



Ramsar Information Sheet

Published on 5 September 2025

Update version, previously published on : 14 June 1999

Australia

Gwydir Wetlands: Gingham and Lower Gwydir (Big Leather) Watercourses



Designation date	14 June 1999
Site number	993
Coordinates	29°15'26"S 149°14'06"E
Area	842,00 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

<p>The Gwydir Wetlands Ramsar site is located approximately 60km west of Moree on the lower floodplain of the Gwydir River in the Murray-Darling Basin, north-west New South Wales, Australia.</p> <p>The Ramsar site has a total area of 842 ha and is comprised of four sections, two within the NPWS reserve estate and two on private land:</p> <ul style="list-style-type: none"> • Old Dromana (part of the Gwydir Wetlands State Conservation Area) (608 ha), • Goddard’s Lease (part of the Gwydir Wetlands State Conservation Area) (45 ha), • Crinolyn (Crown Land) (88 ha) and • Windella (private) (102 ha) <p>The Gwydir wetlands, including the Ramsar site, are part of the traditional land of the Kamilaroi people and hold current and historical cultural importance for the Traditional Owners.</p> <p>The site meets Ramsar listing criteria 1, 2, 3, and 4:</p> <p>Criterion 1: The Gwydir Wetlands are one of few terminal wetlands found within inland NSW and contain one of the largest stands of water couch (<i>Paspalum distichum</i>) and marsh club-rush (<i>Bolboschoenus fluviatilis</i>) remaining in New South Wales (Bennett & Green 1991, McCosker & Duggin 1993).</p> <p>Criterion 2: The site supports one nationally listed threatened ecological community (within and adjacent to the Ramsar boundaries): Coolibah-black box Woodland. It supports an appreciable assemblage of rare and threatened species.</p> <p>Criterion 3: The Gwydir Wetlands Ramsar sites supports a large biodiversity of flora and fauna that is unique to the Murray-Darling Basin bioregion because the major wetlands in the Basin are rarely flooded simultaneously, so the Gwydir Wetlands can provide important habitats for wetland-dependent birds when other major wetlands are dry (Spencer 2010).</p> <p>Criterion 4: The broader Gwydir wetlands support 27 species of listed migratory birds, 14 of which have been recorded within the Ramsar site. The greater Gwydir wetlands are one of the most important sites in Australia for colonially-nesting waterbirds. 17 species of colonial waterbirds were recorded or observed to breed in their thousands in the broader wetlands.</p>
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2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency	Department of Climate Change, Energy, the Environment and Water
Postal address	GPO Box 3090 Canberra ACT 2601 Australia

National Ramsar Administrative Authority

Institution/agency	Department of Climate Change, Energy, the Environment and Water
Postal address	GPO Box 3090 Canberra ACT 2601 Australia

2.1.2 - Period of collection of data and information used to compile the RIS

From year	1999
To year	2024

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Gwydir Wetlands: Gingham and Lower Gwydir (Big Leather) Watercourses
Unofficial name (optional)	Gwydir Wetlands

2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary	Yes <input checked="" type="radio"/> No <input type="radio"/>
(Update) The boundary has been delineated more accurately	<input checked="" type="checkbox"/>
(Update) The boundary has been extended	<input type="checkbox"/>
(Update) The boundary has been restricted	<input type="checkbox"/>
(Update) B. Changes to Site area	the area has increased
(Update) The Site area has been calculated more accurately	<input checked="" type="checkbox"/>
(Update) The Site has been delineated more accurately	<input type="checkbox"/>
(Update) The Site area has increased because of a boundary extension	<input type="checkbox"/>
(Update) The Site area has decreased because of a boundary restriction	<input type="checkbox"/>
(Update) For secretariat only: This update is an extension	<input type="checkbox"/>

2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?	Yes (actual)
(Update) Are the changes	Positive <input type="radio"/> Negative <input type="radio"/> Positive & Negative <input checked="" type="radio"/>
(Update) No information available	<input checked="" type="checkbox"/>
(Update) Optional text box to provide further information	

In 2003 the Australian Ramsar Administrative Authority notified the Ramsar Convention Secretariat of a change in the ecological character of the Gwydir Ramsar site as a result of illegal land clearance, ploughing and wheat cropping on the Windella component of the Ramsar site.

The landholder was successfully prosecuted under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), fined and an injunction issued preventing the landholder from taking any further agricultural activity on the land, and from running livestock on the site until at least 2007. The site was subsequently fenced and stock excluded.

Higher than average rainfalls, and local inundation and flooding events from early 2020 to early 2023 are likely helped regeneration at Windella. This extended wet period resulted in inundation extents across the wetlands exceeding the long-term maximum extents. Inundation has been confined to core wetlands since late 2023, but core wetlands have remained reasonably wet up until the end of 2024.

Apart from the regeneration from clearing at Windella, the condition of the four Ramsar sub-sites has remained relatively stable.

2023 surveys in Crinolyn and Windella show both sites contain vegetation reflective of functioning wetland systems which vary in form and condition across their extent, and in addition to their individual ecological value, are an important part of the wider Gwydir Wetlands. The survey did observe the impacts of aerial spraying (vegetation die-back and exotic invasive species becoming abundant) (DCCEEW 2024a). More regular vegetation surveys are required to determine the health trend of the sites.

In Old Dromana and Goddard's Lease, an analysis of vegetation condition trend from 2010-11 to 2022-23 water years show that vegetation condition and extent have been maintained. Responses track water availability, but on the whole condition has remained stable over this period.

(Update) Changes resulting from causes operating within the existing boundaries? ☒

(Update) Changes resulting from causes operating beyond the site's boundaries? ☐

(Update) Changes consequent upon site boundary reduction alone (e.g., the exclusion of some wetland types formerly included within the site)? ☐

(Update) Changes consequent upon site boundary increase alone (e.g., the inclusion of different wetland types in the site)? ☐

(Update) Please describe any changes to the ecological character of the Ramsar Site, including in the application of the Criteria, since the previous RIS for the site.

The site was listed under the former listing criteria. In 1999, the site was considered to meet Ramsar criteria 1 (a, b c & d), 2 (a, b & c) and 3 (a & b).

The Ramsar site criteria has changed since the last RIS, and the site is now considered to meet current criteria 1, 2, 3 and 4.

In the previous RIS, criterion 5 was considered to be met, however an assessment in 2006 found the criteria was not met at that time or at time of listing, as the data used to support the criterion used breeding colonies outside of the Ramsar site. It is uncertain whether the site also meets Ramsar criterion 5, either now or at the time of listing. The broader Gwydir wetlands has supported more than 20,000 waterbirds in previous years, such as from 2021-2023.

The changes outlined above reflects the change to the criteria, not a change in the ecological character of the site.

(Update) Is the change in ecological character negative, human-induced AND a significant change (above the limit of acceptable change) Yes ☒

(Update) Has an Article 3.2 report been submitted to the Secretariat? Yes ☒

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Former maps 0

Boundaries description

The Gwydir Wetlands Ramsar site is made up of four parcels of land within the Gwydir Wetlands system, with two of these being in the NPWS NSW Gwydir Wetlands State Conservation Area (GWSCA):

* Windella (privately owned): Latitude: 29° 12' 10"; Longitude: 149° 05' 40"

* Crinolyn (Crown Land): Latitude: 29° 13' 20"; Longitude: 149° 07' 20"

* Old Dromana (part of the Gwydir Wetlands State Conservation Area): : Latitude: 29° 21' 00"; Longitude: 149° 19' 50"

* Goddard's Lease (part of the Gwydir Wetlands State Conservation Area): Latitude: 29° 25' 00"; Longitude: 149° 23' 10"

2.2.2 - General location

a) In which large administrative region does the site lie? New South Wales

b) What is the nearest town or population centre? Moree (population 7,070) lies approximately 70 km east of the site

2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes ☐ No ☒

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes ☐ No ☒

2.2.4 - Area of the Site

Official area, in hectares (ha):

Area, in hectares (ha) as calculated from GIS boundaries

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Other scheme (provide name below)	Murray-Darling Basin, Border Rivers Region
Other scheme (provide name below)	Darling Riverine Plains

Other biogeographic regionalisation scheme

Bureau of Meteorology (2012). Australian Hydrological Geospatial Fabric (Geofabric): Topographic Drainage Divisions and River Regions – Murray-Darling Basin, Border Rivers Region. (http://www.bom.gov.au/water/geofabric/documents/BOM002_Map_Poster_A3_Web.pdf).

