Information Sheet on Ramsar Wetlands (RIS) – 2009-2014 version

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Original compiled by Roger Jaensch, Wetlands International – Oceania, on behalf of the former Western Australian Department of Conservation and Land Management (now Department of Parks and Wildlife) in 1998. Updated by Department of Conservation and Land Management staff in 2000 and 2003. Updated by Dr Christine Semeniuk on behalf of Department of Environment and Conservation (now Department of Parks and Wildlife in 2008. Updated by Department of Parks and Wildlife staff in 2014.

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2. Date this sheet was completed/updated:

August 2014

3. Country:

Australia

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Becher Point Wetlands

5. Designation of new Ramsar site or update of existing site:

The Becher Point Wetlands Ramsar site was designated on 5 January 2001. The previous RIS was dated 2008.

This RIS is for (tick one box only)**:**
a) Designation of a new Ramsar site ❑; or
b) Updated information on an existing Ramsar site ☑

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged: ❑

or
If the site boundary has changed:
i) the boundary has been delineated more accurately ☑; or
ii) the boundary has been extended ❑; or
iii) the boundary has been restricted** ❑

and/or

If the site area has changed:
i) the area has been measured more accurately ☑; or
ii) the area has been extended ❑; or
iii) the area has been reduced** ❑

** **Important note**: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

There has been no change to the ecological character of the Ramsar site or to the application of criteria since the previous RIS.

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7. Map of site:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:
i**) a hard copy** (required for inclusion of site in the Ramsar List): ☑;

ii**) an electronic format** (e.g. a JPEG or ArcView image) ☑;

iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** ☑.

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The Becher Point Wetlands Ramsar site boundary comprises all of Crown Reserve 44077 (Lot 216 on Plan 219947 and Lot 138 on Plan 219088) and Unallocated Crown Land PIN 1338686.

Note: Unallocated Crown Land (UCL) refers to Crown land which is not subject to any interest (aside from native title interests) and which is not reserved or dedicated. A Parcel Identifier Number (PIN) is allocated to areas of UCL that do not have a defined cadastral identifier (e.g. lot number). Boundary descriptions including UCL will be revised as more information is available.

There is a discrepancy between the maps that have been provided to the Ramsar Secretariat, prior to this 2014 update, and the actual boundary of the Becher Point Ramsar site. The Ramsar site boundary shown on the map provided with the nomination and subsequent RIS updates does not match the boundary description in those RISs. The maps provided since nomination of the site cut off the southern most

portion of the site (approximately 40 hectares). While the boundary description was correct and has not been altered, the map was drawn in error. The GIS data for the Western Australian Ramsar sites have been recently revised; the error was picked up and rectified, in accordance with Resolution 8.21 of the Ramsar Convention.

The whole of the site including the portion excised on the map has been, and continues to be, managed under the Rockingham Lakes Regional Park Management Plan.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):
Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Latitude: 32° 22' S, Longitude: 115° 44' E

9. General location:
Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The Becher Point Wetlands Ramsar site is located in the City of Rockingham (local government authority) in the State of Western Australia with a population of approximately 2.24 million in 2011 (Australian Bureau of Statistics 2014). The Ramsar site is 9 km south of the city of Rockingham, which had a population of 104,105 in 2011 (Australian Bureau of Statistics 2014).

The Becher Point Wetlands Ramsar site comprises the entire area of Nature Reserve 44077 and an area of Unallocated Crown Land (UCL PIN 1338686) along the beach. It includes a substantial part of the suite of approximately 200 discrete, small wetlands located between Becher Point (Indian Ocean coast) and the Perth-Mandurah Road.

10. Elevation: (in metres: average and/or maximum & minimum)

The elevation of the Ramsar site ranges from 0-10 metres above mean sea level (Australian Height Datum).

11. Area: (in hectares)

708 ha

12. General overview of the site:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Ramsar site comprises a portion of the system of inter-dunal wetlands on the beachridge plain which forms the geomorphic surface of the Becher cuspate foreland, on the coast of south-west Western Australia. The series of wetlands within the Ramsar site exhibits a continuum of development in geomorphology, sedimentary fill, hydrology, hydrochemistry and vegetation, and is considered by researchers to be a unique wetland system in Western Australia and one of the youngest wetland systems on the Swan Coastal Plain. The sedgelands that occur within the linear wetland depressions of the Ramsar site are a nationally listed threatened ecological community under the Australian Government *Environment Protection and Biodiversity Conservation Act (1999)*. The community is recorded as 'Sedgelands in Holocene dune swales of the southern Swan Coastal Plain' and is listed as endangered.

