

# Shelly Beach to Moffat Beach Coastal Study (focus on Shelly Beach)

19<sup>th</sup> April 2023  
Project Information Session

# Introductions

## Purpose of the meetings

To provide key stakeholder groups and the wider community with a project update

Date	Time	Schedule of meetings
19.04.23	14.00 – 16.30	Key stakeholder groups – Shelly Beach Focus
	17.30 – 20.00	
21.04.23	14.00 – 16.30	Key stakeholder groups – Moffat Beach Focus
22.04.23	09.00 – 13.00	General community drop in session – with presentations at 9am & 11am

# Introductions

## Session structure

Item No	Agenda topic	Mins
1.0	<b>Introductions</b> <ul style="list-style-type: none"><li>- Welcome</li><li>- Meeting objectives and protocols</li></ul>	5
2.0	<b>Project presentation</b> <ol style="list-style-type: none"><li>1. Setting the scene</li><li>2. The Project – A reminder</li><li>3. Approach</li><li>4. Finding common ground</li><li>5. Presenting the complete picture and proposition</li><li>6. Project findings</li><li>7. Further investigations</li><li>8. Advancing the Pilot Project</li><li>9. Next steps</li></ol>	60
3.0	<b>Facilitated Q&amp;A</b>	80
5.0	<b>Next steps</b>	10
6.0	<b>Close and thanks</b>	5

# 1.0 Setting the scene

# 1.0 Setting the scene

## Why are we here?

The broader area and specifically Shelly Beach has been a focus for discussion and community tension for a number of years mainly focused on:

- Light impact on turtles
- Views (from private residences)
- Vegetation management and species choice
- Cottonwood Trees on the dune
- Culminating in Dec 2020 – Placement of shade cloth at William Street car park

Approaches have largely focused on addressing desired individual outcomes, for issues and opportunities that exist within and have influence across a whole system.

# 1.0 Setting the scene

## Growing pains

- Our community is growing
- This growth generates competing interests in an increasingly constrained environment

How do we balance the often competing needs of our community and sensitive, highly valued landscape and flora and fauna?

# 1.0 Setting the scene

## Our response

At the beginning of 2021 Council commenced a detailed study of the coastal strip from the southern end of Shelly Beach northward to Tooway Lake.

The study considered the public (not private) lands within this area, including the:

- i. Recreation open space (parks) including coastal path
- ii. Dune and conservation areas
- iii. Beach

The high ecological, amenity and landscape values of the area coupled with increasing recreation demands means the area requires careful consideration to ensure a sustainable balance can be struck between its significant natural values and community use/ expectations.

# 1.0 Setting the scene

## Objectives

The study sought to:

- Resolve tensions between the community
- Resolve tensions between community and council
- Better understand community perspectives on what is valued about this section of coastline
- Better understand a diverse range of community views related to the management of the area's flora and fauna
- Better understand the challenges and opportunities associated with the areas management
- Explore strategies to ensure the best outcomes for residents, nesting turtles and coastal biodiversity for the future.



## 2.0 The Project – A reminder

## 2.0 The project

### The study area

- 2km section of coastline between Moffat and Shelly Beach.
- Enjoyed as a series of individual destinations - Moffat Beach, George Watson Park, North Shelly Beach and South Shelly Beach.
- And as a series of connected experiences linked by The Coastal Path.



## 2.0 The project

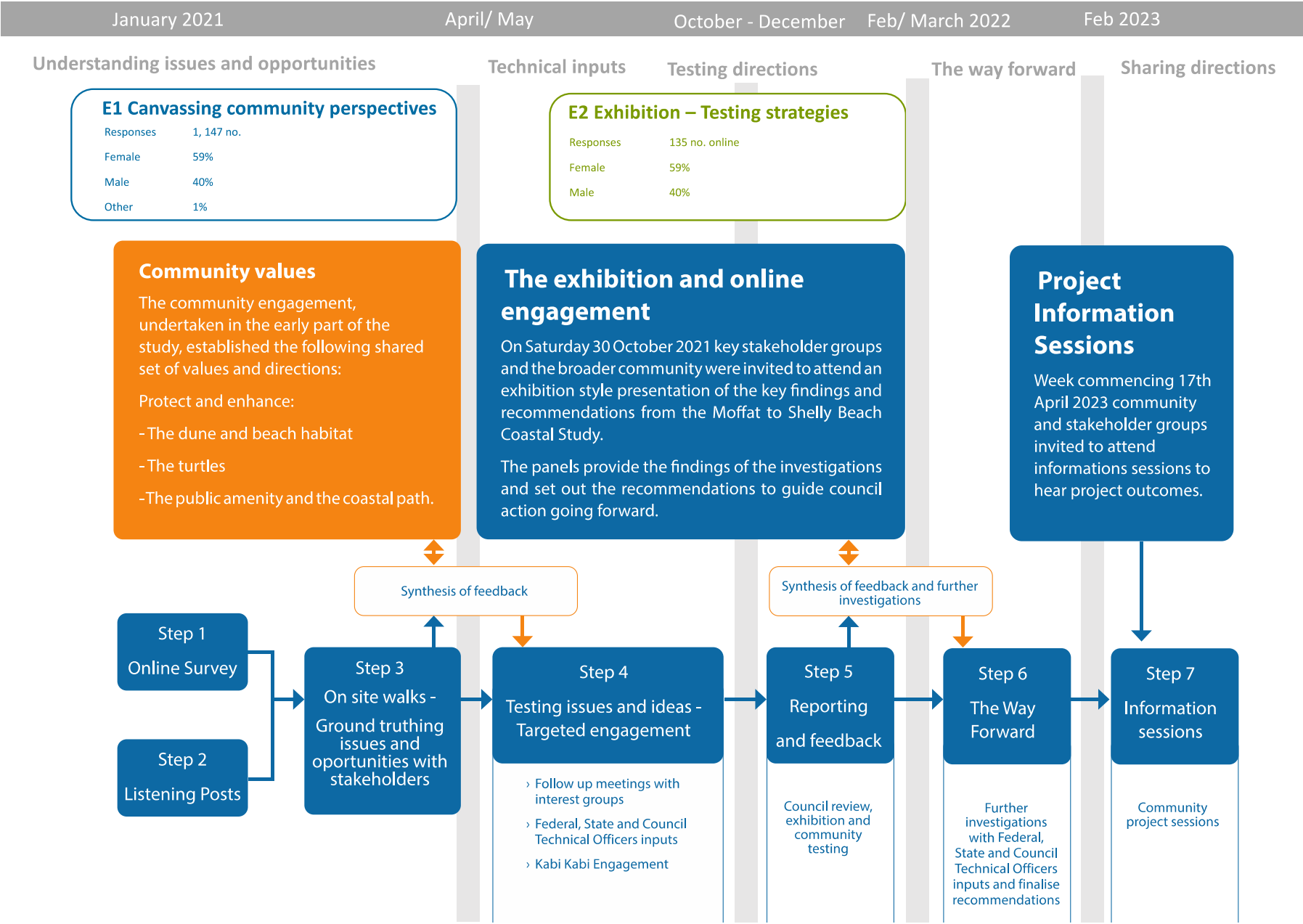
### The brief

**Map a way forward to guide the future evolution and management** of this part of the coastal landscape, including the Coastal Path, to ensure the best outcomes for residents, the natural vegetation of the area and its wildlife.

*The findings of the study will help inform council management of the area and will help provide clear and consistent direction to all.*



# 3.0 Approach





## 3.0 Approach

### Key stakeholders

Significant time dedicated to an engagement process devised to better understand community perspectives on what is valued about this section of coastline and the challenges and opportunities associated with its management.

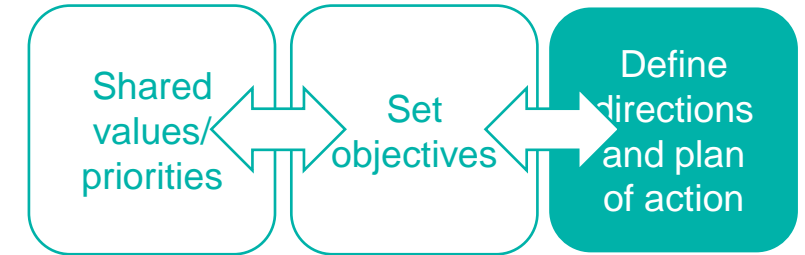
Online Community Survey	28 January 2021 to 1 March 2021			
Shelly Beach Community Listening Post	20 February 2021			
Moffat Beach Community Listening Post	27 February 2021			
General Community drop in session				22 April 2023
<b>External Stakeholder Group</b>	<b>Site Tour</b>	<b>Follow up meeting</b>	<b>Exhibition 31 Oct – 29 Nov '21</b>	<b>Information session</b>
North Shelly Beach Group	25 March 2021	5 May 2021		w/c 16 April 2023
North Shelly Beach Group 2	No Tour	11 May 2021		w/c 16 April 2023
Caloundra Residents Association	26 March 2021	29 June 2021		w/c 16 April 2023
Community of Beaches	27 March 2021	5 May 2021		w/c 16 April 2023
Marine Turtle Conservation Volunteers	27 March 2021	10 May 2021		w/c 16 April 2023
Friends of Shelly and Moffat Beaches Group	27 March 2021	14 June 2021		w/c 16 April 2023
Shelly Beach Conservation Group	26 March 2021	8 July 2021		w/c 16 April 2023
George Watson Park Bush Care Group	26 March 2021	3 June 2021		w/c 16 April 2023
Wildlife Preservation Society of QLD	25 March 2021	3 June 2021		w/c 16 April 2023
Tooway Lake Catchment Care group	25 March 2021	14 July 2021		w/c 16 April 2023
Sunshine Coast Environment Council	No Tour	5 October 2021		w/c 16 April 2023
Kabi Kabi - Brian Warner	28 July 2021			
<b>Internal Stakeholder Groups</b>	<b>Initial Meeting</b>	<b>Follow up Meeting</b>		
Environment Operations	21 May 2021	5 July 2021 & 6 October 2021		Ongoing
Parks and Gardens	2 June 2021	12 October 2021		Ongoing

