Ramsar Information Sheet

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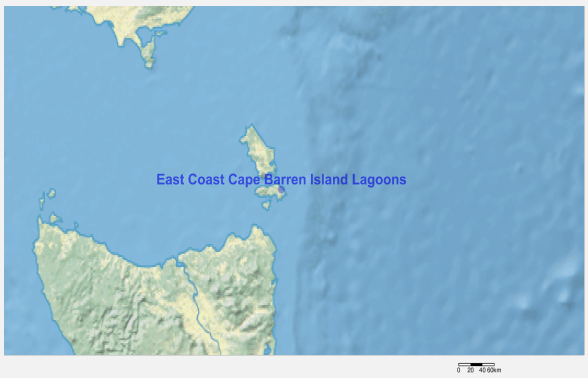
Australia

East Coast Cape Barren Island Lagoons



Designation date	16 November 1982
Site number	256
Coordinates	40°22'47"S 148°24'18"E
Area	4 473,00 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

The Site is a complex of freshwater, brackish, saline and hypersaline lagoons, wetlands and estuaries situated within the sand dune system on the east coast of Cape Barren Island. The island is part of the Furneaux Group, in Bass Strait to the north-east of Tasmania. The indigenous name for Cape Barren Island is 'truwana'.

The Site was formed on a prograding, low relief coastal plain. It is bounded to the east by a wave-dominated coast and to the west (external to the Site boundary) by two granite ranges which provide catchment runoff to the plain. The western edge of the site grades into coastal scrub and heathland with a variety of native vegetation communities, interspersed by numerous wetland associations (Dunn et al. 2010). The Site supports several flora species and vegetation communities threatened on a bioregional level.

The remoteness of the Site contributes to it being largely free from human disturbance and invasive species. However, due to its remoteness, information on the Site, including the importance of the Site for various species, is limited (DPIPWE 2012). No Site-wide systematic flora or fauna surveys have been undertaken; knowledge of vegetation is largely comprised of the 1981 survey by Kirkpatrick and Hardwood and bird records are largely based on the 1996 survey by the Department of Primary Industry and Water.

The Site meets Criterion 1 and 3:

Criterion 1: The suite of wetlands at the Site is the most extensive example of the coastal progradation process in the Tasmanian drainage division. These lagoons are significant as they form a representative sample of coastal lagoons in the region and are relatively undisturbed and free from invasion by exotic species.

Criterion 3: The wetlands provide important habitat for species that are rare in Tasmania. The largest lagoon at the Site, Thirsty Lagoon, has been determined a Tasmanian estuary of critical conservation significance. Three of the lagoons within the Site have been assessed as near pristine wetlands. Cape Barren Dunes in the east of the Site is a geo-conservation site in Tasmania.

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 2602 Australia

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

From year	1981
To year	2022

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	East Coast Cape Barren Island Lagoons
Unofficial name (optional)	truwana Lagoons

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 ○ No ◉
(Update) B. Changes to Site area	No change to area
(Update) For secretariat only: This update is an extension	☐

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?	Not evaluated

(Update) Optional text box to provide further information

It is difficult to assess changes in ecological character of the Site since listing in 1982, given the paucity of Site information, particularly regarding components and processes.

Since the time of listing, several threats have arisen, including the introduction of weeds, root-rot fungus (Phytophthora cinnamomi), and fires. Prior to listing, the Aite was free of weeds (Kirkpatrick & Harwood 1981). It is not known when root-rot fungus was introduced to the Site, however since listing its effect on heathland vegetation has become apparent. There have also been large fires through the area since the time of listing, most recently in 2017. Little data is available to determine changes to the ecological character (Newall & Lloyd 2017). Given the remoteness and relatively undisturbed nature of the Site, it is assumed to be relatively unchanged since listing (Dunn et al. 2010; Newall & Lloyd 2017).

The Site has also been subject to a changing climate. Australia has warmed by an average of 1.4°C (higher than the global average of 1°C) since national records began in 1910, leading to an increased frequency of extreme heat events. Further increases in temperature are projected, with most extremely hot days and fewer extremely cool days under all emissions scenarios (BoM & CSIRO 2020). These conditions will affect the critical components, processes and services of the Site and will test the Site's resilience.

Climate projections and the information available to guide wetland management under a changing climate is continually evolving. This and other relevant sections of the RIS will be reviewed and updated as significant advances are made.

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 boundary of the Site is shown as Lot 1 on Central Plan Register (CPR) 5654 from the Tasmanian Information and Land Services, Department of Primary Industries, Water and Environment. CPR 5654 horizontal datum is Australian Mapping Grid Datum AGD66-Zone 55 Transverse Mercator Projection for horizontal datum and Australian Height Datum for vertical datum.

The geographical centre of the Site is: 40°22'42.2"S, 148°24'05.7"E
The limits of the Site are:
North: 40 18' 0.8"S
East: 148 28' 2.7"E
South: 40 26' 37.2"S
West: 148 20' 18.7"E
Datum: WGS 1984, not projected

The Site extends from north of Tar Point down to Jamiesons Bay, excluding Cape Barren (DPIPWE 2012). It is approximately 15 km long and typically ranges between 1 and 2 km wide, covering almost the entire east coast of the island (Newall & Llyod 2017).

2.2.2 - General location

a) In which large administrative region does the site lie? Tasmania

b) What is the nearest town or population centre? The Site is located 20 km southeast of Lady Barron (population 158), on Flinders Island, the second largest settlement in the Furneaux group.

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): 4473

Area, in hectares (ha) as calculated from GIS boundaries: 4474.87

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Other scheme (provide name below)	Tasmanian Drainage Division, Flinders-Cape Barren Islands River Basin
Other scheme (provide name below)	Southeast Shelf Transition (SST)

Other biogeographic regionalisation scheme

Bureau of Meteorology (2012). Australian Hydrological Geospatial Fabric (Geofabric): Topographic Drainage Divisions and River Regions – Tasmanian Drainage Division, Flinders-Cape Barren Islands River Basin (http://www.bom.gov.au/water/geofabric/documents/BOM002_Map_Poster_A3_Web.pdf).

