

Wilson Inlet Foreshore Flora Survey- *Revisit to Vegetation Monitoring Sites established in March 2011*

May 2021



Acknowledgments

This survey project was carried out by the Wilson Inlet Catchment Committee, and funded through the City of Albany and Denmark Shire Council.

The ground works were undertaken by Mark Parre who provided valuable feedback, guidance and site assessment during the project. His assistant for the vegetation survey and on-site photography was WICC's project officer, Matthew Doble. The report was written, edited and prepared by Matthew Doble and approved by the WICC board.

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1 Introduction

1.1 Site and Hydrology:

Foreshore vegetation is situated in a zone of dynamic transition, from an aquatic estuarine environment to a terrestrial landscape within the Wilson Inlet, located in Denmark, Western Australia. This changing environment determines the survivability and recruitment of certain species of native flora. The duration of inundation by brackish estuarine waters occur after non-openings of the inlet as the Wilson Inlet is closed to the ocean by a natural sand bar most of the year. The inlet is artificially opened annually to alleviate flooding from stream inflow, caused by heavy seasonal rain fall. June monthly mean rainfall for all years in the Denmark area was 126.0 millimetres (BOM). This year's monthly rainfall for June was 207.9 millimetres (www.farmonlineweather.com.au).

The mouth of the estuary is then left open for months and closes again with decreased stream flow over the dry summer.

Figure 1 below best illustrates the water levels that have occurred in the inlet before openings over a ten-year period.

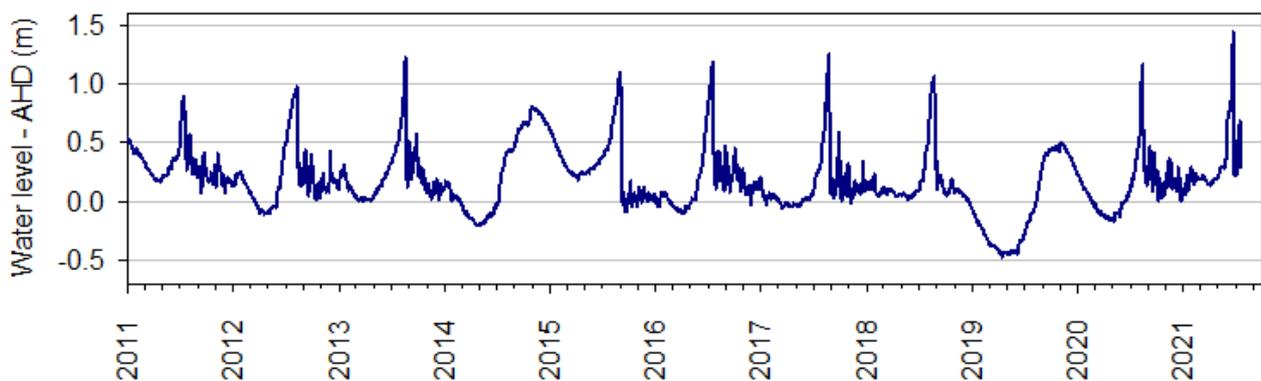


Figure 1: A yearly graph of water level height over a 10-year period (E.Reichwaldt 2021).

1.2 Purpose:

The Wilson Inlet Foreshore Flora surveys commenced in March 2011 across 12 sites of the Wilson Inlet, due to concerns of the effects of non-openings would have on foreshore vegetation. The survey was repeated in 2016 and an additional four sites were introduced.

In 2020 it was determined that the five yearly frequency was inadequate to determine the effects of non-openings, so it was decided to introduce an annual survey at a subset of four sites, including a quadrat in between the five yearly surveys and was carried out in 2020.

The purpose of monitoring foreshore flora in Wilson Inlet is to understand which flora species are being stressed beyond their tolerance levels and their ability to undergo natural seedling recruitment. Within the foreshore, invasive flora weed species act as additional barriers for native seed recruitment and are themselves impacted by the brackish inundation.

Sarcocornia blackiana (Samphire) is a halophytic succulent species of coastal shrub that dominates the saline shores of Wilson Inlet.

Common rushes and sedges surrounding the inlet comprises of *Juncus kraussii*, *Ficinia nodosa* and *Lepidosperma effusum* (Stewart 2011). Fringing tree and shrub species that provide habitat and overstory shade include *Melaleuca densa*, *Melaleuca cuticularis*, *Melaleuca raphiophylla*, *Callistachys lanceolata* and *Eucalyptus cornuta* with some *Banksia* species (Stewart 2011).

A species of special interest from the 2011 report is *Selliera radicans*, a herbaceous conservation priority 1 species (Biodiversity Conservation Act 2016), is now known as *Goodenia radicans* (Shiny Swamp-mat).

Dominant invasive flora species of *Paspalum* (Couch grass) and *Chenopodium* (Goose foot) recorded since the 2011 report (Stewart 2011), are still present.

Low lying areas prone to seasonal inundation were chosen for the survey. Where the elevation rises past bunds of accumulated dead plant material of *Rupia megacarpa* (Sea Tassel), vegetation improves in diversity and condition. The Wilson Inlet sand bar was not opened in 2007 and 2010, resulting in prolonged inundation (Stewart 2011). Impacts upon species of *Melaleuca* from this event can be observed at the Youngs Lake site.

The purpose for increasing the frequency of the surveys annually, was to survey new seedling recruitment and their ability to survive annual inundation. This frequency is beneficial in monitoring levels of inundation at each site, as the elevation changes.

1.3 Aim:

The aim of this 2021 survey was to revisit existing monitoring sites established by the original Wilson Inlet Foreshore Flora Survey of March 2011 and the additional sites thereafter, of 2016 and 2020.

The survey report captures the current condition and abundance of flora species that is subject to seasonal disturbance from fluctuating water and salinity levels of the Wilson Inlet.

A total of 17 monitoring sites (Figure 2), were visited around the inlet, photographed and surveyed to capture site-specific data and thereby reporting on changes to the foreshore vegetation that have occurred over time, under changing environmental conditions.

Flora was graded from 'degraded' to 'very good' over a transect of up to 20 meters, from the foreshore through to bushland as the slope gradient increased inland.

This report aims to assist decision makers in order to make recommendations on the scope, methods, and timing of ongoing foreshore flora monitoring.

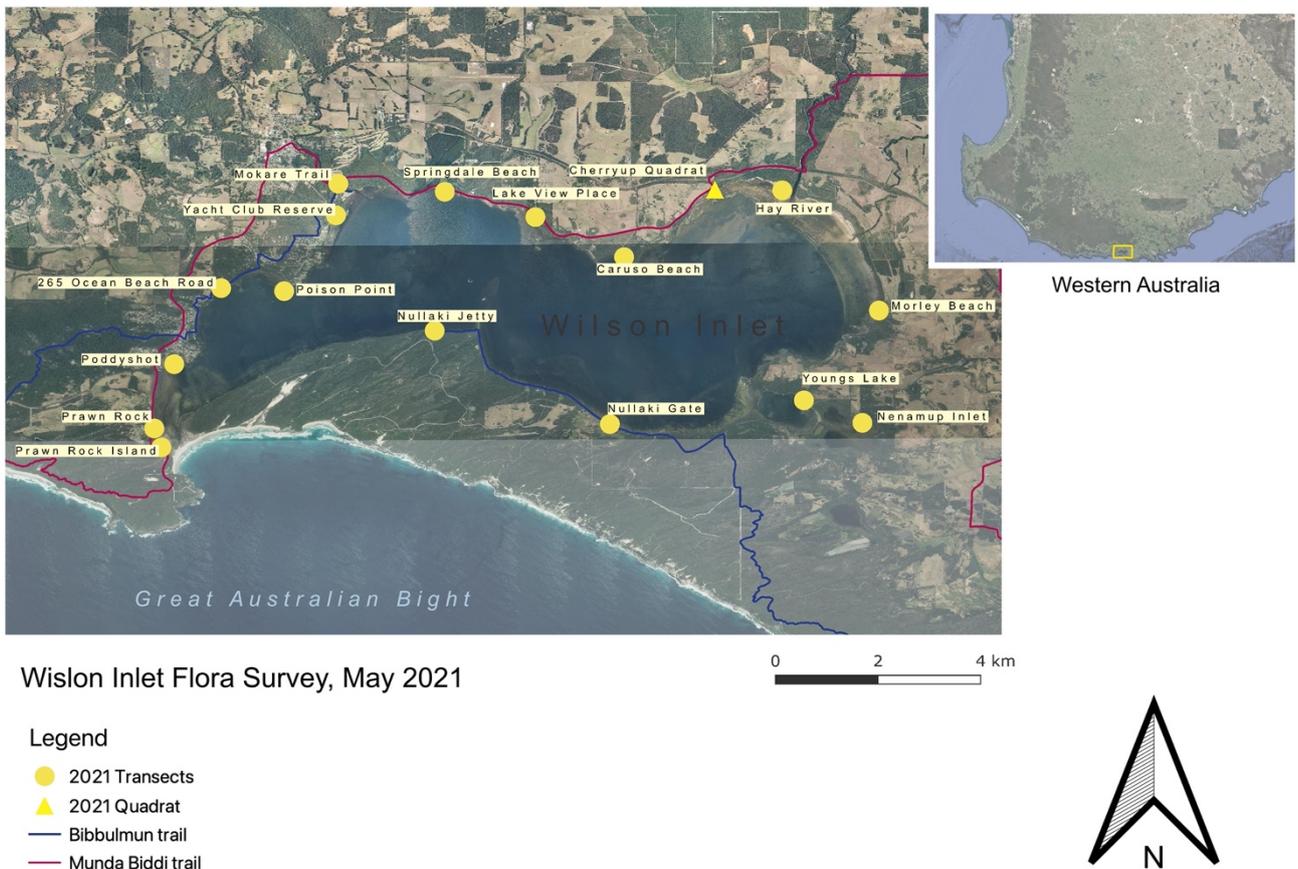


Figure 2: Location of the May 2021 Survey Sites.

1.4 Method:

Equipment used included a:

- *Garmin 550* GPS hand held unit and spare batteries.
- *Canon EOS 650D* digital camera (no recordable GPS data function)
- A 50-meter red *Medalist* (07483) fibreglass tape measure.
- A clamping tool to attach the tape measure to the peg.
- Printed transect survey data sheets (used in the 2016 report) for recording plant species and a spare field notebook for recording observations.
- Paper envelopes and tags for storing and noting collected botanical specimens.
- Past copies of the Wilson Inlet Flora Survey from 2011, 2016 and the 2020 annual report.
- *Flora of the South West, volumes 1 & 2* (J. Wheeler et al., 2002) botanical reference book.

Data recording:

Monitoring Data Collection sheets (see Appendix 2 for completed data sheets) were used for recording the findings of each transect, the date, names of data collectors, transect ID, size of the transect and the GPS locations of each end of the transect as well as soil type details of colour and texture (sand/loam or clay) were recorded on the transect.

Water levels were recorded along the transect where inundation was present.

At each transect, a photo was taken from the shoreline marker end, looking up (inland) the transect line for future reference and comparison. Each transect was divided into 1m by 2m plot (1m either side of the measuring tape) sections on the Monitoring Collection Data sheet, on which the following data was collected, cover abundance: The Cover Abundance Scale is utilised to estimate percentage of overall vegetation cover within each sub-plot.

Vegetation Condition: The Bushland Condition Scale developed by Kaesehagen (1994) is utilised to estimate the degree of disturbance within each plot.

This five yearly Wilson Inlet Flora Survey was carried out by Mark Parre and Matthew Doble over four days between the 07th and 14th of May 2021. Sites were revisited and transect pegs located or re-established using GPS coordinates and original 2011, 2016 and 2020 photographs.

Single photos of each transect site from the 2016 and 2020 survey reports were used to assist with observing changes in vegetation structure and condition. A digital photo survey for each individual transect was conducted (one image per meter) to capture details of vegetation type and condition on both sides of the transect tape. These photographs were taken to compare and support future survey work. New GPS locations were re-established for missing peg locations. The direction in which all peg photographs were taken was repeated from past reports, so as to capture the foreground and background landscape.

A GPS was used to establish latitude and longitude for the survey peg locations and positions from which some photographs of interest were taken.

Transect and peg location photography does not include GPS meta-data in the original digital file.

New GPS location points were taken with the *Garmin 550* hand held unit. Some images of interest were taken with this device.

All plant species were recorded one meter either side of the transect and along the transect. Botanical samples that were unknown, were collected for identification later. These samples were tagged and noted of their original site location, folded and stored in a sample paper bag.

These samples were identified from the botanical reference book '*Flora of the South West, volumes 1 & 2* (J. Wheeler et al., 2002)' or directly at the Denmark Environment Centre, using their herbarium.

Attention was given to a change in the condition of vegetation and where past inundation levels were. This was evident by washed up *Rupia megacarpa* plant material forming bunds (a small rise in elevation of the landscape).

Comments were recorded for all sites. Water depth was not recorded for all sites as this was dependant on inundation levels. Photographs from each site of this survey, and going forward is archived in digital format. This Wilson Inlet Flora Survey report including digital photographs and GPS data, including previous hardcopy reports from 2011, 2016 and 2020 can be obtained by emailing waterways@wiccc.org.au.

2 Results

2.1 Prawn Rock Channel

Date of inspection: 10/05/2021

New land peg was installed as old pegs could not be located.

Land Peg: S35.02089 E117.32656 Water Depth 2cm

Inlet Peg: S35.02077 E117.32677 Water Depth 3cm

Comments:

Water inundation across entire transect from 2cm, up to 20cm.

New pegs set by cross reference to previous photos.

Photos of North and South views of the inlet peg were unable to be taken as vegetation was high and obstructive at this year's inlet monitoring point.

A planting of *Melaleuca cuticularis* exists at the eastern end that has grown considerably since planting in 2011, though no natural recruitment of *Melaleuca* was observed.

Inlet end of transect is not on the shore, it is over 50 meters inland. There is a drain running inland from the inlet on the North side.

A cycle path exists parallel to the shore and west of the land peg.

Conclusion:

This site seems to have improved with tall and thick vegetation.

Comparative Photos

June 2016 Photo of Prawn Rock Channel transect line	May 2021 Photo of Prawn Rock Channel Transect line.
	

2021 Survey Photos

Prawn Rock Channel

Land Peg:
S35.02089
E117.32656
Water Depth 2cm

Photo 1/
IMG_1291.jpg
taken from the land
peg looking toward
the inlet peg.



Prawn Rock Channel

Inlet Peg:
S35.02077
E117.32677
Water Depth 10cm

Photo 2/
IMG_1296.jpg
taken
from the inlet peg
looking toward the
land peg



Prawn Rock Channel

Inlet Peg:
34.02077
E117.32677
Water Depth 3cm

Photo 3/
IMG_6933.jpg
taken from the inlet
peg looking north
over inlet.



Prawn Rock Channel

Inlet Peg:
34.02077
E117.32677
Water Depth 3cm

Photo 4/
IMG_6939.jpg
taken from the inlet
peg looking south
over inlet.



2.2 Poddyshot.

Date of inspection: 10/5/2021

Both 2016 pegs present, shore peg bent over and a new peg installed.

Land peg moved three meters inland.

