



**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

May 2023

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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 four Coastal Management Programs (CMPs): The Tuggerah Lakes, the Open Coast, Coastal Lagoons and Hawkesbury/Nepean River 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 Vision Environment 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 within 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. Toowoong 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 experienced 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.

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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 usage 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

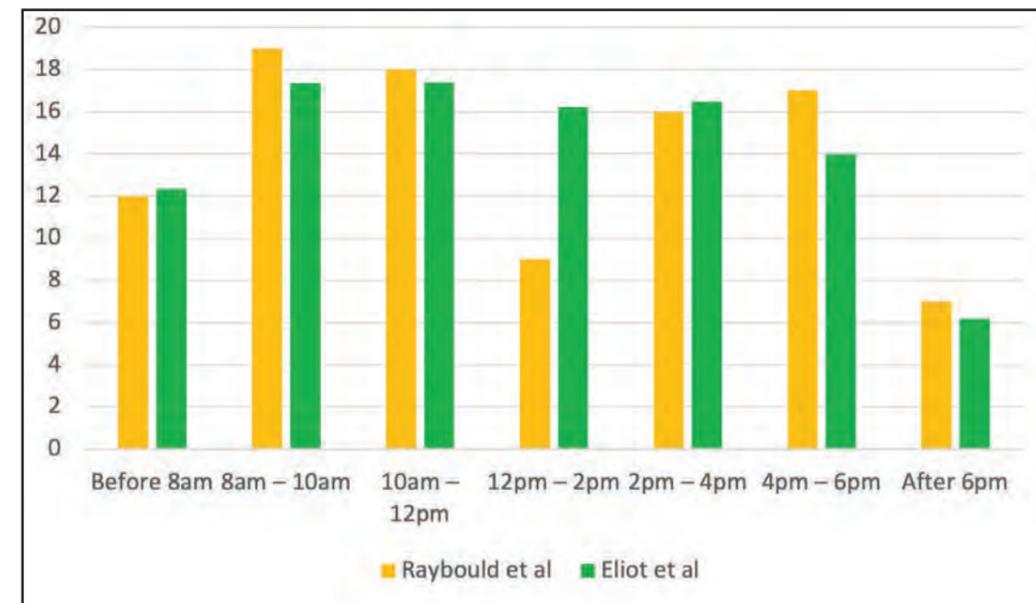


Figure 2: Visitation time of day as reported in the Raybould et al. and Eliot et al. studies.

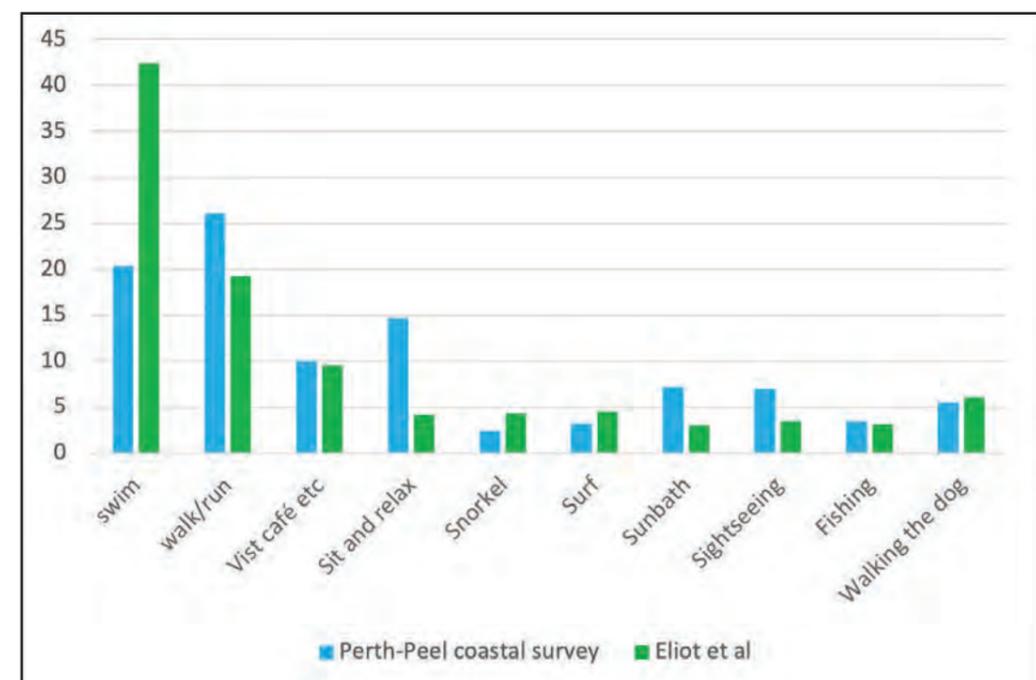


Figure 3: Activities engaged in by beach users.

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.

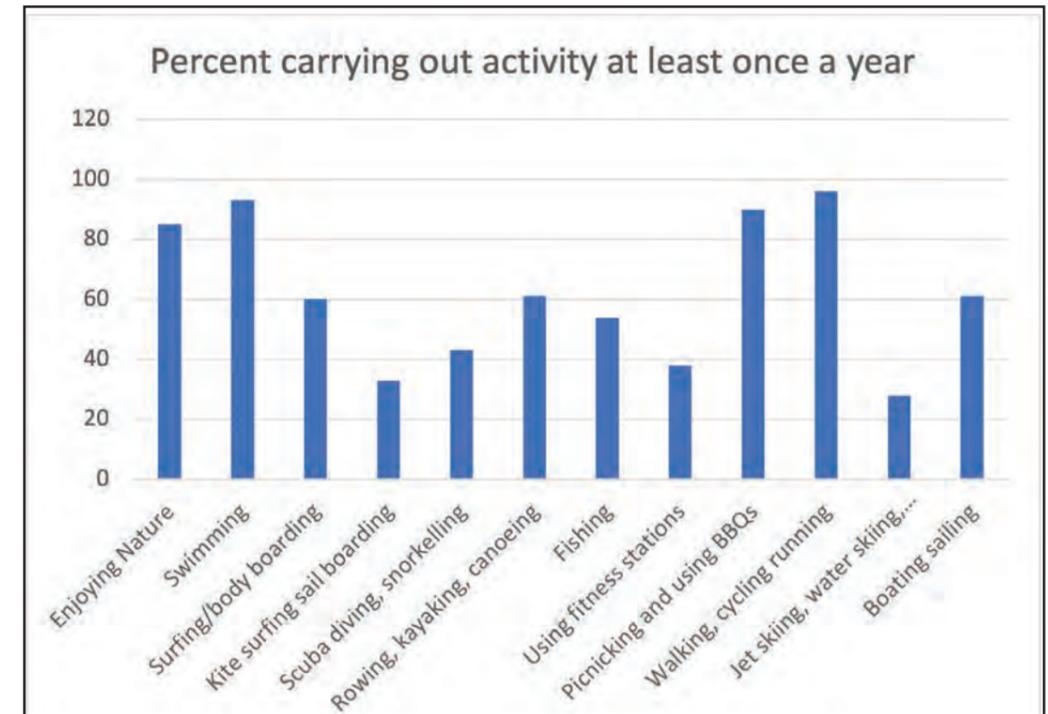


Figure 4: Percent of Central Coast Council survey respondents who carry out an activity at least once a year.