Commonwealth of Australia (2006). Integrated Marine and Coastal Regionalisation of Australia (IMCRA) Version 4 – Southeast Shelf Transition (https://parksaustralia.gov.au/marine/management/resources/scientific-publications/gu ide-integrated-marine-and-coastal-regionalisation-australia-version-40-june-2006-imcra/)

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

Other ecosystem services provided	The Site includes saltmarsh, which is recognised as a blue carbon ecosystem. Blue carbon ecosystems sequester significant amounts of carbon dioxide from the atmosphere and oceans, contributing to climate change mitigation. They also protect the coastline from storms and sea level rise, prevent shoreline erosion and regulate coastal water quality (Conservation International 2019).
Other reasons	The diverse complex of wetlands in the east of Cape Barren Island lies on a prograding sandy plain overlaying Devonian granite. Some 100 separate wetlands, mostly of small size with variable degrees of hydration (many of the lagoons are ephemeral), stretch from the northern most to southern most point of the east coast of Cape Barren Island. The suite of wetlands at the Site are representative of the process of progradation of coasts, a process that is uncommon in southern Australia. The Site is one of the most extensive examples of such a system in the Tasmanian Drainage Division, covering over 800 ha, and includes 8 wetland types: • Rocky shores (Ramsar type D); • Sand, shingle or pebble shores (E); • Estuarine waters; permanent water of estuaries and estuarine systems of deltas (F); • Intertidal mud or sand flats (G); • Intertidal marshes; includes salt marshes, salt meadows, saltings, raised salt marshes; tidal brackish and freshwater marshes (H); • Coastal brackish/saline lagoons; brackish to saline lagoons with at least one relatively narrow connection to the sea (J); • Coastal freshwater lagoons; includes freshwater delta lagoons (K); and • Seasonal/intermittent/irregular rivers/streams/creeks (N). Whilst dune barred lagoons are reasonably common (particularly on King, Flinders and Cape Barren Islands) it is rare to find examples of deflation basins in good condition within Tasmania, particularly with intact vegetation. The lagoon in the south end of the Site near Jamiesons Bay is the best example of a deflation basin in the Site. This lagoon is a good representative example of this landform type in near natural condition. Other wetlands further north are polygenetic, having more than one origin. They are a mixture of dune (or beach-ridge) barred lagoons and deflation basins. All are good representative examples because of their near natural condition (Ian Houshold, pers. comm. cited in DPIPWE 2012). The remoteness of the Site means that it is a largely natural system in near pristine condition, compared to other coastal wetlands. Flyover Lagoon 1, Flyover Lagoon 2 and Little Thirsty Lagoon have been assessed as near pristine wetlands (Dunn 2005 cited in DPIPWE 2012). Thirsty Lagoon was also determined a Tasmanian estuary of critical conservation significance in 1999 (DPIPWE 2012). The high degree of naturalness of the Site makes it unique within Tasmania and south eastern Australia.

Optional text box to provide further information

It is likely that the Site meets criterion 2 for the hooded plover and curlew sandpiper, however it is yet to be formally assessed.

Since the 2012 RIS update and preparation of the 2010 ECD, two species known or suspected to depend on the Site were listed as threatened nationally under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)), and/ or internationally under the IUCN Red List:

• hooded plover (eastern subspecies), (EPBC –vulnerable (DoE 2014), IUCN –vulnerable at the species level (IUCN 2016))
• curlew sandpiper (EPBC – critically endangered (DoE 2015))

The Site has been known to support a breeding population of hooded plover in the past and this species was known to frequent the beaches at the site (DPIPWE 2012, Dunn et al. 2010).

Although no systematic surveys of migratory birds have been conducted, migratory species including the curlew sandpiper have been recorded at the Site. Thirsty and Little Thirsty Lagoons have been identified as potentially suitable habitat for migratory species to stop-over at during migration and as summer feeding habitat (Hirst et al. 2006 cited in Dunn et al. 2010).

The importance of this Site for listed threatened and migratory species is a knowledge gap. The Site will be reassessed against this criterion when more information is available.

☑ Criterion 3 : Biological diversity

Justification

13 wetland vegetation communities occur within the Site. The representation of many successional stages within the Site reflects the diversity of habitats and species present. Wetland vegetation communities at the Site range from highly saline to freshwater, and from mostly inundated to vegetation that is mostly exposed (Dunn et al. 2010).

The wetlands within the Site provide important habitat for species and vegetation communities listed on a state level, under the Tasmanian Threatened Species Protection Act 1995 (TSPA), as well as endemic species.

Flora
The Site sits astride a floristic break with a range of species found no further south (Stephen Harris pers. comm. 2005 cited in DPIPWE 2012), highlighting the regional significance of the Site in maintaining the biodiversity in the region. At least 14 flora species listed as threatened under the TSPA occur on the site, including the vulnerable Furze Hakea and vulnerable Horny Conebush. The Site represents the only known reserve in Tasmania for one of these threatened flora species, the rare Utricularia tenella. At least 4 flora species endemic to Tasmania occur within the Site.

Vegetation communities
Thirteen different Tasmanian wetland vegetation communities were found onsite during the 1981 survey by Kirkpatrick and Harwood. These correspond to six TASVEG vegetation communities (lacustrine herbland, freshwater aquatic sedgeland and rushland, freshwater aquatic herbland, saline aquatic herbland, saline sedgeland/ rushland and succulent saline herbland) (Dunn et al 2010). Four of these communities are recognised as threatened in Tasmania under the Nature Conservation Act (2002) (Newall & Lloyd 2017).

Fauna
Bird surveys of the Site have previously recorded 13 wetland dependent species and 9 migratory species. Two of these species, the hooded plover and curlew sandpiper have since been nationally listed as threatened. The state listed threatened white-bellied sea eagle also occurs at the Site.

The Site is considered important for maintaining the biological diversity of the biogeographic region, in the context of the Tasmanian Drainage Division and Integrated Marine and Coastal Regionalisation of Australia (IMCRA v4.0) Southeast Shelf Transition biogeographic regions.

