Central Coast Recreational Use Study
Stage 1: Open Coast and Coastal Lagoons

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Central Coast Recreational Use Study Stage 1: Open Coast and Coastal Lagoons

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Authors

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EXECUTIVE SUMMARY

This report provides a baseline understanding of recreational use of the Central Coast coastline, specifically between Munmorah State Conservation Area to the North and Patonga to the South: including the four near-shore coastal lagoons of Wamberal, Terrigal, Avoca and Cockrone. The report's main outputs are a series of hard copy maps that collectively show the recreational infrastructure, uses and classification of the study area, and a comprehensive series of recommendations.

The Central Coast of New South Wales is one of the most valued and iconic coastal regions in Australia: with its beaches, ocean baths, cliffs and conservation reserves providing a range of recreational opportunities for locals, visitors and tourists alike. However, forces such as encroaching residential and commercial development, climate change and the need for better environmental conservation are individually and collectively placing increasing pressure on the recreational use of this coastline.

The Central Coast Council (Council) is currently developing two Coastal Management Programs (CMP): The Tuggerah Lakes CMP and the Open Coast and Coastal Lagoons CMP. Stage 1 of the CMP process was a scoping study which identified information gaps required to inform the development of management actions in the later stages of developing the CMPs.

Consultancy VisionEnvironment was engaged to carry out this study, which drew on existing information regarding coastal planning, and site visits. A Coastal Recreational Use Audit was carried out during the field trips, which involved collecting information on the location of existing infrastructure, locations of heavy use and designated recreational areas in the coastal zone. The site visits also enabled observations to be made that supported the report recommendations.

The geographic extent of the study was the coast and near shore marine areas within Central Coast Council's boundaries, and the four coastal lagoons.

The report has a series of maps that show specific uses for the whole coastline, notably:

- Surf life saving patrolled areas;

- Universal Beach Access;

- Locations popular for fishing;

- Locations popular for surfing;

- Ocean pools/baths;

- Boat launching facilities, or boat ramps;

- Jetties and Ferry Terminals;

- Shared Paths;

- Walking Paths; and

- Dog Exercise Areas.

A Coastal Recreational Use Classification Framework was developed which enabled the coast to be categorized into either a node or a connector. Nodes are developed areas within a foreshore reserve that have a variety of infrastructure to allow for a range of passive and active recreation activities.

Four types of nodes are recognised:

- Beach Access Nodes – provide for only beach and water-based uses;

- Minor Activity Nodes – provide additional park-based active and passive uses, with greater capacity for specialist water-based use;

- Moderate Activity Nodes – provide a greater variety of park-based recreation, including commercial and indoor uses, however may restrict specialist water-based uses; and

- Major Activity Nodes – provide more extensive commercial opportunities and are typically used for tourism purposes.

Connectors are the foreshore and beach areas that act as links between two nodes. Connectors have a range of values, including ecosystem, recreational, social, aesthetic, wildlife corridors, and, where there is no foreshore reserve (i.e. no public access), private economic. Connectors can be well vegetated, cleared of native vegetation and anything in between. They are mostly free of infrastructure, but some areas have a formal path or track, a track with access to the beach, and the occasional lookout or seat.

Seven types of coastal connectors are recognised, with the first five contained with public reserves, and the last two types have no foreshore reserve and private property extend to the water's edge:

- Conservation Connectors – well vegetated areas within conservation reserves and well separated from urban areas, facilitating primarily land based recreation, giving them high aesthetic, nature and wilderness experiences;

- Landscape Connectors – well vegetated foreshore reserves with limited infrastructure set within urban areas having limited beach and water-based recreation, however may provide unique aesthetic, nature and wilderness experiences;

- Shared Path Connectors – foreshore reserves with native vegetation similar to Landscape connectors, but typically contain shared paths and supporting infrastructure within the reserve: thus facilitating a range of additional recreational uses, along with enhanced aesthetic and educational experiences;

- Urban Connectors – enhanced water and beach and path-based uses, however have little if any native vegetation therefore negligible nature and wilderness experiences. There is either a road or path that provide a hard edge to the adjacent residential areas;

- Local Connectors – houses directly abut the foreshore reserve, which tends to be narrow and with limited native vegetation. There is no hard edge that separates the houses from the foreshore. These areas provide beach and water use primarily to local residents;

- Residential Connectors – set within urban areas and have no public foreshore with private property directly abutting the water, and so provide beach and water use exclusively to residents of these private properties; and

- Rural Residential Connectors - set within rural areas and have no public foreshore with private property directly abutting the water, and so provide beach and water use exclusively to residents of these private properties.

Part B of the report has 18 maps that illustrate how the coast and lagoons are classified and the location and certain types of key infrastructure.

The report contains an extensive literature review which includes reviewing data collected on four different studies that carried out surveys of users, one of which was Council's "Your Voice" survey. The key findings of the literature review, observation made on the site visit, the mapping carried out for this report, the review of relevant Council and other reports, and discussion with Council's officers enabled the following recommendations to be made.

Coastal shared/dual use paths potential

The following locations are ideal for new shared use paths and the feasibility of constructing these paths should be pursued including costings, grants, community engagement and detailed site design:

1. Connecting Budgewoi Beach and Hargrave Beach;

2. Toowoon Bay Surf Life Saving Club to Shelley Beach;

3. The beach adjacent to Wamberal Lagoon with a possible extension north to Forresters Beach around or along the rocky point; and

4. Connecting the Entrance North beach to Magenta Beach, using, upgrading and extending the existing track at Magenta Beach, and linking this to existing coastal track through the coastal reserve at The Entrance North Beach via Curtis Parade, which will need to be upgraded.

Upgrading existing tracks

5. The existing track which starts at Pretty Beach boat ramp and goes through the Araluen Drive road reserve linking back to the constructed Araluen Drive in Hardys Bay could be upgraded to dual use path standard and extended around part of Hardys Bay through the developed although narrow foreshore reserve to at least the small commercial centre at Killcare Road junction.

Lagoons and tracks

6. There is a short walk on the SW arm of Terrigal Lagoon that has the potential to be upgraded, not necessarily to dual use path standard, and extended further. The Council-approved option to develop a loop track around the SW arm of the lagoon starting at Marine Discovery Centre should be supported.

7. The eastern arm also has potential for including a walking track. The track could start from a new car park along Lake view road and head north and then west past the Breakers Country Club, then along the western shore past Franklin Oval to link up with the existing path near the northern end of Terrigal Drive, which could then link to the path to the Terrigal major node. Such a path would also provide a pedestrian/cycle link to the Terrigal major node for residents in the Beaufort and Hastings Roads locality. It is likely that the path would have to run partly along Ogilvie Street where there is no public foreshore.

8. Whilst the track in Avoca Lagoon reserve is rough, overgrown, muddy in parts and is not continuous, it has the potential to be upgraded and made into a single walking trail. At the moment, it would be an out and back track, but options to extend the track to the west as well so it become more of a circuit should be explored.

9. A poor quality path runs from Matawai Avenue to Wairakei Road Reserve, which could be upgraded.

10. A higher quality path on the eastern side of the lagoon at Spoon Bay connects to the beach adjacent to Wamberal Lagoon. This section could form part of a loop track which goes along the eastern side of Wamberal Lagoon, with a possible extension north to Forresters Beach around or along Wamberal Point.

11. This track in Cockrone Lagoon reserve is a bit rough and rather short. It has the potential to be upgraded and extended around the lagoon.

Improving and increasing disabled access

12. Council should work with SLS clubs to ensure that they all have either beach access wheelchairs or beach mats.

Lookouts

13. An audit of the lookouts should be carried out to identify those that require the vegetation to be trimmed to ensure the views can still be experiences by visitors, and/or those where the seating should be added.

Examples of infrastructure to be upgraded or improved

14. Council should develop a coastal infrastructure replacement and upgrade programme to modernise the aging coastal infrastructure. The list in this report is a useful starting point, however, the first step should be a complete audit of coastal infrastructure.

Specific beach recommendations for enhancing users' experiences

15. Improving parking North Avoca Beach opposite the end of View Street is likely to be difficult as there is little room at the end of View Street. However, the facilities here could be improved with an upgrade to the shower and provision of potable water.

16. Despite the vegetation at North Avoca Beach opposite the end of View Street being fenced off, people had jumped the fence to watch the event. If this continues to occur and is not isolated to this event, then damage to the vegetation could be managed and reduced by creating a modest grassed area with seating here.

17. Council may want to re-consider its policy on safety warning signs and whether the warning sign at North Avoca Beach should be upgraded to include a warning to the general public of the hazard at the rock platform.

18. The adequacy of the warning signs at other locations that have rock platforms exposed to large waves should also be considered.

19. The track and steps to Jenny Dixon Beach are accessible from the reserve and are available to the public, and Council should consider whether to close the steps or upgrade it to improve its safety.

20. The infrastructure at Lakes Beach should be upgraded to make better use of the existing carparking and to provide the Budgewoi and Toukley residents with a more attractive and useable resource. This could be done at the same time the dual use path is constructed between Budgewoi Beach and Hargrave Beach.

21. A public toilet should be provided at eastern part of the Terrigal Beach Node.

22. Council should consider upgrading the parking end of Mareela Ave, Booker Bay, Ettalong Beach area, and providing some basis facilities - shower, bin, drinking water and seating.

Coastal erosion, climate change and long-term planning

23. An audit should be carried out of the proposed recommendations and management actions contained in the two reports that address coastal hazards carried out by the Wyong and Gosford Councils that specifically relate to recreation infrastructure and whether they have been implemented. This should include an assessment of the relevance of any outstanding recommendations and management actions.

24. Once completed, any outstanding recommendations and management actions should be prioritised and an implementation plan developed.

25. The relevant Coastal Hazard Lines should be taken into account in planning the location of any new coastal recreation infrastructure.

Demarcation between private land and the foreshore reserve

26. An audit should be carried out of the coastal areas in the Central Coast where houses directly abut the foreshore reserve to identify cases of significant intrusion into the reserve which has caused loss of vegetation or landform.

27. Council should work with residents to identify a more suitable location for this infrastructure, or in the case of beach access, identify a more appropriate form of access which minimises the impact of vegetation.

28. Once these measures have been implemented, rehabilitation of the vegetation and landform should then occur.

29. To ensure an ongoing and clear demarcation between private property and the public foreshore, either a property boundary fencing policy be introduced and implemented, or a dual use path or formal track be constructed at the western edge of the foreshore reserve.

Informal uses causing damage

30. An audit should be carried out of all the foreshore reserves identifying locations where damage is being caused by the informal use of the reserves, including tracks.

31. Where the informal use is by adjacent residents, Council should work with residents to have these items removed.

32. Where the informal use is a public use (track or infrastructure), Council should first consider whether these uses should be formalised so as to better manage the impact, but if not, then the site should be rehabilitated.

33. Once these measures have been implemented, rehabilitation of the vegetation and landform should then occur.

Parking

34. Any long-term solutions to parking problems at Central Coast Council beaches and nodes are likely to be costly, and so the nature and extent of the problems need to be identified so that fit-for-purpose solutions are identified.

35. Two surveys are needed to identify the nature and extent of the problems:

a. A physical observational survey of parking in the key locations is needed to identify how often and when parking is a problem and to then determine if temporary or permanent solutions are needed. The use of cameras would be a cost effective way to collect these data; and

b. If a permanent solution is needed, a survey of visitors should be carried out to establish if the parking problems negatively affected their visit, why they visited each particular beach and if another node, if suitably developed, would offer an alternative they would visit instead, and do they believe that adding more parking would negatively impact on the character of the node and quality of their experiences?

Surfing

36. Council should work with the local surfing community to identify benefits and disbenefits of nominating at least one surfing location as a National Surfing Reserve, and, where there are clear benefits and strong local community support for any nomination exists, proceed to nominate a location or locations to become a National Surfing Reserve.

Fishing

37. Council should consider better matching the provision of supporting infrastructure such as cleaning stations and platforms with the natural formations that best facilitate recreational fishing.

Urban beaches, local access points and infrastructure

38. Budgewoi beach: The minor node at Budgewoi could be upgraded. Consideration be given to adding a playground and toilet here.

39. Hargraves Beach: The access point at the north of Elizabeth Drive could be upgraded.

40. Entrance North south to Shelley Beach: The access points at the end of Wyuna Ave and either the end of Manly Parade or Florida Street the upgraded. Both the Manly and Florida access points already have lookouts.

41. Wamberal Beach to Terrigal Beach: This access point between the two nodes at the lagoons entrances could be upgraded. Consideration be given to adding a playground and toilet here.

42. North Avoca Beach: Either, or both, of the access points at the end of View Street and/or Ocean Street could be upgraded. Consideration be given to adding a playground and toilet to one of these.

43. Avoca Beach: The access point between the lagoon entrance and the Surf life Saving Club could be upgraded, with the cleared area turned into a grassed area. Consideration be given to adding a playground.

44. Copacabana Beach: The western most local access point from Copacabana Surf Life Saving Club could be upgraded.

45. Macmasters Beach: the access point at the end of 3 Points Ave could be upgraded.

46. Ettalong Beach area: the access point at the end of Barrenjoey Road could be upgraded.

47. Pearl Beach: This access point at the end of Agate Ave could be upgraded.

48. Patonga Beach: This access point at the end of Brisk Street could be upgraded.

The report finishes with a discussion of the recommendations and their relationship to, and consistency with, Council's approved strategic and policy context. It is concluded that the report recommendations are consistent with Council's Community Strategic Plan and the various relevant documents that sit underneath that plan. It is acknowledged that some of these recommendations will require re-allocation of existing resources to address and others will require specific additional funds for implementation. The former recommendations are questions for management to consider – for example allocating staff time to carry out the audits recommended here. The latter recommendations need to be included in Council's Delivery Program, the next one will be for the 2025-26 and 2026-27 financial years.

Contents

PART A

The Central Coast of New South Wales is one of the most valued and iconic coastal regions in Australia: with its beaches, ocean baths, cliffs and conservation reserves providing a range of recreational opportunities for locals, visitors and tourists alike. However, forces such as encroaching residential and commercial development, climate change and environmental conservation are individually and collectively placing increasing pressure on the recreational use of this coastline.

Introduction

The Central Coast Council (Council) is currently developing two Coastal Management Programs (CMP): The Tuggerah Lakes CMP and the Open Coast and Coastal Lagoons CMP. Stage 1 of the CMP process was a scoping study which identified information gaps required to inform the development of management actions in the later stages of developing the CMPs. It was identified that a Recreational Use Study was required to better understand the various coastal recreational activities occurring in the Central Coast area and determine the adequacy of public amenities and infrastructure to accommodate for those activities now and into the future.

Consultancy VisionEnvironment was engaged to carry out this study, which drew on existing information regarding coastal planning, and site visits. The site visited included carrying out a Coastal Recreational Use Audit which involved collecting information on the location of existing infrastructure in the coastal zone. The site visits also enabled observations to be made that supported the report recommendations.

This report contains maps and information that should be a valuable reference for discussion and decision making by coastal planners and managers generally, and recreation planners and stakeholders specifically.

The geographic extent of the study – the study area as shown in Figure 1 – is the coast and near shore marine areas and the four coastal lagoons: Wamberal, Terrigal, Avoca and Cockrone. More specifically, this includes:

- The existing and proposed foreshore reserves vested in the relevant local governments;

- Coastal Conservation Reserves vested and managed by State Government agencies; and

- The near-shore marine areas – defined as the extent of the marine area subject to human uses where those uses are accessed by the adjacent beach.

Lakes and lagoon areas (aside from those directly abutting the coast) were excluded from this study, however are included in Stage 2 of this study.

This report identifies and maps the existing recreational use of this study area. It was compiled using an iterative and responsive action research approach. This approach commenced with a desktop review of existing coastal usage and management information, as provided by Central Coast Council, followed by physical site visits and photography along the study area, and finally consultation with relevant coastal planning and management officers at CCC.

The first stage of the approach was the creation of a Coastal Recreational Use Audit Tool that comprised a near-exhaustive list of coastal recreational infrastructure and principal uses. This audit was then applied from north to south along the study area, with the location of key recreational infrastructure and uses identified, digitised and spatially geocoded using the software ArcGIS. This data collection process informed the development of a Coastal Recreational Use Classification Framework, comprising 'nodes' and 'connectors' that took into account the provision of recreational infrastructure, type and extent of recreational uses and experiences, and to a lesser extent its catchment area (i.e. local, district, and regional).

A key output of this report is a series of hard copy maps that represent a mid-2022 baseline of the Central Coast coastline, from a recreational use perspective. Compiled from the audit

and classification framework information, the maps include the location of key recreational infrastructure and uses, along with all nodes and connectors.

This report is structured in three parts, as follows:

Part A

- Literature Review: An overview of the significance of the study and the policy context in which it is situated, with definition and explanation of key concepts.
- Methodology: A summary of the research approach and methods.
- Coastal Recreational Use Audit Tool: The full list of criteria comprising the audit tool.
- Audit Application: Key findings from the application of the audit tool presented as maps and accompanying discussion.
- Coastal Recreational Use Classification Framework: The framework that emerged from the audit, detailed illustrated examples for each classification type, and the overall distribution of each classification type along the study area.

Part B

- A resource comprising a series of 18 maps that detail the recreational infrastructure, uses and classifications of the study area from north to south.

Part C

- A comprehensive list of findings and recommendations.

Figure 1: Study area extent.

Coastal Recreation Literature Review

Purpose and Overview

The purpose of this review is to inform recommendations with respect to improving the recreational and social values of Central Coast Council's coast. This review starts with an analysis of the benefits of outdoor recreation in general and then recreation at the coast. This is followed by a discussion of how beaches are used based on four studies that had data from surveys of visitors to various beaches in Australia. The next section discusses three issues: the importance of users' experiences when participating in outdoor recreation; the importance of providing a range of opportunities for participating in outdoor recreation; and, the idea that participating in outdoor recreation enhances the sense of place an individual feels for the location where they pursue and outdoor recreation activity. The final section summarises the key findings of the discussion.

Benefits of outdoor recreation and the beach as a resource for outdoor recreation

Much has been written about the benefits of outdoor recreation. For example, the Society of Outdoor Recreation Professionals (undated) found that outdoor recreation offered the following benefits:

- Improves physical and mental health;
- Adds to family cohesion;
- Promotes civility;
- Increases social integration;
- Assists in child development;
- Can lead to economic stimulation;
- Increases work productivity;
- Grows resource stewardship within a community; and
- Promotes a positive conservation ethic.

The WA Outdoor Recreation Strategy identified five broad pillars of benefits of outdoor recreation (Department of Local Government Sport and Cultural Industries 2019):

- Personal development, challenge and enjoyment: resilience, fostering spirit and identity, changing lives of young people at risk, encouraging challenge and risk taking;
- Improved health and wellbeing: physical and mental health benefits, social cohesion and inclusion, avoided healthcare costs;
- Outdoor learning: outdoor literacy, outdoor education;
- Connection to nature: getting back to nature, volunteering, environmental stewardship; and
- Economic development: investment in tourism and recreational facilities, pathways to employment.

Some studies have highlighted the specific economic value of outdoor recreation: for example, in Queensland, outdoor recreation is estimated to be worth over $3.5 million a year and employs over 15,000 people (Tunny 2019).

The importance of the coast, including beaches and the nearshore marine area, as an outdoor recreation resource has been highlighted in a number of studies. As noted by Telses da Mota et al "Beaches are one of the most popular destinations for tourism and recreation globally." (2022, p106017).

Moreton Bay Regional Council's Outdoor Recreation Plan (Ross Planning 2019) noted that the beach and ocean was the most popular location for outdoor recreation with 27% of residents saying they recreated at the coast, 15% saying they recreated at local reserves, and 14% at National Parks.

Interestingly, of the total area of land available for outdoor recreation, only 5% were council foreshore and local reserves. This suggests that council reserves, including coastal foreshore reserves, are the most intensely used outdoor recreation resources.

A study of Queensland beaches in 2013 estimated that the total annual local recreational value of those beaches was $1.6 billion (Windle and Rolfe 2013). A study of four of the beaches in Australia used modelling to estimate the annual value of resident recreation and tourism expenditure at those beaches, which is summarised in Table 1 below (Raybould, Anning et al. 2013).

Table 1. Estimated annual value of resident recreation and tourism expenditure at selected beaches.

Case Study	Annual value (million $A) of resident recreation	Annual value (million $A) of tourist expenditure reacted to beaches
Augusta-Margaret River	3.72	24.58
Clarence Valley	31.60	32.13
Surf Coast	6.09	106.63
Sunshine Coast	65.59	270.17

Central Coast Council carried out a survey of residents titled "Our Coast, Our Waterways" community survey. The purpose of the study was to "understand the value our community places on waterways, their uses, opinions on the current state and management practices and their opinions on future management." (Brown-Mason, McCann et al. 2021, 4). A total of 1,168 people responded to the survey. Waterways included the beaches, lagoons, lakes and rivers.

Some of the key findings from that survey are:

- 96% of respondents said they used or visited Council's waterways;

- 73% said they carried out some form of recreation at a waterway; and

- 95% agreed (12%) or strongly agreed (83%) that waterways are a significant reason why they choose to live on the Central Coast.

In summary, outdoor recreation is an important pursuit for many Australians, and the coast is one of the most important natural resources used to facilitate outdoor recreation, and provides a range of social and economic benefits to individuals and the broader community. The next section examines in more detail how the coast is used for outdoor recreation.

How the coast is used – surveys of beach users

Relevant studies

This section analyses data collected from four studies that included beach users' surveys. This analysis will help in getting a more detailed understanding of how the coast is used for outdoor recreation. The first is the results of Council's "Our Coast, Our Waterways" community survey. (Brown-Mason, McCann et al. 2021)

The second is a 2013 study into the value of beach and surf tourism in Australia, which included a survey of users of beaches in six Local Government areas – Gold Coast, Sydney Central Coast Council, Sunshine Coast, Clarence Valley, Augusta-Margaret River and Surf Coast (Raybould, Anning et al. 2013). The third is a 2005 study of recreational use of Perth beaches carried out by the University of WA (Eliot, Tonts et al. 2005).

The fourth is data collected from 2010-2014 of beach usage in the south west of WA, with a particular focus on the Perth-Peel beaches (2010-14 beach usage study). Dr Garry Middle

coordinated an undergraduate course titled Environmental and Coastal Planning, and a key part of that course was a field trip to various beaches where the students carried out surveys of beach users and completed an assignment that analysed the data. Over those 5 years, 1,468 surveys were collected from 42 different beaches, most in the Perth Peel region.

It should be noted that the Central Coast Council survey was for all waterways, and the data of beach usage was not separated..

The sub-sections that follow provide data from those surveys relevant to this current study.

Visitation time of day

The Raybould et al and the Eliot et al studies had data on the time of day that users visited the beach. These data are shown in Figure 2 which has the summer data averaged across all beaches for each study (note where the totals are greater than 100% this is because some respondents reported multiple visits).

The data suggests that useage is fairly consistent throughout the day with mornings marginally preferred over the afternoons, and early mornings preferred to late afternoon/evenings.

Activities engaged in by users

The Central Coast Council Survey, Eliot et al and 2010-14 beach usage studies had data on the activities that users reported as their prime reason for visiting, which is shown in Figure 3. It is highly likely that these data underestimated the numbers for cycling (none recorded), running and less so walking, Experience from the 2010-14 beach usage study suggest that this is largely because these users were unwilling to stop to complete a survey, and for safety reasons, students were instructed to not try to survey active cyclists.

These data are averaged across all beaches and the numbers for surfing, walking the dog and fishing were highly variable depending on the beach: for example, some beaches were renown surf beaches with up to 40% of those surveyed saying
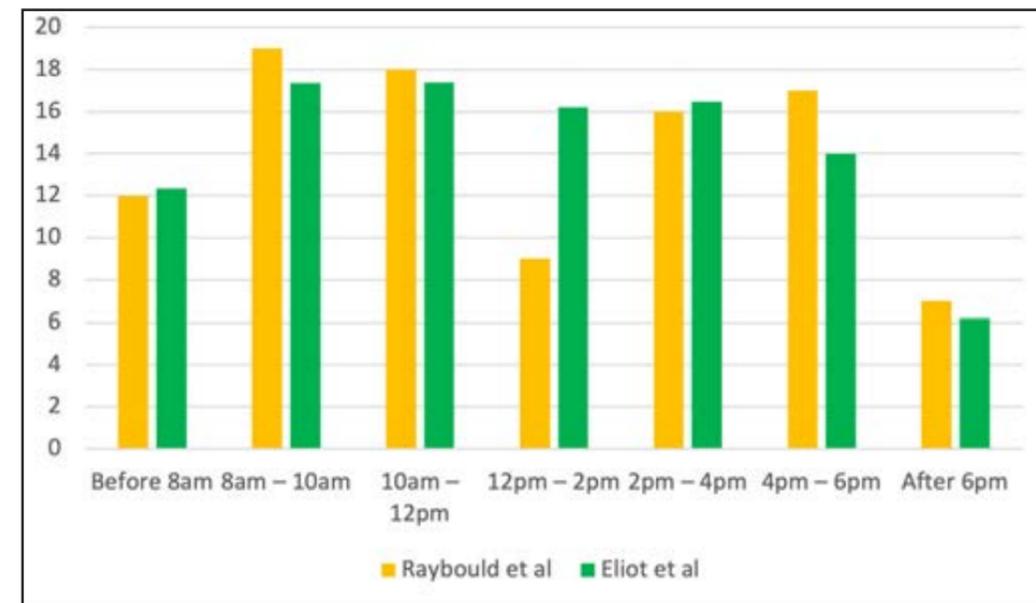

Figure 2: Visitation time of day as reported in the Raybold et al. and Eliot et al. studies.
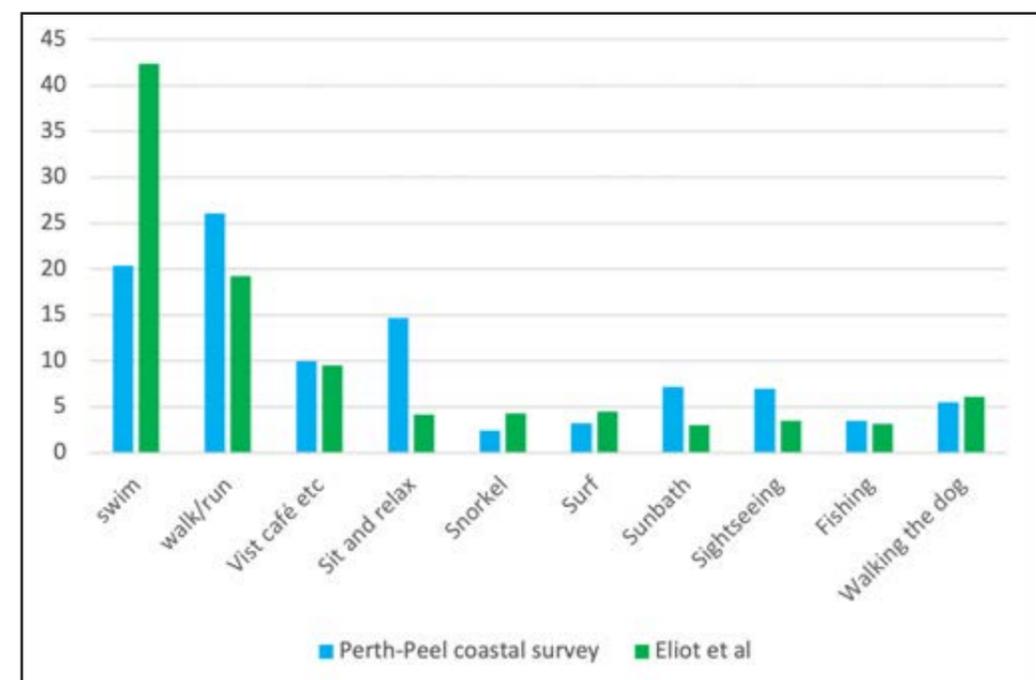

Figure 3: Activities engaged in by beach users.

they surfed, whereas this was 0% for most other beaches. As well, not all beaches allowed dogs.

The Central Coast Council survey has different sort of data on activities engaged in. Figure 4 has these data and shows the percent of respondents who carried out an activity at least once a year

A survey carried out by Australian Sports Commission in 2018 is a useful supplement to the above data, and it found the top 7 sport and recreation activities carried out by adult Queenslanders were:

- Recreational walking – 42%;

- Fitness/gym – 34%;

- Athletics including running and jogging – 15%;

- Swimming – 13%

- Cycling – 12%

- Bush walking – 7%;

- Yoga – 6%. (Tunny 2019)

This survey suggests that participation in swimming and cycling would be about the same in the above surveys, and if this was reflected in the other survey data somewhere between 10% and 20% of beach users would participate in cycling.

There are some interesting implications for the Central Coast beaches and coastal areas. Walking and running are already catered for to some extent, with the long stretches of beaches available for both these activities, and observations from the field trips indicate that the beaches are well used for walking and less so for running. It's worth noting that many of the foreshores of lakes in Central Coast have extensive dual use paths networks, which are largely absent in the beach foreshores, which explains in large part the high number of respondents who said they either walked, ran or cycled. The lack of sealed shared coastal paths through or adjacent to the coastal foreshore (see analysis on Page 28) restricts the use of the coast for cycling and running. As well, whilst

walking on the beach appears to be a popular activity in the Central Coast, walking along a hard coastal paths through or adjacent to the foreshore can offer a different experience and would likely attract more people to the coast who are looking for a different walking experience. This is explored in more detail below, and addressed in the recommendations section..

Mode of transport

Figure 5 shows the mode of transport used to get to the beach as reported in the Raybould et al and Eliot et al studies. As noted above, it is likely that the number of people arriving by bike is likely an underestimate.

By way of comparison, a study of beach users in Spain (Alves, Benavente et al. 2014) found the following were the modes of transport for visitors:

- Walking – 54.9%;

- Car/motorcycle – 34.9%;

- Public transport – 6.1%;

- Other (unspecified) – 4.1%.

It is highly likely that the data for Central Coast beaches will be very similar to that in Figure 4, with arrivals by car being the most popular mode. Facilitating cycling at the coast would certainly attract more users to the coast but could also reduce the number of people who arrive by car. Observations from the field trip suggest that several carparks have insufficient number of bays to manage the number of arrivals during peak periods, and this observation has been confirmed by officers from the Central Coast Council. This matter is addressed in the recommendations section.
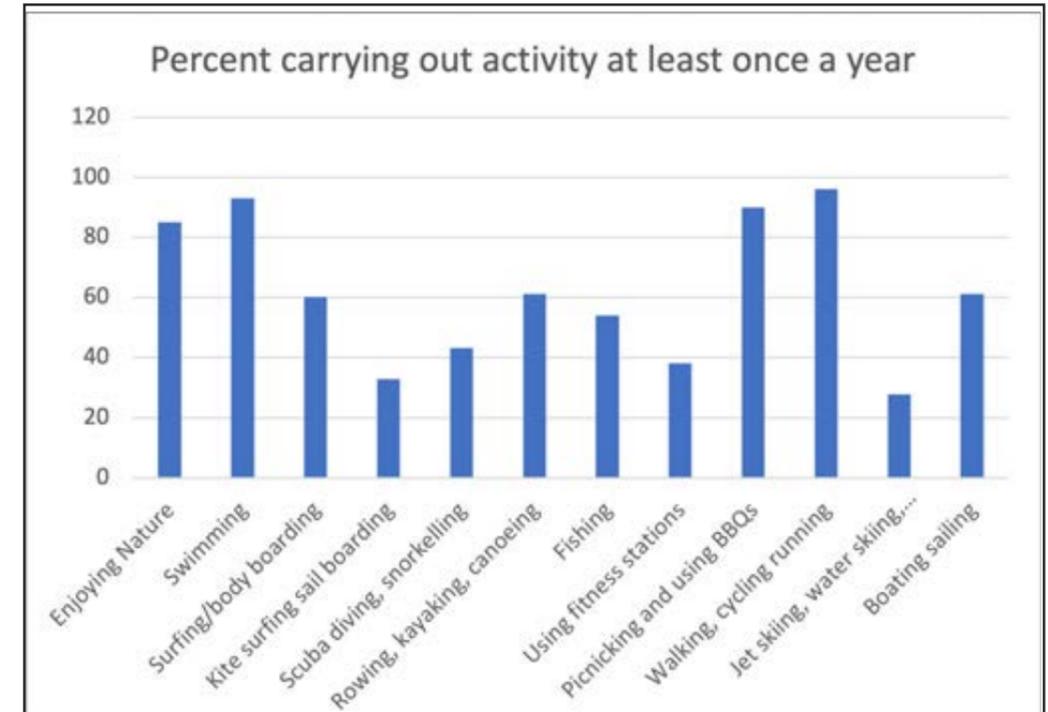

Figure 4: Percent of Central Coast Council survey respondents who carry out an activity at least once a year.
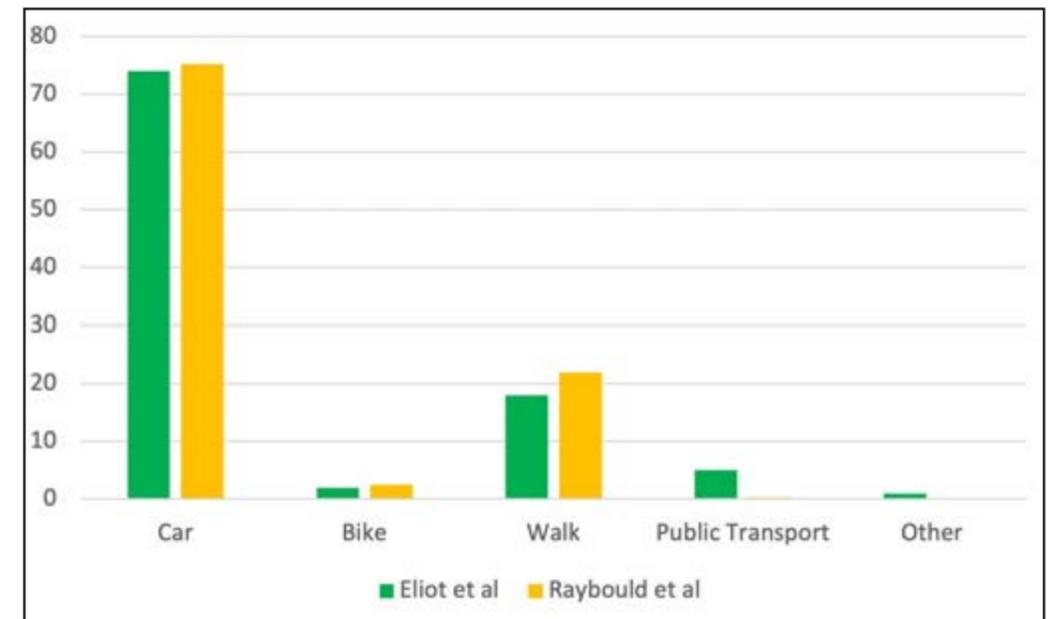

Figure 5: Mode of transport to access beach as reported in the Raybould et al and Eliot et al. studies.

Where respondents lived in relation to the beach being visited

The 2010-14 beach usage study collected data on where respondents lived in relation to the beach visited. Figure 6 compares the data for two beaches – Falcon which is a beach that has some facilities can be considered a local beach, whereas and Scarborough is a highly developed coastal node.

Not surprisingly, Scarborough has a higher percentage of users who are not locals, and is likely to be a typical profile for these types of nodes. Also, locals are less likely to use car to access the beach.

The Central Coast Council survey had data on this question but was aggregated for all waterway – see Figure 7.

Location of beach users

The Eliot et al study collected data on where respondents were when they completed the survey. The beaches in the survey were popular beaches with well-developed foreshores, and had three broad zones: beach, grassed/recreation area and commercial. These data are shown in Figure 8.

These data do not show whether visitors used more than one zone, but it does highlight the importance of the two non beach zones to users for these highly developed nodes.

