

Nomination to list *Stipa Aristiglumis* grasslands of the Liverpool Plains in NSW as an endangered ecological community under the Environment Protection and Biodiversity Conservation Act, 1999.

Generally accepted name (if any) of the ecological community [EPBC Regulation 7.06 2(a)]:

The *Stipa aristiglumis* grasslands has been identified as one of the six natural grasslands of New South Wales (Specht et al., 1974; Beadle, 1981).

A description of the ecological community that distinguishes it from any other ecological community, including [EPBC Regulation 7.06 2(b)]:

(i) its biological (including any listed threatened species) and non-biological components;

Biological components

The *Stipa aristiglumis* grasslands of the Liverpool Plains form an almost pure stand on the heavy textured black earth soils of the Liverpool Plains. The common sub dominant of this grassland association is *Dichanthium sericeum* (Sim and Urwin, 1984). In the woodlands adjacent to these grasslands *Stipa aristiglumis* is the dominant component of the woodland understory association. The woodland themselves are generally dominated by *Eucalyptus albens* and occasionally *E. populena* (Sim and Urwin, 1984).

There are also outliers of this community found in small scattered occurrences in the Macquarie region, on the lower slopes of the adjacent areas of the Liverpool Plains and in the Hunter Valley (Sim and Urwin, 1984).

These woodlands, where *S. aristiglumis* is dominant, can be described as an open woodland consisting of two stratum - grasslands and woodlands (██████, person. comm.). Historically, it is likely that there was also a shrub layer which would have been quite dense at times, its density affected by the area's fire regime (██████, person. comm.).

Remnant lowland grasslands, like the Liverpool Plains grasslands (██████, person. comm.), and grassy woodlands have been identified as two of the most threatened ecosystems in temperate Australia (Lunt, 1991).

The grasslands of the Liverpool Plains are described as 'specified native grasslands' in the Liverpool Plains Native Grasslands Plan. Specified native grasslands have been identified (in Clause 5 of SEPP 46) as a "plant community dominated by native grasses

and containing a variety of other herbaceous plants. They may comprise the dominant layer of vegetation (treeless and shrubless communities) or the understorey in tree or shrub dominated communities (grassland understoreys)".

The use of the term 'Liverpool Plains grasslands' within this nomination will be based on the above definition of specified native grasslands i.e. will consider the vegetation associations where *Stipa aristiglumis* is the dominant vegetation and where it is the dominant grassy understorey.

The key species of the *Stipa aristiglumis* grassland association are *Stipa aristiglumis*, *Panicum* sp. and *Dichanthium sericeum* (D. Beckers, NSW National Parks and Wildlife Service), however, knowledge of the species composition is limited by the lack of scientific studies that have looked at this community.

The condition of the grasslands can be identified by the presence of native herbaceous legumes including the genera *Glycine*, *Desmodium*, *Rhynchosia* and *Lotus*. These species occur in abundance on grasslands on heavy textured soils, like the Liverpool Plains, that have not been abused in the past (██████, person. comm.). The condition of *S. aristiglumis* grasslands can also be identified by the micro topography with a well developed micro topography a feature of grasslands that have not been abused too much (██████, person. comm.).

This community is naturally restricted by its requirements for suitable climate and soil (██████ person. comm.).

Flora

A list of the flora found in *Stipa aristiglumis* grasslands of the Liverpool Plains is provided in Appendix A (Native Grassland Management Plan - Draft, Unpub., ██████ person. comm.) . There has been very few studies of the compositional make up of the *Stipa aristiglumis* grasslands and therefore the flora list is not extensive (██████, person. comm.).

Fauna

A list of the fauna found as part of the *Stipa aristiglumis* grasslands of the Liverpool Plains is provided in Appendix B (██████, person. comm.; ██████ person. comm.). Again, due to the limited scientific studies that have occurred within the *Stipa aristiglumis* the fauna list is not comprehensive and is the combination of personal knowledge and recorded accounts.

While not all of these species listed are permanent residents of the *S. aristiglumis* community, there is not enough information about this community to distinguish

between the fauna which are irregular, regular or permanent residents of this community([REDACTED], person. comm.). Regardless, for the threatened animals that are found in this community any loss of any part of their habitat will have a detrimental effect on their population ([REDACTED], person. comm.).

The threatened animals recorded or expected to use this habitat are listed below ([REDACTED], person .comm.; [REDACTED], person. comm.; [REDACTED], person. comm.).

