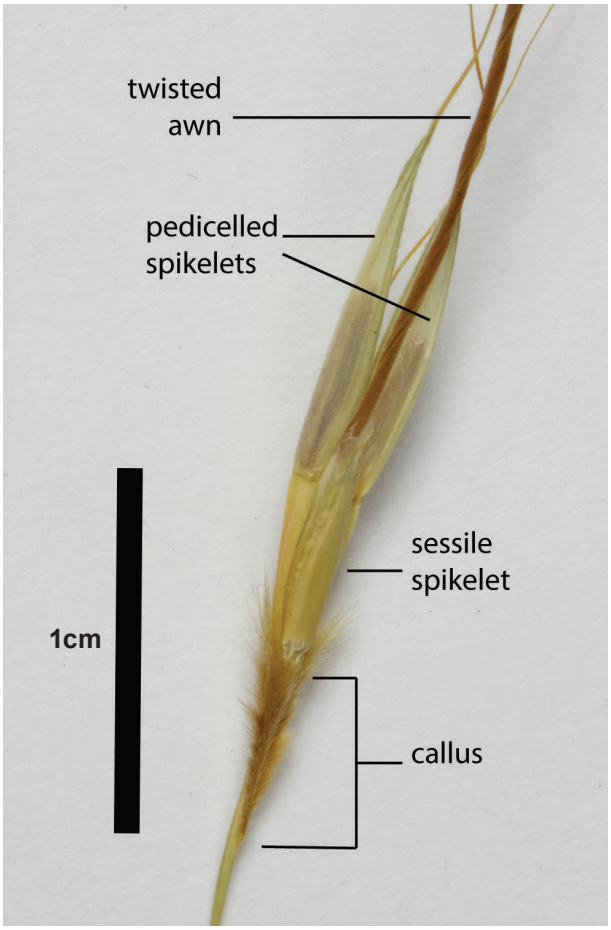

Fig. 3. Spikelet cluster of *Chrysopogon pallidus*

Fig. 2. Inflorescence of *Chrysopogon pallidus*

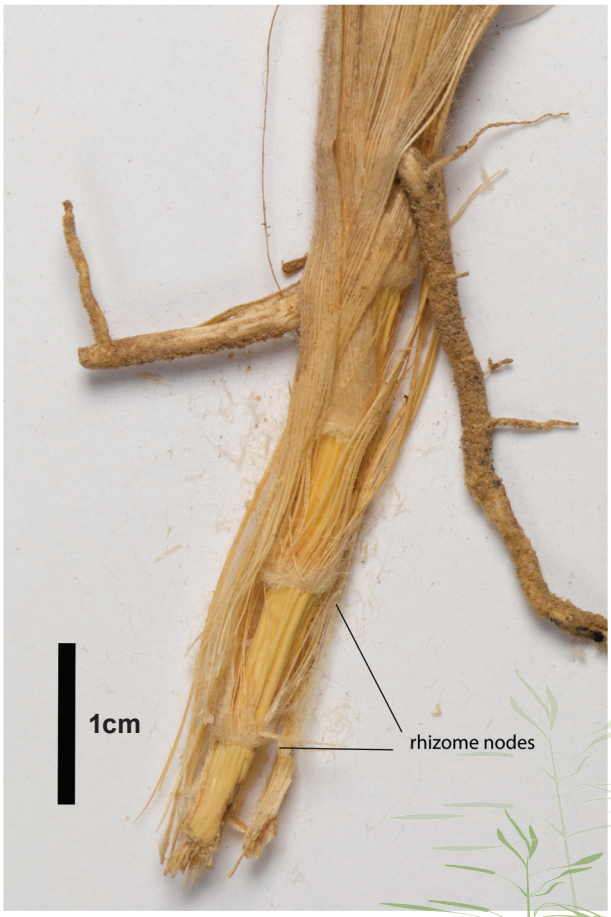

Fig. 4. Rhizome nodes of *Chrysopogon pallidus*

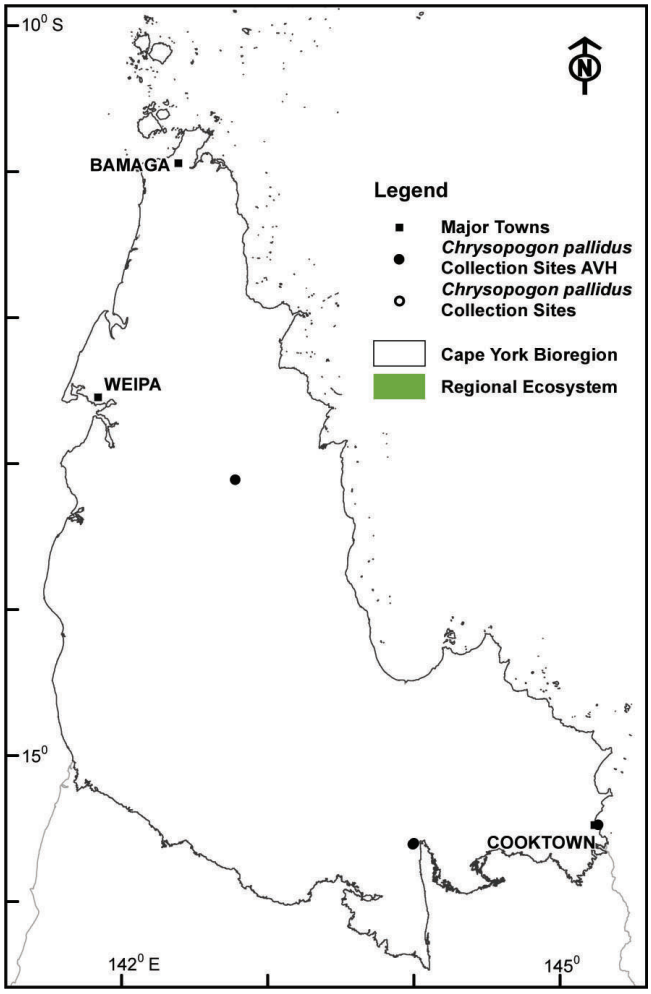

Fig. 5. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Chrysopogon pallidus*. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

> DIAGNOSTIC FEATURES

Species of this genus that occur in Cape York Peninsula can be identified when flowering by the whorled branches of the open panicle (Fig. 2), the awned sessile spikelet and the spikelet clusters occurring with one sessile spikelet and one or two stalked or pedicelled spikelets (Fig. 3). This species can be difficult to separate from other species within the genus but with careful examination of the inflorescence it is distinguished by the combination of the following characters, the deep rooted habit and fibrous leaf base, the number of spikelet clusters per branch of inflorescence usually 2 or 3, the two companion spikelets and the narrow leaf blades < 1 cm wide. It is most likely to be confused with *Chrysopogon fallax* but can be distinguished from that species by the larger callus or tip at the base of the sessile spikelet or seed and the longer awn on the sessile spikelet, see notes under *C. fallax* for comparison. Spear grass species from the genus *Sorghum/Sarga* although usually easily recognisable may cause confusion as they have a similar inflorescence structure to *Chrysopogon*, with branches of the inflorescence often in whorls and spikelets in clusters or pairs of awned sessile spikelets and stalked spikelets. The common spear grass species in the region have generally more robust spikelets, longer awns and quite pungent tips on the end of the sessile spikelet which spear into clothing (see figures under *C. filipes*).

> NATURAL VALUES

A rhizomatous deep rooted perennial probably useful in stabilising soils, providing habitat for fauna, and seed for granivorous species.

> HABITAT

Widespread throughout tropical areas of Australia, although a few collections extend into the arid zones of northern Australia; often found in sandy soils.

> LAND MANAGEMENT NOTES

This species is likely to have similar pasture value to *C. fallax* with some forage value when shoots are young and green, considered resistant to drought and heavy grazing. (Simon 1992, Simon & Alfonso 2011).

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Lazarides, M. (2002) Economic attributes of Australian grasses. Flora of Australia 43: 213-245.

Sharp, D. & Simon, B.K. (2002) Ausgrass: Grasses of Australia. CD-Rom. Version 1.0 (Australian Biological Resources Study, Canberra, and Environmental Protection Authority, Queensland).

Simon, B.K. (1992) Chrysopogon. In J.R. Wheeler (ed), B.L. Rye, B.L. Koch & A.J.G. Wilson. Flora of the Kimberley Region. (Western Australian Herbarium, Dept. of Conservation and Land Management Como, W.A.), pp. 1141-1142.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [date 29 March 2017].

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Chrysopogon rigidus (B.K.Simon) Veldkamp

This grass is an erect tufted perennial between 130-150 cm, usually found forming large clumps along stream banks and flood plains (Fig. 1a). The leaves are mostly basal with leaf sheaths tightly overlapping at the base (Fig. 1b). The basic flowering units or spikelets are arranged in pairs in an open rather rigid inflorescence or flowering head. The branches of the flowering head are arranged in several whorls along a central stem, each whorl with branches arising from the stem like the spokes of a wheel (Fig. 2). There are usually several spikelet pairs along each branch of the whorl. The spikelet pairs consist of a sessile spikelet which has a prominent awn, 8-10 mm long, and a tuft of often brown hairs at the base, and a much smaller reduced awnless spikelet at the end of a short stalk (Fig. 3).

> BOTANICAL DESCRIPTION

A perennial grass with culms 130-150 cm high (Fig. 1). Rhizomatous and forming large clumps. Leaf sheaths tightly overlapping at base, leaf blades held erect, 30-50 cm long, 3-5 mm wide, and a leaf surface more or less rough to the touch. The inflorescence is an open panicle, comprised of numerous raceme or spike-like branches arranged in whorls along a central stem (Fig. 2). Spikelets are arranged in pairs along each branch, each branch 3.5-9 cm long, with 3-4 per branch. Each spikelet pairs consists of a prominent sessile spikelet and a much smaller sterile pedicelled spikelet (Fig. 3). The sessile spikelets are 6-9 mm long and are conspicuously awned, the awn 8-10 mm long, the pedicelled spikelets are usually 4-5 mm long and awnless.