The Australian Hydrological Geospatial Fabric (Geofabric) is a specialised Geographic Information System (GIS). It registers the spatial relationships between important hydrological features such as rivers, water bodies, aquifers and monitoring points. The National Topographic Drainage Divisions and River Regions are currently derived from Geofabric version 2. These provide a set of surface water reporting units based on drainage-enforced digital elevation models and are used to depict where water flows and drains across the landscape.

Commonwealth of Australia (2012). Interim Biogeographic Regionalisation for Australia, Version 7 – Darling Riverine Plains. <https://www.environment.gov.au/land/nrs/science/ibra/australias-bioregions-maps>

The interim Biogeographic Regionalisation for Australia (IBRA) describes the biogeographic regions within Australia. Subdivisions of IBRA regions provide finer scale regions of the Australian landscape. Vegetation community and land system mapping undertaken by the states and territories have been used to establish IBRA Region and Subregion Boundaries. This information can potentially be used to identify regional ecosystems across Australia.

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

☒ Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided

The Gwydir Wetlands are terminal wetlands providing flood mitigation for downstream areas. Although the Gingham and the Lower Gwydir watercourses remain terminal, except during very large-scale flood events (when they connect across floodplain to the Barwon River), water now flows through to the Barwon River semi-permanently through the Carole Creek and the Mehi River (distributaries of the Gwydir River).

Flooding in the Gwydir Wetlands is not always synchronous with flooding of other Murray-Darling Basin wetlands, such as the Macquarie Marshes or Narran Lakes. As a result, the Gwydir Wetlands play an important hydrological role in the region, providing spatial and temporal variation in flooding and drying habitats, as well as mitigating impacts of high flow events and low flow periods.

Other reasons

The Gwydir Wetlands are a particularly good example of an inland terminal delta in the both the Darling Riverine Plains bioregion and the whole of the Murray-Darling Basin. The wetlands play a substantial part in the biological and ecological functioning of the Murray-Darling Basin, as the major wetlands in the Basin are rarely inundated simultaneously, and therefore not always suitable for waterbird breeding at the same time. The Ramsar listed areas are important components of the entire Gwydir Wetlands system.

The Gwydir Wetlands are one of the few terminal wetlands found within inland NSW and contain one of the largest stands of water couch (*Paspalum distichum*) and marsh club-rush (*Bolboschoenus fluviatilis*) remaining in New South Wales.

The Gwydir Ramsar site supports four Ramsar wetlands types as well as small areas of terrestrial habitat and seasonally flooded agricultural land.

Ts: Seasonal/ intermittent freshwater marshes/ pools on inorganic soils. 677 ha comprised of spike-rush sedgeland with *Eleocharis plana* and water couch *Paspalum distichum* dominated plant communities:

- Crinolyn – 39 ha
- Goddard's Lease – 45 ha
- Old Dromana – 492 ha
- Windella – 102 ha

Xf: Freshwater, tree-dominated wetlands. 146 ha comprised of Coolibah - Black Box Woodlands

- Crinolyn – 48 ha
- Old Dromana – 98 ha

W: Shrub-dominated wetlands. 11 ha containing River cooba swamp–lignum shrubland

- Old Dromana – 11 ha

N - Seasonal/intermittent/irregular rivers/streams/creeks

- Drainage lines present but too small to map

Terrestrial floodplain habitats (8.5 ha)

- Crinolyn – 1.3 ha
- Old Dromana – 7.2 ha

Seasonally flooded agricultural land (including intensively managed or grazed wet meadow or pasture) (20 ha).

Note that there is overlap between wetland types.

☒ Criterion 2 : Rare species and threatened ecological communities

Optional text box to provide further information

The site provides habitat for 8 wetland-dependent fauna species and one plant species that are listed as threatened nationally under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), and/or internationally under the IUCN Red List:

- Silver perch (*Bidyanus bidyanus*) (EPBC – endangered)
- Australasian bittern (*Botaurus poiciloptilus*) (EPBC - endangered, IUCN - vulnerable)
- Sharp-tailed sandpiper (*Calidris acuminata*) (EPBC and IUCN - vulnerable)
- Black box (*Eucalyptus largiflorens*) (IUCN – vulnerable)
- Latham's Snipe (*Gallinago hardwickii*) (EPBC Act – vulnerable)
- Black-tailed Godwit (*Limosa limosa*) (EPBC – endangered)
- Murray cod (*Maccullochella peelii peelii*) (EPBC – vulnerable)
- Australian painted snipe (*Rostratula australis*) (EPBC - endangered, IUCN - endangered)
- Common greenshank (*Tringa nebularia*) (EPBC – endangered)

The Australasian bittern (*Botaurus poiciloptilus*) is listed by the IUCN as globally vulnerable and decreasing; and endangered under the Australian EPBC Act. This species was identified as occurring at three components of the Site (Old Dromana, Goddard's Lease and Crinolyn). The Australian painted snipe (*Rostratula australis*) has been recorded during annual ground surveys in October 2010 (Goddards Lease) and November 2017 (Old Dromana).

The site contains the following ecological community listed as threatened under national (EPBC) legislation:

Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions (EPBC - endangered). This ecological community represents occurrences of one type of eucalypt woodland where coolabah/coolabah / (*Eucalyptus coolabah* subsp. *Coolibah*.) and/or black box (*Eucalyptus largiflorens*) are the dominant canopy species and where the understorey tends to be grassy.

☒ Criterion 3 : Biological diversity

Justification	<p>The wetland supports common species at the edge of their range including black-necked stork (<i>Ephippiorhynchus asiaticus</i>), and comb-crested jacana (<i>Irediparra gallinacea</i>). The wetland is of value for maintaining genetic and ecological diversity because there are few of these inland wetlands left, and they are declining. It is of special habitat value particularly as breeding and feeding habitat for large numbers of colonial waterbirds.</p>
	<p>The site supports a diversity of waterbird species. Families present at the Ramsar site and in the broader Gwydir wetlands include: magpie geese (<i>Anseranatidae</i>), swans and ducks (<i>Anatidae</i>), ibis and spoonbills (<i>Threskiornithidae</i>), herons and egrets (<i>Ardeidae</i>), darters (<i>Anhingidae</i>), cormorants (<i>Phalacrocoracidae</i>), and grebes (<i>Podicipedidae</i>). The region is also important for gallinules (<i>Rallidae</i>), cranes (<i>Gruidae</i>), storks (<i>Ciconiidae</i>), raptors (<i>Accipitridae</i> and <i>Falconidae</i>), shorebirds and waders (<i>Scolopadicae</i>).</p>
	<p>The site contains fish from the following species populations listed as threatened at the state level under the NSW Fisheries Management Act 1994 (FMA):</p> <ul style="list-style-type: none"> • western population of the olive perchlet (<i>Ambassis agassizii</i>) (endangered population) • Murray-Darling Basin population of the eel-tailed catfish (<i>Tandanus tandanus</i>) (endangered population)
	<p>The Ramsar site contains the following ecological communities listed as threatened under the NSW Biodiversity Conservation Act 2016 (NSW BCA) legislation:</p> <ul style="list-style-type: none"> • Marsh Club-rush Sedgeland in the Darling Riverine Plains Bioregion (NSW BCA - critically endangered). This community is mainly restricted to the Gwydir wetlands and has a very highly fragmented geographic distribution. It is dominated by the marsh club-rush (<i>Bolboschoenus fluviatilis</i>) up to 2 metres tall and is further characterised by an understorey of tussock sedge (<i>Carex appressa</i>), ribbed spike rush (<i>Eleocharis plana</i>), blown grass (<i>Lachnagrostis filiformis</i>), water couch (<i>Paspalum distichum</i>) and swamp buttercup (<i>Ranunculus undosus</i>) (NSW OEH 2017); and • Coolibah-Black Box Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain and Mulga Lands Bioregions (NSW BCA - endangered).