# 3.0 Approach

Key inputs	Policy setting and technical references			Key technical background	Community commissioned studies
	Federal Government	State Government	Local Council		
	Environment Protection and Biodiversity Conservation (EPBC) Act 1999	Nature Conservation Act 1992 - Dept of Environment and Science	Environment and Liveability Strategy 2017	[George] Watson Park Management Plan 1994	Assessment of dune rehabilitation proposal 2019
	Referral requirements – Matters of National Environmental Significance (MNES)	Lands Act 1994 – Dept of Resources	Environmental Reserves Network Management Plan 2017- 2027	Caloundra Bar to Tooway Lake Coastal Management Plan 2000	Impact of Cottonwood on Turtle Nesting at Shelly Beach 2021
		Coastal Protection and Management Act 1995 - Dept of Environment and Science	LIM - Open Space Landscape Infrastructure Manual	Lake and Estuary Risk and Operational Management Protocols	Shelly Beach Dune Rehabilitation Plan 2019
			Shoreline Erosion Management Plan	Benchmark artificial light at night study 2017	Cllr. initiated studies
			Coastal Management Policy (Public Lands)	Coastal Processes Study for the Sunshine Coast - April 2013	2016 Assessment of dune habitat and landscape amenity proposal
			Coastal Hazard Adaptation Strategy 2021		2016 Sky Glow
			Marine Turtle Conservation Plan – Draft 2022		2017 Assessment of vegetation management proposal
					www.sunshinecoast.qld.gov.au

# 4.0 Finding common ground

## Early insights informing approach



Community	The context	Approach
<ul style="list-style-type: none"> <li>• Strong interest / passion from local residents</li> <li>• Many diverse and interested stakeholders</li> <li>• Some interested community members not yet represented as stakeholders</li> <li>• Desire to preserve what is special – ensure next generations have same experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Complex, high value environment</li> <li>• Under pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Many hands</li> <li>• Many perspectives</li> <li>• Currently not well coordinated</li> <li>• Shared objectives/ approach not aligned</li> </ul>
<ol style="list-style-type: none"> <li>Pause</li> <li>Step back</li> <li>Listen to the community</li> <li>Rebuild trust</li> <li>Understand shared priorities/ values and use these to align action</li> </ol>	<ol style="list-style-type: none"> <li>Understand and work with the complexity of the natural and human systems</li> <li>Take an integrated and whole of landscape approach.</li> </ol>	<ol style="list-style-type: none"> <li>Take an evidence based approach</li> <li>Seek appropriate technical and scientific inputs</li> <li>Define objectives</li> <li>Support with a plan of action</li> </ol>

# 4.0 Finding common ground

## Shared community values

- The area is unique
- It has a natural character
- It is ecologically rich
- The turtles are highly valued
- The coastal path is highly valued
- The diverse sequence of experiences connected by the Coastal Path valued.
- Its relaxed and low-key character valued





# 4.0 Finding common ground

## Focus of community tension

- Light impact on turtles
- Views (from private residences)
- Vegetation management and species choice
- Cottonwood Trees on the dune



# 4.0 Finding common ground

## Priority Place Values:

### *Protect and Enhance*

- I. The turtles*
- II. The dune and beach habitat*
- III. The public amenity of the area and the coastal path.*

## A framework for decisions and action

These values establish an important framework to help align decision making and guide future enhancement and management activities in the area across council and community stakeholder groups.

# 4.0 Finding common ground

## Desired outcomes:

The turtles	The dune and beach habitat	The public amenity and coastal path
<ol style="list-style-type: none"><li>1. Increased area for natural turtle nesting</li><li>2. Reduction in the requirement to relocate turtle nests</li><li>3. Increase the options / area available for turtle nest relocation receiving sites</li><li>4. Reduction in light spill.</li></ol>	<ol style="list-style-type: none"><li>1. Enhanced ecological diversity</li><li>2. Retain and enhance dune stability.</li></ol>	<ol style="list-style-type: none"><li>1. Enhanced recreation and visitor experiences</li><li>2. Increased public vantage points for appreciation of local amenity</li><li>3. Fit for purpose services and infrastructure</li><li>4. Increased area of public recreation open space</li><li>5. Reduction in conflict on coastal path.</li></ol>
<p>Across all priorities:</p> <ol style="list-style-type: none"><li>1. Enhanced recognition and celebration of history, cultural heritage, environment etc</li><li>2. Enhanced awareness and education about the area's distinctive natural and cultural values.</li></ol>		

There is general agreement about these key priorities but there remain divergent views around what the end point looks like and the plan of action to get there.

## Summary list of key issues

## Detail strategy directions/ actions

1.	<b>The dune and beach</b> (William Street to Russell Street)	Evidence suggests a highly modified landscape, with significant contemporary ecological and amenity value, and diverse/ conflicting stakeholder opinion regarding appropriate vegetation mix and management.	1. Establish landscape management strategies to support the evolution of a resilient and appropriate dune landscape and ecology.
2.	<b>Turtles &amp; light spill</b>	Community concern regarding light spill onto the beach and the impact on nesting turtle behaviour.	2. Mitigate the negative impact of light spill and improve community understanding of turtle needs.
3.	<b>William street car park</b>	Community concern regarding light spill onto beach from parked cars and the impact on nesting turtle behaviour.	3. Address the role and integration of parking provision at William Street to support the community and the local fauna
4.	<b>Illegal action impacting vegetation</b>	Community concern regarding: <ul style="list-style-type: none"> <li>- Illegal vegetation management - clearing, pruning, poisoning, planting</li> <li>- Undesirable activity/ use of the beach negatively impacting the health of vegetation.</li> </ul>	4. Address illegal vegetation management and establish and enforce a consistent and clear council position.
5.	<b>Beach access</b>	Community conflict over beach access and impact on dune ecology and vegetation health.	5. Ensure appropriate beach access is provided that facilitates community use and protects sensitive ecologies.
6.	<b>The Coastal Path</b>	Increasing and diversified use causing conflict.	6. Address behaviours and path conditions to support safe use by all.
7.	<b>Education &amp; awareness</b>	Concern new residents and visitors lack understanding of natural systems and sensitive habitats in the area.	7. Opportunity to improve awareness and change behaviour to support improved ecological value and cultural knowledge.
8.	<b>Coordination</b>	Uncoordinated management activity (Council and community) by diverse groups resulting in perverse outcomes - despite best intentions.	8. Create a resource/s to communicate a consistent and clear set of objectives and desired outcomes to guide all inputs, enhancements, and management activity in the area.  9. Improve awareness and co-ordination of management activities across stakeholders to improve ecological and amenity outcomes aligned to a set of shared objectives.

# 5.0 Presenting the complete picture and proposition

## Exhibition – Role and purpose

1. Synthesis of the **key findings** directly informed by all of the inputs received from online survey, site walks etc.
2. Provide a **spatial representation of the directions and actions** to address priority community concerns - to protect and enhance the dune and beach habitat, turtle habitat and the public amenity of the area and enjoyment of the coastal path.
3. Opportunity for the community to provide feedback on proposals **over 4 weeks**
4. Responses
  - Close to **100 people attended the exhibition** (3 sessions run through the course of one day to manage COVID requirements)
  - Received **135 online responses** post exhibition, including submissions from key stakeholder groups.

# 5.0 Presenting the complete picture and proposition

Proposed directions presented for community feedback 31 October 21 – 29 November 2021



# 6.0 Project findings

## In summary

From the online and in-person submissions received there is significant community support for the proposed directions and actions.

Additional narrative in the feedback from the community provided valuable advice and information in response to proposed directions – including detailed insights into vegetation planting and management, as well as ideas for general improvements to enhance the amenity of the area.

## Council Directions

- General support provided in progressing and advancing the the detailed planning and key findings of the Shelly to Moffat Beach Coastal study, undertaken between January 2021 and February 2022.
- Recognition of the requirement to lodge EPBC referral and receive approval prior to commencement of works at Shelly Beach.