Fig. 1a. Herbarium sheet of *Chrysopogon rigidus*

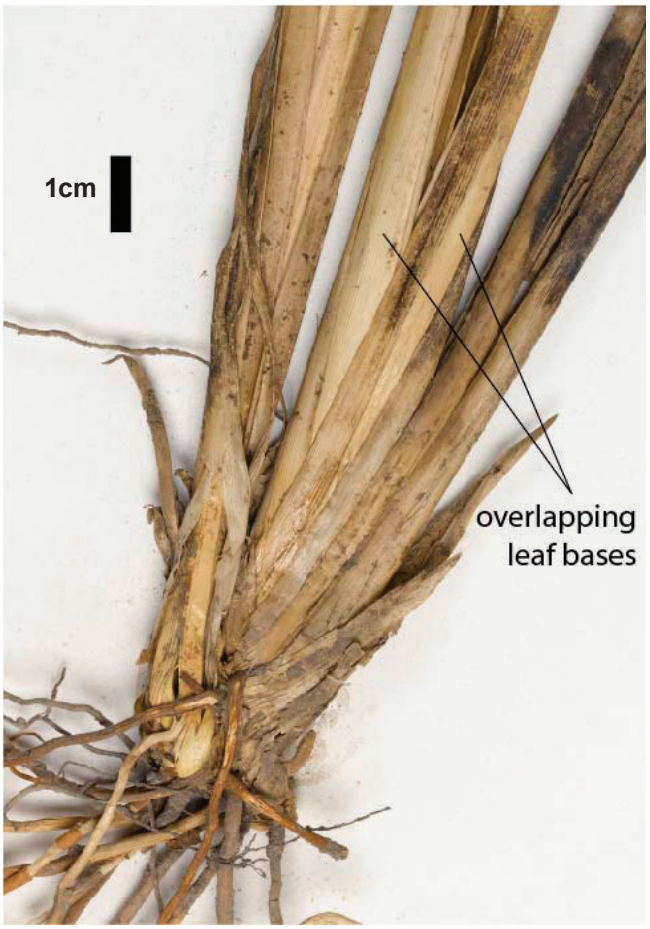

Fig. 1b. Overlapping leaf sheaths of *Chrysopogon rigidus*

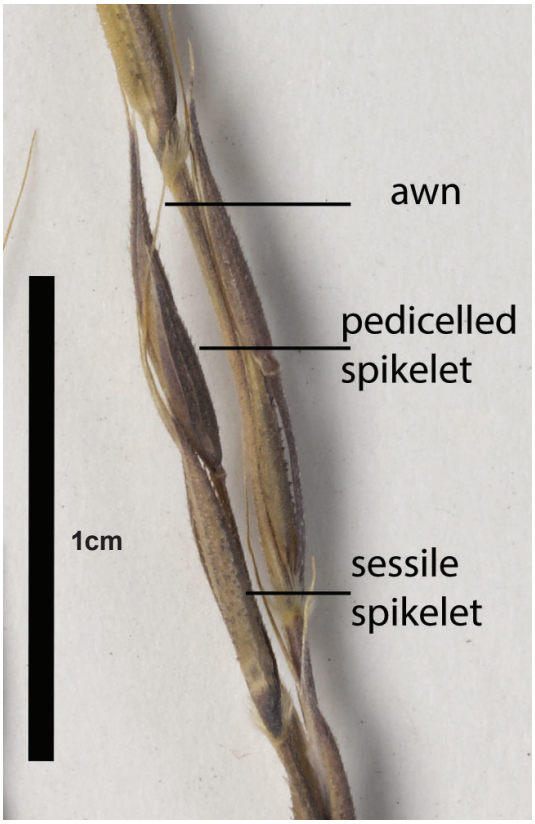

Fig. 3. Spikelet cluster of *Chrysopogon rigidus*

Fig. 2. Inflorescence of *Chrysopogon rigidus*

Fig. 4. Spikelet cluster of *Sarga plumosum*

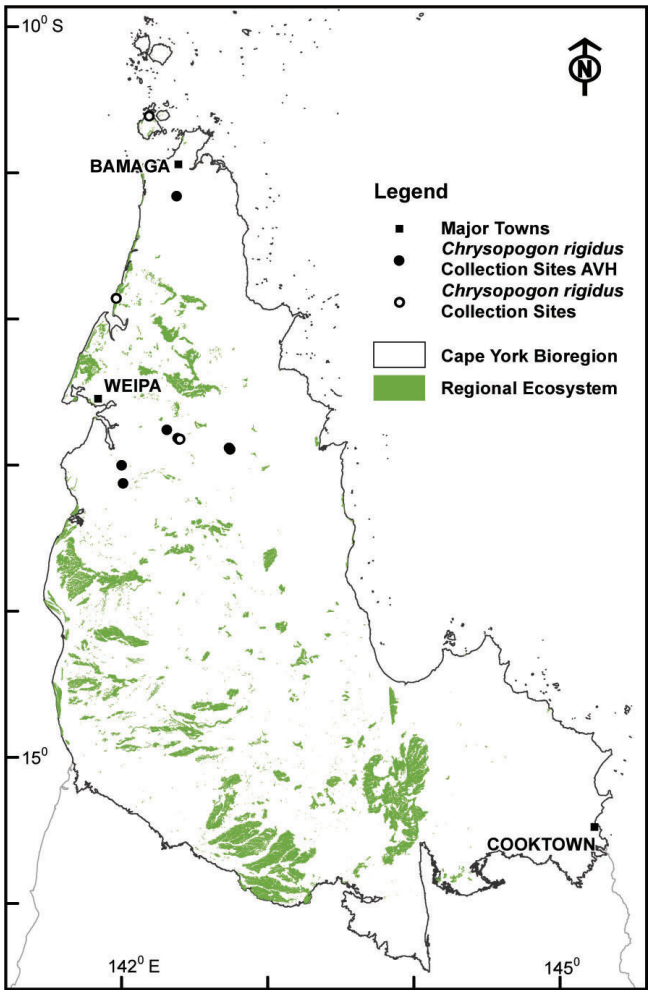

Fig. 5. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Chrysopogon rigidus*. The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

> DIAGNOSTIC FEATURES

Species of this genus that occur in Cape York Peninsula can be identified when flowering by the whorled branches of the open panicle (Fig. 2), the awned sessile spikelet and the spikelet clusters occurring with one sessile spikelet and one or two stalked or pedicelled spikelets (Fig. 3). This species can be difficult to distinguish from other species within the genus but with careful examination of the inflorescence it can be identified by the combination of the following characters, the number of spikelet clusters per branch of inflorescence (3-4), the companion spikelet present but sterile and the inflorescence branches rigid, 1.5-4 cm long. It is most likely to be confused with *Chrysopogon filipes*, see notes under that species. Spear grass species from the genus *Sorghum/Sarga*, although usually easily recognisable, may cause confusion as they have a similar inflorescence structure to *Chrysopogon*, with branches of the inflorescence often in whorls and spikelets in clusters or pairs of awned sessile spikelets and stalked spikelets. The common spear grass species in the region, however, generally have more robust spikelets, longer awns and quite pungent tips on the end of the sessile spikelet which spear into clothing (Fig. 4).

> NATURAL VALUES

A rhizomatous perennial probably useful in stabilising soils along seasonal streambanks and floodplains.

> HABITAT

In Australia this species is only known from a few localities on the northern half of Cape York Peninsula around Weipa and the Jardine River crossing. Usually grows along stream banks, *Melaleuca* swamps and floodplains.

> LAND MANAGEMENT NOTES

Apparently readily grazed (Lazarides 2002, Simon & Alfonso 2011).

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Lazarides, M. (2002) Economic attributes of Australian grasses. Flora of Australia 43: 213-245.

Simon, B.K. (1989) Studies in Australian Grasses 4. Taxonomic and nomenclatural studies in Australian Andropogoneae. Austrobaileya 3(1): 95.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [date 29 March 2017].

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Dimeria acinaciformis R.Br.

A short annual grass, between 10-40 cm tall, erect or sprawling from the centre before becoming erect. The leaves arise along the stem (cauline) with leaf blades 1-4 cm long and 1-2 mm wide and hairy (Fig. 1). The basic flowering units or spikelets are arranged along spike-like branches the flowering head consisting usually of two branches arranged opposite each other (Fig. 2). The flowering heads either exserted some distance from the leaves or sometimes partially enclosed by the leaf sheath (that part of the leaf which clasps the stem). The spikelets (the basic flowering unit) are shortly stalked and arranged as solitary units along the stem, alternating from one side of the branch to the other, the stem of the branch is bent in a zig zag pattern, which is especially obvious when spikelets have fallen or from the 'back' of the branch which is naked of spikelets (Fig. 3). The spikelets are laterally compressed or flattened from one side to the other, so that they appear broadest from the sides. The spikelets are prominently awned, the awn twisted and bent and arising from the lemma which is 10-12 mm long.

Fig. 1. Herbarium sheet of *Dimeria acinaciformis*

> BOTANICAL DESCRIPTION

An annual grass erect or with decumbent culms between 10-40 cm high (Fig. 1). The leaves are basal and cauline, with leaf blades lanceolate, 1-4 cm long, 1-2 mm wide; usually hairy. The leaf sheath is glabrous. The inflorescence is comprised of a pair of spike like branches or racemes held directly opposite each other, 2.5-5 cm long, wings along the branch stem give it a flattened appearance (Fig. 2). The spikelets are solitary and arranged on the 'front' of the flowering branches but alternate from side to side with the stem bent to form a zig-zagged outline, the 'back' of the stem is naked of spikelets. Spikelets are readily deciduous, 4.5-5.5 mm long and laterally compressed (Fig. 3). A prominent awn is present, 10-12 mm long emerging from the bisexual lemma within the spikelet.

Fig. 2. Inflorescence of *Dimeria acinaciformis*

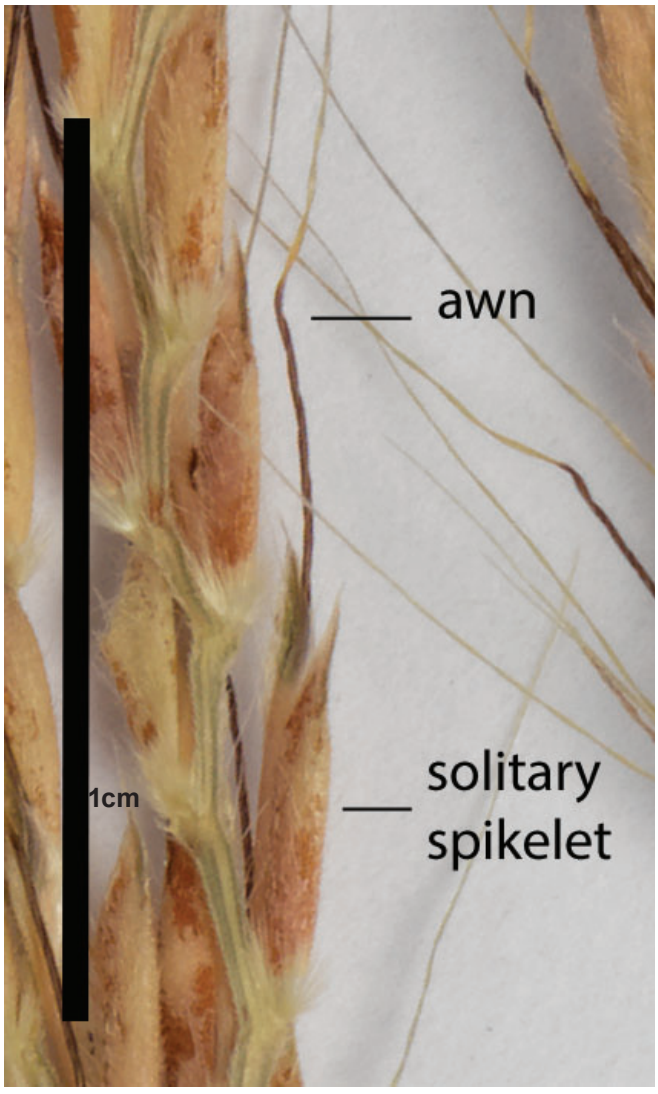

Fig. 3. Spikelets of *Dimeria acinaciformis* back view

Fig. 4. Inflorescence of *Dimeria chlordiformis*

> DIAGNOSTIC FEATURES

Dimeria acinaciformis is distinguished by the combination of the following characters, an annual habit, the flowering head consisting of two opposing branches, and awned spikelets arranged as solitary units along the branches of the flowering head, the branch stem shallowly zig-zagged. From other species of *Dimeria* it is identified by either the size of the spikelets or the annual habit. *Dimeria chloridiformis* (Fig. 4) is a tall perennial species with usually three branches in the flowering head. *Dimeria ornithipoda* is very similar but has spikelets usually ≤ 3 mm long. This species may also be confused with *Ischaemum decumbens* and differences are discussed under that species.

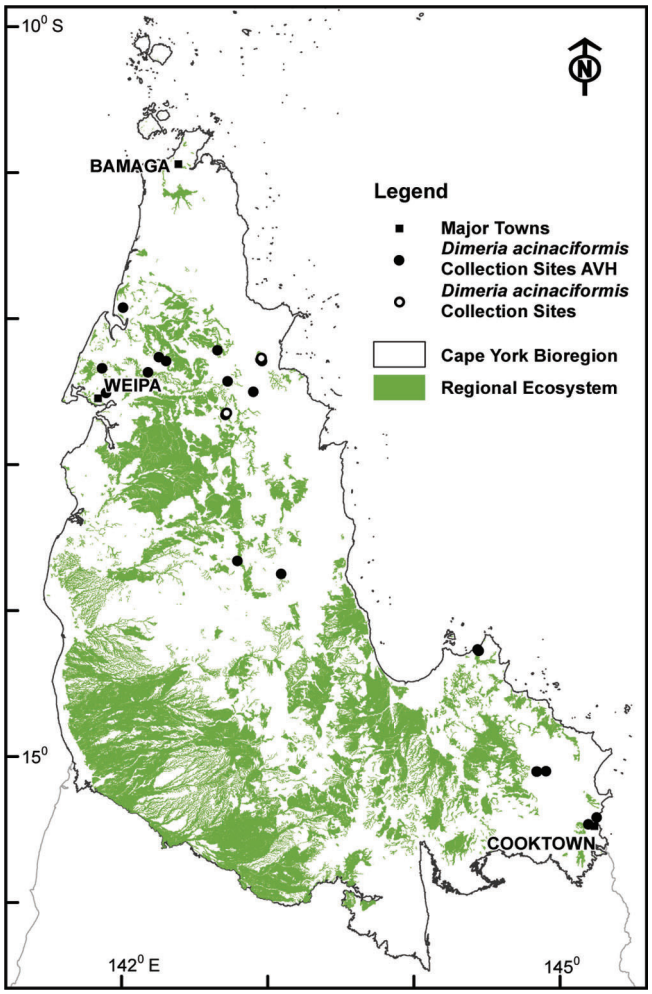

Fig. 5. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Dimeria acinaciformis*. The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

> HABITAT

In Australia this species is recorded from Cape York Peninsula and across the Top End of the Northern Territory. Often collected from wet situations either in *Melaleuca* woodland or seepage areas in open woodland, usually on sandy soils.

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [date 29 March 2017].

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Dimeria ornithopoda Trin.