Land peg S35.00709 E117.33068 No inundation

Inlet peg S35.00725 E117.33080 No inundation

Comments:

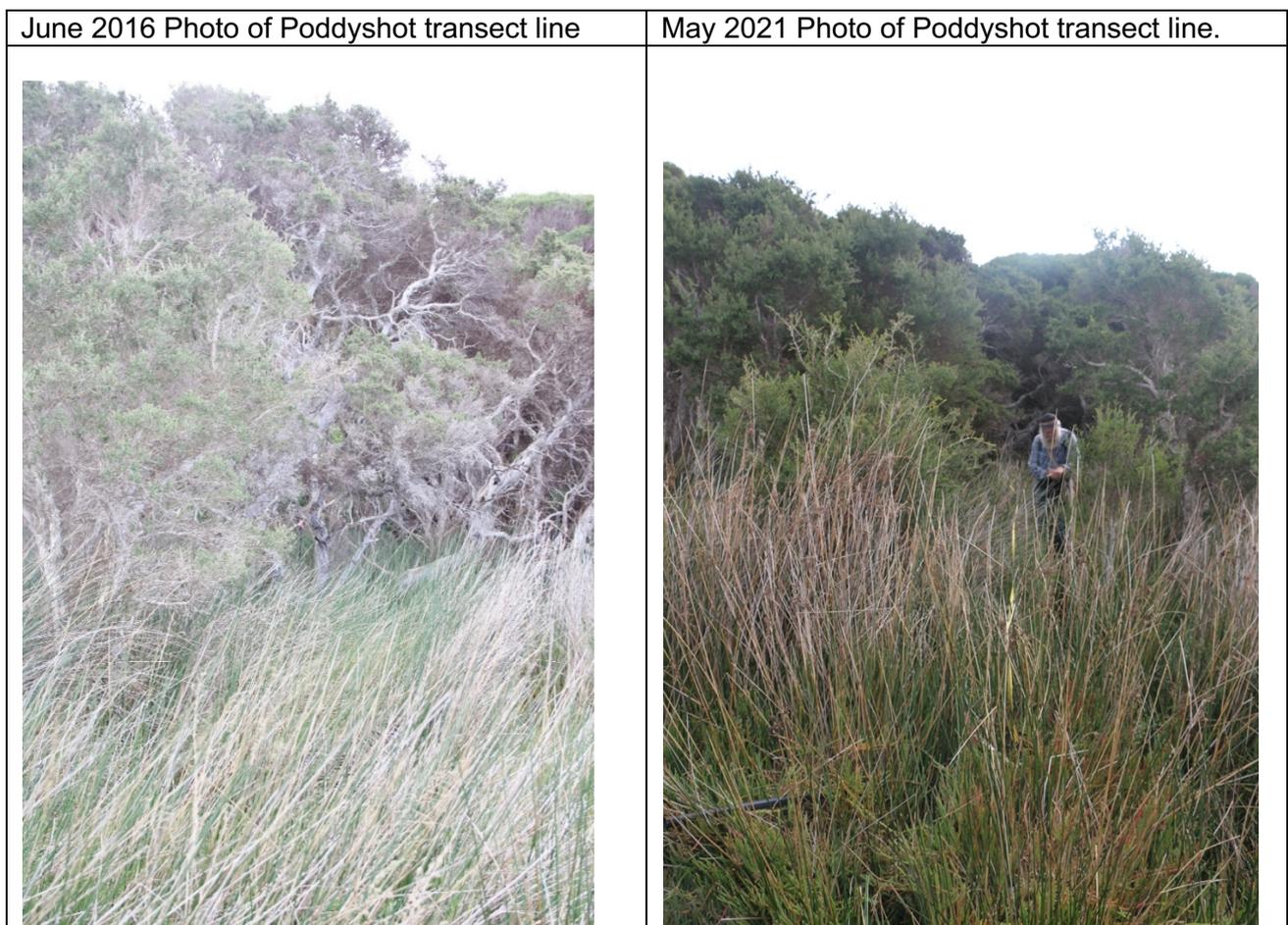
No natural recruitment of *Melaleuca*.

There is an inlet bund of debris plant material 0.5 above sea level that extends inland by ten meters.

Conclusion:

Weeds are persisting, especially Couch grass and Kikuyu grass, allowing for a poor and degraded condition.

Comparative Photos



2021 Survey Photos

Poddyshot

Land peg
S35.00709
E117.33068
No inundation

Photo 1/
MG_1348.JPG
taken from land peg
looking towards the
inlet peg.



Poddyshot

Inlet peg
S35.00725
E117.33080
No inundation

Photo 2/
MG_1348.JPG
Taken from inlet peg
looking South-West



Poddyshot

Inlet peg
S35.00724
E117.33078
Water Depth 30cm

Photo 3/
IMG_1373.JPG
Taken from inlet peg
looking toward land
peg



Poddyshot

Inlet peg
S35.00725
E117.33080
No inundation

Photo 4/
IMG_1369.JPG
Taken from inlet peg
looking North East



2.3 Yacht Club Reserve

Date of inspection: 13/05/2021

Land peg in place, shore peg reset using photos from 2016 and twenty meters measured from land peg.

Land Peg	S34.97489	E117.36520	No inundation
Inlet Peg	S34.97511	E117.36550	No inundation

Comments:

No native species until at 13 meters, then an abrupt line of *Lepidosperma effusum* and one *Eucalyptus cornuta* at 18 meters, then *Agonis flexuosa* at land peg, at 20 meters.

No standing water, most of the weeds are dead up to 13 meters.

Conclusion:

Native vegetation condition has declined up to 13 meters from inlet peg, weeds are persisting where past inundation has been.

Comparative Photos



2016 Survey Photos

**Yacht Club
Reserve**

Land Peg
S34.97489
E117.36520
Water level 0.0

Photo 1/
IMG_1440.JPG
Taken at Land peg
looking towards inlet
peg.



**Yacht Club
Reserve**

Land Peg
S34.97489
E117.36520
No inundation

Photo 2/
IMG_1437.JPG
Taken from land peg
looking South West



**Yacht Club
Reserve**

Inlet Peg
S34.97489
E117.36520
No inundation

Photo 3/
IMG_1439.JPG
Taken from inlet peg
looking South West



**Yacht Club
Reserve**
Inlet Peg
S34.97511
E117.36550
No inundation

Photo 4/
IMG_1435.JPG
Taken at inlet peg
looking towards land
peg.



2.4 Mokare Trail

Date of inspection: 13/05/2021
River peg missing but replaced.

Land Peg S34.96822 E117.36584 No inundation
River peg S34.96836 E117.36574

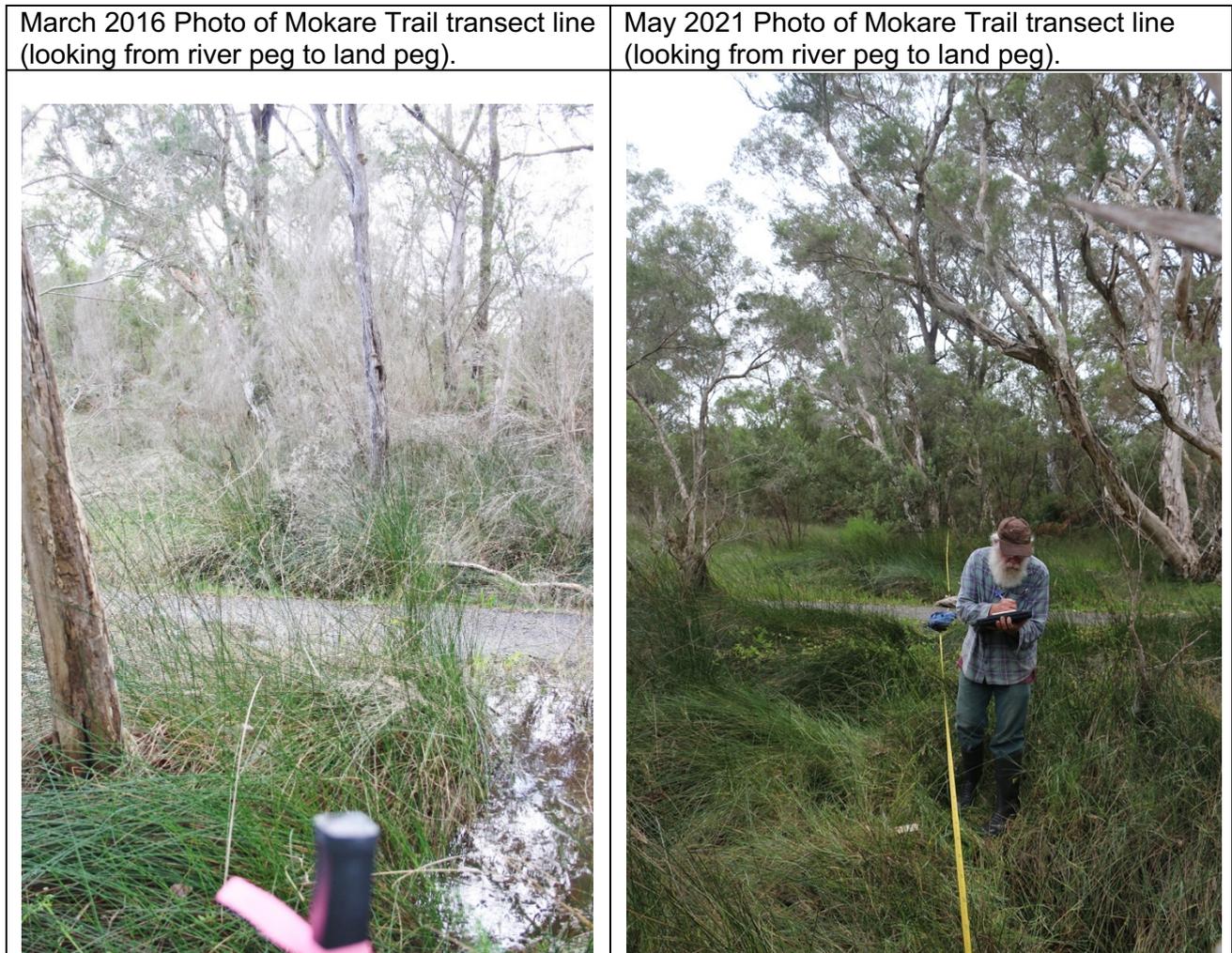
Comments:

Compared to the 2016 report, overall site has good native growth, evident by sedges and rushes. *Taxandria juniperina* at 15 meters, but north of transect line by three meters. No natural *Melaleuca* recruitment.

Conclusion:

Lower storey vegetation of *Juncus* have improved, however weeds still present including plantain, Goose foot, couch and Kikuyu.

Comparative Photos



2021 Survey Photos

Mokare Trail

Land Peg

S34.96822

E117.36584

Photo 1/

IMG_1469.JPG

Taken from land peg
looking toward the
river.



Mokare Trail

River peg
S34.96836
E117.36574

Photo 2/
IMG_1471.JPG
Taken from river
peg. Mokare trail
looking South East.



Mokare Trail

Photo 3/
IMG_1472.JPG

Taken where inlet
peg starts. Mokare
trail looking North
West. (Note river
peg in lower left of
frame behind tree)



Mokare Trail

Photo 4/
IMG_1474.JPG
On Mokare trail
looking towards land
peg.



2.5 Lake View Place

Date of inspection: 13/05/2021

Shore peg missing, reset with wood and metal pegs.

Land Peg	S34.58522	E117.58522
Inlet Peg	S34.58529	E117.24473

Comments:

Very degraded conditions at shore end, mostly Couch grass weed and *Juncus Kraussii*.

Shorter transect at 17.3 meters as elevation rises into thick vegetation, well above high-water mark at that point.

Good vegetation condition from high-water mark onwards.

Some *Melaleuca densa* trees alive from just below the high-water mark.

Conclusion:

Vegetation has improved a little since 2016 in terms of quantity and condition.

Comparative Photos



2021 Survey Photos

Lake View Place

Land Peg
S34.58522
E117.24477

Photo 1/
IMG_1525.JPG
Taken from land peg
looking along
transect towards
inlet.



Lake View Place

Inlet Peg
S34.58529
E117.24473

Photo 2/
MG_1531.JPG
Taken from inlet peg
looking towards land
peg.



Lake View Place

Photo 3/
MG_1534.JPG
Taken looking west
to inlet peg and
dead *Melaleuca*
densa.



Lake View Place

Inlet Peg
S34.58529
E117.24473

Photo 4/
MG_1527.JPG
Taken from inland
peg looking towards
North West,
elevation rises here
at 17.3 meters.



2.6 Crusoe Beach

Date of inspection: 13/5/2021

Both pegs missing, reset from past photos with a tape measure.

Land peg	S34.59042	E117.25614
Inlet peg	S34.59050	E117.25608

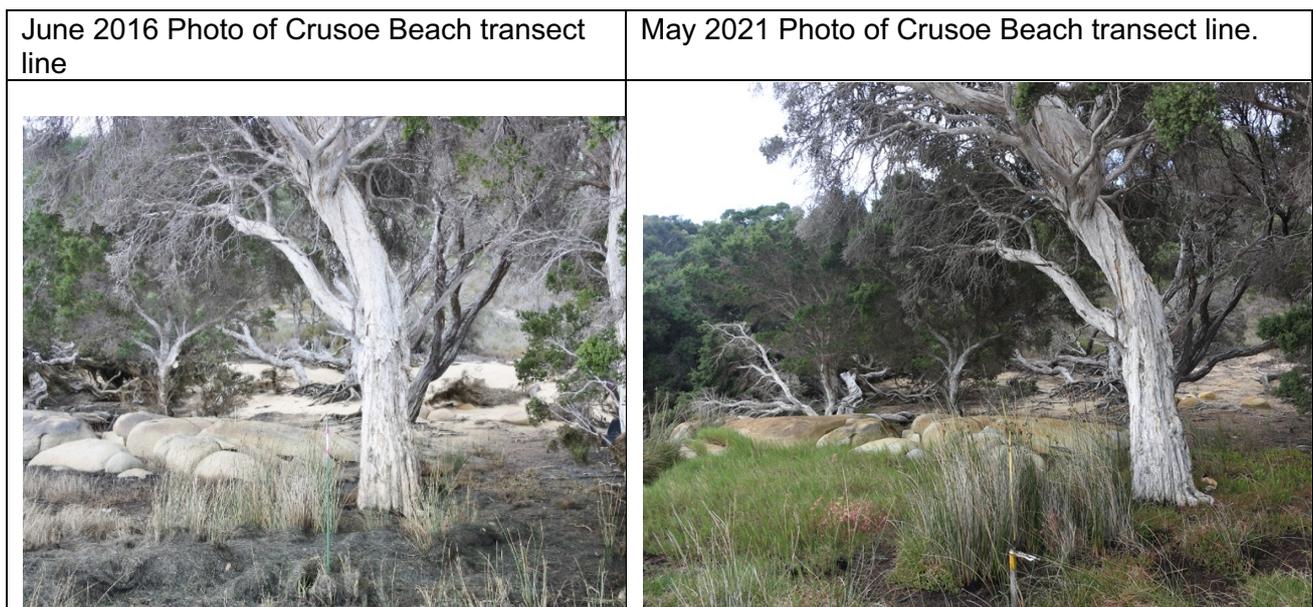
Comments:

Shoreline *Samphire* has increased since 2016. *Juncus Kraussii* has remained the same. Priority 1 species *Goodenia radicans* (Shiny Swamp-mat) present and looking good, found within two meters of the shore peg. Same *Melaleuca densa* has broken off and fallen over. Seedling *Melaleuca* species, mostly *M.densa* exist east of the transect in the zone of inundation and have been GPS logged and photographed (an ideal monitoring point). At high-water mark, *Melaleuca* seedlings not present. Cluster of *M.densa* seedlings (20cm – 70cm) at S 34.59055, E117.25627.

Conclusion:

The native vegetation appears to be in good condition compared to 2016, however the natural recruitment of *Juncus kraussii* has not improved. *Selliera radicans* at base of *Melaleuca cuticularis* (10 – 11 meters on transect) from 2016, no longer present.