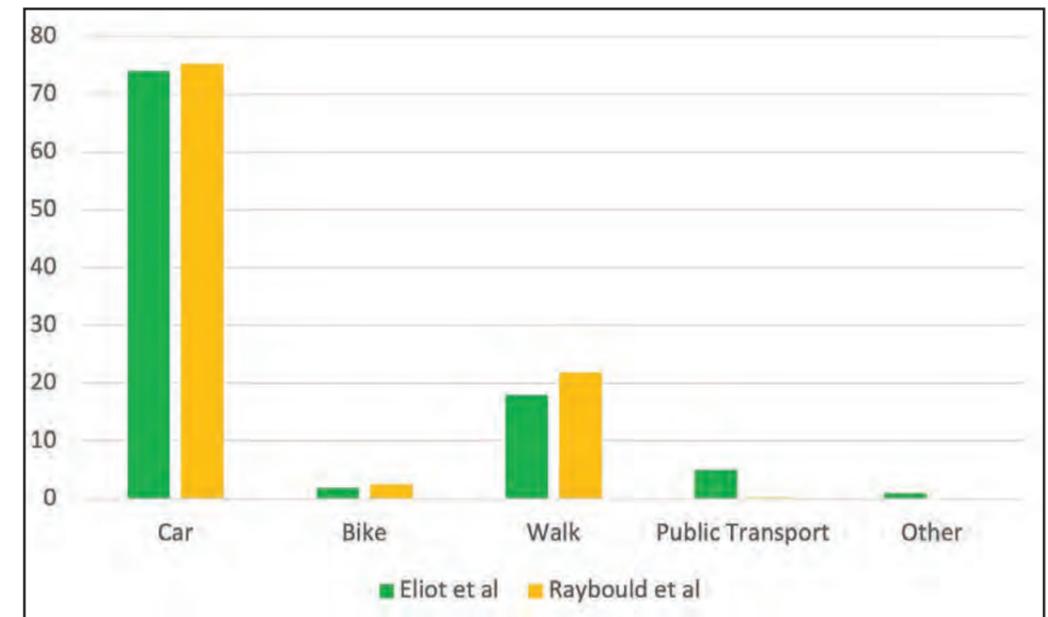


Figure 5: Mode of transport to access beach as reported in the Raybould et al and Eliot et al studies.

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 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.

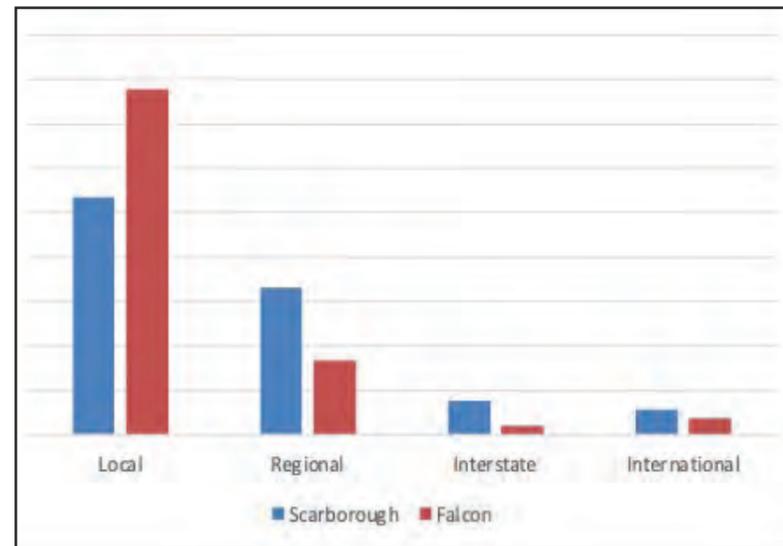


Figure 6: Where users live in relation to the beach.

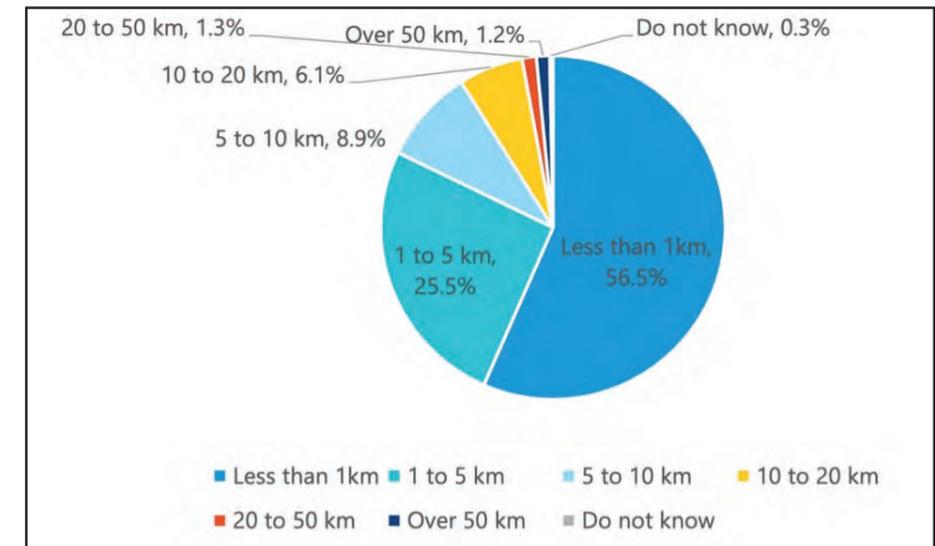


Figure 7: Where users live in relation to the beach.