# 6.0 Project findings

## Further investigations

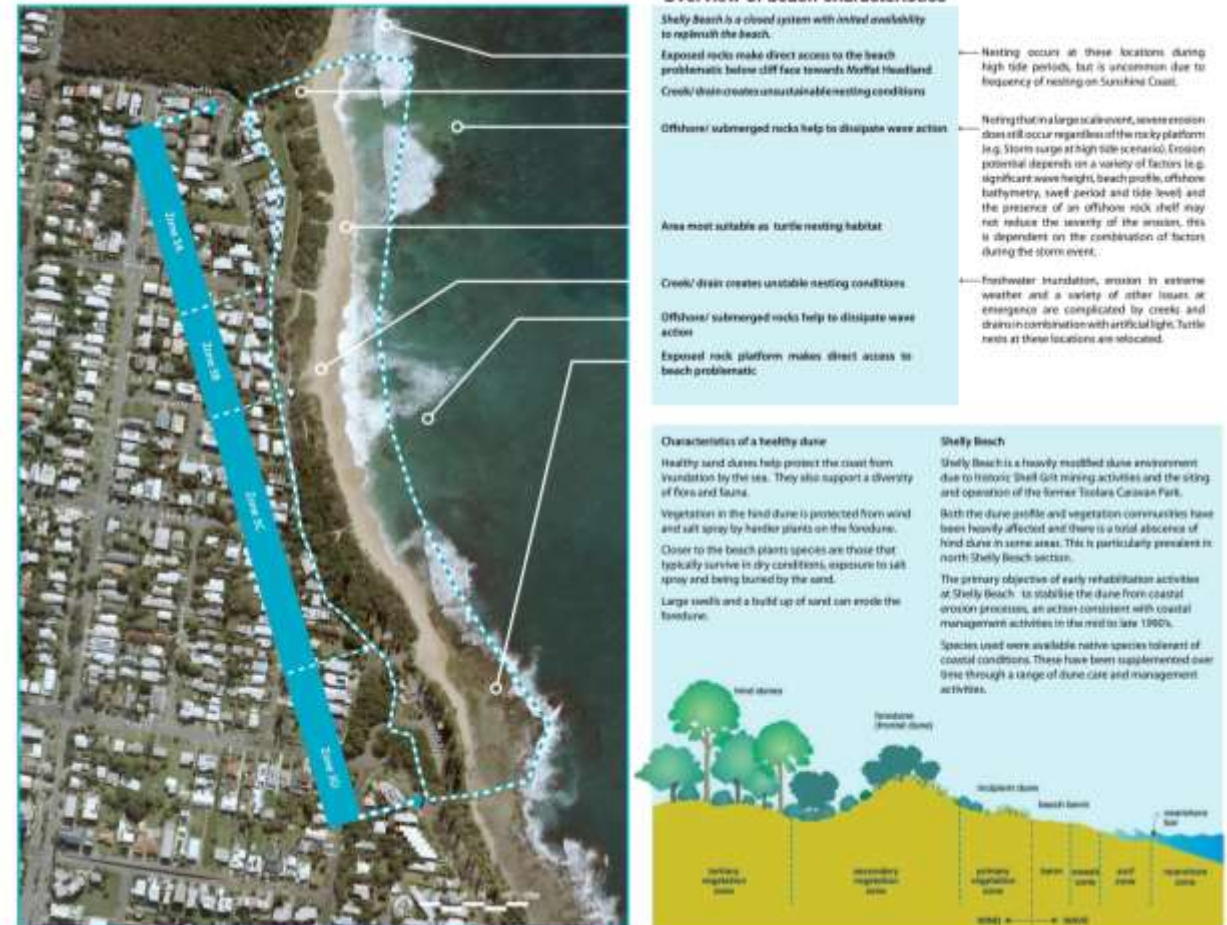
The directions/ actions with the highest level of continued community sensitivity were associated with:

1. The appropriate land use of the North Shelly Beach area – [Land designations](#)
2. The treatment of the William Street car park – [Turtles](#)
3. The appropriate species mix on the dune - [Turtles and native ecologies](#)
4. The approach to be adopted to any vegetation removal on the dune - [Turtles and native ecologies](#)
5. The location and species choice for revegetation activity on the dune - [Turtles and native ecologies](#)



# 7.0 Further investigations

## Area of focus



# 7.0 Further investigations

Technical inputs were sought from the relevant and recognised authorities at Federal, State and Local Government levels, and from Council professionals relating to current knowledge and contemporary best practice management for three key issues:

1. Land designation
2. Dune conditions and vegetation considerations
3. Considerations for Marine Turtles (at Shelly Beach)

These inputs were used to ensure:

- Issues and ideas could be ground-truthed and tested
- Contemporary and best practice inputs from technical experts informed the advancement of place-based directions.

# 7.0 Further investigations

## 1. Land designation

Long standing tension and difference of opinion with regards to what the land between William Street and Russell Street is to be used for and its appropriate maintenance in support of that use.

The recognised authorities on this issue are:

- Council
- Department of Environment and Science (Coastal Protection)
- Department of Resources (Land and surveying).



## 1. Land designation

Question	Project significance	Advice
<b>1. What is the relevant land designation covering the reserve at Shelly Beach?</b>	To ensure current and future land uses are in keeping with and have a full understanding of the intended role and function of the relevant land designations.	<ul style="list-style-type: none"> <li>- As per the face of plan SP100298, Lot 9 was to be designated as Public Use Land (PUL) land for Park purposes.</li> <li>- At the time of designation, it was common practice for the department to issue Park Reserves as “Park and Garden” in accordance with Schedule 1 of the Land Act 1994.</li> </ul> <p>There is no definition of “Park and garden” under the Land Act, therefore, the common meaning as per the Macquarie Dictionary apply:</p> <p>Park - 1. an area of land within a town, set aside for public use, often landscaped with trees and gardens and with recreational &amp; other facilities., 2. a tract of land set apart, as by a city or a nation to be preserved in its natural state for the benefit of the public.</p> <p>Garden – 1. a plot of ground devoted to the cultivation of useful or ornamental plants. etc.,</p>
<b>2. What are State expectations with regards to Council’s ongoing management responsibilities of the land?</b>	Confirmation with the designating authority the long-term expectations on Council for the areas management.	<ul style="list-style-type: none"> <li>- The department would expect that the trustee would manage and enhance the reserve in accordance with the purpose of the reserve. As coastal dunes are included in the geography of Lot 9, extra coastal management practices would be expected to be included in such management.</li> </ul>
<b>3. What is the relevant documentation that should be referenced relating to the lands ongoing use and management?</b>	Provides up to date and full understanding of any permissions needed to undertake adaptation to the area in response to future community needs.	<ul style="list-style-type: none"> <li>- Schedule 1 of the Land Act 1994</li> </ul>

# 7.0 Further investigations

## Project implications

<i>Key issue</i>	<i>Project implications</i>
<b>Land designation</b>	<ul style="list-style-type: none"><li>• Council is using the land for purposes consistent with land designation and relevant Council and State approvals.</li><li>• Council is required to maintain and enhance the area.</li><li>• There is room for improvement on the clarity, coordination and approach to landscape enhancement and management.</li></ul>

# 7.0 Further investigations

## 2. Dune conditions and vegetation considerations

Long standing tension and difference of opinion regarding the:

- Appropriate vegetation type on the dune
- Appropriate approach to revegetation work and vegetation management

Area 1. William Street to Russell Street

Area 2. William Street south to the drain

The recognised authorities on these issues are

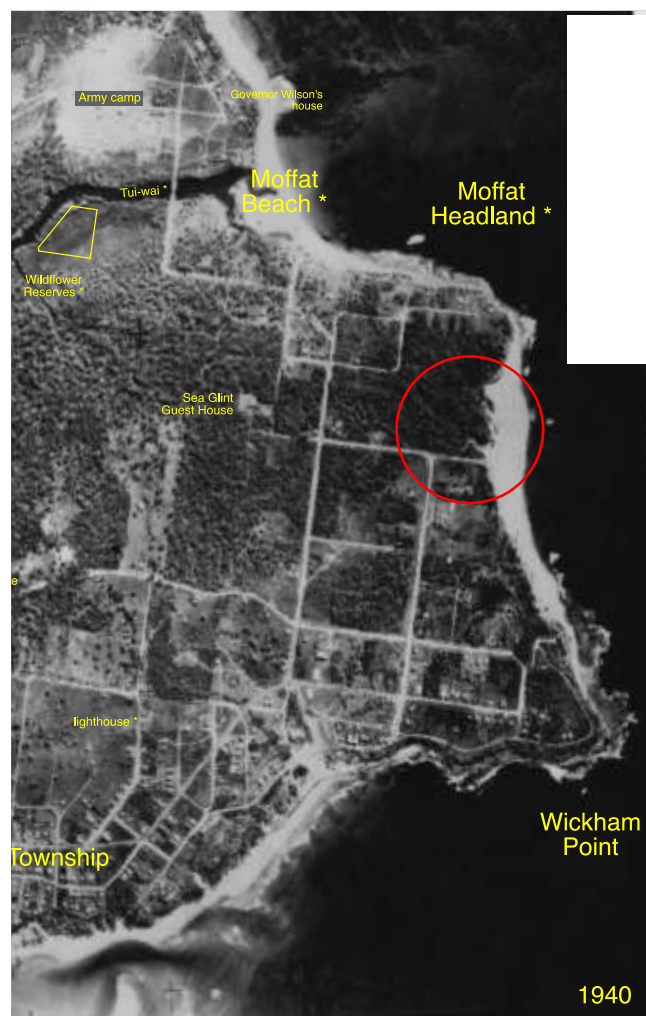
- Vegetation – Queensland Herbarium, Department of Environment and Science
- Dunes – Department of Environment and Science