13. Ramsar Criteria:
Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
☑	☑	☐	☐	☐	☐	☐	☐	☐

14. Justification for the application of each Criterion listed in 13 above:
Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

The Ramsar site continues to meet the criteria for which it was originally listed.

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.
The Becher Point Wetlands Ramsar site comprises an example of shrub swamps and seasonal marshes formed in an extensive sequence of inter-dunal depressions that have arisen from seaward advancement of the coastline over recent millennia. This geomorphological sequence of Holocene wetlands is rare in the South-West Coast bioregion and is one of the youngest wetland systems on the Swan Coastal Plain. Examples of this type of geomorphological sequence in equally good condition and within a protected area are considered rare globally (Semeniuk 2007).

In addition to the presence of a nationally endangered sedgeland community, the conservation values of the wetlands are primarily related to the geomorphic significance of the site and the respective location of the wetlands along the evolutionary time sequence. When conserved as a representative unit, the relative youth of the wetlands, and the range of wetlands of different ages in association with their geomorphic history, provide important opportunities for research on wetland evolution (V & C Semeniuk Research Group 1991).

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.
The Becher Point Wetlands Ramsar site supports a nationally listed threatened ecological community 'Sedgelands in Holocene dune swales of the southern Swan Coastal Plain'. The sedgeland community is nationally listed as Endangered under the Australian Government *Environment Protection and Biodiversity Conservation Act (1999).*

The sedgeland community has a restricted distribution and is almost entirely located within linear wetland depressions (swales) occurring between parallel sand ridges of the Rockingham-Becher Plain in south-west Western Australia. The best record of the sedgeland community occurs along a linear transect from the Ramsar site through to the hinterland, which spans the last 8,000 years of the Holocene Epoch (Department of Environment and Conservation 2011). The sedgeland community within the Ramsar site is particularly important for the outstanding demonstration of a continuous depositional history of sediment during the last 3,000 years.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):
Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:
South West Coast drainage division

b) biogeographic regionalisation scheme (include reference citation):
Commonwealth of Australia (Bureau of Meteorology), 2011, Australian Hydrological Geospatial Fabric

16. Physical features of the site:
Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

The Ramsar site is located on the beachridge plain that forms the surface of the Becher cuspate foreland. The wetlands form a sequence that are progressively younger towards the coastline. In terms of formation, as the cuspate foreland prograded seawards, a chain of wetlands formed in the swales of the newly stabilised beachridge plain. With incremental additions to the cuspate foreland, new ridges and swales developed and new wetlands were formed (V & C Semeniuk Research Group 2014). The site's wetlands are within 0.2-2.0 km of the Indian Ocean and form chains of microscale linear, ovoid or irregular basins (approximately 60 wetland basins) arranged in about five groups roughly parallel to the coast and separated by sand ridges.

As the wetlands within the sequence formed at different times during the last 5,000 years, they are at different stages of their evolution with variable degrees of internal complexity. The younger wetlands near the coast have a simple geomorphology with small accretionary fills. From these young wetlands it is possible to determine how the wetlands were initiated and to observe the plant colonisers and subsequent successions. In comparison, the older wetlands have more complex stratigraphy and hydrogeology with different accretion characteristics and sediments. From the older wetlands it is possible to ascertain how the relative simplicity developed into internal complexity, even in a very small wetland basin. The oldest wetland within the Ramsar site boundary is approximately 3,000 years old (V & C Semeniuk Research Group 2014).

The site's wetlands are seasonal: there is usually no surface water in summer-autumn. The fresh surface water of winter is derived from both groundwater flow and direct precipitation, and generally is less than 0.3 m deep.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

The Ramsar site is situated in the Perth Basin, on the Rockingham-Becher Plain, which is part of the coastal landform unit known as the Quindalup Dunes. The site is directly underlain by the Safety Bay Sand formation. The Becher cuspate foreland accreted on the Pleistocene surface of the inter-ridge depression between the Spearwood Ridge on the mainland and the nearshore Garden Island Ridge, in response to a falling sea level during the middle to late Holocene period (V & C Semeniuk Research Group 2014).