Frequency of visits

The Central Coast study, the Eliot et al and the 2010-14 beach usage study collected data on the frequency of visiting each beach. These data are shown in Figure 9. As can be seen, the data categories used in the Central Coast study are different from the other two studies.
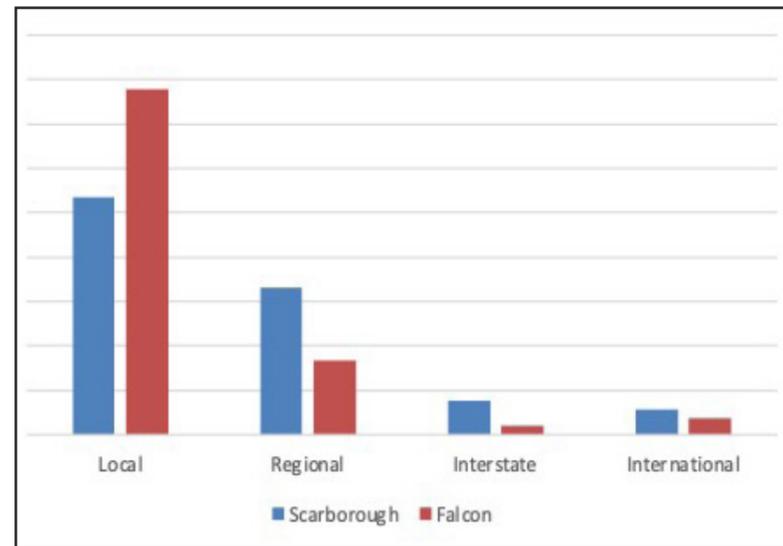

Figure 6: Where users live in relation to the beach.
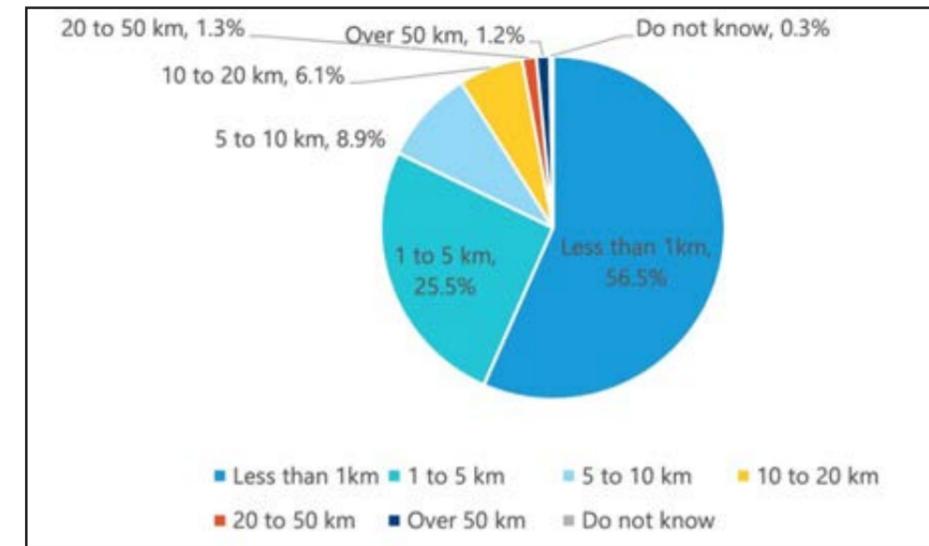
Figure 7: Where users live in relation to the beach.
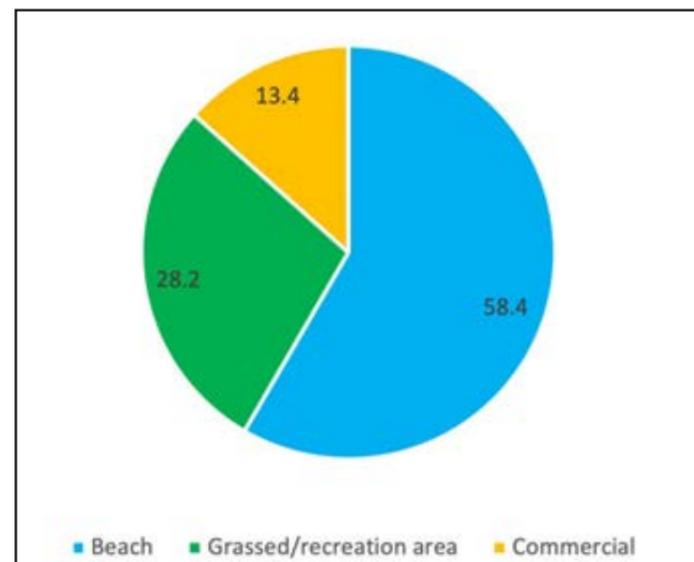
Figure 8: Location of survey respondents as reported in the Eliot et al. study
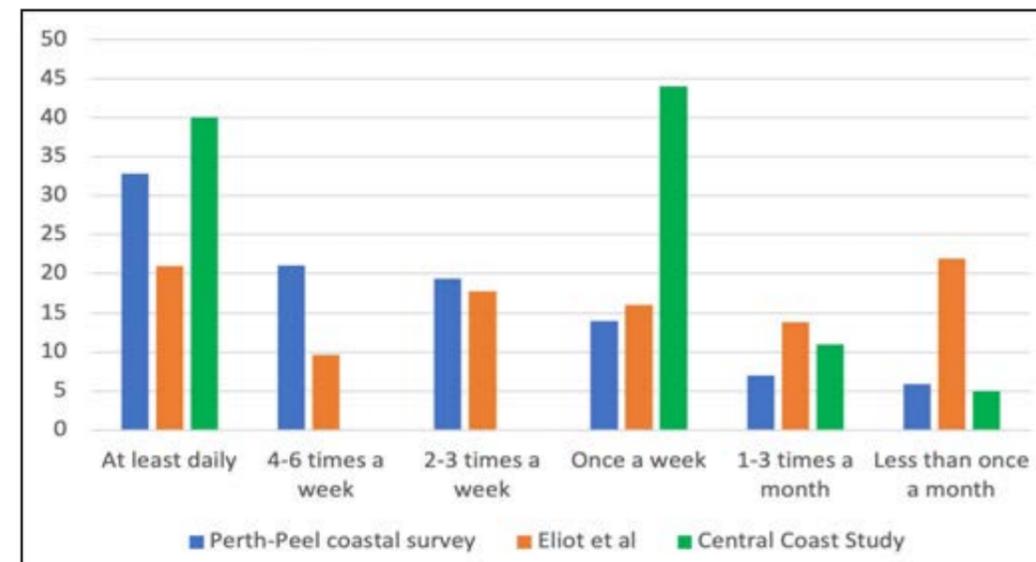
Figure 9: Frequency users visited a beach.

The differences are likely to be explained by the beaches included in each study. The Eliot et al study focused on popular beaches with well-developed facilities, whereas the 2010-14 beach usage study included many local beaches. In both cases it can be seen that most local users visit the beach at least 2-3 times a week – 73% for the 2010-14 beach usage study and 47% for the Eliot et al study. These regular visitors are most likely to be locals, showing how significant beaches are to the local community.

Significance of the built attributes of a beach to users

The Raybould et al study collected data on which built attributes of the beach were 'critically' important for residents and tourists (estimated average %) in deciding on which beach to visit, or were critically important in the beach they visited. These data is shown in Table 2 below.

Table 2. Importance of built attributes to users.

Attribute	% Residents	% Tourists
Nearby shopping	4	3
Nearby cafes	5	9
Easy to park	12	12
Beach close to carpark	13	10
Lifesaving patrol	16	15
Footpaths/shared paths	13	10
Amenities	13	13

Four of the top five attributes are common to the more popular beaches in Central Coast, but absence of dual use paths at most beaches is a potential barrier to the greater use of the Central Coast beaches.

Conclusion from the survey data

The data above provide some useful insights into how beach visitors use the coast, and the discussion pointed out some issues for the Central Coast Council's beaches and coastline which will be address in the recommendations. To assist in formulating our recommendations, the discussion that follows examines the research into outdoor recreation.

Economic Value of the Coast

A number of studies have reported the economic benefits of the coastal zone. A 2011 study of coastal England and Wales estimated that 210,000 jobs were directly supported by seaside tourism in, and the value of the economic associated with this employment was £3.6 billion in 2009 (Roger Tym & Partners 2011, 84). A 2014 study value of the Great Barrier Reef found that annual economic benefit of the reef was $1,115 million of which tourism was $613 million and recreation $244 million (Thomas and Brodie 2014).

A 2013 study of Victorian coasts found that tourism was worth $3,154 million per year, supported 23,010 direct and 16,770 indirect jobs (WorleyParsons and EcoNomics 2013).

Tourism is an important part of the Central Coast's economy. Council's Economic Development Plan (Central Coast Council 2020, 14) estimated that visitors spent over $1 billion in 2019, with nearly 70% of visits being to the coast (Central Coast Council 2021). Council's Destination Management Plan noted (Central Coast Council 2021) that

"Waterways are a primary strength of the Central Coast visitor economy, including beaches, rivers, lakes, bays and estuaries These natural assets define the visitor experience, particularly along the coastline (P40)"

Figure 10: Dining and tourist accommodation adjacent to Patonga Wharf.

Outdoor recreation users' experiences and opportunities

The importance of place attachment

Research into outdoor recreation suggests that an important aim in providing outdoor recreation should be to enhance the users' experiences. A positive experience will encourage people to continue that activity at a specific location, and will add to a user's attachment to that place.

Kyle et al (2003) carried out a study of hikers using the Appalachian Trail. They noted previous research had suggested that the activity carried out in a particular place (for example walking) was an antecedent or precursor to attachment to that place, and their study explored this relationship more deeply. They found that there were two key factors in increasing users 'emotional bond' and identifying with that place: the 'pleasure' derived from the walking experience and the 'self expression'. Self expression was defined as "self representation, or the impression of oneself that individuals wish to convey to other through their leisure participation." (p253).

The idea of increasing attachment or emotional bond to a place has significant value in natural resource management and the management of the coast. A study by Mohapatra and Mohamed (2013) looking at the links between place attachment and participation in management of neighbourhood green spaces made three key conclusions. First, parks visited more frequently by locals for recreational activities showed high levels of place attachment ratings. Second, higher levels of attachment led to increased interest in participating in the management of the park. Third, social bonding with a park exerts a positive effect on attitudes towards park management.

Grocke et al (2022), in a study of the influence of place attachment and place management in towns in the Barossa region in South Australia noted that previous research suggested that place attachment "helps to explain why community leaders are willing to invest time and energy into the leadership, management and development of rural towns to make them better" (p301), that is, the stronger the attachment the more likely it is that people will volunteer to be part of the management of that place. A key finding of the research related to the potential benefits of greater place attachment:

The results of this study demonstrate how place attachment processes can be a strong mechanism for community-led action and how participation in place management and development itself engages the processes of place attachment, strengthening resident identity, belonging and purpose. (p309)

There is some caution for planners and managers in this research, which is related to the two types of place attachment – 'being of place' which seeks to reinforce the place as it is currently known, and 'becoming of place' is attachment that seeks to drive change. The former type can express itself as opposition to a change in management of an area, whereas the latter can be harnessed to improve management. These two types of attachment inevitably lead to tensions as one case study explored in this study showed:

"The Being and Becoming of Place in Mt Pleasant at the time of data collection showed close tension. Some community leaders and residents were lobbying for greater co-management of community facilities with the local government to improve service quality. Others preferred to maintain the status quo to avoid a loss of control by incumbent user groups who through historical relationships had priority access to community facilities." (p307).

Wynveen et al (2020), in a study of the relationship between place attachment and level of development, found that, in general, place attachment was stronger for the less developed more natural sites.

There are a couple of implications here for the Central Coast Council and how it plans and manages its coast. First, increasing users' attachment to the coast will increase community involvement in the better management of the coast which can complement the efforts of formal management. Second, this will be particularly helpful for those sites that are more remote, less developed and less visited – i.e. place attachment could be stronger in these settings. Third, changing the sense of place through increasing facilities and infrastructure will create tensions between those whose sense of place favours no change and those who want to see change. In these cases, introducing change will require careful and considered consultation. This is most likely to be the case for those coastal areas where houses directly abut the beach and foreshore where those land owners will likely have a sense of place that favours no change.

The Central Coast survey had some data relevant here. One of the questions was to rate the following "Waterways contribute to my personal health and wellbeing (e.g. fitness, relaxation, happiness, lifestyle, sense of place, cultural heritage".91% of respondents said they strongly agreed with this.

So, if increasing place attachment will add value to the coast and lead to better community involvement in management, ways to increase that attachment need to be identified.

Increasing a sense of place attachment through outdoor recreation experiences

A key finding from the previous section was that the more frequently that users visited a site, the stronger the sense of place attachment is likely to be. This can be directly related to the users experience at a site and the range of opportunities available – i.e. the better the experience the more likely that users will return, and the more recreational opportunities offered at a site, the more likely it is that more people will use that site.

A paper by Kyle et al (2012) found that satisfaction with an experience in hiking can be explained by two factors: the nature of the activity and the setting within which the activity is carried out.

The Tourism Recreation Conservation organisation has produced guidelines for the planning, design and management of recreational trails (Tourism Recreation Conservation 2020) and noted that "user experience is essential and central to all aspects of trail design and management" (p2) and that trails planning needs "to determine the needs of multiple user groups to appeal to multiple demographics" (p7).

They note that a sustainable trail is:

- Ecologically sustainable and is economically viable in terms of resources for management and maintenance;

- Highly valued by the local community;

- Is designed and planned with strong involvement of the local community; and

- Allows for different levels of ability and different levels of challenge.

There are three key implications for outdoor recreation planning with respect to user experience:

- The infrastructure provided should enhance the user's experience by being a good quality – for example, tracks/paths, seating etc should be maintained and bar b ques cleaned regularly;

- If the activity itself is important in deriving pleasure from the experience then outdoor recreation planners need to provide for a diversity of recreation opportunities; and

- Strong community involvement in planning for outdoor recreation is essential to ensure the range of users' experiences are catered for and that those experiences are good quality.

This second point is particularly significant for recreation planners. As noted by the Society of Outdoor Recreation Professionals:

Because there is no "average" recreationist, it is important to plan for and maintain a spectrum of diverse recreation opportunities. (undated, 2)

This idea of 'recreation opportunities' has two dimensions: providing for a range of different activities; and, providing for a diversity of experiences for the same activity, for example walking along popular paths within an urban context, walking in a wilderness setting, and experiences in between these two extremes.

Kil et al (2012) discussed the importance of 'outcome-focused management' in outdoor recreation management which involves:

"Identifying what is needed to provide the opportunities for people to attain their desired benefits from public recreation resources, as well as understanding people's relationship to a particular area (i.e., place meanings) (p1110)"

Such an approach is needed so that public spaces are planned and managed to optimize the personal, social, economic and environmental benefits to users. Outcome-focused management recognises three levels of demand for opportunities: level one opportunities are those that are provided by resource managers that meet specific requirements; level 2 are those recreational activities and settings aimed at meeting visitors' expected experiences and benefits; and level 3 are values that extend beyond the experience of a visit to a site, for example pleasant memories of the visit.

Planning should also recognise "place meaning" which includes tangible and intangible values for example the beauty of scenery and the sense of attachment. Place meaning can be aesthetic, cultural, individual expressions and instrumental (for example economic).

Kil et al (2012) also carried out a study of users of a scenic trail examining the experiential differences between two types of users: locals and non-locals. The key differences in those experiences were found to be:

- The mental and physical health/wellness benefits were more important to locals than non-locals;

- Nature learning/ exploration benefits were more important to non-locals than locals;

- Levels of meanings related to place dependence, family identity, community identity, and place identity were more important for locals than non-locals; and

- Non-locals preferred to have fewer encounters with other visitors and for hiking on natural trails/in ecologically intact areas compared to locals.

A key idea from the above discussion is the importance of providing a range of recreational experiences and opportunities, and this idea is encapsulated in the notion of a Recreation Opportunity Spectrum, discuss next.

Recreation Opportunity Spectrum

The Kil et al study (2012) referred to above noted that the idea of recreation opportunity spectrum (ROS) is used in planning for recreational activities and settings aimed at meeting visitors' expected experiences and benefits. ROS is a useful planning tool as is allows for "a diversity of recreation opportunities based upon a combination of biophysical, social, and managerial attributes." (Wynveen, Schneider et al. 2020, p250). It was originally proposed in 1979 (Clark and Stankey 1979) and has been refined since then.

ROS can be used to classify areas based of biophysical, social and managerial characteristics and settings. Biophysical characteristics include remoteness, size and evidence of human impact or modification, whereas social characteristics include user density and frequency of encounters with other people. Managerial settings refer to noticeability of management (signs and infrastructure) and regimentation – i.e. setting aside areas for specific purposes. In its most basic form the spectrum ranges from primitive or wild, to rural, to semi urban to full blown urban.

ROS planning would facilitate a diversity of recreation opportunities, appealing to a wide range of people and thus maximising community involvement in outdoor recreation.

The WA Outdoor Recreation Strategy proposed a modified ROS spectrum made up of three core levels (Department of Local Government Sport and Cultural Industries 2019):

Outdoor aware:

• Virtual or visual – on-screen viewing or participation,

• Incidental – casual visits to green spaces near home,

• Outdoor play - play and exploration of outdoor places;

Outdoor active:

• Managed outdoor recreation – participation in low- risk outdoor activities in managed environments and spaces,

• Adventure recreation - participation in more challenging activities and extended visits to natural environments and spaces,

• Outdoor immersion – more popular multi-day activity in natural environments and spaces where adequate infrastructure is provided;

Outdoor adventure:

• Wilderness experience - self-sufficient, multi-day experience in remote locations,

• Extreme adventure - life-affirming, life-changing challenge in extreme conditions.

This spectrum shows a generally increasing trend of the following:

• commitment and time to being outdoors,

• risk, and

• participation.

The strategy also recognises three levels of settings providing different experiences and levels of participation as set out in Table 3.

Disabled people are a special group of users to consider within an ROS spectrum. Paraquad Tasmania carried out a survey of people with disability and asked them how they felt about accessing Tasmanian beaches (Paraquad Tasmania undated). They found that

• 80% of respondents reported a lack of ramps as a barrier in attempting to access a beach;

• 80% said they had difficulty getting across the sand;

• 56% said they found a lack of suitable change and toilet facilities; and

• 56% said a barrier was accessible car parking.

They also asked if the use of beach matting would encourage them to access a beach, and 95% of respondents said it would. They also asked respondents what activities would they partake in if beaches were accessible. The results were:

• 72% would enjoy sitting on the beach;

• 64% would spend time with family and friends; and

• 60% would enjoy swimming.

Figure 11: Beach matting at Toowoon Bay Beach.

Table 3. WA Outdoor Recreation Strategy's three levels of settings

Setting	Description	Experience sought	Level of participation
Urban parks, reserves and outdoor spaces	Generally, easily accessible and highly developed	Security, safety, comfort and social interaction	High
National and regional parks and reserves, and campsites	Moderately accessible with limited development but adequate infrastructure	Managed risk, some comfort, some interaction with others	Moderate
Wilderness location	Remote access with little or no development	Solitude, risk taking, self-reliance	Low

Summary and key messages as a basis for report recommendations

The key conclusions that can be drawn for the above discussion relevant to planning to increase the recreational and social values of Central Coast Council's coast are as follows:

- **Social and economic benefits** - outdoor recreation offers a range of important social and economic benefits;

- **The importance of the coast for outdoor recreation** - the Coastal Zone and Council Reserves are the most important resource for people to pursue outdoor recreation;

- **When users visit the beach** - usage of the beach and coastal zone is fairly consistent throughout the day with mornings marginally preferred over the afternoons, and early mornings preferred to late afternoon/evenings;

Activities engaged in at the beach:

- the three most reported uses of the beach are for walking, swimming and sitting and relaxing,

- highly active pursuits (running and cycling) are underreported with participation in cycling likely to be similar to swimming,

- the lack of hard coastal paths through or adjacent to the foreshore in the Central Coast Council area limits the use of the coast for cycling and running and represents a future opportunity to add recreational value to the coast,

- participation in activities that require special features or controls – surfing, fishing and walking the dog – will be higher in those specific beaches

Mode of transport to get to the beach:

- arrivals by car is by far the most popular mode,

- facilitating cycling at the coast would attract more users to the coast and could reduce the number of people who arrive by car,

- during the field trip it was observed that several carparks have insufficient number of bays to manage the number of arrivals during peak periods

Where beach users come from – Popular beaches with significant infrastructure including commercial, have a higher proportion of visitors from outside the local area compare to the typically local beaches with minimal infrastructure;

Visitation patterns at popular beaches with significant infrastructure – the commercial and grassed areas associated with these beaches are well used with up to 40% of visitors using these areas at any one time;

Frequency of visiting beaches – between 50-70% of local users visit the beach at least 2-3 times a week;

Importance of built infrastructure – the built infrastructure that users find to be the most important are

- beach close to carpark,

- lifesaving patrol,

- footpaths/dual use paths,

- amenities (toilet, showers, BBQs etc)

As noted previously, the lack of hard coastal paths in the Central Coast Council area represents a future opportunity to add recreational value to the coast

Importance of users experiences - An important aim in providing outdoor recreation should be to enhance the users' experiences. A positive experience will encourage people to continue that activity at a specific location, and will add to a user's attachment to that place;

Place attachment

- increasing place attachment will add value to the coast, lead to better community involvement in management, and increase participation in outdoor recreation,

- increasing place attachment will be particularly helpful for those sites that are more remote, less developed and less visited,

- changing the sense of place through increasing facilities and infrastructure will create tensions between those whose sense of place favours no change and those who want to see

change. In these cases, introducing change will require careful and considered consultation. This is most likely to be the case for those coastal areas where houses directly abut the beach and foreshore;

Enhancing users' experiences

- the infrastructure provided should enhance the user's experience by being a good quality,

- the activity itself is important in deriving pleasure from the experience therefore outdoor recreation planners need to provide for a diversity of recreation opportunities, and

- strong community involvement in planning for outdoor recreation is essential to ensure the range of users' experiences are catered for and that those experiences are good quality;

Recreation Opportunity Spectrum (ROS)

- ROS is a useful way to conceptualise the planning and management of outdoor recreation,

- it involves providing a diversity of recreation opportunities based upon a combination of biophysical, social, and managerial attributes appealing to a wide range of people and therefore maximising community involvement in outdoor recreation;

Disabled access to the beach – key barriers to disabled people having greater access to the beach are:

- lack of ramps or mats making difficult getting across the sand,

- lack of suitable change and toilet facilities,

- lack of accessible car parking.

The coast is a highly value asset by the Central Coast community and is a significant contributor to the economy, including from tourism and as an important recreational resource. Council wants to double visitor stay nights by 2040, and it is expected that the population will grow by 8,500 in the same time. Consequently, the pressure on, and the use of, the coast will only increase over time, and Council will need to plan accordingly to ensure the necessary infrastructure is in place so that the coast is used in a sustainable manner to meets the diverse need to the community and visitors.

Methodology

This study sought to map the coast based on indicators of recreational use. To a large extent, the occurrence of specific uses is closely related to the physical form of the coast, including the provision of specific sets of infrastructure. The main method adopted in the study was thus the development and application of an audit of the coastline that identified and mapped recreational infrastructure and, where possible, specific recreational uses. The audit instrument was adapted from a previous study (Middle et al. 2018). The audit findings were then interpreted to gain a broader picture and understanding of the recreational use of the coast.

An action research approach was adopted comprising five key stages that can be understood to be largely sequential, with some overlap due to the iterative and responsive nature of the research approach. They include:

1. Desktop Study;
2. Site Visits;
3. Desktop Mapping;
4. Consultation and Verification;
5. Analysis and Classification.

Such a multi-stage approach was required to address a limitation that emerged from the timing of the commission of the study, which resulted in the majority of the site visits being undertaken during non-peak periods of use between May and September 2022. While this did not affect the accuracy of identifying recreational infrastructure, which is almost entirely fixed, it did impact the extent of observations of activity along the entire coast. Nonetheless, it is suggested that these five stages represent a template for any similar future research on recreational use of coastal areas or other natural assets.

1. Desktop Study

This study commenced with a desktop review of existing coastal usage and management information. This was complemented by initial consultation with relevant coastal planning and management stakeholders and other opportunistic engagements. This process informed the background and scope of the report, and also assisted in the modification of the coastal recreational use audit tool.

2. Site Visits

The second stage of the study comprised comprehensive site visits from north to south along the study area. Data collected from these visits consisted mainly of photographs of every individual recreational infrastructure included in the initial audit tool. Opportunistic observations of recreational activity, along with signage that indicated specific designated uses at specific locations, assisted in identifying recreational uses itemised in the audit tool.

3. Desktop Mapping

As a result of the site visits, a wealth of photographic and observational data was collected for the study area, and the audit tool fine-tuned. The data gained through this combined approach then enabled a process of comprehensive desktop mapping of the recreational infrastructure and uses of the Central Coast coastline. This mapping was undertaken in spatial geocoded format using the software ArcGIS, with the data also converted into files able to be viewed within Google Earth software. Hard copy representations of these maps were then compiled using Adobe Illustrator.

4. Consultation and Verification

Feedback from study stakeholders was then used to further refine the maps and audit tool, This consultation process, which comprised several iterative stages, allowed for the completion of both the final Coastal Recreational Use Audit Tool (see pages 33 and 34 for full detail) and the mapping of all recreational infrastructure and uses (see Part B).

5. Analysis and Classification

The preceding four steps resulted in a comprehensive picture of the distribution of recreational infrastructure and use along the study area. An initial analysis of this distribution was undertaken, the results of which are presented in Pages 21 to 31 of this report. When viewed holistically, distinct patterns in distribution became apparent allowing the entire study area to be classified into a series of discrete nodes and connectors. Full details of the resultant Coastal Recreational Use Classification Framework are presented in Pages 35 to 45, with the application of the framework also shown in more detail in the maps that comprise Part B of this report.

Coastal Recreational Use Audit Tool

Table 4 shows the full list of recreational infrastructure and uses mapped in the study. The instrument is largely the same as that used in the Perth Recreational Use study (Middle et al. 2018), however with some key changes: for example, the addition of ocean pools.

All coastal paths were identified and mapped, including both shared-use and walking paths. Individual beach access paths were also mapped and are available in GIS format, however it was not practical to show these paths in the final maps produced for this report.

Black icons are used to indicate key recreational infrastructure, arranged in a number of sub-categories. These categories of infrastructure can be used as general proxies for the presence of different recreational uses.

Blue icons are used to identify specific locations where specialist recreational uses are known to occur. These icons are not used to identify more general uses (specifically water-base use such as swimming, as well as other beach and park-based uses), which are assumed to occur along the majority of the study area.

Discrete areas of the coast that had been explicitly designated for (or sometimes to prohibit) certain recreational uses are identified through hatchings of various designs and colours.

Once finalised, the Coastal Recreational Use Audit Tool was applied to audit the entire coast within the study area.

Table 4. Mapped infrastructure and uses

Paths			
Paths	Shared use path	Walking path	Beach access path
Infrastructure			
Beachside/park access and facilities	Covered picnic tables • Showers • Bike racks • Universal beach access • BBQs • Public toilets • Car parking		
Active recreation facilities	Skate park • Playground • Fitness equipment • Basketball court/ring • Swimming pool • Beach volleyball		
Boating facilities	Jetty • Boat ramp • Boat moorings • Water sports club		
Community and commercial facilities	Cafe/kiosk • Shopping area • Community centre		
Attractions	Lookout • Cultural heritage site • Public artwork		
Safety/rescue organisations	Surf Life Saving (SLS) club • SLS observation tower • Sea rescue		
Use Locations			
Use locations	Surfing • Diving • Fishing • Kite/wind surfing • Snorkeling • Kayaking/canoeing/ stand up paddle boarding		
Designated Use Areas			
Designated beaches	Dog Beach • SLS patrolled beach		

Audit Application

In this section, some of the key findings of the application of the Coastal Recreational Use Audit Tool are presented and discussed. The full application of this audit tool is displayed in the maps in Part B of this report.

The majority of the audit mapping process was straightforward, and involved mapping fixed and easily visible recreational infrastructure based on site visits and photography along the study area. The most common types of infrastructure were those associated with general and specialist water-based and beach use: car parks, showers, public toilets and changing facilities. Such infrastructure was typically centred on one or more beach access, which together constituted a recreational destination or 'node'. Some but not all of these nodes also contained an adjacent grassed area with infrastructure for park-based passive and active recreation: picnic facilities and BBQs, playgrounds and other various active recreational features. Commercial premises were also common, both within these park areas and adjacent developed areas.

Beach access paths were also common and significant pieces of coastal infrastructure, providing relatively consistent access through the conservation area to the beach and ocean from adjacent residential and recreational areas. Occasionally, linking these beach access paths were shared-use paths, which form 'connectors' between recreational destinations while also providing for a range of important recreational uses.

To provide a detailed and accurate baseline understanding of the recreational use of the coast, it was necessary to identify and map every individual occurrence of each piece of infrastructure, along with the location of specific recreational uses and designated areas. The full application of the audit is found in Part B of this report, which identifies these occurrences in a series of 18 maps along the coast (see example in Figure 12). The combined patterns of these infrastructure and associated uses across the study area are the basis for the Coastal Recreational Use Classification Framework outlined from Page 32 onwards in Part A of this report.

In addition to this detailed mapping, insights could also be gained from identifying and discussing the distribution of individual groupings of infrastructure and uses along the entire coast in a single map. The most common and significant of these infrastructures, uses and designated areas are discussed in more detail in the following pages - and include:

- General water-based/SLS use;
- Universal beach access;
- Specialist water-based use (e.g. fishing and surfing);
- Ocean pools.
- Boating
- Jetties and ferry terminals.
- Shared and walking paths.
- Dog exercise areas; and
- Holiday parks and campgrounds..

Figure 12: Example application of Coastal Recreational Use Audit Tool to a section of the Central Coast coastline (Lakes Beach - see Part B: Map 2B).

General Water-based/SLS Use

General water-based use can be assumed to occur along the study area wherever beach access paths have been provided. However, some features are closely correlated to higher levels of use, most notably the presence of surf life saving (SLS) clubs. SLS clubs serve a range of community functions: ensuring the safety of beach users through patrols by vehicles, boats and also drones (Figure 13). targeted swimming programs such as for children, mothers and people with disabilities, and also state and national competitions.

Fifteen SLS clubs were identified, spreading from Lakes Beach in the NE to Umina Beach in the SW (Figure 15). This is the same number identified along the Perth coastline, despite the Perth study area being roughly 50% greater than the Central Coast. The size of the clubs varied: larger premises at Shelly Beach and Avoca Beach contain multiple cafes and restaurants, while smaller buildings at North Entrance and North Avoca are found within small nodes with limited adjacent parking. The majority (11) of the SLS Cubs have fixed observation towers located directly adjacent (Figure 14).

The approximate extent of patrolled beach areas was also mapped in Part B. These areas should be seen as indicative only, and are subject to change and seasonal variation. Up to date information is available at www.beachsafe.org.au.

Figure 15: Distribution of SLS Clubs along the Central Coast.

Figure 16: Local beaches like Hargraves Beach are typically not patrolled and thus can be assumed to have lower water-based use.

Figure 13: SLS Patrols at The Entrance Beach.

Figure 14: SLS observation tower at Avoca Dog Beach: the only tower on the central coast not directly adjacent to a SLS Club.

Universal Beach Access

Providing universal access to the beach is an increasing priority for coastal recreation planners and stakeholders. As such, infrastructure that facilitates such access is a crucial dimension of understanding general water-based use.

The most fundamental aspect of universal access is physical wheelchair access to the beach, typically through the provision of dedicated ramps with minor gradients (Figure 18), combined with clearly marked and reserved parking spaces. Some locations also provide special matting that allows wheelchairs to be maneuvered directly into the water (Figure 17). Some beaches also have universal changing facilities adjacent to the beach. These facilities are often complemented by opportunities to hire special beach and water wheelchairs (e.g. 'beach trekkers', see Figure 20). In addition to physical infrastructure, initiatives such as inclusion programs run by SLS clubs are also important in ensuring universal access to the beach and ocean.

Universally accessible locations mapped in this study were those with a combination of physical beach access, beach wheelchair hire and dedicated parking spaces. As shown in Figure 19, such locations were identified at 13 of the 15 SLS clubs in the study area: only North Entrance and North Avoca beaches were found lacking.

Figure 19: Distribution of Universal Beach Access along the Central Coast.

Figure 20: A beach trekker available for hire at Ocean Beach.
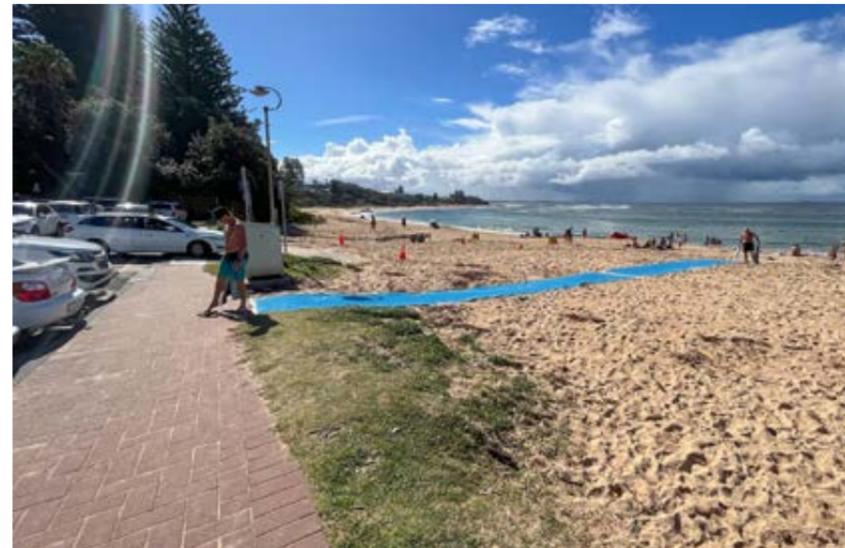

Figure 17: Beach wheelchair mat at Toowoon Bay Beach.

Figure 18: Dedicated beach wheelchair access ramp at Lakes Beach.

Fishing

Specialist water-based uses proved somewhat difficult to map, as many uses can and do occur along virtually the entire extent of the study area. Recreational fishing is the most notable example, given it can be attempted at any publicly accessible beach or shoreline. Nonetheless, specific fishing spots were identified through a combination of observations and the presence of formal signage and supporting infrastructure.

As shown in Figure 23, a total of 17 fishing spots were identified and mapped. Locations were centered around headlands (e.g. Wybung Head, Norah Head, Terrigal Point) and other rockshelves (Soldiers Beach, Avoca Beach, Copacabana Beach, Macmasters Beach), sheltered bays (Bateau Bay, Little Beach), inlets (The Entrance Channel, Cockrone Lagoon (Figure 24), Patonga Creek), and jetties (Hardys Bay Jetty, Wagstaffe Wharf).

A dedicated fishing platform is found to the south of Ettalong Beach (Figure 22). In other locations such as Cabbage Tree Bay, fish cleaning stations with size guides are also provided (Figure 21). Such facilities are not common within the study area however, and Council should consider better matching the provision of supporting infrastructure such as cleaning stations and platforms with the natural formations that best facilitate recreational fishing..

Figure 23: Distribution of fishing spots along the Central Coast.

Figure 24: Locals fishing in Cockrone Lagoon along Del Monte Place.

Figure 21: Fishing station at Cabbage Tree Bay adjacent to the boat ramp.

Figure 22: Fishing platform at Ettalong Beach.

Surfing

Similar to recreational fishing, surfing is a difficult coastal use to pinpoint to specific locations. Nonetheless, popular spots are documented online on various surfing pages, along with the Beachsafe SLS page. As shown in Figure 27, this allowed for 20 individual surfing spots to be identified and mapped: ranging from Frazer Beach in the NE to Umina Beach in the SW.

In contrast to fishing, surfing spots were primarily identified along exposed stretches of beach, including adjacent to the majority of SLS Clubs (at many of the larger beaches, SLS clubs offer surfing lessons and are home to community surfing clubs). Notable exceptions were often notorious, expert-only point breaks at Crackneck Point, Terrigal Point, Box Head and Umina Point.

Planning for recreational surfing is not straightforward: the attraction of many surfing spots is their 'local' nature, in that the lack of infrastructure and formal designation keep visitation lower. Many locals would thus be resistant to attempts to designate and formalise these locations. As a result, while additional infrastructure at some locations may be beneficial, in other locations it would be better to focus on managing existing use to minimise risk and negative impacts on the foreshore reserve.
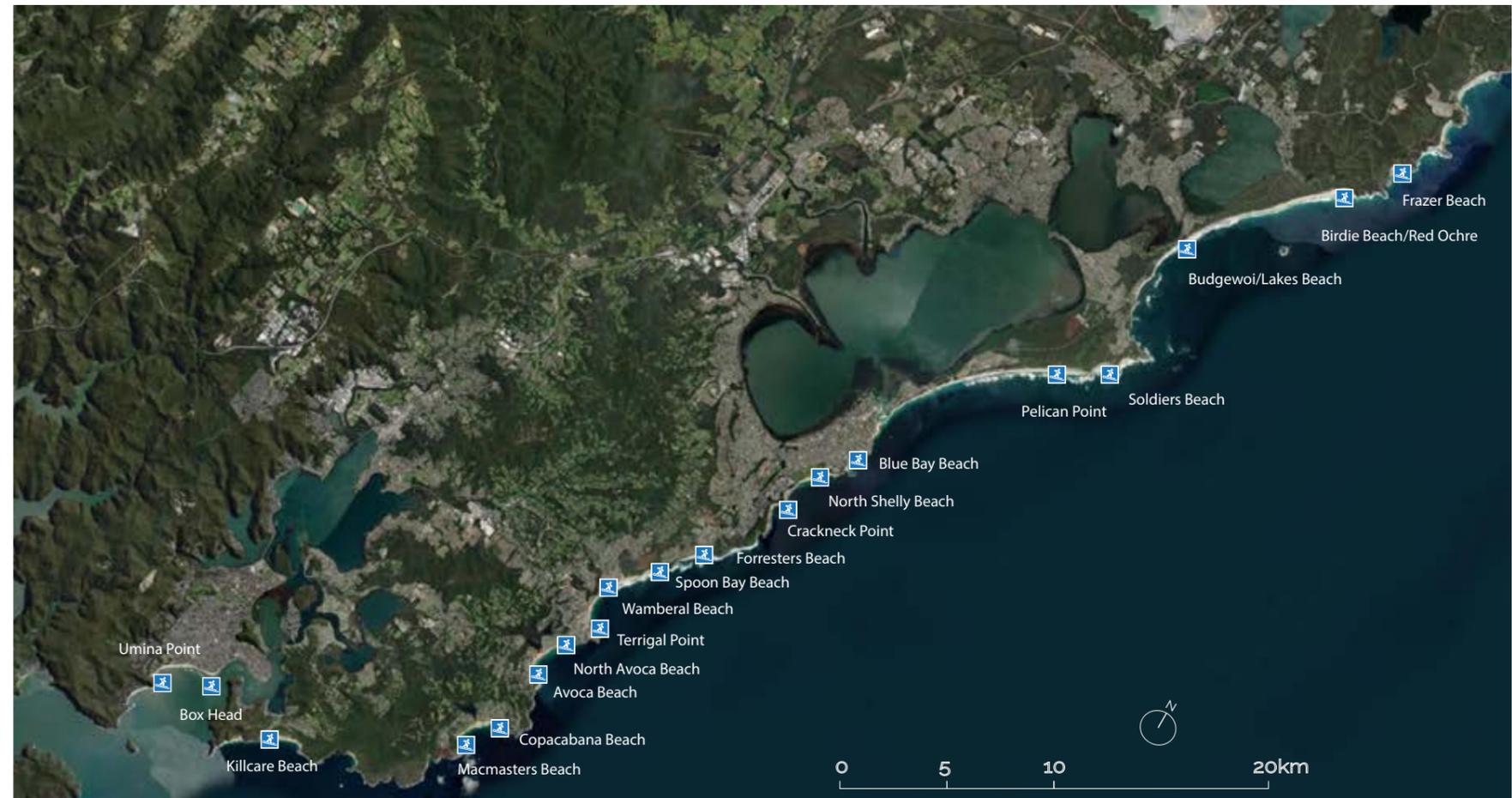
Figure 27: Distribution of surfing spots along the Central Coast.