☒ Criterion 4 : Support during critical life cycle stage or in adverse conditions

<p>50 waterbird species breeding in the broader Gwydir Wetlands are likely to breed within the Ramsar site:</p> <ul style="list-style-type: none"> • grey teal (<i>Anas gracilis</i>) • Australasian shoveler (<i>Anas rhynchotis</i>) • Pacific black duck (<i>Anas superciliosa</i>) • Australasian darter (<i>Anhinga melanogaster</i>) • magpie goose (<i>Anseranas semipalmata</i>) • great egret (<i>Ardea alba</i>) • plumed egret (<i>Ardea plumifera</i>) • white-faced heron (<i>Ardea novaehollandiae</i>) • white-necked heron (<i>Ardea pacifica</i>) • hardhead (<i>Aythya australis</i>) • musk duck (<i>Biziura lobata</i>) • cattle egret (<i>Bubulcus ibis</i>) • bush stone-curlew (<i>Burhinus grallarius</i>) • Australian wood duck (<i>Chenonetta jubata</i>) • whiskered tern (<i>Chlidonias hybridus</i>) • black swan (<i>Cygnus atratus</i>) • plumed whistling duck (<i>Dendrocygna eytoni</i>) • wandering whistling duck (<i>Dendrocygna arcuate</i>) • little egret (<i>Egretta garzetta</i>) • black-fronted dotterel (<i>Eiseyornis melanops</i>)
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Optional text box to provide further information

- black-necked stork (*Ephippiorhynchus asiaticus*)
- red-kneed dotterel (*Erythrogonys cinctus*)
- Eurasian coot (*Fulica atra*)
- black-tailed native hen (*Gallinula ventralis*)
- dusky moorhen (*Gallinula tenebrosa*)
- Australian gull-billed tern (*Gelochelidon macrotarsa*)
- brolga (*Grus rubicundus*)
- black-winged stilt (*Himantopus Himantopus*)
- comb-crested jacana (*Irediparra gallinacean*)
- little bittern (*Ixobrychus minutus*)
- pink-eared duck (*Malacorhynchus membranaceus*)
- rufous night heron (*Nycticorax caledonicus*)
- blue-billed duck (*Oxyura australis*)
- great cormorant (*Phalacrocorax carbo*)
- little pied cormorant (*Phalacrocorax melanoleucos*)
- little black cormorant (*Phalacrocorax sulcirostris*)
- pied cormorant (*Phalacrocorax varius*)
- royal spoonbill (*Platalea regia*)
- yellow-billed spoonbill (*Platalea flavipes*)
- glossy ibis (*Plegadis falcinellus*)
- great-crested grebe (*Podiceps cristatus*)
- hoary-headed grebe (*Poliocephalus poliocephalus*)
- purple swamphen (*Porphyrio porphyrio*)
- Australian painted snipe (*Rostratula australis*)
- freckled duck (*Stictonetta naevosa*)
- Australasian grebe (*Tachybaptus novaehollandiae*)
- Australian white ibis (*Threskiornis Molucca*)
- straw-necked ibis (*Threskiornis spinicollis*)
- masked lapwing (*Vanellus miles*)
- banded lapwing (*Vanellus tricolor*)
- .15 listed migratory species recorded in the broader wetlands may use the site:
- fork-tailed swift (*Apus pacificus*)
- sharp-tailed sandpiper (*Calidris acuminata*)
- double-banded plover (*Charadrius bicinctus*)
- oriental plover (*Charadrius veredus*)
- white-winged black tern (*Chlidonias leucopterus*)
- Latham's snipe (*Gallinago hardwickii*)
- Black-tailed Godwit (*Limosa limosa*)
- little curlew (*Numenius minutus*)
- ruff (*Philomachus pugnax*)
- Glossy Ibis (*Plegadis falcinellus*)
- Caspian tern (*Sterna caspia*)
- common tern (*Sterna hirundo*)
- Wood Sandpiper (*Tringa glareola*)
- common greenshank (*Tringa nebularia*)
- marsh sandpiper (*Tringa stagnatilis*)
- 1 threatened vegetation community provides habitat for threatened species:
- Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions

End year 1998

The site may meet criterion 5. There is currently insufficient information on whether the Ramsar site regularly supports more than 20,000 waterbirds. This will be investigated for future RIS updates.

Optional text box to provide further information

When flooded, the broader Gwydir Wetlands sustain large numbers of breeding colonial water birds. Following several dry years, La Nina conditions in late 2020 and early 2021 brought higher flows in the Gwydir Valley. Aerial surveys in late December 2021 found the first significant waterbird colonies in the Gwydir Wetlands since 2012. These included an estimated 45,000 active nests of royal spoonbills, egrets, nankeen night herons, glossy ibis and straw-necked ibis (CEWO 2022a). Subsequent monitoring, following a second La Nina year recorded an estimated 50,000 nests of colonial waterbird species across the Gingham and Lower Gwydir Wetlands (CEWO 2023). The Goddards Lease Ramsar site supported nesting ibis in both the 2021-22 (estimated 10,000 nests) and 2022-23 (estimated 5,000 nests) breeding events. Group-nesting waterbird families include: ibis and spoonbills (Threskiornithidae), herons and egrets (Ardeidae), darters (Anhingidae), cormorants (Phalacrocoracidae), and grebes (Podicipedidae) (CEWO 2022b).

3.2 - Plant species whose presence relates to the international importance of the site

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA/ LILIOPSIDA	<i>Bolboschoenus fluviatilis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Part of a state listed threatened ecological community	This is the key species of the state listed threatened ecological community. Marsh Club-rush Sedgeland. It contributes to the biodiversity of the site.
TRACHEOPHYTA/ LILIOPSIDA	<i>Carex appressa</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Part of a state listed threatened ecological community	This is a key species of the state listed threatened ecological community. Marsh Club-rush Sedgeland. It contributes to the biodiversity of the site.
TRACHEOPHYTA/ LILIOPSIDA	<i>Eleocharis plana</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Part of a state listed threatened ecological community	This is a key species of the state listed threatened ecological community. Marsh Club-rush Sedgeland. It contributes to the biodiversity of the site.
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Eucalyptus coolabah coolabah</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	Part of a nationally listed (EPBC) threatened ecological community	This is the key species of the nationally listed threatened ecological community. Coolibah - Black Box Woodlands of the Darling Riverine Plains. It contributes to the biodiversity of the site. The site provides a source of genetic material (e.g. seeds) for reintroduction to the surrounding landscape after extreme conditions (such as drought).
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Eucalyptus largiflorens</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VU	<input type="checkbox"/>	This species is internationally listed (IUCN) - vulnerable. Part of a nationally listed (EPBC) threatened ecological community	This is a key species of the nationally listed threatened ecological community. Coolibah - Black Box Woodlands of the Darling Riverine Plains. It contributes to the biodiversity of the site.
TRACHEOPHYTA/ LILIOPSIDA	<i>Lachnagrostis filiformis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Part of a state listed threatened ecological community	This is a key species of the state listed threatened ecological community. Marsh Club-rush Sedgeland. It contributes to the biodiversity of the site.
TRACHEOPHYTA/ LILIOPSIDA	<i>Paspalum distichum</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>	Part of a state listed threatened ecological community	This is a key species of the state listed threatened ecological community. Marsh Club-rush and the key species of the important Water Couch Meadows. It contributes to the biodiversity of the site.
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Ranunculus undosus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Part of a state listed threatened ecological community	This is a key species of the state listed threatened ecological community. Marsh Club-rush Sedgeland. It contributes to the biodiversity of the site.