Optional text box to provide further information

The Site may meet criterion 4, however it is yet to be formally assessed due to the paucity of information available.

Migratory species
Migratory species recorded at the Site in 1996 (DIPW 1996) included double-banded plover, red-necked stint, curlew sandpiper, ruddy turnstone, crested tern, Caspian tern, great egret and short-tailed shearwater. Visitation numbers and frequency of occurrence are unknown for these species. Records from nearby Flinders Island, notably in Adelaide Bay on its southern coast, indicate several species of migratory shorebirds frequent the area, some in numbers exceeding 500 individuals (Dunn et al. 2010).

According to Woehler & Ruoppolo (2010), Sites in the Bass Strait (including Lavinia and Logan Lagoon) are considered essential feeding sites for migratory shorebirds during their annual migration through the East Asian-Australasian flyway (cited in Bryant & Harris 2020). Hirst et al. (2006) suggest that the characteristics of Thirsty and Little Thirsty Lagoons offer suitable stop–over habitat or summer feeding grounds for migratory birds. Birds migrating further south to sites on the east coast of Tasmania could potentially use the coastal lagoons and estuaries in the Site as stop-over points (Dunn et al. 2010).

Beach-nesting species
The Site has been known to support a breeding population of hooded plover in the past (DPIPWE 2012). There are a total of 7 species (including the hooded plover) which may potentially breed in the Site (Dunn et al. 2010). Parts of the Site have been characterised as offering a range of habitats for waterbirds and migratory shorebirds, including for feeding and nesting (Dunn et al. 2010).

Seabirds
According to Birdlife Australia, small islands around Tasmania are exceptionally important for seabirds, especially the short-tailed shearwater, little penguin, black-faced cormorant and Pacific gull (Duston et al. 2009). The Forsyth, Passage & Gull Islands Important Bird Area is just off the coast of the Ramsar site and supports more the 1% of the global population of little penguin and black-faced cormorant (Birdlife International 2022). These species have been recorded within the Site, which may provide critical breeding habitat.

The important of the Site for supporting breeding and providing habitat for migratory species is a knowledge gap. The Site will be reassessed against this criterion when more information becomes available.

Optional text box to provide further information

The Site may meet criterion 5, however this is currently a knowledge gap.

According to Woehler & Ruoppolo (2010, cited in Bryant & Harris 2020), Wetland of International Importance in the Bass Strait (including Lavinia and Logan Lagoon) are considered essential feeding sites for migratory shorebirds during their annual migration through the East Asian-Australasian flyway. The number of migratory birds using the Site is unknown.

The Site is thought to support locally significant numbers of many species of waterbirds (Tasmanian Department of Environment and Land Management 1998), however a systematic survey to estimate numbers has not been undertaken.

This criterion will be reassessed when more information becomes available.

Optional text box to provide further information	The Forsyth, Passage & Gull Islands Important Bird Area is just off the coast of the Site and supports more the 1% of the global population of Little Penguin and Black-faced Cormorant (Birdlife International 2022). These species have been recorded onsite, however their numbers within the Site are unknown. This criterion will be reassessed when more information becomes available.

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

While there are no nationally listed flora species recorded from the Site, the extensive system of shallow coastal lagoons contains at least 14 flora species that are listed as rare or vulnerable at the State level, under the Tasmanian Threatened Species Protection Act 1995 (TSPA). While some of these species are common on mainland Australia, at the Site they are at the edge of their habitat ranges and are uncommon in the rest of Tasmania. These species have been included under other noteworthy flora (section 4.3.1)

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								
Birds																	
CHORDATA / AVES	*Arenaria interpres*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐	Nationally listed (EPBC Act) –migratory	This species is migratory (East Asian-Australasian flyway (EAAF)). It uses the Site for non-breeding habitat and as a stopover point during migration. This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Calidris ferruginea*	☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐	Nationally listed (EPBC Act) – critically endangered, migratory	This species is migratory (East Asian-Australasian flyway (EAAF)). It uses the Site for non-breeding habitat and as a stopover point during migration. This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 2 and 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Calidris ruficollis*	☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐	Nationally listed (EPBC Act) –migratory	This species is migratory (East Asian-Australasian flyway (EAAF)). It uses the Site for non-breeding habitat and as a stopover point during migration. This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 2 and 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Charadrius bicinctus*	☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐	Nationally listed (EPBC Act) –migratory	This species is migratory (East Asian-Australasian flyway (EAAF)). It uses the Site for non-breeding habitat and as a stopover point during migration. This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 2 and 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Charadrius ruficapillus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		This species is migratory (East Asian-Australasian flyway (EAAF)). It uses the Site for non-breeding habitat and as a stopover point during migration. This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 2 and 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Haliaeetus leucogaster*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐	Nationally listed (EPBC Act) –migratory State listed (Tasmanian Nature Conservation Act 2002) – vulnerable	This species has a broad range and contributes to the biodiversity 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								
CHORDATA / AVES	*Hydroprogne caspia*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐	Nationally listed (EPBC Act) –migratory (JAMBA)	This species is listed under the Japan-Australia migratory bird agreement (JAMBA). This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Puffinus tenuirostris*	☐	☐	☐	☐	☑	☐	☐	☐					☐	☐	Nationally listed (EPBC Act) –migratory (CAMBA, JAMBA, ROKAMBA)	This species is listed as migratory under CAMBA, JAMBA and ROKAMBA. This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 2 and 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Thalasseus bengalensis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 2 and 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Thalasseus bergii*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐	Nationally listed (EPBC Act) –migratory (JAMBA)	This species is listed under the Japan-Australia migratory bird agreement (JAMBA). This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 2 and 4. However, no information is available on the numbers or frequency of occurrence within the Site.
CHORDATA / AVES	*Thinornis rubricollis*	☐	☐	☐	☐	☑	☐	☐	☐					☐	☐	Nationally listed eastern subspecies (EPBC Act) – vulnerable, migratory	This species is also known as Thinornis cucullatus. It is internationally listed as vulnerable under this name (IUCN). At the subspecies level, Thinornis cucullatus cucullatus is nationally listed as vulnerable (EPBC). This species contributes to the biodiversity of the Site. This species may contribute to the Site meeting criterion 2 and 4. However, no information is available on the numbers or frequency of occurrence within the Site.