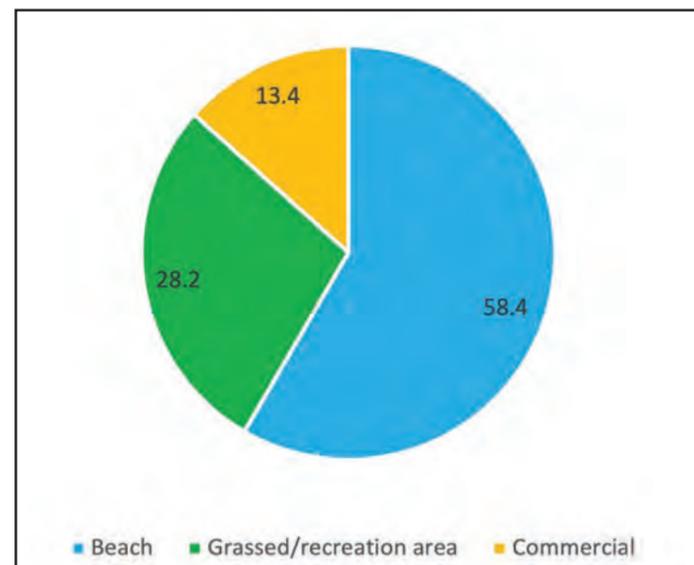


Figure 8: Location of survey respondents as reported in the Eliot et al. study

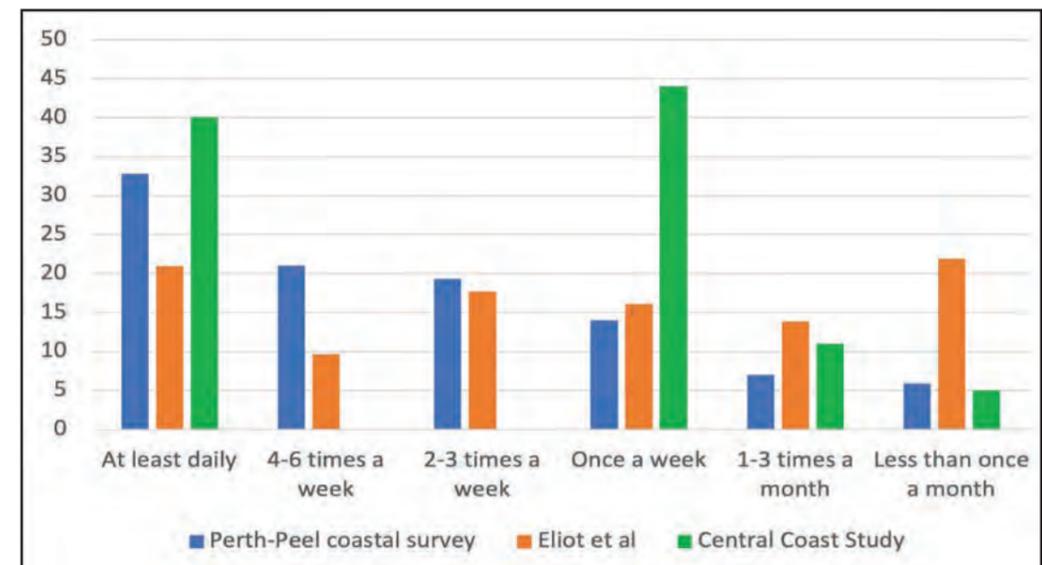


Figure 9: Frequency users visited a beach.

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 barbecues 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 it 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 on 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 Toowoona 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 Clubs 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.

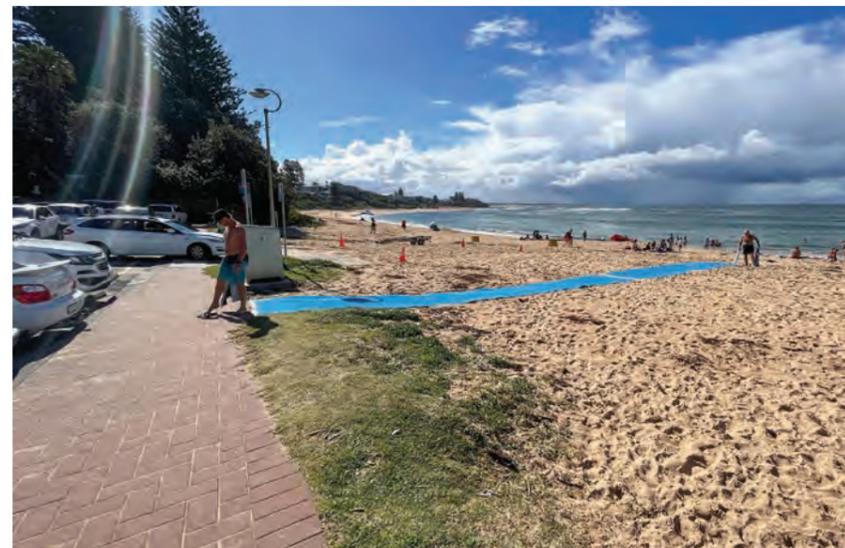


Figure 17: Beach wheelchair mat at Toowoomb Bay Beach.

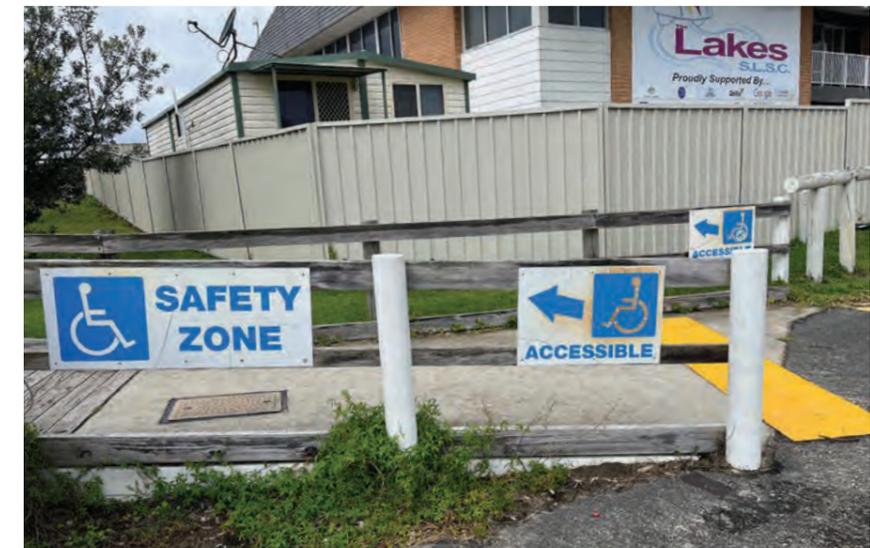


Figure 18: Dedicated beach wheelchair access ramp at Lakes Beach.

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.