- Great Pipistrelle - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Greater Broad Nosed Bat - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Koala - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Squirrel Glider - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Yellow Bellied Sheath Tail Bat - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Large Bent Wing Bat - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Large Pied Bat - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Border Thick Tailed Gecko - listed as vulnerable under the NSW *Threatened Species Act* 1995 and the Federal *EPBC Act* 1999
- Pale Headed Snake - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Painted Burrowing Frog - listed as endangered under the NSW *Threatened Species Act* 1995
- Turquoise Parrot - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Square Tailed Kite - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Barking Owl - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Masked Owl - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Painted Honeyeater - listed as vulnerable under the NSW *Threatened Species Act* 1995
- Regent Honeyeater - listed as endangered under the NSW *Threatened Species Act* 1995 and the Federal *EPBC Act* 1999
- Bush Stone Curlew - listed as endangered under the NSW *Threatened Species Act* 1995

Non - biological Components

Nomination of *Stipa aristiglumis* Grasslands of the Liverpool Plains as an Endangered Ecological Community

The land surface of the Liverpool Plains is mainly flat, with some slopes dipping northward, and consists of unconsolidated Quarternary alluvium (Sim and Urwin, 1984).

The soils on these plains are derived from alluvial outwash of the Liverpool Ranges, namely, tertiary basalts and dolerites found in lava flows, dykes and collovium (Native Grassland Management Plan - Draft, Unpub.). The *S. aristiglumis* grassland community is found on heavily textured soils (mostly black earth) (Sim and Urwin, 1984). Where the community occurs as a treeless/shrubless community the soil remains water logged for many months after floods (Namoi Community Catchment Plan, 1996) which may prevent tree growth (Beadle, 1981).

The area tends to have a slight dominance of summer rainfall with a total between 400 and 550 mm. Temperature in summer vary from 9C to 43C and in winter 0C to 25C (Native Grassland Management Plan - Draft, Unpub.).

(ii) the processes by which those components interact (if known); and

Very little information is available on the ecology of *S. aristiglumis* grassland or behaviour of the species (Sim and Urwin, 1984).

Throughout its range, *S. aristiglumis* occurs with many species forming several recognisable grassland and understorey associations (Sim and Urwin, 1984).

(iii) its known natural distribution, including the bioregions where it occurs

Current Distribution

The Liverpool Plains are situated on the north western slopes of NSW. This province lies between Narrabri and Quirindi in the central eastern part of the Brigalow Belt South Bioregion and makes up part of the Namoi Catchment (NSW National Parks and Wildlife Service, Unpub.). The Plains are confined on the north by the Kaputar Ranges, on the south by the Liverpool Ranges, on the east by the Tamworth Fold Belt and on the west by the Warrumbungle Ranges and the Pilliga Scrub (Sim and Urwin, 1984). The Moki River and Coxs Creek drains this area (Namoi Community Catchment Plan, 1996).

Stipa aristiglumis extends from the northern part of the Darling Downs in south eastern Queensland, through the western slopes and plains of New South Wales and the north eastern quarter of Victoria to Yorke Peninsula in South Australia (Sim and Urwin, 1984). Throughout its range *S. aristiglumis* occurs with many species forming several recognisable grasslands and understorey associations (Sim and Urwin, 1984).

On the Liverpool Plains the *S. aristiglumis* community is found on heavy textured black earth soils (Sim and Urwin, 1984) and it is the dominant grassland of the Liverpool Plains (██████, person. comm.).

There are also outliers of Liverpool Plains *S. aristiglumis* association found in small scattered occurrences in the Macquarie region, on the lower slopes of the adjacent areas of the Liverpool Plains and in the Hunter Valley (Sim and Urwin, 1984). The actual size of these outliers are unknown, however, they are also believed to be small, fragmented and under serious threat (██████, person. comm.).

Sim and Urwin estimated in 1984 that only about 29,000 hectares of grasslands remains and this represents the more important occurrences of the *S. aristiglumis* association. It is not known how much of this community exists today, however, it is known that this area is being reduced even further (██████ person. comm.). Most of the remaining areas occur as fragmented blocks (Sim and Urwin, 1984) of less than 1000 hectares (██████, person. comm.).

The *S. aristiglumis* community of the Liverpool Plains are not protected in any parks or reserves (Sim and Urwin, 1984; ██████, person. comm.).

Past Distribution

There is no exact figure on how large this community was before 1788 with estimates ranging from 1000 to 3600 square kilometres (Sim and Urwin, 1984; ██████, person. comm.).

Category for which the ecological community is nominated under the EPBC Act:

It is not known how much of this community remains, however Sim and Urwin reported (1984) that by 1978 approximately 85 % of the Black Earth Alluvial Plains Land System of the Liverpool Plains (where the *S. aristiglumis* community is predominantly found) was under cultivation and this will have increased even further in the last 22 years. On the basis of this, this community is being nominated as endangered.

Justification for this nomination [EPBC Regulations 7.06 2(c) and 7.02].