1) Percentage of the total biogeographic population at the site

The nationally listed endangered Tasmanian wedge-tailed eagle (Aquila audax fleayi) has been recorded within the wetlands on the island (Dunn et al. 2010), however further investigation is required to determine the importance of habitat within the Site for this species. This species is a habitat generalist, using whatever habitat is available within its territory. As such, it is unclear whether this species should be considered wetland dependent.

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

<no data available>

Optional text box to provide further information

While there are no nationally listed ecological communities at the site, the following 6 TASVEG* vegetation communities occur and contribute to the ecological character of the Site (Newall & Lloyd 2017):

• lacustrine herbland – (floristic community includes Mimulus repens herbfield, Selliera radicans herbfield and Wilsonia rotundifolia herbfield)
• freshwater aquatic sedgeland and rushland – (floristic community includes Baumea arthrophylla sedgeland, Eleocharis sphacelata sedgeland and Lepidosperma longitudinale sedgeland)
• freshwater aquatic herbland – (floristic community includes Triglochin procerum aquatic herbland, Myriophyllum salsugineum aquatic herbland and Myriophyllum propinqua aquatic herbland
• saline aquatic herbland – (floristic community includes Lamprothamnium spp. aquatic herbland and Lepilaena cylindrocarpa (longfruit watermat) aquatic herbland
• saline sedgeland/rushland – (floristic community includes Juncus kraussii (sea rush) rushland)
• succulent saline herbland – (floristic community includes Sarcocornia quinqueflora (beaded glasswort) herbfield)

Freshwater aquatic herbland, saline aquatic herbland, saline sedgeland/rushland, and succulent saline herbland are listed as threatened in Tasmania, under the Nature Conservation Act (2002). These vegetation communities contribute to the biodiversity of the site (Criterion 3).

* TASVEG is a comprehensive digital map of Tasmania's vegetation, including sub-Antarctic Macquarie Island. The map depicts the extent of more than 150 vegetation communities, including coastal heathlands, eucalypt forest and alpine communities.

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

4.1 - Ecological character

The critical components of the Site are:

Geomorphology - The geomorphic conditions of particular importance at the Site relate to the active process of beach progradation (the building outward of the shoreline), which has occurred following the Holocene marine transgression (a period of high sea levels). These processes are strongly related to successional stages in wetland (and other) vegetation communities.

Hydrology - The hydrology of the Site contributes to the unique diversity and range of wetland types. Of note, the Site features dendritic drainage channels which flow into a series of deflation plains; impounded lagoons which lie behind parallel dunes; and some lagoons which are connected to freshwater drainage channels and deflation features that are subject to varying inundation.

Together, the geomorphology and hydrology of the site make it the most extensive example of the coastal progradation process in the Tasmanian Drainage Division biogeographic region.

Vegetation types - The geomorphic and hydrological conditions at the Site have influenced successional stages of the vegetation, resulting in a mosaic of vegetation communities, supporting many state listed species and wetland floristic community types. Vegetation associated with the wetlands plays an important role in stabilising the highly dynamic coastal system.

Other:
Whilst not critical, the following components and processes are important in supporting the ecological character of the Site:

• Water quality (relatively pristine site; varying salinities from fresh to hypersaline)

• Flora (good representation of diverse array of wetland vegetation types and floristic communities; driven largely by length of inundation and degree of salinity; important representation of regional biodiversity)

• Fauna (supports both freshwater and estuarine faunal associations, however these are poorly documented; habitat for listed migratory bird species)

the critical ecosystem services of the Site are:

Near-natural coastal wetlands - The Site is an example of a near-natural coastal wetland which contains a suite of different types of wetlands. The dynamics of these vegetation types is maintained as there are no developments within the boundaries of the site. Due to their remoteness, these wetlands lack large scale disturbance and make them unique within the Tasmanian Drainage Division.

Other:
Whilst not critical, the following services are important in supporting the ecological character of the Site:

• regulating services: coastal shoreline stabilisation (vegetation associated with the wetlands plays an important role in stabilising the highly dynamic coastal system).

• cultural services: spiritual and inspirational (the Site has significant cultural value in the recent history of the Tasmanian Aboriginal community and is a place of spiritual and religious significance).

• supporting services: threatened wetland species, habitats and ecosystems (the Site supports rare plant species and communities at the limit of their ranges).
(Dunn et al 2010).

Due to the paucity of data for the Site, there may be critical components, process or services which are currently unrecognised and require further investigation.

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

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
D: Rocky marine shores		0	20.3	
E: Sand, shingle or pebble shores		3	80.5	
F: Estuarine waters		2	200	Representative
G: Intertidal mud, sand or salt flats		4	55	
H: Intertidal marshes		0	44	Representative
J: Coastal brackish / saline lagoons		1	375	Representative
K: Coastal freshwater lagoons		1		Representative

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		0	37.8	

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Other terrestrial areas	3660

(ECD) Habitat connectivity	No specific mapping or assessment of the areas of each type of wetlands has been undertaken for Wetland Types J and K. Together, both wetland types comprise the 375 ha area value in the table, attributed to Type J.