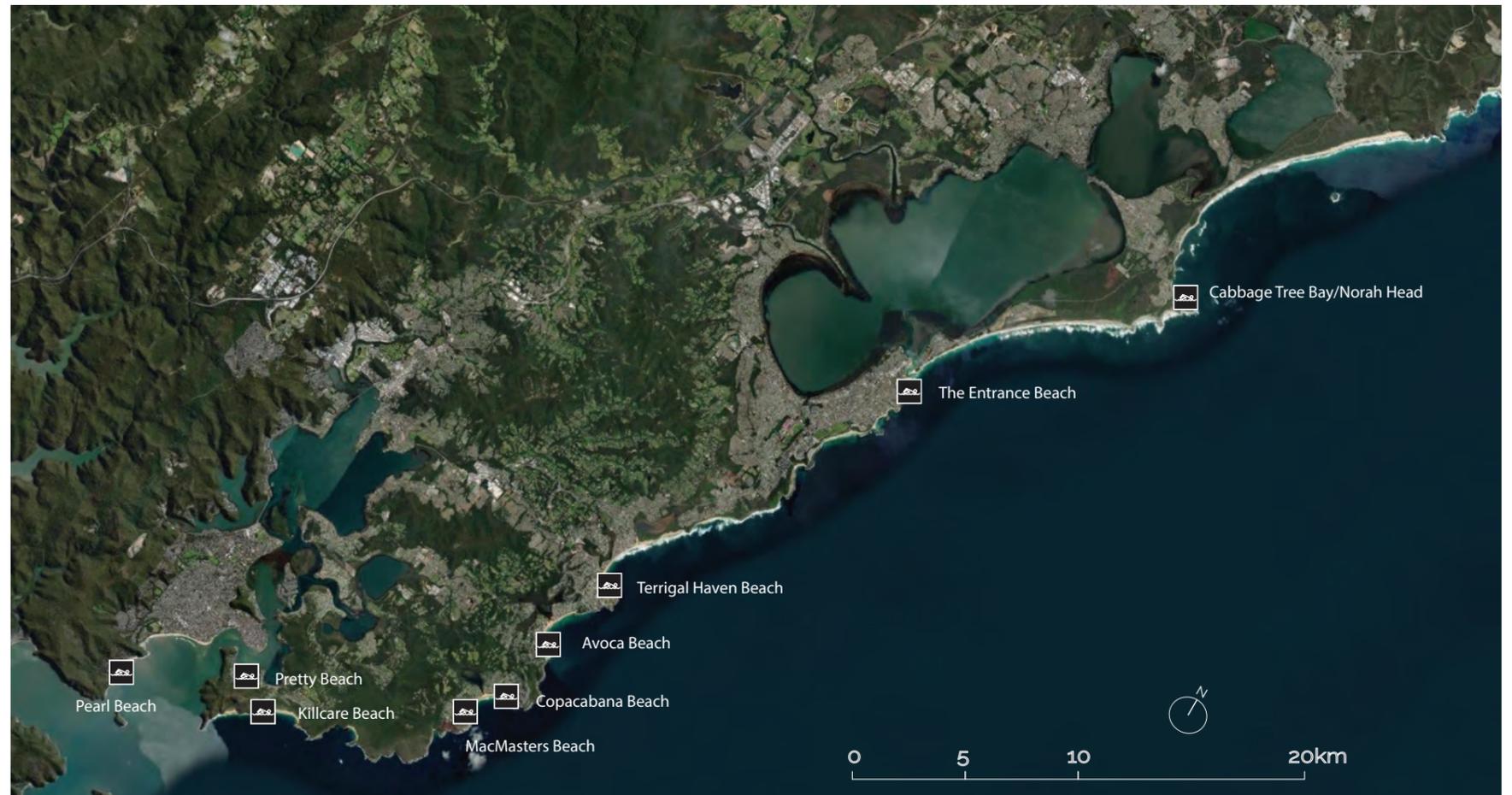


Figure 31: Distribution of Ocean Pools along the Central Coast.

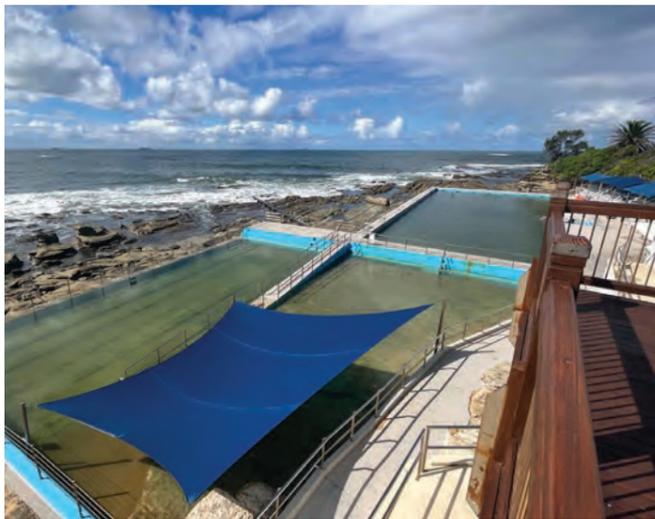


Figure 32: Grant McBride Ocean Baths, one of the main attractions on the Central Coast.



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 Wyrribalong 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 Wyrribalong 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 Wyrabalong 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)