(1) Marked Decrease in Geographic Distribution

There is no exact figure on how large this community was before 1788 with estimates ranging from 1000 to 3600 square kilometres (Sim and Urwin, 1984; ██████, person. comm.). Sim and Urwin estimated in 1984 that only about 29,000 hectares of grasslands remains and this represents the more important occurrences of the *S. aristiglumis* association. It is not known how much of this community exists today, however, it is known that this area is being reduced even further (██████, person. comm.). Most of the remaining areas occur as fragmented blocks (Sim and Urwin, 1984) of less than 1000 hectares (██████, person. comm.).

(2) Restricted geographic distribution such that the community could be lost rapidly by the action of a known threatening process

Cropping and similar agricultural practices are recognised as being the most serious threat to the *S. aristiglumis* community today and it is having a devastating impact (██████ person. comm.). This community is now seriously threatened and face reduction in small isolated patches (Sim and Urwin, 1984).

The *Stipa aristiglumis* community of the Liverpool Plains has been assigned the conservation risk code E1 by Benson (1989) in a paper prepared for the Australian Committee for IUCN and NSW National Parks and Wildlife Service. This means that this community is considered endangered and “likely to become extinct with a few decades if action is not taken to rectify the decline of the association and protect and manage areas” and the area is “not conserved”.

The Benson (1989) report also states the major cause of decline of this community is grazing and cropping which has resulted in a major reduction in its range.

Sim and Uriwn reported (1984) that by 1978 approximately 85 % of the Black Earth Alluvial Plains Land System of the Liverpool Plains (where the *S. aristiglumis* community is predominantly found) was under cultivation and this proportion of land cultivated has increased even further (██████, person. comm.). These areas have been further reduced because the Native Grasslands Management Plan (Unpub.), which was in action until 1/1/2000, stated that a grazier/farmer could clear 85% of their properties grasslands or 60% of the existing Plains Grass, which ever is smallest, if the grassland has not been identified as high conservation value. All of the remaining grasslands are equally susceptible to conversion to cropping since the soils, climate and topography are suitable (Sim and Urwin, 1984).

While there is the potential for the species *S. aristiglumis* to return after cropping it is
Nomination of *Stipa aristiglumis* Grasslands of the Liverpool Plains as an Endangered Ecological Community

unlikely that Kangaroo Grass, Silky Brown Top and Native Oat, which also makes up part of this community, will return if the cropped area is not situated close to uncropped areas, which is likely due to the fragmentation of this community, and even then the density of species within the community is likely to be different (██████, person. comm.).

Invasion of exotic plants is also a threatening processes to these grasslands. The major threatening weeds to this community includes Johnson Grass (*Sorghum halepense*) and Coolatai grass (*Hyparrhenia hirta*) (Sim and Urwin, 1984; ██████, person. comm). Other weeds found within this community include Noongaga Burr, *Repistrium rugrosa*, Spear Thistle, Golden Dodder, *Verbena tenusecta* and *Medics* spp. (██████, person. comm.).

All the remaining areas of *S. aristiglumis* communities identified in the study by Sim and Urwin (1984) are virtually islands in a sea of cultivation and are subject to the potential effects of exotic species invasion from neighbouring crops, pastures and weeds.

Grazing has also impacted upon this community. Prior to the extensive stocking of sheep and cattle on the Liverpool Plains, native grasslands were adapted to low soil fertility, light intermittent grazing by soft footed indigenous marsupials and recurrent burning (Native Grassland Management Plan - Draft, Unpub.). The introduction of sheep and cattle meant heavier grazing pressures and this together with trampling, increased nutrient cycling and decreased frequency of fire has led to changes in the original species composition of the pastures (Lodge and Whalley, 1989).

Changes in the botanical composition of the grassland has also occurred as a result of grazing (Sim and Urwin, 1984). *Themeda avenacea* has virtually been eliminated as a result of increased grazing and *Dichanthium sericeum* has increased under these conditions (Sim and Urwin, 1984).

The woodlands community where *S. aristiglumis* is the dominant understorey are under additional threat as the trees are often cleared for personal use(Sim and Urwin, 1984).

Coal mining in the area also has the capability to affect this grasslands as there is the potential for future coal mining projects to conflict with existing grasslands in the vicinity (Sim and Urwin, 1984).

Grasslands blocks of a significant size for this community are relatively rare and most of the areas in 1984 were only about 1,000 hectares (Sim and Urwin, 1984). As there has been no comprehensive study of this area since 1984 it is unknown what size the communities are now, however, they have been reduced even further and continue to be reduced (██████, person. comm.).

Clearing of grasslands and woodlands in this region has been associated with the rise in shallow saline watertables (Banks, 1998) and it is likely that salinity in the future will impact upon this community (██████, person. comm.).