## 2. Dune conditions and vegetation considerations – Dunes

Question	Project significance	Advice
<b>1. What are the natural and man-made influences that shape the dune/ beach environment at Shelly Beach?</b>	To understand the natural and man-made influences that shape the dune/ beach environment to ensure any future improvements/ interventions are appropriate and sustainable.	<ul style="list-style-type: none"> <li>- <i>North Shelly Beach is a modified landscape, the area appearing to have been impacted by human activity and by persistent sea erosion events and wind erosion.</i></li> <li>- <i>Historic and documented changes have included:</i> <ul style="list-style-type: none"> <li><i>I. Vegetation clearance for urban development</i></li> <li><i>II. Siting of a caravan park</i></li> <li><i>III. Shell Grit mining activity</i></li> <li><i>IV. Dune re-establishment and tree planting activity</i></li> </ul> </li> <li>- <i>In its current condition and use it:</i> <ul style="list-style-type: none"> <li><i>I. Is an important nesting habitat for endangered turtles</i></li> <li><i>II. Supports vegetation</i></li> <li><i>III. Performs a coastal protection role</i></li> <li><i>IV. Is a valued community amenity</i></li> </ul> </li> </ul> <p><i>See following images supplied by Department of Environment and Science, Queensland Government (except 1940 image of Caloundra to Moffat).</i></p>

## 2. Dune conditions and vegetation considerations – Dunes



1940, Aerial – Caloundra to Moffat



2021 Cadastre – Shelly Beach

*Note: All images supplied by Department of Environment and Science, Queensland Government (except 1940 image of Caloundra to Moffat).*



## 2. Dune conditions and vegetation considerations – Dunes



1961 25 September, Aerial – North Shelly Beach

*Sparse tree cover on the dunes and a well-developed ground cover behind the foredune but a sparsely vegetated foredune.*



30 October 1962.

*Sand/ Shell grit quarrying operation in progress on the foredune and vegetation cover increased, probably due to favourable seasonal conditions, and at the same time a new dune has built up seaward.*

## 2. Dune conditions and vegetation considerations – Dunes



1974 January, Aerial – North Shelly Beach

*A dune has been artificially reconstructed.*



*Imagery from the then Beach Protection Authority indicated dune severe sea erosion between 1972 to 1974 and damage to the January 1974 dune above. reconstructed*



## 2. Dune conditions and vegetation considerations – Dunes



10A CYCLONE DAVID 22/1/76

1976 22 January, Aerial – North Shelly Beach

*Beach Protection Authority imagery suggests the foredune was reconstructed again prior to January 1976 and revegetated.*



18 September 1979.

*Foredune at Shelly Beach looks devoid of tree cover except for a few horsetail she-oak at the southern end which predated the works.*

## 2. Dune conditions and vegetation considerations – Dunes



1981 7 November

*Aerial imagery confirms the dune is dominated by ground cover plant species with a single line of trees, most likely planted, at the rear of the dune becoming obvious.*



2004 11 June

*The new line of trees appear to be expanding, but mainly westward (probably due to exposure). It is therefore assumed that these are the current cotton trees. Ground truthing needed.*



1994 25 May

*Trees have appeared seaward of the original line of trees at the rear. The uniform size, spacing and arrangement in lines suggests artificial planting. These may be the Cotton Trees. Clearing of trees in the northern part appears to have occurred. Additional trees appear to have been planted on the western edge*



Circa 2011

*Land elevations.*

*Suggest the 1976 artificially created dune is still intact.*

## 2. Dune conditions and vegetation considerations – Dunes

Question	Project significance	Advice
<b>2. What conditions are required to ensure the dune continues to perform its coastal protection role.</b>	<p>Any initiatives to improve/ change the dune conditions need to be considered carefully.</p> <p>Considering the urban development that has occurred in the area, the significance and frequency of weather events and the impacts of climate change on sea levels the contemporary dune performs an important coastal protection role and is a valued habitat for nesting turtles.</p>	<ul style="list-style-type: none"> <li>• The dune is the first line of defence against coastal erosion for the public and private assets behind them.</li> <li>• Noted that the Cottonwood Trees at North Shelly Beach occupy a location at imminent threat of erosion with an expectation that vegetation would be lost.</li> <li>• Vegetation has an important role in dune building through the accretion of sand, but vegetation has virtually no effect on preventing sea erosion on most coasts.</li> <li>• Once erosion starts, a scarp wall will form, the beach level drops and whatever is on the surface of the dunes gets undermined, drops into the water and washes away.</li> <li>• It is accepted that dune vegetation is lost over time and eventually replaced back to a primary successional stage.</li> </ul>

# 7.0 Further investigations

## Project implications

<i>Key issue</i>	<i>Project implications</i>
<b>Dune conditions and vegetation considerations – Dunes</b>	<ul style="list-style-type: none"><li>• Sensitive landscape subject to dynamic influences (coastal erosion)</li><li>• Has important coastal protection role and habitat role, supporting marine turtle nesting</li><li>• Valued community amenity</li><li>• Supports valued vegetation communities</li></ul>



## 2. Dune conditions and vegetation considerations – Vegetation

Question	Project significance	Advice
<b>1. What is the appropriate species mix on the dune?</b>	<p>Proposed changes to vegetation on the dune are informed:</p> <ul style="list-style-type: none"> <li>- Using the appropriate species mix for the region</li> <li>- Support the habitat requirements of nesting turtles</li> <li>- Ensure the continued coastal protection role of the dune.</li> </ul> <p>Key questions</p> <ol style="list-style-type: none"> <li>1. Are Cottontrees native to Australia and the Sunshine Coast</li> <li>2. Are Cottontrees naturally occurring in RE12.2.14</li> <li>3. Have Cottontrees been planted at north Shelly beach</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Cottonwood Tree is a native species to Australia and the Sunshine Coast</i></li> <li>2. <i>The appropriate Regional Ecosystem (RE) reference for suitable species for the dune is RE12.2.14 Cottonwood Tree is included in RE12.2.14</i></li> <li>3. <i>Based on the evidence available it is likely that Cottonwood Trees have been planted at Shelly Beach to support dune stabilisation (Council and State supplies).</i></li> </ol>
<b>2. What specific advice is available concerning the status of Cottonwood Trees within the Shelly Beach dune system.</b>	<p>Confirm:</p> <ul style="list-style-type: none"> <li>- Whether Cottonwoods are an appropriate species at this location on the Sunshine Coast.</li> <li>- The 'normal' characteristics (location and shape) of Cottonwood within a dune system?</li> </ul>	<ul style="list-style-type: none"> <li>• <i>The current characteristics of Cottonwood Trees on the dune at Shelly Beach are considered to be 'highly unusual'.</i></li> <li>• <i>Management to improve the overall biodiversity of the dune, inline with what would be expected of the appropriate Regional Ecosystem supported.</i></li> </ul>
<b>3. What are the recommended practices to ensure any changes to habitat do not adversely impact established turtle nesting locations?</b>	<p>With proposed changes to dune habitat inputs required to confirm any revegetation best practice recommendations in sensitive receiving habitats – with particular concern for:</p> <ul style="list-style-type: none"> <li>- Nesting turtles</li> <li>- The unique characteristics of the sand at Shelly Beach.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Advice not to use chemicals to undertake significant vegetation management due to the sensitivity of the receiving habitat and the porosity of the sand.</i></li> </ul>

## 2. Dune conditions and vegetation considerations – Vegetation

Regional ecosystem details for 12.2.14 | Environment, land and water | Queensland Government

7/3/2022, 06:43



Queensland Government home >For Queenslanders >Environment, land and water >Plants and animals >Plants >Regional ecosystems >Regional ecosystem descriptions >Regional ecosystem details for 12.2.14

### Regional ecosystem details for 12.2.14

Regional ecosystem	12.2.14
Vegetation Management Act class	Least concern
Wetlands	Not a Wetland
Biodiversity status	No concern at present
Subregion	9, 4, 1, (8), (12)
Estimated extent <sup>1</sup>	Pre-clearing 22000 ha; Remnant 2019 22000 ha
Extent in reserves	High
Short description	Foredune complex
Structure category	Sparse

#### Description

Strand and fore dune complex comprising *Spinifex sericeus* grassland *Casuarina equisetifolia* subsp. *incana* low woodland/open forest and with *Acacia leiocalyx*, *A. dispartima* subsp. *dispartima*, *Banksia integrifolia* subsp. *integrifolia*, *Pandanus tectorius*, *Corymbia tessellaris*, *Cupaniopsis anacardioides*, *Acronychia imperforata* and *Hibiscus tiliaceus*. Occurs mostly on frontal dunes and beaches but can occur on exposed parts of dunes further inland. (BVG1M: 28a)

Vegetation communities in this regional ecosystem include:

12.2.14a: *Casuarina equisetifolia* subsp. *incana* woodland to low open forest. Exposed frontal areas. Not a Wetland (BVG1M: 28a)  
12.2.14b: *Casuarina equisetifolia* subsp. *incana* woodland to low open forest with mid-dense shrub of *Argusia argentea*/ *Scaevola taccada*. Exposed frontal areas. Not a Wetland (BVG1M: 28a)  
12.2.14c: *Casuarina equisetifolia* subsp. *incana* open forest with *Pandanus tectorius* sub-canopy. Exposed frontal areas. Not a Wetland (BVG1M: 28a)  
12.2.14d: *Sporobolus virginicus* closed tussock grassland. Exposed frontal areas. Not a Wetland (BVG1M: 28a)  
12.2.14e: *Spinifex sericeus* open hummock grassland. Exposed frontal areas. Not a Wetland (BVG1M: 28a)  
12.2.14f: \**Cakile edentula* herbland. Exposed frontal areas. Not a Wetland (BVG1M: 28a)  
12.2.14g: Very sparse herbland, mainly sand. Exposed frontal areas. Not a Wetland (BVG1M: 28a)  
12.2.14h: Shingle shores with sparse vegetation e.g. *Canavalia rosea*. Exposed frontal areas of coral cays. Not a Wetland (BVG1M: 28a)  
12.2.14i: Seashore mixed herbland. Exposed frontal areas. Not a Wetland (BVG1M: 28a)