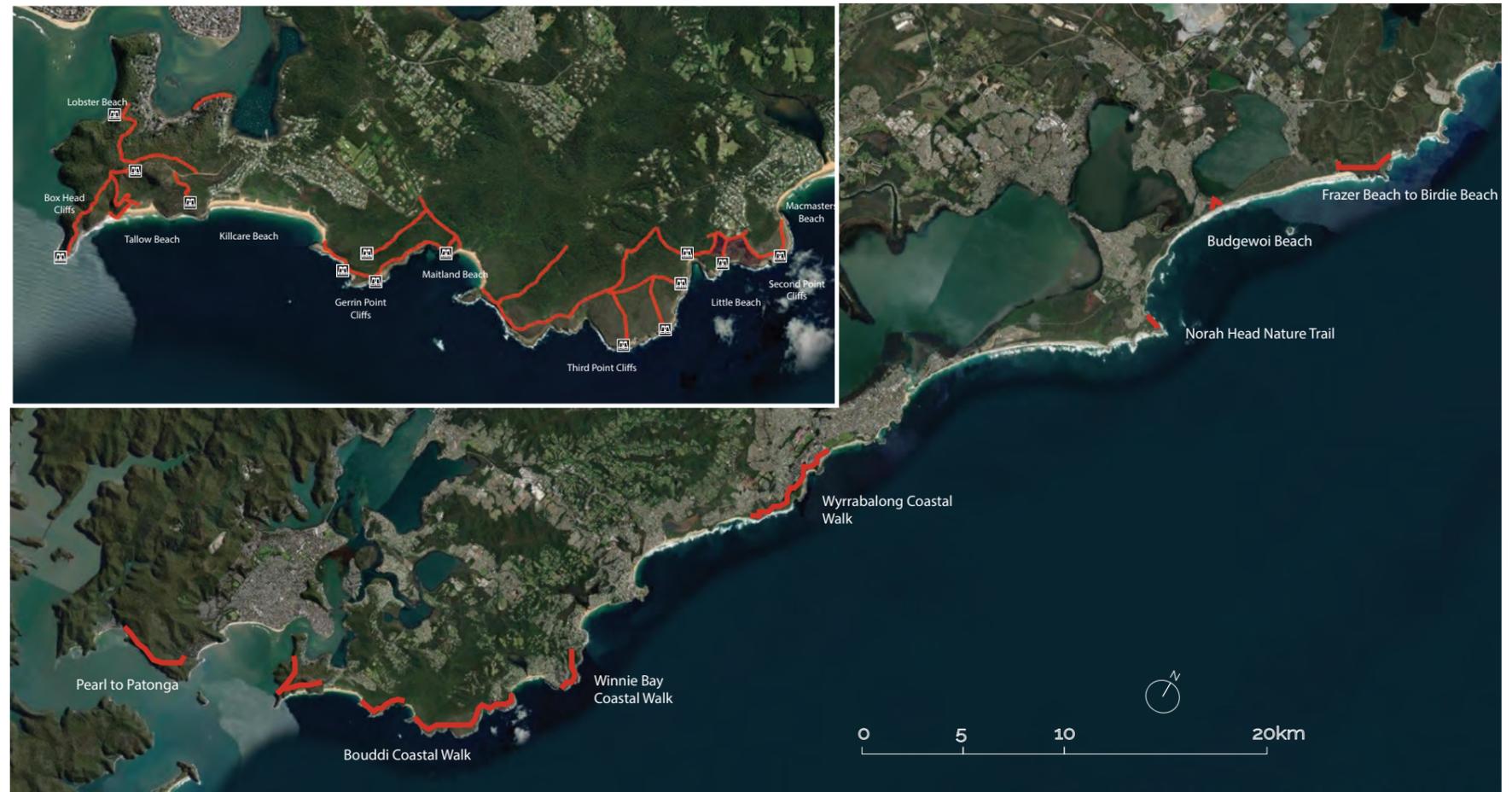


Figure 47: Distribution of walking paths along the Central Coast: the full extent of the Bouddi Coastal Walk is illustrated in the inset.



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

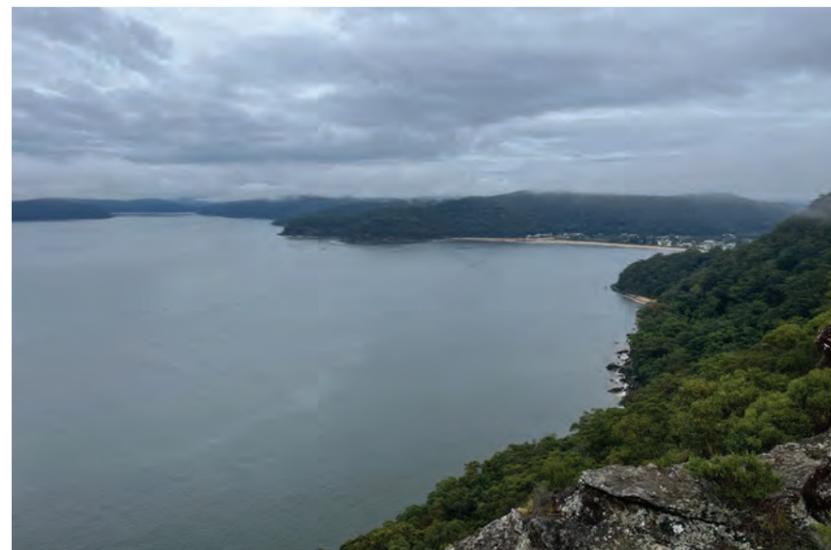


Figure 48: Patonga Beach from Warrah Lookout: one of the many lookouts found along the nature trails at the south of the Central Coast.

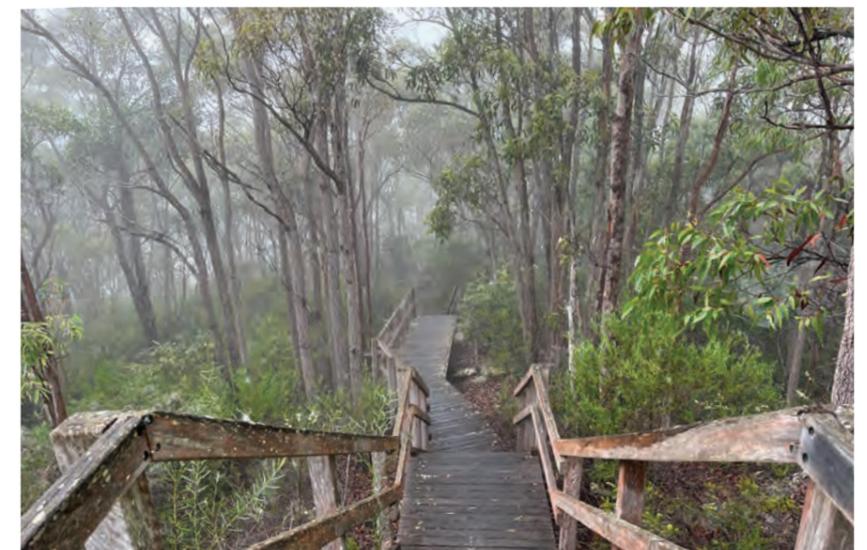


Figure 46: Nature experiences range from coastal dunes, wetlands to forests, such as the trail to Warrah Lookout.

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)	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • 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 <i>community</i> (e.g. adventure playground, SLS clubrooms, boat ramp) or <i>commercial</i> recreation facility (water sports club, kiosk/café, restaurant, caravan park) that encourages use from outside local population. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • The Entrance Beach • Toowoyn 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)	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Munmorah: Wybung Head, Budgewoi Peninsula. Wyrribalong: Pelican Point, Magenta Beach Foreshore, Wyrribalong 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)	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> North Entrance Dog Beach
C4	Urban Connector (n=7)	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Marine Parade Foreshore Terrigal Drive Foreshore Pretty Beach Hardys Bay Ettalong Foreshore Ettalong Dog Beach
C5	Local Connector (n=24)	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> No public access to beach, with private residences backing directly onto beach/water. 	<ul style="list-style-type: none"> Opportunities for beach and water-based recreation limited to adjacent properties. 	<ul style="list-style-type: none"> Wagstaffe Beach, Daley Avenue Foreshore, Booker Bay. Lagoon: Avoca Lake Foreshore, Ocean View Drive Foreshore.
C7	Rural Residential Connector (n=2)	<ul style="list-style-type: none"> No public access to beach, with private rural properties backing directly onto beach/water. 	<ul style="list-style-type: none"> Opportunities for beach and water-based recreation limited to adjacent properties. 	<ul style="list-style-type: none"> 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



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



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.