The species listed in Table 3.1 are the key species associated with their nationally-listed or state-listed threatened ecological communities (TEC).

Eucalyptus coolabah subsp. *coolabah* and *Eucalyptus largiflorens* are integral species of the 'Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions' and the 'Coolibah-Black Box Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain and Mulga Lands Bioregions'. These ecological communities are listed as endangered under the national (EPBC) and state (NSW BCA) Acts, respectively.

Bolboschoenus fluviatilis is the key species of the 'Marsh Club-rush Sedgeland in the Darling Riverine Plains Bioregion' threatened ecological community, listed as endangered at the state level. *Carex appressa*, *Eleocharis plana*, *Lachnagrostis filiformis*, *Paspalum distichum* and *Ranunculus undosus* are significant understorey components of this TEC.

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
Fish, Mollusc and Crustacea																	
CHORDATA/ ACTINOPTERYGII	<i>Ambassis agassizii</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	The population at the site is considered to be an endangered population at the state level (NSW FMA)	The site provides breeding habitat for this species. It contributes to the biodiversity of the site.
CHORDATA/ ACTINOPTERYGII	<i>Bidyanus bidyanus</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC Act) - endangered	Nationally listed threatened species. The site provides breeding habitat for this species.
CHORDATA/ ACTINOPTERYGII	<i>Maccullochella peelii</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC Act) - vulnerable	Nationally listed threatened species. The site provides breeding habitat for this species.
CHORDATA/ ACTINOPTERYGII	<i>Tandanus tandanus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	The population at the site is considered to be an endangered population at the state level (NSW FMA)	The site provides breeding habitat for this species. It contributes to the biodiversity of the site.
Birds																	
CHORDATA/ AVES	<i>Actitis hypoleucos</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (JAMBA, CAMBA, ROKAMBA**). This species breeds in the northern hemisphere and migrates* to Australia in its non-breeding season. It uses may use the site for non-breeding habitat and as a stopover point during migration. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/ AVES	<i>Anas gracilis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Anas superciliosa</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Anhinga melanogaster</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides foraging habitat for this species. This species forms part of breeding colonies in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including darters and cormorants. This species contributes to that diversity.

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/ AVES	<i>Anseranas semipalmata</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	State listed (NSW BCA) - vulnerable	The site provides breeding habitat for this species. It is listed as vulnerable at the state level. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Apus pacificus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (JAMBA, CAMBA, ROKAMBA**), and is a non-breeding visitor to Australia. The site provides non-breeding habitat for this species.
CHORDATA/ AVES	<i>Ardea alba</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site foraging habitat for this species. This species forms part of breeding colonies in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including herons and egrets. This species contributes to that diversity.
CHORDATA/ AVES	<i>Ardea pacifica</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides foraging habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including herons and egrets. This species contributes to that diversity.
CHORDATA/ AVES	<i>Aythya australis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides foraging habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Biziura lobata</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Botaurus poiciloptilus</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) – endangered. State listed (NSW BCA) - endangered	Nationally and internationally listed threatened species. The site provides habitat for this species.
CHORDATA/ AVES	<i>Bubulcus ibis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including herons and egrets. This species contributes to that diversity.
CHORDATA/ AVES	<i>Burhinus grallarius</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	State listed (NSW BCA) - endangered	The site provides breeding habitat for this species. This species is listed as rare or threatened at the state level.
CHORDATA/ AVES	<i>Calidris acuminata</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) – vulnerable and migratory species.	Nationally and internationally listed threatened species. This species is listed under international migratory bird agreements (JAMBA, CAMBA, ROKAMBA, Bonn**). The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/ AVES	<i>Calidris pugnax</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (CAMBA, JAMBA, ROKAMBA, Bonn**). This species breeds in the northern hemisphere and is mostly found in Africa, the Indian subcontinent and southern Europe during the non-breeding season. It is a rare but regular visitor to Australia in its non-breeding season. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/ AVES	<i>Charadrius bicinctus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (Bonn**). It breeds in New Zealand and migrates to Australia in its non-breeding season. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/ AVES	<i>Charadrius veredus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (JAMBA, CAMBA, ROKAMBA, Bonn**). This species breeds in the northern hemisphere and migrates* to Australia in its non-breeding season. It may use the site for non-breeding habitat and as a stopover point during migration. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/ AVES	<i>Chenonetta jubata</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Chlidonias hybrida</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species. This species contributes to that diversity.
CHORDATA/ AVES	<i>Chlidonias leucopterus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (JAMBA, CAMBA, ROKAMBA**). This species breeds in the northern hemisphere and migrates* to Australia in its non-breeding season. It may use the site for non-breeding habitat and as a stopover point during migration.
CHORDATA/ AVES	<i>Cygnus atratus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Dendrocygna arcuata</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Dendrocygna eytoni</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/ AVES	<i>Dupetor flavicollis</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	State listed (NSW BCA) - vulnerable	The site may provide habitat for this species, which is listed as vulnerable at the state level.
CHORDATA/ AVES	<i>Egretta garzetta</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. This species forms part of breeding in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including herons and egrets. This species contributes to that diversity.
CHORDATA/ AVES	<i>Egretta intermedia plumifera</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		The site provides foraging habitat for this species. This species forms part of breeding colonies in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including herons and egrets. This species contributes to that diversity.