#### Supplementary description

Bean et al. (1998), B14

#### Protected areas

Great Sandy NP, Moreton Island NP, South Stradbroke Island CP, Eurimbula RR, Bribie Island NP, Curtis Island NP, Eurimbula NP, Naree Budjong Djara NP, Southend CP, Burrum Coast NP, Mouth of Kolan River CP, Broadwater CP, Noosa NP, Joseph Banks (Round Hill Head) CP, Main Beach CP (IJMA), Mouth of Baffle Creek CP 1, Buckleys Hole CP, Capricornia Cays NP, Barubbra Island CP, Great Sandy RR, Mouth of Baffle Creek CP 2, Teerk Roo Ra CP (IJMA), Currumbundi Lake (Kathleen McArthur) CP, Maroochy River CP, Wild Cattle Island NP, Sandy Cape CP, Beachmere CP, Deepwater NP, Double Island Point CP, Teerk Roo Ra NP (IJMA), Cape Capricorn CP, King Island CP

#### Fire management guidelines

STRATEGY: Do not burn deliberately. Burn surrounding ecosystems in conditions that would minimise fire incursion. ISSUES: Protection relies on broad-scale management of surrounding country. *Casuarina equisetifolia* is very sensitive to fire and germination after fire is typically very low or negligible. Triggers unrelated to fire appear to maintain a healthy ecosystem. Issues with *lantana* and other weeds may result from fire and other disturbance.

Regional ecosystem details for 12.2.14 | Environment, land and water | Queensland Government

7/3/2022, 06:43

#### Comments

12.2.14b: (grades into 2b) (Masthead) 12.2.14c: Wilson Island, Capricorn Cays NP 12.2.14g: (North Reef) 12.2.14h: Restricted to shingle cays

<sup>1</sup> Estimated extent is from version 12.1 pre-clearing and 2019 remnant regional ecosystem mapping. Figures are rounded for simplicity. For more precise estimates, including breakdowns by tenure and other themes see [remnant vegetation in Queensland](https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/remnant-vegetation/) ( <https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/remnant-vegetation/> ).

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Last updated 8 December 2021

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### RE 12.2.14

Bio region	12	SEQ
Land zone	2	Coastal sands dunes and swales
Vegetation Community (Dominant canopy species)	14	

<https://apps.des.qld.gov.au/regional-ecosystems/details/?re=12.2.14>

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<https://apps.des.qld.gov.au/regional-ecosystems/details/?re=12.2.14>

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# 7.0 Further investigations

## Project implications

<i>Key issue</i>	<i>Project implications</i>
<b>Dune conditions and vegetation considerations – Vegetation</b>	<ul style="list-style-type: none"><li>• Appropriate vegetation RE advised as RE12.2.14</li><li>• Cottonwood Tree appropriate in the mix but not in its current behaviour.</li><li>• Management supported to improve the overall biodiversity of the dune, in line with what would be expected of this type of Regional Ecosystem</li></ul>

# 7.0 Further investigations

## 3. Considerations for Marine Turtles (at Shelly Beach)

Long standing tension and differences regarding the conditions required to support nesting turtle populations:

- Space for nests
- Light impacts
- Vegetation limitations

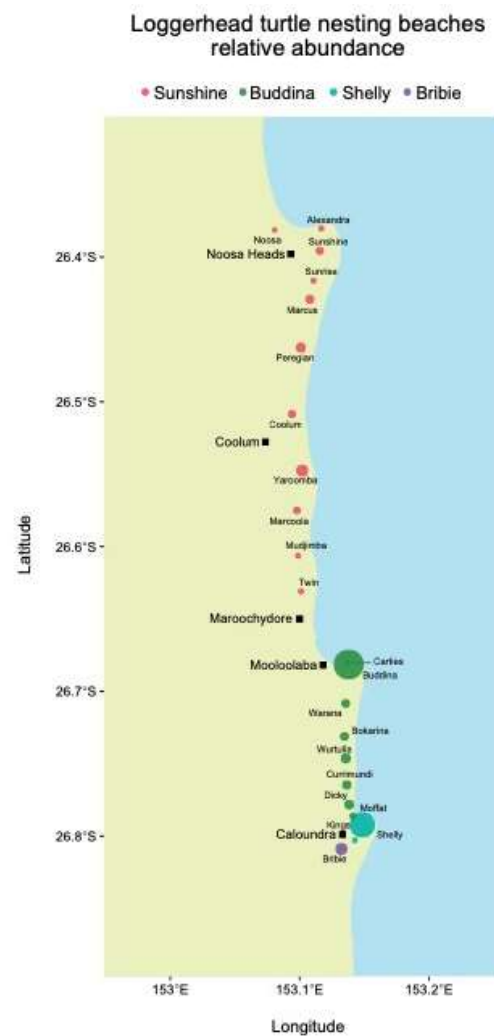
The recognised authorities on this issue are Federal and State Government:

- Migratory Species Section, Biodiversity Conservation Division, Department of Agriculture, Water and the Environment
- Chief Scientific Officer, Department of Environment and Science

### 3. Considerations for Marine Turtles (at Shelly Beach)

Question	Project significance	Advice
<b>1. What is the significance of Shelly Beach to the marine turtle population?</b>	To understand any priority issues for consideration in strategies seeking to balance the competing needs of flora, fauna, and human activity.	<ul style="list-style-type: none"> <li>- Globally all marine turtles are recognised as species of conservation concern. All six species of marine turtles on the Sunshine Coast are protected under a range of international, national, state, and local mechanisms.</li> <li>- In response to increasing temperatures in higher latitudes, turtles are predicted to undertake a southward shift in nesting distribution over future decades and the Sunshine Coast is likely to provide increasingly important alternative nesting sites.</li> <li>- Whilst all Sunshine Coast beaches have the potential for turtle nests, there are physical conditions which favour some nesting beaches. Specifically short crescent shape beaches defined by rocky headlands.</li> <li>- On the Sunshine Coast Buddina and Shelly beaches typically record more nests than any other beaches.</li> <li>- Shelly beach is identified by State Government as the index beach for the entire Sunshine Coast rookery (first studied in the 1970's).</li> </ul>

### 3. Considerations for Marine Turtles (at Shelly Beach)



SUCCESSFUL NESTS AT SHELLY BEACH

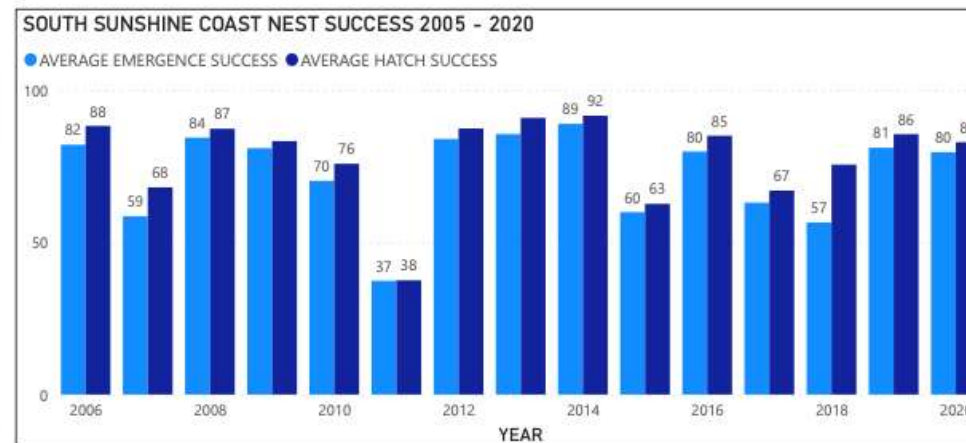
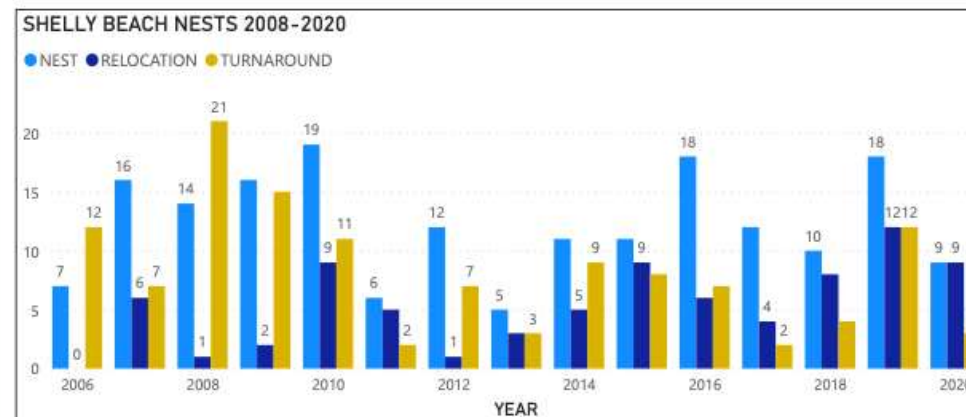
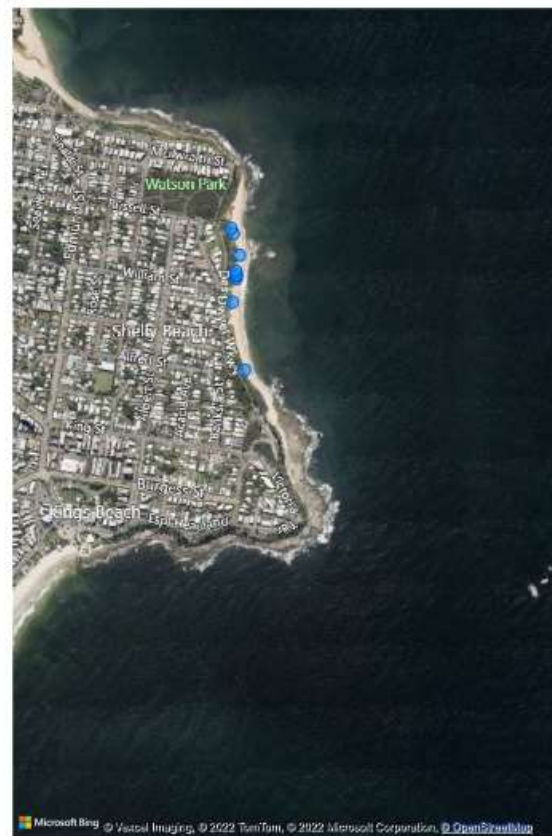