It is also likely that around watering points introduced animals have impacted upon the soil structure and therefore potentially upon the *S. aristiglumis* community (██████, person. comm.).

Summary

S. aristiglumis grassland is a community restricted in its natural range, is nowhere protected in parks or reserves, and is under strong and continuing threat from conversion to cropping. It is believed that this area is host to at least 17 threatened fauna species (██████, person. comm., ██████, person. comm.).

Sim and Urwin (1984) suggest an active management program is needed to protect these grasslands. Grazing could continue to be a management tool if used appropriately to control weeds and maintain diversity (Sim and Urwin, 1984; ██████, person. comm.). These appropriate management regimes could be pursued under conservation agreements with private landholders. Burning of this community could be an alternative management action, however, this needs to be explored further (██████, person. comm.).

The Native Grasslands Management Plan - Draft (Unpub.) management actions proposed were to enhance landholders ability to identify native grasses; allow intermittent grazing; weed control; seed collection and undertake further research.

The stands of Liverpool Plains Grasslands in this region are fragmented, significantly reduced in size and highly vulnerable to a range of threatening processes. It is also habitat to at least 17 threatened fauna species. The need for this area to be conserved/protected is well recognised (██████, person. comm., ██████, person. comm., Sim and Urwin, 1984; Benson, 1989) and the nominee urges the Threatened Species Scientific Committee to draw the same conclusion in regards endangered listing for this community on the EPBC.

References to any scientific literature that supports the other information given in the nomination

Beadle, N. 1981. The Vegetation of Australia. Gustav Fischer Verlag, Stuttgart.

Nomination of *Stipa aristiglumis* Grasslands of the Liverpool Plains as an Endangered Ecological Community

Benson, J. 1989. Establishing priorities for the conservation of rare or threatened plants and plant associations in New South Wales In Hicks, M. and Eiser, P (eds) The Conservation of Threatened Species and Their Habitats. Australian Committee of IUCN. Canberra

Banks, R. 1998. Soil landscapes of the Blackville 1: 100 000 Sheet Report. Department of Land and Water Conservation. Sydney

Lodge, G. and Whalley, R. 1989. Native and Natural Pastures of the Northern Slopes and Tablelands of NSW: A Review and Annotated Bibliography. NSW Agriculture and Fisheries. Sydney

Lunt, I. Management of remnant lowland grasslands and grassy woodlands for nature conservation: a review. Victorian Naturalists **108 (3)**: 56 - 66

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Native Grassland Management Plan

NSW National Parks and Wildlife Service. Unpub. Preliminary Overview of the Brigalow Belt South Bioregion (Stage 1).

Sim, I and Urwin, N. 1984. The Natural Grasslands of the Liverpool Plains: Report based on Duggin and Allison 1982. NSW Department of Environment and Planning. Sydney

Specht, R., Roe, E. and Boughton, V. 1974. The conservation of major plant communities in Australia and Papua and New Guinea. Australian Journal of Botany. Supplement No. 7

Appendix A.

Flora of the *Stipa aristiglumis* community of the Liverpool Plains (Native Grassland Management Plan - Draft, Unpub., ██████, person. comm.)

	Scientific Name	Common Name	Notes
Dominant	<i>Stipa aristiglumis</i>	Plains Grass	
Sub Dominant and Associated Grasses	<i>Dichanthium sericeum</i>	Blue Grass	
	<i>Panicum spp.</i>	Panics	
	<i>Chloris spp.</i>	Windmill Grass	
	<i>Aristida spp.</i>	Wire Grasses	
	<i>Stipa spp.</i>	Spear Grasses	
	<i>Themeda australis</i>	Kangaroo Grass	
	<i>Eriochloa procera</i>	Early Spring Grass	
	<i>Eragrostis spp.</i>	Love Grasses	
	<i>Eulalia aurea</i>	Silky Brown Top	
	<i>Themeda avenacea</i>	Native Oat	
	<i>Danthonia spp.</i>	Wallaby Grass	
	<i>Mentha spp.</i>	Native Mints	
	<i>Rumett brownii</i>	Native Dock	
Woodland Species			
	<i>Eucalyptus albens</i>		Common
	<i>Eucalyptus melliodora</i>		Common
	<i>Eucalyptus albens</i> x <i>Eucalyptus mollucana</i>		Potentially
	<i>Eucalyptus populena</i>		Common, eastern limit
	<i>Eucalyptus blakelyi</i>		On peripheral

Nomination of *Stipa aristiglumis* Grasslands of the Liverpool Plains as an Endangered Ecological Community

	<i>Eucalyptus camuldensis</i>		Along Cox's Ck and Mooki River
	<i>Casurina cunninghamia</i>	River Oak	On Coolah Tops and scattered along Cox's Ck and Mooki River
	<i>Acacia harpophylla</i>	Brigalow	Isolated presence
	<i>Acacia pendula</i>		Scattered
	<i>Angophora floribunda</i>		Upper reaches of Cox's Ck and Mooki River

Appendix B. Fauna List of the *Stipa aristiglumis* community ([REDACTED], person. comm.; [REDACTED], person. comm.).