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/AVES	<i>Egretta novaehollandiae</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides foraging habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including herons and egrets. This species contributes to that diversity.
CHORDATA/AVES	<i>Euseyornis melanops</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/AVES	<i>Ephippiorhynchus asiaticus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input type="checkbox"/>	<input type="checkbox"/>	State listed (NSW BCA) – endangered	The site provides breeding habitat for this species. This species is listed as rare or threatened at the state level. The site and the broader wetland ecosystem support a diversity of waterbird species including storks and cranes. This species contributes to that diversity.
CHORDATA/AVES	<i>Erythrogonys cinctus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/AVES	<i>Fulica atra</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including gallinules, coots, and grebes. This species contributes to that diversity.
CHORDATA/AVES	<i>Gallinago hardwickii</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) – vulnerable and migratory species.	Nationally listed threatened species. This species is also listed under international migratory bird agreements (JAMBA, ROKAMBA, Bonn**). This species breeds in the northern hemisphere and migrates* to Australia in its non-breeding season. It uses the site for non-breeding habitat and as a stopover point during migration.
CHORDATA/AVES	<i>Gallinula tenebrosa</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including gallinules, coots, and grebes. This species contributes to that diversity.
CHORDATA/AVES	<i>Gallinula ventralis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including gallinules, coots, and grebes. This species contributes to that diversity.
CHORDATA/AVES	<i>Gelochelidon macrotarsa</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (CAMBA**).
CHORDATA/AVES	<i>Grus rubicunda</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	State listed (NSW BCA) - vulnerable	The site provides breeding habitat for this species. This species is listed as rare or threatened at the state level.
CHORDATA/AVES	<i>Himantopus himantopus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/AVES	<i>Hydroprogne caspia</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (JAMBA**). In Australia, the Caspian Tern is a resident and is generally present throughout the year at sites where breeding occurs (Higgins & Davies 1996). Some birds may move from coastal breeding colonies to inland non-breeding areas (Bravery 1970). Whilst listed under JAMBA, the Australian population of this species does not appear to migrate internationally. The site provides habitat for this species.
CHORDATA/AVES	<i>Irediparra gallinacea</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	State listed (NSW BCA) - vulnerable	The site provides habitat for this species. This species is listed as rare or threatened at the state level. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/AVES	<i>Ixobrychus minutus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including herons and egrets. This species contributes to that diversity.
CHORDATA/AVES	<i>Limosa limosa</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - vulnerable	This species is listed under international migratory bird agreements (CAMBA, JAMBA, ROKAMBA, Bonn**). The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/AVES	<i>Malacorhynchus membranaceus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans, and ducks. This species contributes to that diversity.
CHORDATA/AVES	<i>Microcarbo melanoleucos</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. This species forms part of breeding colonies in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including darters and cormorants. This species contributes to that diversity.
CHORDATA/AVES	<i>Numenius minutus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (CAMBA, JAMBA, ROKAMBA, Bonn**). This species breeds in the northern hemisphere and migrates* to Australia in its non-breeding season. It may use the site for non-breeding habitat and as a stopover point during migration. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/AVES	<i>Nycticorax caledonicus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. This species forms part of breeding colonies within the Ramsar site and in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including herons and egrets. This species contributes to that diversity.
CHORDATA/AVES	<i>Oxyura australis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans, and ducks. This species contributes to that diversity.

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/AVES	<i>Phalacrocorax carbo</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including darters and cormorants. This species contributes to that diversity.
CHORDATA/AVES	<i>Phalacrocorax sulcirostris</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. This species forms part of breeding colonies in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including darters and cormorants. This species contributes to that diversity.
CHORDATA/AVES	<i>Phalacrocorax varius</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including darters and cormorants. This species contributes to that diversity.
CHORDATA/AVES	<i>Platalea flavipes</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. This species forms part of breeding colonies in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including ibis and spoonbills. This species contributes to that diversity.
CHORDATA/AVES	<i>Platalea regia</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. This species forms part of breeding colonies in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including ibis and spoonbills. This species contributes to that diversity.
CHORDATA/AVES	<i>Plegadis falcinellus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (Bonn**). This species is considered migratory and nomadic. Within Australia, the species moves in response to good rainfalls. Regular migration to locations outside of Australia is suspected but has not been confirmed (Marchant & Higgins 1990). This species forms part of breeding colonies within the Ramsar site and in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including ibis and spoonbills. This species contributes to that diversity.
CHORDATA/AVES	<i>Podiceps cristatus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including gallinules, coots, and grebes. This species contributes to that diversity.
CHORDATA/AVES	<i>Poliiocephalus poliocephalus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including gallinules, coots, and grebes. This species contributes to that diversity.
CHORDATA/AVES	<i>Porphyrio porphyrio</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including gallinules, coots, and grebes. This species contributes to that diversity.
CHORDATA/AVES	<i>Rostratula australis</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				EN	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - endangered	Nationally and internationally listed threatened species. The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/AVES	<i>Spatula rhynchotis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans and ducks. This species contributes to that diversity.
CHORDATA/AVES	<i>Sterna hirundo</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	This species is listed under international migratory bird agreements (CAMBA, JAMBA, ROKAMBA**). This species breeds in North America and Eurasia. It is a non-breeding migrant to Australia.
CHORDATA/AVES	<i>Stictonetta naevosa</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	State listed (NSW BCA) - vulnerable	The site provides breeding habitat for this species. This species is listed as rare or threatened at the state level. The site and the broader wetland ecosystem support a diversity of waterbird species including magpie geese, swans, and ducks. This species contributes to that diversity.
CHORDATA/AVES	<i>Tachybaptus novaehollandiae</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including gallinules, coots, and grebes. This species contributes to that diversity.
CHORDATA/AVES	<i>Threskiornis molucca</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. This species forms part of breeding colonies within the Ramsar site and in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including ibis and spoonbills. This species contributes to that diversity.
CHORDATA/AVES	<i>Threskiornis spinicollis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. This species forms part of breeding colonies within the Ramsar site and in the broader Gwydir wetlands. The site and the broader wetland ecosystem support a diversity of waterbird species including ibis and spoonbills. This species contributes to that diversity.
CHORDATA/AVES	<i>Tringa glareola</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		This species is listed under international migratory bird agreements (CAMBA, JAMBA, ROKAMBA, Bonn**). The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/AVES	<i>Tringa nebularia</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) – endangered and migratory species.	This species is listed under international migratory bird agreements (CAMBA, JAMBA, ROKAMBA, Bonn**). This species breeds in the northern hemisphere and migrates* to Australia in its non-breeding season. It uses the site for non-breeding habitat and as a stopover point during migration. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/AVES	<i>Tringa stagnatilis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Nationally listed (EPBC) - migratory species.	Nationally listed (EPBC) - migratory species. This species is listed under international migratory bird agreements (CAMBA, JAMBA, ROKAMBA, Bonn**). This species breeds in the northern hemisphere and migrates* to Australia in its non-breeding season. It uses the site for non-breeding habitat and as a stopover point during migration. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/ AVES	<i>Vanellus miles</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.
CHORDATA/ AVES	<i>Vanellus tricolor</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		The site provides breeding habitat for this species. The site and the broader wetland ecosystem support a diversity of waterbird species including shorebirds and waders. This species contributes to that diversity.

1) Percentage of the total biogeographic population at the site

Notes:

* Migratory bird species within Australia typically follow the East Asian-Australasian Flyway (EAAF), migrating seasonally between breeding habitat in the northern hemisphere, and non-breeding habitat within Australia. See: <https://www.eaaflyway.net/the-flyway>.

** In Australia, migratory species are recognised under the EPBC Act. This is based on listings under the Convention on Migratory Species and bilateral migratory bird agreements between Australia, China, Japan and Korea. See: <https://www.dcceew.gov.au/environment/biodiversity/migratory-species/migratory-birds>

3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	<input checked="" type="checkbox"/>	Semi-arid to humid subtropical woodland where <i>Eucalyptus coolabah</i> subsp. <i>coolabah</i> (coolibah) and/or <i>Eucalyptus largiflorens</i> (black box) are the dominant canopy species and where the understorey tends to be grassy.	Nationally listed (EPBC Act) - endangered

Optional text box to provide further information

Whilst not listed nationally as a threatened ecological community, the "Marsh Club-rush Sedgeland in the Darling Riverine Plains Bioregion" is listed as a critically endangered ecological community (BCA) at the state level and forms part of the ecological character of the site.

The Marsh Club-rush Sedgeland in the Darling Riverine Plains Bioregion community (BCA - critically endangered) is mainly restricted to the Gwydir wetlands and has a very highly fragmented geographic distribution. It is dominated by the marsh club-rush (*Bolboschoenus fluviatilis*) up to 2 m tall and is characterised by an understorey of tussock sedge (*Carex appressa*), ribbed spike rush (*Eleocharis plana*), blown grass (*Lachnagrostis filiformis*), water couch (*Paspalum distichum*) and swamp buttercup (*Ranunculus undosus*) (NSW OEH 2017).