Figure 4: Location of the nesting beaches sampled in the Sunshine Coast region. Dot size shows relative beach-specific loggerhead nesting abundance recorded since 2009. Dot colour indicates the specific subregion that each beach was assigned to for analysis of nesting probability.

### 3. Considerations for Marine Turtles (at Shelly Beach)

Question	Project significance	Advice
<b>2. What is contemporary best practice with regards to the physical conditions required to support marine turtles?</b>	<p>Opportunity to deliver a 'best practice' approach to support nesting turtles within the region.</p> <p>Ensure the habitat needs of nesting turtles can be factored into any vegetation management or adaptation both in terms of species choice and removal practices.</p>	<ul style="list-style-type: none"> <li>- An elevated frontal dune important nesting habitat for turtles. Optimum conditions characterised by low grassy vegetation with shallow root system</li> <li>- Elevated dark horizon behind the nesting habitat (typically provided by dune vegetation or rocky headlands) to assist in sea finding.</li> <li>- Light affects the turtles if it can be seen from the nesting beach, nearshore and adjacent waters.</li> </ul>
<b>3. What are the policy and legal frameworks in place that guide / regulate actions associated with marine turtle habitat?</b>	To understand councils' obligations and any legal/procedural requirements when undertaking actions in or adjacent to turtle habitat.	<p>The loggerhead at Shelly Beach is listed under the following:</p> <ul style="list-style-type: none"> <li>i. Nature Conservation Act 1992: <i>Endangered</i></li> <li>ii. Environment Protection &amp; Biodiversity Conservation Act 1999:</li> <li>iii. <i>Endangered</i></li> <li>iv. IUCN Red List: <i>Critically endangered</i>.</li> </ul> <ul style="list-style-type: none"> <li>- Globally all marine turtles are recognised as species of conservation concern. All six species of marine turtles on the Sunshine Coast are protected under international, national, state, and local mechanisms (See table in Section 5 in supporting information)</li> <li>- Most significant Australian policy Environmental Protection and Biodiversity Conservation Act 1999.</li> <li>- Advice given that proposed activities likely to require referral under this Act (MNES).</li> </ul>
<b>4. What are the recommended practices to ensure any changes to habitat do not adversely impact established turtle nesting locations?</b>	To understand appropriate risk mitigation requirements to limit the impact of physical change on nesting turtle habitat and behaviour.	<ul style="list-style-type: none"> <li>• Equal or improved levels of dune height and opacity to manage relevant light sources.</li> <li>• Appropriate nesting habitat (available space and conditions) available – vegetation and sand.</li> <li>• Activity conducted outside of critical nesting period and not piloted on core habitat areas.</li> </ul>



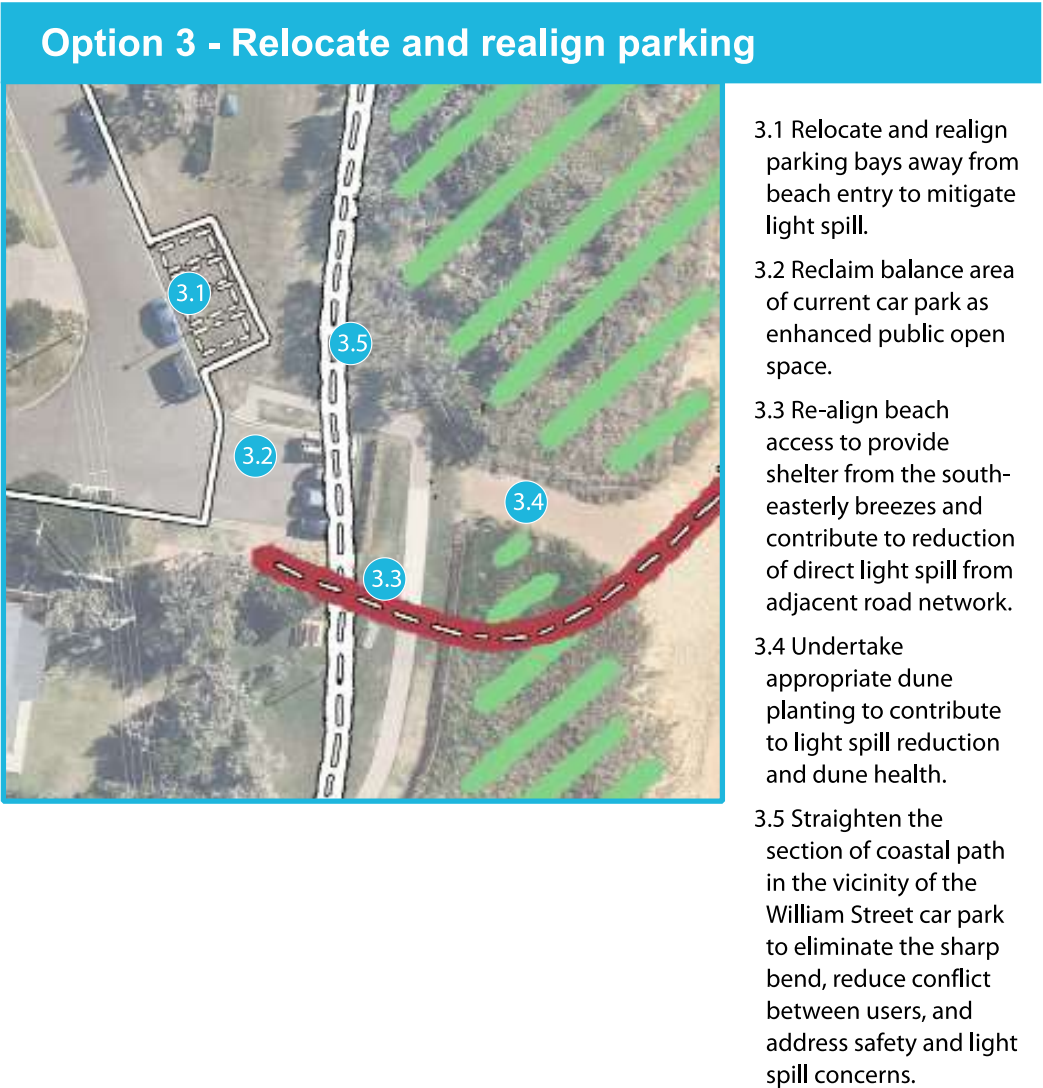
# Key strategies & community sentiment

## Zones 3A North Shelly Beach (William Street car park)



Option 3 preferred direction from community engagement. This feedback will be used to establish a brief for further development and the testing of options and ideas. Options will be developed and tested with technical and community inputs.