Comparative Photos



2021 Survey Photos

Crusoe Beach

Photo 1/
IMG_1576.JPG

Taken looking West
across land peg
(GPS S34.42
E117.25614)



Crusoe Beach

Land peg
S34.59042
E117.25614

Photo 2/
IMG_1577.JPG
Taken at land peg
looking toward inlet
peg.



Crusoe Beach

Photo 3/
IMG_1578.JPG

Taken looking East
towards land peg
(GPS location
S34.59042
E117.25614)



Crusoe Beach

Photo 4/

Looking towards
Crusoe Beach
transect area,
showing *M.densa*
seedlings in the
foreground. An
example of natural
recruitment.



Crusoe Beach

Inlet peg
S34.59050
E117.25608

Photo 5/
IMG_1553.JPG
Taken from Inlet peg
looking to Land peg.



Crusoe Beach

Inlet peg
S34.59050
E117.25608

Photo 6/
IMG_1552.JPG
Taken from inlet peg
looking East



Crusoe Beach

Inlet peg
S34.59050
E117.25608

Photo 7/
IMG_1554.JPG
Taken from inlet peg
looking West



2.7 Hay River

Date of inspection: 14/05/201

Both pegs in place.

Land peg S34.58176 E117.27646
Inlet Peg S34.58178 E117.27634

Comments:

No natural recruitment of *Melaleuca* seedlings found.

At 20 meters inland, may be a historic shore line.

Conclusion:

Similar to 2016, vegetation stressed but recovering

Rushes in decline (*Juncus kraussii*)

Comparative Photos

March 2011 Photo of Hay River transect line	May 2021 Photo of Hay River transect line (similar condition to 2016 image).
	

2021 Survey Photos

Hay River
Land peg
S34.58176
E117.27646

Photo 1/
IMG_1673.JPG
Taken from land peg
looking towards
inlet.



Hay River
Inlet peg
S34.58176
E117.27646
Water depth 7cm

Photo 2/
IMG_1676.JPG
Taken from inlet peg
looking down,
focussing on *Juncus kraussii*
at peg base
with a low inundation
level compared to
2016 report.



Hay River

Inlet peg
S34.58178
E117.27634
Water depth 7cm

Photo 3/
IMG_1670.JPG
Looking North West
from inlet peg



Hay River

Inlet peg
S34.58178
E117.27634
Water depth 7cm

Photo 4/
IMG_1669.JPG
Looking South East
from inlet peg



Hay River

Photo 5/
IMG_1668.JPG

Taken from inlet at the same location as 2016 report photo. It shows continued decline of rushes. No change in tree canopy but appears to be improving.



2.8 Morley Beach

Date of inspection: 14/05/2021

Pegs in place, land peg bent, short timber one placed at its base.

Land peg	S34.59753	E117.28803
Inlet peg	S34.99545	E117.48112

Comments:

Access via Morley Road, turn off from South Coast Hwy.

No flooding inundation. Die off of *Samphire* at 13 meters. Left and right are to viewpoint relative as it is hard to say where the shore point of *M.cuticularis* are on the north side of the line. Land peg is at 20 meters and this is the high-water point but the bund of material inland of this indicates higher levels that have been reached previously. Further inland, along the track are some very long and old *M. cuticularis*, presumed to be on the old shoreline (GPS points logged, Mc21 & WI21 on GIS map). This lies either side of the track that runs North-South.

Conclusion:

Similar to the 2016 report, vegetation community stressed beyond the *Samphire*. *Samphire* in abundance and in a healthy condition. This site would benefit from further monitoring on the impacts of non-openings, given the historical dead tree species (*B.litoralis* and *A.flexiosis*) beyond the bund at 20 meters.

Comparative Photos

June 2016 Photo of Morley Beach transect line facing inland	July 2021 Photo of Morley Beach transect line facing inland.
	

2016 Survey Photos

<p>Morley Beach Land peg S34.59753 E117.28803</p> <p>Photo 2/ IMG_1633.JPG At land peg looking towards inlet peg</p>	
<p>Morley Beach Inlet peg S34.99545 E117.48112</p> <p>Photo 3/ IMG_1630.JPG Inlet peg looking South</p>	

Morley Beach

Inlet peg
S34.99545
E117.48112

Photo 4/
IMG_1636.JPG
Inlet peg looking
North



2.9 Youngs Lake

Date of inspection: 07/05/2021

2016 peg found at 7.5 meters along transect, did not move the transect line inland at this time.

Land peg S35.01485 E117.46538

Inlet Peg S35.01493 E117.46514

Comments:

Water depth 20cm to two meters on transect.

No small seedlings of *Melaleuca* were found. Land peg is on the boundary of *Melaleuca densa*, that are breaking off and falling over.

No real change from the last 2020 visit.

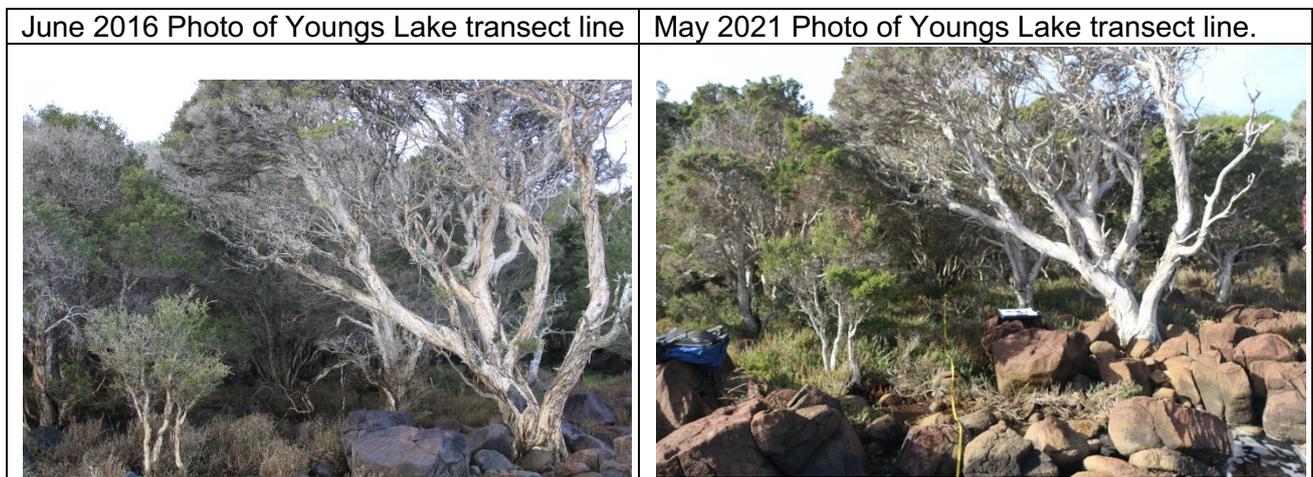
At 13 meters, 1 young dead *M.cuticularis*.

At 12 meters onwards, *M.densa* are alive.

Conclusion:

At 12 meters onwards, *M.densa* are alive.

Comparative Photos



2021 Survey Photos

Youngs Lake

Inlet Peg
S35.01493
E117.46514
water depth 20cm

Photo 2/
IMG_1253.JPG
From inlet peg
looking towards land
peg.



Youngs Lake

Photo 3/
IMG_1261.JPG
Looking North
across transect
along shore.



Youngs Lake

Photo 4/
IMG_1264.JPG
Taken South East of
land peg looking
South from shore
peg.
S35.01493
E117.46514



2.10 Nenamup Inlet

Date of inspection: 14/05/2016

Both pegs present.

Land Peg S35.01180 E117.28661
Inlet Peg S35.01190 E117.28662

Comments:

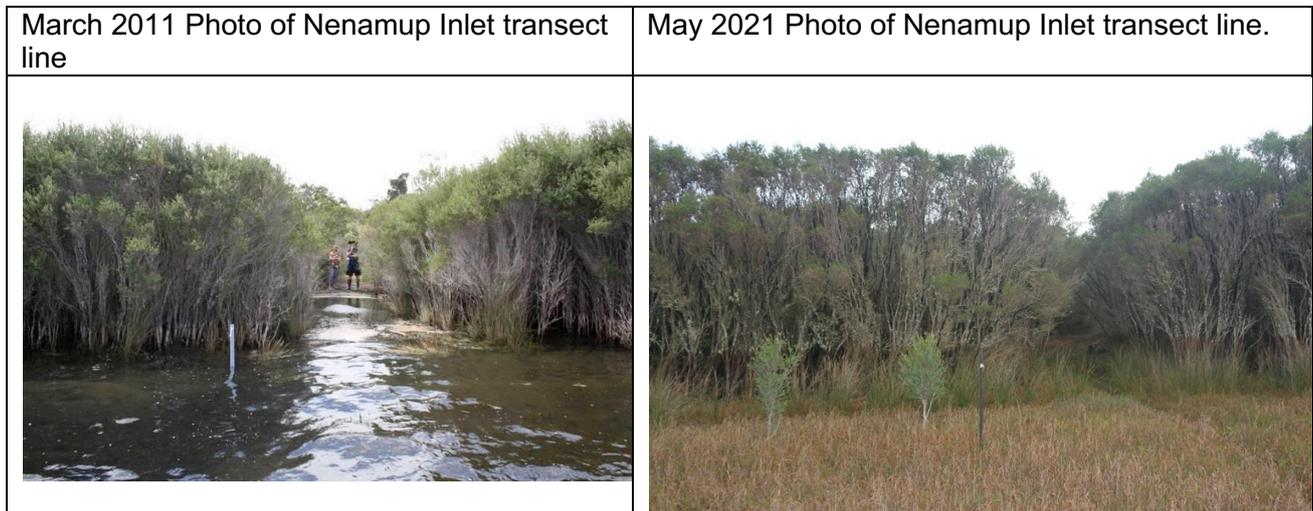
Banksia occidentalis east of Nenamup transect by 100 meters. *Melaleuca densa* at top of transect looks in poorer condition than at inlet end. There was no observable recruitment of *M.densa* seedlings. *Melaleuca cuticularis* on the shore end of transect are healthy and are new to the image taken from 2016 (comparison image below from 2011, used to show inundation).

Very thick juvenile *M.densa* shrubs from 4 meters to 21 meters. *Calytrix acutifolia* (behind land peg marker).

Conclusion:

Vegetation condition has improved since previous reports.

Comparative Photos



2021 Survey Photos

Nenamup Inlet

Land Peg

S35.01180

E117.28661

Photo 1/

IMG_1627.JPG

From land peg

looking towards inlet

peg



Nenamup Inlet

Inlet Peg
S35.01190
E117.28662

Photo 2/
IMG_1590.JPG
From inlet looking
across inlet peg to
land peg



Nenamup Inlet

Inlet Peg
S35.01190
E117.28662

Photo 3/
IMG_1588.JPG
Looking West across
inlet peg location.



2.11 Nullaki Gate

Date of inspection: 07/05/2021

Plastic Inlet peg present and original metal Land peg located.

A shorter transect of 12 meters.

Land peg S35.01992 E117.42291

Inlet Peg S35.01977 E117.42396

Comments:

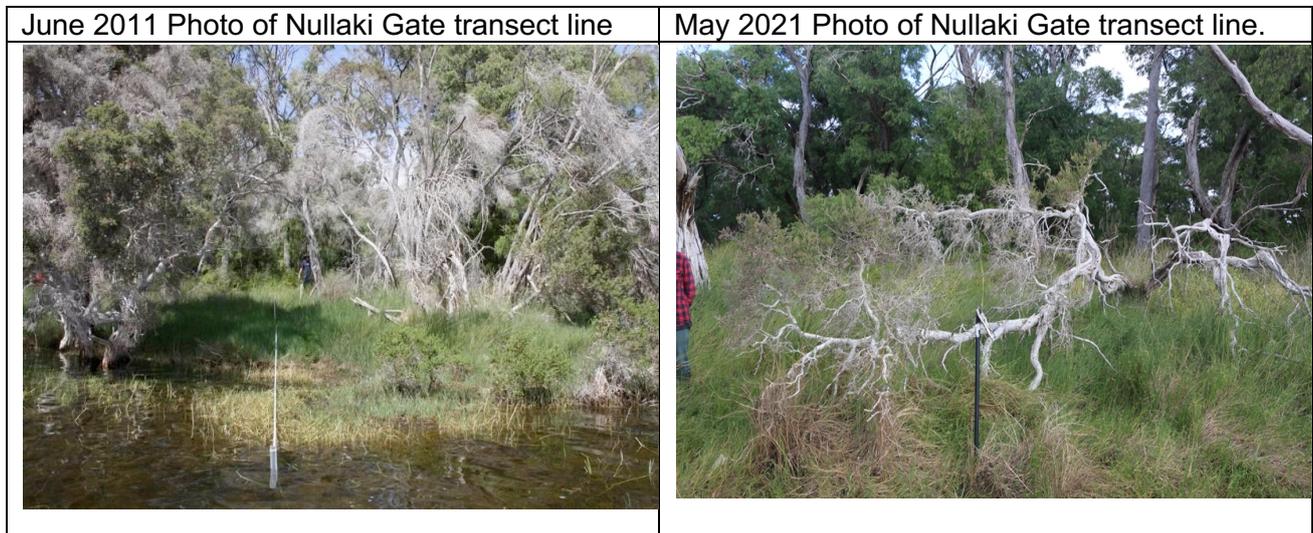
Melaleuca cuticularis has fallen over but is re-shooting in the transect area. No recruitment of native seedlings was observed. Couch grass was very thick from the shore inwards. In the foreshore area at this point, are several *Agonis flexuosa* trees that have re-sprouted from the base and are therefore recovering from the first couple of non-openings.

Agonis flexuosa (1 meter beyond inland peg).

Conclusion:

Overall a degraded site with predominantly invasive understory weed species.

Comparative Photos



2021 Survey Photos

Nullaki Gate
Photo 1/
IMG_1223.JPG
Looking North to
inlet peg



Nullaki Gate
Photo 2/
IMG_1226.JPG
Looking South to
land peg



Nullaki Gate

Photo 3/
IMG_1230.JPG
Looking West along
Bibbulman Track
across transect to
show dead
Peppermint on
transect line, live
Peppermints behind.
Weed species of
Watsonia Mariana
var. bulbifera and
Arum Lily (*Z.
aethiopica*) in
foreground.



2.12 Nullaki Jetty

Date of inspection: 07/05/2021

New timber shore peg installed at edge of inlet high-water mark as original peg not found, inland peg pushed back up incline into thick vegetation to extend from shore by 20 meters.

Land Peg S34.99990 E117.38642

Inlet Peg S34.99974 E117.38638

Comments:

At 12 meters, 2011 peg present, also 2016 peg present.

At nine meters, a previous high-water bund was detected. At 20 meters inland from the shore peg, the new inland peg is easily accessed via the Bibbulman track.

As the transect may have been much shorter due to the current high-water mark, the land peg was pushed back some considerable distance to sample vegetation higher in the elevation, meeting the Bibbulmun Track. This method is unique for this site, but was not repeated on other sites due to time constraints and a very high elevation in general, is not often susceptible to inundation. The benefit in doing this for the Nullaki Jetty site is that vegetation diversity was sampled in very good condition higher in the landscape.

Conclusion:

Invasive couch grass present and persists on the lower inundation zone.

No new *Melaleuca* seedling recruitment on the lower inundation zone.