The ecological community is associated with the floodplains and drainage areas of the Darling Riverine Plains and the Brigalow Belt South bioregions.

This community is found on the grey, self-mulching clays of periodically waterlogged floodplains, swamp margins, ephemeral wetlands, and stream levees.

A full description is available in the TEC listing and conservation advice on the Species Profile and Threats database: <http://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=66>

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

The critical components and processes of the Gwydir Wetlands: Gingham and Lower Gwydir Watercourses are:

Wetland types and vegetation –wetland vegetation within the Gwydir Wetlands can be divided into two groups (DECCW 2011). Those specifically relevant to the Ramsar Site are:

1. 'seasonally inundated grass/sedge meadows', encompassing the wetland communities that depend on frequent flooding to maintain their structural integrity and condition:

* Water couch – spike rush – tussock rush, which generally needs to be flooded once per year and includes extensive water couch grasslands and water couch – spike rush meadows.

* Marsh club-rush, which occurs in frequently flooded areas and can grow in dense stands, up to 2 m tall.

2. 'Floodplain wetland vegetation' consisting of wetland communities that can tolerate prolonged flooding for several months and can survive dry periods lasting for several years, but have a dominant overstorey species that require flooding at some stage for regeneration. These include associations of river cooba, coolibah and black box found along a gradient of decreasing flood frequency and duration, between the margins of semi-permanent wetlands.

Aquatic ecological community – this comprises all native fish and aquatic invertebrates that occur within the ecosystem and provides a key food source for waterbird breeding. The aquatic invertebrates and diversity of fish species play a critical role in energy and nutrient cycling which maintains biological diversity. The site provides habitat for 4 wetland-dependent fauna species that are listed as threatened nationally and/or internationally.

Birds – The site regularly supports thousands of birds including waterbirds and shorebirds. The site provides habitat for migratory species and supports waterbird breeding. 17 colonial nesting species have been recorded breeding, with intermediate egret; little black cormorant; little pied cormorant; yellow-billed spoonbill; royal spoonbill; glossy ibis; Australian white ibis; and straw-necked ibis breeding in large numbers.

Hydrology – The flow regime of Gwydir River has been substantially altered since the construction of Copeton Dam and associated weirs and regulators. Regulation of the river system caused significant reduction in moderate to high flows in the lower Gwydir. It has contributed to an increase in the average period between large flows, and a reduction in the average volume of large flows. Environmental water provides flows to the wetlands and these are supplemented with inputs from unregulated minor tributaries that flow directly to the Wetlands.

Geomorphology –The Gwydir Ramsar site is part of a low-energy, terminal wetland system on an alluvial fan of the Gwydir floodplain. Flows almost always terminate at the Gwydir Wetlands, except in very large floods, where flows can continue to the Barwon River. The system has a complex geomorphology, consisting of modern anastomosing and distributary channels that are often ephemeral and frequently break down into unchannelised wetlands in a low relief environment (Ralph et al. 2020). Other geomorphic features include abandoned palaeochannels and historic ridge, levee and depression features. Artificial channels and levees also affect the present-day flow regime.

4.2 - What wetland type(s) are in the site?

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Flowing water >> N: Seasonal/ intermittent/ irregular rivers/ streams/ creeks	Gingham watercourse Gwydir River, Big Leather watercourse	4	1	
Fresh water > Marshes on inorganic soils >> Ts: Seasonal/ intermittent freshwater marshes/ pools on inorganic soils	Floodplain marshlands in proximity to the Gingham, Gwydir and Lower Gwydir (Big Leather) watercourses	1	678	Representative
Fresh water > Marshes on inorganic soils >> W: Shrub-dominated wetlands	Floodplain shrublands of the Gingham, Gwydir and Lower Gwydir (Big Leather) watercourses	3	11	
Fresh water > Marshes on inorganic soils >> Xf: Freshwater, tree-dominated wetlands	Floodplain woodlands of the Gingham, Gwydir and Lower Gwydir (Big Leather) watercourses	2	146	Representative

(ECD) Habitat connectivity

The Ramsar site area is less than 1% of the greater Gwydir Wetlands, and each parcel is strongly interconnected to the wetlands. Each parcel is dependent upon the health of the greater wetlands and representative of its condition.

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Duma florulenta</i>	Provides habitat/ material for waterbird breeding
TRACHEOPHYTA/LILIOPSIDA	<i>Phragmites australis</i>	Provides habitat/ material for waterbird breeding
TRACHEOPHYTA/LILIOPSIDA	<i>Typha domingensis</i>	Provides habitat/ material for waterbird breeding
TRACHEOPHYTA/LILIOPSIDA	<i>Typha orientalis</i>	Provides habitat/ material for waterbird breeding

Invasive alien plant species

Phylum	Scientific name	Impacts	Changes at RIS update
TRACHEOPHYTA/LILIOPSIDA	<i>Pontederia crassipes</i>	Actual (minor impacts)	unknown

Optional text box to provide further information

Invasive species:
Areas of the wetland have been invaded by lippia (*Phyla canescens*), noogoora burr (*Xanthium occidentale*), bathurst burr (*Xanthium spinosum*), black thistle (*Cirsium vulgare*), variegated thistle (*Silphium marianum*) and black roly-poly and soft roly-poly (*Bassia sclerolaena muricata* and *B. salsola kali*) Rol-poly & soft roly-poly invade during dry phase and are generally not a threat to water-loving species. Of these invasive plants, lippia is the greatest threat, as is water hyacinth (*Eichhornia crassipes* / *Pontederia crassipes*) in the Gingham watercourse (McCosker, pers comm.). Water regimes along with some control activities for water hyacinth drive the phases of invasive species dominance with dominance decreasing during wetter phases for all invasive species with the exception of water hyacinth.

The Barwon Area Branch of NSW NPWS conducts treatment of invasive weed species such as green cestrum and African box thorn. Moree Plains Shire Council, as part of an LGA-based control program, conduct an annual aerial control program for water hyacinth in the wetlands.

Phyla canescens is not in the table above as it does not register as a species. This species is different to similar species, such as *Phyla nodiflora*.

4.3.2 - Animal species

Invasive alien animal species

Phylum	Scientific name	Impacts	Changes at RIS update
CHORDATA/MAMMALIA	<i>Felis catus</i>	Actual (minor impacts)	unknown
CHORDATA/MAMMALIA	<i>Sus scrofa</i>	Actual (minor impacts)	decrease
CHORDATA/MAMMALIA	<i>Vulpes vulpes</i>	Actual (minor impacts)	unknown

Optional text box to provide further information

Noteworthy fauna:
Mammal species which are wetland dependent and occur within the Gwydir wetlands include eastern water rat (*Hydromys chrysogaster*), and swamp wallaby (*Wallabia bicolor*).

Preliminary research indicates that areas of the wetlands are important fish breeding habitat (Siebentritt, 1999). Many species of frogs are also found (McCosker,1996).

Invasive species:
Feral animals that may occur in the Ramsar site and require control include pigs, foxes and cats (NSW OEH 2014). NSW NPWS (Barwon Area and Northern Inland Branches) conduct regular feral animal control measures, which include trapping, baiting and aerial shooting (twice per year) to control pigs and foxes in the reserve. NPWS also centrally coordinate supplementary pest control (ground shooting activities) twice per year.

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cfa: Humid subtropical (Mild with no dry season, hot summer)

The Gwydir Wetlands lies within the semi-arid region. Average rainfall in the Gwydir Valley ranges from 980 mm over the north-eastern margin to about 480 mm around the western extremity. There are two wet periods, from November–March and June–July, while the rest of the year is relatively dry (DECCW 2011).