The Rockingham-Becher Plain has a sub-humid climate, with cool wet winters and hot dry summers. A seasonal north-south movement of the belt of subtropical high pressure systems controls temperatures, rainfall and wind patterns. Median and mean annual rainfall at Rockingham are 818 mm and 826 mm respectively, mostly falling in May-August. Annual evaporation is about 1,900 mm (V & C Semeniuk Research Group 1991).

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The wetlands of the Ramsar site are seasonal and have been classified as sumplands (seasonally inundated basins) and damplands (seasonally waterlogged basins). Seasonal recharge of the wetlands is derived from rainfall and groundwater. Rainfall recharges the groundwater, which annually rises to inundate or waterlog the wetland basins. In an average rainfall year, sumplands are inundated to a depth of 10-50 cm for approximately 1-4 months, and damplands are waterlogged from surface and near-surface to depths of 20 cm below ground (V & C Semeniuk Research Group 2014).

The seasonal and shallow nature of the wetlands, influences the nature and development of sediment fills, which in turn plays a role in the chemical composition of the surface water, groundwater and soils. The water storage capacity of each wetland also influences the dynamic biological responses from flora and fauna (V & C Semeniuk Research Group 2014).

The wetland sediments within the Ramsar site affect regional and local groundwater flows in several ways. The less permeable wetland sediments can act as a barrier and disturb the east-west groundwater flows. The wetland sediments also determine the pathways in which rainfall infiltrates to the groundwater and the rates of infiltration. The morphology of the groundwater table is one of the unusual features of the Ramsar site. It is dynamic, responding to different recharge rates through the lenses of relatively impermeable wetland sediments and a highly porous regional sand body, resulting in mounds, troughs and changeable gradients. The wetlands also display considerable complexity in the local recharge and discharge patterns (V & C Semeniuk Research Group 2014).

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19. Wetland Types

a) presence:
Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:
List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

W, Ts

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20. General ecological features:
Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The setting of the Ramsar site is unusual in that it is underlain by a parent quartzose sand with a very high carbonate content. The presence of this parent material influenced the chemical reactions between the sediments and water, and also played a crucial role in wetland formation and evolution (V & C Semeniuk Research Group 2014). The wetlands within the Ramsar site are also unusual because of their small size and scattered nature. A fundamental driver of the ecology of the wetlands within the Ramsar site is the seasonal recharge.

The distribution of vegetation communities within and amongst the wetlands is diverse and extremely dynamic, resulting in different mosaics within these small wetland basins and very different assemblages between wetlands, even between wetland less than 20 metres apart (V & C Semeniuk Research Group 2014). The vegetation composition of the wetlands is likely to be related to both age and proximity to the watertable. The wetlands support sedgelands, herblands, grasslands, open-shrublands and/or low open-forest in various spatial arrangements (V & C Semeniuk Research Group 1991; Semeniuk 2007). The sedgelands are dominated by *Baumea articulata*, *B. juncea*, and *Lepidosperma gladiatum*. Also present are *Schoenoplectus validus, Ficinia nodosa* and *Juncus kraussii*. Herblands comprise *Centella asiatica* and grasslands comprise *Sporobolus virginicus*. The open shrubland comprises *M. viminea* and *M. teretifolia*, and the low forest is dominated by *Melaleuca rhaphiophylla* with some *M. cuticularis*. Surrounding dryland beachridge areas support mainly open-heathland (Tauss 2002; Semeniuk 2007).

From west to east on the cuspate foreland, and coinciding with youngest to oldest wetlands, the sedgeland communities transition to heath and then low forest. Within the wetlands, the vegetation

assemblages form mosaics that are constantly expanding and contracting in size, however, the composition of each assemblage remains fairly constant (V & C Semeniuk Research Group 2014).

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

The Ramsar site comprises approximately 19 hectares of a nationally listed threatened ecological community under the *Environment Protection and Biodiversity Conservation Act* (1999). The community is recorded as 'Sedgelands in Holocene dune swales of the southern Swan Coastal Plain', is listed as endangered and covers approximately 193 hectares in the south-west of Western Australia. Typical and common species of the sedgeland community include the shrubs *Acacia rostellifera*, *Acacia saligna*, *Xanthorrhoea preissii*, the sedges *Baumea juncea*, *Ficinia nodosa* and *Lepidosperma gladiatum* and the grass *Poa porphyroclados* (Department of Environment and Conservation 2011). The threatened ecological community is often confined to the younger wetlands and damplands within the Ramsar site (V & C Semeniuk Research Group 2014).