Comparative Photos

March 2016 Photo of Nullaki Jetty transect line	May 2021 Photo of Nullaki Jetty transect line.
 <p>A photograph showing a transect line in a coastal area. The foreground is dominated by tall, dry, yellowish-brown grasses. In the background, there are dense green trees and a prominent, bleached, dead tree trunk leaning to the right.</p>	 <p>A photograph showing the same transect line in May 2021. The vegetation has changed significantly, with lush green grasses in the foreground. The bleached tree trunk is still visible, but the overall scene is much greener and more densely vegetated. A yellow measuring tape is visible in the foreground.</p>

2021 Survey Photos

Nullaki Jetty

Land Peg

S34.99990

E117.38642

Photo 1/

IMG_1217.JPG

Looking from land

end peg to inlet

(taken from a higher
elevation)



Nullaki Jetty

Land Peg
S34.99990
E117.38642

Photo 2/
IMG_1219.JPG
Looking from land
peg to the East
along Bibbulmun
Track.



Nullaki Jetty

Inlet Peg
S34.99974
E117.38638

Photo 3/
IMG_1195.JPG
Looking from inlet
peg to land peg



Nullaki Jetty

Inlet Peg
S34.99974
E117.38638

Photo 4/
IMG_1220.JPG
Looking East from
inlet peg



Nullaki Jetty

Inlet Peg
S34.99974
E117.38638

Photo 5/
IMG_1222.JPG
Looking West from
inlet peg



2.13 Prawn Rock Island

Date of inspection: 10/05/2021

Pegs in place

Land peg S35.02492 E117.32807

Inlet Peg S35.02486 E117.32826

Comments:

Invasive Marram grass (*Ammophila arenaria*) colonising the inlet end and extending inland across the sand dune bund.

Melaleuca cuticularis planted in 2011 have grown and appear healthy.

Conclusion:

No new natural recruitment of *M.cuticularis*.

Apart from annual inundation there are many impacts on this site including; wave and wind action causing erosion; wind-blown salt-spray; and recreational use.

Vegetation is situated in an exposed area.

2021 Survey Photos



Prawn Rock Island

Inlet Peg
S35.02485
E117.32826

Photo 2/
IMG_1322.jpg
Looking North
across inlet peg.
Invasive Marram
grass (*A. arenaria*) in
foreground.



Prawn Rock Island

Inlet Peg
S35.02485
E117.32826

Photo 3/
IMG_1321.jpg
Looking South
across inlet peg.
Invasive Marram
grass (*A. arenaria*) in
foreground.



Prawn Rock Island

Land peg
S35.02492
E117.32807

Photo 4/
IMG_1320.jpg
At land peg looking
towards inlet peg.
Planted *M.cuticularis*
in foreground.



Prawn Rock Island

Land peg
S35.02492
E117.32807

Photo 5/
IMG_1323.jpg
Looking Southwest
from land peg



Prawn Rock Island

Land peg
S35.02492
E117.32807

Photo 6/
IMG_1318.JPG
Looking Northwest
from land peg.
Planted *M.cuticularis*
from 2011 in
foreground.



Prawn Rock Island

Land peg
S35.02492
E117.32807

Photo 7/
IMG_1320.jpg
Looking South East
from land peg.
Planted *M.cuticularis*
in foreground.



2.14 265 Ocean Beach road.

Date of inspection: 10/5/2021

Wilson Inlet foreshore adjacent location to 265 Ocean Beach road.

Access to this site is not possible by road without crossing private land.

Alternative pedestrian access is via the 'Little River Walk Trail', from Ridley Place, Denmark.

Inlet peg missing and reset from previous photo, replaced with a short peg. Land peg in place and is 14 meters from inlet peg.

Land peg	S34.99064	E117.34084
Inlet peg	S34.99075	E117.34082

Comments:

Adjacent *Callistachys lanceolata* seedling (photo taken) two meters north of four meters on transect is a good survival indicator. Shore to land peg elevates to about 1.5 meters above sea level. At nine meters there is evidence of a high-water bund. There was no benefit in continuing the transect beyond 13 meters as the elevation increased to a steep incline.

A planted *Melaleuca densa* in the zone of inundation at six meters is looking good, it was probably planted in 2012. Juvenile seedling of *Hakea oleifolia* (10cm) also recorded at six meters.

Invasive *Asparagus scandens* occurs here as does *Gladiolus unulatus*. As of writing this report, below in photo 5, is a recent image taken after the May/June 2021 inlet flooding event. The inlet was artificially opened on the 21st of June 2021.

Conclusion:

Five meters south of transect is natural rejuvenation of *Melaleuca densa* seedlings (one at junction of seven meters).

There is major disturbance (Kikuyu grass) South-West of the survey site with total loss of foreshore vegetation which goes back to when this was a holiday park.

This site is an ideal candidate to restore the native vegetation within the zone of inundation.

2021 Survey Photos

Ocean Beach Road

Land peg
S34.99064
E117.34084

Photo 1/
IMG_1380.JPG
Taken at land peg
looking toward inlet
peg.



Ocean Beach Road

Inlet peg
S34.99075
E117.34080

Photo 2/
IMG_1377.JPG
Taken at inlet peg
looking to land peg



Ocean Beach Road

Inlet peg
S34.99075
E117.34082

Photo 3/
IMG_1376.JPG
Taken at inlet peg
looking South West



Ocean Beach Road

Inlet peg
S34.99075
E117.34082

Photo 4/
IMG_1375.JPG
Taken at inlet peg
looking North East



Ocean Beach Road

Inlet peg
S34.99075
E117.34082

Photo 5/
IMG_6965.JPG
Taken at inlet peg
looking to land peg
after the brief
inundation of the
21st of June 2021.



2.15 Poison Point

Date of inspection: 10/5/2021

Land peg S34.99131 E117.35429

Inlet peg S34.99134 E117.35406

Comments:

The following observations were made along the 20m transect line:

There is a walking path that intrudes along the transect. Almost all mature *Melaleuca densa* trees were dead up until two meters before the land peg, providing some evidence that *M.densa* cannot tolerate saline inundation.

In the 2016 survey, at the high-water mark was a line of *M.densa* seedlings of 0.5 to 1 meter tall was noted.

As of this report there are no new natural recruitment of *M.densa* seedlings, however there is a definite line of the surviving 2016 *M.densa* seedlings in less than two meters before the land peg.

Conclusion:

An overall reduction of native species in this area.

2021 Survey Photos

Poison Point

Land peg

S34.99131

E117.35429

Photo 1/

IMG_1408.JPG

From land peg
looking south to inlet
peg.



Poison Point

Land peg
S34.99131
E117.35429

Photo 2/
IMG_1410.JPG
From land peg
looking West



Poison Point

Land peg
S34.99131
E117.35429

Photo 3/
IMG_1411.JPG
From land peg
looking East



Poison Point

Inlet peg
S34.99134
E117.35406

Photo 4/
IMG_1407.JPG
From inlet peg
looking to land peg.
(Some water
inundation on right
hand side of image.)



Poison Point

Inlet peg
S34.99139
E117.35405

Photo 5/
IMG_1405.JPG
From inlet peg
looking West



Poison Point

Inlet peg
S34.99134
E117.35406

Photo 6/
IMG_1402.JPG
From inlet peg
looking East (less
inundation
compared with 2016
image)



2.16 Springdale Beach

Date of inspection: 13/5/2021

Shore peg was missing, but replaced

Land peg S34.58194 E117.23317

Inlet peg S34.58199 E117.23313

Comments:

Native plants in good condition though sparse due to the terrain. From the shore peg until about 10 meters inland, the terrain is very rocky (laterite).

High-water mark evident at 10 meters, and transect ends at 13 meters.

Conclusion:

A sparse site due to rocky terrain, first 10 meters is in a degraded condition due to Couch (*Cynodon dactylon*) grass weed invasion.

2021 Survey Photos



Springdale Beach

Inlet peg
S34.58199
E117.23313

Photo 2/
IMG_1507.JPG
At inlet peg looking
East



Springdale Beach

Inlet peg
S34.58199
E117.23313

Photo 3/
IMG_1508.JPG
At inlet peg looking
West.



Springdale Beach

Photo 4/
IMG_1502.JPG
On transect looking
South to inlet peg.



Springdale Beach

Land peg
S34.58194
E117.23317

Photo 5/
IMG_1506.JPG
At land peg looking
to inlet peg



<p>Springdale Beach Transect line</p> <p>Photo 6/ IMG_1520.JPG An example of the sparse rocky laterite.</p>	
<p>Springdale Beach Inlet peg S34.58199 E117.23313</p> <p>Photo 7/ IMG_1512.JPG Start of inlet peg (<i>Juncus kraussii</i> and invasive Couch grass)</p>	

2.17 Cherryup Quadrat

Date of inspection: 14/5/2021

10 x 10-meter quadrat

South-East peg GPS location: S34.96941, E117.44674

Comments:

The Cherryup Quadrat was initiated in 2020 as a monitoring site which is now part of the once yearly Wilson Inlet Flora survey. Access is from where the Mundabiddi track crosses the South Coast highway, east of Sunny Glen Road. Parking is available either side of the highway in gravel areas. Follow the track until it veers south-west, then follow an access track (opposite a turning corner and farm fence) to inlet through thick vegetation.

This year it was re-visited, though data sheets were not recorded for the quadrat, only photographic evidence was taken for the photo points of interest. No major change in the vegetation structure was found, therefore the 2020 survey data sheet best reflects the current species found there.

This quadrat is valued for its species diversity, and is an ideal monitoring site given that the site is in a zone of inundation. Species found here include *Callistachys lanceolata*, *Taxandra juniperena*, *Melaleuca raphiophylla*, *Bilardiera fusiformis* and *Lepidospermum offusum*.

There was a small discrepancy in the 2020 report, on the location of sample photo point 1 and has been correctly located. This photo point was of interest due to the presence of susceptible *Callistachys lanceolata* seedlings, which are no longer present (Western boundary).

Bilardiera fusiformis along the Southern boundary also missing. Two healthy *Callistachys lanceolata* seedlings found in photo point 2.

Cherryup Quadrat

SE Peg looking
West

Photo 1/
IMG_1702.JPG



Cherryup Quadrat

SE Peg looking
North

Photo 2/
IMG_1703.JPG



Cherryup Quadrat
SE Peg Diagonal
view

Photo 3/
IMG_1704.JPG



Cherryup Quadrat
SW Peg Looking
East, over inlet

Photo 4/
IMG_1712.JPG



Cherryup Quadrat
SW Peg Looking
North

Photo 5/
IMG_1705.JPG



Cherryup Quadrat
Photo point 1
4m east of West peg

Photo 6/
IMG_1710.JPG

No surviving
Callistachys
lanceolata seedlings
as found in the 2020
survey.



Cherryup Quadrat

Photo point 2
2m North of SW peg
(west side of
quadrat).

Photo 7/
IMG_1710.JPG

Surviving
Callistachys
lanceolata seedlings
as found in the 2020
survey.



Cherryup Quadrat

Looking west from
SE peg.

Photo 8/
IMG_1716.JPG

A noticeable change
in the landscape,
evident most likely
from previous saline
inundation.



Conclusion:

The two healthy *Callistachys lanceolata* seedlings found in photo point 2 in May 2021, no longer present since the inundation event shortly after in June 2021. Image 1 and 2 below best illustrates the impact of inundation upon the quadrat area. Image 2 shows *Rupia megacarpa* (Widgeon grass) suffocating vegetation under.



Image 1: Cherryup Quadrat, May 2021 (IMG_1705.JPG).



Image 2: Cherryup Quadrat after inundation of *Rupia megacarpa*, July 2021 (IMG_6847.JPG).

3 General comments

- The transects overall are indicating that there has been some decline in condition since the last full survey.
- One of the key features, along most transects, worth recording is the high-water mark represented by a bund of accumulated dead plant material (*Rupia megacarpa*) deposited at the bar opening time, the previous year.
- The current method of collecting multiple data monitoring sites (17 at present) may be more than is necessary.
- Sites that show some seedling recruitment are able to provide more valuable data than sites that are bare or weed infested.
- If there are further non-opening events, an extensive investigation of the impact on the fringing vegetation, would give a clearer picture of how long inundation can be tolerated by individual species. This needs to be in the form of field observations and salinity readings, both for surface and subsurface water. Variability of soil type may have an impact on how long a species can survive so it needs to be looked at also.
- Overall impressions on the health of the inlet are observed through revisiting transects. It seems there is a lack of recruitment in all transects of the *Melaleuca* species. *Melaleuca densa* is mostly dead in the 20-meter zone, a definite line of survival / regeneration persists beyond this point and could be attributed to saline inundation. While *Melaleuca raphiophylla* does not occur in all areas, where it does, it seems to have suffered greatly.
- There seems to be a reduction in some weed species with an increase in other species.
- Most quickly elevated areas see the *Agonis flexuosa* suffering, either dead or recovering.
- Soil type variations may explain why some species are hit more severely in some areas during non-opening years.
- Gaining an understanding of pre-1920 artificial openings and foreshore conditions may facilitate a baseline being established that more accurately represents sustainable foreshore vegetation. Through observation, it may be that it can still be read in the landscape.

4 Conclusions

The presence of *Melaleuca* seedlings above the high-water mark and the absence below indicates that even those species that tolerate prolonged inundation as adults are killed when young. Natural recruitment of native species is limited by invasive weed ground cover, for example the reduction of healthy *Juncus kraussii* (noted in the 2016 report).

As of writing this report, the Wilson Inlet sand bar was artificially opened on Monday the 21st of June 2021 due to heavy rain fall (Image 3), after setting a new inundation record (Figure 3)

. The inundation reached 1.49 meters above the Australian Height Datum (*E.Reichwaldt*), though only for a few days.

In order to build up a database that shows major changes and trends, photographic survey work should continue to be undertaken annually and at the same time every year. Possibly with less monitoring sites, with a focus on the impacts upon *Melaleuca* species and native rushes and sedges. As noted in the 2016 report, February is considered a good time due to low water levels and weeds being present.

Reasons why the following sites would be ideal candidates for annual monitoring are:

- Prawn Rock Island – Sand shore erosion, pedestrian impacts of people and the presence of invasive Marram grass.
- Crusoe Beach – The only site to host priority conservation 1 species *Goodenia radicans* (Shiny Swamp-mat).
- Morley Beach – Terrain is of value at this site as there are depressions in the landscape behind the transect that stay inundated for long periods of time, even after saline flooding has subsided.
- Nenamup Inlet – Juvenile *M.densa* trees near the shore peg are a good indicator for monitoring of salinity and inundation impacts.
- Cherryup quadrat - – This site best reflects the species diversity of the area and is situated in the zone of inundation. Seedlings that undergo natural germination here are sensitive to both inundation and saline intrusion.