Rainfall mostly occurs in late spring to summer, when thunderstorms are common, and historically resulted in larger floods. When short and intense, they produced high localised rainfall and flooding. Comparatively, winter storms tend to be less severe (Keyte 1994).

According to BoM and CSIRO (2020b) climate change projections for Australia's NRM Regions (Central slopes), average temperatures will continue to increase in all seasons with more hot days and warm spells projected. Average winter rainfall is projected to decrease, with increased intensity of extreme rainfall events likely. There will be a harsher fire-weather climate in the future.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

Entire river basin ☐

Upper part of river basin ☐

Middle part of river basin ☐

Lower part of river basin ☒

More than one river basin ☐

Not in river basin ☐

Coastal ☐

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Gwydir River

4.4.3 - Soil

Mineral ☒

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Organic ☒

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

No available information ☐

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes ☐ No ☒

Please provide further information on the soil (optional)

The soils of the Gwydir Wetlands Ramsar site are vertosols (cracking clays).

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	No change
Usually seasonal, ephemeral or intermittent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from surface water	<input checked="" type="checkbox"/>	increase

Water destination

Presence?	Changes at RIS update
To downstream catchment	unknown

Stability of water regime

Presence?	Changes at RIS update
Water levels fluctuating (including tidal)	unknown

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.

The main flow path is via the Gwydir River which is regulated by Copeton Dam. It controls on average, but highly variable year to year, around 55% of inflows. The site relies on flooding regimes from variable river flows, to provide some natural variability in water regimes.

The Water Sharing Plan for the Gwydir Regulated River Water Source 2016 protects a portion of tributary flows for the Gwydir wetlands and provides for an environmental water allowance to be used to support environmental assets and environmental functions within and downstream of the water source. Significant changes to flows have occurred due to changing land use since 1976, when the Copeton Dam was completed. Numerous regulating weirs have been built along the Gwydir River, upstream of the Gwydir Wetlands and flood/flow diversion structures have been built throughout the catchment, including at the Gwydir Wetlands. Upstream water extraction has reduced flow volumes.

Between 1971 to 2021, there was a 67% decline in flow volumes and 79% in flood frequencies at the Gwydir Wetlands (Lanceman 2021, unpublished thesis).

There are no documented quantitative analysis of groundwater-surface water connectivity in the wetlands. It is likely the wetlands are groundwater dependent, potentially receiving groundwater discharges in times of drought and low surface water availability. The presence of several trees with known groundwater affinities (e.g. coolibah, black box, poplar box) suggests groundwater interactions exist within these wetlands. The site has been mapped as a high ecological groundwater dependent ecosystem (Dabovic et al., 2019) further indicating the surface and groundwater connectivity of the site.

The hydrology of rivers and wetlands is mainly related to the climate of the broader catchment; conditions vary within and around the wetlands. Extreme flooding and drying have been recorded since explorers and squatters began frequenting the Gwydir Wetlands from the 1830s (Holmes et al. 2009).

4.4.5 - Sediment regime

Sediment regime unknown ☒

Please provide further information on sediment (optional):

Sediment erosion, accretion, transport and deposition occur at various locations and timescales in the Ramsar site. Generally high sediment loads are delivered and potentially contribute to the relative lack of open water areas in the Gwydir Wetlands (Keyte 1994).

Sediment accretion occurs at Old Dromana, as sediments are spread across the floodplain when the Lower Gwydir channel breaks down into a floodout system in this area.

Artificial channels, such as those immediately south of Old Dromana and the channel located at the northern boundary of Crinolyn and southern boundary of Windella, can promote erosion or become sites of sediment deposition in a low energy environment.

System hydrology is also influenced by the Gwydir Raft; an accumulation, of timber, debris and sediment deposited in the original channel. This causes water pooled behind the deposit to spill north into the Gingham Watercourse and south into the Tyreel Anabranh (Green et al. 2011).

(ECD) Water turbidity and colour	Mean turbidity was 77.92 ± 6.20 NTU (Gingham watercourse) and 16.52 ± 5.80 NTU (Lower Gwydir) (Tsoi et al. 2022).
(ECD) Water temperature	Water temperature at the Gwydir Wetlands varies with air temperature, but not with flow rate (Wilson 2009).

4.4.6 - Water pH

Circumneutral (pH: 5.5-7.4) ☒

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Unknown ☐

Please provide further information on pH (optional):

The Gwydir wetlands are slightly alkaline but are generally within Basin Plan pH targets for the Gwydir wetlands (6.5-8.0); (DPIE 2020b) and ANZECC pH trigger values for NSW upland and lowland rivers (6.5-9.0); (Mawhinney 2005).

4.4.7 - Water salinity

Fresh (<0.5 g/l) ☒

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Unknown ☐

4.4.8 - Dissolved or suspended nutrients in water

Unknown ☒

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself: i) broadly similar ☒ ii) significantly different ☐

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Fresh water	Drinking water for humans and/or livestock	Medium
Fresh water	Water for irrigated agriculture	Medium
Wetland non-food products	Livestock fodder	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Erosion protection	Soil, sediment and nutrient retention	Medium
Hazard reduction	Flood control, flood storage	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Spiritual and inspirational	Cultural heritage (historical and archaeological)	Medium

Other ecosystem service(s) not included above:

Provisioning services: The site provides an abundance of high-quality livestock fodder for beef cattle and sheep for substantial parts of the year.

Regulating services: The site regulates water flows, reducing downstream flooding and providing more reliable flows throughout the year. The site captures sediment, reducing impacts from sediment blanketing during high flow events. Nutrient trapping and cycling by the wetlands will help reduce the likelihood of algal blooms in the Barwon-Darling system.

Cultural Services: The wetlands, including the Ramsar site, have current and historical cultural importance for the Aboriginal Kamilaroi people, as the area provides edible plants and animals and was a drought refuge for people. There are at least 168 cultural sites in and around the broader Gwydir Wetlands, including bora/ceremonial sites (5%), burial sites (4%), open camp sites (13%), stone artefacts, carved and scarred trees (20%) (DECCW 2011, Biosis 2008). The region is still used by Indigenous people for bush tucker, and for connecting to culture, especially for Indigenous people who've always lived in town. There are also many important Dreamings associated with the wetlands.

Supporting services: The site traps and cycles nutrients, contributes to soil formation and is an important contributor to primary production and water cycling. The site provides an important regional refuge option for wetland dependent species and contributes to regional biodiversity, due to its flooding often being asynchronous with other significant wetlands in its region. The site supports good examples of seasonally inundated grass/sedge meadows present in the Murray-Darling Basin Drainage Division, including:

- water couch (*Paspalum distichum*) meadows,
- regionally rare marsh clubrush (*Bolboschoenus fluviatilis*) sedgeland, and
- Coolibah-black box woodland (EPBC listed).

Optional text box to provide further information

Grain production

Areas of the broader Gwydir Wetlands and floodplain are used for commercial grain and fibre production – with crops including cotton, wheat, barley, chickpeas, faba beans and sorghum. The Gwydir Wetlands are also important sources of native grains and bush tucker for Indigenous communities.

Other food production

Water couch (*Paspalum distichum*) and associated wetland meadow vegetation communities are important sources of food (grazing) for livestock at the Gwydir Wetlands, mostly across the broader wetlands but also at the Ramsar site. These vegetation communities are still an important source of food for livestock in areas of the Ramsar site where grazing still occurs (Crinolyn and Windella). Grazing stopped on Old Dromana in 2010 and Goddard's Lease in 2012, after these sites were acquired by NSW NPWS

Irrigation Water Use

The Gwydir Wetlands mostly compete for water with other water users, including irrigation water use, in the catchment. Water in the Gwydir wetlands is also used for stock supply, but there is also pipe stock supply system installed to provide stock (and also was done for domestic) water supplies so are not reliant on S&D via Gwydir Wetlands deliveries.