Invasive flora species that are impacting the site include:

Common name	**Scientific name**
Hastate Orache	*Atriplex prostrata*
Mediterranean Turnip	*Brassica tournefortii*
Great Brome	*Bromus diandrus*
	Crassula glomerata
Scaly Sedge	*Cyperus tenuiflorus*
	Dischisma arenarium
	Holcus sp.
Rose Pelargonium	*Pelargonium capitatum*
Guildford Grass	*Romulea rosea*
Rough Sowthistle	*Sonchus asper*
Common Sowthistle	*Sonchus oleraceus*
Cluster Clover	*Trifolium glomeratum*
Dune Onion Weed	*Trachyandra divericata*
Geraldton Carnation Weed	*Euphorbia terracina*

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

Noteworthy native fauna of the Ramsar site include the quenda (*Isoodon obesulus fusciventer*), carpet python (*Morelia spilota imbricata*), Perth lined lerista (*Lerista lineata*) and black-striped snake (*Neelaps calanotus*). At least four species of amphibians and 21 species of reptiles have been recorded.

Rabbit burrowing has been observed within the Ramsar site. A fence around the majority of the site (the southern end is unfenced) has probably reduced access of feral animals and assists in mitigating damage from off-road vehicles. A detailed survey for invasive species has not been undertaken, however, it is likely that the species listed below occur at the site:

Common Name	**Scientific Name**
House mouse	*Mus domesticus*
Black rat	*Rattus rattus*
Red fox	*Vulpes vulpes*

Cat	*Felis catus*
Rabbit	*Oryctolagus cuniculus*

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

There is strong community support for protection of the natural history values of the Becher Point Wetlands Ramsar site. The Rockingham Naturalists' Group, WA Wildflower Society and Royal Society of Western Australia host visits to the area for education and excursions.

Along with other sites in the Rockingham area, the Ramsar site was historically used as an artillery range by the Department of Defence around the time of World War II (Conservation Commission of Western Australia 2010).

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box ❑ and describe this importance under one or more of the following categories:

i) sites which provide 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) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where 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:

24. Land tenure/ownership:
a) within the Ramsar site:

The Ramsar site is within Nature Reserve 44077 which is vested in the Conservation Commission (appointed by the Government of Western Australia) for the purpose of 'Conservation of Flora and Fauna'.

b) in the surrounding area:

Surrounding areas include freehold (privately owned) land, Crown Reserves, Marine Park, other marine waters and Unallocated Crown Land.

25. Current land (including water) use:
a) within the Ramsar site:

There is no land use other than nature conservation within the Ramsar site. There are no facilities at present for nature-based recreation and this type of recreation is currently negligible within the site.

b) in the surroundings/catchment:

The dominant land use in the surrounding areas is urban (residential), which is increasing; other uses include recreation and rural smallholdings.

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26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:
a) within the Ramsar site:

With the expansion of the Perth metropolitan area, significant urbanisation has taken place adjacent to the Ramsar site. Water tables are likely to rise in the superficial aquifer as a consequence of further clearing in the catchment. Rising water-tables have the potential to cause longer and deeper wetting of wetlands and therefore to significantly modify the ecological community. Although this is a possible threat, it is expected that the sedgelands are under greater threat from a decrease in groundwater levels due to the combination of a drying climate, and water extraction for irrigation and industrial purposes.

Past factors include clearing, slashing to clear unexploded ordnance, grazing by cattle and rabbits, and erosion of coastal dunes. Present factors include the off-road use of motor vehicles and motor bikes, fire, grazing by rabbits and invasion by exotic plants.

b) in the surrounding area:

The Kennedy Bay Urban Development site is located directly north of the Ramsar site. The development area currently comprises a golf course and small residential area with a future proposal for an increased residential area, a town centre precinct, public open space and foreshore reserves (Department of Sustainability, Environment, Water, Population and Communities 2013). Groundwater is currently extracted for irrigation of the golf course and will be increased for use on the future public open space areas. Groundwater is also extracted for recreation reserves and a horse racing track to the east of the Ramsar site.