Figure 28: Surfers gathering south of Wamberal Beach SLS at Surfers Road.

Figure 25: Surfing at North Shelly Dog Beach.

Figure 26: Surfer at Ocean Beach, looking out to Box Head.

Ocean Pools

Ocean pools are one of the most iconic features of the Central Coast coastline. They provide safe, supervised environments for children and individuals with minimal swimming skills, and - in more formal examples - opportunities for lap swimming. Figure 31 shows a total of nine ocean pools along the Central Coast, ranging from constructed cement swimming pools to semi-natural rockpools to swimming nets.

The most well-known ocean pool on the Central Coast is the Grant McBride Ocean Baths (Figure 32) south of The Entrance Surf Club, which provide several formal swimming pools, a viewing platform and dedicated changing facilities. Smaller scale constructed pools, which have been reinforced with concrete and often contain formal stairs and guardrails, were identified at MacMasters Beach and Pearl Beach (Figure 30).

On the other end of the spectrum are "natural" pools, where the formation of the rockshelf combined with minor reinforcement allows for sheltered swimming. These were identified at Cabbage Tree Bay, Terrigal Beach, Avoca Beach (Figure 29), Copacabana Beach and Killcare Beach.

A final example was the swimming net found at Pretty Beach, although both the pool and the adjacent changing facilities were of low quality when visited.

Figure 31: Distribution of Ocean Pools along the Central Coast.
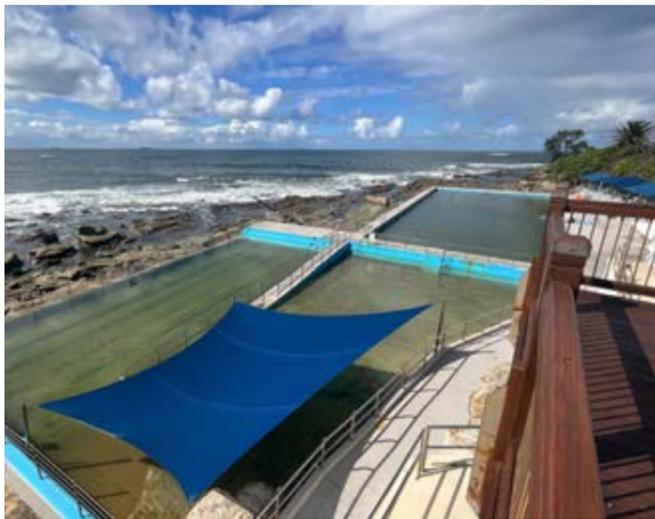
Figure 32: Grant McBride Ocean Baths, one of the main attractions on the Central Coast.

Figure 29: Avoca Beach Rockpool is the largest rockpool on the Central Coast.

Figure 30: Constructed ocean pool at Pearl Beach.

Boating

The presence of boat launching facilities, or boat ramps, was the clearest proxy for recreational boating use across the study area. These locations typically comprise at least one, but often multiple, boat launching ramps that permit vehicular access directly into the ocean (Figure 34), along with parking spaces large enough for cars and trailers. Several other types of infrastructure were also mapped that are indicative of recreational boating use, including mooring infrastructure (Figure 36) and private boat clubs (Figure 33).

Figure 35 shows boat launching facilities centered around sheltered marine areas. Three ramps were identified in the shelter of Brisbane Waters at Pretty Beach, Booker Bay and south of Ettalong Beach. Private boat mooring facilities are also found at Hardy's Bay, Andersons Boatshed and Booker Bay Wharf. Two further access points are found at Patonga: the main ramp at the wharf, and second on the sheltered side of the campgrounds.

Only three ramps provide boat access straight into the ocean: Cabbage Tree Bay, Toowoon Bay and Terrigal Haven. In each case, the natural formation of the coastline creates a sheltered bay environment to facilitate safe .boat launching. Both Cabbage Tree Bay and Terrigal Haven have adjacent private boat clubs.

Figure 35: Distribution of Boat Launching Ramps along the Central Coast.

Figure 36: Boat launching and mooring infrastructure at Booker Bay Wharf.

Figure 33: Marine rescue club adjacent to Cabbage Tree Bay boat launching ramp..

Figure 34: Boat launching ramp into Brisbane Waters at Pretty Beach.

Jetties and Ferry Terminals

Jetties mapped in this study were those with designated public access and potential for recreational use. This excluded the private jetties found within Residential Connectors (see Recreation Classification table in next section).

Such public jetties can be considered proxies for general water-based recreation (as popular jumping and diving locations) as well as specialist activities such as fishing. Many are also used for private boat mooring (Figure 40).

As shown clearly in Figure 39, distribution of jetties along the study area was concentrated within Brisbane Waters: in fact, only the two jetties at Patonga lie outside of these sheltered waters. Both Pretty Beach and Hardys Bay contain a main jetty at the node and smaller jetties within the adjacent connectors. The main jetty at Hardys Bay, along with Andersons Boatshed are used for boat mooring.

Three jetties - Wagstaffe Wharf (Figure 38), Ettalong Wharf (Figure 37), and Patonga Wharf - also function as ferry terminals providing direct shuttles to and from Palm Beach (see insert in Figure 39).
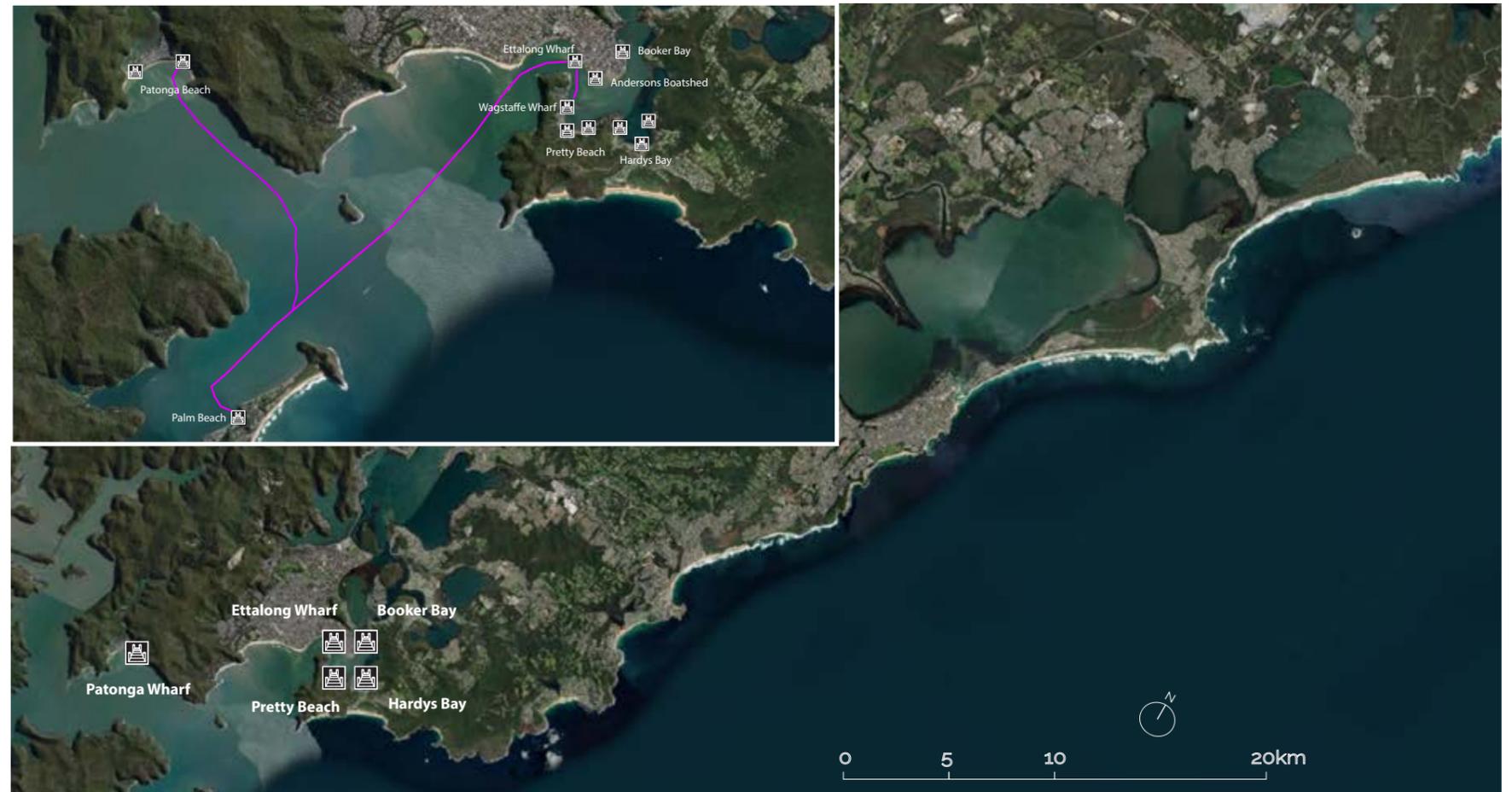
Figure 39: Distribution of jetties along the Central Coast, with ferry route to Palm Beach shown in pink on the inset..

Figure 40: Andersons Boatshed Jetty provides public access and private boat mooring.

Figure 37: Ettalong Wharf Jetty also functions as a ferry terminal to Palm Beach..

Figure 38: Wagstaffe Wharf jetty is a popular fishing location.

Shared Paths

Shared paths – that is, paths suitable for use by both pedestrians and cyclists – are one of the most significant pieces of recreational infrastructure along the coast. These paths serve a range of functions: providing largely uninterrupted transport links between coastal nodes and other significant suburban locations - hence facilitating physical activity both through transport and recreational use - while providing aesthetic and educational experiences at various intervals.

Coastal shared paths were identified at 5 locations along the study area. The longest continuous path runs from Ettalong Wharf to Ocean Beach (Figure 41 and inset in Figure 43). Shorter shared paths run along the urbanised foreshores at The Entrance and Terrigal Beach (Figure 41). A shared path along Shelly Beach links the node to the Wyrrabalong Coastal Path to the South (Figure 44), while a shorter path links Soldiers Beach to the Norah Head precinct to the North.

The provision of coastal shared path was the most salient difference between audit of the Perth coastline, which was significantly better provided in this regard than the Central Coast (including a continuous 25km stretch between City Beach and Burns Beach). This discrepancy is in part due to the prevalence of Local and Residential Connectors (see next section), where private residences directly abut the beach.

Figure 43: Distribution of Shared Paths along the Central Coast: the continuous path running between Ettalong Wharf and Ocean Beach is shown in the inset.

Figure 44: Shared path along Shelly Beach, which connects in the South to Wyrrabalong Coastal Walk..

Figure 41: A shared path runs along Terrigal Drive, connecting the main Terrigal Beach node to Terrigal Haven.

Figure 42: The longest continuous shared path in the study area runs from Ettalong Wharf (pictured) to Ocean Beach (see also inset in Figure 43).

Walking Paths

One of the most significant features of the Central Coast are its wealth of coastal conservation reserves. Many of these reserves contain formal walking paths that provide a range of often unique recreational experiences.

Walking paths in formal conservation areas were identified in seven locations (Figure 47). In contrast to the audit undertaken in Perth, nature-based walking paths were better provided along the Central Coast than shared paths. This is most notable to the south of the study area in Bouddi National Park, with a largely continuous walking path network linking Macmasters Beach in the East to Lobster Beach in the West (see inset in Figure 47). Similarly, on the other side of Broken Bay, a continuous path links Pearl Beach to Patonga Beach (Figure 46) provides a stunning lookout view across the bay (Figure 48). At the North of the study area in Munmorah State Conservation Area, a path network links Snapper Point and Wybung Head to Birdie Beach and the adjacent campground.

Other notable walking paths include Wyrrabalong and Winnie Bay Coastal Walks, which both provide various nature experiences and lookout opportunities. While considerably shorter, the Norah Headland Trail links Cabbage Tree Bay to Norah Head Lighthouse, and contains a range of educational signage (Figure 45)

Figure 47: Distribution of walking paths along the Central Coast: the full extent of the Bouddi Coastal Walk is illustrated in the inset..

Figure 45: Educational signage like that at Norah Head is common throughout formal nature trails..

Figure 48: Patonga Beach from Warrah Lookout: one of the many lookouts found along the nature trails at the south of the Central Coast.
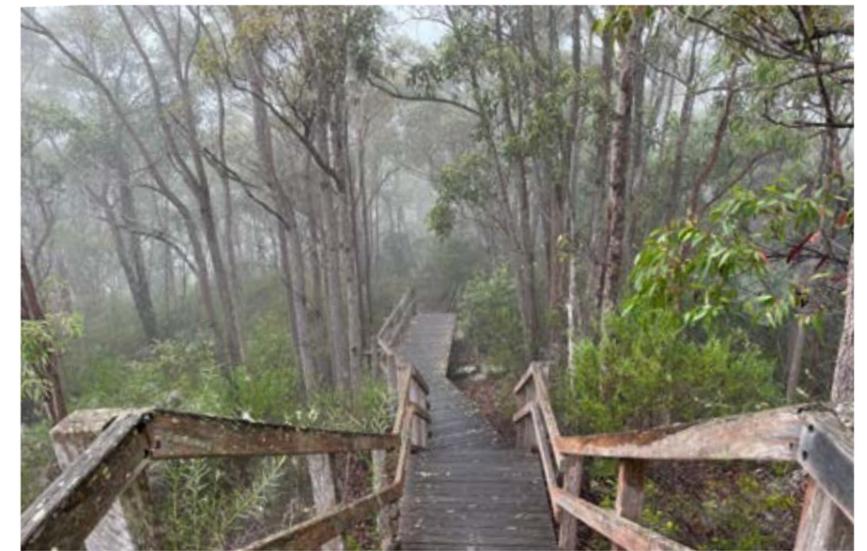
Figure 46: Nature experiences range from coastal dunes, wetlands to forests, such as the trail to Warrah Lookout.

Dog Exercise Areas

Of all the recreational uses along the coast, dog exercise was the most straightforward to map. Central Coast Council provides detailed maps of dog beaches on their websites, while signs at the entrance to beach access paths are generally clear in showing whether dog exercise is allowed on that beach (Figure 49). Such formal designation is important, as dog exercise has the potential to conflict with other recreational uses (see Figure 50). That said, it should not be assumed that dog exercise occurs only in designated areas, as shown in Figure 52.

Figure 51 shows an even distribution of dog beaches along the study area. The majority of major beaches have some proportion (usually the majority) of the coastal strip designated for dog exercise, typically forming links between nodes located at the edges. For example, the coastal strips of Avoca, Copacabana/Macmasters, Putty/Killcare, Pearl and Patonga all have a similar pattern of nodes at either end with dog exercise areas running between them.

While the location and extent of dog exercise areas was correct as of December 2022, it should be noted that the policy is currently up for review, and these areas are thus subject to change. This audit provides useful data that can assist in that process
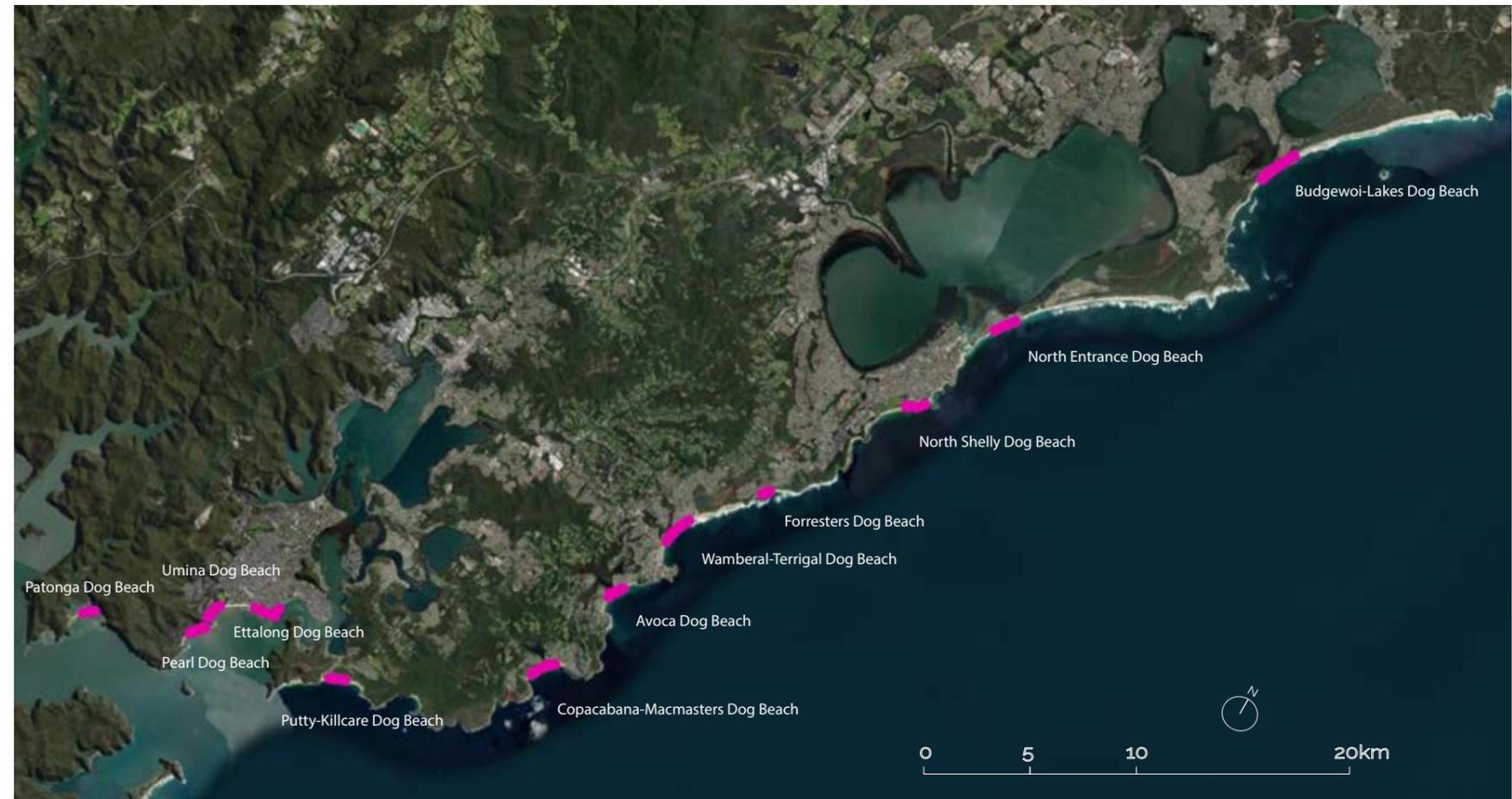
Figure 51: Distribution of Dog Beaches along the Central Coast.

Figure 52: Despite the best attempts of planners and decision makers, some locals will still make their own rules..

Figure 49: Signage at Terrigal Inlet clearly showing the limits of dog exercise areas.

Figure 50: Dog exercise and fishing overlapping at the mouth of The Entrance Channel.

Holiday Parks and Campgrounds

The recreational value of the Central Coast coastline makes it a popular tourist destination. Such tourist use is partially facilitated through adjacent holiday parks that offer chalets alongside facilities for campers and caravaners (Figure 53). In addition to larger parks located near popular urban beaches, several campgrounds ranging in size and facilities are provided in more remote coastal locations (Figure 54). These more remote sites typically consist only of a handful of designated camping sites and basic toilet facilities, with fees typically required both for park entry and site hire (Figure 56).

11 locations in total - 5 holiday parks and 6 campgrounds - were identified and mapped, as shown in Figure 55. Notable is the grouping of holiday parks south of the Entrance at Toowoon Bay Shelly and Blue Lagoon Beaches, indicating the value of this region as a tourist destination. A large park lies between Cabbage Tree Bay and Soldiers Beach, servicing the entire Norah Head region, with another park located adjacent to the Peninsula Recreation Precinct that services Ocean and Umina Beaches.

Campgrounds are mainly found within National Parks - two within Munmorah and three within Bouddi - with the exception of the large campground at Patonga Beach.

Figure 55: Distribution of Campgrounds and Holiday Parks along the Central Coast.

Figure 56: Campgrounds located in National Parks are subject to various fees.

Figure 53: The view over Blue Lagoon Holiday Park.

Figure 54: Example of formal camping sites at Frazer Beach.

Coastal Recreational Use Classification Framework

Once the application and mapping of the Coastal Recreational Use Audit Tool was finalised, overall patterns in the provision of recreational infrastructure and the occurrence of recreational uses became apparent. Fundamentally, it became clear that two broad types of coastal locations existed - nodes and connectors - each of which are now defined within the context of this report.

Nodes

Nodes are developed areas within a foreshore reserve that have a variety of infrastructure to allow for a range of passive and active recreation activities. At a minimum, nodes provide access to the coast for both beach and water-based use, and may provide additional recreational opportunities away from the beach. Nodes range from being relatively small with few facilities – e.g. a small car park and a shower – to large with multiple of facilities and commercial premises (cafes etc.). The extent of the development at a node is one key determiner of the number of visitors to the site and also where they come from (i.e. the node's catchment). Small nodes primarily serve the local community, and visitor numbers are relatively low. Larger nodes that have many more facilities including commercial premises may attract visitors from all over Central Coast and also tourists from outside Central Coast. Larger nodes that have many more facilities including commercial premises may attract visitors from all the region and also tourists from outside region - statewide, nationally and internationally.

Connectors

Connectors are those areas of foreshore that act as links between two nodes. They have few if any infrastructure other than a formal path, the occasional lookout as well as track access to the beach, although in more remote areas the path is absent. Connectors have a range of values, including ecosystem, recreation, aesthetic, wildlife corridors, and, where there is no foreshore reserve, private economic. The foreshore is often dominated by natural vegetation, although in more built up areas the foreshore is much narrower and can have extensive grassed areas. Visitors typically pass through these areas either to exercise (walk, run, walking the dog etc.) or to access adjacent beaches or nodes, but may also stop and use specific locations (e.g. lookouts) for passive recreational purposes.

These two types of locations, which can be further classified based on variations in infrastructure provision and recreational use, form the basis of the subsequent Coastal Recreational Use Classification Framework (the framework) set out in Table 5. It should be noted that the types of nodes and connectors are generalised, and example sites listed under each type may have specific infrastructure and uses that fall outside of these descriptions. Nonetheless, the framework offers a useful starting point for classifying the coastline based on overall patterns in recreational infrastructure and use.

The framework developed for the Perth study originally identified seven types of nodes, While the order in which the nodes are discussed is in increasing size and intensity of development and infrastructure provision, the key distinguishing factor between each level of node is the addition, and sometimes loss of, specific types of recreational uses. Four recreational use node categories were found to occur in the Central Coast:

- **Beach Access Nodes** – provide for only beach and water-based uses;
- **Minor Activity Nodes** – provide additional park-based active and passive uses, with greater capacity for specialist water-based use;
- **Moderate Activity Nodes** – provide a greater variety of park-based recreation, including commercial and indoor uses, however may restrict specialist water-based uses;
- **Major Activity Nodes** – provide more extensive commercial opportunities and are typically used for tourism purposes;

A further three node types - Ports, Industrial Areas and Boat Harbour Nodes - were not identified in the Central Coast study area: a notable difference between the Central Coast and Perth coastlines.

The framework for this study identifies seven types of coastal connectors, five of which have foreshore reserves, and two where no foreshore reserve is present where private property extends to the waters' edge.. The seven recreational use connector categories are:

- **Conservation Connectors:** well vegetated areas within conservation reserves and well separated from urban areas, facilitating primarily land based recreation, giving them high aesthetic, nature and wilderness experiences;
- **Landscape Connectors:** well vegetated foreshore reserves with limited infrastructure set within urban areas having limited beach and water-based recreation, however may provide unique aesthetic, nature and wilderness experiences;
- **Shared Path Connectors:** foreshore reserves with native vegetation similar to Landscape connectors but typically contain shared paths and supporting infrastructure within the reserve, that facilitate a range of additional recreational uses, along with enhanced aesthetic and educational experiences;
- **Urban Connectors:** enhanced water and beach and path-based uses, however have little if any native vegetation therefore negligible nature and wilderness experiences. There is either a road or path that provide a hard edge to the adjacent residential areas
- **Local Connectors:** houses directly abut the foreshore reserve, which tends to be narrow and with limited native vegetation. No hard edge separates the houses from the foreshore. These areas provide beach and water use primarily to local residents.
- **Residential Connectors:** set within urban areas and have no public foreshore, with private property directly abutting the water, and so provide beach and water use exclusively to residents of these private properties; and
- **Rural Residential Connectors:** set within rural areas and have no public foreshore with private property directly abutting the water, and so provide beach and water use exclusively to residents of these private properties.

Table 5 and 6 set out in detail the Coastal Recreational Use Classification Framework. Each of the classification categories are discussed in detail, with specific examples provided and their distribution across the study area mapped. Finally, Figures 101 and 102 (Pages 46 and 47) show the full application of the framework, displaying every node and connector along the entire study area.

Table 5. Coastal Recreational Use Classification Framework: Beach Nodes

Class	Descriptor	Typical characteristics and infrastructure	Typical recreational uses and values	Examples
N1	Beach Access Node (n=10)	• Small development footprint, almost entirely continuous with adjacent connectors save for parking space adjacent to a beach access path. • Facilities provided for use by a local population that typically include a single car park with at least one of the following: outdoor shower, toilet block, bicycle rack and drink fountain.	• Uses are solely focused on the beach and for general water-based recreation, with some specialist water-based uses possible. • Node often utilised as access point to shared pathways and dog exercise areas running through adjacent connectors. • Recreational experiences similar to class of adjacent connector.	• Rural: Pelican Beach, Magenta Beach, Tuggerah Beach, Maitland Beach, • Urban: Blue Bay Beach, Forresters Beach, Spoon Bay Beach, Ettalong Creek.
N2	Minor Activity Node (n=22)	• A small to moderately sized development footprint, largely continuous with adjacent connectors. • Facilities for beach access and water-based recreation typically include all of the aforementioned Beach access node infrastructure. • Also includes basic park-based recreation facilities such as a grassed area, play equipment and picnicking facilities.	• Uses are still largely focused on the beach and for general water-based recreation, with greater likelihood of specialist water-based uses. • Grassed areas and other facilities enable park-based passive and active uses such as play, picnicking, walking and socialising to occur adjacent to the beach. • Node often utilised as access point to shared pathways and dog exercise areas running through adjacent connectors. • Recreational experiences similar to class of adjacent connector.	• Campgrounds: Frazer Beach, Birdie Beach, Little Beach, Putty Beach, Tallow Beach, Patonga Beach. • Playgrounds: Jenny Dixon Reserve, North Entrance Estuary, North Shelly Dog Beach, Wairakei Road Reserve, Terrigal Drive Reserve, Avoca Lake Scout Hall. • Local Nature Walks: Budgewoi Beach, Bateau Bay Beach • Jetties and Boat Launching: Pretty Beach Boat Ramp, Hardys Bay Jetty, Ettalong Wharf, Patonga Wharf. • Ocean Pool: Pearl Beach.
N3	Moderate Activity Node (n=18)	• A medium sized development footprint that breaks up the adjacent connectors. • Facilities as per Minor activity node (car parking, beach amenities, play equipment etc.) provided on a larger scale capable of catering for population outside the local area. • Typically includes at least one *community* (e.g. adventure playground, SLS clubrooms, boat ramp) or *commercial* recreation facility (water sports club, kiosk/café, restaurant, caravan park) that encourages use from outside local population.	• High use for general water-based recreation and beach-based recreation, with dog exercise generally prohibited. • Allows for unique specialist water-based opportunities that attract a broader population (e.g. protected swimming, surfing, boating, SLS, scuba diving), however high general use may restrict other specialist uses (e.g. surfing within SLS patrolled areas). • Park areas provide extensive passive and active opportunities, may be used for organised active pursuits such as professional personal training, and may also accommodate small to moderate scale sporting and community events. • Commercial opportunities are common, while community and commercial facilities provide unique indoor opportunities such as dining, meeting, and shopping. • Site-specific educational and aesthetic experiences possible (e.g. public art, heritage features); nature and wilderness experiences lost.	• SLS Club and Patrol: Soldiers Beach, North Entrance Beach, Shelly Beach, Wamberal Beach, North Avoca Beach, Copacabana Beach, MacMasters Beach, Killcare Beach, Ocean Beach, Umina Beach. • Playing Fields: Brendan Franklin Oval, Heazlett Park. • Dining and Commercial: Avoca Dog Beach, Ettalong Beach. • Boat Launching: Cabbage Tree Bay. • Community and Heritage: Norah Head Lighthouse.
N4	Major Activity Node (n=5)	• A medium to large sized development footprint that may extend some distance, with commercial and tourism facilities adjacent to the reserve. • Facilities as per Moderate activity node, scaled to accommodate significant visitation, including: restaurants and commercial precincts; large SLS and other sport and recreation clubrooms; Ocean pools; large caravan parks. • Activity infrastructure may include designated beach recreation areas such as beach volleyball, entertainment areas or amphitheatres, extensive play and picnic areas at multiple points along node.	• Used for beach, park and general water-based recreation as per minor activity node and with significant commercial activities (such as dining, shopping, meetings etc.) at or adjacent to the beach, typically with tourist potential. • Used for commercial specialist uses such as surfing school, kayak/SUP hire and training, water-based eco-tours, diving or snorkelling. • Commercial indoor opportunities and/or large-scale special events of uniqueness and significance that attract tourism use. • Additional experiences as per Moderate Activity Node.	• The Entrance Beach • Toowoon Bay Beach • Terrigal Beach and Terrigal Point • Avoca Beach

Table 6. Coastal Recreational Use Classification Framework: Connectors

Class	Descriptor	Typical characteristics and infrastructure	Typical recreational uses and values	Examples
C1	Conservation Connector (n=13)	• Set within a conservation reserve away from urban areas with no infrastructure unless those associated with a wild coastal walk trail; • Seating and signage typically placed in strategic locations to enhance aesthetic and educational appreciation of the landscape. • Little formal recreation facilities provided outside of pathways.	• Uses are almost solely land-based, with coastline composed of cliffs and inaccessible beaches. • Remoteness of location also limits use for beach and general water-based recreation even where beach is accessible. • Hiking trails with coastal lookout common. • Remoteness is typically the main attractor, with high potential for aesthetic, nature and wilderness experiences.	• Munmorah: Wybung Head, Budgewoi Peninsula. • Wyrrabalong: Pelican Point, Magenta Beach Foreshore, Wyrrabalong Coastal Walk. • Bouddi: Second Point Cliffs, Third Point Cliffs, Gerrin Point Cliffs, Killcare Cliffs, Box Head Cliffs, Middle Head Cliffs • Lagoon: Wamberal Lagoon Foreshore.
C2	Landscape Connector (n=24)	• Coastal reserve primarily serves to retain the prevalent landscape type (e.g. remnant vegetation, dune system, cliffs), however of a reduced quality than Conservation Connector. • Typically located within residential areas. • Limited or no physical infrastructure such as fencing, signage, pathways or lookout points. • No formal recreation facilities provided - Informal paths may enable public access to beach.	• Some specialist water-based recreation such as surfing and fishing, although beach access often limited. • Some dune-based recreation (e.g. 4WD, hiking), although not always for formally designated purposes. • Remoteness may be key attractor, with high potential for aesthetic, nature and wilderness experiences.	• Jewfish Point, Cliff Street Lookout, Pebbly Beach, Shelly Beach Foreshore, Wamberal Point. • Lagoon: Wamberal Cemetery Foreshore, Bradleys Road Reserve. • Cliffs: Terrigal Cliffs, Winnie Bay Cliffs. • Dog Beaches: Putty Killcare Dog Beach • Brisbane Waters: Wagstaffe Point, Araluen Drive Foreshore, Rocky Point, Umina Point.
C3	Shared Path Connector (n=1)	• The coastal reserve is relatively wide and undeveloped apart from established shared paths along the boundary or through reserve, with long and often frequent beach access paths. • Limited infrastructure along pathways such as fencing, signage, lookout points, occasional seating and drinking fountains. • Seating and signage typically placed in strategic locations to enhance aesthetic and educational appreciation of the landscape. • Little formal recreation facilities provided outside of pathways.	• Greater potential for some beach and water-based recreation, particularly dog exercise, with cycling and other active uses facilitated by the path. • Shared path and supporting infrastructure facilitates a range of active (e.g. walking, jogging cycling) and passive (e.g. appreciation of the landscape and ocean) uses. • Greater potential for specialist water-based recreation such as surfing and fishing. • Typically no dune–based uses, with recreation limited to formal pathways to minimise environmental impact. • Still high potential for aesthetic and nature experiences; reduced wilderness but enhanced educational experiences.	• North Entrance Dog Beach
C4	Urban Connector (n=7)	• The coastal reserve is relatively narrow and often developed (grassed) with limited areas of remnant native vegetation. • Formal shared paths run along the boundary of the reserve adjacent to local roads, with on-street parking and shorter beach access paths. • May include seating and multiple lookout points, with other minor public amenities such as showers.	• High potential for beach and water-based recreation, particularly dog exercise. • Shared path and supporting infrastructure continues to facilitate a range of active uses, although less passive opportunities. • Specialist water-based uses such as surfing and fishing enhanced due to greater proximity to the beach from parking areas, along with the addition of minor amenities and space for equipment setup. • Still high potential for aesthetic and education experiences, but with negligible nature and wilderness experiences.	• Marine Parade Foreshore • Terrigal Drive Foreshore • Pretty Beach • Hardys Bay • Ettalong Foreshore • Ettalong Dog Beach
C5	Local Connector (n=24)	• Usually narrow foreshore reserve, which can be either cleared or well-vegetated, with houses directly abutting foreshore having private access • Regular beach access paths allow public access to beach from street, however limited supporting infrastructure and parking encourages local use only.	• Uses are solely focused on the beach and for general water-based recreation, with some specialist water-based uses possible. • Designated dog exercise areas are common. • Still high potential for aesthetic and education experiences, but with negligible nature and wilderness experiences.	• Hargraves Beach, Curtis Parade Beach, Anderson's Boatshed Beach. • Dog Beaches: Wamberal-Terrigal Dog Beach, North Avoca Dog Beach, Patonga Dog Beach, Pearl Dog Beach. • Resort Beaches: Blue Lagoon Beach • Lagoon: Avoca Lake Foreshore, Del Monte Place
C6	Residential Connector (n=7)	• No public access to beach, with private residences backing directly onto beach/water.	• Opportunities for beach and water-based recreation limited to adjacent properties.	• Wagstaffe Beach, Daley Avenue Foreshore, Booker Bay. • Lagoon: Avoca Lake Foreshore, Ocean View Drive Foreshore.
C7	Rural Residential Connector (n=2)	• No public access to beach, with private rural properties backing directly onto beach/water.	• Opportunities for beach and water-based recreation limited to adjacent properties.	• Scenic Highway Foreshore, Cockrone Lagoon Foreshore.

Beach Access Nodes

Beach access nodes typically consist of small to moderate car parks with formal beach access paths, often with small-scale changing facilities that support beach and water-based recreational use – typically general but occasionally specialised.

Figure 59: Pelican Beach Uses and Infrastructure

🚗 Car parking　　🔭 Lookout　　•••• Beach access path

Example: Pelican Beach

Pelican Beach is given as an example of the minimum level of development needed for classification as a node. The presence of a car park within the foreshore reserve makes it a destination for beach users, and hence a node, however no other formal infrastructure (e.g. toilets, showers). The presence of a lookout provides an additional attraction, otherwise recreational use is solely at the beach.