Remnant plant diversity for human use

The Gwydir Wetlands, including the Ramsar site, are potential sources of diverse native plants for longer-term investigations into the use of native species for medicinal and ornamental uses, as they are an area of the landscape where these plants still remain.

Within the site: 100s

Outside the site: 1000s

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes ☐ No ☐ Unknown ☒

4.5.2 - Social and cultural values

i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland ☐

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland ☐

iii) the ecological character of the wetland depends on its interaction ☐
with local communities or indigenous peoples

iv) relevant non-material values such as sacred sites are present and
their existence is strongly linked with the maintenance of the ecological ☒
character of the wetland

Description if applicable

The social and cultural values of the site have not been assessed for international importance.

The Gwydir Wetlands, including the Ramsar site are culturally important for the Aboriginal Kamilaroi people, as the area provides edible plants and animals and was a drought refuge for people. There are at least 168 cultural sites in and around the broader Gwydir Wetlands, including bora/ceremonial sites (5%), burial sites (4%), open camp sites (13%), stone artefacts, carved and scarred trees (20%) (DECCW 2011, Biosis 2008). The region is still used by Indigenous people for bush tucker, and for connecting to culture, especially for Indigenous people who've always lived in town. There are many important Dreamings associated with the wetlands.

4.6 - Ecological processes

<no data available>

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
Provincial/region/state government	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Provide further information on the land tenure / ownership regime (optional):

The Gwydir Ramsar site covers a total area of 842 ha and is comprised of four sections, two of which occur within the NPWS reserve estate and two of which occur on private land:

- Old Dromana (part of the Gwydir Wetlands State Conservation Area) (608 ha),
- Goddard's Lease (part of the Gwydir Wetlands State Conservation Area) (45 ha),
- Crinolyn (Crown Land) (88 ha) and
- Windella (private land) (102 ha).

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

1. For parcels in the Gwydir Wetlands Conservation Area: NSW Department of Climate Change, Energy, the Environment and Water,
2. For private land: current landholders.

Postal address:

GPO Box 3090,
Canberra ACT 2601,
Australia (general Ramsar PO box as we no longer have PO boxes for specific sites)

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Drainage	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Water abstraction	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Annual and perennial non-timber crops	Low impact	Low impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Livestock farming and ranching	Low impact	Low impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Vegetation clearance/land conversion	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Invasive non-native/alien species	Low impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Agricultural and forestry effluents	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Habitat shifting and alteration	Medium impact	Medium impact	<input checked="" type="checkbox"/>	unknown	<input checked="" type="checkbox"/>	unknown
Droughts	High impact	High impact	<input checked="" type="checkbox"/>	unknown	<input checked="" type="checkbox"/>	unknown
Unspecified	High impact	High impact	<input checked="" type="checkbox"/>	unknown	<input checked="" type="checkbox"/>	unknown

Please describe any other threats (optional):

Key threats to the ecological character of the Gwydir Wetlands include:

- Climate change: NARCLIM2.0 projections suggest significant changes in both rainfall and temperature in the Gwydir Wetlands region. Rainfall is anticipated to decline, particularly in winter and autumn, although there is projected to be increased intensity of heavy rainfall while average and maximum temperatures are expected to rise, with the most pronounced increases occurring in summer and harsher fire weather. These changes are projected under both low and high-emission scenarios, although the impacts are expected to be more severe in high-emission scenarios, (DCCEE 2024b).
- Hydrological changes: Using NARCLIM1.5 Callaghan and Hughes (2022) reveal that in the short, medium, and long term, flooding in the Gwydir Valley is expected to decrease. However, they also reveal instances of increased risk in non-safe flood hazard classifications while decreasing the safe flood hazard classification. This reduction in inundation frequency, magnitude and extent coupled with an increase in damaging floods would reduce the availability of suitable habitat for migrating shorebirds, breeding waterbirds, threatened species and regional rare vegetation/habitat types.
- Loss of suitable habitat: reduction in the extent and diversity of vegetation communities and habitat types which could result in a decline in the diversity/ abundance of threatened species and/or waterbirds.
- Introduction and increase in the distribution and abundance of weeds: that have the ability to severely degrade the wetlands. Species of concern including lippia and/or water hyacinth (weeds) and pigs and foxes (feral animals).
- Effects of fire: the medium and long terms impacts of burning on *Bolboschoenus fluviatilis* sedgeland (and broader Gwydir Wetlands) is a knowledge gap.
- Over grazing

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Crown Land	Crinolyn		partly
State Conservation Area (SCA)	Goddards Lease (part of Gwydir Wetlands State Conservation Area)		partly
State Conservation Area (SCA)	Old Dromana (part of Gwydir Wetlands State Conservation Area)		partly

5.2.3 - IUCN protected areas categories (2008)

- Ia Strict Nature Reserve ☐
- Ib Wilderness Area: protected area managed mainly for wilderness protection ☐
- II National Park: protected area managed mainly for ecosystem protection and recreation ☐
- III Natural Monument: protected area managed mainly for conservation of specific natural features ☐
- IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention ☐
- V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation ☐
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems ☐

<no data available>

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Other:

In Australia, the ecological character of a designated Ramsar site is protected as a matter of national environmental significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

5.2.5 - Management planning

Is there a site-specific management plan for the site? No

Has a management effectiveness assessment been undertaken for the site? Yes ☐ No ☒

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes ☐ No ☒

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

Long-term watering Plans aim to guide water management over the long-term to help maximise river and wetland ecological outcomes from all available water within and between catchments. They set objectives, quantitative targets and environmental water requirements for key plants, waterbirds, fish and system functions over 5, 10 and 20 year timeframes. The Gwydir wetlands and Ramsar site are identified as priority assets in the Gwydir Long Term Water Plan (DPIE 2020a).

URL of site-related webpage (if relevant):

<https://www.environment.nsw.gov.au/topics/water/water-for-the-environment/planning-and-reporting/long-term-water-plans/gwydir>

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No, the site has already been restored

Further information

In 2003, an area within the Windella parcel of the Ramsar site was cleared and ploughed. The landholder was prosecuted for this action under the Environment Protection and Biodiversity Conservation Act 1999. The Court Order required regeneration of the impacted area.

In 2008 some regeneration was identified. Although no recent, site specific vegetation survey data are available, a series of coarse-scale maps of vegetation changes at the site from 1996, through 2005 and 2008 to 2014 indicates that the cleared and ploughed area within Windella has returned to being classified as 'Sedgeland and water couch marsh', from being 'Cultivated' in a 2005 survey (Lanceman undated).

Subsequent high flow events in the Gingham Watercourse and inundation of the site are likely to have assisted remediation of the site, although the full extent is not known at the time of preparing this RIS.

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Water quality	Implemented
Birds	Implemented
Animal community	Implemented
Plant community	Implemented
Water regime monitoring	Implemented

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

References are added as an attachment at 6.1.2 (iv) other published literature

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<1 file(s) uploaded>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<1 file(s) uploaded>

v. site management plan

<no file available>

vi. other published literature

<1 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Goddard's Lease (*David Preston, 7/3/2023*)



Old Dromana (*David Preston, 24-09-2020*)



Crinoly n (*David Preston, 18-09-2023*)



Windella (*David Preston, 29-11-2022*)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation

1999-06-14