Fauna List Where *Stipa aristiglumis* is the Dominant Understorey of the Woodlands.

MAMMALS	
COMMON NAME	SPECIES NAME
KANGAROOS AND WALLABIES	
Eastern Grey Kangaroo	<i>Macropus giganteus</i>
Common Wallaroo	<i>Macropus robustus</i>
Swamp Wallaby	<i>Wallabia bicolor</i>
Red-necked Wallaby	<i>Macropus rufogriseus</i>
PHASCOLARCTIDAE	
Koala	<i>Phascolarctos cinereus</i>
MONOTREMES	
Short-beaked Echidna	<i>Tachyglossus aculeatus</i>
DASYURIDS	
Yellow-footed Antechinus	<i>Antechinus flavipes</i>
Common Dunnart	<i>Sminthopsis murina</i>
Narrow-nosed Planigale	<i>Planigale tenuirostris</i>
POSSUMS AND GLIDERS	
Sugar Glider	<i>Petaurus breviceps</i>
Squirrel Glider	<i>Petaurus norfolcensis</i>
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>
Common Brushtail Possum	<i>Trichosurus vulpecula</i>
Feathertail Glider	<i>Acrobates pygmaeus</i>
RODENTS	
Black Rat	<i>Rattus rattus</i>
House Mouse	<i>Mus musculus</i>
CARNIVORES	
Fox	<i>Vulpes vulpes</i>
Cat	<i>Felis catus</i>
INTRODUCED HERBIVORES	
Rabbit	<i>Oryctolagus cuniculus</i>
Brown Hare	<i>Lepus capensis</i>
BATS	

Nomination of *Stipa aristiglumis* Grasslands of the Liverpool Plains as an Endangered Ecological Community

LITTLE MASTIFF BAT	<i>Mormopterus planiceps</i>
EASTERN HORSESHOE	<i>Rhinolophus megaphyllus</i>
YELLOW-BELLIED SHEATHTAIL	<i>Saccolaimus flaviventris</i>
WHITE-STRIPED MASTIFF	<i>Tadarida australis</i>
LARGE BENT-WING	<i>Miniopterus schreibersii</i>
WESTERN BROAD-NOSED	<i>Scotorepens balstoni</i>
LITTLE BROAD-NOSED	<i>Scotorepens greyii</i>
LESSER LONG-EARED	<i>Nyctophilus geoffroyi</i>
GOULD'S LONG-EARED	<i>Nyctophilus gouldi</i>
LARGE PIED BAT	<i>Chalinolobus dwyeri</i>
GOULDS WATTLED	<i>Chalinolobus gouldii</i>
CHOCOLATE WATTLED	<i>Chalinolobus morio</i>
PALE EPTESICUS	<i>Vespadelus vulturnus</i>
LARGE FOREST EPTESICUS	<i>Vespadelus darlingtoni</i>
<u>REPTILES</u>	
REPTILE SPECIES	COMMON NAME
GECKOS	
<i>DIPLODACTYLUS williamsi</i>	Soft-spined Gecko
<i>DIPLODACTYLUS vittatus</i>	Stone Gecko
<i>GEHYRA dubia</i>	Northern Dtella
<i>GEHYRA variegata</i>	Tree Dtella
<i>HETERONOTIA binoei</i>	Prickly Gecko
<i>OEDURA tryoni</i>	Southern Spotted Velvet Gecko
<i>OEDURA robusta</i>	Robust Velvet Gecko
<i>UNDERWOODISAURUS milii</i>	Thick-tailed Gecko
<i>UNDERWOODISAURUS sphyrurus</i>	Border Thick-tailed Gecko
SNAKE LIZARDS	
<i>DELMA plebia</i>	
<i>DELMA tincta</i>	
<i>LIALIS burtonis</i>	Burtons Legless Lizard
<i>PYGOPUS nigriceps</i>	Hooded Scaly-foot
GOANNAS	
<i>VARANUS varius</i>	Lace Monitor
DRAGONS	
<i>AMPHIBOLURUS muricatus</i>	Jacky Lizard
<i>AMPHIBOLURUS nobbi</i>	Nobby
<i>POGONA barbata</i>	Eastern Bearded Dragon
SKINKS	

Nomination of *Stipa aristiglumis* Grasslands of the Liverpool Plains as an Endangered Ecological Community