An erect annual grass, between 5-50 cm tall. The leaves arise along the stem (cauline) with leaf blades 0.5-7 cm long and 0.5-3 mm wide and hairy (Fig. 1). The basic flowering units or spikelets are arranged along spike-like branches, the flowering head consisting usually of two branches arranged opposite each other (Fig. 2). The flowering heads are either exserted some distance from the leaves or sometimes partially enclosed by the leaf sheath (that part of the leaf which clasps the main stem). The spikelets are shortly stalked and arranged as solitary units along the stem, alternating from one side of the branch to the other, the stem of the branch bent in a zig zag pattern, especially obvious when spikelets have fallen or from the 'back' of the branch which is naked of spikelets (Fig. 3a & b). The spikelets are laterally compressed (flattened from one side to the other) so that they appear broadest from the sides. The spikelets are prominently awned, the awn twisted and bent and arising from the lemma is 4-9 mm long.

> BOTANICAL DESCRIPTION

A tufted erect annual grass. The leaf sheath is usually hairy The inflorescence is comprised of a pair of spike like branches or racemes held directly opposite each other, or rarely with 3 branches present and sub-digitate, 1.5-6 cm long (Fig. 2); wings along the stem of the branch give it a flattened appearance (Fig. 3b). The spikelets are solitary and arranged on the 'front' of the flowering branches but alternate from side to side, with the flowering stem bent to form a zig-zag pattern, the 'back' of the stem is naked of spikelets. Spikelets are readily deciduous, (1-)2-3(-4.5) mm long and laterally compressed. A prominent awn is present, 4-9 mm long emerging from the bisexual lemma within the spikelet.

Fig. 1. Herbarium sheet of *Dimeria ornithopoda*

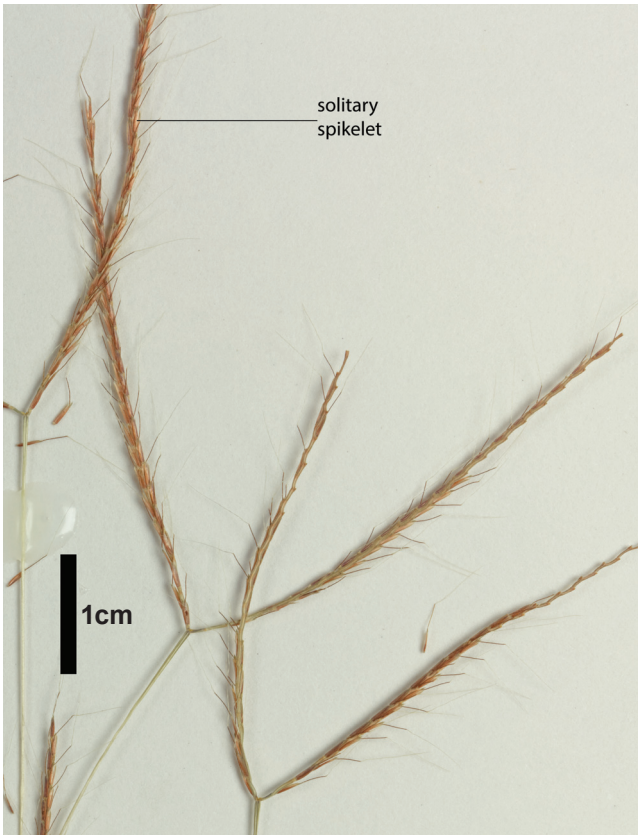

Fig. 2. Inflorescence of *Dimeria ornithopoda*

Fig. 4. Inflorescence of *Dimeria chlordiformis*

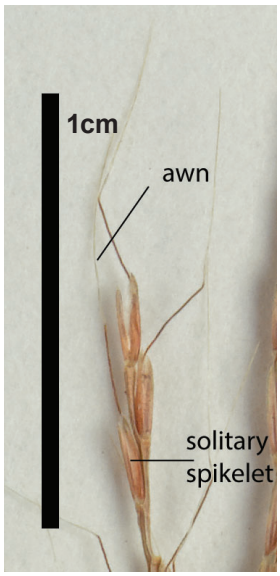

Fig. 3a. Spikelets of *Dimeria ornithopoda* front view

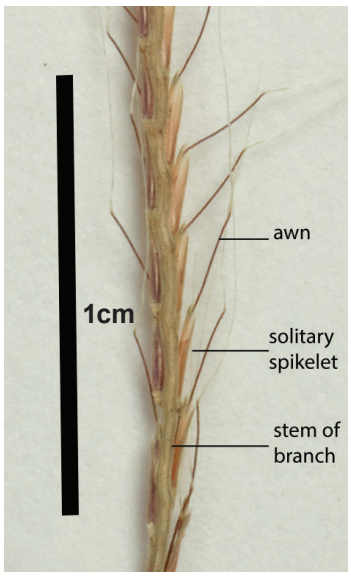

Fig. 3b. Spikelets of *Dimeria ornithopoda* back view

> DIAGNOSTIC FEATURES

Dimeria ornithipoda is distinguished by the combination of the following characters, an annual habit, the flowering head usually consisting of two opposing branches, and awned spikelets arranged as solitary units along the branches of the flowering head, the branch stem shallowly zig zagged. From other species of *Dimeria* it is identified by either the size of the spikelets or the annual habit. *Dimeria chloridiformis* (Fig. 4) is a tall perennial species with usually three branches in the flowering head. *Dimeria acaciniflormis* is very similar but has spikelets usually c. 5 mm long.

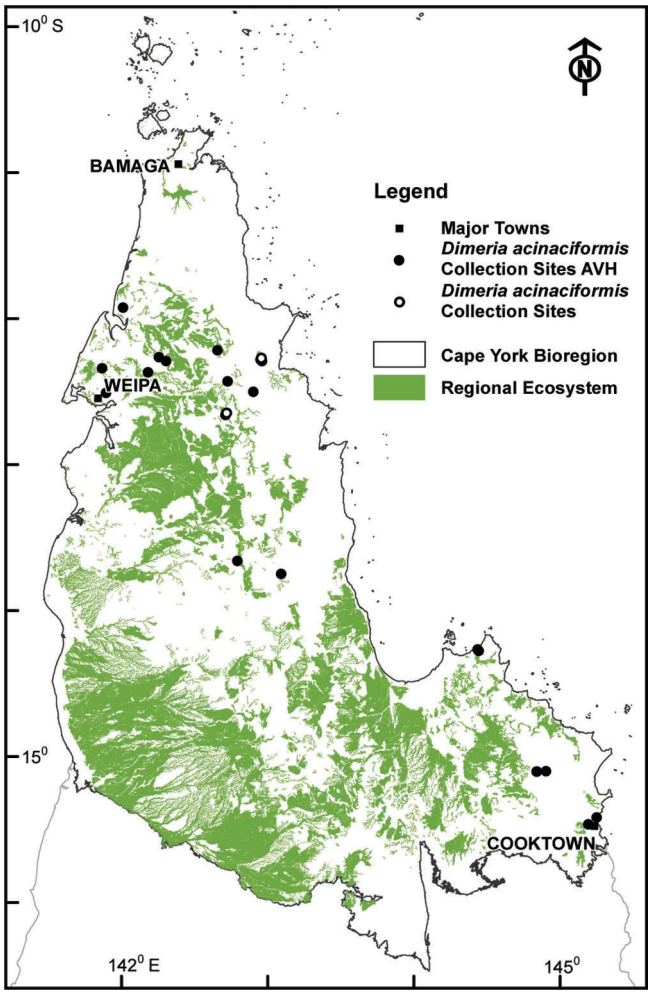

Fig 5. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Dimeria ornithopoda*. The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

> HABITAT

In Australia this species recorded from Cape York Peninsula, across the Top End of the Northern Territory and into the Kimberley region of Western Australia. Often collected from wet sites and seepage areas, on a variety of substrates, including sandy or clay soils and amongst rocky outcrops of granite or sandstone. Extends to India and Japan.

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/ accessed on [date 29 March 2017].

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Eragrostis jacobsiana B.K.Simon

This species is a tufted annual or slender perennial, erect, between 20 to 60 cm tall (Fig. 1). A fairly restricted species of *Eragrostis* (Love Grass) with most collections from around the Laura/Quinkan region. Eragrostis species are usually very easy to recognise, the spikelets (the basic flowering unit) are usually comprised of many overlapping florets (modified flowers). The regular overlapping florets give the spikelet a distinctive herringbone pattern (Fig. 3) and the spikelets are often laterally compressed, i.e. flattened from one side to the other, like a spear head or knife blade. *Eragrostis jacobsiana* has leaves both at the base of the plant and arising along the stem. The leaf blades are flat, 5-9 cm long, 2-3 mm wide, smooth and hairless. The inflorescences or flowering branches are relatively sparse and simple, 18-25 cm long, 2-4 cm wide (Fig. 2), with branches arising along a central stem. Each inflorescence branch bears 2 to 5 spikelets, the inflorescences have a “fairy lights” appearance. The spikelets consist of two glumes, the lower glume shorter than the upper glume, which encompass many florets (7-44), the glumes are smaller than the florets. All florets are bisexual, the lemmas are distinctly shaped like the hull of a boat and are partially stacked inside each other from the bottom to the top. The upper florets are usually immature with no developed male or female organs. The deciduous glumes and lemmas fall off with age and expose the distinct zig zagged stem of the spikelet common to many *Eragrostis* species.

Fig. 1a. Habit of *Eragrostis jacobsiana*

> BOTANICAL DESCRIPTION

An erect tufted annual or short lived perennial, between 20-60 cm tall, the culms sparsely branched. The leaf-blades flat, 5-9 cm long, 2-3 mm wide, smooth and glabrous. The flowering head a panicle, 18-25 cm long, 2-4 cm wide. The spikelets oblong, elliptic or ovate, compressed but a little biconvex or inflated at the base, 5-17 mm long, 2.5-3 mm wide. Glumes are deciduous, unequal, ovate, lower 1-1.2 mm long, upper 1.5-1.6 mm long. Lemma boat shaped 2-2.5 mm long, palea with two keels and flaps.

Fig. 2. Inflorescence of *Eragrostis jacobsiana*

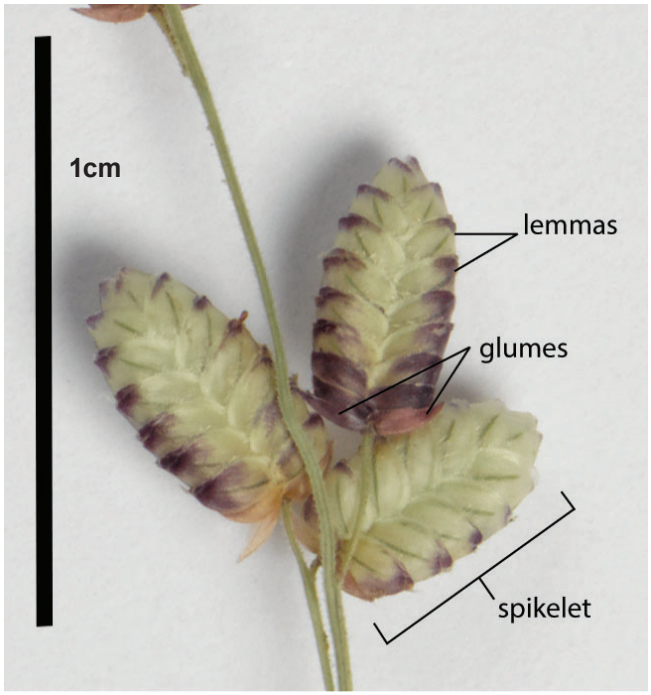

Fig. 3. Spikelet of *Eragrostis jacobsiana*

> DIAGNOSTIC FEATURES

Although this genus is easy to recognise identifying plants to species can be very problematic. *Eragrostis jacobsiana* is relatively distinct, the spikelets are quite wide and rounded in a loose relatively open inflorescence with the base of the spikelets slightly swollen or biconvex (Fig. 3). However, it is difficult to differentiate between it and *Eragrostis cassa* especially as both are not well collected from the region and the variation that exists within the two species is not well understood. Currently *Eragostis cassa* is only known from one location at the tip of Cape York Peninsula. For further information on this species and for tools to identify species of *Eragrostis* see Simon & Alfonso 2011 and Palmer et al. (2005).