Groundwater is extracted from the Rockingham Sand aquifer which has a restricted hydraulic connectivity to the superficial Safety Bay Sand aquifer. Groundwater modelling indicates that the increased abstraction for the Kennedy Bay Urban Development site is predicted to have a maximum drawdown of 3cm within the Ramsar site (Department of Sustainability, Environment, Water, Population and Communities 2013). Monitoring to detect any impacts from the groundwater abstraction is regularly undertaken (see Section 29).

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27. Conservation measures taken:
a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:
In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

The Ramsar site is within Crown Reserve 44077. The site includes a nationally listed threatened ecological community 'Sedgelands in Holocene dune swales of the southern Swan Coastal Plain'.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ☑; Ib ❑; II ❑; III ❑; IV ❑; V ❑; VI ❑

c) Does an officially approved management plan exist; and is it being implemented?:

The Rockingham Lakes Regional Park Management Plan 2010 is being implemented by the Department of Parks and Wildlife. Actions undertaken within the site include: weed control focusing on Geraldton Carnation Weed and Dune Onion Weed, illegal four-wheel drive access control comprising fencing and installation of rock barriers, maintenance of fire access tracks and operations targeting off road vehicle users in conjunction with the City of Rockingham.

d) Describe any other current management practices:

Parks and Wildlife work closely with the City of Rockingham who manage the beaches adjoining the Ramsar site.

28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

There is the potential to extend the Ramsar site, following proposed changes in land tenure and consultation with land managers, to include adjoining parts of the Rockingham Lakes Regional Park, and four other areas, which together incorporate two swales and 30 additional wetlands. This would add later stages (up to 5,000 years before present) in the Holocene dune/wetland development to the Ramsar site. The site as currently defined includes wetlands aged up to 3,000 years before present.

29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The Ramsar site is of international significance in terms of research interest in the evolution of wetlands; it presents a rare opportunity for investigation of coastal history, biological succession and palaeoclimate during the past 5,000 years (see V & C Semeniuk Research Group 1991; Semeniuk 1995, 2007; Semeniuk et al. 1998, 2006a, 2006b; V & C Semeniuk Research Group 2014). The site contains important scientific information on geomorphology, coastal history, wetland sediment accumulation, soils, hydrology, hydrochemistry, vegetation, pollen and wetland evolution.

Wetland water levels within the Ramsar site have been monitored over the long term and continue to be monitored monthly. Wetland vegetation has been monitored annually since 2006 within the Ramsar site. Groundwater levels across the Port Kennedy project site have been monitored monthly since 1996. Wetland vegetation monitoring up to 2013 did not show any evidence of changes in wetland floristic composition associated with groundwater abstraction (Department of Sustainability, Environment, Water, Population and Communities 2013).

30. Current communications, education, participation and awareness (CEPA) activities related to or benefiting the site:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

There are plans to provide walk trails, a lookout and interpretive signage for the area. A brochure has been produced and distributed to local residents about the values of the site.

31. Current recreation and tourism:
State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The Ramsar site is used only for low level recreational purposes.

32. Jurisdiction:
Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Territorial: The State Government of Western Australia.

Functional: The Conservation Commission (vesting) and the Western Australian Department of Parks and Wildlife (management on behalf of the Conservation Commission).

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33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Department of Parks and Wildlife, Swan Region, Regional Parks Unit, Crawley, Western Australia.

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34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Australian Bureau of Statistics 2014. 2011 Census QuickStats, Australian Bureau of Statistics, www.abs.gov.au, viewed January 2014.

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Semeniuk, V. 1995. The Holocene record of climatic, eustatic and tectonic events along the coastal zone of Western Australia - a review. pp 247-59 in Journal of Coastal Research Special Issue No. 17: Holocene Cycles: climate, sea levels and sedimentation.

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Tauss, C 2002. Surveying Western Australia's Land Edge. Reference transects in coastal vegetation at Geraldton, Port Kennedy, Bunbury and Esperance, Western Australia. Published by Coastwest/Coastcare and WA Herbarium, Perth.

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V & C Semeniuk Research Group 2014. Draft Ecological Character Description of the Becher Point Wetlands Ramsar Site, Rockingham, Western Australia. Report to the Department of Parks and Wildlife.

Please return to: **Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
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Appendix 1. Map of the Becher Point Wetlands Ramsar site