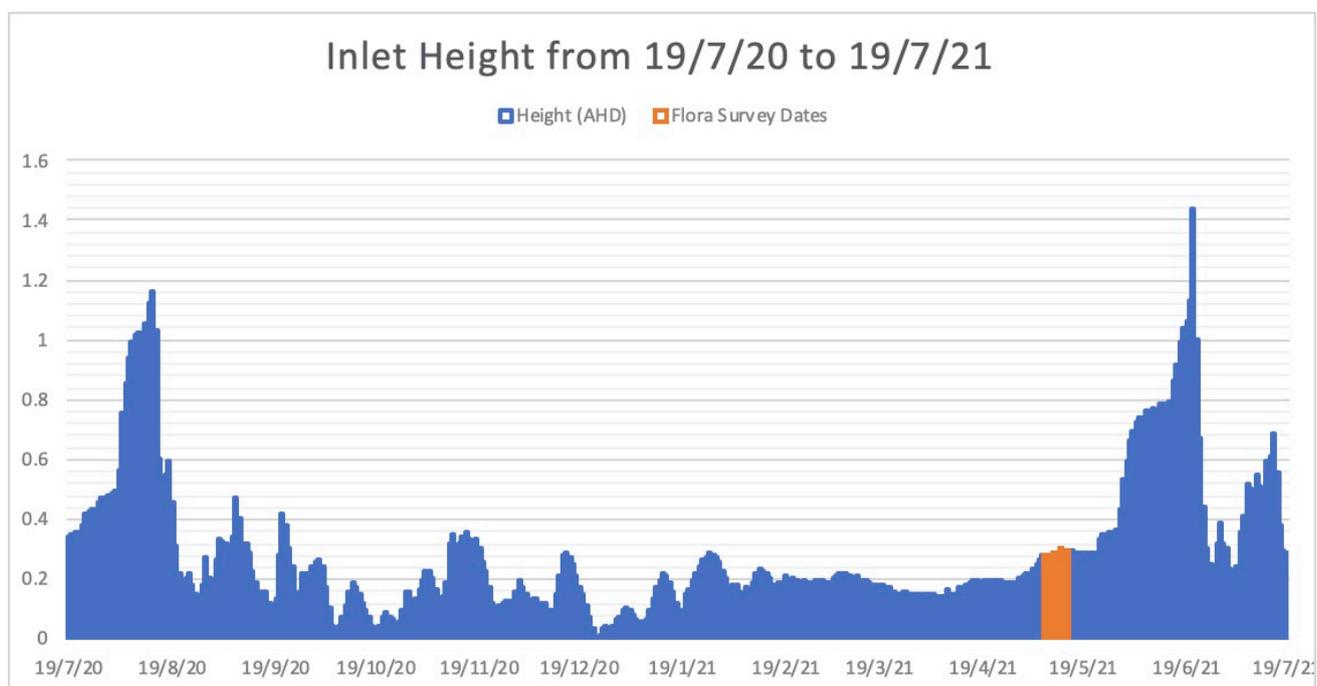


Figure 3: A monthly graph depicting inlet water height over a 12-month period.

It is recommended that agencies and groups responsible for natural resource management decisions that can potentially impact the riparian vegetation of Wilson Inlet, will be able to utilise this report to make better-informed decisions regarding: ongoing monitoring work; bar-openings; coastal access; weed control; and revegetation.



Image 3: Poddyshot Bay boat ramp under inundation, 21st June 2021 (IMG_6847.JPG).

5 References

Bureau of Meteorology, <http://www.bom.gov.au>

E.Reichwaldt 2021, (Elke.Reichwaldt@dwer.wa.gov.au) Department of Water and Environmental Regulation (email communication).

J. Wheeler *et al.*, 2002, *Flora of the South West*, volumes 1 & 2.

Kaesehagen, D. (1994) *Bushland Condition Mapping*

Stewart, E. 2011, *Wilson Inlet Flora Survey March 2011*

Appendix 1: Table of Survey Sites.

Transect Name	Date of creation	Land Peg Latitude	Land Peg Longitude	Inlet Peg Latitude	Inlet Peg Longitude
Prawn Rock Channel	Mar 2011	S35.02089	E117.32656	S35.02077	E117.32677
Poddyshot	Mar 2011	S35.00709	E117.33068	S35.00725	E117.33080
Yacht Club Reserve	Mar 2011	S34.97489	E117.36520	S34.97511	E117.36550
Mokare Trail	Mar 2011	S34.96822	E117.36584	S34.96836	E117.36574
Lake View Place	Mar 2011	S34.58522	E117.24477	S34.5829	E117.24473
Crusoe Beach	Mar 2011	S34.59042	E117.25614	S34.59050	E117.25608
Hay River	Mar 2011	S34.58176	E117.27646	S34.58178	E117.27634
Morley Beach	Mar 2011	S34.59753	E117.28803	S34.99545	E117.48112
Youngs Lake	Mar 2011	S35.01485	E117.46538	S35.01493	E117.46514
Nenamup Inlet	Mar 2011	S35.01180	E117.28661	S35.01190	E117.28662
Nullaki Gate	Mar 2011	S35.01992	E117.42391	S35.01977	E117.42396
Nullaki Jetty	Mar 2011	S34.99990	E117.38642	S34.99974	E117.38638
Prawn Rock Island	June 2016	S35.02492	E117.32807	S35.02485	E117.32826
265 Ocean Beach Road	June 2016	S34.99131	E117.35429	S34.99134	E117.35406
Poison Point	June 2016	S34.99133	E117.35429	S34.99139	E117.35405
Springdale Beach	June 2016	S34.58194	E117.23317	S34.58199	E117.23313

Note: GPS data updated for each transect peg, as past peg locations may have been missing or moved due to site conditions.

Appendix 2: May 2021 data for all sites.

Wilson Inlet Foreshore Fringing Vegetation Survey Prawn Rock Channel

Date: 10-05-21 Transect ID: WIPC Size: 20m x 2m
 Location: Prawn Rock Channel

Shore end Lat/Long: S 34.02077 Inland end Lat/Long: S 34.02089
E 117.32677 E 117.32656

Soil Type:

Colour: Black
 Texture (s/l/c): Silty sand
 (sand/loam/clay)

Survey Project Officers:

Yvette Carusoe, Mark Parre, Matt. D

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: new land peg was installed. The old pegs could not be located. New pegs set by cross reference to previous photos. A planting of *Melaleuca cuticularis* exists at the eastern end that has grown considerably since planting in 2011. No natural recruitment of *Melaleuca* was observed. The land peg is set on the cycle track embankment and the inlet peg goes nowhere near the foreshore. Note: Inlet end of transect is not on the shore, it is over fifty meters inland. There is a drain running inland from the inlet on the north side.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Prawn Channel

Transect ID: WIPR

Date: 10.05.21

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition	SPECIES	WATER LEVEL
Mc	1 A= 7 B= 7	Mc	02 cm
Jk		Jk	
Jk	2 A= 7 B= 7	Jk	03 cm
Couch		Couch	
<i>Centella asiatica</i>		<i>Centella asiatica</i>	
Mc, couch grass	3 A= 7 B= 7	Jk	05 cm
Jk		Couch grass	
<i>Centella asiatica</i>			
Mc	4 A= 7 B= 7	Mc	05 cm
<i>Centella asiatica</i>		Jk	
Jk, couch grass (weed)		Couch grass (weed)	
Mc	5 A= 7 B= 7	<i>Centella asiatica</i>	05 cm
Jk		Mc, Couch grass (weed)	
Couch grass (weed)		Jk	
Mc, Couch	6 A= 7 B= 7	<i>Centella asiatica</i>	08 cm
Jk		Couch grass (weed)	
<i>Centella asiatica</i>		Mc, Jk	
Jk	7 A= 7 B= 7	<i>Centella asiatica</i>	08 cm
Couch grass (weed)		Jk	
<i>Centella asiatica</i>		Couch grass (weed)	
Jk	8 A= 7 B= 7	Jk	05 cm
Couch		<i>Centella asiatica</i>	
<i>Centella asiatica</i>			
Jk	9 A= 7 B= 7	Jk	10 cm
<i>Centella asiatica</i>		Couch grass (weed)	
Couch grass (weed)			
JK	10 A= 7 B= 7	Couch grass (weed)	15 cm
Couch		Jk	
		<i>Centella asiatica</i>	
Jk	11 A= 7 B= 7	Jk	10 cm
Couch grass (weed)		Couch grass (weed)	
Couch grass (weed)	12 A= 7 B= 7	Couch grass (weed)	10 cm
<i>Cyperus eragostis</i>	13 A= 5 B= 5	Couch grass (weed)	20 cm
Couch grass (weed)			
<i>Cyperus eragostis</i>	14 A= 5 B= 5	<i>Cyperus eragostis</i>	18 cm
Couch grass (weed)		Couch grass (weed)	
Jk	15 A= 7 B= 7	<i>Cyperus eragostis</i>	15 cm
		(water)	
Jk	16 A= 7 B= 7	Jk	20 cm
<i>Juncus microcephalus</i>		<i>Juncus microcephalus</i>	
		(water)	
Jk	17 A= 7 B= 6	Couch	20 cm
Couch			
Jk	18 A= 7 B= 7	Jk	15 cm
Couch		Couch	
Jk	19 A= 7 B= 7	Couch	10 cm
Couch grass			
Jk	20 A= 7 B= 7	Jk	03 cm
Couch grass		Couch	

Wilson Inlet Foreshore Fringing Vegetation Survey Poddy Shot

Date: 10-05-21 Transect ID: WIPS Size: 20m x 2m

Location: Poddy Shot

Shore end Lat/Long: S 34.00725 Inland end Lat/Long: S 35.00709
E 117.33080 E 117.33068

Soil Type: Black muddy Survey Project Officers: Mark Parre and Matthew Doble
 Colour: Black muddy
 Texture (s/l/c): loam
 (sand/loam/clay)

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

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Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	<i>Goose Foot</i>
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Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: Both pegs in place, shore peg bent over, and new peg installed. Land peg moved 3 meters inland. No natural recruitment of Melaleuca. There is an inlet bund of debris plant material 0.5 above sea level that extends inland by ten meters.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Poddy shot

Transect ID: WIPS

Date: 10.05.21

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition		SPECIES	WATER LEVEL
<i>Samolus repens, couch</i>	1		samphire, couch	0
<i>J. microcephalus</i>	A= 7	G	Jk, Mc, <i>J. microcephalus</i>	
<i>Baumea juncea, samphire</i>	B= 7		<i>Samolus repens</i>	
Jk, <i>J. microcephalus</i>	2		Jk, <i>J. microcephalus</i>	
<i>Samolus repens</i>	A= 7	G	Couch, <i>Samolus repens</i>	
Couch grass	B= 7			
Jk, <i>Samolus repens</i>	3		Jk, <i>J. microcephalus</i>	
Couch, <i>J. microcephalus</i>	A= 7	P	Couch, <i>Samolus repens</i>	
	B= 7			
Couch, <i>J. microcephalus</i>	4		Jk, <i>J. microcephalus</i>	
Jk, <i>Samolus repens</i>	A= 7	P	Couch, <i>Samolus repens</i>	
	B= 7			
Couch, <i>J. microcephalus</i>	5		Jk, <i>J. microcephalus</i>	
Jk, <i>Samolus repens</i>	A= 7	P	Couch, <i>Samolus repens</i>	
Fn	B= 7		Fn	
Fn, Jk	6		Fn, Jk, <i>J. microcephalus</i>	
<i>Samolus repens</i>	A= 7	P	couch	
Couch, <i>Centella asiatica</i>	B= 7		<i>Centella asiatica</i>	
<i>J. microcephalus</i>	7		Fn, couch, Jk	
Fn, Jk, couch	A= 7	P	<i>J. microcephalus</i>	
<i>Samolus repens</i>	B= 7		<i>Centella asiatica</i>	
Jk, Fn	8		Fn	
Kikuyu grass (weed)	A= 7	D	Couch	
	B= 7			
Kikuyu grass (weed)	9		Kikuyu grass, Jk	
Jk, <i>Samolus repens</i>	A= 7	D	<i>Samolus repens</i>	
<i>Centella asiatica</i>	B= 7			
<i>Baumea juncea</i>	10		<i>Baumea juncea</i>	0
<i>Samolus repens</i>	A= 5	G	<i>Samolus repens</i>	
Kikuyu grass (weed)	B= 5		Kikuyu grass (weed)	
<i>J. microcephalus</i>	11		<i>Samolus repens</i>	0
<i>Baumea juncea</i>	A= 7	G	<i>Baumea juncea</i>	
<i>Samolus repens</i>	B= 7		<i>Melaleuca cuticularis</i>	
Jk, couch grass	12		Couch grass	0
<i>Samolus repens</i>	A= 7	P	<i>Samolus repens</i>	
<i>Baumea juncea</i>	B= 7		Jk, <i>Baumea juncea</i>	
<i>M.cuticularis, Samolus repens</i>	13		<i>Baumea juncea</i>	0
Jk, couch grass	A= 7	P	Jk, couch grass	
<i>Baumea juncea</i>	B= 7		<i>Samolus repens</i>	
<i>Samolus repens</i>	14		<i>Samolus repens</i>	0
Jk	A= 7	D	Jk	
Couch grass	B= 7		Couch grass	
Jk	15		Jk	0
Couch grass	A= 7	D	<i>Samolus repens</i>	
	B= 7		Couch grass	
<i>Samolus repens</i>	16		Jk	0
Jk	A= 7	D	Couch	
Couch grass	B= 7			
<i>M. cuticularis</i>	17		Fn	0
Jk	A= 7	P		
Couch	B= 7		Couch	
Kikuyu grass (weed)	18		Jk	old peg location
Jk	A= 7	P	Fn	
Fn	B= 7			
Fn	19		Jk	0
Jk	A= 7	P	Fn	
Kikuya	B= 7			
Fn, <i>Samolus repens</i>	20		<i>Centella asiatica</i>	0
<i>J. microcephalis</i>	A= 7	D	Fn, <i>Samolus repens</i>	
Kikuyu grass (weed)	B= 7		Kikuyu grass (weed)	

Wilson Inlet Foreshore Fringing Vegetation Survey Yacht Club Reserve

Date: 13-05-21 Transect ID: WIYC Size: 20m x 2m
 Location: Yacht Club Reserve

Shore end Lat/Long: S 34.97511 Inland end Lat/Long: S 34.97489
E 117.36550 E 117.36520

Soil Type: Survey Project Officers:
 Colour: Dark
 Texture
 (s/l/c): Loam
 (sand/loam/clay)

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	Gf	<i>Goose Foot (Chenopodium)</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: Land peg in place, shore peg reset using photos from 2016 and twenty meters measured from land peg. No native species until at 13 meters, then an abrupt line of *Lepidosperma effusum* and one *Eucalyptus cornuta* at 18 meters, then *Agonis flexuosa* at land peg, at 20 meters.
 No standing water, most of the weeds are dead up to 13 meters.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Yacht Club Reserve

Transect ID: WIYC

Date: 13.05.21

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition	SPECIES	WATER LEVEL
Gf	1	Gf	
Celery weed	A= 7	D Celery weed	
	B= 7		
	2		
	A= 6	D Dead material	
	B= 6		
Gf	3		
Dead material	A= 7	D Dead material	
	B= 7		
	4		
Dead material	A= 7	D Dead material	
	B= 7		
	5		
Dead material	A= 7	D Dead material	
	B= 7		
	6		
Dead material	A= 7	D Dead material	
	B= 7		
<i>Rumex</i> (Dock weed)	7		
Dead material	A= 7	D Dead material	
Goose foot	B= 7		
Goose foot	8	Goose foot	
<i>Rumex</i> (Dock weed)	A= 7	D Dead material	
	B= 7		
	9		
Dead material	A= 7	D Dead material	
	B= 7		
	10		
Goose foot	A= 7	D Goose foot	
<i>Rumex</i> (Dock weed)	B= 7	<i>Rumex</i> (Dock weed)	
	11		
Dead material	A= 7	D Dead material	
	B= 7		
Couch	12	Couch	
Goose foot	A= 7	D Goose foot	
	B= 7		
Couch	13	Couch	
Celery weed	A= 7	D	
	B= 7		
<i>L. effusum</i> (Sword grass)	14	<i>L. effusum</i>	
	A= 7	G	
	B= 7		
<i>L. effusum</i> (Sword grass)	15	<i>L. effusum</i>	
	A= 7	G	
	B= 7		
Couch grass	16	<i>L. effusum</i>	
	A= 7	G	
	B= 7		
Couch grass	17	<i>L. effusum</i>	
	A= 7	P	
	B= 7		
<i>E. cornuta</i>	18	<i>L. effusum</i>	
<i>Centella asiatica</i>	A= 7	P Couch grass	
Couch	B= 7		
<i>L. effusum</i> , <i>O. hispidula</i>	19	Couch	
<i>Centella asiatica</i>	A= 7	G <i>V. nodosa</i>	
<i>L. squamatum</i>	B= 7		
<i>L. squamatum</i>	20	<i>L. squamatum</i>	
Couch grass	A= 7	G <i>Opercularia hispidula</i>	