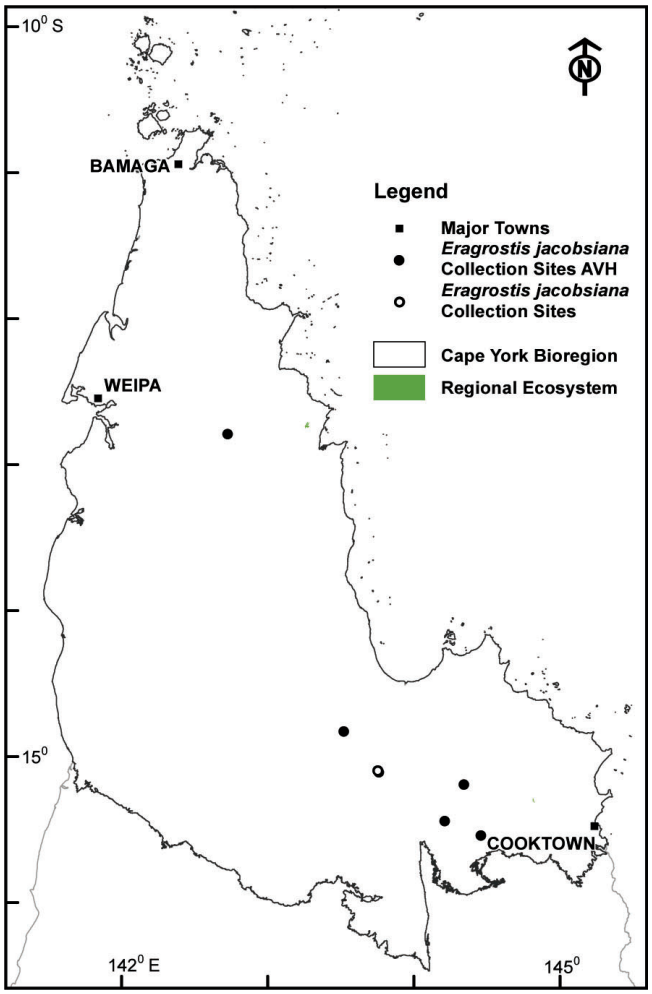

Fig. 4. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Eragrostis jacobsiana*. The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

> HABITAT

This species is only known from a handful of collections around Laura, the Hahn River Roadhouse and Batavia Downs on the Peninsula Development Road. Usually found growing in low lying wet areas or spring fed drainage lines with *Eucalyptus leptophleba* or *Melaleuca viridiflora* on sandy soil.

> LAND MANAGEMENT NOTES

Eragrostis species are economically significant both as fodder and weeds species however there are no specific attributes recorded for this species (Lazarides 1997).

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Lazarides, M. (1997) A revision of Eragrostis (Eragrostideae, Eleusininae, Poaceae) in Australia. Australian Systematic Botany 10(1): 8.

Palmer, J., Lazarides, M., McCusker, A. & Weiller, C.M. in Mallett, K. (ed.) (2005) Eragrostis. Flora of Australia 44B: 346-348.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [20 March 2017].

Simon, B.K. in Mallett, K. (ed.) (2005) Eragrostis. Flora of Australia 44B: 399, 460, Fig. 72H-O.

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Eriachne armittii F.Muell. ex Benth.

Longawn Wanderrie grass; Annual Wanderrie grass

This species is very widespread north of the Tropic of Capricorn in the Northern Territory and Queensland. It is a spreading to ascending annual, 14-50 cm high, becoming reddish with age. Leaves and stems have a covering of short or long hairs with warty base. Leaves are cauline (arising along the stem) with blades to 14 cm long (Fig. 1). Inflorescences or flowering branches terminate the stem and appear well exserted some distance from or partially enclosed in leaf axils. The inflorescences or flowering branches are contracted panicles with branches arising along a central stem, panicles 2.5-7 cm long, 0.8-1.8 cm wide. *Eriachne armittii* has spikelets (the basic flowering unit) consisting of two glumes encompassing two bisexual florets (modified flowers) (Fig. 2). The florets are shorter than the glumes, with the lemma of each floret giving rise to a curved awn 15-45 mm long, the palea of each floret is split into two small awns 1-6 mm long.

> BOTANICAL DESCRIPTION

An annual species 14-50 cm high, becoming reddish. The culms or stems are hispid or villous with tubercle-based hairs or partly glabrous. Leaves hispid or villous with tubercle-based hairs; leaf blade to 14 cm long and up to 6 mm wide. The inflorescences are contracted panicles, 2.5-7 cm long, 0.8-1.8 cm wide. Spikelets are defined by two glumes 7-11 (-12.5) mm long, each with a short awn or bristle to 3 mm long. The glumes encompass two bisexual florets which are much shorter than the glumes (2.5-4 mm long). The lemma of each floret is awned, the lemma awn is 15-45 mm long, with the palea of each floret splitting to form two awns much shorter than the lemma awn, 1-6 mm long (Fig. 2). The lemma is densely hairy with silky hairs exceeding the apex by up to 4 mm, grooves are absent but two depressions are present near the lemma apex.

Fig. 1. Herbarium sheet of *Eriachne armittii*

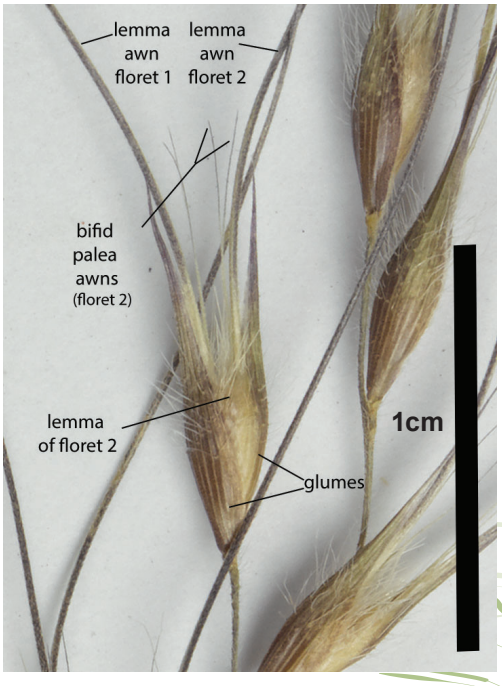

Fig. 2. Mature spikelet of *E. armittii*

> DIAGNOSTIC FEATURES

Eriachne armittii is one of many species of *Eriachne* characterised by long awned spikelets, the awns curled, curved or bent. Other long awned species of *Eriachne* which occur in the region and may be easily confused with this species are *E. burkittii, E. glauca, E. squarrosa, E. stipacea, E. vesiculosa* and *E. rara.* Some of these species are more easily distinguished than others. Most are treated in this guide, however some of the key differences between the species are shown in Table 1. In other regions of Australia e.g. the Northern Territory, additional species may also need to be considered. *Eriachne armittii* is distinguished by the combination of the following characters, an annual habit, the absence of bladder like sacs on the upper leaf surface, a contracted inflorescence, the glume usually hairy, the florets being distinctly shorter than the glumes and the bifid two awned palea. Users are encouraged to consult Lazarides (2005) or Simon & Alfonso (2011) for more detail on distinguishing between these species.

> NATURAL VALUES

This species is likely to provide seed for granivorous or seed eating animals.

> HABITAT

Widespread north of the Tropic of Capricorn in the Northern Territory and Queensland and collected from a few localities west of the Northern Territory border in Western Australia. Recorded growing on a variety of substrates including seasonally wet sites, sometimes saline or disturbed ground (Lazarides 2005, Simon 2011).

> LAND MANAGEMENT NOTES

Species of this genus are considered generally to be of low forage value (Lazarides 2002).

Table 1: Characters useful in diagnosing 7 long awned *Eriachne* species found in the Quinkan region of CYP.

Species	Habit	Inflorescence	Floret to glume size	Palea apex	Groove on lemma apex
E. armittii	annual	contracted 2.5-7 cm long, 0.8-1.8 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. stipacea	annual/perennial	loose to open 5-13 long, 2.4-7 cm wide	Distinctly shorter than glume	Palea bifid into two awns	Yes or no
E. squarrosa	perennial	contracted, dense c. 3 cm long, c. 1.5 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. burkittii !*	short lived perennial	loose to open or drooping 10.5-19 cm long, 1-6 cm wide	Subequal to exceeding glume	Palea entire or bicuspidate	Yes
E. rara	short lived perennial	Open 3.5-10 cm long, 0.5-5 cm wide	Slightly shorter/ subequal to glume	Palea bifid into two awnlets	No
E. vesiculosa *	annual/perennial	Open 5-10.5 cm long, 1-3.5 cm wide	Much shorter than glume	Palea bifid into two awns	Yes
E. glauca *	perennial	contracted, dense 3-8.5 (-14) cm long, 1.5-3 (-5) cm wide	Subequal to glumes	Notched or bifid to 0.5 mm	Yes

! Purple colouring

* Short bladder like sacs on upper leaf surface (only visible with microscope or hand lens)

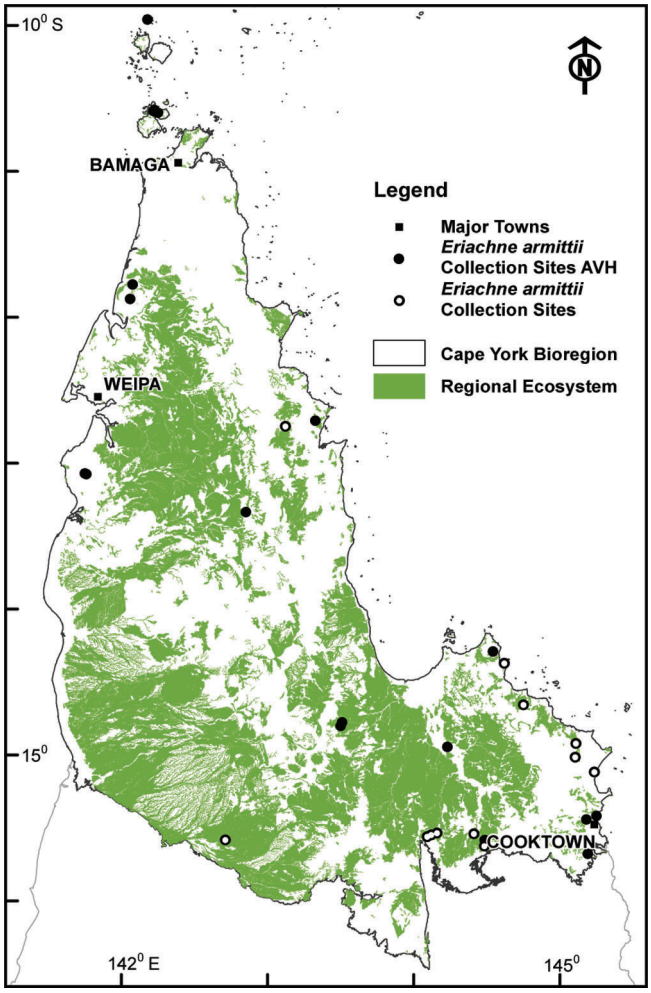

Fig 3. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Eriachne armittii*.
The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Lazarides, M. (1995) The genus Eriachne (Eriachneae, Poaceae). Australian Systematic Botany 8(3): 355-452.

Lazarides, M. (2002) Economic attributes of Australian grasses. Flora of Australia 43: 213-245.

Lazarides, M., Weiller, C.M. & McCusker, A. in Mallett, K. (ed.) (2005) Eriachne. Flora of Australia 44B: 132-175.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [20 March 2017].

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ATH Australian Tropical Herbarium

This project is supported by the Queensland Government Department of Natural Resources and Mines through the Queensland Regional Natural Resource Management Investment Program

Eriachne burkittii Jansen

This species occurs in Cape York Peninsula as an erect short-lived perennial, 60-125 cm high and is often blue-green in colour with a whitish bloom. Stems are usually hairless although bearded or pubescent along stem nodes or joints, often tinged purple. Leaves are cauline (arising along the stem), hairless or hairy, with blades to 35 cm long (Fig. 1), sometimes with bladder like sacs on upper surface. Inflorescences or flowering branches terminate the stem and are well exserted some distance from leaf axils. The inflorescences or flowering branches are loose to open drooping panicles with branches arising along a central stem, panicles are 10.5-19 cm long, 1-6 cm wide (Fig. 2). *Eriachne burkittii* has spikelets (the basic flowering unit) consisting of two glumes encompassing two bisexual florets (modified flowers) (Fig. 3). The florets are slightly smaller, equal to or exceeding the glumes, with the lemma of each floret giving rise to a curved awn 10-27 mm long, the palea of each floret is tapered to a point or with two small teeth at apex.

> BOTANICAL DESCRIPTION

A short-lived perennial species to 125 cm high. The culms or stems hairless, often purple, with nodes bearded, tuberculate bearded or pubescent, rarely hairless. Leaves are hairless to quite hairy; leaf blades to 35 cm long and up to 5 mm wide, sometimes with vesicles on upper surface. The inflorescences are loose to open drooping panicles, 10.5-19 cm long, 1-6 cm wide (Fig. 2). Spikelets are defined by two glumes 4.3-10 mm long, each with a sharp point at the apex or with an awnlet to 1.5 (-4) mm long. The glumes encompass two bisexual florets, the florets shorter than or exceeding glumes by 1-2.5 mm, the lemma 5-7 mm long, cartilaginous. The lemma of each floret is awned, the lemma awn 10-27 mm long, with the palea of each floret entire or with two short teeth (Fig. 3). The lemma is hairy in lower 1/3-1/2 with hairs not exceeding the apex, and with two grooves present.