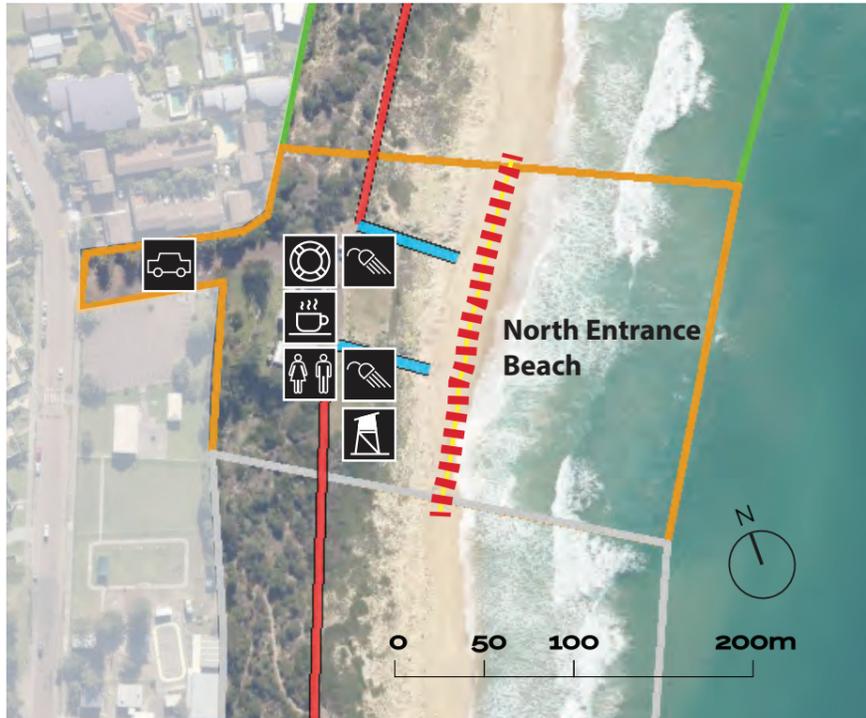


Figure 67: North Entrance Beach Uses and Infrastructure

- 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.



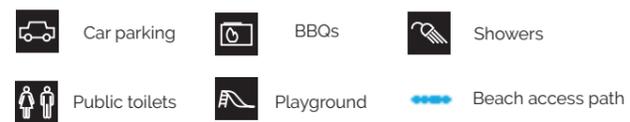
Figure 68: Central Coast Moderate Activity Node distribution

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



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 from those associated with coastal walk trails. Seating and signage typically placed in strategic locations to enhance aesthetic and educational appreciation of the landscape.

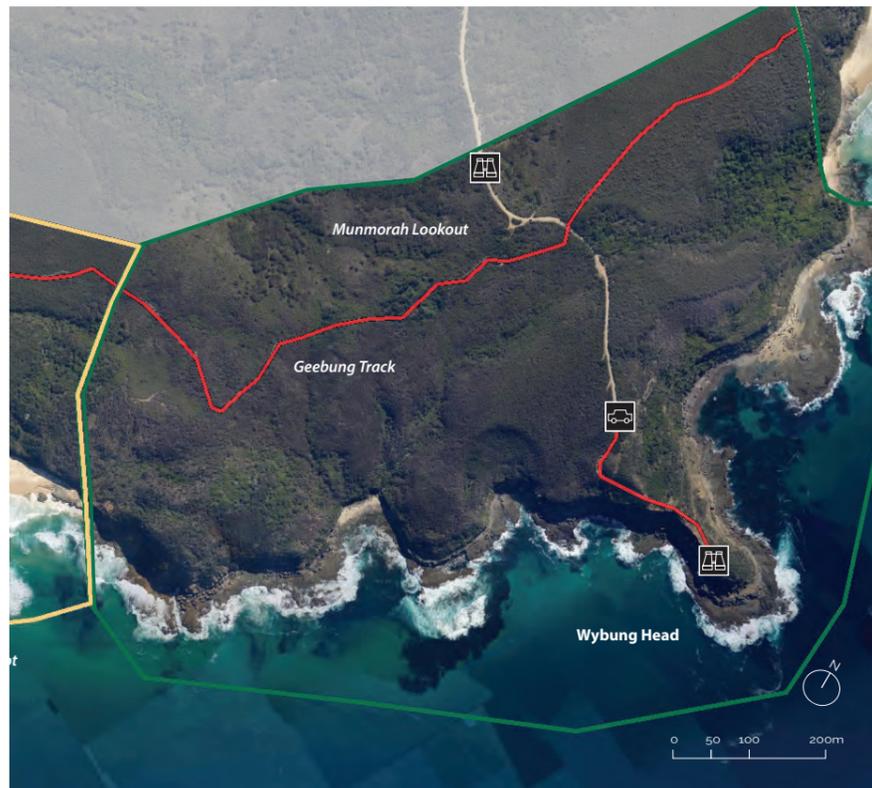


Figure 75: Wybung Head Uses and Infrastructure



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



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.