**Note** - This diagram does not illustrate a design.





# 7.0 Further investigations

## Project implications

<i>Key issue</i>	<i>Project implications</i>
<b>Turtles (at Shelly Beach)</b>	<ul style="list-style-type: none"><li>- On the Sunshine Coast Buddina and Shelly beaches typically record more nests than any other beaches.</li><li>- Shelly beach is identified by State Government as the index beach for the entire Sunshine Coast rookery (first studied in the 1970's).</li><li>- An elevated frontal dune and dark horizon are important nesting habitat requirements for turtles.</li><li>- Activity conducted outside of critical nesting period and not piloted on core habitat areas.</li><li>- Referral under the EPBC Act advised where disturbance to vulnerable species habitat expected (MNES)</li></ul>

# Summary of project implications

Key issue	Project implications
<b>Land designation</b>	<ul style="list-style-type: none"> <li>• Council is using the land for purposes consistent with land designation and relevant Council and State approvals.</li> <li>• Council is required to maintain and enhance the area.</li> <li>• There is room for improvement on the clarity, coordination and approach to landscape enhancement and management.</li> </ul>
<b>Dune conditions and vegetation considerations – Dunes</b>	<ul style="list-style-type: none"> <li>• Sensitive landscape subject to dynamic influences (coastal erosion)</li> <li>• Has important coastal protection role and habitat role, supporting marine turtle nesting</li> <li>• Valued community amenity</li> <li>• Supports valued vegetation communities</li> </ul>
<b>Dune conditions and vegetation considerations – Vegetation</b>	<ul style="list-style-type: none"> <li>• Appropriate vegetation RE advised as RE12.2.14</li> <li>• Cottonwood Tree appropriate in the mix but not in its current behaviour.</li> <li>• Management supported to improve the overall biodiversity of the dune, in line with what would be expected of this type of Regional Ecosystem</li> </ul>
<b>Turtles (at Shelly Beach)</b>	<ul style="list-style-type: none"> <li>• On the Sunshine Coast Buddina and Shelly beaches typically record more nests than any other beaches.</li> <li>• Shelly beach is identified by State Government as the index beach for the entire Sunshine Coast rookery (first studied in the 1970's).</li> <li>• An elevated frontal dune and dark horizon are important nesting habitat requirements for turtles.</li> <li>• Activity conducted outside of critical nesting period and not piloted on core habitat areas.</li> <li>• Referral under the EPBC Act advised where disturbance to vulnerable species habitat expected (MNES)</li> </ul>
<b>Overall</b>	<ul style="list-style-type: none"> <li>• The adoption of an integrated collaborative process that draws together the appropriate technical expertise – turtles, dunes and vegetation – is essential to informing any proposed physical change at Shelly Beach.</li> </ul>

# 8.0 Advancing the pilot project



## Background

Shelly Beach is a highly modified landscape. In its current condition the vegetation, the species mix and the profile and extent of the landscape are not characteristic of an established coastal dune.

## The issues

The prevalence and growth form of Cottonwoods in the area is dominating the foredune vegetation community and limiting available space for turtle nesting habitat above the high-tide mark.

## The opportunity

Proposed opportunity to trial and monitor effectiveness of Cottonwood management techniques for application in the broader North Shelly Beach area to support dune health and turtles.

## Pilot site selection process

The pilot site selection process was informed by the following key considerations:

- Identification of the dune area most heavily dominated by Cottonwood trees and limiting available space for natural turtle nesting.
- Avoiding most consistently successful natural turtle nesting areas on North Shelly Beach.
- Avoiding current preferred / successful turtle nest relocation areas.
- Recognition that successful turtle nesting habitat requires approximately 18 months to settle post significant disturbance of sand dune to minimise poor nest outcomes.
- Risk of wide-spread coastal / dunal erosion if entire area was managed at the same time.
- Risk of significant impact on successful turtle nesting from poor outcomes if Cottonwood management is not delivered in a staged and sequenced manner integrated with dune management etc.

## Staged habitat restoration program with pilot initiative



## Future action for consideration - Low amenity planting to integrate and screen Coastal Path

In the 5 year time frame undertake a design process to consider in detail the option of establishing low (up to 2m) plantings on the western side of the coastal path between William and Russell Streets, to provide a level of privacy to adjoining residents, in anticipation of the coastal path becoming busier.

Design process to include species selection and placement in conjunction with CPTED principles and adjacent residents inputs.

## Establish and enhanced dunal ecology and vegetation diversity achieved through:

- The assisted staged reduction in the current extent of Cottonwoods on the foredune at North Shelly Beach.
- Dune vegetation rehabilitation activities to establish a functional foredune vegetation community informed by Regional Ecosystem 12.2.14, including spinifex on the frontal dune grading to Foredune Herbland and then into *Casuarina equisetifolia*, *Banksia integrifolia*, and *Pandanus tectorius*.
- Dune vegetation rehabilitation activities to establish a pseudo hind-dune vegetation community within available space incorporating *Acrotychia imperforata* (Fraser Island apple), the ubiquitous *Cupaniopsis anacardioides* (tuckeroo) and *Hibiscus tiliaceus* (cottonwood).
- Dune vegetation species composition, density and height to provide equivalent to or enhanced dark sky and light glow management outcomes (elevated dark horizon supporting ocean-finding behaviour).
- Outcomes to balance enhanced ecological diversity, dune stabilisation against coastal erosion processes, and turtle conservation.

Establish an expanded area of turtle nesting habitat located above high tide to optimise available nesting habitat and hatching success - achieved through the removal of woody vegetation for a distance of 10m landward of high-tide mark, and rehabilitated with appropriate coastal grasses and herbs dominated by coastal spinifex.

The same 10m strip of enhanced turtle nesting habitat will provide valuable turtle nest relocation receiving sites located above high tide to provide alternative receiving sites and optimise hatching success.

Ensure *Pandanus tectorius* plantings are maintained approx. 10m landward of the turtle nesting habitat area to minimise risk of *Pandanus* root impacts on turtle nests, particularly during dry seasons / drought years.

Manually remove any marine couch grass growing at high tide mark to remove physical restrictions to turtle nesting, and replace with coastal spinifex plantings.

Close the informal beach access point located between Russell Street and William Street, fence completed and dune rehabilitated.

Undertake infill planting on bare and degraded areas of the dune consistent with the recommended establishment of a functional foredune and pseudo hind dune as above.

Dune areas subject to disturbance through removal of woody vegetation become unsuitable as nesting habitat for a period of 18 months.

Any turtle nests laid within this pilot zone within the 18 month dune settlement period to be relocated to minimise the risk of poor nest outcomes.

Lift Cottonwoods off fence line separating the dunes and grassed recreation open space area to a distance of 1m - achieving a reduction in fence maintenance, and reducing competition for the recommended Parks and Gardens amenity plantings between the fence line and coastal path.

Establish Parks and Gardens amenity plantings utilising small native trees to maximum height of 5m - achieving improved amenity, shading for park users, and contribute to enhanced light glow management.

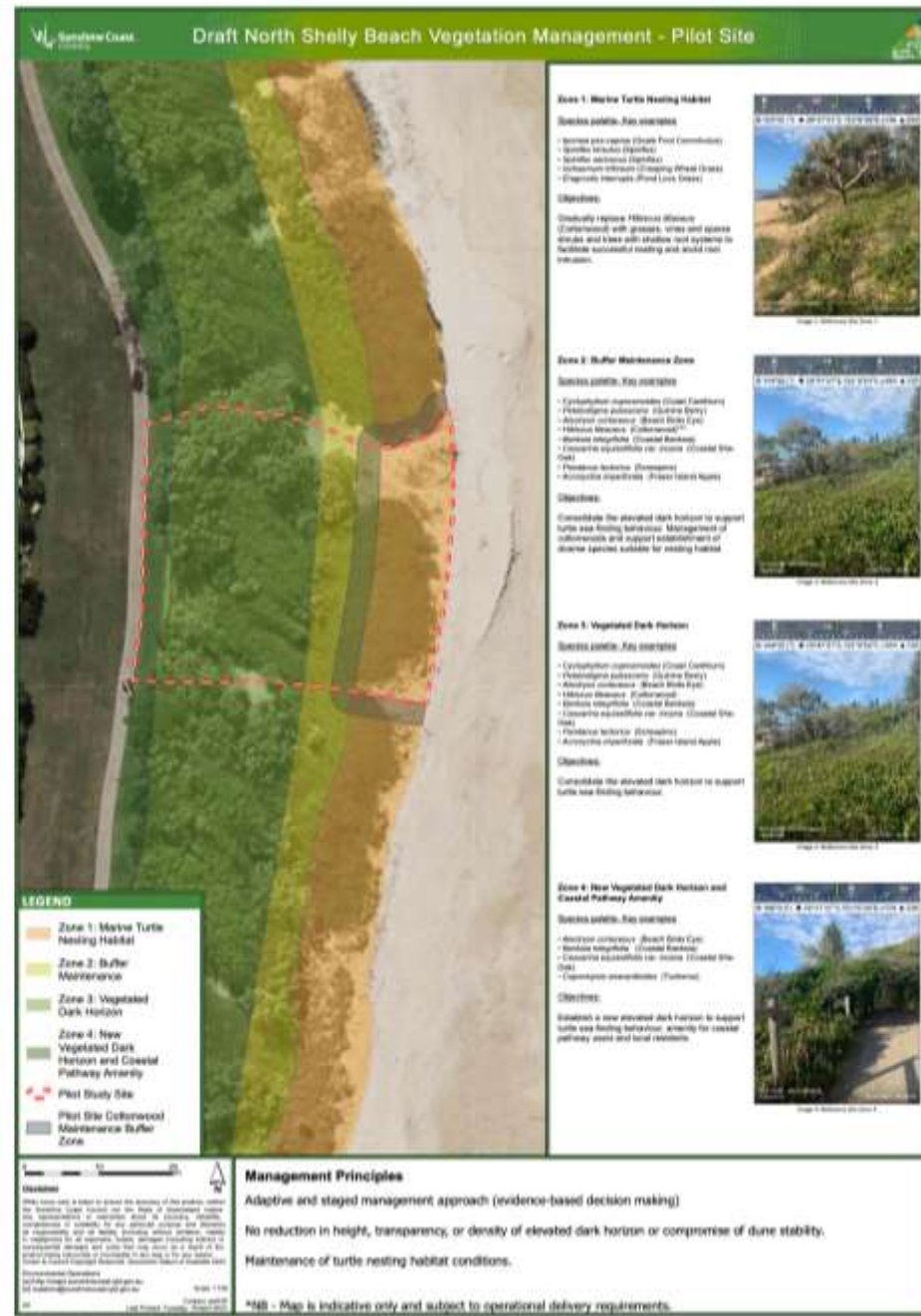
Enhanced management of dune areas to disrupt occasional anti-social behaviour, and to minimise associated fire risk and dune erosion.