Fig. 1. Herbarium sheet of *Eriachne burkittii*

Fig. 2. Inflorescence of *E. burkittii*

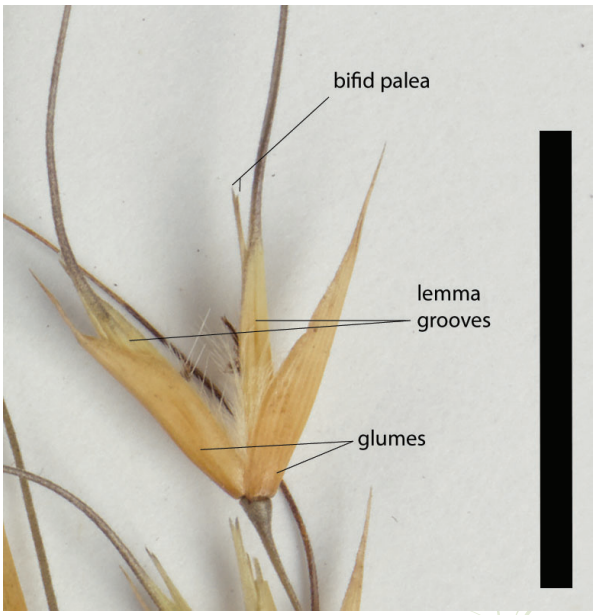

Fig. 3. Mature spikelet of *E. burkittii*

> DIAGNOSTIC FEATURES

Eriachne burkittii is one of many species of *Eriachne* characterised by long awned spikelets, the awns curled, curved or bent. Other long awned species of *Eriachne* which occur in the region and may be easily confused with this species are *E. armittii, E. glauca, E. squarrosa, E. stipacea, E. vesiculosa* and *E. rara*. Some of these species are more easily distinguished than others. Most are treated in this guide, however some of the key differences between the species are shown in Table 1. In other regions of Australia e.g. the Northern Territory, additional species may also need to be considered. *Eriachne burkittii* is distinguished by the combination of the following characters, a leafy perennial habit, culms often purple coloured, firm glumes, the florets usually longer than glumes and the entire or two toothed apex of the palea. Users are encouraged to consult Lazarides (2005) or Simon & Alfonso (2011) for more detail on distinguishing between these species.

> NATURAL VALUES

This species is likely to provide seed for granivorous or seed eating animals.

> HABITAT

This species occurs in northern Australia north of 18˚S and also in Papua New Guinea. Found in wet areas especially seasonally inundated, heavy clay floodplains, as well as margins of swamps and lagoons, alluvial floodouts, seepage areas and drainage depressions (Lazarides 2005, Simon 2011).

> LAND MANAGEMENT NOTES

Species of this genus are considered generally to be of low forage value (Lazarides 2002).

Table 1: Characters useful in diagnosing 7 long awned *Eriachne* species found in the Quinkan region of CYP.

Species	Habit	Inflorescence	Floret to glume size	Palea apex	Groove on lemma apex
E. armittii	annual	contracted 2.5-7 cm long, 0.8-1.8 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. stipacea	annual/perennial	loose to open 5-13 long, 2.4-7 cm wide	Distinctly shorter than glume	Palea bifid into two awns	Yes or no
E. squarrosa	perennial	contracted, dense c. 3 cm long, c. 1.5 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. burkittii !*	short lived perennial	loose to open or drooping 10.5-19 cm long, 1-6 cm wide	Subequal to exceeding glume	Palea entire or bicuspidate	Yes
E. rara	short lived perennial	Open 3.5-10 cm long, 0.5-5 cm wide	Slightly shorter/ subequal to glume	Palea bifid into two awnlets	No
E. vesiculosa *	annual/perennial	Open 5-10.5 cm long, 1-3.5 cm wide	Much shorter than glume	Palea bifid into two awns	Yes
E. glauca *	perennial	contracted, dense 3-8.5 (-14) cm long, 1.5-3 (-5) cm wide	Subequal to glumes	Notched or bifid to 0.5 mm	Yes

! Purple colouring

* Short bladder like sacs on upper leaf surface (only visible with microscope or hand lens)

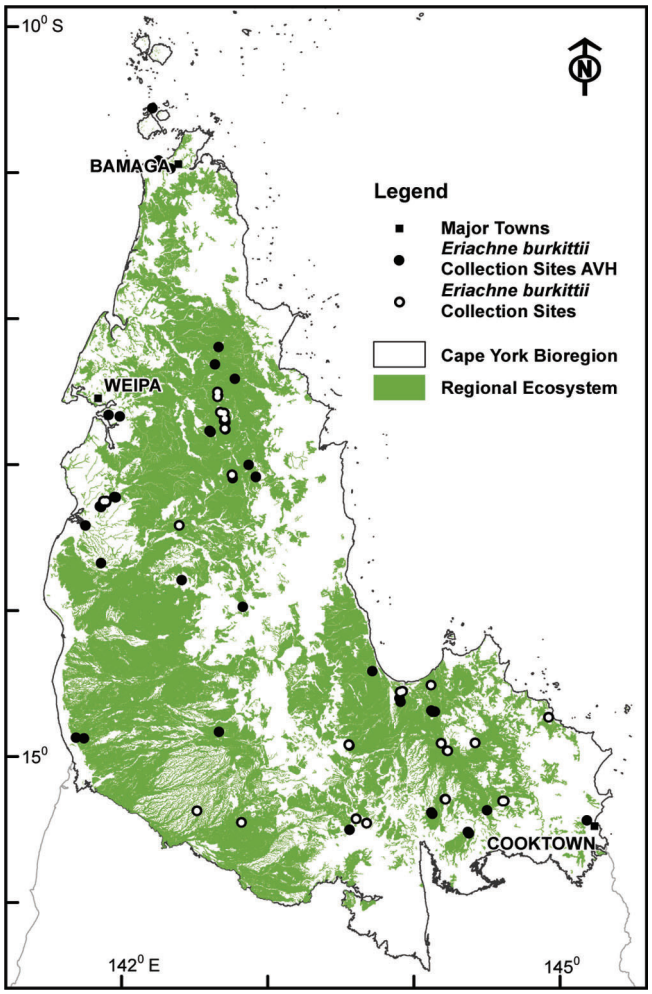

Fig 4. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of E*riachne burkittii.* The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

RESOURCES:

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Lazarides, M. (1995) The genus Eriachne (Eriachneae, Poaceae). Australian Systematic Botany 8(3): 355-452.

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Eriachne ciliata R.Br.

Slender Wanderrie Grass

This species is very widespread and common, although never dominant, across northern Australia. It is a slender short-lived species, single or multi-stemmed, between 7 cm and 33 cm high (Fig. 1a & b). Plants are usually conspicuously hairy with short stiff spreading to ascending hairs moderately distributed across the stems and leaves. *Eriachne* species commonly have two bisexual florets per spikelet, the lemmas of *Eriachne ciliata* are distinctly but shortly awned, with awns 1.5-3 mm long. When mature the glumes of the spikelet open widely to reveal two florets, each with lemmas covered in hairs for the lower 1/3 to 3/4 (Fig. 2). The spikelets of *Eriachne ciliata* are quite small with the glumes between 2.5-5 mm long enclosing slightly shorter florets 2-3 mm long.

Fig. 1a. Habit of *Eriachne ciliata*

> BOTANICAL DESCRIPTION

An annual or ephemeral species (7-) 14-25 (-33) cm high. The leaves and culms are usually prickly hispid with tubercle-based hairs (Fig. 3), often more densely distributed along the leaf margin, with leaf blades to 4 cm long and up to 4 mm wide. Often described as having a delicate inflorescence, the inflorescence is an open panicle between 4-8 cm long and 1.5-4 cm wide, each spikelet is stalked, solitary and arranged on branches which arise from a main inflorescence stem. Spikelets consist of a pair of hairless glumes 2.5-5 mm long and two bisexual florets (Fig. 2). The lemma of each floret is between 2-3 mm long, is distinctly awned, the awn 1.5-3 mm long and densely hairy in lower 1/3 to 3/4 .

Fig. 1b. Single stemmed habit of *Eriachne ciliata*

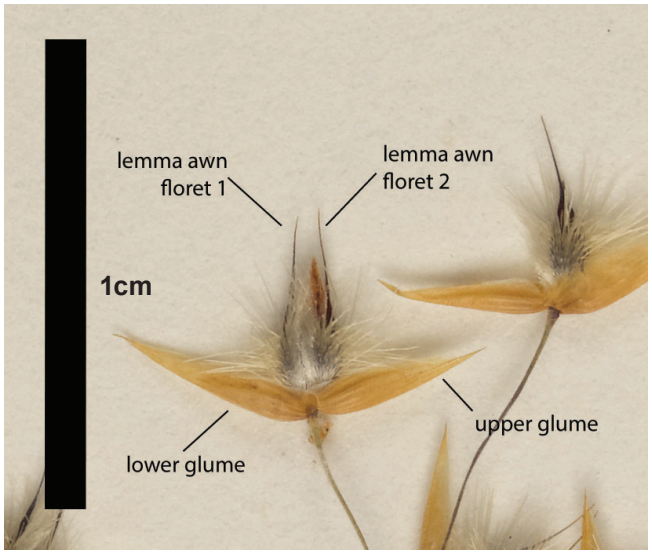

Fig. 2. Mature and fully open spikelet of *Eriachne ciliata*

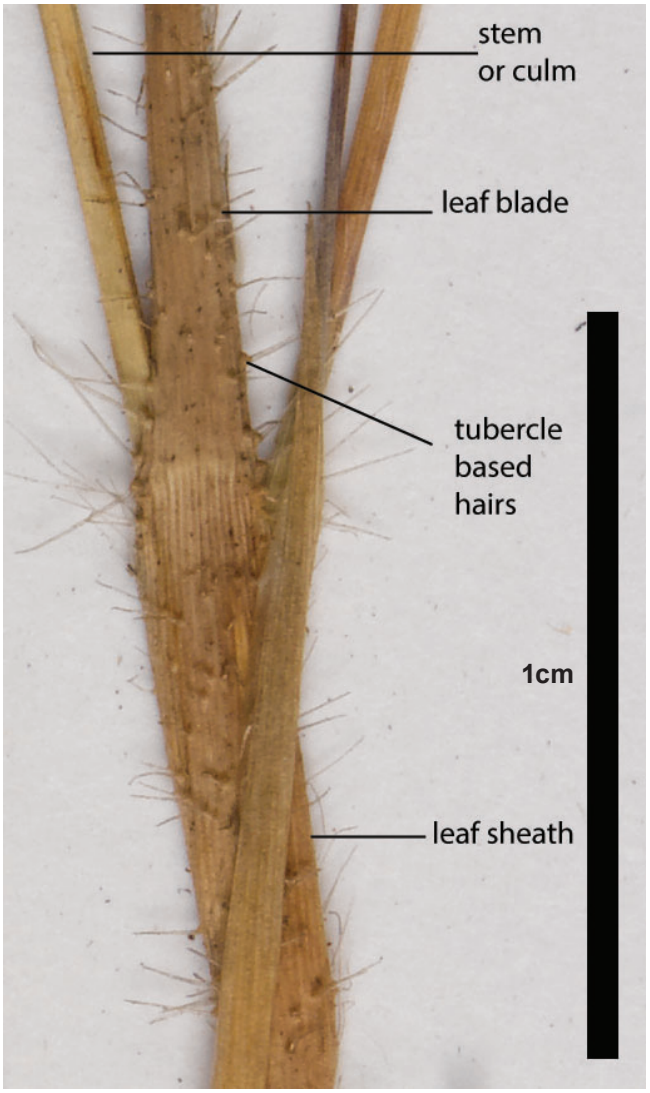

Fig. 3. Leaf blade and leaf sheath with hispid hairs *E. ciliata*. Herbarium sheet