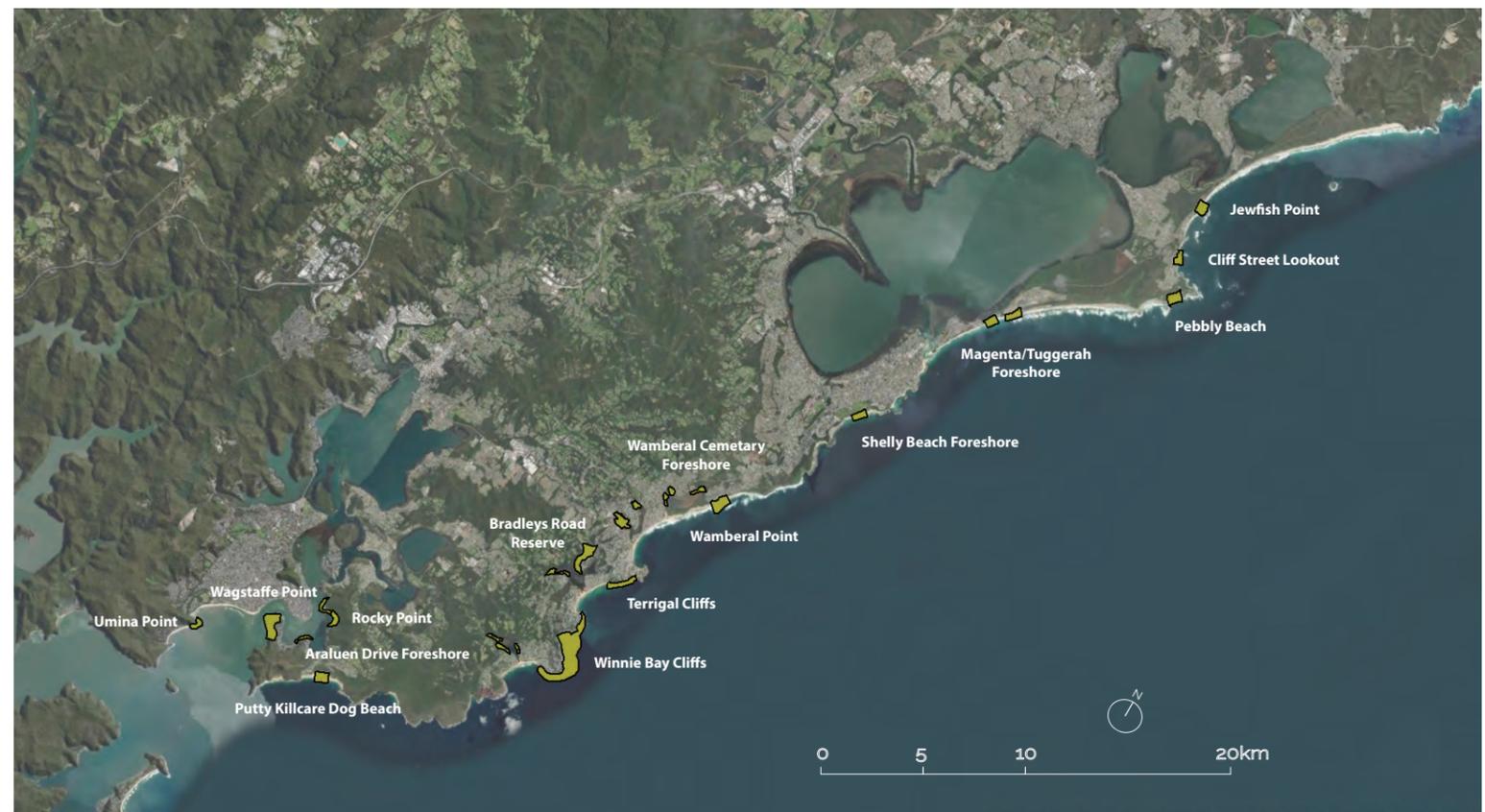


Figure 80: Central Coast Landscape Connector distribution

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.

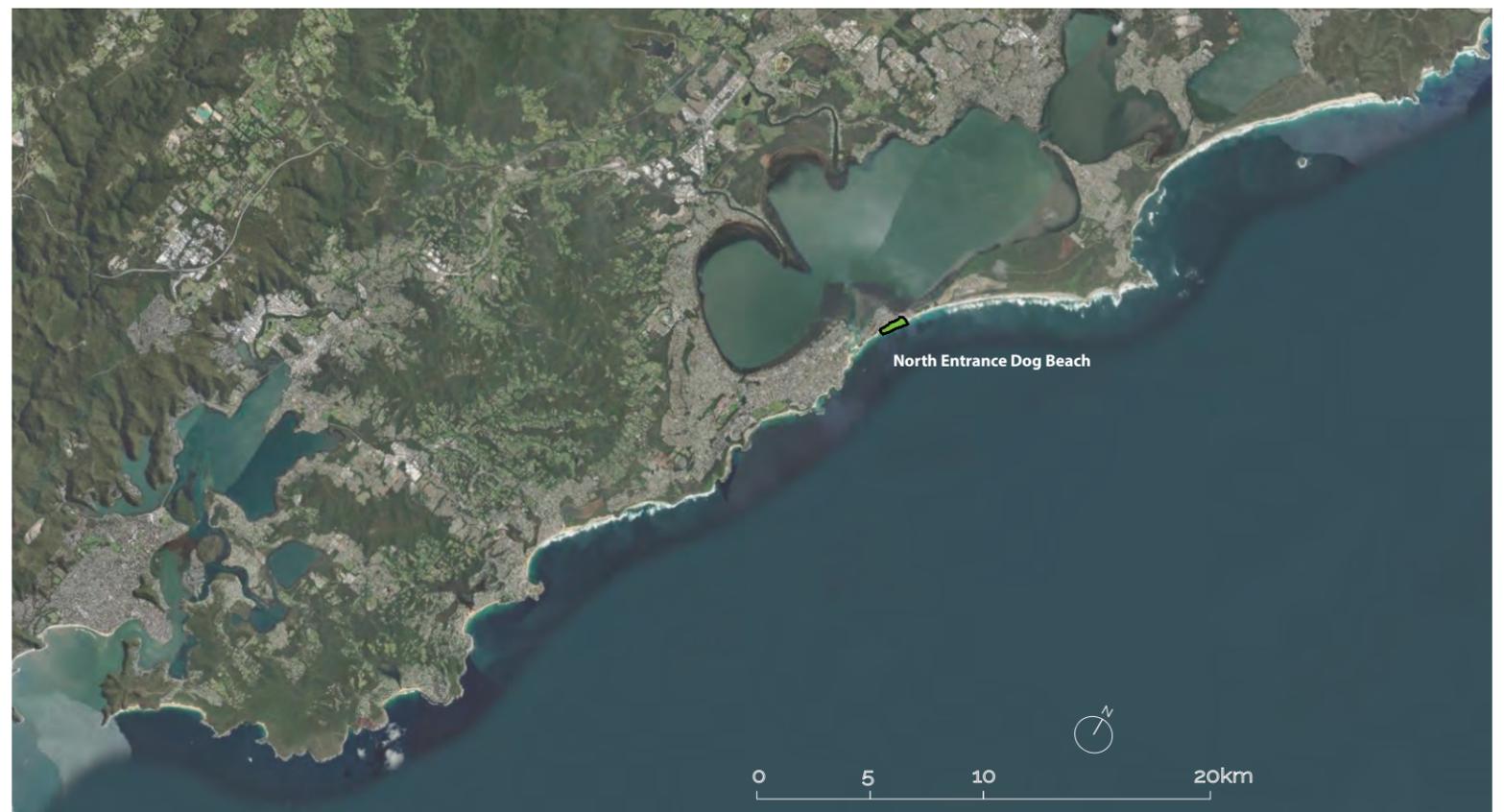


Figure 84: Central Coast Shared Path Connector distribution

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 87: Marine Parade Foreshore Uses and Infrastructure



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 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 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