Figure 57: Pelican Beach has a medium sized car park and formal paths to facilitate beach access, however no toilets or showers

Figure 58: A formal lookout is provided off the beach access paths, providing an additional recreational experience for beach users.

Figure 60: Central Coast Beach Access Node distribution

Minor Activity Nodes

Minor Activity Nodes are distinguished from Beach Access Nodes by the presence of small scale infrastructure facilitating land-based recreation opportunities - for example playgrounds and picnic areas, nature walks and campgrounds - or specialist water-based recreation: for examples jetties and boat launching ramps.

Figure 63: Jenny Dixon Beach Uses and Infrastructure

Car parking		Playground		BBQs	
Public toilets		Showers		Beach access path	

Example: Jenny Dixon Beach

Jenny Dixon Beach is given as an example of the typical level of development needed for classification as a minor activity node. Carparks, public toilets and showers facilitate beach and water-based recreation, while picnic facilities and a playground also encourage land-based recreation.

Figure 61: Jenny Dixon Beach has formal car parking facilities, including designated universal access spaces, along with changing facilities.

Figure 62: A playground and picnic facilities provide land-based recreational opportunities at the node.

Figure 64: Central Coast Beach Access Node distribution

Moderate Activity Nodes

Moderate Activity Nodes are distinguished from minor nodes through the inclusion of a significant piece of community infrastructure - for example a Surf Life Saving Club, Ocean Pool, Cafe - that attracts users from outside of the local area. To cater for this additional use, infrastructure found in minor nodes are typically provided to a greater scale.

Figure 67: North Entrance Beach Uses and Infrastructure

🚗	Car parking	🔲 BBQs	Showers	▬▬ Beach access path
🚻	Public toilets	☕ Cafe	SLS observation tower	▬▬ Walking path

Example: North Entrance Beach

North Entrance Beach is given as an example of the typical level of development needed for classification as a moderate activity node. Both a Surf Life Saving club and Cafe are provided adjacent to the node, with carparks, public toilets and showers present at greater scales to facilitate increased beach and water-based recreation.

Figure 65: A large community building housing both a SLS club and Cafe is found at North Entrance Beach.

Figure 66: Observation towers are often found at moderate nodes with greater water-based use.

Figure 68: Central Coast Moderate Activity Node distribution

Major Activity Nodes

Major Activity Nodes are distinguished from moderate nodes through a greater development footprint - the foreshore reserve is either minimal or absent - with a significant regional attractor that enables commercial and tourism use alongside typical water-based recreation.
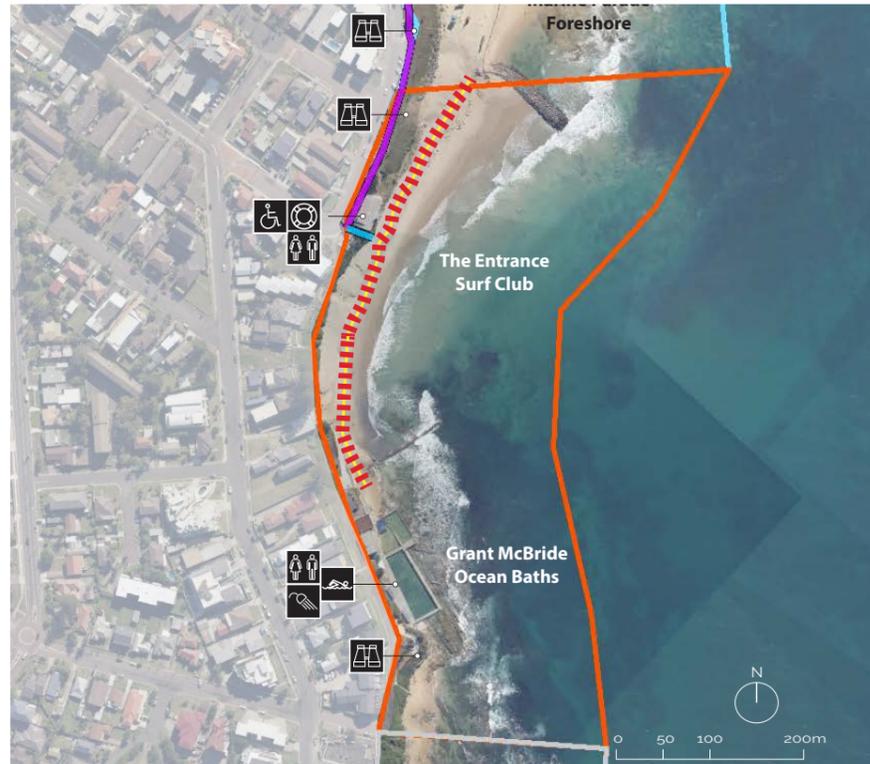
Figure 71: The Entrance Beach Uses and Infrastructure

Car parking	BBQs	Showers
Public toilets	Playground	Beach access path

Example: The Entrance Beach

The Entrance Beach is given as an example of the typical level of development needed for classification as a major activity node. A Surf Life Saving club and supporting infrastructure are provided at the north of the node, with an ocean pool facility at the south.

Figure 69: To the north of The Entrance Beach node is the iconic Surf Life Saving Clubrooms.

Figure 70: To the south of the node are the Grant McBride Ocean Baths, providing a unique recreational attraction.

Figure 72: Central Coast Major Activity Node distribution

Conservation Connectors

Conservation Connectors are found within formal conservation reserves away from urban areas, and typically contain no infrastructure aside form those associated with coastal walk trails. Seating and signage typically placed in strategic locations to enhance aesthetic and educational appreciation of the landscape.

Figure 75: Wybung Head Uses and Infrastructure

Car parking   Lookout   Walking path

Example: Wybung Head

Wybung Head is provided as an example of a typical Conservation Connector. Located within Munmorah State Recreational Area, the reserve contains multiple lookout points and walking trails, however provides no beach or water-based recreational opportunities.

Figure 73: Wybung Head is accessed from an informal parking area.

Figure 74: The walking trail around the Head provides multiple lookout vantage points.

Figure 76: Central Coast Conservation Connector distribution

Landscape Connectors

Landscape Connectors primarily serve to retain the prevalent landscape type (e.g. remnant vegetation, dune system, cliffs), however of a reduced quality than Conservation Connector. They are typically located within residential areas and may permit beach access, however offer little physical infrastructure such as fencing, signage, pathways or lookout points.

Figure 79: Cliff Street Lookout Uses and Infrastructure

Lookout   Beach access path

Example: Cliff Street Lookout

Cliff Street Lookout is provided as an example of a typical Landscape Connector. The connector primarily serves to retain the cliff face and adjacent low quality remnant vegetation. Some public recreational value is provided in this case through an informal lookout point.

Figure 77: Little formal infrastructure is provided to access Cliff Street Lookout, with only a small dirt carpark.

Figure 78: The reserve primarily serves to retain the foreshore cliff system, with views of the landscape enabled through an informal lookout.

Figure 80: Central Coast Landscape Connector distribution

Shared Path Connectors

Shared Path Connectors are distinguished from other connectors by the inclusion of formal paths running parallel to the beach through the foreshore reserve. These paths provide active transport links between adjacent nodes, while the inclusion of lookouts and signage provide additional recreational experiences.

Figure 83: North Entrance Dog Beach Uses and Infrastructure

Beach access path   Walking path

Example: North Entrance Dog Beach

North Entrance Dog Beach is provided as the only example of a Shared Path Connector identified along the Central Coast foreshore. The beach would otherwise function as a Local Beach Connector, with frequent beach access paths from the street with no supporting infrastructure, however the path provides an active link to the adjacent beach node.

Figure 81: A formal walking path within the foreshore reserve provides an active transport to the adjacent North Entrance Beach node.

Figure 82: Lookout spots with seating and signage are also common along Shared Path Connectors.

North Entrance Dog Beach
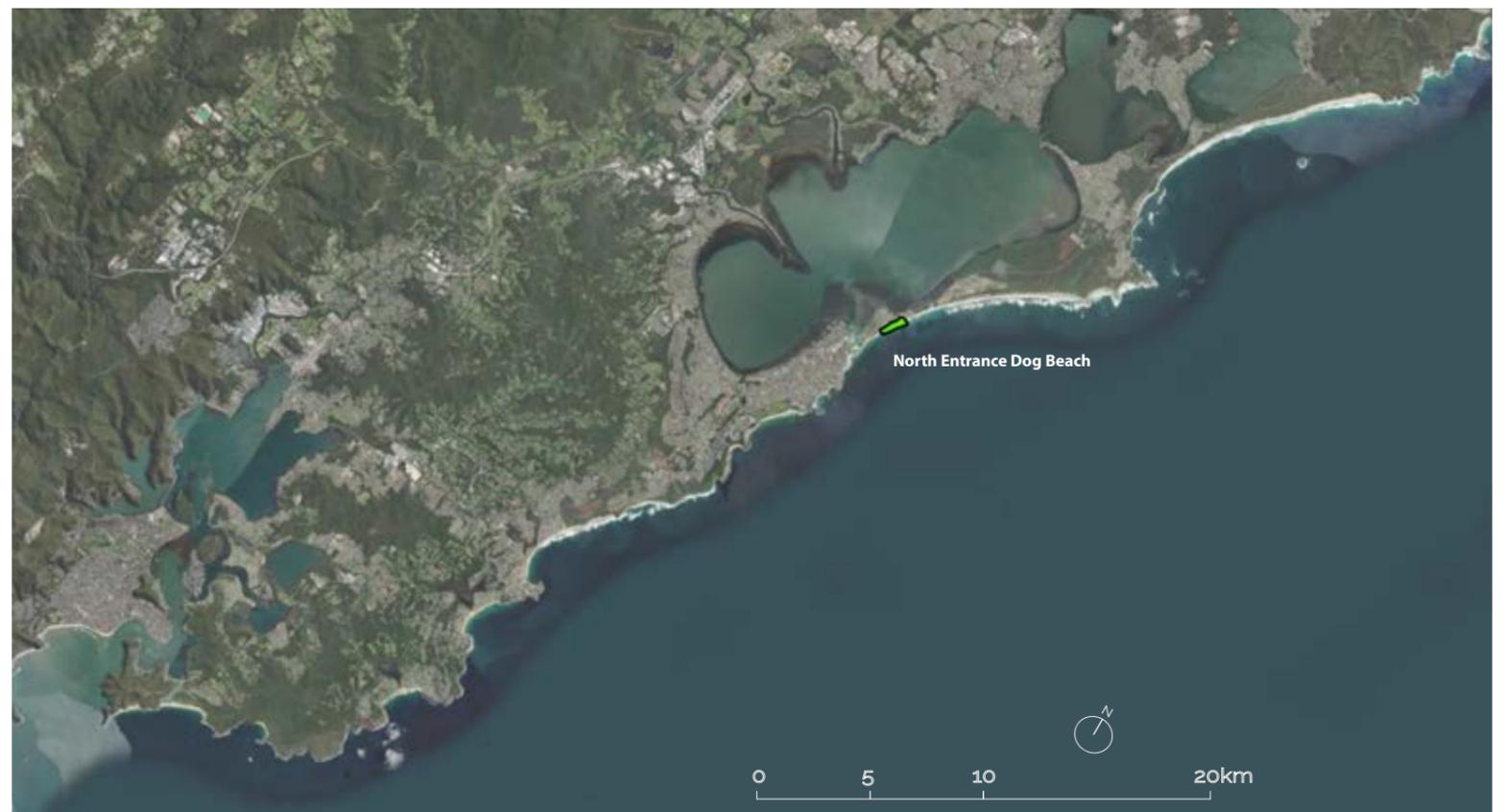
Figure 84: Central Coast Shared Path Connector distribution

Urban Connectors

Urban Connectors are typically located between high-use nodes in high density residential areas. They are characterised by narrow foreshore reserves, typically with shared use paths between the beach and the street, with street parking and small scale supporting infrastructure to support water-based recreational use.

Figure 85: Formal street parking is provided along the extent of Marine Parade Foreshore.

Figure 86: Several seated lookout spots with small scale supporting infrastructure are also provided.
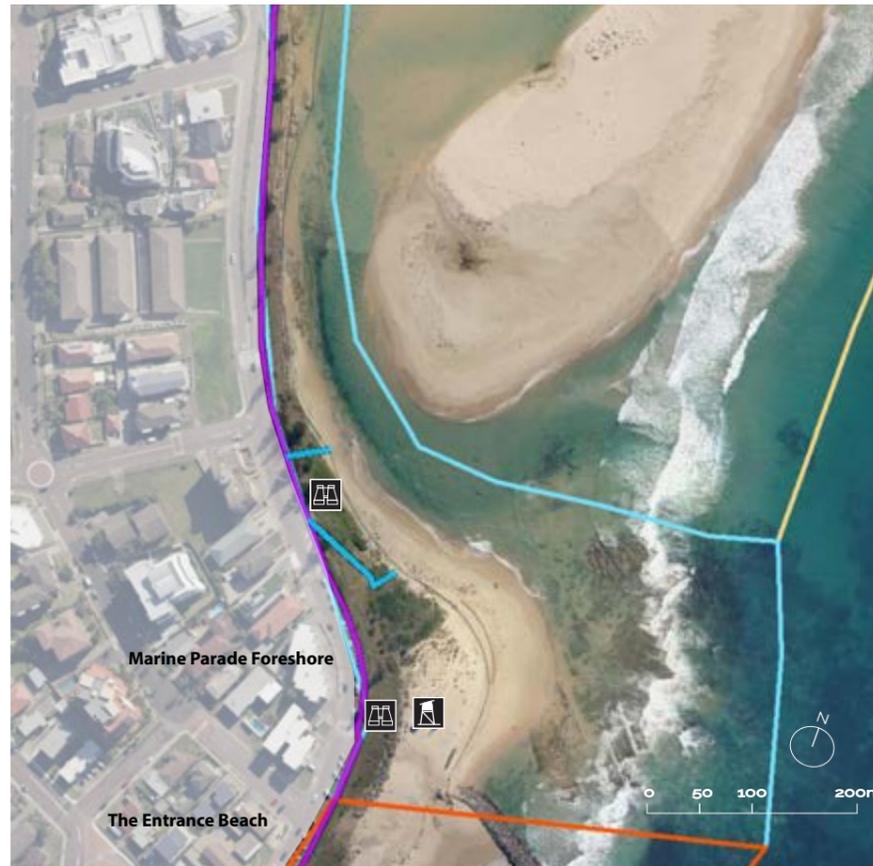
Figure 87: Marine Parade Foreshore Uses and Infrastructure

🔭 Lookout   ●●● Beach access path

Example: Marine Parade Foreshore

Marine Parade Foreshore is provided as an example of a typical Urban Connector. There is minimal foreshore reserve, providing easy access to the beach, with small scale infrastructure (in this case, seated lookout spots) provided along the street. Its main feature is a shared path running from north to south.

Figure 88: Central Coast Urban Connector distribution

Local Connectors

Local Connectors are stretches of beach that are backed on to by private residences. Public access is facilitated by beach access paths from the street, however supporting infrastructure is rare and no formal car parks are provided, encouraging use by locals only.

Figure 91: Curtis Parade Beach Uses and Infrastructure

Beach access path

Example: Curtis Parade Beach

Curtis Parade Beach is provided as an example of a typical Local Connector. Beach access paths are provided from the street at either end, however no changing facilities are provided and there is street parking only.

Figure 89: While beach access paths are provided from Curtis Parade, there are no formal parking areas or supporting infrastructure

Figure 90: Private residences backing straight onto Curtis Parade Beach.

Figure 92: Central Coast Local Connector distribution

Residential Connectors

Residential Connectors are stretches of beach that are backed on to by private residences. Unlike Local Beach Connectors, no public access is provided, and use of the beach and adjacent water is essentially restricted to private residences.

Figure 95: Wagstaffe Beach Uses and Infrastructure

Example: Wagstaffe Beach

Wagstaffe Beach is provided as an example of a typical Residential Connector. Private residences back directly onto the beach, with regular jetties restricting any access by the public.

Figure 93: Private residences with jetties directly abut Wagstaffe Beach, with signage clearly prohibiting public access.

Figure 94: Wagstaffe Beach does contain one publicly accessible jetty at Wagstaffe Wharf, however its recreational use is restricted to fishing with no water use permitted.

Figure 96: Central Coast Residential Connector distribution

Rural Residential Connectors

Similar to Residential Connectors, Rural Residential Connectors are stretches of foreshore that are backed on to by private residences. The primary difference is that the adjacent properties are zoned Rural, thus retaining a larger foreshore reserve between the residence. Two Rural Residential Connectors were identified in this study, both in lagoon areas.
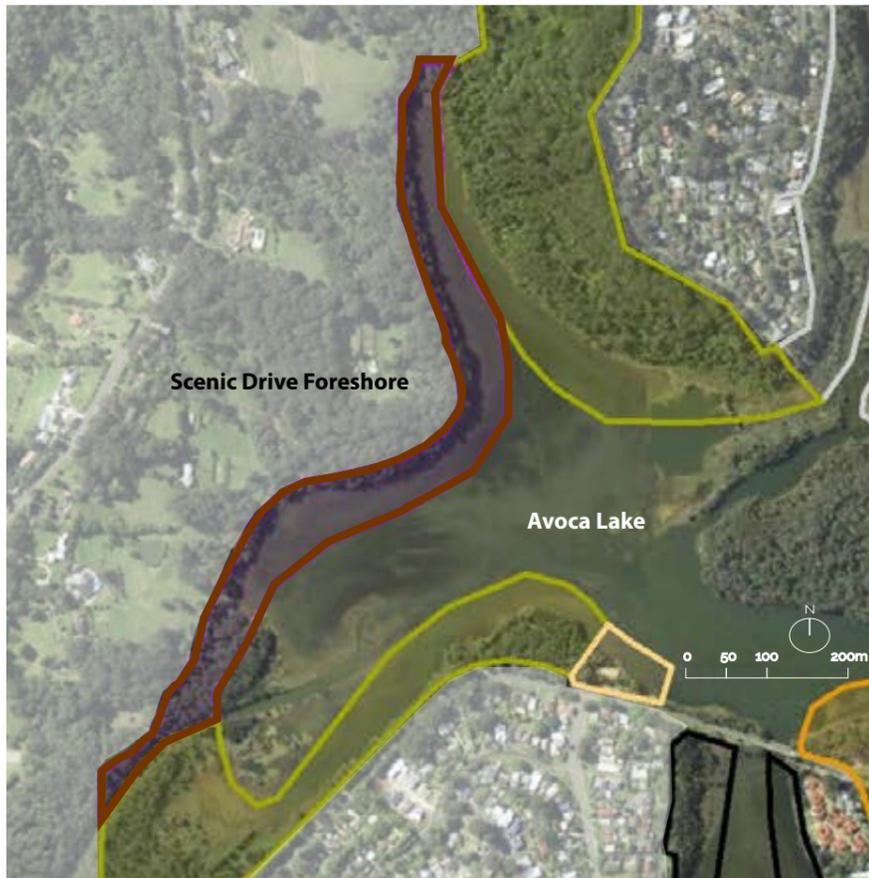
Figure 99: Scenic Highway Foreshore.

Example: Scenic Highway Foreshore

Scenic Highway Foreshore is presented as an example of a Rural Residential Connector. Rural properties backing directly on to the lagoon restrict public access, although the significant retention of vegetation make much of the foreshore inaccessible regardless.

Figure 97: Drone image of Scenic Highway Foreshore, which is comprised of Rural zoned properties with often significant retained vegetation.

Figure 98: Similar to Residential Connectors, access to the lagoon foreshore is restricted to adjacent residences.
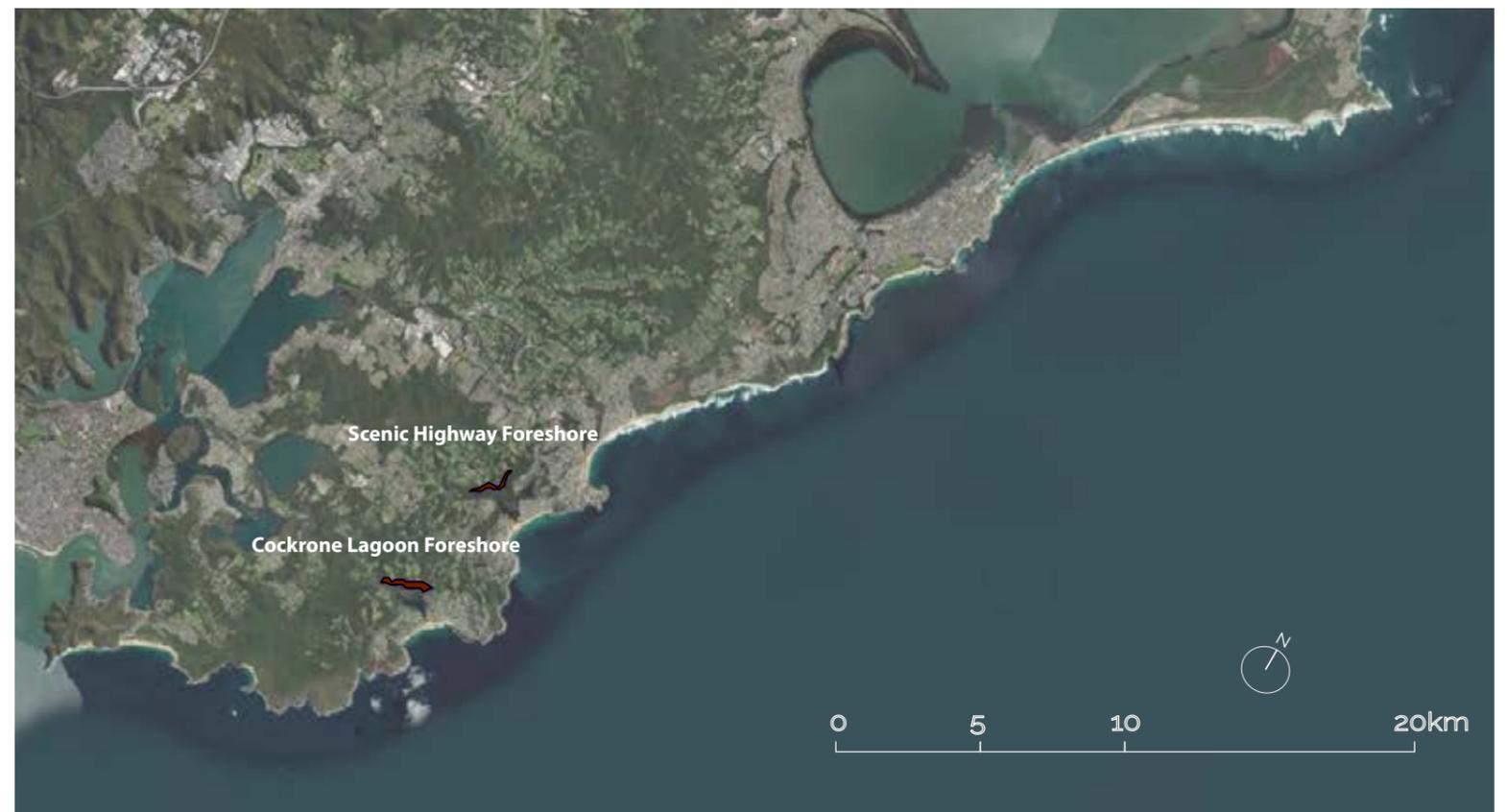
Figure 100: Central Coast Rural Residential Connector distribution

Coastal Recreational Use Classification - Distribution Map West
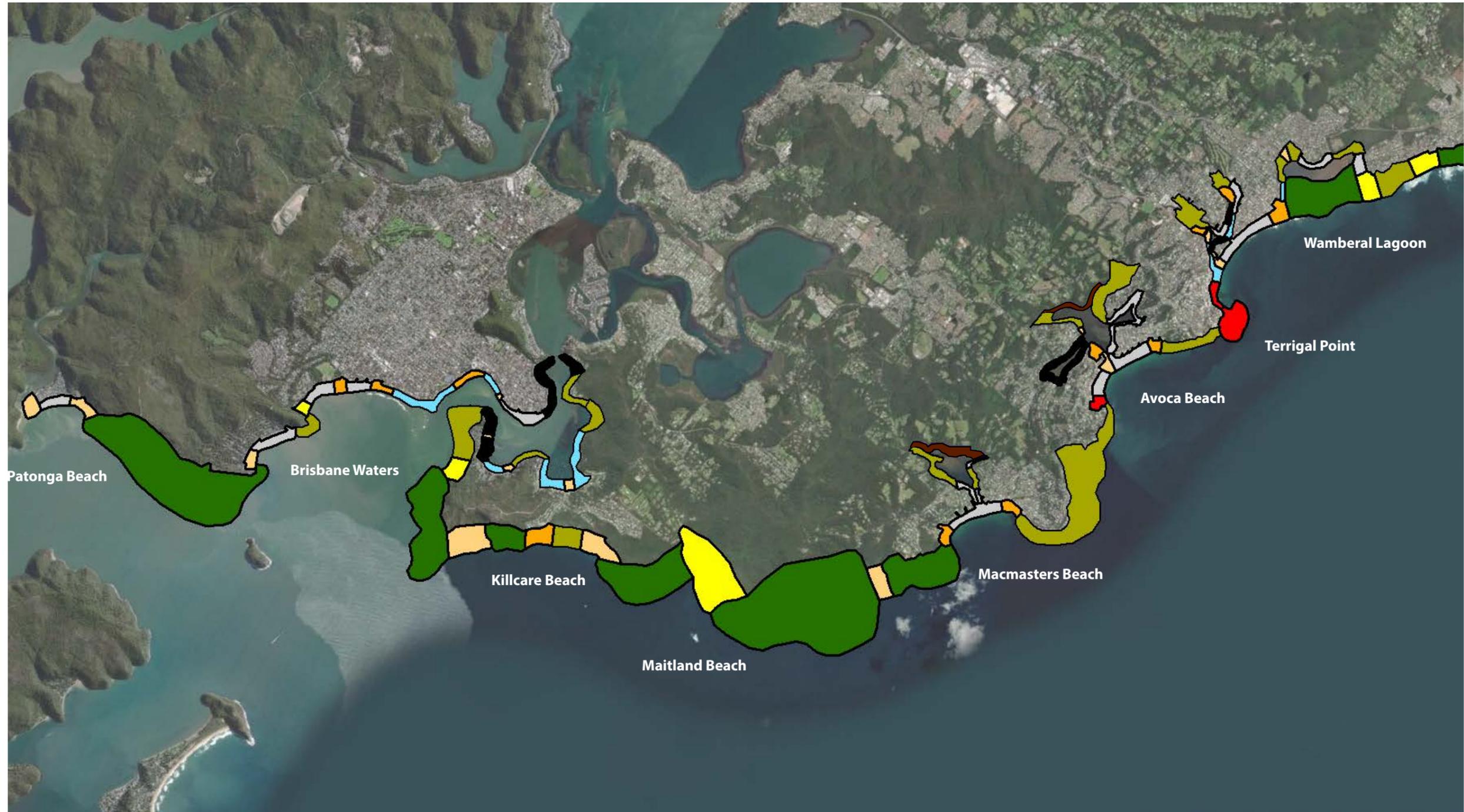
Figure 101: Distribution of nodes and connectors from Wamberal to Patonga.

Coastal Recreational Use Classification - Distribution Map East

Figure 102: Distribution of nodes and connectors from Munmorah to Wyrrabalong.

PART B

Detailed Coastal Recreational Use Maps

This section of the report contains 18 maps covering the length of the coast within the study area, commencing at the northern edge of the study area at Munmorah, and concluding at Patonga in the south. The extent of each map is illustrated adjacent in Figure 103. More detailed maps are also provided for 39 significant beaches, indicating the locations of recreational infrastructure, uses and paths for each beach.

Each of the 18 regional maps and 39 beach maps set out in detail the results of the Coastal Recreational Use Audit, the categories of the Coastal Recreational Use Classification Framework applied to the area, and a description of the specifics of the area – complete with supporting photos. The maps are based on the spatial geocoded dataset compiled during the audit tool application and classification process. A complete Legend for all symbols used in these maps is found on Page 19.

Figure 103: Extent of 18 regions across the study area.

Map 1:   Munmorah State Conservation Area

Frazer Beach
Minor Activity Node

Snapper Point
Conservation Connector

Birdie Beach
Minor Activity Node

Wybung Head
Conservation Connector

Budgewoi Peninsula
Conservation Connector

0   200   500m   1km

Figure 104: Looking north from Snapper Point towards Flat Rocks Point.

Munmorah State Conservation Area encapsulates the northern-most part of the study area. It is a regionally significant conservation reserve with an accompanying management plan aimed at balancing ecological habitat, aesthetic and recreational values. Recreational opportunities are primarily land-based: walk trails and lookout spots are found at both Snapper Point (Figure 104) and Wybung Head (Figure 105). The former is also a popular (if hazardous) rock fishing location (Figure 106) and the latter a popular whale watching spot. Lying between the two headlands is Frazer Beach: a popular regional surfing spot with an adjacent campground. A second popular surf break and campground are found at Birdie Beach, which marks the start of the Budgewoi Peninsula coastal beach strip that stretches SW to Cabbage Tree Bay.

Figure 106: Life buoys are provided for rock fishers at Snapper Point..

Figure 105: Signage at the start of the walking trail leading to Wybung Head Lookout

Map 1A: Frazer Beach

Figure 107: Frazer Beach Campground.

Frazer Beach is a Minor Activity Node with full beach access facilities and a small camping area (Figure 107). A large toilet and changing block is located in the middle of the node, with the adjacent grassed and picnic area – Dave Campbell Memorial Park – named after a former local resident and surf patroller (Figure 108). Parking is well provided, however is paid due its location in the National Park. The main beach access path runs down from the carpark, with multiple stairs restricting universal access. The campground contains formally designated camping sites, with toilets, cold showers and BBQ facilities adjacent. Adult fees were $17.00 per night as of December 2022 (Figure 109). The formal part of the Geebung Track linking to Birdie Beach ends just west of the node, however remains accessible for serious walkers.

Figure 109: Entry sign to campground.

Figure 108: The story of Dave Campbell.

Map 1B: Birdie Beach

Figure 110: Birdie Beach toilets.

Birdie Beach is most notable for being the only clothing optional beach on the Central Coast. Also a Minor Activity Node, it has similar facilities to Frazer Beach to the north, including ample parking and public toilets for beach users (Figure 110). The main difference is that the campground is located several hundred metres from the beach, which can be accessed by foot from the path at the north of the carpark. A informal path provides access from the campground to the Geebung Track, which runs east through Wybung Head towards Frazer Beach, and north to completion at Campbell Road. To the NE of the main node is Birdie Creek (Figure 111), as well as Red Ochre surf spot. To the SW of the main node is the Tea Tree Picnic Area, which provides a BBQ and sheltered seating (Figure 112). Halfway down the beach access path is a lookout point, which provides views back towards Wybung Head and south towards Budgewoi Beach.

Figure 112: BBQ and seating at Tea Tree Picnic Area.

Figure 111: Birdie Creek.

Map 2:   Budgewoi Lakes

Budgewoi Peninsula Conservation Connector

Budgewoi Beach Minor Activity Node

Budgewoi Dog Beach Beach Access Node

Lakes Beach Moderate Activity Node

Lakes Beach South Landscape Connector

Hargraves Beach Local Beach Connector

Jenny Dixon Beach Minor Activity Node

Cliff Street Lookout Landscape Connector

0   200   500m   1km

The Budgewoi Lakes Coastal strip runs approximately 9kms from Birdie Beach in the north to Jenny Dixon Beach in the south. Regular beach access nodes are provided south of Budgewoi Peninsula, the first of which is the main Budgewoi Beach node that also contains a wetland walk trail. A designated dog beach runs south for roughly a kilometre, and can be accessed from three different carparks: with the whole dog beach classified as a Beach Access Node accordingly. The dog beach ends at the edge of Lakes Beach, which provides the northernmost Surf Life Saving patrolled beach in the study area. Surfing occurs along the entire beach stretch to Jewfish Point, however swell is larger to the North adjacent to Budgewoi Beach node. The coastal strip narrows at Hargraves Beach – the first Local Connector in the study area – and transforms into cliffs at Jenny Dixon Beach: providing multiple lookout opportunities, most notably to the very south at Cliff Street Lookout (Figure (115).

Figure 113: Drone image of the Budgewoi Lakes coastline looking north towards Birdie Beach.

Figure 115: View towards Norah Head from Cliff Street Lookout, just south of Jenny Dixon Beach.

Figure 114: Drone image of the Budgewoi Lakes coastline looking south towards Lakes Beach.

Map 2A: Budgewoi Beach

Figure 117: The Dunecare Circuit Walk is the main land-based recreation opportunity at Budgewoi Beach.

With only basic parking facilities provided to support a popular dog beach and surf spot, Budgewoi Beach would be a typical Beach Access Node, were it not for the Dunecare Circuit Walk (Figure 116). The walk runs north-west as a wetlands boardwalk from the carpark to a second street parking area, before running south-east to the beach (see map in Figure 177). Educational signage is found throughout the boardwalk section of the circuit, explaining local ecology principles and management practices. The dog exercise area begins directly south of the main carpark, and can also be accessed further south from Coloma Street. Even further south are a series of informal, poorly surveilled carparks, which were observed being used by caravans (Figure 118).

Figure 118: A range of vehicles found at one of the dog beach carparks.
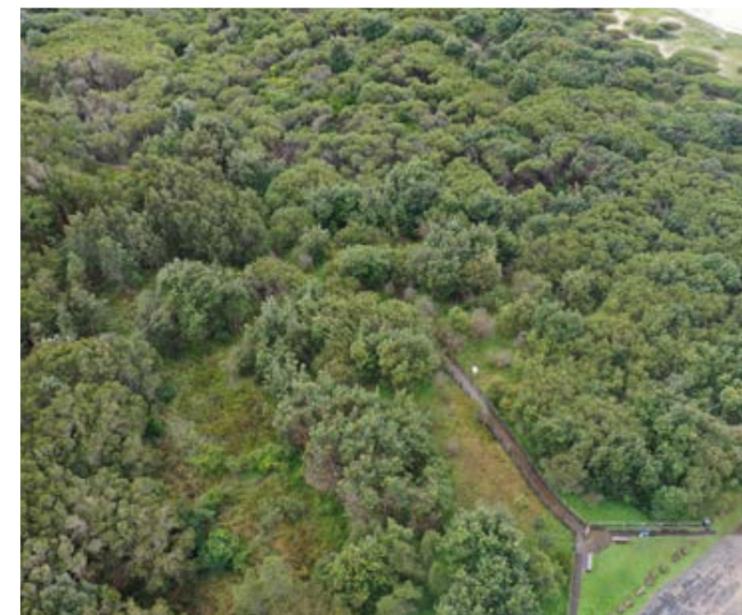
Figure 116: Drone image of the entrance to the Dunecare Walk Trail from the carpark.

Map 2B: Lakes Beach

Lakes Beach is a typical Moderate Activity Node, however is one of the few such nodes not located in a residential area. It contains a large carpark, beach access facilities with and adjacent cafe and picnic area (Figure 119). To the south is a Surf Life Saving Club and observation tower (Figure 120). Another notable feature of Lakes Beach is that it is one of the most universally accessible nodes in the study area. Multiple designated parking spaces (Figure 121), a wheelchair accessible toilet and marked wheelchair ramp leading to the raised viewing platform and beach (see Universal Beach Access example on Page 22 for more information).

Figure 119: Public toilets (including universal access facilities), kiosk and picnic seating at Lakes Beach.

Figure 121: Universal access parking is supported by accessible toilets (Figure 119), wheelchair hire and ramp access to the beach.

Figure 120: A SLS observation tower lies at the south of the node.

Map 2C: Jenny Dixon Beach

Figure 123: The view south from Jenny Dixon Reserve towards Norah Head.

Jenny Dixon Beach and adjacent Reserve represent a typical Minor Activity Node. It contains a medium-sized carpark with full beach access infrastructure, as well as a grassed recreational area with a playground (Figure 122), BBQ and sheltered picnic facilities. The raised location of the foreshore also provides several lookout opportunities, most notably to the south of the node (Figure 123). The most notable feature of Jenny Dixon Beach when it was visited in mid-2022 was that the main beach access path was closed due to rock fall hazards around the stairs down to the beach (Figure 124). To the north of the node is Hargraves Beach: a Local Connector with private residences abutting the foreshore reserve.

Figure 124: The main beach access path was closed due to rock fall hazards around the stairs.

Figure 122: Playground at Jenny Dixon Reserve.

Map 3: Norah Head

Cliff Street Lookout
Landscape Connector

Cabbage Tree Bay
Moderate Activity Node

Norah Head
Moderate Activity Node

Pebbly Beach
Landscape Connector

Soldiers Beach
Moderate Activity Node

Norah Head is one of the highest intensity use regions in the study area, with three separate Moderate Activity Nodes. Cabbage Tree Bay in the north provides a sheltered beach for boat launching, fishing and protected swimming in its rockpool (Figure __). A bushland walk trail provides unique recreational, educational and aesthetic values, while also linking to the Norah Head Lighthouse precinct (Figure __), which includes some of the most significant cultural and heritage value in the study area. Pebbly Beach (Figure __), linking Norah Head to Soldiers Beach, also has significant Indigenous values, as does the entire Norah Head precinct. Various opportunities for rock fishing are found around the headland.