	B= 7		V.nodosa	
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Wilson Inlet Foreshore Fringing Vegetation Survey Mokare Trail

Date: 13-05-21 **Transect ID:** WIMK **Size:** 20m x 2m

Location: Mokare Trail

Shore end Lat/Long: S 34.96836 **Inland end Lat/Long:** S 34.96822
E 117.36574 E 117.36584

Soil Type: **Survey Project Officers:**
 Colour: Black
 Texture (s/l/c): Peaty loam
 (sand/loam/clay)

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	Gf	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>
Jm	<i>Juncus microcephalis</i>	Bj	<i>Baumea Juncea</i>		

General Comments/observations:

Mark's notes: Shore peg missing but replaced. Overall site has good native growth evident by sedges and rushes. *Taxandria juniperina* at 15 meters, but at three meters of transect. No *Melaleuca* recruitment. *Taxandria juniperina* three meters north of the 14meter mark.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Mokare Trail

Transect ID: **WIMK** Date: **13.05.21** Survey Project Officers: **M.P & M.D**

SPECIES	ABUNDANCE & Bushland Condition	SPECIES	WATER LEVEL
Mc	1	Mc, Gf	0
Jk, Jm	A= 7	Jk, Jm	
Couch	B= 7	Couch	
Jk, Jm	2	Jk, Jm	
Couch	A= 7	Couch	
	B= 7		
Jk	3	Jk	10cm Drain
Couch	A= 7	Couch	
	B= 77		
Jk	4	Jk	
Jm	A= 7	Jm	
Couch	B= 7	Couch	
<i>Centella asiatica</i>	5	Jf, Gf, Jm	
Jk, Jm	A= 7	Couch	
Nightshade	B= 7		
<i>Centella asiatica</i>	6	<i>Centella asiatica</i>	
Gf, Jk, Jm	A= 7	Jf, Fn, Jm	
	B= 7		
Jk, Fn, Jf,	7	Fn, Jk	
<i>Centella asiatica</i>	A= 7	<i>Apium graveolens</i> (Wild Celery)	
	B= 7		
<i>Centella asiatica</i>	8	Plantago weed	
Jk	A= 7	Jk	
<i>Plantago lanceolata</i>	B= 7	<i>Centella asiatica</i>	
Jk	9	Jk	
<i>Plantago lanceolata</i>	A= 4	<i>Plantago lanceolata</i>	
	B= 4		
Bitumen	10	Bitumen	
	A= (Mokare walk B= trail)		
Plantago weed	11	Jk, <i>Centella asiatica</i>	
Jk, Fn	A= 4	Plantago weed	
	B= 4	<i>Megathyrsus maximus</i> (Panic grass)	
Jk, Fn, Jm	12	Jk, Fn, Jm	
	A= 7		
	B= 7		
Jk, Fn, Jm	13	Jk, Jm	
	A= 7		
	B= 7		
Jm, Jk, Bj	14	Kikuyu grass	
Kikuyu grass	A= 7	Jk, Jm, couch	
	B= 7	<i>Centella asiatica</i>	
Jk, Jk	15	Gladiolus weed	
	A= 5	Bj	
	B= 5		
Kikuyu grass	16	<i>restionaceae</i>	
<i>restionaceae</i>	A= 5		
	B= 5		
Kikuyu weed	17	Jk	
<i>restionaceae</i>	A= 5	<i>restionaceae</i>	
	B= 5		
(Dead tree)	18	Jm, Jk	
Gladiolus weed	A= 5		
<i>restionaceae</i>	B= 5		
	19	Jk	
<i>restionaceae</i>	A= 6		

	B= 6			
<i>restionaceae</i>	20	G	<i>restionaceae</i>	
	A= 7			
Bridle creeper weed	B= 7			

Wilson Inlet Foreshore Fringing Vegetation Survey Lake View

Date: 13-05-21 **Transect ID:** WILV **Size:** 20m x 2m

Location: Lake View

Shore end Lat/Long: S 34.58529 **Inland end Lat/Long:** S 34.58522
E117.24473 E 117.24477

Soil Type:

Colour: Yellow
 Texture (s/l/c): Sand
 (sand/loam/clay)

Survey Project Officers:

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	Gf	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus kraussii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: Shore peg missing, reset with wood and metal pegs.
 Very degraded conditions at shore end, mostly Couch grass weed and *Juncus Kraussii*.
 Good vegetation condition from high water mark onwards.
 Some *Melaleuca densa* trees alive from just below the high-water mark.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Lake View

Transect ID:
WILV

Date: 13.05.21

Survey Project Officers:

M.P &
M.D

SPECIES	ABUNDANCE & Bushland Condition		SPECIES	WATER LEVEL
Couch	1		Couch	No inundation
Gf	A= 7	D	Jk	
	B= 7			
Couch	2		Couch	
<i>Centella asiatica</i>	A= 7	D	Gf	
	B= 7			
Couch	3		<i>F.nodosa</i>	
<i>F.nodosa</i>	A= 7	D	<i>Centella asiatica</i>	
Milk thistle weed	B= 7		Couch	
Couch	4		<i>F.nodosa</i>	
<i>F.nodosa</i>	A= 7	G	<i>Centella asiatica</i>	
	B= 7			
Couch	5		<i>F.nodosa</i>	
<i>F.nodosa</i>	A= 7	G	<i>Centella asiatica</i>	
<i>Bolboschoenus caldw ellii</i>	B= 7			
<i>Bolboschoenus caldw ellii</i>	6		<i>F.nodosa</i>	
<i>F.nodosa</i>	A= 7	P	<i>Bolboschoenus caldwellii</i>	
Couch	B= 7		Couch	
<i>Bolboschoenus caldw ellii</i>	7		<i>Centella asiatica</i>	(Dry) High water line
	A= 2	D	<i>B.juncea</i>	
<i>Centella asiatica</i>	B= 2		Couch, <i>Bolboschoenus caldwellii</i>	
Gf	8		<i>B.juncea</i>	
<i>B.juncea</i>	A= 1	D	Gf	
	B= 1			
<i>F.nodosa</i>	9		<i>F.nodosa</i>	
<i>Leucopogon capitellatus</i>	A= 2	P	<i>F.nodosa</i>	
	B= 2			
	10		Mature <i>Agonis flexuosa</i>	
<i>F.nodosa</i>	A= 1	P	<i>F.nodosa</i>	
	B= 1			
<i>F.nodosa</i>	11		<i>Taraxis grossa</i>	
<i>Lomandra pauciflora</i>	A= 7	G	<i>Restionaceae sp.</i>	
	B= 7			
Fn	12		<i>Patersonia umbrosa</i>	
<i>Taraxis grossa</i>	A= 7	G	<i>Desmoclatis flexuosus</i>	
<i>Restionaceae sp.</i>	B= 7		<i>Restionaceae sp., FN</i>	
<i>Taraxis grossa</i>	13		<i>Taraxis grossa</i>	
	A= 7	VG	Bracken fern, <i>Lepidosperma longitudinale</i>	
Cl	B= 7		<i>Leucopogon capitellatus</i>	
<i>Patersonia umbrosa</i>	14			
	A= 7	VG	<i>Taraxis grossa</i>	
	B= 7		<i>Restionaceae sp.</i>	
Fn	15		<i>Taraxis grossa</i>	
<i>Taraxis grossa</i>	A= 7	VG	<i>Lepidosperma</i>	
<i>Restionaceae sp.</i>	B= 7		<i>Restionaceae sp.</i>	
	16			
<i>Taraxis grossa</i>	A= 7	VG		
	B= 7			
<i>Taraxis grossa</i>	17		<i>Restionaceae sp.</i>	
<i>Patersonia umbrosa</i>	A= 7	VG	<i>Taraxis grossa</i>	
	B= 7		Cl	
<i>Taraxis grossa</i>	18		<i>Lepidosperma longitudinale</i>	

<i>Restionaceae sp.</i>	A= 7	VG	<i>Restionaceae sp.</i>	(17.3 Transect ends)
	B= 7			
	19			
	A=			
	B=			
	20			
	A=			
	B=			

Wilson Inlet Foreshore Fringing Vegetation Survey Crusoe Beach

Date: 13-05-21 Transect ID: WICB Size: 20m x 2m

Location: Crusoe Beach

Shore end Lat/Long: S 34.59050 Inland end Lat/Long: S 34.59042
E 117.25608 E 117.25614

Soil Type: Survey Project Officers:
 Colour: Black
 Texture (s/l/c): Loam
 (sand/loam/clay)

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus kraussii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: Both pegs missing, reset from past photos with tape measure. Shoreline *Samphire* has increased since 2016. *Juncus Kraussii* has remained the same.

Same *Melaleuca densa* has broken off and fallen over. *Selliera radicans* present and looking good.

Seedling *Melaleuca* species, mostly *M.densa* exist east of the transect in the zone of inundation have been GPS logged and photographed (making a good monitoring point).

Note: At high water mark, *Melaleuca* seedlings not present.

Cluster of *M.densa* seedlings (20cm – 70cm) at S 34.59055, E117.25627.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Crusoe Beach

Transect ID: WICB ___

Date: 13.05.21

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition	SPECIES	WATER LEVEL
Samphire	1	Jk	
Jk	A= 4	Samphire	
Gf	B= 4		
Samphire	2	Couch grass	
<i>S.radicans</i>	A= 7	Jk	
Jk	B= 7		
Couch	3	Couch	
Jk	A= 7	Samphire	
Samphire	B= 7		
Couch	4	Couch	
Samphire	A= 5	Samphire	
	B= 5	<i>V.nodosa</i>	
(Bare rock)	5	(Bare rock)	
	A= 1		
	B= 1		
<i>B.juncus</i>	6	<i>B.juncus</i>	
	A= 2		
	B= 2		
Samphire	7	Samphire	
Mc	A= 2	Mc	
Jk	B= 2		
	8	Jk	
Jk	A= 2		
	B= 2		
	9		
Bare ground	A= -	(Bare ground)	
	B= -		
Mc	10		
	A= 1	(Bare ground)	
	B= 1		
Mc	11	Mc	
	A= 1		
	B= 1		
(Bare ground)	12	(Bare ground)	
	A= -		
	B= -		
(Bare ground)	13	(Bare ground)	
	A= -		
	B= -		
Md (dead)	14	Md (dead)	
Dead material	A= -	Dead material	
Cl	B= -		
	15		
Dead material	A=	Dead material	
	B=		
Vn	16	Vn	
Md (dead)	A= 2	Md (dead)	
<i>D.flexuosa</i>	B= 2	<i>D.flexuosa</i>	
<i>D.flexuosa</i>	17	<i>Gompholobium</i>	
<i>Gompholobium</i>	A= 5	<i>D.flexuosa, gladiolus</i> (weed)	
	B= 5	<i>Conostylis aculatus</i>	
	18	<i>Darwinia citriodora</i>	
<i>D.flexuosa</i>	A= 5	<i>D.flexuosa</i>	
	B= 5		
Vn	19	<i>V.nodosa</i>	
<i>Darwinia citriodora</i>	A= 7	<i>Darwinia citriodora</i>	
<i>D.flexuosa</i>	B= 7	<i>Pimelea rosea</i>	
	20	<i>V.nodosa, Conostylis aculatus</i>	
<i>Darwinia citriodora</i>	A= 7	<i>Darwinia citriodora</i>	
<i>D.flexuosa</i>	B= 7	<i>leucopogon capitalatus</i>	

Wilson Inlet Foreshore Fringing Vegetation Survey Hay River

Date: 14-05-21 Transect ID: WIHR Size: 20m x 2m

Location: Hay River

Shore end Lat/Long: S 34.58178 Inland end Lat/Long: S 34.58176
E 117.27634 E 117.27646

Soil Type:

Colour: black
 Texture: loam (some
 (s/l/c): sand)
 (sand/loam/clay)

Survey Project Officers:

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	JK	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	Rb	<i>Rhagodia baccata</i>
Bj	<i>Baumea juncea</i>	Sr	<i>Samulus repens</i>		

General Comments/observations:

Mark's notes:
 Both pegs in place.
 No seedlings of the *Melaleuca* genus found.
 At 20 meters may be a historic shore line.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Hay River

Transect ID: WIHR

Date: 14.05.21

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition	SPECIES	WATER LEVEL
Samphire (die off)	1 A= 2 B= 1	D	7 cm
Jk	2 A= 2 B= 2	D	2 cm
Samphire			
Jk	3 A= 1 B= 1	D	0
Samphire			
Jk	4 A= 1 B= 1	D	
Samphire			
Jk	5 A= 3 B= 3	D	
Samphire			
Mc			
Mc	6 A= 5 B= 5	P	
Jk			
Samphire			
Mc	7 A= 6 B= 6	G	
KJ			
Samphire			
Mc	8 A= 6 B= 6	G	
Jk			
Samphire			
Samphire	9 A= 1 B= 1	P	
Mc			
Samphire	10 A= 1 B= 1	P	
Jk			
Samphire			
Samphire	11 A= 1 B= 1	P	
Jk			
Samphire			
Samphire	12 A= 1 B= 1	P	
	13 A= 1 B= 1	P	
Samphire			
Bj	14 A= 1 B= 1	P	
Mc	15 A= 1 B= 1	p	
Bj			
Mc	16 A= 1 B= 1	P	
<i>M.densa</i>			
<i>M.densa</i> (alive)	17 A= 1 B= 1	P	
Samphire			
Mc, Jk			
Mc	18 A= 1 B= 1	P	
Jk			
Jk	19 A= 1 B= 1	P	
Mc (small one dead)			
<i>M.densa</i> (dead)			
Bj	20 A= 2	P	
<i>Mc, restionaceae Sp.</i>			

<i>M.densa (alive)</i>	B= 2	Samphire, Sr	

Wilson Inlet Foreshore Fringing Vegetation Survey Morley Beach

Date: 14-05-21 Transect ID: WIMB Size: 20m x 2m
 (11:20am)

Location: Morley Beach

Shore end Lat/Long: S 34.99545 Inland end Lat/Long: S 34.59753
E 117.48112 E 117.28803

Soil Type: Survey Project Officers:
 Colour: Black
 Texture
 (s/l/c): loam
 (sand/loam/clay)

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	Gf	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	JK	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: Pegs in place, land peg bent, short timber one placed at it's base. Previous surveys have put the *M. cuticularis* on the shore, on the right side of transect but should have been on the left. No flooding inundation. Die off of Samphire at 13 meters. Left and right are to viewpoint relative as it is hard to say where the shore point of *M. cuticularis* are on the north side of the line. Land peg is at 20 meters and this is the high-water point but the bund of material inland of this indicates higher levels that have been reached previously. Further inland, along the track are some very long and old *M. cuticularis*, I would presume these are on the old shoreline (GPS points logged, Mc21 & WI21 on GIS map). This lies either side of the track that runs north-south.