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/LILIOPSIDA	*Centrolepis strigosa pulvinata*	State listed (TSPA) - rare. Endemic to Tasmania, restricted to the Furneaux Islands.
TRACHEOPHYTA/MAGNOLIOPSIDA	*Chrysocephalum baxteri*	State listed (TSPA) - rare
TRACHEOPHYTA/MAGNOLIOPSIDA	*Hakea ulicina*	State listed (TSPA) - vulnerable
TRACHEOPHYTA/MAGNOLIOPSIDA	*Haloragis myriocarpa*	State listed (TSPA) - rare
TRACHEOPHYTA/MAGNOLIOPSIDA	*Isopogon ceratophyllus*	State listed (TSPA) - vulnerable. Internationally listed (endangered), but not considered wetland dependent.
TRACHEOPHYTA/LILIOPSIDA	*Lachnagrostis billardierei*	State listed (TSPA) - rare
TRACHEOPHYTA/LILIOPSIDA	*Lepidosperma forsythii*	State listed (TSPA) - rare
TRACHEOPHYTA/MAGNOLIOPSIDA	*Myriophyllum muelleri*	State listed (TSPA) - rare
TRACHEOPHYTA/MAGNOLIOPSIDA	*Pomaderris paniculosa paralia*	State listed (TSPA) - rare
TRACHEOPHYTA/LILIOPSIDA	*Stuckenia pectinata*	State listed (TSPA) - rare
TRACHEOPHYTA/MAGNOLIOPSIDA	*Styphelia esquamata*	State listed (TSPA) - rare
TRACHEOPHYTA/LILIOPSIDA	*Tricostularia pauciflora*	State listed (TSPA) - rare
TRACHEOPHYTA/MAGNOLIOPSIDA	*Utricularia tenella*	State listed (TSPA) - rare
TRACHEOPHYTA/MAGNOLIOPSIDA	*Wilsonia rotundifolia*	State listed (TSPA) - rare

Invasive alien plant species

Phylum	Scientific name	Impacts	Changes at RIS update
TRACHEOPHYTA/LILIOPSIDA	*Ammophila arenaria*	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	*Cirsium arvense*	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	*Elephantopus mollis*	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	*Euphorbia paralias*	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	*Lycium ferocissimum*	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	*Marrubium vulgare*	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	*Onopordum acanthium*	Potential	No change
TRACHEOPHYTA/LILIOPSIDA	*Sporobolus africanus*	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ulex europaeus*	Potential	No change

Optional text box to provide further information

Noteworthy flora
The species above are rare or vulnerable under the Tasmanian Threatened Species Protection Act 1995 (TSPA). Together with the eastern side of Clarke Island (directly south of Cape Barren Island), this area sits astride a floristic break with a range of species found no further south (Stephen Harris pers. comm. 2005 cited in DPIPWE 2012).

The Cape Barren Island Lagoons are recognised as a key Site for some of these flora species. Flyover Lagoon 1, Flyover Lagoon 2 and Little Thirsty Lagoon are key sites for Wilsonia rotundifolia; Flyover Lagoon 1 is a key site for fennel pondweed; and the Site is known to be important for coast blown-grass (Dunn et al. 2010).

Centrolepis strigosa pulvinata, Myriophyllum muelleri, Stuckenia pectinata and Wilsonia rotundifolia are found at Flyover Lagoon. Lachnagrostis robusta is found at the estuary north of Thirsty Lagoon. Lepidosperma forsythii can be found in the moist heathland in the deflation plain west of Thirsty Lagoon. Tricostularia pauciflora is found south of Little Thirsty Lagoon. Pomaderris paniculosa paralia occurs in the southern part of Site, near coast at Jamieson's Bay. Isopogon ceratophyllus occurs on drier slopes of the western perimeter of the Site. Although listed internationally as endangered (IUCN Redlist), Isopogon ceratophylls is not listed as threatened nationally and does not appear to be wetland dependent. Hence, it is not considered under criterion 2.

Further investigations are required to identify any other significant flora species present onsite.

Invasive species:
Invasive weeds have colonised the Site since the time of listing (prior to which the Site was relatively free of weeds; Kirkpatrick and Harwood 1981 cited in Dunn et al. 2010). Weed species of concern include creeping thistle (Cirsium arvense), marram grass (Ammophila arenaria), common gorse (Ulex europaeus), African boxthorn (Lycium ferocissimum) and sea spurge (Euphorbia paralias) (Dunn et al. 2010; Newall & Lloyd 2017).

These species can affect dune dynamics as well as displacing native species such as the dune binding beach spinifex (Spinifex sericeus).

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/AVES	*Anas castanea*				This species contributes to the biodiversity of the Site.
CHORDATA/AVES	*Anas superciliosa*				This species contributes to the biodiversity of the Site.
CHORDATA/AVES	*Ardea alba*				This species contributes to the biodiversity of the Site.
CHORDATA/AVES	*Cereopsis novaehollandiae*				This species contributes to the biodiversity of the Site.
CHORDATA/AVES	*Cygnus atratus*				This species contributes to the biodiversity of the Site.
CHORDATA/AVES	*Eudyptula minor*				This species contributes to the biodiversity of the Site.
CHORDATA/AVES	*Larus pacificus*				This species contributes to the biodiversity of the Site.
CHORDATA/AVES	*Pelecanus conspicillatus*				This species contributes to the biodiversity of the Site.
CHORDATA/AVES	*Phalacrocorax fuscescens*				This species contributes to the biodiversity of the Site.

Invasive alien animal species

Phylum	Scientific name	Impacts	Changes at RIS update
CHORDATA/MAMMALIA	*Oryctolagus cuniculus*	Potential	unknown
CHORDATA/AVES	*Meleagris gallopavo*	Potential	unknown

Optional text box to provide further information

Noteworthy fauna:

Avifauna - the Site offers a range of habitats important for waterbirds and shorebirds, including migratory shorebirds (Blackhall 1986, 1988; DIPW 1996; Bryant 2002; Hirst et al. 2006). Three species may contribute to the site meeting criterion 4 (namely the black-faced cormorant, Pacific gull and little penguin). A comprehensive list of all records from the 1996 survey can be found in Dunn et al. 2010.

Invertebrates - surveys of aquatic invertebrates have been undertaken at Flyover Lagoon and a deflation basin near Jamiesons Bay, with the former recording 28 species and ranking among the highest of any lagoons in the Bass Strait Islands (Walsh et al. 2001 in Dunn et al. 2010). In contrast, the lagoon in the deflation basin near Jamiesons Bay only recorded 5 species.

Water chemistry and variability of salinities may play a significant role in the composition and diversity of the invertebrate fauna, however further investigation is required to understand these components (Dunn et al. 2010).