Figure 125: Norah Head Rockpool within Cabbage Tree Bay provides safe ocean swimming opportunities, alongside fishing and boat launching facilities.

Figure 127: View across Pebbly Beach towards Norah Head Lighthouse.

Figure 126: The iconic Norah Head Lighthouse can be accessed by foot from Cabbage tree Bay via the Headland Nature Trail.

Map 3A: Cabbage Tree Bay

Figure 128: Cabbage Tree Bay provides ideal sheltered conditions for boat launching..

Cabbage Tree Bay is an atypical Moderate Activity Node in that it doesn't contain a SLS club or commercial area, however provides infrastructure for multiple water-based activities unique to the broader region. It provides one of the few open water boat launching ramps in the study area (Figure 128), along with a boat and marine rescue club (Figure 130). Adjacent to the boat ramp is a fish cleaning station (see Fishing discussion on Page 23), while to the east of the node is a large rockpool with adjacent changing facilities. A playground is found west of the node in Mazlin Reserve, while the eastern edge of the node connects with the Headland bushland reserve and nature trail (Figure 129). An additional carpark and playground is located in the adjacent Young Street Reserve, however was not considered within the node given it was separated by a main road.

Figure 130: The entrance to the Norah Head Marine Rescue club.

Figure 129: The Headland Nature Trail connects the nodes between Cabbage Tree Bay and Norah Head Lighthouse

Map 3B: Norah Head Lighthouse
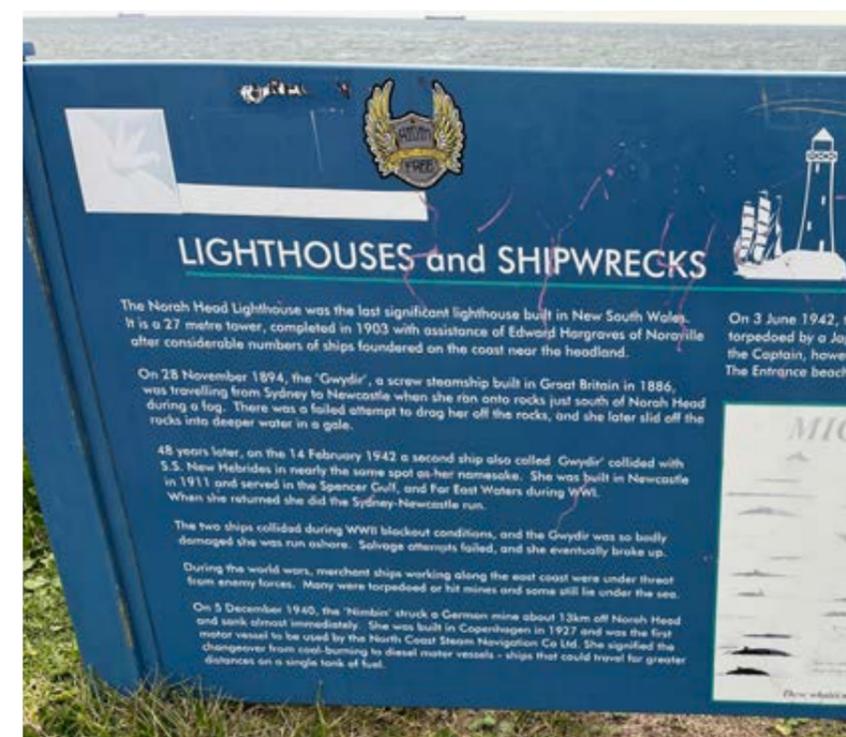
Figure 131: Lighthouse history sign provided at Pebbly Beach.

Norah Head Lighthouse is the most significant heritage precinct in the study area. As such, it was classified as a Moderate Activity Node despite a small development footprint and lack of supporting beach access infrastructure. The main feature is the Lighthouse – a 27 metre tower constructed in 1903 (Figure 131) – with several other key heritage features retained for cultural and educational purposes (Figure 132). The precinct also includes guest accommodation and venue hire. The rock shelf below is a popular fishing spot, with users warned of the hazards of rock fishing on entrance (Figure 133).

Figure 133: Information signs for rockshelf fishers.

Figure 132: An example of the heritage retained within the Norah Head Lighthouse precinct.

Map 3C: Soldiers Beach

Figure 134: The view from Soldiers Point towards the SLS Club.

Soldiers Beach is one of the largest Moderate Activity Nodes in the study area – although, similar to Lakes Beach, it does not lie directly adjacent to a residential area. It contains three large carparks, the eastern of which contains a kiosk, beach access facilities and provides access to the rockshelf (Figure 135). The eastern point also provides a vantage point across Pebbly Beach. The smaller carpark is directly adjacent to the SLS club, which provides beach wheelchair access to the patrolled beach below that is also a popular surfing spot. Bike racks would assist to facilitate use from the shared path, which runs north to the holiday park (Figure 136).

Figure 136: The shared path connecting Soldiers Beach with the adjacent holiday park and residential area.

Figure 135: Rock fishing is popular off the Soldiers Point rockshelf however comes with risk.

Map 4: Wyrrabalong National Park North

Pelican Point
Conservation Connector

Pelican Beach
Beach Access Node

Magenta Foreshore East
Conservation Connector

Magenta Beach
Beach Access Node

Magenta Foreshore West
Landscape Connector

Tuggerah Beach
Beach Access Node

Tuggerah Beach West
Landscape Connector

0   200   500m   1km

Figure 137: Drone image looking from Pelican Beach towards Magenta Beach.

The northern coastal stretch of Wyrrabalong National Park runs from Norah Head to Curtis Parade Beach. Beach access nodes are provided at Pelican, Magenta and Tuggerah Beaches: Pelican and Magenta Beaches have formal parking spaces, while Tuggerah Beach is accessed from a Government landfill site (Figure 138). A longer walking trail leads from a small informal parking area on Central Coast Highway, east of Magenta Golf Course. Adjacent to this parking area are access points to the popular Red Gum and Lillypilly walking trails, however are located outside of the study area. While not mapped, informal trails provide a connection between the three beaches for keen walkers (Figure 139).

Figure 139: Informal trails branching off from the Magenta Beach access path, leading to Pelican Beach to the north and Tuggerah Beach to the south.

Figure 138: Beach Access points are found at Pelican, Magenta and Tuggerah Beaches, although the latter provides only an informal parking area next to a Landcare site.

Map 5:   The Entrance
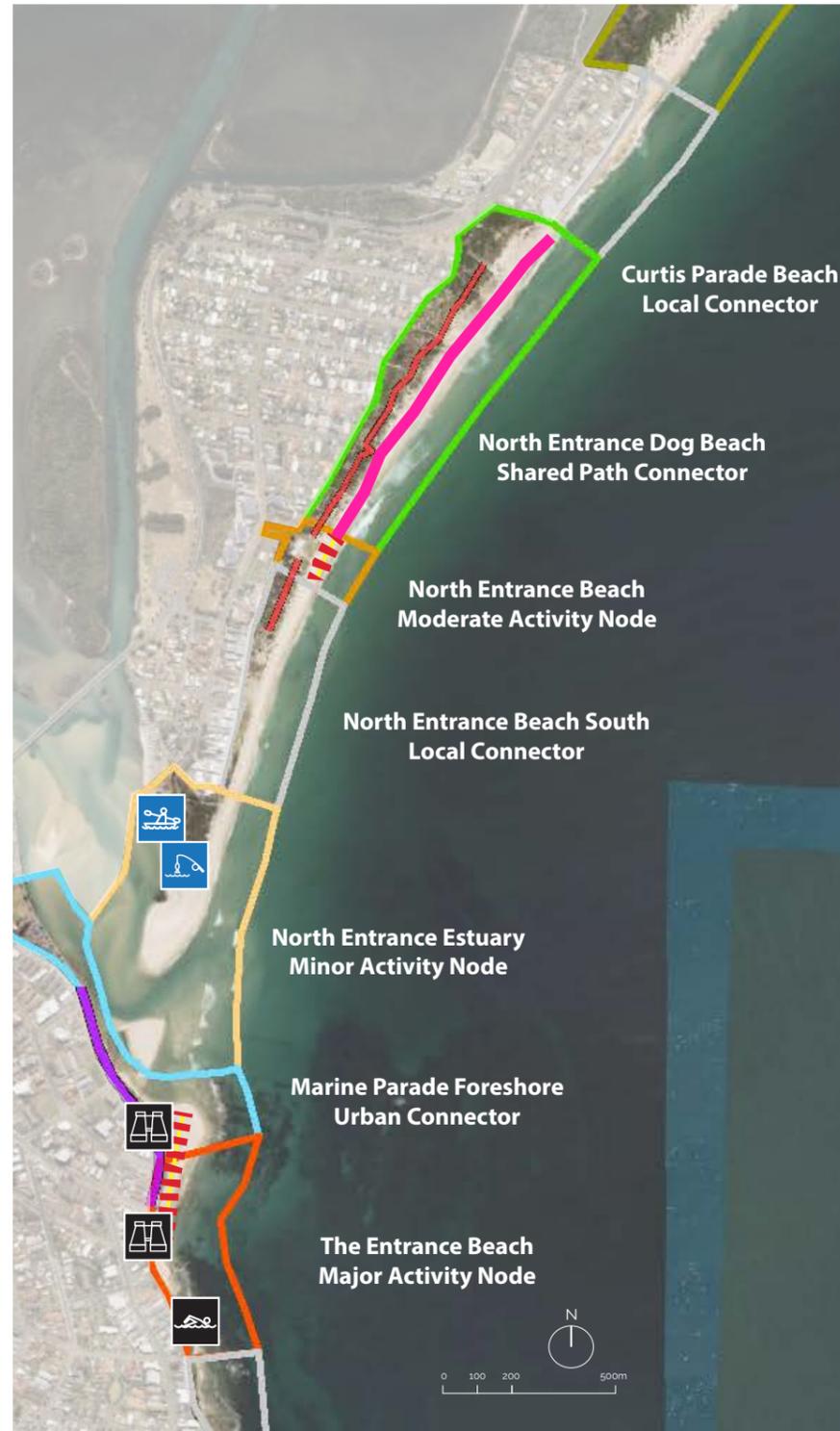
One of the most valued areas of the Central Coast, The Entrance extends north and south of the channel entrance to Tuggerah Lake. The residential area begins at Curtis Parade Beach (See Local Connector example on Page 43) before the only Shared Path Connector in the study area – North Entrance Dog Beach – classified as such given the walking path that runs through the coastal reserve parallel to the beach (see Shared Path Connector example on Page 41). The sheltered waters of the channel provide various water-based activities, including kayaking and fishing around the inlet, and are renown for birdlife viewing particularly during breeding season. Marine Parade Foreshore is the first Urban Connector in the study area: linking Memorial Park to The Entrance Beach through a shared path with multiple lookout points (see Urban Connector example on Page 42). The main Entrance Beach node encompasses the iconic SLS Club (Figure 141) and Grant McBride Ocean Baths (Figure 142): one of only five Major Activity Nodes in the study area.

Figure 140: View of the southern side of the channel from Marine Parade.

Figure 142: The Grant McBride Ocean Baths.

Figure 141: The Entrance Surf Club.

Map 5A: North Entrance Beach

North Entrance
Dog Beach

North Entrance
Beach

Figure 145: An example of local ownership of the coastline along North Entrance Dog Beach.

North Entrance Beach extends south from Curtis Parade to the northern side of The Entrance Channel. The main beach node is one of the smaller Moderate Activity Nodes in the study area, with limited parking at the SLS Club (some additional parking is provided at the adjacent school) making it more of a local node. Its most unique feature is the walking path (Figure 144) that runs north along the extent of the dog beach, and south to the beach access path at Roberts Street. The dog beach otherwise functions as a Local Beach Connector, with a high level of local ownership of the space by residents (see Figure 145).

Figure 143: North Entrance SLS Club.

Figure 144: A walking path runs along the length of North Entrance Dog Beach to the main beach node, before commencing again to the south.

Map 5B: The Entrance Channel

The Entrance Waterfront

Memorial Park

North Entrance Estuary

Marine Parade Foreshore

Figure 146: The northern banks of the channel provide an ideal spot for kayak launching.

As with other inlets along the study area, The Entrance Channel provides ideal sheltered conditions for water-based activities. Kayaking, SUP and other boarding activities are facilitated by commercial operators at the main node at Karagi Point (Figure __), which is supported by a carpark, changing facilities and a small playground (Figure __). Fishing was also observed all along the northern bank of the inlet. The stretch of Marine Parade Foreshore across the channel, including Memorial Park, is classified as an Urban Connector as the foreshore is entirely built over and it provides no formal access to the water.

Figure 148: Fishing along the northern bank of the estuary.

Figure 147: The view across the channel towards Memorial Park.

Map 5C: The Entrance Beach

Marine Parade Foreshore

The Entrance Surf Club

Grant McBride Ocean Baths

N

0   50   100   200m
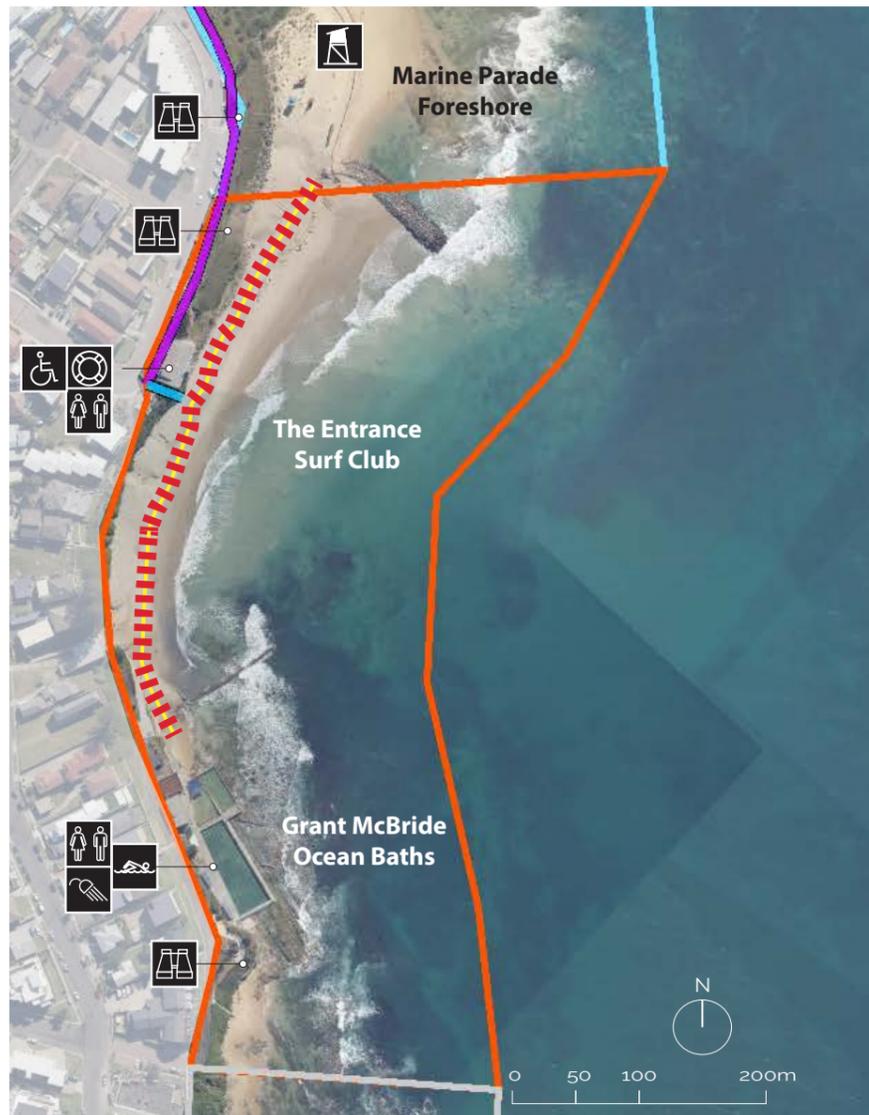
The Entrance was classified as a Major Activity Node for several reasons: its location in one of the most developed areas of the study area that sees heavy use from locals and visitors, its iconic Surf Club at the north and unique Grant McBride Ocean Baths at the south. What makes The Entrance problematic as a Major Node is a lack of parking both at the SLS Club and Ocean Baths – only street parking is provided at the SLS Club (Figure __), while only a small carpark is provided at the Ocean Baths. The presence of a shared path encourages pedestrian use from the commercial and recreational precinct to the north, while providing numerous lookout opportunities along Marine Parade.

Figure 151: The view towards the Ocean Baths from the Surf Club.

Figure 149: Users arriving by car to The Entrance Beach will have to rely on street parking.

Figure 150: Grant McBride Ocean Baths, one of the main attractions on the Central Coast.

Map 6: Blue Bay to Blue Lagoon

Blue Bay North
Local Connector

Blue Bay Beach
Beach Access Node

Toowoon Bay North
Local Connector

Toowoon Bay Beach
Major Activity Node

Toowoon Bay Foreshore
Local Connector

North Shelly Dog Beach
Minor Activity Node

Shelly Beach Foreshore
Landscape Connector

Shelly Beach
Moderate Activity Node

Blue Lagoon Beach
Local Beach Connector

0   100   200   500m

The coastal strip from Blue Bay to Blue Lagoon is one of the most popular tourist precincts along the Central Coast, as evidenced by the presence of holiday parks at Toowoon Bay, Shelly Beach and Blue Lagoon Beach (Figure 154). Moderate Activity Nodes are found at Toowoon Bay Beach and Shelly Beach – both of which are considered close to Major Nodes due to large development footprints and adjacent holiday parks. The northern bay areas provide multiple snorkeling opportunities, as well as a boat launching at Toowoon Bay, while a dog exercise area runs from the south to the main North Shelly Dog Beach carpark (Figure 153). Blue Lagoon beach was difficult to classify, as use is largely restricted to users of the holiday park, meaning it functioned largely as a Local Beach Connector for those residents.

Figure 152: Looking south along Blue Bay Beach.

Figure 154: The view across Blue Lagoon Resort south of Shelly Beach.

Figure 153: The view across North Shelly Dog Beach towards Toowoon Bay, from the carpark lookout.

Map 6A: Blue Bay

Blue Bay stretches from the Ocean Parade in the north to Toowoon Bay in the south. The main access point is a small Beach Access Node, with additional street access provided to the north (Figure 155). The node has only a handful of parking spaces (Figure 156), making its use mainly for locals, with a small toilet block, showers and grassed area (Figure 157). The coastal stretch from Blue Bay to Toowoon Bay is one of the most popular snorkelling locations in the study area, with the series of reefs also providing several surf breaks.

Figure 157: Watching surfers from the grass at Blue Bay Beach.

Figure 155: Beach access to Blue Bay North from Ocean Parade.

Figure 156: Only a handful of parking bays are provided at Blue Bay Beach.

Map 6B: Toowoon Bay

Figure 158: Beach wheelchair mat at Toowoon Bay.

Toowoon Bay is one of the most popular beaches on the Central Coast, owing mainly to its reef feature that provides a sheltered bay for safe swimming, snorkelling and boat launching. It is a popular tourist destination, with a holiday park and numerous short-stay accommodations directly adjacent to the node (Figure 159). A beach wheelchair mat is often set up next to the boat ramp (Figure 158), along with wheelchair hire from the SLS Club. Swadling Reserve lies within the node and provides an extra set of public toilets, along with a playground, BBQ and picnic facilities (Figure 160).

Figure 160: Play and picnic facilities at Swadling Park.

Figure 159: Beachside accommodation overlooking Toowoon Bay Beach.

Map 6C: North Shelly Dog Beach

Figure 161: The view south along North Shelly Dog Beach.

This node provides the main access point to North Shelly Dog Beach, along with a popular reef break for local surfers (Figure 162). The beach can also be accessed by holiday park residents via a series of beach access paths through the foreshore reserve. Along with parking and changing facilities, the presence of BBQ and picnic facilities (Figure 163) make this a Minor Activity Node. The raised profile of the node also provides good lookout views in both directions along the coast.

Figure 163: BBQ and picnic facilities adjacent to the carpark.

Figure 162: A surfer captured mid-ride at North Shelly Dog Beach.

Map 6D: Shelly Beach

Shelly Beach Golf Course

Shelly Beach

Shelly Beach Holiday Park

Blue Lagoon Beach

Blue Lagoon Holiday Park

0   50   100   200m

Shelly Beach was classified as a Moderate Activity Node, however has a strong case to be a Major Node. It has a large development footprint, with extensive parking around a large SLS building that also contains an upstairs bar and restaurant (Figure 164). Two large changing facilities and beach wheelchair hire and access are also provided. Multiple bike racks are provided to cater for the shared path that extends in each direction (Figure 165). To the south of the node at Blue Lagoon Beach, the shared path changes into a walking path that links to the Wyrrabalong Coastal Walk commencing at Bateau Bay (Figure 166).

Figure 164: View of the bar and restaurant located above Shelly Beach SLS Club (photo courtesy of Central Coast Council).
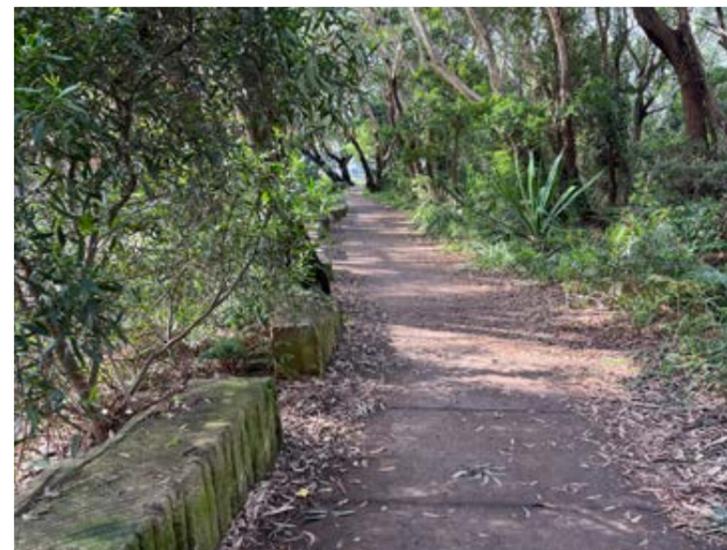
Figure 166: The shared walking path running south from Shelly Beach towards Bateau Bay.
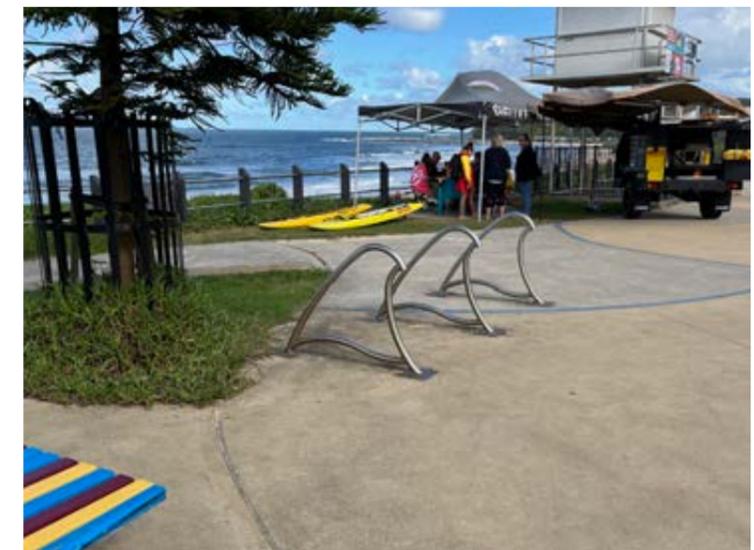
Figure 165: Bike racks near Shelly Beach SLS Club.

Map 7:   Wyrrabalong National Park South

Bateau Bay Beach
Minor Activity Node

Crackneck Point

Wyrrabalong Coastal Walk
Conservation Connector

Wyrrabalong
Lookout

0   100   200   500m

The southern coastal stretch of Wyrrabalong National Park runs south from Bateau Bay to Foresters Beach. Its most notable feature is the Wyrrabalong Coastal Walk, which provides a continuous 3km trail from Bateau Bay to Wyrrabalong Lookout. Approximately halfway along the track is Crackneck Point Lookout (Figure 168), a popular whale watching location that also provides views across the Crackneck Point surf spot: a notorious break often visited by pro-surfers. Hand gliding is also common within the Park (see sign in Figure 169).

Figure 167: Drone image of Wyrrabalong National Park South, looking north.

Figure 169: Advice to hand gliders at Wyrrabalong Lookout.

Figure 168: Drone image of Crackneck Point Lookout, looking West.

Map 7A: Bateau Bay Beach

Figure 170: The view over Bateau Bay Beach from the carpark.

Bateau Bay Beach is a small sheltered bay that provides opportunities for safe swimming, snorkelling and rock fishing. While a typical beach access nodes, with the presence of a small carpark and toilets, the shared walking path that runs across the node marks the start of the Wyrrabalong Coastal Walk (Figure 171), which runs 3 kms south to Wyrrabalong Lookout. Another notable feature of Bateau Bay is as one of the few locations of mangroves along the coast.

Figure 172: Bike racks are provided at the node to cater for shared path users.

Figure 171: The shared walking path running through Bateau Bay connects south to the Wyrrabalong Coastal Walk.

Map 8: Wamberal

This section of the coastline, which also incorporates Wamberal Lagoon (Figure 174), incorporates three beach nodes, each providing access to renown surfing breaks. Forrester's Beach in the north east is a dog beach with multiple lookout opportunities, while a longer dog beach stretches south of Wamberal SLS Club located at the lagoon inlet. The foreshore stretches between the nodes represent excellent examples of Landscape Connectors, which serve primarily to conserve the dominant landscape type along the coastline. The only node along the Wamberal Lagoon foreshore lies at Wairekai Road Reserve, which includes a playground, fitness equipment and picnic area (Figure 175).

Figure 175: Playground at Wairekai Road Reserve.

Figure 174: The entrance to Wamberal Lagoon viewed from Remembrance Drive Foreshore.

Map 8A: Forresters Beach

Figure 176: View from the lookout over Forresters Beach towards Wyrrabalong National Park.

Forresters Beach is a popular local dog beach and surf break with large swells. It functions largely as a Local Beach Connector, with private residences abutting and providing direct access to the beach, however formal street parking and a small toilet block with showers make it a small scale Beach Access Node (Figure 178). At the south of the node is a lookout (Figure 177), which provides a vantage point back towards Wyrrabalong National Park (Figure 176) and around to the edge of Terrigal Point.

Figure 178: Facilities are provided for both surfers and dog walkers.

Figure 177: The community has taken to providing their own seating at the lookout.

Map 8B: Spoon Bay Beach

Lavinia Street Foreshore

Wamberal Lagoon

Wamberal Point

Spoon Bay Beach

0   50   100   200m

Figure 180: The view from Spoon Bay Beach lookout.

Spoon Bay Beach is another Beach Access Node that serves a well-known local surf spot, although this time providing only a small carpark and shower to support beach use. The node is tucked away on the edge of the Wamberal Lagoon Nature Reserve (Figure 181), which gives it a few unique features. The beach access paths provides a short nature walk (Figure 179), with a short turnoff path leading to a lookout spot over the beach (Figure 180).

Figure 181: The entrance to Spoon Bay Beach lies within Wamberal Lagoon Nature Reserve.
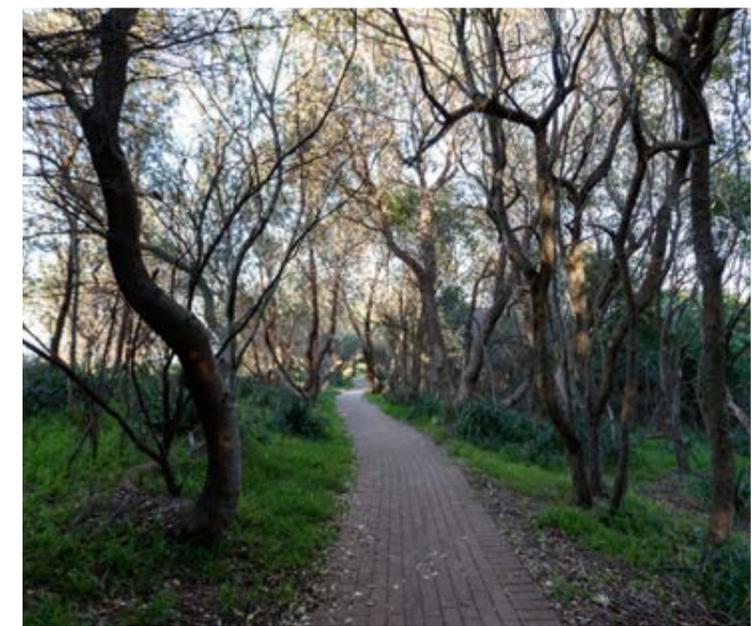
Figure 179: The path to Spoon Bay Beach (photo courtesy of Central Coast Council).

Map 8C: Wamberal Beach

Rememberance Drive Foreshore

Wamberal Lagoon

Wamberal Beach

Wamberal Terrigal Dog Beach

0   50   100   200m

N

Wamberal Beach is a typical Moderate Activity Node in the infrastructure it provides. Given its position on the edge of Wamberal Lagoon, it is unique in encompassing both a popular patrolled surfing beach and sheltered inlet, which can also be accessed from Remembrance Drive to the north. The main surfing area is south of the SLS Club, and can be accessed from Surfers Road. Extending south is the Wamberal Terrigal Dog Beach, one of the longest in the study area.

Figure 183: Surfers gathering south of Wamberal Beach SLS at Surfers Road.

Figure 184: Community art on Wamberal Beach Public Toilets.

Figure 182: Swimming in Wamberal Lagoon comes with its own hazards.

Map 9:   Terrigal

Breakers Country Club Foreshore
Landscape Connector

Terrigal Lagoon Foreshore
Landscape Connector

Bundara Avenue Foreshore
Local Connector

Brendan Franklin Oval
Moderate Activity Node

Terrigal Lions Park
Moderate Activity Node

Wamberal Terrigal Dog Beach
Local Beach Connector

Terrigal Drive Foreshore
Urban Connector

Terrigal Inlet
Minor Activity Node

Terrigal Beach
Major Activity Node

Terrigal Point
Major Activity Node

Terrigal Cliffs
Landscape Connector

0   100   200   500m

Terrigal is the highest intensity coastal region in the study area, encompassing Major Activity Nodes at both Terrigal Beach and Terrigal Point, and a third Minor Activity Node at the inlet to Terrigal Lagoon. A further two Moderate Activity Nodes are found within the adjacent Terrigal Lagoon. Opposite the Terrigal Lagoon Inlet node is the Terrigal Drive Urban Connector, whose shared path feeds pedestrians and cyclists into the main Terrigal Beach node, and further down to Terrigal Haven Beach. Fishing, surfing, safe swimming snorkelling opportunities are all provided around the Haven, with multiple lookout points found on the eastern edge of the node, including the famous Skillion landmark at the south. Several popular scuba dive spots are also found around the headland.

Figure 186: The view from Terrigal Beach Boardwalk.

Figure 187: Terrigal Haven Beach.

Figure 185: The view south along the dog beach towards Terrigal Point.

Map 9A: Terrigal Inlet

Wamberal Terrigal Dog Beach

Terrigal Inlet

Terrigal Drive Foreshore

Figure 188: Commercial board operators at Terrigal Inlet.

Terrigal Inlet is a Minor Activity Node similar in nature to that found at The Entrance Channel. Commercial operators (Figure 188) facilitate use for kayaking and SUP boarding in the sheltered channel area (Figure 189), which is supported by a small toilet block and showers. The dog exercise area ends just north of the inlet (Figure 190). South of the inlet is an Urban Connector, with a shared path running along Terrigal Drive south to Terrigal Beach.

Figure 190: The border of the designated dog exercise area is clearly demarcated.

Figure 189: Sheltered waters provide ideal conditions for stand-up paddle boarding.

Map 9B: Terrigal Beach

One of if not the most famous beach on the Central Coast, the main Terrigal Beach node runs from the start of Terrigal Esplanade down to the Rockpool and Boardwalk (Figure 192). A large SLS Club, Café (Figure 191) and changing facilities support recreational use along the beach, while the shared path and shaded grassed areas are also heavily used, including by patrons of the adjacent commercial precinct (Figure 193). A second carpark and showers are provided adjacent to the Rockpool and Boardwalk at the south of the node.


Figure 192: Terrigal Beach Rockpool.

Figure 193: Looking south along the Terrigal Beach shared path.

Figure 191: Terrigal Beach has numerous commercial operators both at and adjacent to the node.

Map 9C: Terrigal Point

Terrigal Beach

Terrigal Haven

Terrigal Cliffs

Skillion

0   50   100   200m

Terrigal Point encapsulates Haven Beach and its adjacent playing field, along with the lookout walking path that finishes at The Skillion. As the name suggests, the sheltered waters of The Haven make a popular family beach: on the west side is a popular dining precinct (Figure 196), while on the east is a boat ramp and marine club (Figure 194). The reef to the north provides both fishing and surfing opportunities – with the main Big Haven break frequented by famous big wave surfers. Adjacent to the playing field is a grassed dog exercise area, ringed by a walking path that link the Point's various lookout spots (Figure 196).

Figure 195: The view north from the Skillion lookout.

Figure 196: Terrigal Haven dining precinct.

Figure 194: Boat and board launching at Terrigal Haven.

Map 10: Avoca

Scenic Drive Foreshore
Rural Residential Connector

Bradleys Road Reserve
Landscape Connector

Avoca Drive Foreshore
Landscape Connector

Avoca Lake Scout Hall
Minor Activity Node

Avoca Lake Local Foreshore
Local Connector

Avoca Lake Residential Foreshore
Local Connector

North Avoca Beach
Moderate Activity Node

Avoca Dog Beach/Heazlett Park
Moderate Activity Node

North Avoca Dog Beach
Local Connector

Terrigal Cliffs
Landscape Connector

Avoca Beach
Major Activity Node

Avoca Drive Foreshore
Local Connector

Winnie Bay Cliffs
Landscape Connector

0 200 500m   1km

Figure 197: The Avoca coastline looking south from North Avoca Beach.

The Avoca coastline - running from Terrigal Cliff in the north to Winnie Cliffs in the south, and encompassing Avoca Lake to the East - is a highly value recreational precinct for both locals and tourists. It contains three separate beach nodes: two Moderate Activity Nodes with SLS Clubs and adjacent surf spots lie at each end, while a Minor Activity Node lies at the south of the inlet to Avoca Lake - adjacent to which is another Moderate Activity Node at Heazlett Park. Avoca is world famous surfing location, and occurs along the extent of the coastal strip. The main surf break is adjacent to the north SLS Club, with a second point break at the south, where there is also opportunities for safe swimming in the large rockpool and fishing off the rocks. A dog exercise area runs from View Street to Ficus Avenue, stretching across the inlet.

Figure 199: Looking south towards Avoca Beach SLS and Rockpool.

Figure 198: Looking south across Avoca Lake Inlet.

Map 10A: North Avoca Beach

Figure 200: North Avoca Beach SLS Club.

North Avoca Beach is one of the smallest Moderate Activity Nodes in the study area, with only a small carpark, SLS Club and changing facilities (Figure 200). It supports a popular local surf spot, which a small rock shelf offers further attractions (Figure 201). North Avoca Beach also lies on the 5 Lands Walk (Figure 202): a 9 kilometre coastal walk commencing at Terrigal Point, passing along the stretch of Avoca, Winney Bay Cliffs, Copacabana Beach and finishing at Macmasters Beach.
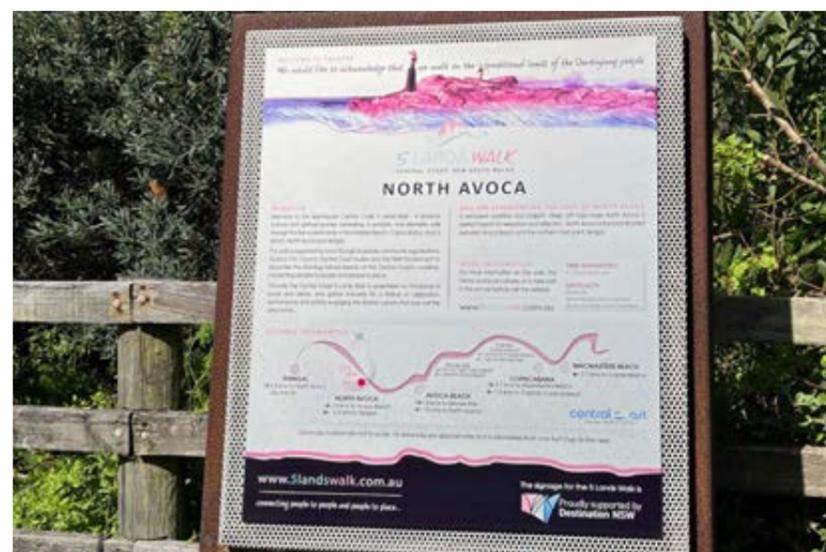

Figure 202: Information on the North Avoca leg of the 5 Lands Walk.

Figure 201: Playing on the rocks below Terrigal Cliffs.

Map 10B: Avoca Dog Beach/Heazlett Park

Figure 204: Drone shot looking west over Heazlett Park towards the dog beach.