Wilson Inlet Foreshore Fringing Vegetation Survey Youngs Lake

Date: 07-05-21 Transect ID: WIYL Size: 20m x 2m

Location: Youngs Lake

Shore end Lat/Long: S 34.01493 Inland end Lat/Long: S 35.01485
E 117.46514 E 117.46538

Soil Type: Black Survey Project Officers: _____
 Colour: Black
 Texture _____
 (s/l/c): Loam
 (sand/loam/clay) _____
 Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	Goose Foot
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's observations: Did not move the Transect line inland at this time. No small seedlings of *Melaleuca* were found. Land peg is the boundary of *Melaleuca densa*, that are breaking off and falling over. No real change from last year's visit.
 - At 13 meters, 1 young dead *M. cuticularis*.
 -At 7.5 meters, 2016 peg found.
 -At 12 meters onwards, *M. densa* are alive.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Youngs Lake

Transect ID: WIYL

Date: 070521

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition	SPECIES	WATER LEVEL
Inundated	1 A=7 B=7	G	20cm
Inundated	2 A=7 B=7	G	20cm
Samphire <i>Halosarcia lepidosperma</i>	3 A=7 B=7	G	0
		Samphire Mc	
Samphire	4 A=7 B=7	G	0
		Samphire Mc	
Samphire	5 A= 7 B= 7	G	0
		Samphire	
Samphire	6 A=6 B=6	G	0
		Samphire	
Samphire	7 A=7 B=7	G	0
		Samphire	
Samphire	8 A=7 B= 7	G	0
		Samphire	
Samphire Mc	9 A=7 B= 7	G	0
		Samphire Mc	
Samphire Mc, species NJ3 <i>M.densa</i>	10 A=7 B= 7	G	0
		Samphire <i>M.densa</i> Mc	
Samphire Mc <i>M.densa</i> , species NJ3	11 A= 7 B= 7	G	0
		species NJ3 Samphire Mc, <i>M.densa</i>	
Samphire <i>M.densa</i> , Mc <i>Samophila</i>	12 A=7 B=7	G	0
		Samphire Mc, <i>M.densa</i> Unknown weed	
Samphire Mc, <i>M.densa</i> <i>Samophila</i>	13 A= 7 B=7	G	0
		Samphire <i>Samophila</i> Mc, <i>M.densa</i>	
Samphire Mc, <i>M.densa</i> species NJ3	14 A= 7 B= 7	G	0
		Samphire Mc <i>M.densa</i> (dead)	
Samphire <i>M.densa</i> (dead) <i>Samophila</i>	15 A= 6 B= 6	G	0
		Samphire <i>M.densa</i> (dead) <i>Samophila</i>	
Samphire <i>M.densa</i> (dead) Mc, <i>Samophila</i>	16 A= 6 B= 6	G	0
		Samphire <i>M.densa</i> (dead) Mc, <i>Samophila</i>	
Samphire Mc <i>M.densa</i> (dead)	17 A= 6 B= 6	G	0
		Samphire Mc <i>M.densa</i> (dead)	
Samphire <i>M.densa</i> (dead) <i>Gahnia trifida</i>	18 A= 6 B= 6	G	0
		<i>M.densa</i> (dead) <i>Samophila</i>	
Samphire <i>B.juncea</i> <i>Empodisma gracillimum</i>	19 A= 5 B= 6	G	0
		Samphire <i>B.juncea</i> <i>Empodisma gracillimum</i>	
Mc <i>Empodisma gracillimum</i> <i>Samophila</i>	20 A= 5 B= 5	G	0
		<i>M.densa</i> (alive) Mc <i>Samophila</i>	

Wilson Inlet Foreshore Fringing Vegetation Survey Nenamup Inlet

Date: 14-05-21 (9am) Transect ID: WINI Size: 20m x 2m

Location: Nenamup Inlet

Shore end Lat/Long: S 35.01190 Inland end Lat/Long: S 35.01180
E 117.28662 E 117.28661

Soil Type: Survey Project Officers:
 Colour: Dark
 Texture
 (s/l/c): Silt/loam
 (sand/loam/clay)

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	Gf	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	JK	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: Site requires permission to access from a local resident as road to site is on private land. Both pegs existing. *Banksia occidentalis* east of Nenamup transect by 100 meters. *Melaleuca densa* at top of transect looks in poorer condition than at inlet end. There was no observable recruitment of *M.densa* seedlings. *Melaleuca cuticularis* on the shore end of transect are healthy and are new to the image taken from 2016. "Melaleuca densa is full of birds" – Angela Dickinson. Very thick juvenile *M.densa*'s from 4 meters to 21 meters. *Calytrix acutifolia* (behind land peg marker)

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Nenamup Inlet

Transect ID: WINI

Date: 14.05.21

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition		SPECIES	WATER LEVEL
Samphire	1	G	Samphire	
<i>cyperus eragrostis</i> (dead)	A= 7		<i>cyperus eragrostis</i> (seasonal dead)	
	B= 7		Mc (1m on transect, 120cm high)	
Samphire	2	G	Samphire	
<i>cyperus eragrostis</i> (dead)	A= 7		<i>cyperus eragrostis</i> (dead)	
	B= 7			
Samphire	3	G	Samphire	
	A= 7			
	B= 7			
<i>M.densa</i>	4	VG	<i>M.densa</i>	
	A= 7			
	B= 7			
<i>M.densa</i>	5	G	<i>M.densa</i>	
Jk	A= 5		Jk	
	B= 5			
<i>M.densa</i>	6	G	<i>M.densa</i>	
	A= 5		(thick coverage)	
	B= 5			
<i>M.densa</i>	7	G	<i>M.densa</i>	
Samphire	A= 5			
	B= 5			
Jk	8	D	Jk	
<i>M.densa</i>	A= 2		<i>M.densa</i>	
Samphire	B= 2		Samphire	
<i>M.densa</i>	9	G	<i>M.densa</i>	
J.k	A= 3		Jk	
	B= 3			
<i>M.densa</i>	10	G	<i>M.densa</i>	
Jk	A= 4		Jk	
	B= 4			
<i>M.densa</i>	11	G	<i>Chaetanthus aristatus</i>	
Jk	A= 5		Jk	
<i>Chaetanthus aristatus</i>	B= 5		<i>M.densa</i>	
<i>M.densa</i>	12	G	<i>M.densa</i>	
<i>Chaetanthus aristatus</i>	A= 5		<i>Chaetanthus aristatus</i>	
	B= 5			
<i>M.densa</i>	13	VG	<i>M.densa</i>	
<i>Chaetanthus aristatus</i>	A= 6		<i>Chaetanthus aristatus</i>	
	B= 6			
<i>Chaetanthus aristatus</i>	14	VG	<i>Chaetanthus aristatus</i>	
<i>M.densa</i>	A= 7		<i>M.densa</i>	
	B= 7		Jk	
<i>M.densa, Gastrolobium sericeum</i>	15	VG	<i>M.densa, Gastrolobium sericeum</i>	
<i>Chaetanthus aristatus</i>	A= 7		<i>Chaetanthus aristatus</i>	
<i>Restionaceae</i> (3)	B= 7		<i>Restionaceae</i> (3)	
<i>M.densa</i>	16	VG	<i>Gastrolobium sericeum</i>	
<i>Gastrolobium sericeum</i>	A= 7		<i>M.densa</i>	
	B= 7		<i>B.juncea</i>	
<i>M.densa</i>	17	VG	<i>Gastrolobium sericeum</i>	
<i>Chaetanthus aristatus</i>	A= 7		<i>M.densa</i>	
<i>Gastrolobium sericeum</i>	B= 7			
<i>Restionaceae</i> (3), <i>B.juncea</i>	18	VG	<i>Chaetanthus aristatus, Melaleuca spathulata</i>	
<i>M.densa, Chaetanthus aristatus</i>	A= 7		<i>Restionaceae</i> (3)	
<i>Gastrolobium sericeum, Melaleuca spathulata</i>	B= 7		<i>Gastrolobium sericeum</i>	

<i>M.densa</i>	19		<i>M.densa, J.nodosa</i>
<i>Gastrolobium sericeum</i>	A= 7	VG	<i>Gastrolobium sericeum</i>
<i>B.juncea</i>	B= 7		<i>B.juncea</i>
<i>V.nodosa</i>	20		<i>Gastrolobium sericeum</i>
<i>Gastrolobium sericeum</i>	A= 7	VG	<i>M.densa</i>
<i>M.densa</i>	B= 7		<i>V.nodosa</i>
<i>V.nodosa</i>	21		<i>Billardiera fusiformis</i>
<i>Gastrolobium sericeum</i>	A= 5	VG	
<i>Anigozanthos flavidus</i>	B= 5		<i>Agonis flexuosa</i>
	22		<i>Conostylis aculatus, Leucopogon capitalates</i>
<i>B.juncea</i>		VG	
<i>Darwinia citriodora</i>	A= 5		<i>Agonis flexuosa</i>
<i>Anigozanthos flavidus</i>	B= 5		<i>Billardiera fusiformis</i>
<i>Agonis flexuosa, B.juncea</i>	23		<i>Agonis flexuosa, Acacia pulchella, Billardiera fusiformis</i>
<i>Anigozanthos flavidus</i>	A= 5	VG	<i>Anigozanthos flavidus</i>
<i>Darwinia citriodora</i>	B= 5		<i>Darwinia citriodora,</i>
	End		

Wilson Inlet Foreshore Fringing Vegetation Survey Nullaki Gate

Date: 07-05-21 Transect ID: N.G1 Size: 12m x 2m

Location: Nullaki Gate

Shore end Lat/Long: S 35.01977 Inland end Lat/Long: S 35.01992
E 117.42396 E 117.42291

Soil Type: Brown Survey Project Officers: _____
 Colour: Brown
 Texture (s/l/c): Loam _____
 (sand/loam/clay) Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Hc	<i>Hibbertia cuneiformis</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	W.o	<i>Wild oates</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

Mark's notes:

A *Melaleuca cuticularis* has fallen over but is re-shooting in the transect area. No recruitment of native seedlings was observed. Couch grass was very thick from the shore inwards. In the foreshore area at this point, are several *Agonis flexuosa* trees that have re-sprouted from the base and are therefore recovering from the first couple of non-openings. Note: *Agonis flexuosa* (1 meter beyond inland peg).

Wilson Inlet Foreshore Fringing Vegetation Survey Nullaki Jetty

Date: 07-05-21 Transect ID: WINJ Size: 20m x 2m

Location: Nullaki Jetty

Shore end Lat/Long: S 34.99974 Inland end Lat/Long: S 34.99990
E 117.38638 E 117.38642

Soil Type: Brown Survey Project Officers: Mark Parre and Matthew Doble
 Colour: Brown
 Texture (s/l/c): Silty loam
 (sand/loam/clay)

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>
Cc	<i>Centella cordifolia</i>	Vn	<i>Vicinia nodosa</i>	Tr	<i>Templetonia retusa</i>

General Comments/observations:

At 9 meters, the high-water bund was detected. At 12 meters, 2011 peg present.
 2016 Peg present. At 20 meters the peg mark is easily accessed via the Bibbulmun track.
 Mark's notes: Inlet at sea level near enough as basin peg not found, not replaced.
 Land peg moved inland to increase coverage of susceptible species. Reset with wooden peg.
 This is now accessible from the Bibbulmun track. Inlet peg reset on shore at high water mark, this is a short peg.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Nullaki Jetty

Transect ID: WINJ

Date: 070521

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition	SPECIES	WATER LEVEL
Couch grass	1	Couch grass	0
<i>Juncus kraussii</i>	A=7		
<i>Rhagodia baccata</i>	B=D		
<i>Facinia nodosa</i>	2	<i>Chenopodium</i> G.f	0
<i>Rhagodia baccata</i>	A=7	Couch grass	
<i>L. gladiatum</i>	B=D		
Specimen 2 & 3	3	<i>Baumea juncea</i>	0
<i>Baumea juncea</i>	A=6	Specimen 2 & 3	
	B=D		
<i>Juncus kraussii</i>	4	<i>Juncus kraussii</i>	0
Couch grass	A=6	Couch grass	
	B=D		
<i>Juncus kraussii</i>	5	<i>Juncus kraussii</i>	0
	A=6		
C.c	B=D	C.c	
<i>Juncus kraussii</i>	6	<i>Juncus kraussii</i>	0
Couch grass	A= 5	Couch	
V.n	B= D		
Species 2 & 3	7	Soecies 1	0
V.n	A= 7	V.n	
	B= P		
V.n	8	V.n	0
	A= 7	Specimen 2	
	B= P		
V.n	9	V.n	0
Specimen 3	A= 7	G.f	
G.f	B= P		
V.n	10	V.n, <i>L. gladiatum</i>	0
Specimen 1	A= 6	Couch grass, R.b	
T.r	B= P	<i>L. gladiatum</i>	
V.n	11	V.n, couch grass	0
Couch grass	A= 6	R.b	
<i>L. gladiatum</i>	B= G	<i>L. gladiatum</i>	
R.b	12	R.b	0
<i>L. gladiatum</i>	A=7	<i>L. gladiatum</i>	
	B=V.G		
R.b	13	R.b	0
<i>L. gladiatum</i>	A= 7	<i>L. gladiatum</i>	
	B=V.G	S.g	
R.b	14	R.b	0
<i>L. gladiatum</i>	A= 7	<i>L. gladiatum</i>	
	B= V.G	<i>Templetonia retusa</i>	
<i>L. gladiatum</i>	15	<i>Spyridium globulosum</i>	0
R.b	A= 7	<i>L. gladiatum</i>	
	B= V.G		
<i>Desmocladius flexuosus</i>	16	<i>L. gladiatum</i>	0
<i>L. gladiatum</i>	A= 5	<i>Spyridium globulosum</i>	
R.b	B= V.G		
<i>Desmocladius flexuosus</i>	17	<i>Hibbertia cuneiformis</i>	0
	A= 5		
	B= V.G		
<i>Desmocladius flexuosus</i>	18	<i>Desmocladius flexuosus</i>	0
	A= 5		
	B= V.G		
<i>Desmocladius flexuosus</i>	19	<i>Templetonia retusa</i>	0
	A= 7	<i>Desmocladius flexuosus</i>	
	B= V.G		
<i>Rhagodia baccata, Templetonia retusa</i>	20	<i>Templetonia retusa</i>	

<i>Desmocladius flexuosus</i>	A= 7	<i>Desmocladius flexuosus</i>	
<i>Spyridium globulosum</i>	B= VG		0

Wilson Inlet Foreshore Fringing Vegetation Survey 265 Ocean Beach Rd

Date: 10-05-21 **Transect ID:** WIOB **Size:** 14m x 2m
Location: 265 Ocean Beach Rd

Shore end Lat/Long: S 34.99075 **Inland end Lat/Long:** S 34.99064
E 117.34082 E 117.34084

Soil Type: **Survey Project Officers:**
 Colour: Black
 Texture (s/l/c): Loam
 (sand/loam/clay)

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callistachys lanceolatum</i>	G.f	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: Inlet peg missing and reset from previous photo, replaced with a short peg. Land peg in place. Adjacent *Callistachys lanceolata* seedling (photo taken) two meters north of four meters on transect is a good indicator. Adjacent *Melaleuca densa* five meters south (1 at junction of seven meters) shore to land peg elevates to about 1.5 meters above sea level. There was no benefit in continuing the transect beyond 13 meters as the elevation was increasing in height. At nine Meters there is evidence of a high-water bund.