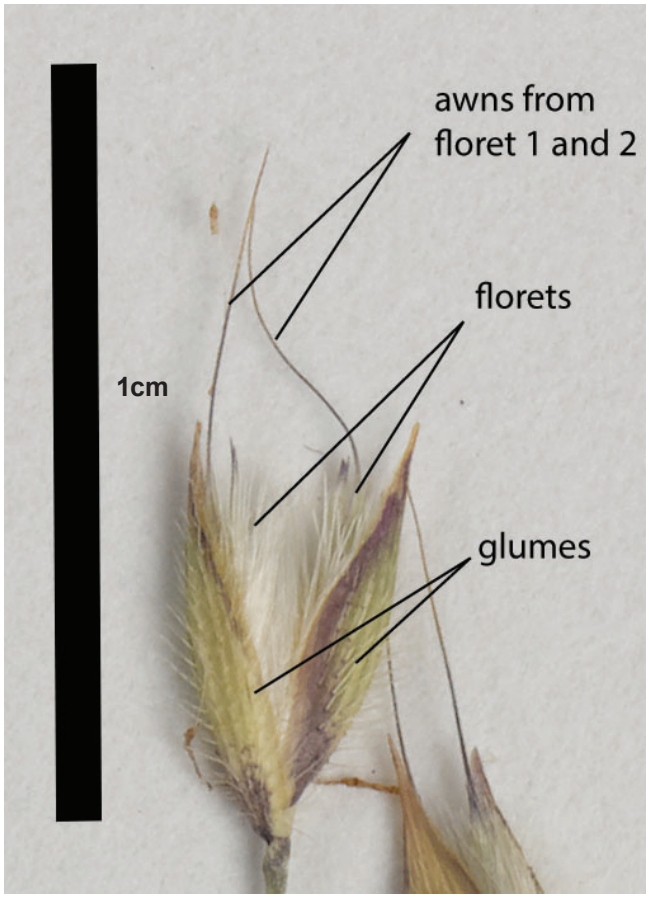

Fig. 4. Just opening spikelet of *E. humilis* showing florets more or less equal to glumes

Fig. 5. Herbarium sheet of *E. humilis* showing narrower leaves

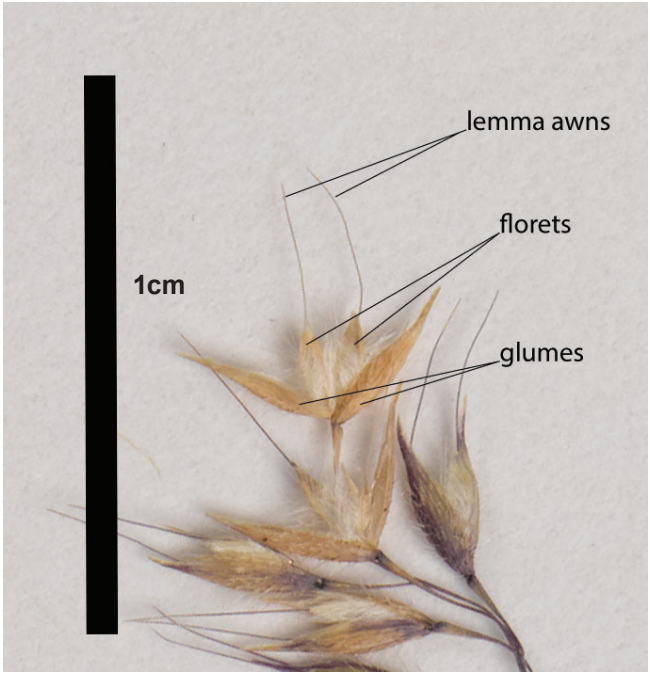

Fig. 6. Just opening spikelet of *E. filiformis* showing florets shorter than glumes

Fig. 7. Herbarium sheet of *E. filiformis* showing narrower leaves than *E. ciliate.*

> DIAGNOSTIC FEATURES

Eriachne ciliata can be confused with *Eriachne semiciliata, Eriachne filiformis* and *Eriachne humilis*. All four species are slender ephemerals, although *E. humilis* can form large clumps, and close inspection and comparison of the leaves, glumes and lemmas is required to allow accurate identification. When plants are young and the spikelets immature identification can be difficult. *Eriachne semiciliata* and *E. humilis* are identified by the florets being equal to or exceeding the glumes compared to the florets being slightly smaller than the glumes as is the case for *E. ciliata*. Also, specimens of *E. humilis* have generally larger spikelets and filiform (narrow thread-like) leaves (Fig. 4 & 5). *Eriachne filiformis* has florets slightly smaller than the glumes as in *E. ciliata* but compared to that species has very narrow almost terete leaves (Fig. 6 & 7). *Eriachne semiciliata* does not occur in the region covered by this guide.

> NATURAL VALUES

Although a small annual this species produces many flowers and is likely to provide seed for granivorous or seed eating animals.

> HABITAT

Widespread north of 20°S across northern Australia. Often found on deep or skeletal sandy or loam soils, usually on gravelly rock or stony sites, on laterite, sandstone, quartzite or granite (Lazarides 2000).

> LAND MANAGEMENT NOTES

Considered generally to be of low forage value (Milson 2000, Lazarides 2002).

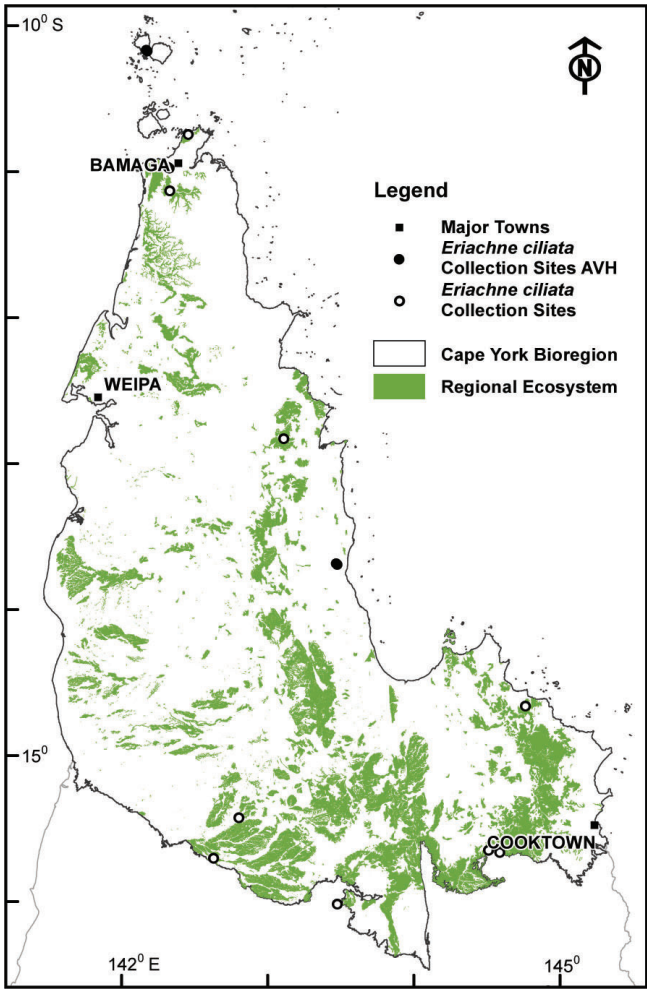

Fig. 8. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Eriachne ciliata*.
The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

RESOURCES:

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Eriachne glauca R.Br.

Pan Wanderrie grass

This species occurs in Cape York Peninsula as a perennial from 45-120 cm high. Stems, stem joints and foliage are usually hairless and often blue-green with whitish bloom (pruinose) or purple. Leaves are cauline (arising along the stem) and leaf blades are densely covered above with small bladder like sacs, however, sacs are only visible with a microscope. Leaf blades are up to 25 cm long and 5 mm wide, and rough to the touch on blade margins. Inflorescences or flowering branches terminate the stem and are exserted from leaf axils. The inflorescences or flowering branches are contracted and dense panicles, rarely open, with branches arising along a central stem, panicles are 3-14 cm long, 1.5-5 cm wide (Fig. 1). *Eriachne glauca* has spikelets (the basic flowering unit) consisting of two glumes encompassing two bisexual florets (modified flowers) (Fig. 3a & b). The florets are subequal or slightly shorter than the glumes (sometimes the palea exceeding glumes by c. 1 mm), the lemma of each floret giving rise to a curved awn 7-25 mm long (Fig. 2). The palea of each floret is tapered to a point and notched or split for up to 0.5 mm at apex.

Fig. 1. Inflorescence of *Eriachne glauca* (image supplied by Queensland Herbarium)

Fig. 2. Mature spikelet of *E. glauca* (line drawing supplied by NT Herbarium, illustrator Monika Osterkamp Madsen)

> BOTANICAL DESCRIPTION

A perennial species 45-95 (-120) cm high. The culms and foliage are often pruinose or purple with culm nodes glabrous or rarely bearded. Leaves with upper surface densely vesicular, blade to 25 cm long and up to 5 mm wide, involute and stiff, and finely pointed. The inflorescences are contracted dense panicles, rarely open, 3-8.5(-14) cm long, 1.5-3(-5) cm wide (Fig. 1). Spikelets are defined by two glumes (3-)4-5.8(-7) mm long, tapered to point or with awnlet to 1.5 mm long (Fig. 2 & 3a). The glumes encompass two bisexual florets, the florets subequal or slightly shorter than the glumes, the lemma (2.8-)4-5.5 mm long. The lemma of each floret is awned, the lemma awn 7-15(-25) mm long, with the palea of each floret tapered into a beak usually notched or split for up to 0.5 mm long. The lemma is hairy in lower 1/3-1/2 with hairs not exceeding apex and with two grooves present (Fig. 3b).

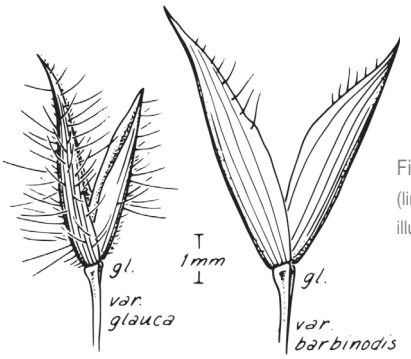

Fig. 3a. Spikelet of *E. glauca* varieties (line drawing supplied by NT Herbarium, illustrator Monika Osterkamp Madsen)

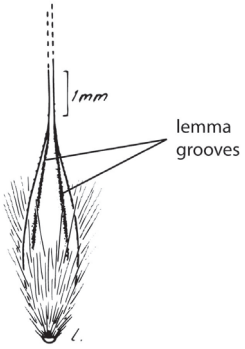

Fig. 3b. Floret of *E. glauca* (line drawing supplied by NT Herbarium, illustrator Monika Osterkamp Madsen)

> DIAGNOSTIC FEATURES

Eriachne glauca is one of many species of *Eriachne* characterised by long awned spikelets, the awns curled, curved or bent. Other long awned species of *Eriachne* which occur in the region and may be easily confused with this species are *E. armittii, E. burkittii, E. squarrosa, E. stipacea* and *E. rara*. Some of these species are more easily distinguished than others. Most are treated in this guide, however some of the key differences between the species are shown in Table 1. In other regions of Australia e.g. the Northern Territory, additional species may also need to be considered. *Eriachne glauca* is distinguished by the combination of the following characters, leafy herbaceous habit, pruinosity, a dense covering of bladder like sacs on the upper surface, grooves present on lemma and the tapered or notched palea. Users are encouraged to consult Lazarides (2005) or Simon & Alfonso (2011) for more detail on distinguishing between these species.

> NATURAL VALUES

This species is likely to provide seed for granivorous or seed eating animals.

> HABITAT

This species occurs north of 20°S across northern Australia. Two varieties are recognised with *Eriachne glauca var. glauca* the more common plant distinguished by glabrous stem nodes. It is found in seasonally flooded habitats including flood plains, levees, banks of watercourses, swamps, lagoons, depressions, claypans and seepage areas (Lazarides 2005, Simon 2011).

> LAND MANAGEMENT NOTES

Species of this genus are considered generally to be of low forage value (Lazarides 2002).

Table 1: Characters useful in diagnosing 7 long awned *Eriachne* species found in the Quinkan region of CYP.