Invasive species:

Rabbits - were thought to be absent from Cape Barren Island at the time of listing, but in recent years they have been seen close to the settlement and are believed to be extending eastwards towards the Site.
Invasion by rabbits would result in degraded habitat and potential loss of flora and fauna species. This would influence wetland structure and dynamics.

Feral turkeys - are now common on Cape Barren Island and their scratching in soil and leaf litter has the potential to impact litter fauna and the regeneration of flora species.

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cfb: Marine west coast (Mild with no dry season, warm summer)

The climate of the Site is maritime and temperate with warm summers, cool winters and no real dry season (Perrin 1988). Data for temperature, wind and rainfall have been derived from the closest Bureau of Meteorology (BoM) site at Swan Island (located in Bass Strait, approximately 50 km south of the Ramsar site).

The Site has an estimated mean annual rainfall of 710 mm. Monthly rainfall ranges from an average of 38 mm in January to 62 mm in June. Maximum daily temperatures peak in February around 23°C, while the lowest daily maximum falls to around 13°C in July. The prevailing wind directions are westerly and north-easterly (Perrin 1988).

According to BoM and CSIRO (2020a) climate projections the Southern Slopes Tasmania East sub-cluster, average temperatures will continue to increase in all seasons, there will be more hot days and warm spells, fewer frosts, generally less rainfall in spring, however little change or an increase in winter rainfall.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres): 0

a) Maximum elevation above sea level (in metres): 20

- 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.

The Site lies on the coastline of Cape Barren Island in Bass Strait, between the Great Australian Bight and the Tasman Sea.

4.4.3 - Soil

- Mineral ☑
- (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 Site occupies an extensive lowland sandy terrain which has largely accumulated through an accretionary coast. Soils are sandy. The rapidly accumulating area of sandy coast, mostly of Holocene age, consists of numerous stretches of coastal dunes, beaches and impounded wetlands and shallow saline lagoons (DPIPWE 2012).

The Site features large areas of sediments overlying impermeable bedrock. The eastern part of the island has soils that are deep with ridges of pale-yellow sand, often with an iron organic layer at depth. The area west of Thirsty and Little Thirsty Lagoons is comprised of sand grain-sized sediment several metres in depth. This area may also include older sandy areas from the last interglacial period (Dunn et al. 2010; Newall & Lloyd 2017).

Overall, the soils within the Site are poorly developed.

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	unknown

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from surface water	☑	unknown
Water inputs from precipitation	☐	unknown
Water inputs from groundwater	☐	unknown
Marine water	☐	unknown

Water destination

Presence?	Changes at RIS update
Marine	unknown
Feeds groundwater	unknown

Stability of water regime

Presence?	Changes at RIS update
Water levels largely stable	unknown

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

For much of the Site, drainage is mainly via short creeks arising in these high inland areas (Perrin 1988). In the northern areas of the Site, these extensive catchment area supports freshwater drainage channels that flow into a series of deflation plains which are subject to inundation. These areas drain into Little Creek and two unnamed estuarine systems (Dunn et al. 2010).

Various coastal lagoons exist along the coastline in the eastern part of the Site, due to the presence of sand dunes blocking drainage on the low-lying coastal plain (Weaver 2008).

The southern area of the Site has fewer drainage channels, with large areas of sand-sized particles several metres deep. In these large areas of sediments overlying impermeable bedrock, streams and surface flows from catchments sink below the surface of dune sands, then follow subsurface flow paths as groundwater (Dunn et al. 2010). This groundwater is discharged as beach springs and is exposed as lagoons where wind has deflated the sand to the water table. The southern half of the site contains Thirsty Lagoon, Little Thirsty Lagoon, deflation basins, chains of impounded lagoons behind parallel dune ridges and a mosaic of drainage channels and hummocky ‘islands’ (Dunn et al. 2010).

Some small lagoons exist independent of the groundwater, sealed by a low permeability peat layer.

The duration of inundation of many of these geomorphic features remains unknown, although based on the presence of aquatic plants, some of the lagoons (deflation and impounded) must retain open water for prolonged periods.

(ECD) Connectivity of surface waters and of groundwater	In some areas of the Site, surface flows sink into the dune sands, following subsurface flow paths as groundwater before being discharged as beach springs or into the estuaries (Dunn et al. 2010).
(ECD) Stratification and mixing regime	There is a gradient of increasing salinity from the marine entrance of Thirsty Lagoon to the upper reaches of Little Thirsty Lagoon.

4.4.5 - Sediment regime

Significant accretion or deposition of sediments occurs on the site ☑

(Update) Changes at RIS update No change ◉ Increase ○ Decrease ○ Unknown ○

Sediment regime unknown ☐

Please provide further information on sediment (optional):

The suite of wetlands at the Site are representative of the active process of beach progradation (the building outward of the coastline), a process that is uncommon in southern Australia. The prograding plain of the site was probably formed in response to rising sea levels, some 10,000 years before present, accompanied by an abundance of sediment which was reshaped in the process of dune formation.

The most recent sandy sediments are found on the beaches and parallel to shore dunes and coastal barrier. Wind has reworked these coarse-grained sediments, forming elongate parabolic dunes and occasional truncated trailing arms (Dunn et al. 2010).

Geomorphic processes that shape the notable features onsite include the deflation (by wind) of loose sediment to bed rock, and sediment accumulation leading to physical obstruction of water flow (this effectively seals lagoon beds). The rate of sediment accumulation in the deflation basins and impounded lagoons is unknown (Dunn et al. 2010).

4.4.6 - Water pH

Alkaline (pH>7.4) ☑

(Update) Changes at RIS update: No change ◉ Increase ○ Decrease ○ Unknown ○

Unknown ☐

Please provide further information on pH (optional):

Little information is available about the pH of wetlands within the Site.
Dunn (2010) noted that the wetlands in the northern area of the site are in the lee of the parallel dunes north of Little Creek and have generally higher pH than those further south. This may be attributed to the underlying marine-origin calcium carbonate sheet. Flyover Lagoon (wetland 330) was described as having alkaline pH. Wetland 329 lies over limestone and has a pH of 8. (Dunn et al. 2010).