Consistent approach to Council's messaging, response and regulation of unauthorised vegetation management (clearance and/or planting) on public land under Council's care and control.

Enhanced coordination and collaboration between Council, contractors and volunteer groups operating in accordance with endorsed guidelines and operating procedures - achieving improved awareness of activities and collective outcomes.

Reinstate appropriate mowing regime for the grass open space recreation areas in accordance with Council's levels of service.











**Zone 1: Marine Turtle Nesting Habitat**

Species palette- Key examples

- *Ipomea pes-caprae* (Goats Foot Convolvulus)
- *Spinifex hirsutus* (Spinifex)
- *Spinifex sericeous* (Spinifex)
- *Ischaemum triticeum* (Creeping Wheat Grass)
- *Eragrostis interrupta* (Pond Love Grass)

Objectives:

Gradually replace *Hibiscus tiliaceus* (Cottonwood) with grasses, vines and sparse shrubs and trees with shallow root systems to facilitate successful nesting and avoid root intrusion.

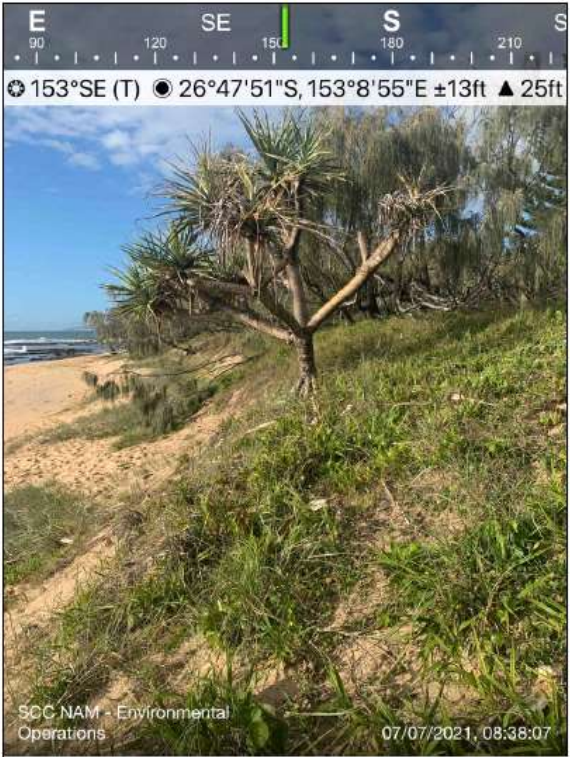


Image 1: Reference Site Zone 1

**Zone 2: Buffer Maintenance Zone**

Species palette- Key examples

- *Cyclophyllum coprosmoides* (Coast Canthium)
- *Petalostigma pubescens* (Quinine Berry)
- *Alectryon coriaceus* (Beach Birds Eye)
- *Hibiscus tiliaceus* (Cottonwood)\*\*\*
- *Banksia integrifolia* (Coastal Banksia)
- *Casuarina equisetifolia* var. *incana* (Coastal She-Oak)
- *Pandanus tectorius* (Screwpine)
- *Acronychia imperforata* (Fraser Island Apple)

Objectives:

Consolidate the elevated dark horizon to support turtle sea-finding behaviour. Management of cottonwoods and support establishment of diverse species suitable for nesting habitat.

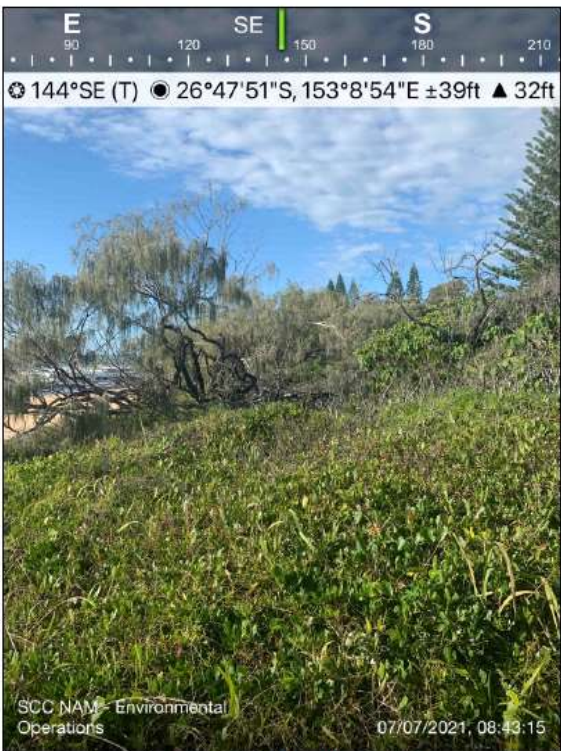


Image 2: Reference Site Zone 2

Species palette provides examples of species to be planted and those likely to naturally occur in the seedbank. Indicative draft only and subject to change in consultation with relevant experts and development of EPBC referral.

\*\*\*No additional Cottonwood trees will be planted in this zone



**Zone 3: Vegetated Dark Horizon**

Species palette- Key examples

- *Cyclophyllum coprosmoides* (Coast Canthium)
- *Petalostigma pubescens* (Quinine Berry)
- *Alectryon coriaceus* (Beach Birds Eye)
- *Hibiscus tileaceus* (Cottonwood)\*\*\*
- *Banksia integrifolia* (Coastal Banksia)
- *Casuarina equisetifolia* var. *incana* (Coastal She-Oak)
- *Pandanus tectorius* (Screwpine)
- *Acronychia imperforata* (Fraser Island Apple)

Objectives:

Consolidate the elevated dark horizon to support turtle sea-finding behaviour.



Image 3: Reference Site Zone 3

Species palette provides examples of species to be planted and those likely to naturally occur in the seedbank. Indicative draft only and subject to change in consultation with relevant experts and development of EPBC referral.

\*\*\*No additional Cottonwood trees will be planted in this zone

**Zone 4: New Vegetated Dark Horizon and Coastal Pathway Amenity**

Species palette- Key examples

- *Alectryon coriaceus* (Beach Birds Eye)
- *Banksia integrifolia* (Coastal Banksia)
- *Casuarina equisetifolia* var. *incana* (Coastal She-Oak)
- *Cuponiopsis anacardioides* (Tuckeroo)

Objectives:

Establish a new elevated dark horizon to support turtle sea-finding behaviour, amenity for coastal pathway users and local residents.



Image 4: Reference Site Zone 4





# Commonwealth EPBC Act

## Environmental Protection and Biodiversity Conservation Act 1999

- The EPBC Act protects Matters of National Environmental Significance (MNES); it also applies to actions undertaken by Australian Government agencies and/or actions that may impact on Commonwealth land and waters
- The EPBC Act lists loggerhead turtles as Endangered and Migratory
- DCCEEW will determine whether the pilot study is a Controlled Action and therefore requires approval under the EPBC Act
- The SMBCS is anticipated to have a positive impact on the loggerhead turtle
- As a matter of due diligence, the EPBC Assessment Report will also address any other MNES potentially affected by the proposed works

# EPBC Assessment Report

Will be prepared in accordance with the EPBC Significant Impact Guidelines

- The Guidelines describe significant impact criteria depending on the conservation status of the MNES in question
- For an endangered species, the Assessment Report will need to consider whether the proposed works could impact on the population size or range of the species; whether it could affect habitat quality (e.g. through the introduction of invasive species); whether it could disrupt the breeding cycle of the species, etc.
- No new survey work is expected to be required as there is considerable amount of existing scientific literature to draw from
- A key consideration is that no works will be undertaken during the loggerhead turtle's nesting and emergence period (November to March, with a peak in late December / early January)

# Process

## Environmental Protection and Biodiversity Conservation Act - Referral process

- Prepare EPBC Assessment Report
- Pre-referral meeting with Department of Climate Change, Energy, and the Environment and Water (DCCEEW)
- Finalise the EPBC Assessment Report
- Lodge referral end of May
- All referrals are subject to a mandatory public comment period of 10 business days
- Anticipate receiving a response from DCCEEW by early July

# 9.0 Next Steps

## 1. Pilot Project

- Undertake community stakeholder project update exercise
- Advance development of pilot project scope
- Lodge EPBC referral end of May, anticipate receiving a response by early July
- Finalise preparation for pilot project implementation, pending receipt of EPBC outcome

## 2. Utilise plan to drive action and planning

- Environmental Operations and Parks & Gardens develop action plan – projects, priorities, resourcing, funding

## Ongoing

Provision of updates at key points eg. Lodgement of EPBC referral, receipt of response, proposed commencement of works



# 9.0 Next Steps

Delivered through spatial strategies

***Landscape and place management plan***

***Guide & align action***

A framework for decisions and action

## ***Priority Place Values***

### ***Protect and Enhance***

- I. The turtles
- II. The dune and beach habitat
- III. The public amenity of the area and the coastal path.



# Thank you.



See council's website for further details  
[www.sunshinecoast.qld.gov.au](http://www.sunshinecoast.qld.gov.au)