Species	Habit	Inflorescence	Floret to glume size	Palea apex	Groove on lemma apex
E. armittii	annual	contracted 2.5-7 cm long, 0.8-1.8 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. stipacea	annual/perennial	loose to open 5-13 long, 2.4-7 cm wide	Distinctly shorter than glume	Palea bifid into two awns	Yes or no
E. squarrosa	perennial	contracted, dense c. 3 cm long, c. 1.5 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. burkittii !*	short lived perennial	loose to open or drooping 10.5-19 cm long, 1-6 cm wide	Subequal to exceeding glume	Palea entire or bicuspidate	Yes
E. rara	short lived perennial	Open 3.5-10 cm long, 0.5-5 cm wide	Slightly shorter/ subequal to glume	Palea bifid into two awnlets	No
E. vesiculosa *	annual/perennial	Open 5-10.5 cm long, 1-3.5 cm wide	Much shorter than glume	Palea bifid into two awns	Yes
E. glauca *	perennial	contracted, dense 3-8.5 (-14) cm long, 1.5-3 (-5) cm wide	Subequal to glumes	Notched or bifid to 0.5 mm	Yes

! Purple colouring

* Short bladder like sacs on upper leaf surface (only visible with microscope or hand lens)

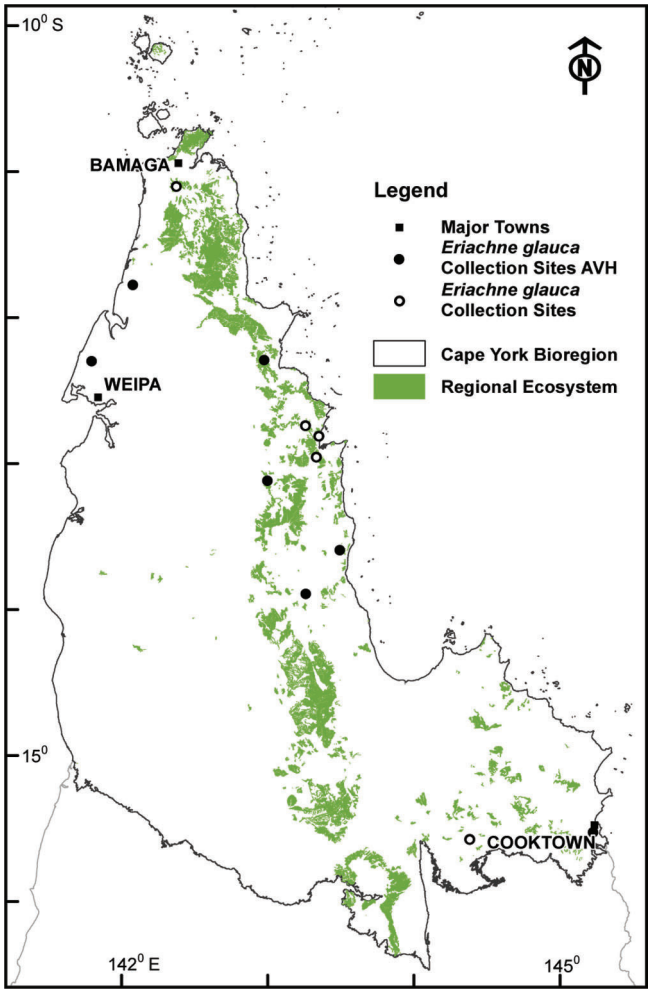

Fig. 4. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Eriachne glauca*.
The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

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Eriachne melicacea F.Muell.

This species is not commonly recorded from Cape York Peninsula with only a few records from around Laura and one record from Somerset at the tip of the peninsula. It is a slender annual or short-lived perennial 3-45.5 cm high, with branching stems (Fig. 1). Plants are rough to touch with warty based hairs on leaves and stems. Leaves are cauline (arising along the stem) with blades to 10 cm long, the margins rolled inwards giving leaves a fine bristle like appearance (Fig. 2). Inflorescences or flowering branches terminate the stem and appear well exserted some distance from the leaves. The inflorescences or flowering branches are open panicles with branches arising along a central stem, panicles 2.5-5 cm long, 0.5-0.8 cm wide. *Eriachne* species commonly have spikelets (the basic flowering unit) consisting of two glumes encompassing two bisexual florets (modified flowers) (Fig. 3). In *Eriachne melicacea* the florets exceed the glumes by 0.3-3 mm, with the lemma of each floret awnless and tapering to a fine point up to 0.6 mm long, the lemma is densely hairy near the base. The palea of each floret is notched or shortly split, the marginal flaps of the palea are fringed with short hairs in the lower part.

Fig. 1. Herbarium sheet of *Eriachne melicacea*

> BOTANICAL DESCRIPTION

An annual or ephemeral species (3-)13.5-45.5 cm high. The culms scabrous to sparsely hispid with tubercle-based hairs, nodes pilose or glabrous. The leaves are hispid and tuberculate, blade to 10 cm long, bristle like, hispid or scabrous-papillose on upper surface The inflorescence is an open but narrow panicle between 2.5-5 cm long and 0.5-8 cm wide. Spikelets consist of a pair of hairy or hairless glumes 4.8-8.3 mm long and two bisexual florets. The lemma of each floret is between (5.8-) 6.8-7.3 (-9) mm long, exceeding glumes by up to 3 m. The lemma is awnless with a sharp point to 0.6 mm long, grooves are absent and lemma is hirsute near base with long hairs on margins extending almost to the apex. The palea is as long as the lemma or slightly shorter, notched or shortly bifid, sparsely ciliate on margins of flaps at least in lower part.

Fig.2. Leaf blade and leaf sheath with hispid hairs *Eriachne melicacea*

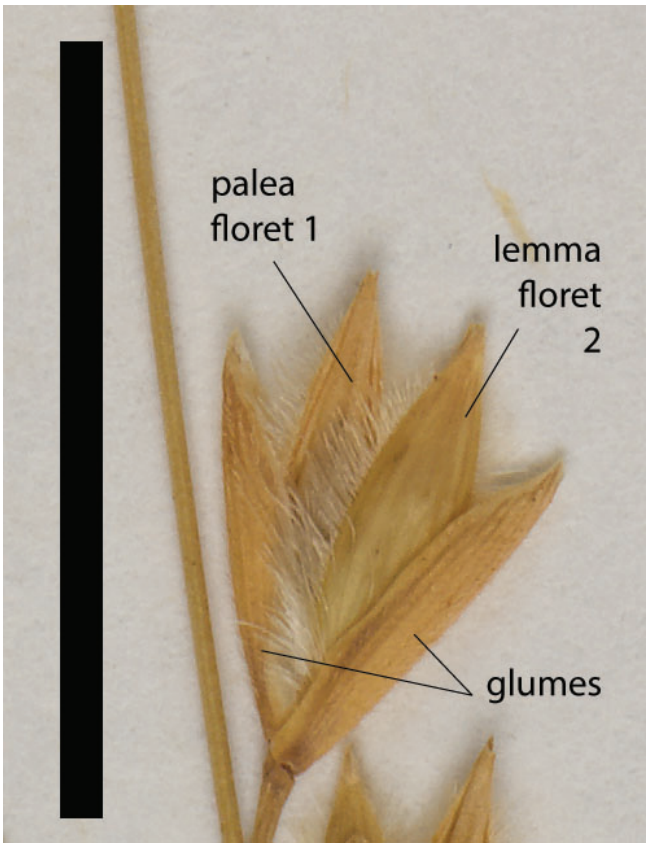
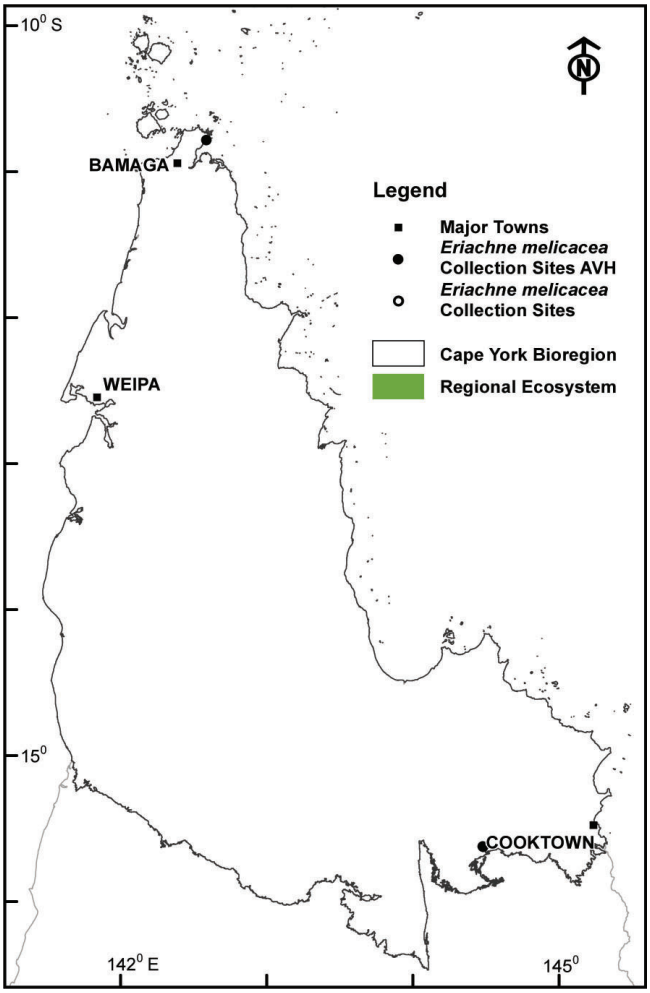


Fig. 3. Mature and fully open spikelet of *Eriachne melicacea*

> DIAGNOSTIC FEATURES

Eriachne melicacea is not easily confused with other species of *Eriachne* in the region. It closely resembles *E. avenacea* but it does not grow in the region and can be distinguished by its awned spikelets. *Eriachne melicacea* can be identified by the combination of the following characters, fine bristle like leaf blades, florets longer than the glumes and awnless, and the glumes and lemmas purple when young and maturing to yellow or straw coloured.



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> NATURAL VALUES

This species is likely to provide seed for granivorous or seed eating animals.

> HABITAT

Widespread north of 22°S across northern Australia. Often found on deep or skeletal sandy or loam soils, usually on gravelly rock or stony sites, on laterite, sandstone, quartzite or granite and in seasonally wet sites which including saline environments (Lazarides 2000).

> LAND MANAGEMENT NOTES

Considered generally to be of low forage value (Milson 2000, Lazarides 2002).

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Cape York Natural Resource Management

ATH Australian Tropical Herbarium

This project is supported by the Queensland Government Department of Natural Resources and Mines through the Queensland Regional Natural Resource Management Investment Program

Eriachne rara R.Br.

This species occurs in Cape York Peninsula as an erect short-lived perennial, 16-60 cm high. Stems and leaves are hairy with more or less stiff hairs or sometimes mostly hairless. Leaves are cauline (arising along the stem), blades to 20 cm long and 3 mm wide, the blade bristle-like with margins often rolled inwards (involute) and rough to the touch (Fig. 1). Inflorescences or flowering branches terminate the stem and are well exserted some distance from leaf axils. The inflorescences or flowering branches are open panicles with branches arising along a central stem, panicles are 3.5-10 cm long and 0.5-5 cm wide (Fig. 2). *Eriachne rara* has spikelets (the basic flowering unit) consisting of two glumes encompassing two bisexual florets (modified flowers) (Fig. 3). The florets are subequal or slightly shorter than the glumes, with the lemma of each floret giving rise to a curved awn 13-30 mm long, the palea of each floret is notched into two awnlets 0.5-2 mm long at apex.

> BOTANICAL DESCRIPTION

A short-lived perennial species to 16-60 cm high. The leaves and culms hairy with stiff tubercle-based hairs or sometimes mostly glabrous. Leaf blade to 20 cm long and up to 3 mm wide, setaceous, with margins scabrous. The inflorescences are open panicles, 3.5-10 cm long, 0.5-5 cm wide (Fig. 2). Spikelets are defined by two glumes 5-9 mm long, each tapered into a sharp point which is often split into two awnlets to 2.5 mm long. The glumes encompass two bisexual florets, the florets slightly shorter than or subequal to the glumes, the lemma 3-5 mm long. The lemma of each floret is awned, the lemma awn 13-30 mm long, with the palea of each floret tapered and notched or split into 2 awnlets 0.5-2 mm long, (Fig. 3). The lemma is hairy in lower ¾ with simple hairs usually exceeding the apex, and without grooves, but depressed or shortly grooved at base of awn.

Fig. 1. Herbarium sheet of *Eriachne rara*

Fig. 2. Inflorescence of *E. rara*

Fig. 3. Mature spikelet of *E. rara*

> DIAGNOSTIC FEATURES

Eriachne rara is one of many species of *Eriachne* characterised by long awned spikelets, the awns curled, curved or bent. Other long awned species of *Eriachne* which occur in the region and may be easily confused with this species are *E. armittii, E burkittii, E. glauca, E. squarrosa, E. stipacea,* and *E. vesiculosa.* Some of these species are more easily distinguished than others. Most are treated in this guide, however some of the key differences between the species are shown in Table 1. In other regions of Australia e.g. the Northern Territory, additional species may also need to be considered. *Eriachne rara* is distinguished by the combination of the following characters, a dense covering of hairs, a loose tuberculate hairy panicle, short often red florets, the florets slightly shorter than glumes and the beaked bifid palea. Users are encouraged to consult Lazarides (2005) or Simon & Alfonso (2011) for more detail on distinguishing between these species.

> NATURAL VALUES

This species is likely to provide seed for granivorous or seed eating animals.

> HABITAT

This species occurs along the east coast of Australia in New South Wales and Queensland north of 30˚S. Found predominantly on islands and the coastal mainland in deep or shallow sandy or stony soils in association with sandstone, laterite or granite. Also found on slopes, ridges, *Melaleuca* swamps and seasonal water channels. (Lazarides 2005, Simon 2011).