Water chemistry (including pH) may play a significant role in the composition and diversity of the invertebrate fauna of the lagoons, however further investigation is required to understand these components (Dunn et al. 2010).

4.4.7 - Water salinity

Fresh (<0.5 g/l) ☑

(Update) Changes at RIS update: No change ○ Increase ○ Decrease ○ Unknown ◉

Euhaline/Eusaline (30-40 g/l) ☑

(Update) Changes at RIS update: No change ○ Increase ○ Decrease ○ Unknown ◉

Hyperhaline/Hypersaline (>40 g/l) ☑

(Update) Changes at RIS update: No change ○ Increase ○ Decrease ○ Unknown ◉

Unknown ☐

Please provide further information on salinity (optional):

The site supports wetlands of varying salinities, from fresh to hypersaline. Deflation basins tend to have elevated salinities and reasonably permanent inundation, compared with other brackish/saline basins on mainland Tasmania. The dominant vegetation communities within the Site reflect this, ranging from saltmarsh (which withstands extended periods of drying) to freshwater plant species intolerant of saline conditions.

The only water quality information available from the Site is from March 2005, for 4 sites in Thirsty Lagoon and 3 Sites in Little Thirsty Lagoon (Hirst et al. 2006). These showed a gradient of increasing salinity from the marine entrance of Thirsty Lagoon to the upper reaches of Little Thirsty Lagoon (almost hypersaline) (Hirst et al. 2006).

Variability of salinities may play a significant role in the composition and diversity of invertebrate fauna in the lagoons. Further investigation is required to understand these (Dunn et al. 2010).

4.4.8 - Dissolved or suspended nutrients in water

Unknown ☑

Please provide further information on dissolved or suspended nutrients (optional):

Two lagoons in the Site were sampled as part of an extensive reconnaissance of the limnology of Bass Strait Islands (Rolfe et al. 2001; Walsh et al. 2001). The lagoons sampled were Flyover Lagoon in the northern part of the Ramsar site and a large lagoon north of Jamieson's Bay. These lagoons are slightly brackish with low levels of nutrient (Rolfe et al. 2001).

Grazing has been identified as a potential threat to the Site, in part due to the potential for increased siltation and nutrient enrichment of wetlands.

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 ◉

Surrounding area has greater urbanisation or development ☐

Surrounding area has higher human population density ☐

Surrounding area has more intensive agricultural use ☐

Surrounding area has significantly different land cover or habitat types ☐

Please describe other ways in which the surrounding area is different:

The Site is considered remote and pristine. The few residents of Cape Barren Island (100 people) mostly live on the north-western corner (The Corner) of the island (Flinders Council 2022). Dense scrub on hills in the centre of the island allows only very limited access to the eastern coast.

As such, impacts from the land use of the surrounding area are currently unlikely.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	High

Cultural Services

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

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	High

Optional text box to provide further information

The Site is an example of a near-natural coastal wetland which contains a suite of different wetland and vegetation types. The dynamics of these vegetation types is maintained as there are no developments within the boundaries of the site. Due to their remoteness, these wetlands lack large scale disturbance and make them unique within the Tasmanian Drainage Division. This is considered a critical ecosystem service of the Ramsar site.

Whilst not critical, the following services are important in supporting the ecological character of the site:
• regulating services: coastal shoreline stabilisation (vegetation associated with the wetlands plays an important role in stabilising the highly dynamic coastal system).

• cultural services: spiritual and inspirational (the Site has a significant place in recent history of the Tasmanian Aboriginal community Cultural Heritage and is of spiritual and religious significance).

• supporting services: threatened wetland species, habitats and ecosystems (the Site supports rare plant species and communities at the limit of their ranges).

Within the site: 10s

Outside the site: 100s

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 ☐

<no data available>

4.6 - Ecological processes

(ECD) Notable aspects concerning migration	This Site may provide important habitat for migratory birds of the East Asian-Australasian Flyway as a stop-over Site and southern summer feeding grounds.

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	☐	☑

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Foundation/non-governmental organization/trust	☑	☑

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

At the time of listing, the Site was unallocated Crown Land under the Crown Lands Act 1976 and was managed by the Tasmanian National Parks and Wildlife Service.

Freehold title to part of Cape Barren Island was vested in the Aboriginal Land Council of Tasmania, on behalf of the Tasmanian Aboriginal community, under the Aboriginal Lands Act 1995 (Tasmania) (ATNS 2006).

The hand back of title to the Tasmanian Aboriginal Community of Cape Barren and Clarke Islands was made by the Tasmanian Premier Paul Lennon on 10 May 2005 under the Aboriginal Lands Amendment Act 2004 (Tas). It included 45,000 hectares of Cape Barren Island and 11,000 hectares of Clarke Island, to be held and managed by the Aboriginal Land Council of Tasmania (ATNS 2005).

5.1.2 - Management authority

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

The Site is now under the direction of the Aboriginal Land Council of Tasmania.

The truwana Rangers were formed in 2015 to undertake land and sea management work on Cape Barren Island. The rangers undertake activities such as fire management and weed control, with this work helping to maintain suitable habitats for the island's wildlife (PM & C 2017).

Provide the name and/or title of the person or people with responsibility for the wetland:

Aboriginal Land Council of Tasmania

5.2 - Ecological character threats and responses (Management)

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

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Livestock farming and ranching	unknown impact	unknown impact	☑	unknown	☑	unknown

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Fire and fire suppression	unknown impact	unknown impact	☑	unknown	☑	unknown

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	unknown impact	unknown impact	☑	unknown	☑	unknown

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Unspecified	unknown impact	unknown impact	☑	unknown	☑	unknown

Please describe any other threats (optional):

Threats (DPIPWE 2012)

Climate change - according to projections for the Southern Slopes Tasmania East sub-cluster (BoM & CSIRO 2020a), average temperatures will continue to increase in all seasons (very high confidence), there will be more hot days and warm spells, fewer frosts, generally less rainfall in spring (high confidence) however little change or an increase in winter rainfall (medium confidence). Increased intensity of extreme rainfall events is projected, with high confidence, and mean sea level will continue to rise (the height of extreme sea-level events will also increase (very high confidence)). A harsher fire-weather climate in the future (high confidence).