Avoca Dog Beach runs from View Street in the north to the Ficus Avenue Observation Tower in the south. The north section is a great example of a Local Beach Connector: while there is no direct frontage to the road or formal street parking, numerous access points with basic beach showers are provided for locals (Figure 205). The main node lies on Ficus Avenue, and has a carpark and toilet block to support use within the ocean and inlet, as well as a small picnic area adjacent to the inlet (Figure 203). On the other side of the inlet is a Moderate Activity Node at Heazlett Park, which provides various recreational and sporting opportunities (Figure 204).

Figure 205: The entrance to Spoon Bay Beach lies within Wamberal Lagoon Nature Reserve.

Figure 203: Private residences backing directly on to the inlet foreshore.

Map 10C: Avoca Beach
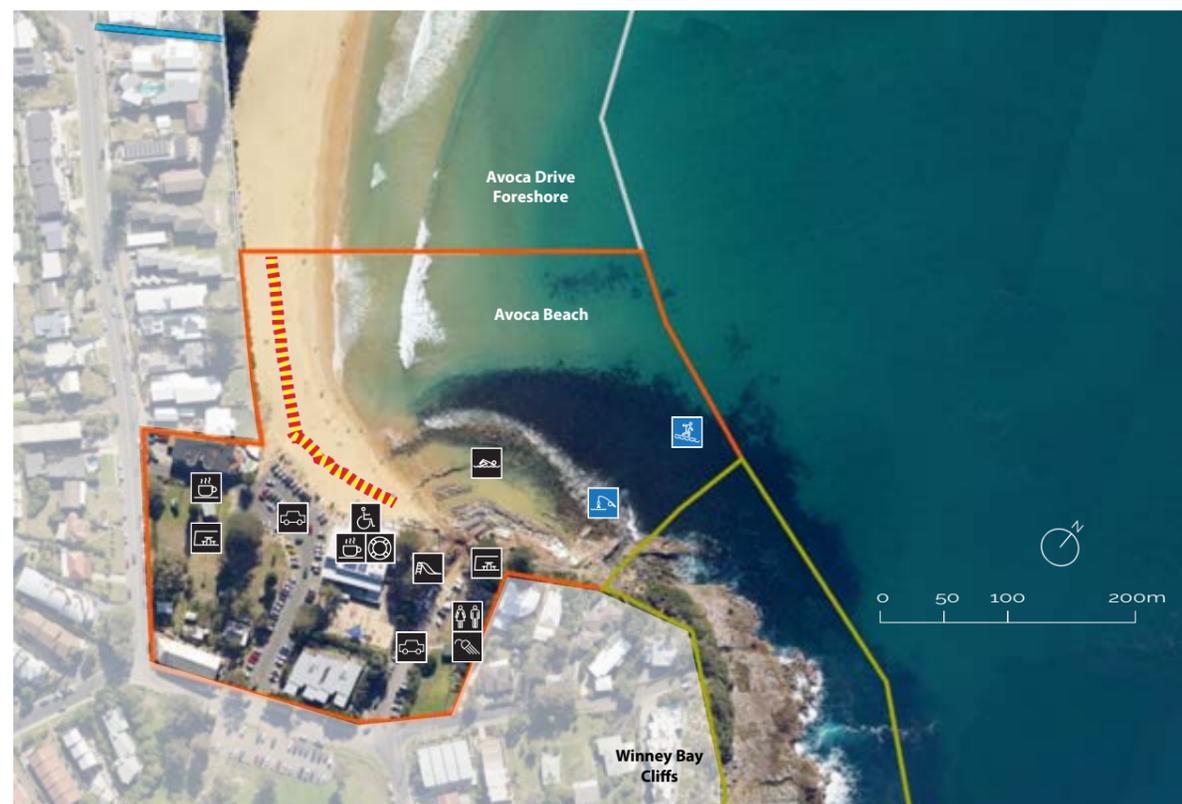
Figure 207: Avoca Beach Rockpool.

The primary Avoca Beach node lies at the very south of the coastal strip. It was classified as one of 5 Major Activity Nodes along the study area, given its popularity, development footprint and diverse range of land and water-based attractions. Its main recreational feature is an expansive rockpool (Figure 207), the largest in the study area. Adjacent to the rockpool is a large SLS Club with multiple cafes and a playground (Figure 206). To the west of the SLS Club is a larger grassed area and dining precinct, to the east is a small picnic area and changing facilities, and beyond that a rockshelf that is popular with fishers (Figure 208). Experienced big wave surfers can also be found utilising the point break off the rockshelf.

Figure 208: The rocks to the east of the rockpool are a popular fishing spot.

Figure 206: An outdoor dining area lies to the adjacent to the SLS Club, with the playground visible behind it.

Map 11: Winney Bay Cliffs

Winney Bay Cliffs stretches from Avoca Beach in the north to Copacabana Beach in the south. A walking path runs south from Cape Three Points Road and links two lookout spots Winney Bay at the north and Captain Cook at the south (note: the southernmost part of the walking trail was closed in mid-2022 due to cliff hazards). The walk also comprises a key component of the 5 Lands Walk: commencing at Terrigal Point and stretching south to Macmasters Beach.

Figure 209: Captain Cook Lookout platform.

Figure 210: The view north from Captain Cook Lookout.

Map 12: Copacabana Macmasters

Figure 211: The view across Copacabana Beach from Winnie Bay Cliffs.

The Copacabana Macmasters is a coherent coastal strip similar in nature to Avoca Beach to the north. It is centred around the mouth of a lagoon – Cockrone Lagoon (Figure 212) – with Moderate nodes found at either end. Both Copacabana Beach to the north and Macmasters Beach to the south contain popular rock fishing spots and surf breaks: surfing occurs all along the beach, however is best supported adjacent to the SLS Clubs. Macmasters Beach has the notable additions of a playground to the north of the node and a constructed rockpool to the south, making it the primary recreational node. Linking the nodes to together is a long dog beach, classified as a Local Connector due to the now familiar combination of residential beach frontage and regular beach access paths from the street. No nodes are found along the lagoon foreshore, however local connectors provide various recreational opportunities, as shown in Figure 213.

Figure 213: Locals fishing in Cockrone Lagoon along Del Monte Place.

Figure 212: A sheltered lagoon inlet divides the two nodes and the dog beach that links them.

Map 12A: Copacabana Beach

Del Monte Place Foreshore

Copacabana Beach

Copacabana Macmasters
Dog Beach

0   50   100   200m

Figure 214: Copacabana SLS Club.

Copacabana Beach is a typical Moderate Activity Node with an iconic name and iconic surf club (Figure 214). It contains a popular surf break, and the rockshelf to the east provides fishing and safe swimming opportunities depending on the tide (Figures 215 and 216). While catering for a variety of uses at the node and the beach, it contains only limited car parking. Opposite the node is a popular commercial and dining precinct, which provides additional parking for beach users. A lookout lies at the west of the node, and beyond that the commencement of the dog beach, which can be accessed through a series of beach access paths from Del Monte Place.

Figure 216: Copacabana Beach from the rocks.

Figure 215: Advice to fishers on the rockshelf.

Map 12B: Macmasters Beach

Copacabana Macmasters
Dog Beach

Macmasters Beach

Figure 219: Macmasters Beach Rockpool (photo courtesy of Central Coast Council).

Macmasters Beach is a Moderate Activity Node situated at the very south of the coastal strip. Similar in nature to the main Avoca Beach node, it contains a SLS Club with beach wheelchair hire, a cafe and picnic area, and changing facilities to support use at the popular rockpool (Figure __). The patrolled area extends up Marine Parade to the edge of the dog beach, where an observation tower (Figure __) stationed adjacent to a playground and additional public toilets (Figure __). The rocks to the south are popular for climbing and fishing, and a popular surf break lies just off the point.

Figure 217: Looking south along Macmasters Beach towards the SLS Club.

Figure 218: Macmasters Beach Playground.

Map 13: Bouddi National Park East

Figure 220: The slightly interrupted view from Little Beach Lookout.

The eastern component of Bouddi National Park stretches from Macmasters Beach in the NE to Putty Beach in the SW. It is most notable for its series of Conservation Connectors that provide a largely continuous series of walking trails with multiple lookout opportunities (Figures 220 and 221). The cliffs are punctuated by two beaches - Little Beach and Maitland Bay Beach - which must be both be accessed by foot over occasionally challenging terrain (Figure 222).

Figure 222: The walking path to Maitland Bay Beach is not for the faint hearted.

Figure 221: Looking east over Maitland Bay Beach from the lookout.

Map 13A: Little Beach

Little Beach is an atypical Minor Activity Node in the sense that it lies within a National Park and can only be accessed by foot. Visitors can either park either at Beachview Avenue and approach from the east through Second Point Cliffs (Figure 223), or from the end of Graham Drive to the west. Once at the node, a formal campground is provided for visitors, with long drop toilets, BBQ and picnic facilities (Figures 224 and 225). As well as providing a small sheltered beach for swimming, the rockshelf extending to the east also provides additional fishing and play opportunities (Figure 226).

Figure 226: Driftwood art on Little Beach, with rockshelf visible in the background..

Figure 223: Eastern access path to Little Beach from Second Point Cliffs.

Figure 225: Toilets at Little Beach Campground.

Figure 224: Little Beach Campground also contains BBQ and picnic facilities.

Map 13B: Maitland Bay Beach
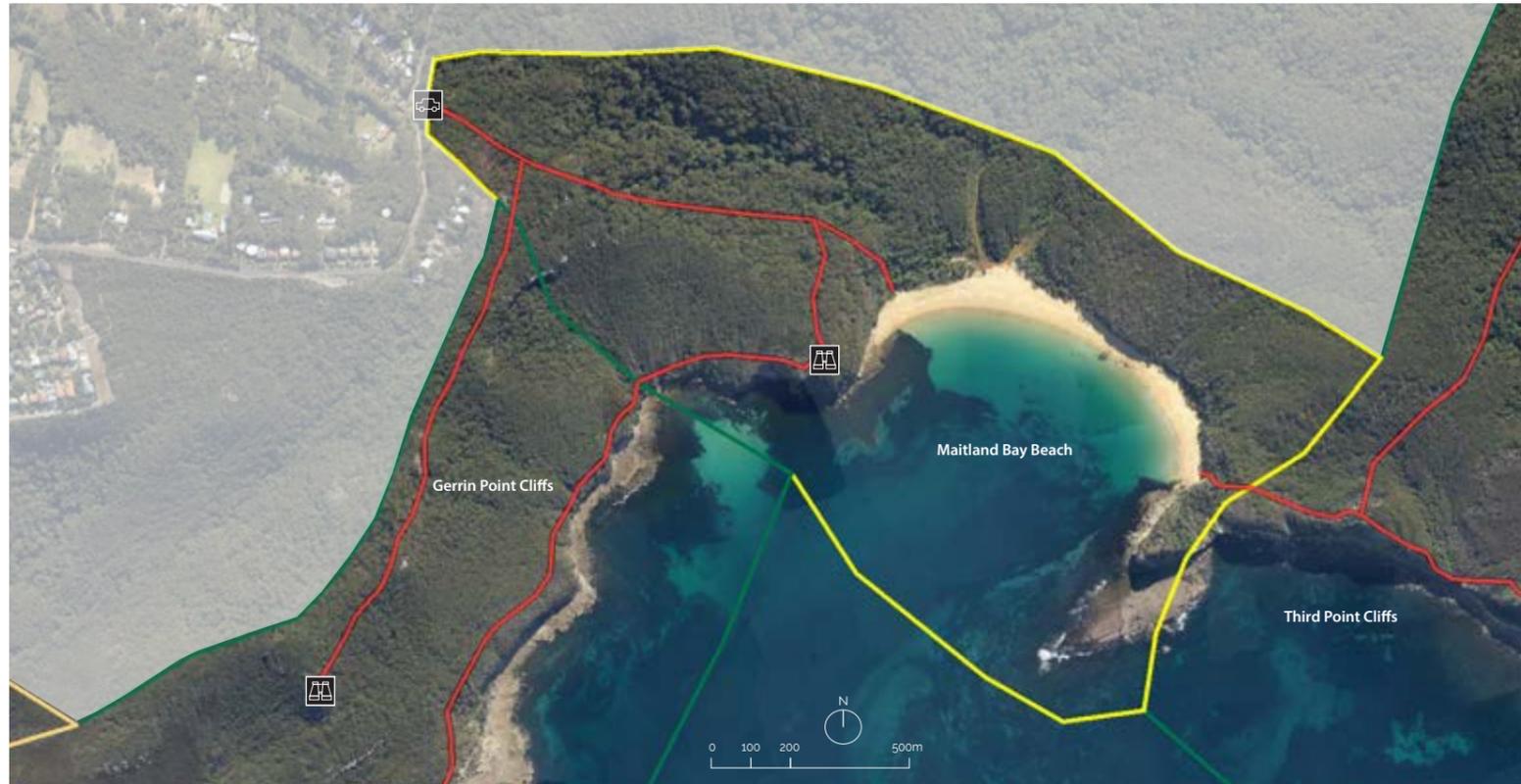
Figure 227: Entry signs at the start of the Maitland Bay Beach walking trail.

Maitland Bay is named after the paddle steamer SS Maitland that crashed in the bay en route to Newcastle in 1898 - parts of the shipwreck can still be found on the rocks. As well as this fascinating backstory, Maitland Bay Beach is a novel Beach Access Node in that it can only be accessed by foot, via a long walking trail commencing just south of Maitland Bay Information Centre on The Scenic Road (Figure 227). Only a carpark is provided at the "node", with no additional beach infrastructure. Several hundred metres from the carpark, a trail branches off towards Bullimah Spur (Figure 228), while several hundred metres from the beach, a right turn onto Bouddi Coastal Trails leads to a lookout over the Beach. No additional infrastructure are found at the beach, however.

Figure 229: Driftwood art on Maitland Bay Beach.

Figure 228: After a few hundred metres, the trail branches off towards Bullimah Spur Lookout.

Map 14: Bouddi National Park West

Lobster Beach
Beach Access Node

Killcare Beach
Moderate Activity Node

Putty Beach
Minor Activity Node

Putty Killcare Dog Beach
Landscape Connector

Killcare Cliffs
Conservation Connector

Tallow Beach
Minor Activity Node

Gerrin Point Cliffs
Conservation Connector

Box Head Cliffs
Conservation Connector

Figure 230: Looking east across Tallow Beach (photo courtesy of Central Coast Council).

The western component of Bouddi National Park stretches from Putty Beach in the east, Box Head Cliffs in the west and Lobster Beach in the north. It contains the only coastal stretch accessible by car in the Park, which includes a Moderate Activity Node at Killcare Beach and a dog beach to the East. From Killcare Beach, a series of walking paths link to Tallow Beach (Figure 230) and Lobster Beach (Figure 231), the former providing a small camping site and the latter providing views across the bay to Umina Point (Figure 232

Figure 232: The view across Lobster Beach towards Umina Point.

Figure 231: Lobster, Tallow and Killcare Beaches can all be accessed via continuous walking paths.

Map 14A: Putty Beach


Putty Killcare Dog Beach
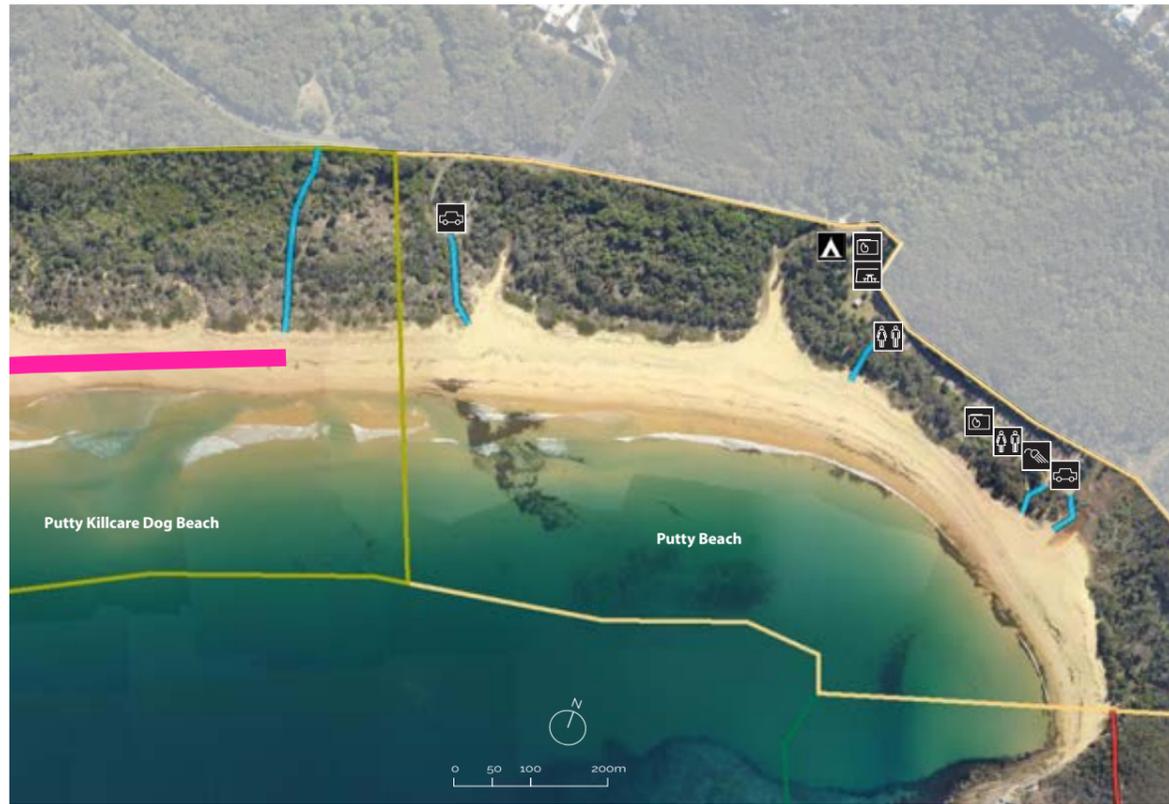
Putty Beach

Figure 234: Information for campers at Putty Beach.

Putty Beach is a Minor Activity Node similar in nature to other nearby coastal campgrounds. It contains 20 formal camping spots that (see map in Figure 234), with adjacent picnic and changing facilities (Figure 235). It marks the end of the Bouddi Coastal Walk, allowing it to be accessed by hikers. Unlike Little and Tallow Beaches to either side, it can also be accessed via car. As shown in Figure 233, driftwood deposited during recent flooding events can be found along the beach, as it could be seen in other non-residential beaches.

Figure 235: BBQ and sheltered seating at Putty Beach Campground.

Figure 233: Driftwood like this at Putty Beach was found at most remote beaches in the study area, owing to the recent floods.

Map 14B: Killcare Beach

Figure 236: Killcare Beach is one of the few coastal nodes in study area with public exercise equipment.

Killcare Beach is a Moderate Activity Node similar in nature to the main nodes at Avoca and Macmasters Beaches. The carpark to the east of the node provides access to the dog beach (Figure 238), which ends at the edge of the main carpark. One novel feature is the presence of a public fitness equipment circuit in the small park area (Figure 236), which also houses a BBQ and picnic area. South of the SLS Club, which also provides beach wheelchair hire and small kiosk, is a natural rockpool for safe swimming (Figure 237). While the entire Putty Killcare coastal strip can be surfed, the main break lies adjacent to Killcare SLS Club.

Figure 238: Shower and dog beach access at the northern carpark.

Figure 237: Killcare Beach Rockpool.

Map 15: Brisbane Waters South

Figure 239: Looking south along Wagstaffe Beach.

The southern half of Brisbane Waters runs from Wagstaffe Point in the west to Hardys Bay Parade Foreshore in the east. It includes the first Residential Beach Connectors in the study area, with the beach north and south of Wagstaffe Wharf (Figure 239) largely restricted to being accessed from adjacent residential properties. Both Pretty Beach and Hardys Bay are broken up into both Urban Connectors and Minor Activity Nodes: while minor infrastructure can be found along the foreshore areas, the nodes are centred around the main jetties: with Hardys Bay being adjacent to a popular commercial precinct (Figure 240). The two bays are connected by a walking path running through Araluen Drive Foreshore (Figure 241).

Figure 241: The entrance to Araluen Drive Foreshore path.

Figure 240: Commercial precinct opposite Hardys Bay Jetty.

Map 15A: Wagstaffe Wharf

Wagstaffe Beach North

Wagstaffe Wharf

Wagstaffe Beach South

0   50   100   200m

Figure 242: The jetty at Wagstaffe Wharf, with a fishing advice sign on the right.

Wagstaffe Wharf is the smallest node in the study area, centered around a small carpark and fishing jetty halfway along Wagstaffe Beach (Figure 242). Adjacent to the small carpark are bike racks, a small picnic area with seating and a BBQ, public toilets, totem pole art features (Figure 244) and the Wagstaffe Hall community centre. As shown in Figure 243, private jetties to the north and south restrict public access to the beach, thus their classification as Residential Connectors.

Figure 244: Public art at Wagstaffe Wharf.

Figure 243: Access to Wagstaffe Beach is restricted to adjacent residences.

Map 15B: Pretty Beach

Figure 245: Pretty Beach swimming net.

Pretty Beach is comprised of an Urban Connector in the west and a Minor Activity Node in the east. A small playground lies adjacent to the western jetty (Figure 247), however was not considered as lying within the coastal area due it being separated by a main road. The main node encapsulates a swimming net and adjacent changing room (Figure 245), however the only toilets are located adjacent to the jetty and boat ramp. While all the jetties can be used for fishing, a dedicated cleaning station (Figure 246) makes this the main fishing spot across the two Brisbane Waters South bays.

Figure 247: Playground opposite Pretty Beach.

Figure 246: A fishing station is located next to the jetty and boat ramp.

Map 15C: Hardys Bay
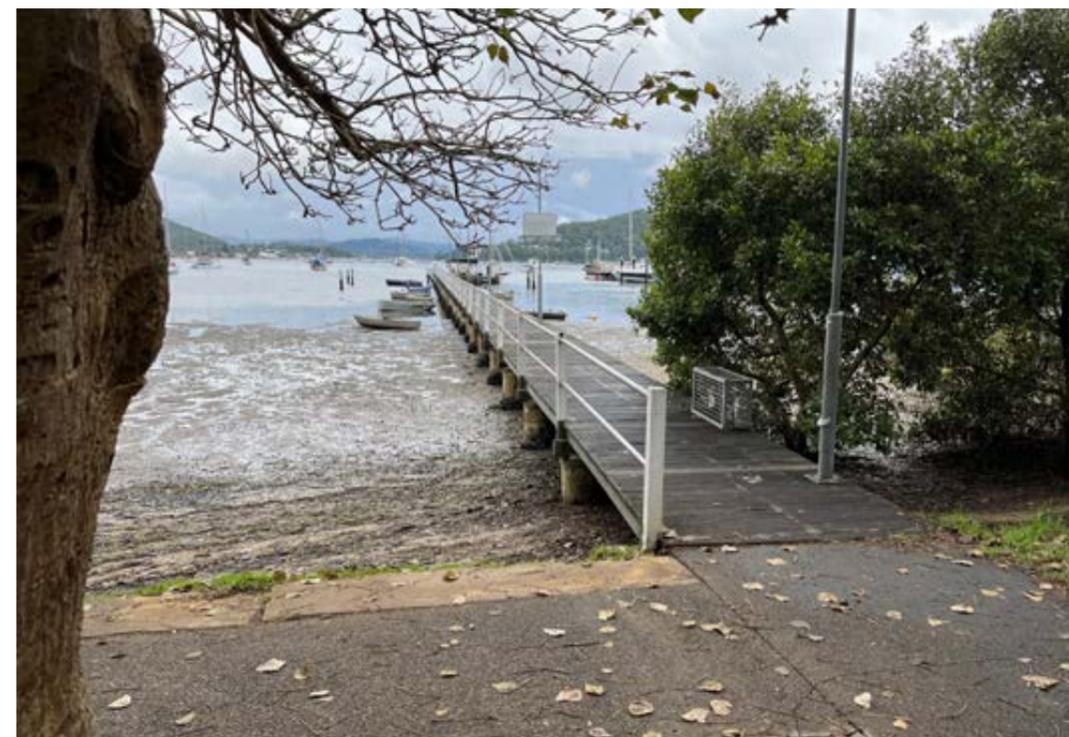
Figure 248: Hardys Bay Jetty.

Hardys Bay, similar to Pretty Beach to the west, is broken up into a longer Urban Connector and smaller Minor Activity Node at its main jetty and public toilets (Figure 248) A further small public toilets can be found at the western jetty (Figure 250), however without any formal parking or additional infrastructure it was not considered a node. Adjacent to the public jetty are toilets and a boat mooring jetty with commercial kayak and board hire (Figure 249). while opposite the node is a popular commercial precinct.

Figure 250: Small public toilets are provided along the Hardys Bay, although are not considered part of a node.

Figure 249: Kayak and board hire is available at the jetty.

Map 16: Brisbane Waters North

Figure 251: Booker Bay Wharf.

The northern half of Brisbane Waters runs from Rocky Point in the East to Ettalong Dog Beach in the west. Booker Bay is a long Residential Beach Connector comprised mainly of private boat mooring jetties. It does contain one public jetty at Guyra Street - Booker Bay Wharf (Figure 251) - and a public boat launching ramp at Karu Avenue. The coast changes to a Local Beach Connector near Mareela Avenue, with many backyards fronting directly onto the public beach (Figure 253). A node of sorts is found at Anderson's Boatshed and the adjacent boat mooring jetty at Petit Street (Figure 252). Kayak and board hire is available from the boatshed to make use of the sheltered Brisbane Waters. A shared path commences at Ettalong Wharf, and continues west through Ettalong Beach along the dog beach to Ocean Beach.

Figure 253: Many private residences have direct frontage on to Anderson's Boatshed Beach.

Figure 252: Boat and board hire at Andersons Boatshed.

Map 16A: Ettalong Beach

Figure 254: The start of the shared path at Ettalong Wharf.

The Ettalong Beach coastal strip stretches from Ettalong Wharf - the departure point for the ferry to Palm Beach - to Ettalong Dog Beach. Its main feature is a continuous shared path, the longest in the study area (Figure 254). Ettalong Beach is one of the few Moderate Activity Nodes in the study area without a SLS Club. The main attraction is the beachfront cafe just south of the commercial precinct (Figure 255), which also provides changing facilities and bike racks. Further south adjacent to the war memorial is a playground and picnic area. Even further south is another playground and picnic area, this time with the addition of public fitness equipment (Figure 256). A fishing platform is located at the end of the node, which can be accessed via the small parking area at the start of the dog beach, which also provides a third boat launching point into Brisbane Waters

Figure 256: Fitness equipment adjacent to the shared path at the south of the node.

Figure 255: Kayak and board hire is available at the jetty.

Map 17: Broken Bay

Figure 257: The view of The Box surf break from The Espy lookout, with Lion Island visible in the background.

The Broken Bay coastline stretches from Ettalong Point to Umina Point. At both ends are iconic surf breaks: The Box at Ettalong Point is perhaps the most well known in the study area, with the Espy lookout giving a perfect vantage point for observers (Figure 257). The shared path (Figure 258), which commenced at Ettalong Wharf, runs east past the edge of the dog beach to the end of Ocean Beach. Moderate Activity Nodes are found at the SLS clubs at Ocean Beach and Umina Beach: two of the most popular SLS clubs in terms of memberships on the Central Coast. A second dog beach begins just west of the node, and runs along the Holiday Park foreshore to Umina Point. A Beach Access Node was identified at the southern end of the Umina Beach, at the mouth of Ettalong Creek, providing a small carpark, showers and changing facilities for surfers and dog beach users (Figure 259).

Figure 259: Facilities for dog beach users at Ettalong Creek.

Figure 258: Walkers along the shared path adjacent to Ettalong Dog Beach.

Map 17A: Ocean Beach

Figure 260: Cafe seating in front of Ocean Beach SLS Club, with the Observation Tower in the background.

The Ocean Beach node begins at the formal street parking at edge of the dog beach, which ends at Augusta Avenue. It is a typical Moderate Activity Node, with a large SLS Club with beach wheelchair hire, downstairs kiosk (Figure 260) and upstairs restaurant. Adjacent to the SLS Club is a small playground, as well as a war memorial looking out to sea (Figure 262). Across the carpark, located within the node, is a popular dining precinct (Figure 261).

Figure 262: The Ocean Beach War Memorial.

Figure 261: Cocktails with a view at Umina Beach.

Map 17B: Umina Beach
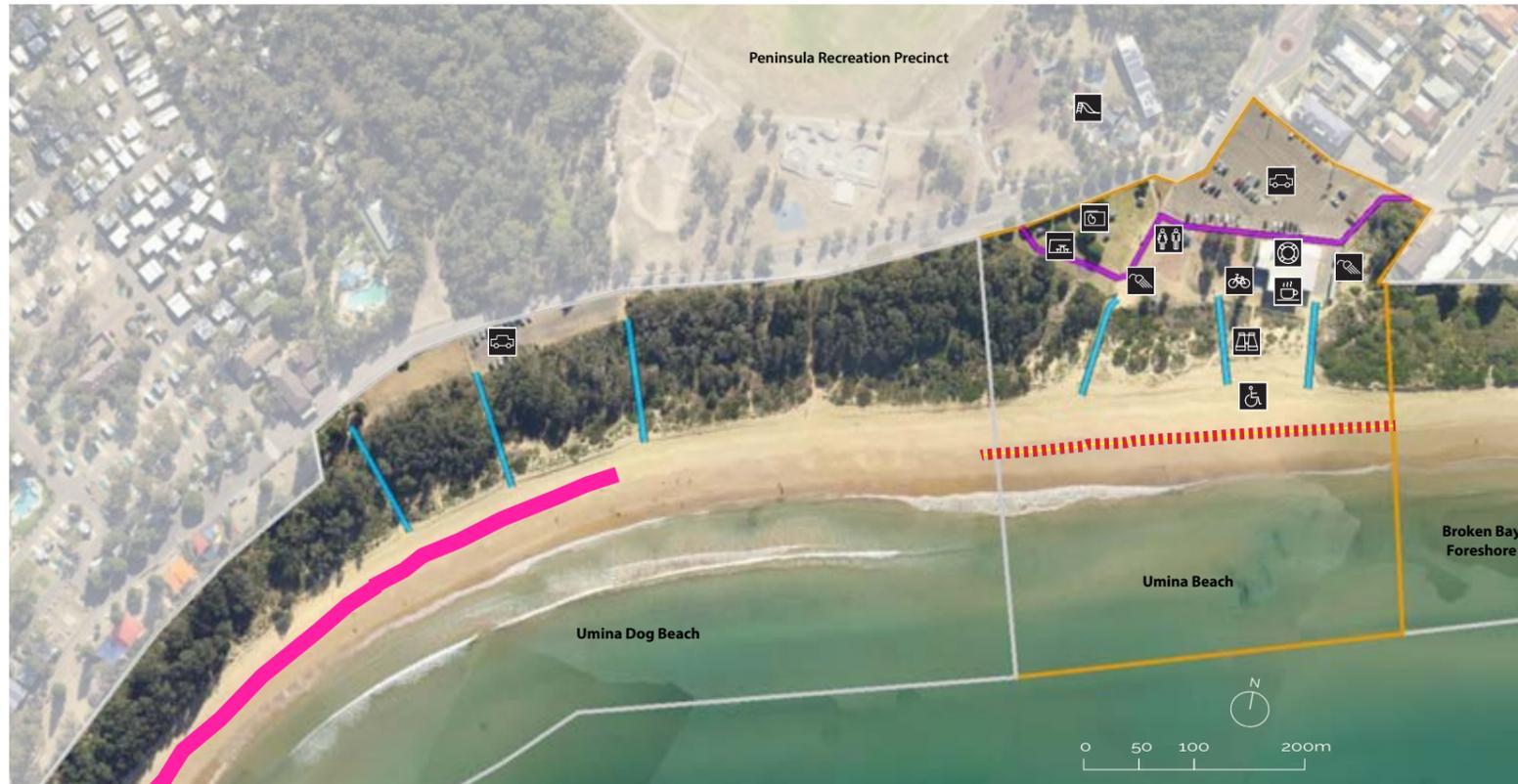
Umina Beach is a large Moderate Activity Node located within the broader Umina recreational and tourist precinct. In front of the SLS Club and cafe is a lookout (Figure 263). East of the shared path that runs along the top of the node is a small picnic area with a BBQ and sheltered seating (Figure 264). While it was not considered within the study, being separated from the coastal reserve by a main road, the Peninsula Recreation Precinct lies directly opposite the node: providing a range of additional land-based recreational opportunities (Figure 265). West of the node is a Local Beach Connector, with the beach mainly serving holiday park residents and dog walkers.

Figure 265: The Peninsula Recreation Precinct lies on the opposite side of Sydney Avenue.

Figure 264: Looking across the shared path towards the picnic area.

Map 18: Pearl Beach to Patonga

Figure 266: Pearl Dog Beach looking south towards the rockpool.

The final section of the study area stretches from Umina Point to Patonga Creek. The Pearl and Patonga coastlines are separated by Middle Head Cliffs: a large Conservation Connector that connects the two through a continuous walking trail starting from the end of Crystal Avenue. Halfway along the track is Warrah Lookout, which provides spectacular views across the bay (Figure 267). Both beaches are similar in nature as Minor Activity Nodes: providing a range of land and water-based recreational opportunities but without SLS Clubs. Patonga Beach also provides a boat launching ramp at its eastern end, and a campground to the west.


Figure 268: The view west across Patonga Creek.

Figure 267: The view of Patonga Beach from Warrah Lookout.

Map 18A: Pearl Beach

Pearl Dog Beach

Pearl Beach

Middle Head Cliffs

Figure 269: The entrance to Pearl Beach Wetland, with the dog exercise area stretching north with direct fronting to private residences.

Pearl Beach is a secluded local beach also popular with tourists. A dog exercise area stretches from Umina Point to the entrance to Pearl Beach Lagoon (Figure 269), providing private residences with direct beach frontage as a typical Local Connector. After a series of beach access paths, the main node begins just north of Amethyst Avenue, where a small toilet block and shaded seating are provided alongside formal street parking bays and a small playground and picnic area further south (Figure 270). A popular restaurant lies within the node at the end of Tourmaline Avenue, with a small commercial precinct and tourist accommodation opposite. At the very south of the node, at the base of Green Point Cliffs, is a small ocean pool (Figure 271).

Figure 271: Pearl Beach Ocean Pool, with Pearls on the Beach restaurant visible in the background.

Figure 270: The small picnic and play area at Pearl Beach, with the commercial precinct adjacent to the node visible in the background.

Map 18B: Patonga Beach

Figure 272: Patonga jetty and ferry platform.

Patonga Beach is the final coastal strip in the study area. A Minor Activity Node at the west encapsulates both a boat launching ramp with extensive trailer parking, as well as a jetty that leads to the departure point of the ferry to Palm Beach (Figure 272). A small playground and picnic area is found west of the jetty, with toilets and showers located opposite the node adjacent to the playing field, as is a small dining precinct. South from the jetty is a Local Connector, with private residences separated from the beach by a narrow power line reserve (Figure 273). A dog exercise area runs from the jetty through the connector to Meroo Avenue. A final Minor Activity Node is found at the edge of Patonga Creek, a popular fishing location. A formal campground with changing, play and picnic facilities (Figure 274). While outside of the study area, low tides allow for access to Little Patonga Beach on the other side of Pacific Head.

Figure 274: Play and picnic facilities in Patonga Beach Campground.

Figure 273: Looking west along the dog beach foreshore reserve.

PART C

Study Recommendations

The recommendations in this section are based on the findings of the policy and literature reviews, the mapping data presented in earlier sections of this report, observations made during the field trips and discussions with officers from the Central Coast Council.

Increasing and enhancing recreational opportunities

Coastal shared/dual use paths potential

The Central Coast Council coast adequately facilitates a certain range of recreational activities: notably swimming, beach walking, surfing, fishing, sitting and relaxing, socialising, beach running, exercising the dog, sun bathing and visiting cafes/restaurants, as well has having facilities and locations for more specialised activities, including kite surfing, canoeing and hang gliding. Popular recreational activities not well catered for are cycling, and walking and running on coastal paths.

Observations from our studies of the Perth beaches is that more walkers and runners prefer the shared use paths over exercising on the beach.

As noted in Part A, there are only 5 shared coastal paths in the study area, with photos of these paths shown in the Figures below:

- A short path at Soldiers Point (Figure 275);

- A very well used path at The Entrance (Figure 276);

- South of Shelly Beach, including a track through the bush reserve (Figures 277 and 278);

- Another very well used path part of the Terrigal Beach and Node including a walkway around the rocky cliffs (Figures 279 and 280); and

- The longest path of the five, which is either side of Ettalong Beach (Figures 281, 282 and 283, following page).

It is highly likely that if more and longer shared use paths within the coastal foreshore are provided, this would attract more users to the beach and enhance the experience of some of the existing users. Council's Destination Management Plan (Central Coast Council 2021) identifies the following opportunity with respect to paths:

Delivery of improved walking trails, pathways, and cycling routes to maximise access and provide a diverse offering of experiences. (p46)

Figure 275: Very short coastal path at Soldiers Beach.