Wilson Inlet Foreshore Fringing Vegetation Survey 265 Ocean Beach Rd

Transect ID: WIOB _____ Date **100521** Survey Project Officers: M.P & M.D

	ABUNDANCE & Bushland Condition		SPECIES	WATER LEVEL
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Couch grass (<i>Cynodon dactylon</i>)	1	D	Couch grass	0
Centella asiatica (pennywort)	A=7			
	B=7			
Couch grass	2	D	Couch grass	0
Centella asiatica (pennywort)	A=7		Centella asiatica	
	B=7			
Couch grass	3	D	Couch grass	0
Centella asiatica (pennywort)	A=6		Centella asiatica	
Couch, Fn	B=6		Fn	
Gladiolus undulatus	4	D	Couch, Fn	0
Couch, Fn	A=5		Centella asiatica	
	B=5		Gladiolus undulatus	
Fn, Centella asiatica	5	D	Fn	0
C. lanceolata (10cm)	A=5		C. lanceolata	
	B=5			
Centella asiatica	6	D	M. densa (planted)	0
Couch, Fn	A=6		H. oleifolia (10cm)	
	B=V.G		Centella asiatica	
Centella asiatica	7	P	Couch	0
	A=5		Centella asiatica	
	B=V.G			
Centella asiatica	8	P	Fn	0
Couch grass	A=6		Centella asiatica	
	B=V.G		Annual rye grass	
Centella asiatica	9	D	Buffalo grass	0
Fn	A=2		Centella asiatica	
	B=G		(Evidence of high-water bund.)	
Fn	10	P	Fn	0
Hardenbergia comptoniana	A=5		Goose foot	
Opercularia hispidula	B=5			
Fn	11	P	Fn	0
Marri (Corymbia calophylla)	A=5		Buffalo grass	
Hardenbergia comptoniana	B=5			
Leucopogon capitellates	12	G	Fn	0
Fn	A=6		Asparagus weed sp.	
	B=6			
Bracken fern	13		Bracken fern	0
Asparagus weed sp.	A=5		Hardenbergia comptoniana	
Billardiera variifolia	B=5		Agonis flexuosa	
(Transect ends)	14		(Transect ends)	0
	A=			
	B=			
	15			0
	A=			
	B=			
	16			0
	A=			
	B=			
	17			0
	A=			
	B=			

Wilson Inlet Foreshore Fringing Vegetation Survey Poison Point

Date: 10-05-21 Transect ID: WIPP Size: 20m x 2m

Location: Poison Point

Shore end Lat/Long: S 34.99134 Inland end Lat/Long: S 34.99131
E 117.35406 E 117.35429

Soil Type: Black Survey Project Officers: _____
 Colour: Black
 Texture (s/l/c): Loam
 (sand/loam/clay) Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	JK	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: No new recruitment of *Melaleuca* seedlings, almost all *Melaleuca densa* trees are dead, except in two meters before the land peg. A definite line of surviving *Melaleuca densa* is evident. Overall impression is apart from the disruption from a walking path being made through the quadrat, there is a reduction of species in this area.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Poison Point

Transect ID: WIPP

Date: 10.05.21

Survey Project Officers:

M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition	SPECIES	WATER LEVEL
Samphire	1 A= 6 B= 6	G Samphire	1 cm
Samphire	2 A= 6 B= 6	G Samphire Jk	0
Samphire	3 A= 6 B= 6	G Samphire Jk <i>J. microcephalus</i>	
Samphire	4 A= 6 B= 6	G Samphire <i>Samolus repens</i> <i>Chenopodium sp. (weed)</i>	
Mc	5 A= 6 B= 6	G <i>Samolus repens</i>	
Samphire		G Samphire	
<i>Samolus repens</i>	6 A= 6 B= 6	G <i>Samolus repens</i>	
<i>Samolus repens</i>		G Samphire	
Samphire	7 A= 6 B= 6	G <i>Samolus repens</i>	
<i>Samolus repens</i>		G Samphire	
<i>Samolus repens</i>	8 A= 6 B= 6	G Mc <i>S. repens</i>	
		G Samphire	
Samphire	9 A= 6 B= 6	G Mc (Dead) <i>Samolus repens</i>	
		G Samphire	
<i>Chenopodium sp. (weed)</i>	10 A= 7 B= 7	G <i>Chenopodium sp. (weed)</i>	
<i>Samolus repens</i>		G <i>Samolus repens</i>	
Samphire	11 A= 7 B= 7	G Samphire	
<i>Chenopodium sp. (weed)</i>		G <i>Chenopodium sp. (weed)</i>	
<i>Samolus repens</i>	12 A= 7 B= 7	G Samphire <i>Chenopodium sp. (weed)</i>	
Md (Dead), Jk, Jm		G <i>S. repens</i>	
Samphire, <i>S.repens</i>	13 A= 7 B= 7	G <i>Chenopodium sp. (weed)</i>	
Mc (Dead)		G <i>Samolus repens, Jk</i>	
<i>Chenopodium sp. (weed)</i>	14 A= 7 B= 7	G <i>J. microcephalus</i>	
Jk, <i>Samolus repens</i>		G (Dead) Md	
<i>J. microcephalus</i>	15 A= 7 B= 7	G <i>J. microcephalus</i>	
Mc (1.1m)		G Jk	
Jk,	16 A= 7 B= 7	G Jk <i>Samolus repens</i>	
<i>Samolus repens</i>		G <i>J. microcephalus</i>	
<i>J. microcephalus</i>	17 A= 7 B= 7	G <i>Samolus repens</i>	
<i>Samolus repens</i>		G Jk	
<i>Samolus repens</i>	18 A= 7 B= 7	G <i>J. microcephalus</i>	
Jk		G <i>Samolus repens</i>	
<i>J. microcephalus</i>	19 A= 7 B= 7	G <i>Chenopodium sp. (weed)</i>	
<i>Samolus repens</i>		G <i>B. juncea</i>	
<i>Chenopodium sp. (weed)</i>	20 A= 7 B= 7	G <i>Samolus repens</i>	
<i>B. juncea</i>		G Fn	
Md	19 A= 7 B= 7	G Fn <i>B. juncea</i>	
<i>B. juncea, couch</i>		G <i>B. juncea</i>	
<i>Samolus repens</i>	20 A= 7 B= 7	G <i>B. juncea</i>	
Md, <i>B. juncea</i>		G Fn	
<i>J. microcephalus</i>	20 A= 7 B= 7	G Md	
Fn		G Md	

Wilson Inlet Foreshore Fringing Vegetation Survey Prawn Rock Island

Date: 10-05-21 Transect ID: WIPI Size: 20m x 2m
 Location: Prawn Rock

Shore end Lat/Long: S 35.02485 Inland end Lat/Long: S 35.02492
E 117.32826 E 117.32807

Soil Type: White Sand Survey Project Officers: _____
 Colour: _____
 Texture (s/l/c): Sand
 (sand/loam/clay) _____
 Yvette Carusoe, Mark Parre and M. Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	Gf	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	JK	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's notes: Pegs in place. Marram grass at inlet end is extending inland and once over the shore bund, it is fairly consistent where *Melaleuca cuticularis* has grown. No evidence of *M. cuticularis* recruitment of new seedlings.

Wilson Inlet Foreshore Fringing Vegetation Survey Transect WIPI

Transect ID: WIPI Date: 14.05.21 Survey Project Officers: Y.C, M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition		SPECIES	WATER LEVEL
Marram grass (weed)	1		Marram grass	
Fn	A= 6	D	Fn	
	B= 5			
Couch	2		Couch	
Marram grass	A= 3	D	Marram grass (weed)	
	B= 3			
Couch	3			
Marram grass (weed)	A= 3	D	Marram grass (weed)	
	B= 3			
Couch	4		Fn	
Marram grass (weed)	A= 4	D	Marram grass (weed)	
	B= 4		Couch	
Couch grass	5		Fn	
<i>Pentstemon palustris</i>	A= 5	D	Marram grass (weed)	
(Pussytail)	B= 6		Couch	
Fn, Couch	6		Fn, Jk	
<i>P. pallida</i>	A= 7	P	Couch	
<i>Centella asiatica</i>	B= 7		<i>Centella asiatica</i>	
(pennywort)				
Jk, Fn	7		Jk, Fn	
Couch grass	A= 7	P	Couch grass	
<i>Centella asiatica</i>	B= 7		<i>Centella asiatica</i>	
<i>Centella asiatica</i>	8		Fn,	
<i>Samolus repens</i>	A= 7	G	<i>Centella asiatica</i>	
Couch, Fn	B= 7		Couch grass, Jk	
<i>Centella asiatica</i>	9		<i>Centella asiatica</i>	
Fn, Couch grass	A= 7	G	Jk, Fn, Couch	
<i>Samolus repens</i>	B= 7		<i>Samolus repens</i>	
Jk, Fn, couch	10		Mc, <i>S. repens</i>	
<i>Centella asiatica</i>	A= 7	G	Jk, Fn, Couch	
<i>Samolus repens</i>	B= 7		<i>Centella asiatica</i>	
Couch, Fn, Mc, Jk	11		Couch, Fn	
<i>Centella asiatica</i>	A= 7	G	<i>Samolus repens</i>	
<i>Samolus repens</i>	B= 7		<i>Centella asiatica</i>	
<i>Samolus repens</i>	12		<i>Centella asiatica</i>	
Fn, Jk, couch grass	A= 7	G	Fn, Jk,	
<i>Centella asiatica</i>	B= 7		Couch, <i>Samolus repens</i>	
<i>Centella asiatica</i>	13		<i>Centella asiatica</i>	
<i>Samolus repens</i>	A= 7	G	Jk, Mc, Couch	
Jr, Fn, Couch grass	B= 7		<i>Samolus repens</i>	
<i>Samolus repens</i>	14		<i>Centella asiatica</i>	
<i>Centella asiatica</i>	A= 7	G	Couch, Jk, Fn	
Couch, Jk, Fn	B= 7		<i>Samolus repens</i>	
Mc, Jk, Fn	15		Jk, Fn, <i>Samolus repens</i>	
Couch, <i>Samolus repens</i>	A= 7	G	Couch	
<i>Centella asiatica</i>	B= 7		<i>Centella asiatica</i>	
<i>Centella asiatica</i>	16		<i>Centella asiatica</i>	
<i>Samolus repens</i>	A= 7	G	<i>Samolus repens</i>	
Couch, Jk, Fn	B= 7		Couch, Jk, Fn	
<i>Centella asiatica</i>	17		<i>Centella asiatica</i>	
<i>Samolus repens</i>	A= 7	G	<i>Samolus repens</i>	
Couch, Jk, Fn	B= 7		Couch, Jk, Fn	
Mc, Fn, Jk	18		<i>Centella asiatica</i>	
Couch, <i>Centella asiatica</i>	A= 7	G	Fn, Jk, Couch	
<i>Samolus repens</i>	B= 7		<i>Samolus repens</i>	
<i>Centella asiatica</i>	19		<i>Centella asiatica</i> , Fn, Jk	
Couch, Fn, Jk	A= 7	G	<i>Samolus repens</i>	

<i>Samulus repens</i>	B= 7		Couch
<i>Centella asiatica, couch</i>	20		Fn, Jk, Couch
	A= 7	G	<i>Samulus repens, Centella asiatica</i>
Fn, Jk, <i>Samulus repens</i>	B= 7		

Wilson Inlet Foreshore Fringing Vegetation Survey Springdale Beach

Date: 13-05-21 Transect ID: WISB Size: 20m x 2m
 Location: Springdale Beach

Shore end Lat/Long: S 34.58199 Inland end Lat/Long: S 34.58194
E 117.23313 E 117.23317

Soil Type:

Colour: Dark brown
 Texture: Sand over
 (s/l/c): laterite, peat
 (sand/loam/clay)

Survey Project Officers:

Mark Parre and Matthew Doble

Cover Abundance Scale (A)	
Cover Abundance Value	Description
1	one-a few individuals
2	uncommon and < 5 % cover
3	common and < 5 % cover
4	very abundant and 5 % or 5-20 % cover
5	20 - 50 %
6	D50 - 75 %
7	75 - 100 %

Bushland Condition Scale (B)	
Bushland Condition Value	Description
Very Good - Excellent (VG)	80-100% Native Flora Composition. Vegetation structure intact or nearly so. Cover/abundance of weeds less than 5%. No or minimal signs of disturbance
Fair - Good (G)	50-80% Native Flora Composition. Vegetation structure modified or nearly so. Cover/abundance of weeds 5-20% any number of individuals. Minor signs of disturbance.
Poor (P)	20-50% Native Flora Composition. Vegetation structure completely modified. Cover/abundance of weeds 20-60% any number of individuals. Disturbance incidence high.
Degraded (D)	0-20% Native Flora Composition. Vegetation structure disappeared. Cover/abundance of weeds 60-100% any number of individuals. Disturbance incidence very high.

Common vegetation species and their acronyms

Md	<i>Melaleuca densa</i>	Cl	<i>Callystachys lanceolatum</i>	G.f	<i>Goose Foot</i>
Mc	<i>Melaleuca cuticularis</i>	Tr	<i>Templetonia retusa</i>	Ma	<i>Muehlenbeckia adpressa</i>
Mr	<i>Melaleuca raphiophylla</i>	Fn	<i>Ficinia nodosa</i>	Le	<i>Lepidosperma effusum</i>
Ec	<i>Eucalyptus cornuta</i>	Jk	<i>Juncus krausii</i>	Bh	<i>Billardiera heterophylla</i>
Sg	<i>Spyridium globulosum</i>	Jp	<i>Juncus pallidus</i>	R b	<i>Rhagodia baccata</i>

General Comments/observations:

Mark's comments: Shore peg was missing, but replaced.
 Native plants sparse. From the shore peg until about 10 meters inland, the terrain is very rocky.
 (Big rocky area north 5 - 6 meters, may be due to wave action.)

Wilson Inlet Foreshore Fringing Vegetation Survey Transect Springdale Beach

Transect ID: _____ : _____ WISB Date 13.05.21 Survey Project Officers: M.P & M.D

SPECIES	ABUNDANCE & Bushland Condition	P	SPECIES	WATER LEVEL
Jk	1		Jk	
Couch	A= 6	P	Couch	
	B= 6			
Couch	2		Couch	
Jk	A= 7	D	Jk	
	B= 7			
Samphire	3		Samphire	
Couch	A= 6	D	Couch	
Jk	B= 6		Jk	
Jk	4		Samphire	
Couch	A= 4	D	Goose foot	
Samphire	B= 4			
	5			
Jk	A= 1	D	Samphire	
	B= 1			
Mc	6			
	A= 1	D	Samphire	
	B= 1			
Mc	7			
	A= 1	D	<i>M.densa</i> (healthy)	
	B= 1			
<i>B.juncea</i>	8		<i>B.juncea</i>	
	A= 1	D		
	B= 1			
<i>B.juncea</i>	9		<i>B.juncea</i>	
	A= 1	D		
	B= 1			
Fn	10		<i>B.juncea</i>	High water line
<i>Lobelia alata</i>	A= 1	D	<i>Lepidosperma effusum</i>	
	B= 1			
<i>B.juncea</i>	11		<i>Lepidosperma effusum</i>	
<i>Lepidosperma effusum</i>	A= 6	P		
Fn	B= 6			
	12		<i>Lomandra pauciflora</i>	
<i>Lepidosperma effusum</i>	A= 4	P	<i>Leucopogon capitallates</i>	
	B= 4			
Mature Cl	13		Mature <i>Agonis flexuosa</i>	End of Transect
<i>B.juncea</i>	A= 1	P	<i>Lepidosperma effusum</i>	
	B= 1		<i>Lomandra patens,</i> <i>B.juncea</i>	
	14			
	A=			
	B=			
	15			
	A=			
	B=			
	16			
	A=			
	B=			
	17			
	A=			
	B=			
	18			
	A=			
	B=			