For the Site, changes in sea level, temperature and rainfall may influence the following:
• wetland physical and chemical processes
• groundwater discharge
• the diversity of wetland types
• wetland biology
• the distribution and abundance of flora and fauna
• the lifecycles of fauna (e.g. waterbird breeding)
• macroinvertebrates

Fire - increase in the intensity and frequency of fire could cause:
• removal of native vegetation and exposure of underlying sediments to destabilisation by wind
• changes in floristics to more fire-tolerant species
• loss of habitat for flora and fauna species onsite

Introduction and spread of invasive species - the three highest priority weeds were identified in the 'truwana Weed Management Plan' as Gorse (Ules europaeus), African Boxthorn (Lycium ferocissimum) and Sea Spurge (Euphorbia paralias). Other invasive species onsite include rabbits, feral turkeys, thistle and marram grass.

The introduction and spread of these invasive species could cause:
• competition with native flora and fauna
• reduced habitat (i.e., choking of wetlands, changes in vegetation structure)
• loss of native species

Pathogens
• Root-rot fungus (Phytophthora cinnamomi) can cause changes to floristics and structure of vegetation communities and potentially result in changes to wetland dynamics.
• Chytrid fungus (Batrachochytrium dendrobatidis) causes death in frogs it infects.

Human activities - grazing onsite could lead to the following:
• increased sediment deposition and turbidity (run off)
• nutrient enrichment
• establishment of weeds
• reduced habitat quality
• change in floristics

Vehicular access (particularly by four-wheel drives) could lead to the following:
• erosion and increased run off
• increased turbidity
• disturbance of native species
• loss of habitat
• loss of native species Introduction or spread of weed propagules and pathogens such as root-rot fungus

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
none			whole

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Important Bird Area	Forsyth, Passage and Gull Islands	http://datazone.birdlife.org/site/factsheet/forsyth-passage-and- gull-islands-iba-australia	partly
Other non-statutory designation	Cape Barren Dunes Geoconservation site	https://maps.thelist.tas.gov.au/listmap/app/list/map	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

Habitat

Measures	Status
Catchment management initiatives/controls	Proposed

Species

Measures	Status
Control of invasive alien plants	Proposed
Control of invasive alien animals	Proposed

Human Activities

Measures	Status
Livestock management/exclusion (excluding fisheries)	Proposed
Regulation/management of recreational activities	Proposed
Communication, education, and participation and awareness activities	Proposed
Research	Proposed

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).

The Draft Management Plan for the Ramsar site sets out a list of priority actions relating to the key conservation measures listed above (Newall & Lloyd 2017).

5.2.5 - Management planning

Is there a site-specific management plan for the site? In preparation

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:

The draft management plan has not been published. A copy of the draft plan is attached under section 6.1.2.

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No need identified

Further information

Whilst there is not a site-specific restoration plan, the following priority actions are outlined in the Draft Management Plan (Newall & Lloyd 2017):

• Baseline survey and monitoring of key indicators, species and attributes of listing criteria (identify these indicators, species and attributes; design survey methods; undertake survey; refine sampling approach; compile monitoring plan; identify evaluation methods and undertake monitoring).

• Fire management (raise community awareness, review fire planning and management activities, and study fire impacts of floristics onsite)

• Invasive species control (develop an action plan that prioritises species and locations for control measures, design and undertake surveys and implement control measures).

• Biosecurity management (survey for root-rot fungus, establish quarantine measures for rangers, surveyors, visitors, and vehicles onsite, raise public awareness, design surveys for chytrid fungus onsite).

• Climate change adaptation and management (maintain maximum natural biodiversity of the site and liaise with land managers of similar sites).

• Vehicular access and visitor management (raise public awareness about the use of vehicles onsite and the need to meet quarantine requirements, develop visitor management plan).

• Grazing and stock management (ensure signage indicates that grazing is not permitted in the Ramsar site; liaise with the relevant landowner to ensure compliance).

• Planning and zoning of site and surrounding lands (zone the catchments of streams flowing into the Ramsar site, but which are not included in the site as special protection zones, to protect the water supplies, water quality of inflows and habitat condition of these upper catchment areas; consider extending the Ramsar site to include catchment area).

• Cultural Heritage (design and undertake an on-ground survey of cultural heritage sites within the Ramsar site).

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Water regime monitoring	Proposed
Plant community	Proposed
Plant species	Proposed
Animal community	Proposed

Monitoring priorities are established within the Draft Management Plan of the Site (Newall & Lloyd 2017).

Monitoring of indicators relating to components, processes and services onsite is proposed. These indicators relate to geomorphology, wetland types (including Ramsar wetland types and TASVEG vegetation communities), plant species, animal species, biological diversity, hydrology (water regime), and sites of cultural significance.

There are many threats and knowledge gaps for which monitoring is proposed. These include changes in fire regime, invasive species, pathogens, climate change, vehicle access, grazing and aboriginal cultural heritage sites.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

This RIS has been prepared based on information from the Ecological Character Description, draft Site Management Plan, and past Ramsar Information Sheets.

A full bibliography is included as an attachment under Section 6.1.2 vi., under the filename, "AU256_lit220624__bibliography.docx"

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)
<1 file(s) uploaded>

iii. a description of the site in a national or regional wetland inventory
<no file available>

iv. relevant Article 3.2 reports
<no file available>

v. site management plan
<1 file(s) uploaded>

vi. other published literature
<2 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:

Cape Barren Island. Photo by Andrew Roberts, 2009 (exact date of photo unknown). (*Department of Environment, 01-01-2009*)

6.1.4 - Designation letter and related data

Designation letter
<1 file(s) uploaded>

Date of Designation: 1982-11-16