Figure 276: Coastal path along Marine Parade at The Entrance.

Figure 277: Shared path south of Shelly Beach.

Figure 278: Track through bush coastal reserve south of Shelly Beach.

Figure 279: Northern part of the Terrigal Beach and node path.

Figure 280: The Terrigal Haven Boardwalk forms part of southern section of the Terrigal Beach path.

A number of considerations are needed in designing these paths, including:

- Users typically do out and back routes, and it is useful to have facilities, including toilets and water at the starting point;

- The design of the paths should maximise interest by not being linear and providing a range of landscapes to pass through, including varied vegetation, different builtscapes, undulations where the view is varied including not always having ocean views – i.e. providing a spectrum of experiences;

- Seats at locations with sweeping views or separate viewing platforms; and

- For maximum usage, these paths are best located within or very near existing residential areas.

Recommendations

The following locations are ideal for new shared use paths and the feasibility of constructing these paths should be pursued including costings, grants, community engagement and detailed site design:

1. Connecting Budgewoi Beach and Hargrave Beach;

2. Toowoon Bay Surf Life Saving Club to Shelley Beach;

3. The beach adjacent to Wamberal Lagoon with a possible extension north to Forresters Beach around or along the rocky point; and

4. Connecting the Entrance North beach to Magenta Beach, using, upgrading and extending the existing track at Magenta Beach (Figure 284), and linking this to existing coastal track through the coastal reserve at The Entrance North Beach via Curtis Parade (Figure 285), which will need to be upgraded.

Figure 281: Path to the east of Ettalong Beach, which connects Ettalong Wharf to Ocean Beach.

Figure 282: Shared path and supporting infrastructure south of Ettalong Beach.

Figure 283: Path running adjacent to Ettalong Dog Beach.

Figure 284: The existing coastal track at Magenta Beach.
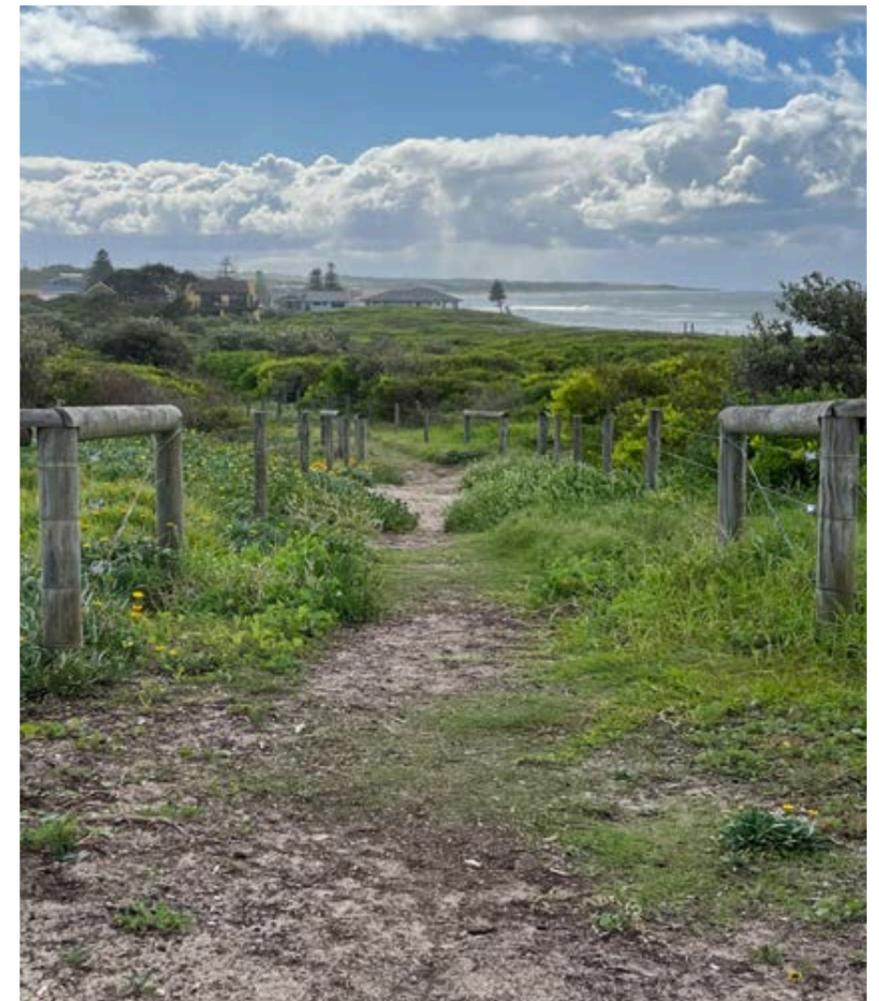


Figure 285: The existing coastal track through the coastal reserve at North Entrance Dog Beach.

Upgrading existing tracks

There are five existing tracks, either formally or informally made, that could be upgraded and extended as described below: one in Brisbane Waters and one in each coastal lagoon. Whilst the conservation value of the four lagoons included in this study is acknowledged, they are largely under utilized as a recreational resource. The most appropriate land based recreational use of these lagoons that is sympathetic to their conservation value is walking/running on well maintained tracks, and in one case a shared use path.

Pretty Beach through to Killcare

Recommendation

5. The existing track starting at Pretty Beach boat ramp (Figure 286) and through Araluen Drive road reserve, linking back to Araluen Drive in Hardys Bay, could be upgraded to shared path standard and extended around part of Hardys Bay through the developed although narrow foreshore reserve (Figure 287) to at least the small commercial centre at Killcare Road junction.

Terrigal Lagoon

Recommendations

6. There is a short walk (Figure 291) on the SW arm of Terrigal Lagoon (photos are shown in Figures 288 to 290). The track is mostly suitable for walking and appears to be well used, although rather short. It has the potential to be upgraded, not necessarily to dual use path standard, and extended further The Council-approved option to develop a loop track around the SW arm of the lagoon starting at Marine Discovery Centre should be supported.

7. The eastern arm also has potential for including a walking track. The track could start from a new car park along Lake view road and head north and then west passed the Breakers Country club, then along the western shore passed Franklin Oval to then link up with the existing path near the northern end of the Terrigal Drive, which could then link to the path to the Terrigal major node. Such a path would also provide a pedestrian/cycle link to the Terrigal major node for residents in the Beaufort and Hastings Roads locality. It is likely that the path would have to run partly along Ogilvie Street where there is no public foreshore.

Figure 286: Start of the existing track through Araluen Drive road reserve at the Pretty Beach boat ramp.

Figure 287: Part of the narrow foreshore reserve around Hardys Bay.

Figure 288: End of the Terrigal Lagoon walk at Hastings Road.

Figure 289: Wetland setting of the Terrigal Lagoon walk.

Figure 290: Start of the Terrigal Lagoon path.
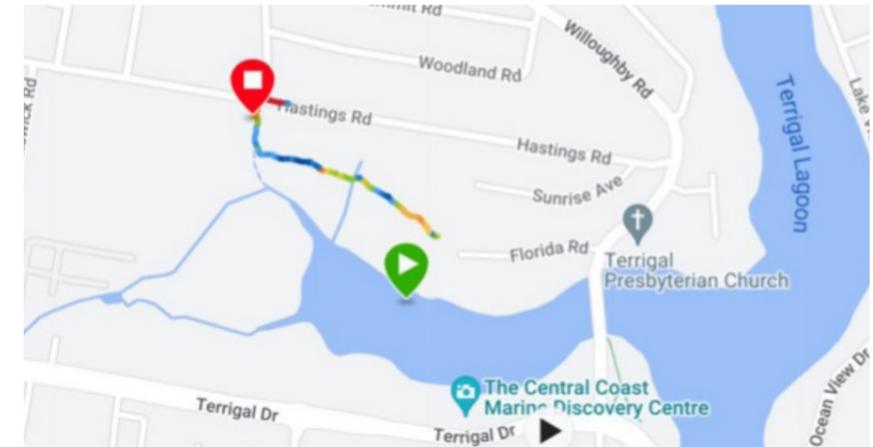
Figure 291: Map of the short walk route in Terrigal Lagoon Reserve.

Avoca Lagoon

There is an existing track network starting on the northern side of Avoca Lagoon near the ocean outlet, goes around the eastern arm of the lake, follows the northern arm and head north through the forested areas of the reserve and ends up at Scenic Highway near the intersection with Bradleys Road – see the photos and map of the walk sections in Figures 292 to 295. The total length is 3.49km.

Recommendation

8. Whilst the track in Avoca Lagoon reserve is rough, overgrown, muddy in parts and is not continuous, it has the potential to be upgraded and made into a single walking trail. At the moment, it would be an out and back track, but options to extend the track to the west so it becomes more of a circuit should be explored.

Wamberal Lagoon

Recommendations:

9. A poor quality path runs from Matawai Avenue to Wairakei Road Reserve (Figure 296 and 297), which could be upgraded.

10. A higher quality path on the eastern side of the lagoon at Spoon Bay connects to the beach adjacent to Wamberal Lagoon (Figure 298). This section could form part of a loop track which goes along the eastern side of Wamberal Lagoon, with a possible extension north to Forresters Beach around or along Wamberal Point.
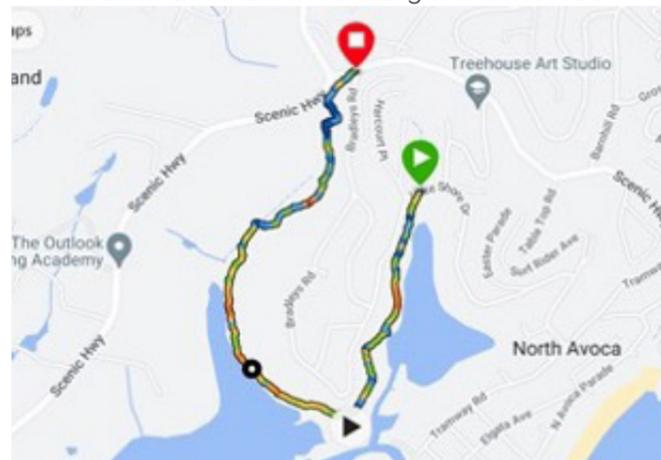
Figure 292: Map of Avoca Lagoon walk.

Figure 293: The start of the Avoca Lake path near the lagoon mouth.

Figure 294: The Avoca Lake path runs directly adjacent to private properties.

Figure 295: A particularly poor quality section of the Avoca Lake path posing a slip hazard.

Figure 296: The entrance to the Wamberal Lagoon path off Matawai Avenue.

Figure 297: The majority of the path was muddy and slippery after heavy rain.

Figure 298: Entrance to the Spoon Bay Beach walking path.

Cockrone Lagoon

The rough track starting on the northern side of Cockrone Lagoon near the ocean outlet, extending about 200m could be upgraded, but not to dual use path standard, and extended – see photos in Figures 299 to 302.

Recommendation:

11. This track in Cockrone Lagoon reserve is a bit rough and rather short. It has the potential to be upgraded and extended around the lagoon.

Improving and increasing disabled access

It was observed that all of the surf lifesaving clubs had facilities that allowed physically disabled people to access facilities by having disabled parking and toilets, but only a few were observed to have facilities to enable access to the beach including having beach wheel chairs (Figure 303) and beach mats (Figure 304).

Recommendation:

12. Council should work with the surf lifesaving clubs to ensure that they all have either beach access wheelchairs or beach mats.

It is also noted that shared use paths provide a recreational opportunity for physically disabled people and that by providing more of these, as recommended above, would enhance and expand physically disabled people's experiences at the coast.

The above recommendations and the comments about dual use paths are consistent with Council's Disability Inclusion Action Plan (Central Coast Council 2021) which has four focus areas, one of which is "2: Making the Central Coast more accessible, inclusive and liveable", and one of the objectives is "We will make it easier to access the places we love on the Central Coast – the beaches, waterways and bushland."

Figure 299: Opening to the Cockrone Lagoon trail from the beach.

Figure 300: The path runs directly past the open backyards of private residences.

Figure 301: Boats found along Cockrone Lagoon trail.

Figure 302: The view of the lagoon along the trail.

Figure 303: Beach wheelchair for hire at Avoca Beach.

Figure 304: Beach wheelchair mat at Toowoon Bay Beach.

Enhancing users' experiences – addressing aging infrastructure

As noted above, good quality infrastructure will enhance the user's experience and increase the likelihood that users will return. There are several areas where the quality of certain infrastructure should be improved.

Lookouts

Most of the lookouts offer excellent views, but some have their views restricted because the vegetation in front of the viewing platform has grown and is blocking some or all of the viewing. Hargraves Beach (Figures 305 and 306) and Ettalong Beach (Figure 307) are two such examples.

As well, some of the lookouts would benefit from have seating, for example at Wamberal Beach (Figure 308) and Umina Beach (Figure 309).

Recommendation:

13. An audit of the lookouts should be carried out to identify those that require the vegetation to be trimmed to ensure the views can still be experiences by visitors, and/or those where the seating should be added.

Examples of infrastructure that should be upgraded or improved

Council has done an excellent job in providing modern facilities, especially at the developed nodes, but the site visits identified examples of infrastructure that was old, and need of repair or replacement, as shown in Figures 316 to 344 on the following pages. Providing modern infrastructure and facilities would enhance users' experiences.

Recommendation:

14. Council should develop a coastal infrastructure replacement and upgrade programme to modernise the aging coastal infrastructure. The list here is a useful starting point, however, the first step should be a complete audit of coastal infrastructure.

Figure 305: Hargraves Beach Lookout.

Figure 306: Obstructed view from Hargraves Lookout.

Figure 307: The obstructed view of Broken Bay from Ettalong Beach Lookout.

Figure 308: Lookout at Wamberal Dog Beach.
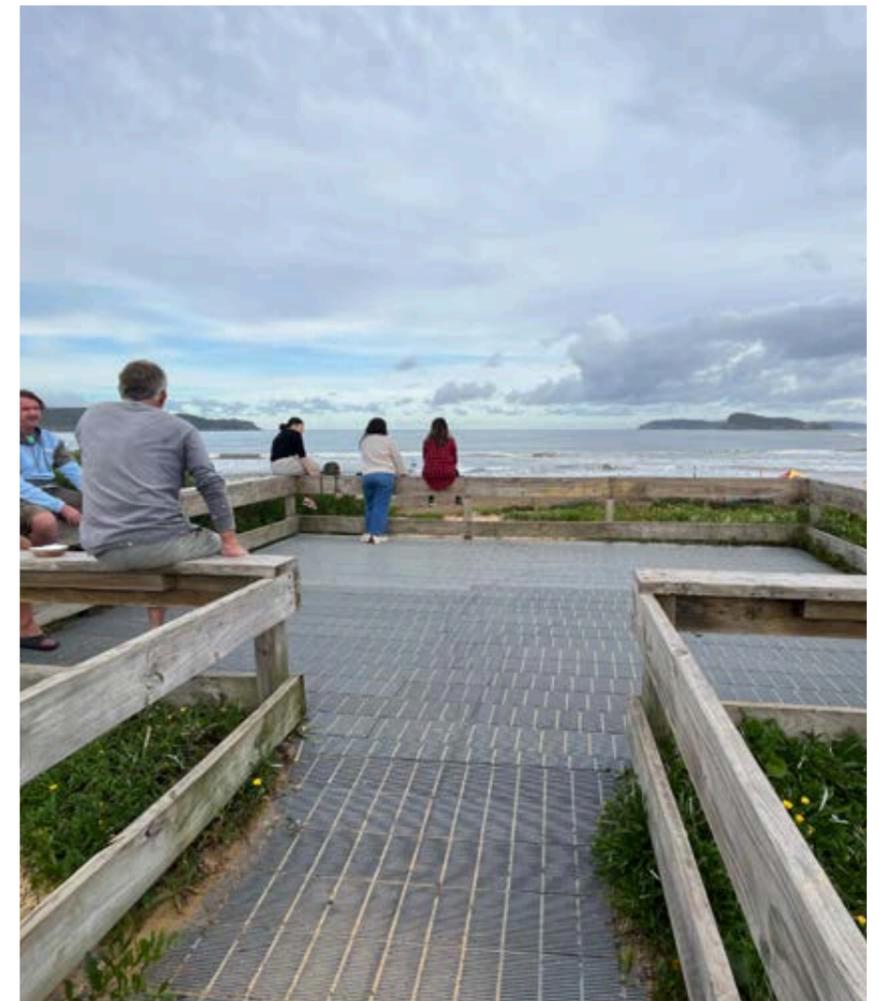
Figure 309: Locals using the ledge for seating at Umina Beach Lookout.

Figure 316: Lookout at Budgewoi Beach.

Figure 313: Carparks at Budgewoi Dog Beach.

Figure 312: Seating along the path at Norah Head Rockpool.

Figure 317: Beach access at the northern end of Curtis Parade Beach.

Figure 315: Lookout seating along North Entrance Dog Beach.

Figure 314: Old seating at North Entrance Beach.

Figure 318: Toilet block at North Entrance Estuary.

Figure 311: Old infrastructure at Blue Lagoon Beach south of Shelly Beach.

Figure 310: Damaged stairs at Blue Lagoon Beach.

Figure 325: Old shower at Spoon Bay Beach.

Figure 322: Old shower at Wamberal Lagoon.

Figure 321: Old showers at Wamberal Beach.

Figure 326: Seating at Terrigal Lagoon.

Figure 324: Old shower at North Avoca Beach.

Figure 323: Old shower along North Avoca Dog Beach.

Figure 327: Another old shower at North Avoca Dog Beach at the end of View Street.

Figure 320: Another old shower at North Avoca Dog Beach at the end of Ocean Street.

Figure 319: Another old shower at North Avoca Dog Beach at the end of Lake Street.

Figure 334: Old showers at Avoca Dog Beach.

Figure 331: Old shower north of Copacabana Beach.

Figure 330: Another old shower north of Copacabana Beach.

Figure 335: Another old shower at Copacabana Beach.

Figure 333: Boats found along Cockrone Lagoon trail.

Figure 332: Old shower at Killcare Beach.

Figure 336: Lack of shady seating at Killcare Beach.

Figure 329: Old seating at the north of Hardys Bay.

Figure 328: Old seating at Pretty Beach adjacent to boat ramp.

Figure 342: Example of old seating in reserve adjacent to Araluen Drive, Hardys Bay.

Figure 339: More old seating in reserve adjacent to Araluen Drive, Hardys Bay.

Figure 338: Old bike racks at Ettalong Wharf.

Figure 343: Old shower at Ettalong Creek, south of Umina Beach.

Figure 341: Old seating along Pearl Dog Beach.

Figure 344: Old showers at Patonga Beach.

Figure 340: Old showers at Pearl Beach.

Figure 337: Old showers at Cockrone Lagoon.

Specific recommendations for enhancing user experience

North Avoca Beach opposite the end of View Street

It was observed during site visits that this beach is popular, especially for surfing (Figure 345), but there is very limited parking, with overflowing into the street (Figure 346). It appeared that there was a special event on at this beach at the time so the shortage of available parking may not be a regular issue. Given the apparent popularity of this beach, there is only minimal infrastructure here – a bin and an old shower – see Figure 347.

Recommendations:

15. Improving parking North Avoca Beach opposite the end of View Street is likely to be difficult as there is little room at the end of View Street. However, the facilities here could be improved with an upgrade to the shower and provision of potable water.

16. Despite the vegetation at North Avoca Beach opposite the end of View Street being fenced off, people had jumped the fence to watch the event (Figure 348). If this continues to occur and is not isolated to this event, then damage to the vegetation could be managed and reduced by creating a modest grassed area with seating here.

Safety at rock platforms - North Avoca Beach

The rock platform at North Avoca Beach is easily accessible but is dangerous due to large waves crashing into the rocks. Whilst the signs warn fisherman of the dangers (Figure 349), there is no general warning for other visitors, and the rock platform is clearly popular (Figure 350). and visitors may or may not be aware of the hazard. Council officers advised that Council had previously considered this issue and that a consideration that time was that individual people would take responsibility for their own actions, and therefore, signs were not required.

Recommendations:

17. Council may want to re-consider this issue and whether the warning sign at North Avoca Beach should be upgraded to include a warning to the general public of the hazard at the rock platform.

18. The adequacy of the warning signs at other locations that have rock platforms exposed to large waves should also be considered.

Figure 345: The crowd at North Avoca Beach opposite the end of View Street.

Figure 346: Overflow street parking at North Avoca Beach opposite the end of View Street.

Figure 347: Old shower at the end of View Street..

Figure 348: Beach users watching the surfing event from the vegetated part of the foreshore reserve.

Figure 349: Hazard warning sign for fishing at North Avoca Beach.

Figure 350: Visitors putting themselves a risk of injury on the rocks at North Avoca Beach

Jenny Dixon Beach - access

The formal access to this beach was closed at the time of the site visit (Figure 351), but the beach can still be accessed via a track and steps that appear to be made by locals (Figure 352). This access has not been well constructed and is quite unsafe in parts (Figure 353).

Recommendation

19. The track and steps to Jenny Dixon Beach are accessible from the reserve and are available to the public, and Council should consider whether to close the steps or upgrade it to improve its safety.

Lakes Beach

This beach has significant potential for re-development and appears to be under-utilised. For example, the northern section of the large carpark has a number of people who are camping there (Figure 355), which reflects that this carpark is rarely full, at least during the time of the site visit.

As well, much of the infrastructure here is old and requires replacement with more appropriate designs, for example, none of the seating offers any shade (Figure 354).

Lakes Beach is the northern most beach with a surf lifesaving club, and is situated in between two residential areas – Budgewoi in the north and Toukley in the south – and also offers a different experience to the other beaches with surf lifesaving club as it is set within a wide and well vegetated reserve rather than a residential area.

Recommendations:

20. The infrastructure at Lakes Beach should be upgraded to make better use of the existing carparking and to provide the Budgewoi and Toukley residents with a more attractive and useable resource. This could be done at the same time the dual use path is constructed between Budgewoi Beach and Hargrave Beach.

Terrigal Beach Node

Recommendations:

21. A public toilet should be provided at eastern part of the Terrigal Beach Node, given the popularity of the area..

Figure 351: The closed public access stairs to Jenny Dixon Beach.
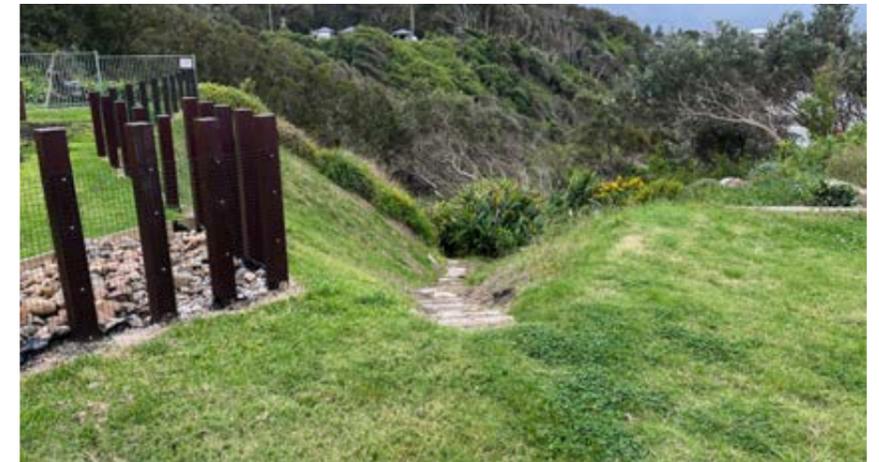
Figure 352: The top of the informal access to Jenny Dixon Beach.

Figure 353: A section of informal access to Jenny Dixon Beach which is unsafe.

Figure 355: People camping in the northern end of the Lakes Beach carpark.

Figure 354: Existing picnicking seating at Lakes Beach which lack any shade.

End of Mareela Ave access to beach east of Anderson Bay Boat Shed, Booker Bay/Ettalong Beach.

It was observed in the site visit that the beach to the west of this access point is quite well used (Figure 356), but the parking is limited and informal and there are no facilities here (Figure357).

Recommendations:

22. Council should consider upgrading the parking end of Mareela Ave, Booker Bay and providing some basis facilities - shower, bin, drinking water and seating.

Coastal erosion, climate change and long-term planning

The site visit was held in July not long after some major rain events, and many of the beaches had yet to recover from those events. Notwithstanding this, several beaches are showing signs of long term erosion. This is likely driven by climate change where rising sea levels and increased storm intensity are causing increased coastal erosion. It is noted that Council is preparing Coastal Management Plans for the entire Central Coast coastline, consistent with the NSW Coastal Management Framework.

It is also noted that in 2011 the former Wyong Shire Council had prepared a management plan for its coastal zone (from Catherine Hill Bay to Crackneck Point) that included a hazard assessment of the coast for three timeframes – immediate, 2050 and 2100 (Umwelt Environmental Consultants 2011). The management plan had 78 recommendations, many of which had proposed actions to address the risk associated with coastal erosion. As well, in 2017, the former Gosford Council had prepared a management plan for its beaches (from Patonga to Forresters Beach), that also included a hazard assessment of the coast for three timeframes – immediate, 2050 and 2100 (WorleyParsons and EcoNomics 2014; 2017). The management plan had a comprehensive list of recommendations, many of which had proposed actions to address the risk associated with coastal erosion

These reports included identification of the recreation infrastructure at risk, for example surf life saving clubs, and made recommendations on how best to address these risks, for example, planned re-location.

Recommendations:

23. An audit should be carried out of the proposed recommendations and management actions contained in the two reports that address coastal hazards carried out by the Wyong and Gosford Councils that specifically relate to recreation infrastructure and whether they have been implemented. This should include an assessment of the relevance of any outstanding recommendations and management actions.

24. Once completed, any outstanding recommendations and management actions should be prioritised and an implementation plan developed.

25. The relevant Coastal Hazard Lines should be taken into account in planning the location of any new coastal recreation infrastructure.

It should be noted that certain adaptation actions to address the impact of coastal erosion on existing houses and coastal infrastructure will have an impact on the recreation and social values of the coast. For example, sea walls will protect house and infrastructure in the short to medium term but will lead to the loss of beach and the subsequent loss of recreational opportunities. These social costs should be included when considering which adaptation action to adopt in each location. Figure 358 shows the seawall that has been constructed in Lake Tuggerah Lake mouth, North Entrance and Figure 359 near Anderson's Boatshed in Brisbane Waters. As can be seen, the beaches will inaccessible at higher tides.

Figure 356: People using the end of Mareela Avenue, near Andersons Boatshed in Booker Bay.

Figure 357: The Parking area the end of Mareela Ave, Booker Bay showing the lack of facilities.

Figure 358: Seawall on the north side of The Entrance Channel.

Figure 359: Private residences backing directly onto the beach near Anderson's Boatshed.

Demarcation between private land and the foreshore reserve

There are several beaches where there is a narrow foreshore reserve and private property directly abuts the reserve. Most resident have constructed their own access to the beach either as a track or steps/stairs (Figure 360).

It is likely that in some cases the stairs and other infrastructure (for example, the viewing platform in Figure 360) could be within the foreshore reserve. Further, there are examples where residents appear to be modifying the vegetation to protect their views, and in one case (Figure 361) lower the sand dune.

There are two options to deal with this problem to ensure a clear demarcation between private and public land. The first it to require boundary fencing, for example Figure 362 at North Avoca Beach.

The second option would be to provide a hard edge by constructing a path at the western edge of the foreshore reserve: Figure 363 shows and example of this from Halls Head in Mandurah, WA.

The former solution has the benefits of not costing Council, would likely be more popular with the property owners and minimises the loss of vegetation, whereas the second option provides a more secure demarcation and provides additional public benefits.

Recommendations:

26. An audit should be carried out of the coastal areas in the Central Coast where houses directly abut the foreshore reserve to identify cases of significant intrusion into the reserve which has caused loss of vegetation or landform.

27. Council should work with residents to identify a more suitable location for this infrastructure, or in the case of beach access, identify a more appropriate form of access which minimises the impact of vegetation.

28. Once these measures have been implemented, rehabilitation of the vegetation and landform should then occur.

29. To ensure an ongoing and clear demarcation between private property and the public foreshore, either a property boundary fencing policy be introduced and implemented, or a dual use path or formal track be constructed at the western edge of the foreshore reserve.

It is recognised that taking any action to better manage the foreshore through the removal of private infrastructure and revegetating degraded areas will meet with resistance by some land owners, therefore the process of implementation will need to be managed carefully including an education program on the broader benefits of these measures.

Whilst these management measures will not completely stop the intrusions into, and the degradation of, the foreshore, it will certainly improve the problem and make the on-going management much easier as the demarcation between private and public is clear.

Figure 360: Private access to Hargraves Beach, including stairs and viewing platforms.

Figure 361: An example of where a sand dune appears to have been modified at Curtis Parade Beach.

Figure 363: Shared path running between foreshore reserve and private residences.

Figure 362: A fence providing a clear demarcation between private and public land at North Avoca Beach.

Informal uses causing damage

There are a number of locations where informal uses are causing management problems through the creation of tracks or other informal uses, and subsequent loss of and damage to vegetation, as shown in Figures 364 to 370.

Addressing these problems will involve removal of these items, noting that the use of the foreshore for boat storage was the most common cause of damage.

Recommendations:

30. An audit should be carried out of all the foreshore reserves identifying locations where damage is being caused by the informal use of the reserves, including tracks.

31. Where the informal use is by adjacent residents, Council should work with residents to have these items removed.

32. Where the informal use is a public use (track or infrastructure), Council should first consider whether these uses should be formalised so as to better manage the impact, but if not, then the site should be rehabilitated.

33. Once these measures have been implemented, rehabilitation of the vegetation and landform should then occur.

As with the recommendations in the previous section, it is recognised that taking any action to better manage the foreshore through the removal of items and other informal uses, and revegetating degraded areas will meet with resistance from some land owners, therefore the process of implementation will need to be managed carefully including an education program on the broader benefits of these measures.

Figure 370: Dumping of rubbish in Terrigal Lagoon.

Figure 364: Small boats being stored in the reserve and damage to vegetation, Booker Bay.

Figure 365: Example of formal and informal small boat storage in the reserve and damage to vegetation, Hardys Bay.

Figure 366: Informal track leading of the main track in the north west of Terrigal Lagoon Reserve damaging important aquatic vegetation

Figure 367: Informal track used by cyclists through Wamberal Lagoon Reserve

Figure 368: Private boat shed in the Araluen Drive Road Reserve, Killcare.

Figure 369: Informal viewing area at Copacabana Beach.

Parking

As noted earlier, it is likely that the two most popular modes of transport used to get to the coast are cars and walking, with the later used by locals to access their beach. The site visits involved visiting the main beach nodes over the Anzac Day weekend and it is clear that some beaches were struggling to accommodate the parking, whilst others had plenty of parking. Of the two most popular nodes – Terrigal and the Entrance – lack of parking was most obvious problem at Terrigal. Terrigal is located within a significant commercial area and the parking at the beach front and on the street was observed to be full all of the time. Parking at the Broken Head seemed adequate.

Parking at The Entrance seems adequate, although parking for the Ocean Bath is ad hoc, involving street parking on Ocean Parade and the end of Boondilla Road.

The carpark at Toowoon Bay was observed to be full, although this beach has additional parking at the adjacent Swadling Park, which was also observed to be nearly full. The carpark at Shelly Beach was also observed to be full, although there was extra parking further south along Shelly Beach Road which was not full.

The two carparks at MacMasters Beach were observed to be full, with limited additional street parking. Carparking at North Avoca beach was observed to be almost full with some street parking available. The carpark at Copacabana Beach was observed to be full, although there was extra parking available as street parking. There is a small commercial area opposite the surf lifesaving club, and the carpark services both the commercial area and the beach.

The carpark at Avoca Beach was observed to be full, although there was extra parking available in the park south of Burns Street. There is also street parking. All the street parking and the carpark at Ettalong Beach were observed to be full, and the street parking is also being used by visitors to the commercial area.

The two carparks at Ocean Beach Surf Lifesaving club were almost full, as were the carparks at Patonga Beach. There are a few smaller nodes where demand for parking was observed to be greater than the available spaces – see Figures 371 to 376..

Figure 374: Carpark at Blue Bay Beach, Blue Street.

Figure 373: Access to Wamberal Beach at the end of Surfers Road.

Figure 376: Parking at the end of Pacific Street, Terrigal Lagoon Inlet.

Figure 375: North Avoca Beach access point at the end of View Street.

Figure 372: Parking at Andersons Boatshed, Booker Bay.

Figure 371: Parking at the end of Ferry Road, Ettalong Wharf.

In most cases, options to increase parking are limited. However, before any solutions are agreed to, it is important to establish the nature and extent of the parking problems. Key questions are:

- Which nodes are experiencing parking problems?

- How often and at what times is parking a problem? If parking is only a problem on certain weekend or during certain events, then temporary solutions can be implemented. If the problem is regular and increasing, then a more permanent solution is needed.

- Where do visitors come from and why are they visiting this particular node? If another node had the same facilities would they visit that node instead? Visitors who have travelled a greater distance may be more willing to use an alternative beach with similar facilitated. The answer to these sorts of questions could suggest that development of another node could take the pressure of an existing popular beach.

- Even if parking is a problem, has the carrying capacity of the node been reached and adding more visitors would negatively impact on the node's environment and character, and the visitors' experiences.

The site visits for this study were unable to answer such questions and only these casual observations were made.

The option to develop another node to facilitate more visitors will also have its own potential problems as the current users of that node may not want the character of their node to change to accommodate more visitors.

Inevitably, parking issues need to be seen within the broader context of population growth in the region (annually more than 1%), increased tourism to the region (Council's Strategic Community Plan has an objective to increase tourism) and changing recreational patterns of the existing population.

Recommendations

34. Any long-term solutions to parking problems at Central Coast Council beaches and nodes are likely to be costly, and so the nature and extent of the problems need to be identified so that fit-for-purpose solutions are identified.

35. Two surveys are needed to identify the nature and extent of the problems:

a. A physical observational survey of parking in the key locations is needed to identify how often and when parking is a problem and to then determine if temporary or permanent solutions are needed. The use of cameras would be a cost effective way to collect these data; and

b. If a permanent solution is needed, a survey of visitors should be carried out to establish if the parking problems negatively affected their visit, why they visited each particular beach and if another node, if suitably developed, would offer an alternative they would visit instead, and do they believe that adding more parking would negatively impact on the character of the node and quality of their experiences?

Surfing

The Central Coast has a number of popular surfing locations, with Avoca Beach recognised as the most important. There is a strong and active local surfing community in Central Coast. A 2017 article in Surfing World Magazine posed the question "Is The Central Coast Now Better At Surfing Than The Gold Coast? Coastsport website notes that "As well as a popular leisure activity, the Central Coast has produced many international surfing talents through its development pathways, including Ace Buchan (Avoca), Wade Carmichael (Avoca), Matt Wilkinson (Copacabana) and Macy Callaghan (Avoca)." (https://coastsport.com.au/surfing/)

Given the significance of some of the surfing sports in the Central Coast, it in noted that none of these locations are classified as a Surfing Reserve. To date, there are 18 National Surfing Reserves in Australia, with one in Newcastle and one in north Sydney. Whilst the benefits of being a National Surfing Reserve are not clear, and a site can only become National Surfing Reserve if when there is strong community support, there is value in exploring the possibility of nominating at least one site in Central Coast as a National Surfing Reserve.

Recommendation

36. Council should work with local surfing communities to identify benefits and downsides of nominating at least one surf location as a National Surfing Reserve, and, where clear benefits and strong local community

support for any nomination exists, proceed to nominate a location or locations to become such a Reserve.

Fishing

Fish cleaning stations with size guides are also provided are not common within the study area

37. Council should consider better matching the provision of supporting infrastructure such as cleaning stations and platforms with the natural formations that best facilitate recreational fishing.

Urban beaches, local access points and infrastructure

The beaches in the urban areas are the most heavily used of the beaches in Central coast, primarily from local visitors. As well as the recognized nodes, there are also many local beach access points which are typically narrow walkways often between houses and either located at the end of cul de sacs or supported by street parking only – see Figure 377.

Some of these local access points have no facilities either at the entrance or at the beach whereas other have minimal facilities – a bins, and in some cases a shower, a seat or a look out: see Figure 378.

In most areas, these local access points are well spaced providing good access to the beach for local residents. However, the lack of basic infrastructure in most cases limits the users' experience of the visit. There is value in creating a few well-placed local access nodes with some basic infrastructure. Such upgraded local access points would not only enhance users' experiences, but can act as small community hubs where socializing is facilitated.

The basic infrastructure at these upgraded local access points should be:

- Bin,

- Shower, drinking water,

- Information signage (referring to dogs, patrolled beaches, hazard info, local information)

- Look out and/or seating,

- Some shading, and

• A small grassed area.

Additional infrastructure could be a playground and a toilet/shower block in some circumstances.

The following discussion looks at the distribution of nodes and local access points and any infrastructure at the local access points, examines their distribution, and makes recommendations for any upgrades and improvements to infrastructure at selected local access points so as to enhance the experience of visitors, especially local residents. It covers the key urban areas starting from Budgewoi in the north to Patonga Beach in the South.

Budgewoi to Soldiers Beach

Figure 379 shows the area between Budgewoi Beach and Soldiers Beach. Budgewoi has a minor node with a car park, a bin, a lookout and nature boardwalk (Figure 380), the other access is at the end of a road and only has a bin. These are the only two access points for Budgewoi residents.