> LAND MANAGEMENT NOTES

Species of this genus are considered generally to be of low forage value (Lazarides 2002).

Table 1: Characters useful in diagnosing 7 long awned *Eriachne* species found in the Quinkan region of CYP.

Species	Habit	Inflorescence	Floret to glume size	Palea apex	Groove on lemma apex
E. armittii	annual	contracted 2.5-7 cm long, 0.8-1.8 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. stipacea	annual/perennial	loose to open 5-13 long, 2.4-7 cm wide	Distinctly shorter than glume	Palea bifid into two awns	Yes or no
E. squarrosa	perennial	contracted, dense c. 3 cm long, c. 1.5 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. burkittii !*	short lived perennial	loose to open or drooping 10.5-19 cm long, 1-6 cm wide	Subequal to exceeding glume	Palea entire or bicuspidate	Yes
E. rara	short lived perennial	Open 3.5-10 cm long, 0.5-5 cm wide	Slightly shorter/ subequal to glume	Palea bifid into two awnlets	No
E. vesiculosa *	annual/perennial	Open 5-10.5 cm long, 1-3.5 cm wide	Much shorter than glume	Palea bifid into two awns	Yes
E. glauca *	perennial	contracted, dense 3-8.5 (-14) cm long, 1.5-3 (-5) cm wide	Subequal to glumes	Notched or bifid to 0.5 mm	Yes

! Purple colouring

* Short bladder like sacs on upper leaf surface (only visible with microscope or hand lens)

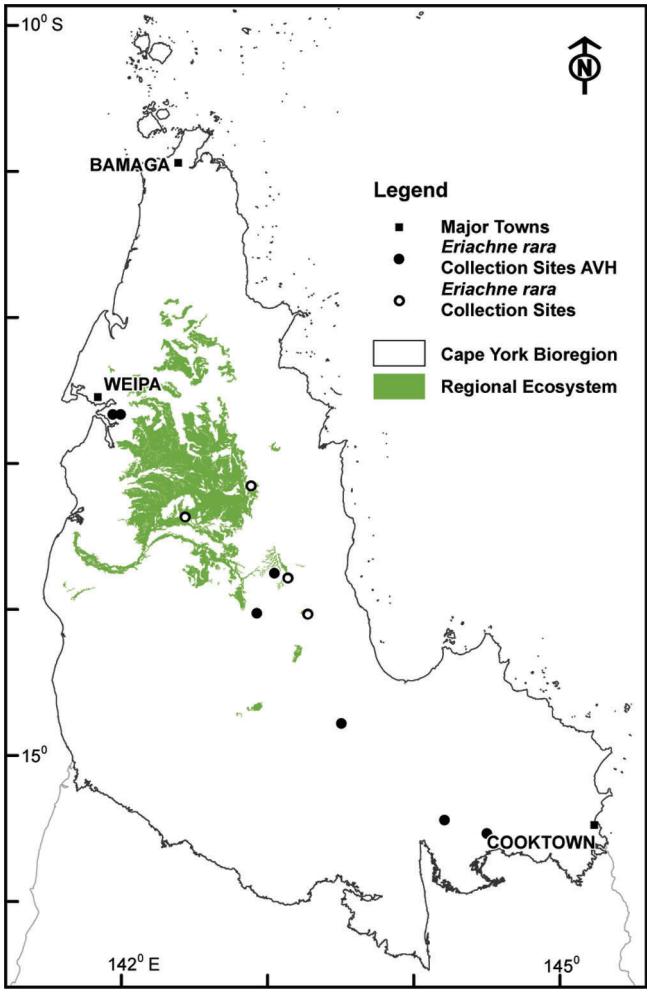

Fig. 4. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Eriachne rara*.
The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

RESOURCES:

AVH (2017) Australia's Virtual Herbarium, Council of Heads of Australasian Herbaria, <http://avh.chah.org.au>, accessed 30 May 2017.

Lazarides, M. (1995) The genus Eriachne (Eriachneae, Poaceae). Australian Systematic Botany 8(3): 355-452.

Lazarides, M. (2002) Economic attributes of Australian grasses. Flora of Australia 43: 213-245.

Lazarides, M., Weiller, C.M. & McCusker, A. in Mallett, K. (ed.) (2005) Eriachne. Flora of Australia 44B: 132-175.

Simon, B.K. & Alfonso, Y. (2011) AusGrass2, http://ausgrass2.myspecies.info/accessed on [20 March 2017].

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Eriachne squarrosa R.Br.

This species occurs in Cape York Peninsula as an erect perennial, 38-90 cm high. Leaves and stems with warty based hairs or are hairless. Leaves are cauline (arising along the stem) with blades to 17-30 cm long (Fig. 1). Inflorescences or flowering branches terminate the stem and are exserted some distance from leaf axils. The inflorescences or flowering branches are dense panicles with branches arising along a central stem, panicles are c. 3 cm long, c. 1.5 cm wide (Fig. 2). *Eriachne squarrosa* has spikelets (the basic flowering unit) consisting of two glumes encompassing two bisexual florets (modified flowers) (Fig. 3). The florets are shorter than the glumes, with the lemma of each floret giving rise to a curved awn c. 25 mm long, the palea of each floret is split into two small awns 1-5 mm long

> BOTANICAL DESCRIPTION

An annual or perennial species to 90 cm high. The culms or stems hairy with tubercle-based hairs or glabrous. Leaves hairy with tubercle-based hairs or glabrous; leaf blade to 17-30 cm long and up to 3 mm wide. The inflorescences are dense panicles, c. 3 cm long, c. 1.5 cm wide (Fig. 2). Spikelets are defined by two glumes 9-11 mm long, each with a long drawn out apex or beak almost the same length as main body. The glumes encompass two bisexual florets, the florets are much shorter than the glumes (2.5-6 mm long). The lemma of each floret is awned, the lemma awn c. 25 mm long, with the palea of each floret splitting to form two awns much shorter than the lemma awn, 1-5 mm long (Fig. 3). The lemma is densely hairy with hairs exceeding the apex, is abruptly contracted at the awn junction and has no grooves along the lemma apex but has two shallow apical depressions.

Fig. 1. Herbarium sheet of *Eriachne squarrosa*

Fig. 2. Inflorescence of *E. squarrosa*

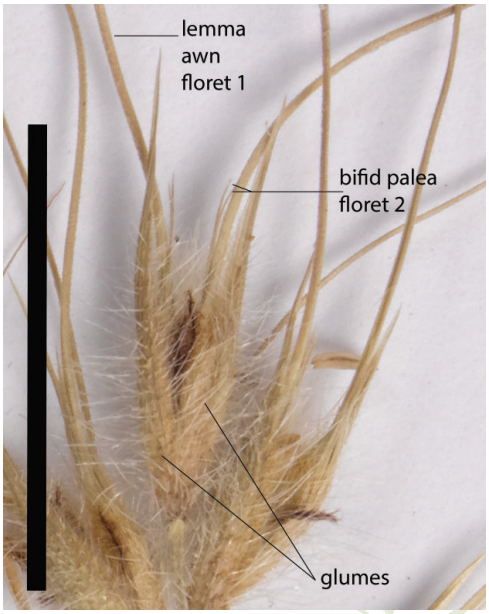

Fig. 3. Mature spikelet of *E. squarrosa*

> DIAGNOSTIC FEATURES

Eriachne squarrosa is one of many species of *Eriachne* characterised by long awned spikelets, the awns curled, curved or bent. Other long awned species of *Eriachne* which occur in the region and may be easily confused with this species are *E. armittii, E. burkittii, E. glauca, E. stipacea, E. vesiculosa* and *E. rara*. Some of these species are more easily distinguished than others. Most are treated in this guide, however some of the key differences between the species are shown in Table 1. In other regions of Australia eg. the Northern Territory, additional species may also need to be considered. *Eriachne squarrosa* is distinguished by the combination of the following characters, a perennial habit, the absence of bladder like sacs on the upper leaf surface, a dense hairy inflorescence, the glume elongated into a long thin tip or beak, the florets being distinctly shorter than the glumes and the bifid two awned palea. Users are encouraged to consult Lazarides (2005) or Simon & Alfonso (2011) for more detail on distinguishing between these species.

> NATURAL VALUES

This species is likely to provide seed for granivorous or seed eating animals.

> HABITAT

This species occurs along eastern Queensland from Townsville to Cape York Peninsula. In the Northern Territory it is only known from a coastal locality in the north east; also known from Malesia. Often found in moist, low-lying, sandy flats and depressions under *Melaleuca* spp. and on floodbanks of seasonal streams; also recorded from sandy granite ridges (Lazarides 2005, Simon 2011).

> LAND MANAGEMENT NOTES

Species of this genus are considered generally to be of low forage value (Lazarides 2002).

Table 1: Characters useful in diagnosing 7 long awned *Eriachne* species found in the Quinkan region of CYP.

Species	Habit	Inflorescence	Floret to glume size	Palea apex	Groove on lemma apex
E. armittii	annual	contracted 2.5-7 cm long, 0.8-1.8 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. stipacea	annual/perennial	loose to open 5-13 long, 2.4-7 cm wide	Distinctly shorter than glume	Palea bifid into two awns	Yes or no
E. squarrosa	perennial	contracted, dense c. 3 cm long, c. 1.5 cm wide	Distinctly shorter than glume	Palea bifid into two awns	No
E. burkittii !*	short lived perennial	loose to open or drooping 10.5-19 cm long, 1-6 cm wide	Subequal to exceeding glume	Palea entire or bicuspidate	Yes
E. rara	short lived perennial	Open 3.5-10 cm long, 0.5-5 cm wide	Slightly shorter/ subequal to glume	Palea bifid into two awnlets	No
E. vesiculosa *	annual/perennial	Open 5-10.5 cm long, 1-3.5 cm wide	Much shorter than glume	Palea bifid into two awns	Yes
E. glauca *	perennial	contracted, dense 3-8.5 (-14) cm long, 1.5-3 (-5) cm wide	Subequal to glumes	Notched or bifid to 0.5 mm	Yes

! Purple colouring

* Short bladder like sacs on upper leaf surface (only visible with microscope or hand lens)

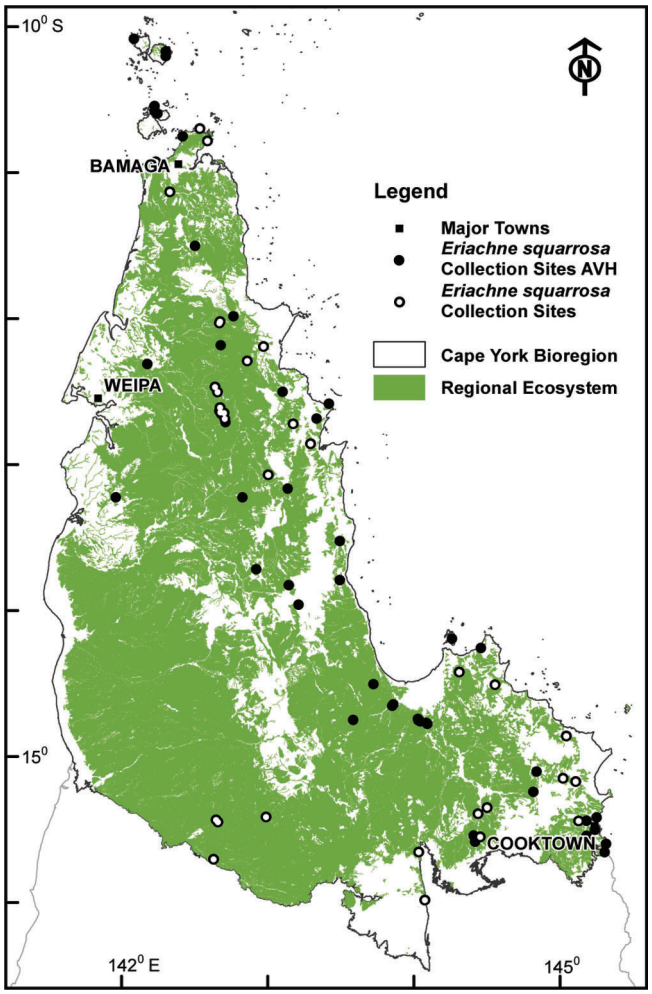

Fig. 4. Map of CYP bioregion showing actual herbarium collections (from BRI and CNS) (solid circle) and site records (open circle) of *Eriachne squarrosa*. The green shading indicates areas where this species might also be found, based on similarity of habitat to locations where the species has been recorded. (Mapping supplied by P. Bannink, DES). Data attribution: Environment and Science, Queensland Government, Biodiversity status of pre-clearing and 2015 remnant regional ecosystems series - version 10.0 licensed under Creative Commons Attribution.

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