<i>ANOMALOPUS leuckartii</i>	<i>Legless Lizard</i>
<i>CARLIA tetradactyla</i>	<i>Southern Rainbow Skink</i>
<i>CRYPTOBLEPHARUS virgatus</i>	<i>Wall Lizard</i>
<i>CRYPTOBLEPHARUS carnabyi</i>	
<i>CTENOTUS robustus</i>	<i>Striped Skink</i>
<i>EGERNIA cunninghami</i>	<i>Cunningham's Skink</i>
<i>EGERNIA striolata</i>	<i>Tree Skink</i>
<i>EULAMPRUS tenuis</i>	<i>Barred-sided Skink</i>
<i>LERISTA bougainvillii</i>	
<i>LERISTA muelleri</i>	
<i>LERISTA punctatovittata</i>	
<i>LYGISAURUS foliorum</i>	
<i>MENETIA greyii</i>	
<i>MORETHIA boulengeri</i>	
<i>TILIQUA scincoides</i>	<i>Eastern Blue-tongued Lizard</i>
SNAKES	
<i>RAMPHOTYPHLOPS proximus</i>	<i>Blind or Worm Snake</i>
<i>RAMPHOTYPHLOPS bituberculata</i>	<i>Blind or Worm Snake</i>
<i>RAMPHOTYPHLOPS nigrescens</i>	<i>Blind or Worm Snake</i>
<i>RAMPHOTYPHLOPS wiedii</i>	<i>Blind or Worm Snake</i>
<i>RAMPHOTYPHLOPS broomi</i>	<i>Blind or Worm Snake</i>
<i>MORELIA spilota</i>	<i>Carpet Python</i>
<i>DEMANSIA psammophis</i>	<i>Yellow-faced Whip Snake</i>
<i>FURINA diadema</i>	<i>Red-naped Snake</i>
<i>HOPLOCEPHALUS bitorquatus</i>	<i>Pale-headed Snake</i>
<i>PSEUDECHIS porphyriacus</i>	<i>Red-bellied Black Snake</i>
<i>PSEUDECHIS guttatus</i>	<i>Blue-bellied Black Snake</i>
<i>PSEUDONAJA textilis</i>	<i>Eastern Brown Snake</i>
<i>SIMOSELAPS australis</i>	<i>Coral Snake</i>
<i>SUTA suta</i>	<i>Curl Snake</i>
<i>SUTA spectabilis</i>	
<i>VERMICELLA annulata</i>	<i>Bandy Bandy</i>
FROGS	
SPECIES NAME	COMMON NAME
FROGS	
<i>CRINIA signifera</i>	<i>Brown Froglet</i>
<i>CRINIA parinsignifera</i>	<i>Brown Froglet</i>

Nomination of *Stipa aristiglumis* Grasslands of the Liverpool Plains as an Endangered Ecological Community

<i>CYCLORANA platycephala</i>	<i>Waterholding Frog</i>
<i>CYCLORANA verrucosa</i>	<i>Warty Waterholding Frog</i>
<i>LIMNODYNASTES tasmaniensis</i>	<i>Spotted Marsh Frog</i>
<i>LIMNODYNASTES fletcheri</i>	<i>Barking Marsh Frog</i>
<i>LIMNODYNASTES ornatus</i>	<i>Ornate Burrowing Frog</i>
<i>LIMNODYNASTES dumerilii</i>	<i>Banjo Frog or Eastern Pobblebonk</i>
<i>LIMNODYNASTES salmini</i>	<i>Salmon Striped Frog</i>
<i>NEOBATRACHUS sudelli</i>	<i>Painted Burrowing Frog</i>
<i>NOTADEN bennettii</i>	<i>Crucifix Frog</i>
<i>PSEUDOPHRYNE bibroni</i>	<i>Bibron's Toadlet</i>
<i>UPEROLEIA rugosa</i>	<i>Wrinkled Toadlet</i>
<i>LITORIA caerulea</i>	<i>Green Tree Frog</i>
<i>LITORIA latopalmata</i>	<i>Broad Palmed Frog</i>
<i>LITORIA peronii</i>	<i>Peron's Tree Frog</i>
<i>LITORIA rubella</i>	<i>Desert Tree Frog</i>
<i>LITORIA alboguttata</i>	<i>Striped Burrowing Frog</i>

BIRDS

COMMON NAME

Little Pied Cormorant
 Little Black Cormorant

 Pacific Heron
 Cattle Egret
 White-faced Heron

 Sacred Ibis
 Straw-necked Ibis

 Australian Wood Duck
 Pacific Black Duck
 Grey Teal

COMMON NAME

Rainbow Lorikeet
 Scaly - breasted Lorikeet
 Musk Lorikeet
 Little Lorikeet

 Crimson Rosella
 Eastern Rosella
 Red-rumped Parrot
 Turquoise Parrot
 Ringnecked Parrot
 King Parrot
 Horsfields Cuckoo
 Shining Bronze Cuckoo
 Black-eared Cuckoo