Recommendation

38. The minor node at Budgewoi could be upgraded. Consideration be given to adding a playground and toilet.

Hargraves Beach has three local access points, two of which have bins. Whilst many residents have direct access to the beach, the remaining residents are not well catered for.

Recommendation

39. The access point at the north of Elizabeth Drive (Figure 381) could be upgraded with a shower and/or seating.

Figure 381: Access point for Hargraves Beach at the northern end of Elizabeth Drive.
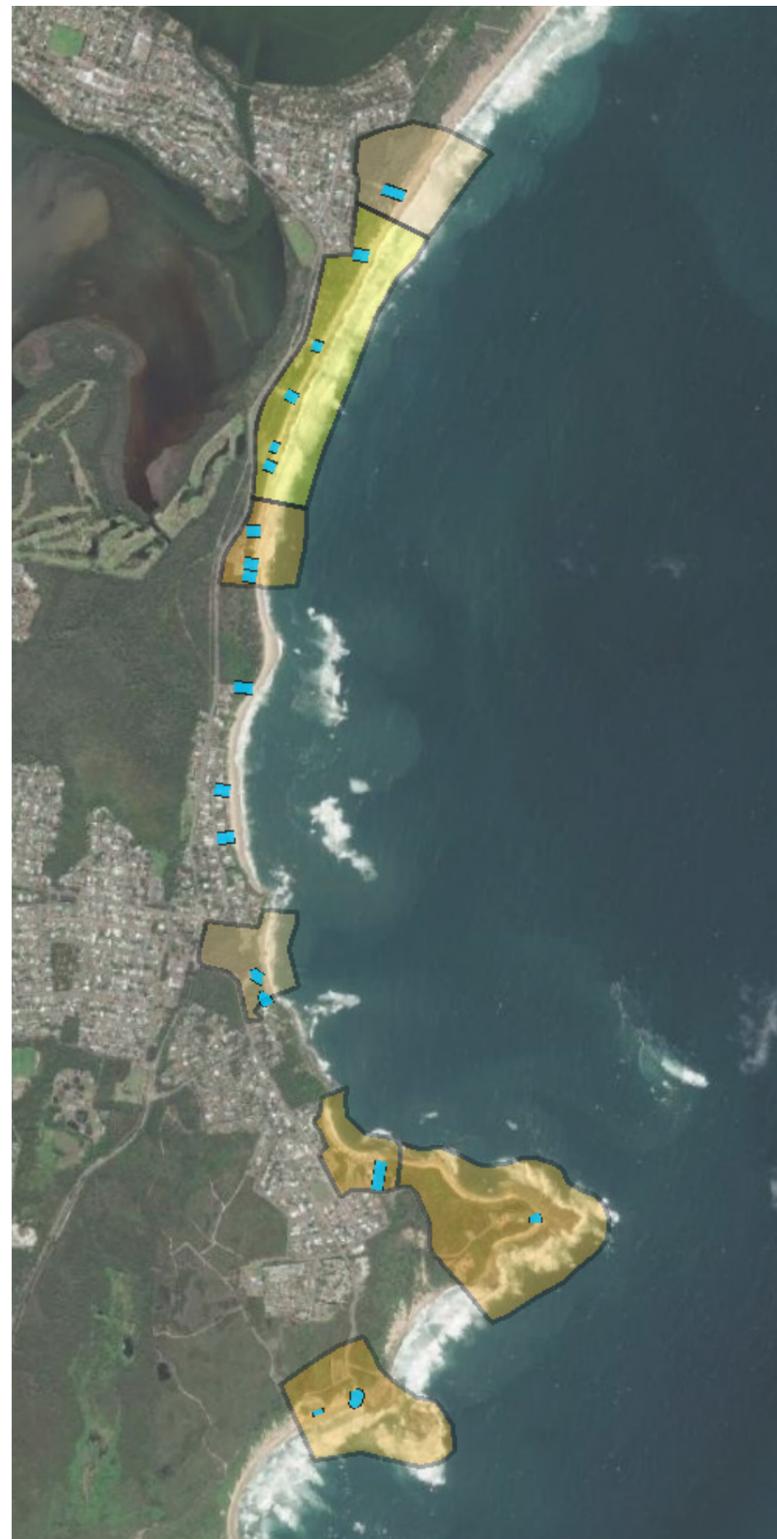

Figure 379: Beach access paths and nodes from Budgewoi to Soldiers Beach.

Figure 377: Typical off-the-street local access point at North Avoca Dog Beach.

Figure 378: An old shower and seating provided at a local access point at North Avoca Beach.

Figure 380: Drone image of the beach access path at Budgewoi Beach node.

Entrance North to Shelly Beach

Figures 383 and 384 show the area from Entrance North south to Shelly Beach.

Entrance North beach has 11 local access points, as well as North Entrance Surf Life Saving Club and Karagi Point nodes. The residents in the south have access to two nodes, whereas the in the far north North Entrance Surf Life Saving Club is not within walking distance, especially those residents in the Curtis Parade area.

Recommendation

40. The access points at the end of Wyuna Ave (Figure 382) and either the end of Manly Parade or Florida Street (Figure 385) should be upgraded. Both the Manly and Florida access points already have look outs.

Figure 382: Access point at the end of Wyuna Avenue.

Figure 385: Lookout at Florida Street access point, North Entrance.
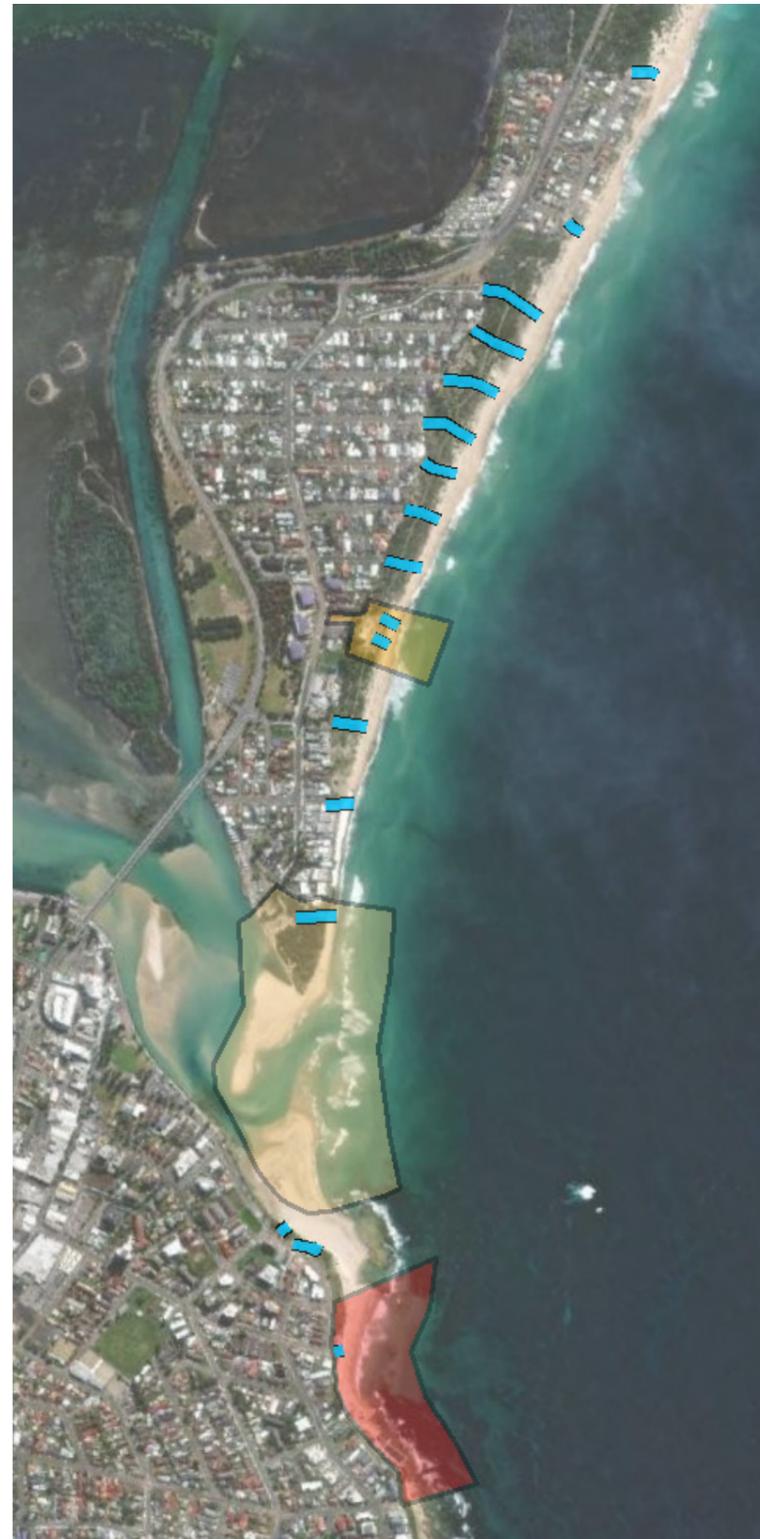

Figure 383: Beach access paths and nodes along The Entrance Beach.

Figure 384: Beach access paths and nodes from Blue Bay through Shelly Beach to Bateau Bay.

Wamberal Beach to Terrigal Beach

Figure 388 shows the beach access points and nodes from Forresters Beach to Terrigal Point.

The area between the two nodes at the lagoon entrances has only two local beach access, the one shown is on the busy Ocean View Drive just south of the Lake View Road junction (known as the Ruins) (Figure 386). There is a look out here but no seats (Figure 387). The other access point is about 250 north of here but with no facilities.

Recommendation

41. This access point could be upgraded by adding a shower and some seating.

Figure 386: Local access point on Ocean View Drive south of Lake View Road junction.

Figure 387: Basic lookout with no seating adjacent to Ocean View Drive.

Figure 388: Beach access paths and nodes from Forresters Beach to Terrigal Point.

Avoca Beach

Figure 389 shows the area from North Avoca Beach to Avoca Beach

There are 4 local access points south of North Avoca Surf Life Saving Club, all of which were observed to be popular during the site visit, especially for surfing, with the access point at the end of View Street the most popular (Figure 390). There were many cars parked in at least two of these access points suggesting many visitors were not locals. Three of the local access points have a shower Figure 391).

Recommendation

42. Either, or both, of the access points at the end of View Street and/or Ocean Street could be upgraded

There are two local access points along Avoca beach between the lagoon entrance and the Surf life Saving Club. The one shown on the map has a bin at the entrance and a seat on the foreshore under a tree (Figure 392). The area around the seat is mostly cleared of vegetation.

Recommendation

43. This access point could be upgraded to a local access node with the cleared area reinstated with coastal dune vegetation.


Figure 390: View Street local access point.

Figure 391: Basic shower at the View Street access point.
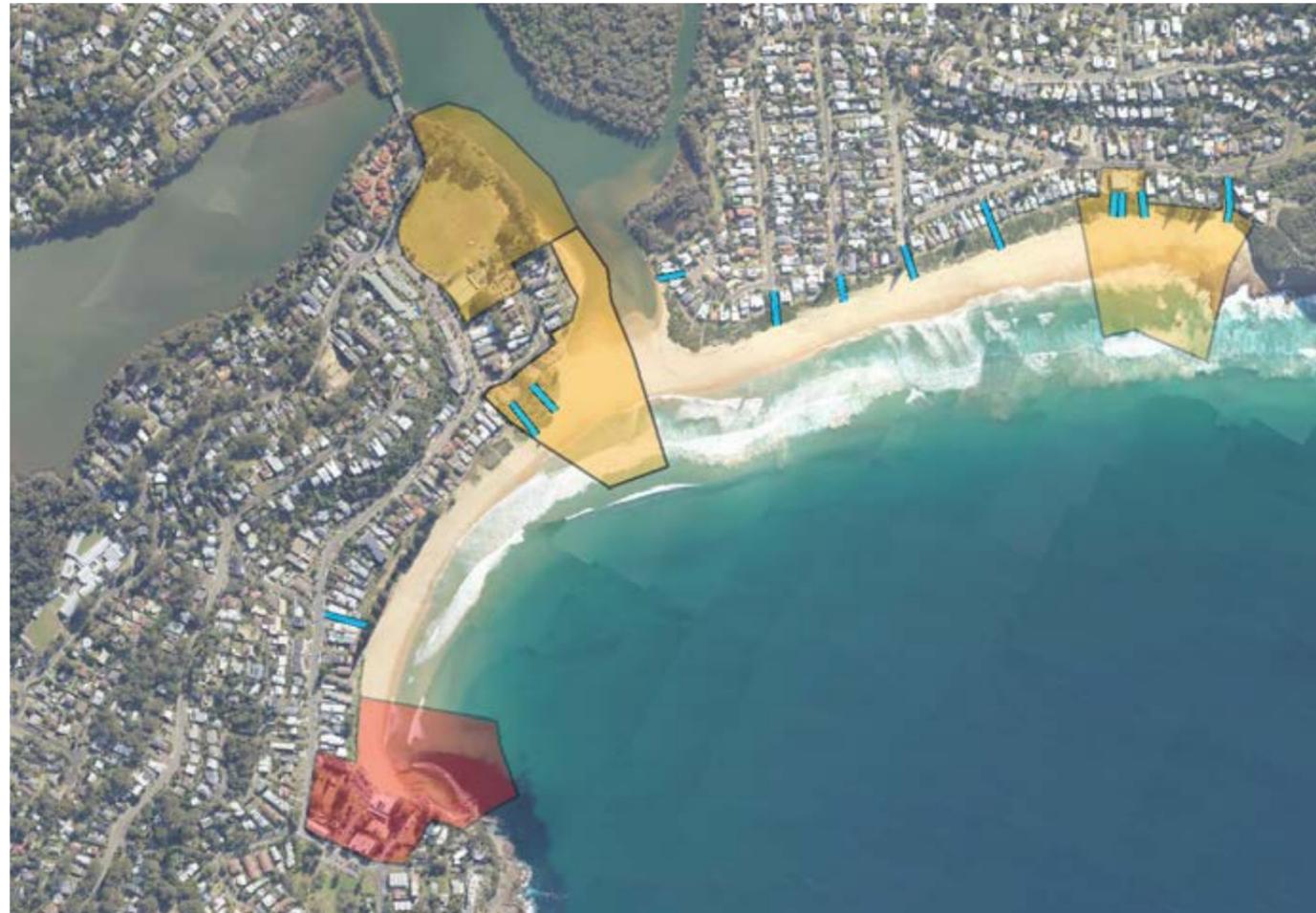
Figure 389: Access point at the end of Wyuna Avenue.

Figure 392: Local access point north of Avoca Beach.

Copacabana and Macmasters Beach

Figure 393 shows the beach access points and nodes from Copacabana Beach to Macmasters Beach.

The Copacabana Surf Life Saving Club. Is centrally located although the western end is quite a distance from the club. The only infrastructure at the access point, to the north of the houses that directly abut the foreshore is a bin (Figure 394)

Recommendation

44. This access point could be upgraded.

The MacMasters Beach Surf Life Saving Club is located at the southwestern end of the beach and there are three local access points between here and the lagoon entrance.

Recommendation

45. This access point at the end of 3 Points Ave (Figure 395) could be upgraded..

Figure 394: The western most local access point from Copacabana SLS Club.

Figure 393: Access point at the end of Wyuna Avenue.

Figure 395: Local access point at the end of 3 Points Avenue

Ettalong Beach

Figure 398 shows the beach access points and nodes along Ettalong Beach and Broken Bay.

The five mapped nodes are reasonably evenly spaced across the area, but there is a larger gap between nodes either side of Ettalong Beach Point. The access point at the end of Barrenjoey Road already has a look out, but no seat (Figure 396 and 397).

Recommendation

46. This access point at the end of Barrenjoey Road could be upgraded.

Figure 396: Lookout at the local access point at the end of Barrenjoey Road.

Figure 397: The lookout provides a perfect vantage point to The Box surf break.
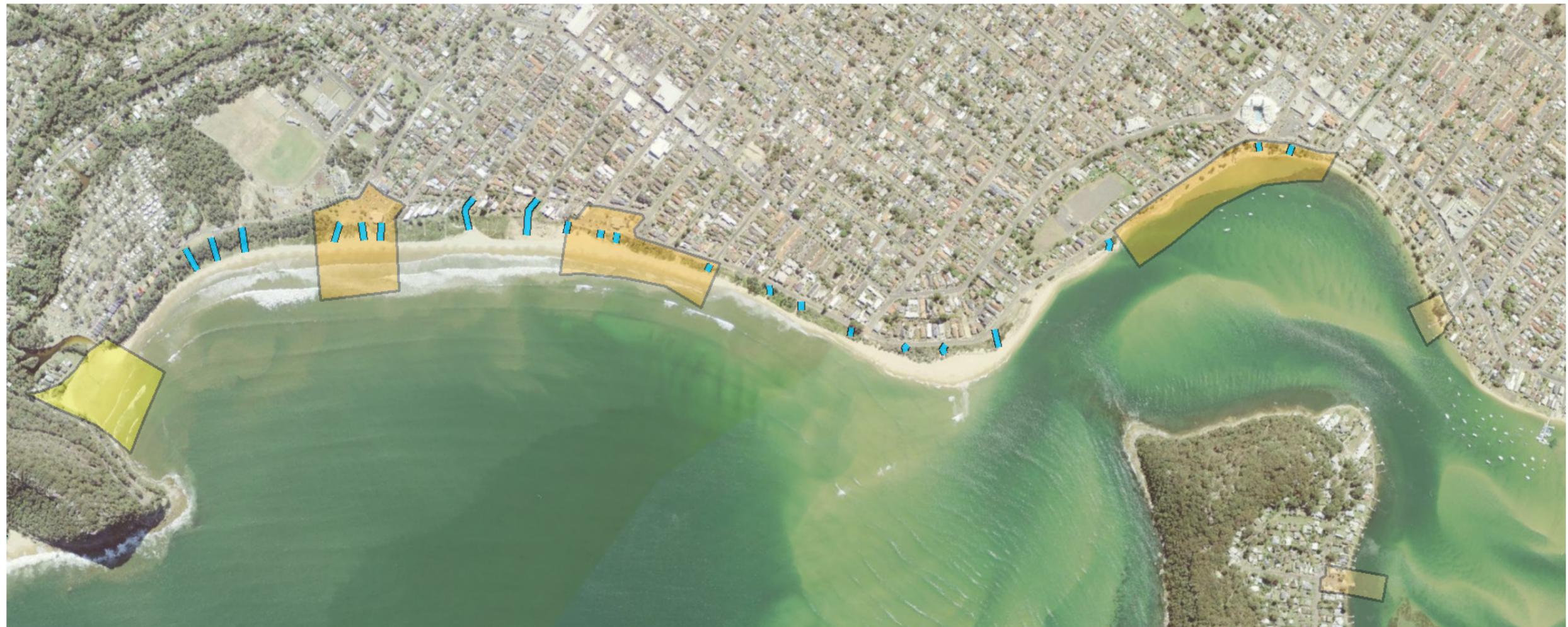
Figure 398: Beach access paths and nodes from Ettalong Wharf in the East to Umina Point in the West.

Pearl Beach

Figure 400 shows the area along Pearl Beach.

There are five local access points north of the Pearl Beach node, with the access point at the end of Agate Ave the most central one (Figure 399 and 401).

Recommendation

47. This access point at the end of Agate Ave could be upgraded.

Figure 399: Access point at the end of Agate Avenue.

Figure 401: Agate Avenue is also the start of the designated dog exercise area.

Figure 400: Beach access paths and nodes along Pearl Beach.

Patonga Beach

Figure 404 shows the beach access points and nodes along Patonga Beach.

There are two local access points between the two nodes at either end of the beach - at Brisk Street (Figure 402) and Meroo Avenue (Figure 403) - neither of which has any infrastructure.

Recommendation

48. This access point at the end of Brisk Street could be upgraded.

Figure 402: Local access point at the end of Brisk Street.

Figure 403: Local access point at the end of Meroo Avenue.

Figure 404: Beach access paths and nodes from Forresters Beach to Terrigal Point.

Discussion, summary of recommendation and overall conclusion

Strategic and policy context

The recommendations in this report were also developed within the context of the existing regional and local strategic planning framework. The discussion below highlights the key regional and local strategic planning documents and the relevance of this reports recommendations to them.

Council's Community Strategic Plan 2018-2028 (Central Coast Council 2020) sets the broad and overall objectives for Council across all its operations and responsibilities. Under the theme "Green" the following focus areas objectives are relevant:

• F1 Protect our rich environmental heritage by conserving beaches, waterways, bushland, wildlife corridors and inland areas and the diversity of local native species;

• F2 Promote greening and ensure the wellbeing of communities through the protection of local bushland, urban trees, tree canopies and expansion of the Coastal Open Space System (COSS);

• F3 Improve enforcement for all types of environmental non-compliance including littering and illegal dumping and encourage excellence in industry practices to protect and enhance environmental health; and

• F4 Address climate change and its impacts through collaborative strategic planning and responsible land management and consider targets and actions.

Under the theme "Liveable" the following focus areas objectives are relevant:

• K1 Create a regional network of interconnected shared pathways and cycle ways to maximise access to key destinations and facilities; and

• K2 Design and deliver pathways, walking trails and other pedestrian movement infrastructure to maximise access, inclusion and mobility to meet the needs of all community members.

Relevant community indicators are:

• Access to transport, walking and cycling - walking and cycling;

• Participation in sport, recreation and community life - sports and recreational activities and access and enjoyment of local environment; and

• Conservation and protection of natural areas – quality of the local environment.

Sitting beside this Plan is the NSW State Government's Central Coast Regional Plan (NSW Planning & Environment 2016). That Plan predicts the population of the Central Coast will grow from 339,550 in 2016 to 415,050 by 2036, an increase of 22.2%. As well, it notes that "Tourism and recreation have become mainstays of the economy" (p8) and that "The region's unique and productive natural environment, including its coastline, will support growth in the tourism, lifestyle housing, agriculture and resource sectors" (p15). Further, "There are ongoing opportunities to promote the tourism appeal of the region's bush, beaches and waterways" (p22).

Goal 2 of this Plan is "Protect the natural environment and manage the use of agricultural and resource lands". Action 12.4 is:

Strengthen the Coastal Open Space System by expanding its links and extending new corridors to balance growth in the north of the region and protect the network of natural areas across the region. (p35)

Actions 14.1-14.3 are

• 14.1 Manage the risks of climate change and improve the region's resilience to hazards such as flooding, coastal erosion, bushfire, mine subsidence and land contamination.

• 14.2 Review and update floodplain risk and coastal management programs to manage flood risk and protect the coast, particularly where urban growth is being investigated.

• 14.3 Incorporate new knowledge on regional climate projections and related cumulative impacts in local plans for new urban development.

Council's biodiversity strategy (Central Coast Council 2020) gives special attention to its coastal reserves and their important role in conserving and enhancing biodiversity. The desired outcome of the strategy is to

… protect and enhance the landscape and biodiversity values of the Central Coast, which includes maintaining functional connections between areas of habitat, maintaining core habitat as well as restoring marginal habitat, preserving threatened and iconic species and ecological communities, preserving significant Aboriginal cultural places, and protecting the scenic amenity of the region. (p25)

The strategy identifies the following key threats to biodiversity:

• Weed invasion,

• Grazing or predation by feral or domestic animals,

• Firewood collection,

• Rubbish dumping, and

• Clearing of native vegetation.

The goals in that strategy relevant here are:

• 1.2.1 – Implement site management plans to rehabilitate degraded bushland and coastal ecosystems;

• 1.2.2 - Prepare a policy for natural area encroachment management, and resource and implement a program to identify and manage threats to natural areas from encroachment

A key specific action related to 1.2.1 is "fencing, gates and access control to prevent dumping, damaging activities and encroachment"(p37).

The strategy also notes the importance of connectivity and biodiversity corridors. It notes

Maintaining and restoring connections between protected areas and areas of high biodiversity value are vital to landscape health and biodiversity of the region. (p60).

Whilst the coast was not identified as a biodiversity corridor in the strategy, given the biodiversity significance of coastal vegetation, improving the connectivity along the whole coastal zone should be explored.

Council has developed a car parking plan (Central Coast Council 2021), that identifies The Entrance and Terrigal as two of the nine key focus areas. The two priorities for the Entrance are:

• Short term - S.7.1: Make better use of the existing off-street parking areas, including The Entrance public car park located on Coral Street, by improving directional signs and marketing; and

• Long term - L.7.1: Make sure The Entrance Town Centre Master Plan parking strategies are delivered, including building a new parking station on the western fringe of the commercial core.

The two priorities for Terrigal are:

• Short term - S.8.1 Make better use of the Wilson Street car park through digital way finding linked to smart technology (real time available spaces);

• Short term - S.8.2 Investigate and implement reduced on-street parking limits within the commercial core during peak seasons; and

• Long term - L.8.1: Investigate the need to expand the existing Wilson Road Parking Station to cater for future development and tourism demands.

Council has adopted a bike plan (Bitzios Consulting and Zwart Transport Planning 2019) which, whilst focusing primarily on cycling as a mode of transport, one of the 5 priorities relate to recreation and tourism routes. This focus on cycling as a mode of transport rather than as a recreational pursuit is reflected in shared path hierarchy where all the three levels are about connecting places with no mention of recreational opportunities. The plan notes that recreational and tourist cycling connections are part of the plan, and recognises that there is community pressure to build missing links in the recreational focused dual use paths especially around the lakes, it states:

"There are a number of missing links along these routes and priority links would serve multiple purposes such as connecting to centres, schools and public transport as well as contributing to the completion of the NSW Coastline Cycleway. Lower priority links would be those serving recreational trips only and lower density populations."

And

"Whilst there was considerable community feedback requesting completion of a number of missing links in the lake routes, Council's priorities should be communicated to the community so there is better understanding on what Council is trying to achieve in terms of prioritising utility and commuting trips over solely recreational trips." (p82)

This is unfortunate and undervalues the benefits of outdoor recreation and the popularity of cycling for recreation and exercise.

The plan notes that three sections of the NSW Coastline cycleway go through Central Coast Council area, but this cycleway is aimed at serious touring cyclist and mainly involves roads and specific cycleways and dual use paths where available. As noted above, there are very few dual use paths in the coastal reserve system that are part of this cycleway.

Council has a Disability Inclusion Access Plan (Central Coast Council 2021). Focus Area 2 is Liveable Communities, and the plan notes that:

On the Central Coast we love our beaches, waterways and bushland. People with disability want better access to these natural places. The beaches that are accessible are highly valued. (p24)

Focus area's 2 objective is – "To make the Central Coast more accessible, inclusive and liveable.".

The key relevant actions that Council has carried out to date are:

• Beach matting provided at Umina Beach, Avoca Beach and Toowoon Bay, and

• Beach wheelchairs provided for use at 12 of beaches.

A key action for the proceeding four years is –

LC1.1 Continue to make beaches more accessible with installation of beach matting and other accessible features. (p27).

Table 7 from Page 135 shows how the recommendations in this report relate to the Council's strategic and policy context.

Table 7. Summary of Report Recommendations

Report recommendations	Relationship to Council's strategic and policy context	Comment
The following locations are ideal for new dual use paths and the feasibility of constructing these paths should be pursued including costings, grants, community engagement and detailed site design: 1. Connecting Budgewoi Beach and Hargrave Beach; 2. Toowoon Bay Surf Life Saving Club to Shelley Beach; 3. The beach adjacent to Wamberal Lagoon with a possible extension north to Forresters Beach around or along the rocky point; and 4. Connecting the Entrance North beach to Magenta Beach, using, upgrading and extending the existing track at Magenta Beach, and linking this to existing coastal track through the coastal reserve at The Entrance North Beach via Curtis Parade, which will need to be upgraded.	Community Strategic Plan K1 and K2 and indicators Access to transport, walking & cycling, and Participation in sport, recreation and community life. Bike plan priority 5. Disability Inclusion Access Plan – Focus area 2.	Provision of more dual use paths in the coastal reserves would likely encourage more people to walk, cycle and run, and provide more opportunities for physically disabled people. It is noted that providing dual use path for recreation is not the main priority of the plan, the objectives of the bike plan should be revised to give equal priority to cycling as a recreational pursuit.
5. Upgrade the existing track starting at Pretty Beach boat ramp and through Araluen Drive road reserve, linking back to the Araluen Drive in Hardys Bay..	As above.	As above.
6. Upgrade path along SW arm of Terrigal Lagoon. 7. Upgrade path along Eastern arm of lagoon.	Community Strategic Plan K1 and K2 and indicators Access to transport, walking & cycling, and Participation in sport, recreation and community life. Disability Inclusion Access Plan – Focus area 2.	Provision of more dual use paths in the coastal reserves would likely encourage more people to walk, cycle and run, and provide more opportunities for physically disabled people.
8. Track in Avoca Lagoon reserve upgraded and made into a single walking trail.	As above.	As above.
9. Upgrade poor quality path in Wamberal Lagoon running from Matawai Avenue to Wairakei Road Reserve. 10. A higher quality path on the eastern side of the lagoon could form part of a loop track which goes along the eastern side of Wamberal Lagoon, with a possible extension north to Forresters Beach around or along Wamberal Point.	As above	As above
11. Track in Cockrone Lagoon reserve to be upgraded and extended further around the lagoon.	As above.	As above.
12. Council should work with the surf lifesaving clubs to ensure that they all have either beach access wheelchairs or beach mats.	Disability Inclusion Access Plan – Focus area 2 and relevant actions.	
13. An audit of the lookouts should be carried out to identify those that require the vegetation to be trimmed to ensure the views can still be experiences by visitors, or those where the seating should be added.		This recommendation is not strategic and not relevant to Council's strategic and policy context.

Report recommendations	Relationship to Council's strategic and policy context	Comment
14. Council should develop a coastal infrastructure replacement and upgrade programme to modernise the aging coastal infrastructure identified.		As above.
15. Improving parking North Avoca Beach opposite the end of View Street is likely to be difficult as there is little room at the end of View Street. However, the facilities here could be improved with an upgrade to the shower and provision of potable water. 16. Despite the vegetation North Avoca Beach opposite the end of View Street being fenced off, people had jumped the fence to watch the event. If this continues to occur and is not isolated to this event, then damage to the vegetation could be managed and reduced by creating a modest grassed area with seating here.	Not covered in the car parking plan.	These recommendations are not strategic and not relevant to Council's strategic and policy context.
17. Council may want to re-consider this issue and whether the warning sign at North Avoca Beach should be upgraded to include a warning to the general public of the hazard at the rock platform. 18. The adequacy of the warning signs at other locations that have rock platforms exposed to large waves should also be considered.		These recommendations are about public safety.
19. The track and steps to Jenny Dixon Beach are accessible from the reserve and are available to the public, and Council should consider whether to close the steps or upgrade it to improve its safety.	As above.	These recommendations are about public safety.
20. The infrastructure at Lakes Beach should be upgraded to make better use of the existing carparking and to provide the Budgewoi and Toukley residents with a more attractive and useable resource. This could be done at the same time the dual use path is constructed between Budgewoi Beach and Hargrave Beach.	Central Coast Regional Plan – importance of tourism and the coast for tourism, and population growth	
21. A public toilet should be provided at eastern part of the Terrigal Beach Node, given the popularity of the area..	Disability Inclusion Access Plan – Focus area 2 and relevant actions.	This recommendation is not strategic and not relevant to Council's strategic and policy context.
22. Council should consider upgrading the parking end of Mareela Ave, Booker Bay and providing some basis facilities - shower, bin, drinking water and seating.	Not covered in the car parking plan.	This recommendation is not strategic and not relevant to Council's strategic and policy context.
23. An audit should be carried out of the proposed recommendations and management actions contained in the two reports that address coastal hazards carried out by the Wyong and Gosford Councils that specifically relate to recreation infrastructure and whether they have been implemented. This should include an assessment of the relevance of any outstanding recommendations and management actions. 24. Once completed, any outstanding recommendations and management actions should be prioritised and an implementation plan developed. 25. The relevant Coastal Hazard Lines should be taken into account in planning the location of any new coastal recreation infrastructure.	Central Coast Regional Plan – addressing climate change	

Report recommendations	Relationship to Council's strategic and policy context	Comment
26. An audit should be carried out of the coastal in the Central Coast where houses directly abut the foreshore reserve to identify cases of significant intrusion into the reserve which has caused loss of vegetation or landform. 27. Council should work with residents to identify a more suitable location for this infrastructure, or in the case of beach access, identify a more appropriate form of access which minimises the impact of vegetation. 28. Once these measures have been implemented, rehabilitation of the vegetation and landform should then occur. 29. To ensure an ongoing and clear demarcation between private property and the public foreshore, either a property boundary fencing policy be introduced and implemented, or a dual use path or formal track be constructed at the western edge of the foreshore reserve.	Community strategic plan Green focus area objective F1 and F3. Biodiversity strategy – addressing a key threat, goals 1.2.1 and 1.2.2.	
30. An audit should be carried out of all the foreshore reserves identifying locations where damage is being caused by the informal use of the reserves, including tracks. 31. Where the informal use is by adjacent residents, Council should work with residents to have these items removed. 32. Where the informal use is a public use (track or infrastructure), Council should first consider whether these uses should be formalised so as to better manage the impact, but if not, then the site should be rehabilitated. 33. Once these measures have been implemented, rehabilitation of the vegetation and landform should then occur.	Community strategic plan Green focus area objective F1 and F3. Biodiversity strategy – addressing a key threat, goals 1.2.1 and 1.2.2.	
34. Any long-term solutions to parking problems at Central Coast Council beaches and nodes are likely to be costly, and so the nature and extent of the problems need to be identified so that fit-for-purpose solutions are identified. 35. Two surveys are needed to identify the nature and extent of the problems: • A physical observational survey of parking in the key locations is needed to identify how often and when parking is a problem and to then determine if temporary or permanent solutions are needed. The use of cameras would be a cost effective way to collect these data; • If a permanent solution is needed, a survey of visitors should be carried out to establish if the parking problems negatively affected their visit, why they visited each particular beach and if another node, if suitably developed, would offer an alternative they would visit instead. Do they believe that adding more parking would negatively impact on the character of the node and quality of their experiences?		Whilst not covered in the Car Parking Plan, this work can be used to assess the relevance of the proposed actions for The Entrance and Terrigal, and could provide more appropriate alternatives. It would also allow assessment of parking solutions at other beaches not covered in the plan.
36. Council should work with the local surfing community to identify benefits and disbenefits of nominating at least one surfing location as a National Surfing Reserve, and, where there are clear benefits and strong local community support for any nomination exists, proceed to nominate a location or locations to become a National Surfing Reserve 37. Council should consider better matching the provision of supporting infrastructure such as cleaning stations and platforms with the natural formations that best facilitate recreational fishing..		

Report recommendations	Relationship to Council's strategic and policy context	Comment
38. Budgewoi beach: The minor node at Budgewoi could be upgraded to a local access node. Consideration be given to adding a playground and toilet here. 39. Hargraves Beach: The access point at the northern bend of Elizabeth Drive could be upgraded to a local access node. 40. Entrance North south to Shelley Beach: The access points at the end of Wyuna Ave (Plate Z) and either the end of Manly Parade or Florida Street the upgraded to a local access node. Both the Manly and Florida access points already have look outs. 41. Wamberal Beach to Terrigal Beach: This access point between the two nodes at the lagoons entrances could be upgraded to a local access node. Consideration be given to adding a playground and toilet here. 42. North Avoca Beach: Either, or both, of the access points at the end of View Street and/or Ocean Street could be upgraded to a local access node. Consideration be given to adding a playground and toilet to one of these. 43. Avoca Beach: The access point between the lagoon entrance and the Surf life Saving Club could be upgraded to a local access node with the cleared area turned into a grassed area Consideration be given to adding a playground. 44. Copacabana Beach: The western most local access point from Copacabana Surf Life Saving Club could be upgraded to a local access node. 45. Macmasters Beach: the access point at the end of 3 Points Ave (Plate Z) could be upgraded to a local access node. 46. Ettalong Beach area: the access point at the end of Barrenjoey Road could be upgraded to a local access node. 47. Pearl Beach: This access point at the end of Agate Ave could be upgraded to a local access node. 48. Patonga Beach: This access point at the end of Brisk Street (Plate Z) could be upgraded to a local access node.	Council's Strategic plan under its Liveability Theme has there following related objectives: "K2 Design and deliver pathways, walking trails and other pedestrian movement infrastructure to maximise access, inclusion and mobility to meet the needs of all community members." "K3 Provide signage, public facilities, amenities and playgrounds to encourage usage and enjoyment of public areas."	Providing upgraded local access points will better meet the needs of there local community (K2) and will encourage the usage and enjoyment of there beaches, which are public areas (K3).

CONCLUSION

The discussion above has demonstrated that the 48 recommendations in this report are consistent with Council's Community Strategic Plan and the various relevant documents that sit underneath that plan. It is acknowledged that some of these recommendations will require re-allocation of existing resources to address and other will require specific additional funds for implementation. The former recommendations are questions for management to consider – for example allocating staff time to carry out the audits recommended here. The latter recommendations need to be included in Council's Delivery Program, the next one will be for the 2025-26 and 2026-27 financial years.

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Document Revisions

Revision	Date
Final draft for CCC	21/09/22