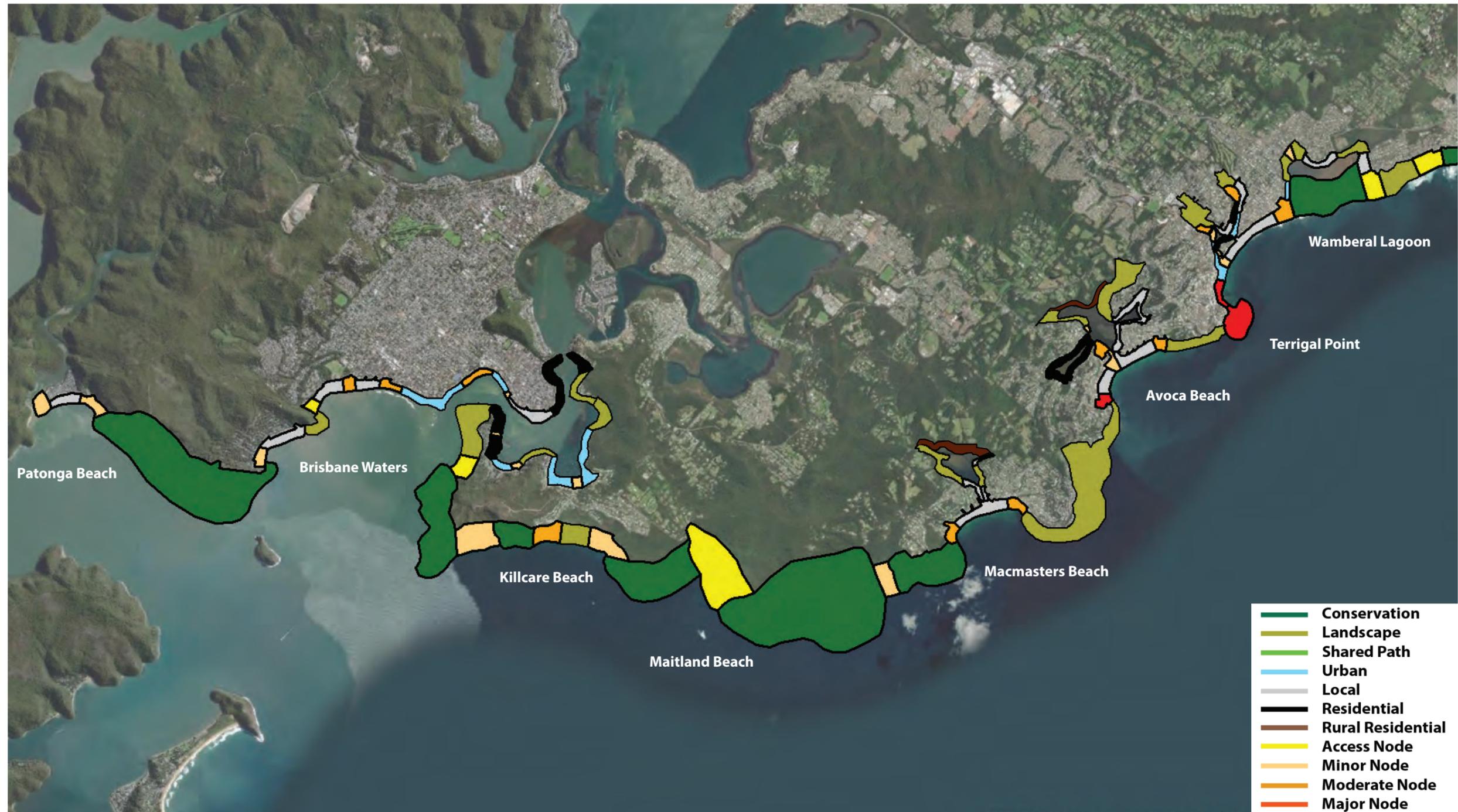


Figure 101: Distribution of nodes and connectors from Wamberal to Patonga.

Coastal Recreational Use Classification - Distribution Map East

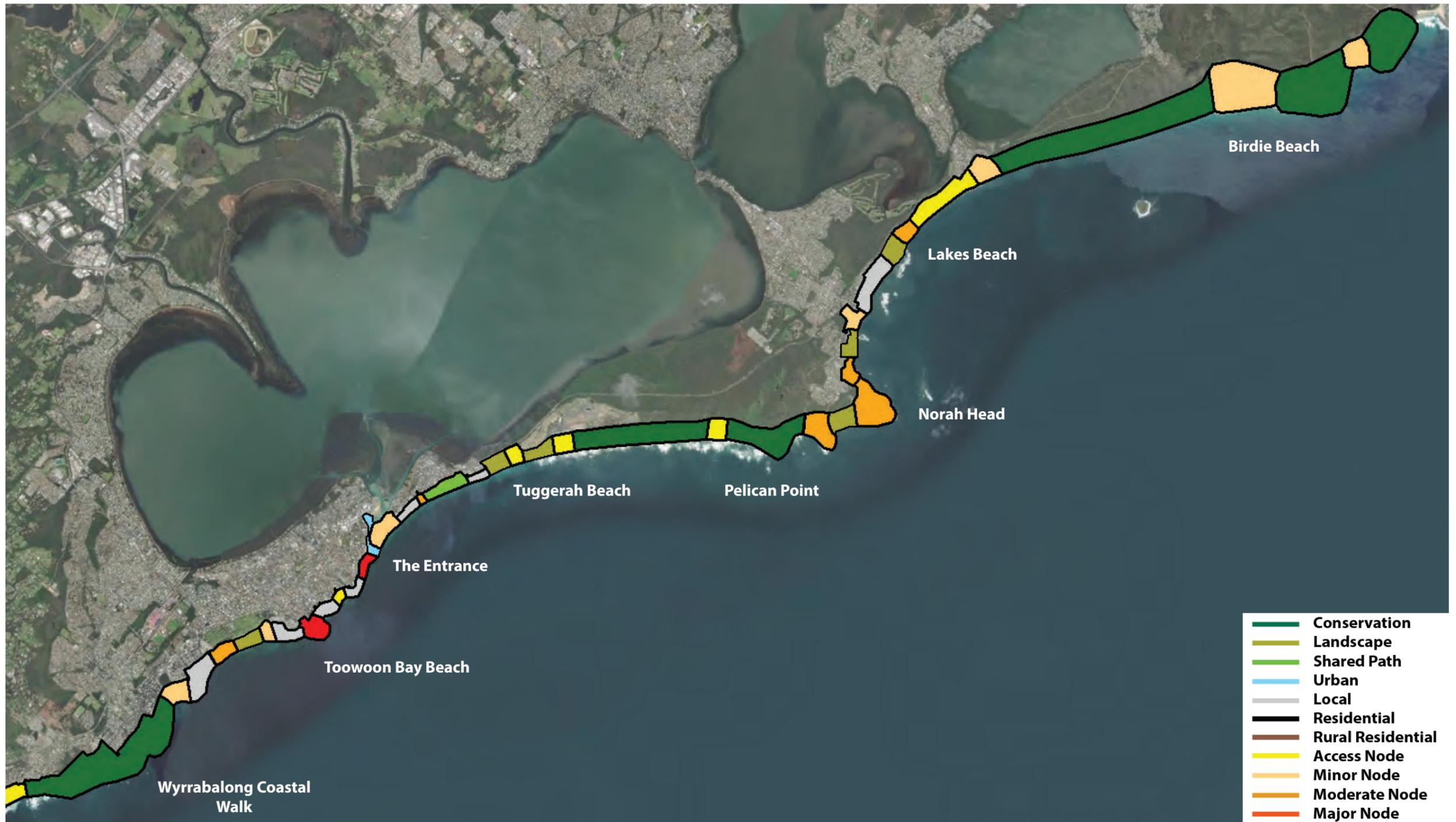


Figure 102: Distribution of nodes and connectors from Munmorah to Wyrrabalong.