Black-shouldered Kite	Fan-tailed Cuckoo
Whistling Kite	Pallid Cuckoo
Collared Sparrowhawk	Channel-billed Cuckoo
Brown Goshawk	Koel
Little Eagle	
Wedge-tailed Eagle	Southern Boobook
Square-tailed Kite	Barking Owl
Black Kite	Barn Owl
Spotted Harrier	Masked Owl
Swamp Harrier	
	Tawny Frogmouth
Peregrine Falcon	
Brown Falcon	Owlet-Nightjar
Australian Kestrel	
Australian Hobby	White-backed Swallow
Black Falcon	Fork-tailed Swift
Painted Button Quail	Laughing Kookaburra
Red Chested Button Quail	Sacred Kingfisher
Little Button Quail	
Brown Quail	Rainbow Bee-eater
	Dollarbird
Masked Lapwing	
Banded Lapwing	Singing Bushlark
Crested Pigeon	Welcome Swallow
Common Bronzewing	Tree Martin
Peaceful Dove	Fairy Martin
Diamond Dove	
	Richard's Pipit
Cockatiel	
Sulphur-crested Cockatoo	Black-faced Cuckoo Shrike

Galah	White-bellied Cuckoo Shrike
Little Corella	Ground Cuckoo Shrike
	White-winged Triller
Red-capped Robin	Mistletoe Bird
Flame Robin	Southern Whiteface
Scarlet Robin	Brown Thornbill
Eastern Yellow Robin	Buff-rumped Thornbill
Jacky Winter	Yellow Thornbill
Hooded Robin	Yellow-rumped Thornbill
	Striated Thornbill
Crested Shrike-tit	White-throated Gerygone
Rufous Whistler	Weebill
Golden Whistler	
Grey Shrike-thrush	Striated Pardalote
	Spotted Pardalote
Rufous Songlark	
Brown Songlark	Silvereye
	Plum-headed Finch
Superb Fairy-wren	Red-browed Finch
Variegated Wren	Diamond Firetail
Speckled Warbler	Double-barred Finch
White -browed Babbler	House Sparrow
Varied Sittella	Zebra Finch
White-throated Treecreeper	Common Starling
Brown Treecreeper	Olive-backed Oriole
	Magpie-lark
Red Wattlebird	
Noisy Friarbird	Restless Flycatcher
Little Friarbird	Grey Fantail
Blue-faced Honeyeater	Willie Wagtail
Noisy Miner	
Spiny-cheeked Honeyeater	White-winged Chough

Nomination of *Stipa aristiglumis* Grasslands of the Liverpool Plains as an Endangered Ecological Community

Yellow-faced Honeyeater	Apostle Bird
White-eared Honeyeater	
Fuscous Honeyeater	Dusky Woodswallow
White-plumed Honeyeater	White-Browed Woodswallow
Brown Honeyeater	
White-naped Honeyeater	Grey Butcherbird
Brown-headed Honeyeater	Pied Butcherbird
Black-chinned Honeyeater	Australian Magpie
Eastern Spinebill	Pied Currawong
Scarlet Honeyeater	
Striped Honeyeater	Australian Raven
Painted Honeyeater	Torresian Crow
Regent Honeyeater	
	Bush Stone-curlew

Fauna List where *Stipa aristiglumis* community is treeless/shrubless

Scientific Name	Common Name
<i>Crinia signifera</i>	Common Eastern Froglet
<i>Limnodynastes dumerilii</i>	Eastern Banjo Frog
<i>Limnodynastes ornatus</i>	Ornate Burrowing Frog
<i>Limnodynastes tasmaniensis</i>	Spotted Grass Frog
<i>Cyclorana spp.</i>	Ornate Frog
<i>Diplodactylus vittatus</i>	Stone Gecko
<i>Underwoodisaurus milii</i>	Thick Tailed Gecko
<i>Lialis burtonis</i>	Burton's Legless Lizard
<i>Pygopus nigriceps</i>	Hooded Scaly Foot
<i>Amphibolurus muricatus</i>	Jacky Lizard
<i>Pogona barbata</i>	Bearded Dragon

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<i>Tympanocryptis lineata</i>	Lined Earless Dragon
<i>Anomalopus leukartii</i>	
<i>Bassiana platynota</i>	Red Throated Skink
<i>Ctenotus robustus</i>	Striped Skink
<i>Hemiergus decreasiensis</i>	
<i>Lampropholis caligula</i>	
<i>Lampropholis delicata</i>	Grass Skink
<i>Lampropholis guichenoti</i>	Garden Skink
<i>Morethia boulengeri</i>	Boulenger's Skink
<i>Pseudemoia entrecasteauxii</i>	Tussock Skink
<i>Pseudemoia pagenstecheri</i>	
<i>Saiphos equalis</i>	Three Toed Skink
<i>Saproscincus mustelinus</i>	Weasel Skink
<i>Tiliqua scincoides</i>	Eastern Blue Tongued Lizard
<i>Ramphotyphlops bituberculatus</i>	
<i>Ramphotyphlops proximus</i>	
<i>Ramphotyphlops wiedii</i>	
<i>Furina diadema</i>	Red naped Snake
<i>Pseudechis guttatus</i>	Spotted Black Snake
<i>Pseudechis porphyriacus</i>	Red Bellied Black Snake
<i>Pseudechis textilis</i>	Eastern Brown Snake
<i>Simoselaps australis</i>	Coral Snake
<i>Suta spectabilis dwyeri</i>	
<i>Dromaius novaehollandiae</i>	Emu
<i>Coturnix pectoralis</i>	Stubble Quail
<i>Anas gracilis</i>	Grey Teal
<i>Accipter cirrhocephalus</i>	Collared Sparrowhawk
<i>Accipter fasciatus</i>	Brown Goshawk
<i>Aquila audax</i>	Wedge Tailed Eagle
<i>Circus approximans</i>	Swamp Harrier

<i>Circus assimilis</i>	Spotted Harrier
<i>Elanus axillaris</i>	Black Shouldered Kite
<i>Haliastur sphenurus</i>	Whistling Kite
<i>Hieraaetus morphnoides</i>	Little Eagle
<i>Falco berigora</i>	Brown Falcon
<i>Falco cenchroides</i>	Nankeen Kestrel
<i>Falco longipennis</i>	Australian Hobby
<i>Falco peregrinus</i>	Peregrine Falcon
<i>Turnix varia</i>	Painted Button Quail
<i>Burhinus grallarius</i>	Bush Stone Curlew
<i>Vanellus miles</i>	Masked Lapwing
<i>Vanellus tricolor</i>	Banded Lapwing
<i>Ocyphaps lophotes</i>	Crested Pigeon
<i>Phaps chalcoptera</i>	Common Bronzewing
<i>Cacatua roseicapilla</i>	Galah
<i>Cacatua sanguinea</i>	Little Corella
<i>Nymphicus hollandicus</i>	Cockatiel
<i>Pseephotus haematonotus</i>	Red Rumped Parrot
<i>Ninox connivens</i>	Barking Owl
<i>Ninox novaeseelandiae</i>	Southern Boobook
<i>Tyto alba</i>	Barn Owl
<i>Tyto novaehollandiae</i>	Masked Owl
<i>Podargus strigoides</i>	Tawny Frogmouth
<i>Aegotheles cristatus</i>	Australian Owlet - nightjar
<i>Hirundapus caudacutus</i>	White Throated Needletail
<i>Malurus cyaneus</i>	Superb Fairy Wren
<i>Malurus lamberti</i>	Variegated Fairy Wren
<i>Avcanthiza chrysorrhoa</i>	Yellow Rumped Thorn Bill
<i>Epthianura tricolor</i>	Crimson Chat
<i>Artamus cinereus</i>	Black Faced Woodswallow

<i>Artamus cyanopterus</i>	Dusky Woodswallow
<i>Neochmia modesta</i>	Plum Headed Finch
<i>Stagonopleura guttata</i>	Diamond Firetail
<i>Taeniopygia bichenovii</i>	Double Barred Finch
<i>Taeniopygia guttata</i>	Zebra Finch
<i>Hirundo ariel</i>	Fairy Martin
<i>Hirundo neoxena</i>	Welcome Swallow
<i>Hirundo nigricans</i>	Tree Martin
<i>Mormopterus planiceps</i>	Little Mastiff Bat
<i>Nyctinomus australis</i>	White Striped Mastiff Bat
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat
<i>Chalinolobus morio</i>	Chocolate Wattled Bat
<i>Falsistrellus tasmaniensis</i>	Great Pipistrelle
<i>Nyctophilus geoffroyi</i>	Lesser Long Eared Bat
<i>Nyctophilus gouldi</i>	Gould's Long Eared Bat
<i>Scoteanax rueppellii</i>	Greater Broad Nosed Bat
<i>Scotorepens greyii</i>	Little Broad Nosed Bat
<i>Vespadelus darlingtoni</i>	
<i>Vespadelus pumilus</i>	Little Cave Eptesicus
<i>Vespadelus regulus</i>	King River Eptesicus
<i>Vespadelus vulturnus</i>	Little Forest Eptesicus