



Transport
for NSW

Maritime Management Centre

Transport for NSW Regional Boating Plan Tweed – Clarence Valley Region

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1. Introduction

The Tweed-Clarence Regional Boating Plan has been developed as part of a major NSW Government initiative to boost the experience of recreational boating across the state. The Plan was developed by the Maritime Management Centre (MMC) in Transport for NSW working closely with the NSW Maritime Division of Roads and Maritime Services (Roads and Maritime) and with expert coastal infrastructure advice from consultants GHD.

The Plan identifies the boating safety, access and infrastructure actions across the region to be implemented over the next five years. A summary of the projects and initiatives to be delivered as part of the Plan are detailed in the Delivery Program in Chapter 8. A Progress Report on the Delivery Program will be published annually to provide an update on the delivery of key projects and actions.

Funding for infrastructure projects will be allocated out of the *NSW Boating Now* program announced by the Minister for Roads and Freight in August 2014 which will see \$14m per year made available for the delivery of boating infrastructure projects over the next five years.

The Plan is one of eleven Regional Boating Plans that have been developed across the major waterways in NSW as shown in Figure 1.

Each Regional Boating Plan was developed through a two-stage consultation process. The first stage involved workshops with local Councils and key stakeholder groups as well as an online survey open to all waterway users and members of the general public. Feedback received from the first stage was then used to inform the development a Consultation Draft which formed the basis of the second stage of consultation.

A public information session was held at Tweed Heads on 9 July 2014, Ballina on 10 July and at Grafton on 24 July 2014 to discuss and seek feedback on the key findings and actions identified in the Consultation Draft. Further meetings were also held with Councils to help determine the priority infrastructure projects identified in the final Plan.

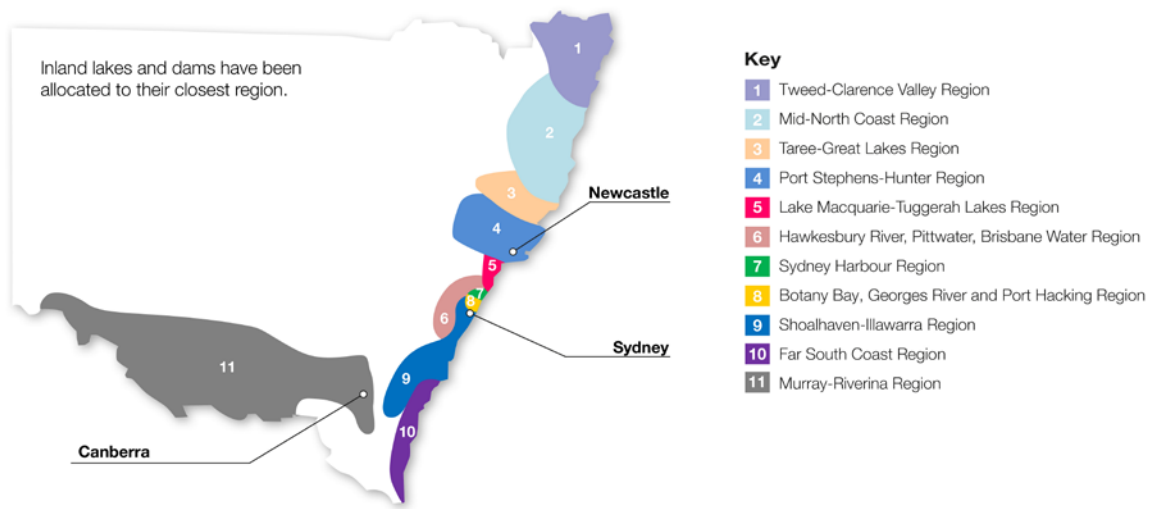


Figure 1 – Map of regions



2. Physical Character of the Waterways

2.1 Background

This region predominately consists of the following major waterways: Tweed River, Brunswick River, Richmond River and Clarence River. The inland waterway of Toonumbar Dam is also included as part of this region.

Recreational boating is popular in the region, with users undertaking a wide variety of boating activities. The region also supports various commercial vessel operations such as commercial fishing vessels, hire and drive vessels and limited port operations through the Port of Yamba. Due to constraints such as limited waterway availability, limited foreshore space and shelter from weather, users in this region tend to be concentrated in particular areas of the waterways. Further details on waterway users are provided in Chapter 3.

The waterways are covered by seven councils:

- Tweed Shire Council (TSC);
- Byron Shire Council (BySC);
- Richmond Valley Council (RVC);
- Ballina Shire Council (BaSC);
- City of Lismore Council (CLC);
- Clarence Valley Council (CVC); and
- Kyogle Council (KC).

Most councils have plans in place to manage their waterways and associated estuaries. The main objectives of these plans have been to manage and co-ordinate waterfront development, improve public accessibility and to protect the visual character and natural landscape of the waterways.

The region incorporates the Cape Byron Marine Park which covers approximately 22,000 hectares extending from Brunswick Heads in the north to Lennox Head in the south. The tidal waters of the Brunswick River and its tributaries, as well as Belongil Creek and Tallow Creek are also within the Marine Park.

The Cape Byron Marine Park Zoning Plan is intended to enhance the conservation of marine habitats and species by providing various levels of protection. The zoning plan identifies activities that can occur without specific permission and those that require a permit. Activities

permitted in each zone and restrictions governing their undertaking are listed on NSW Marine Parks Authority website. Other regulations on some activities and for species protection also apply under the zoning plan.

Restrictions include a ban on aquaplaning and waterskiing in the Brunswick River and Marshalls Creek and a four knot speed limit within 200m of Julian Rocks. The use of personal watercraft (PWCs) is prohibited in the entire marine park, except for organised events under a permit. Anchoring and mooring restrictions also apply with the marine park, with a number of courtesy moorings provided at Julian Rocks.

The region also encompasses the Cook Island Aquatic Reserve located approximately 600m off Fingal Head, with courtesy moorings provided at popular dive locations around the island.

The sections below outline the physical characteristics of the waterways where boating mainly occurs rather than the entire catchment and tributaries.

2.2 Tweed Catchment

The Tweed is the northern most coastal catchment in NSW and includes the Tweed River and a number of smaller estuaries. The Tweed River is one of the busiest waterways in NSW due to its proximity to the large population base in south-east Queensland, its warm climate and its popularity as a holiday destination.

The Tweed River catchment is approximately 1,000km² in size. The catchment boundaries fall entirely within those of the Tweed Shire Council. The mouth of the Tweed River is contained within beach/training walls at Tweed Heads adjacent to the NSW/Queensland border. Bray Park Weir, approximately 4 km upstream of Murwillumbah and 30km from Tweed Heads, is the tidal limit of the main arm of the Tweed River and defines the upstream extent of the Tweed River Estuary.

The mouth of the Tweed River has a clear width of approximately 150m between the training walls. A common dynamic feature at this mouth is the sand bars at the entrance. Immediately upstream, the river is controlled by revetments and ranges between 200m and 250m wide at depths reaching 8m. Upstream, the River widens at Fingal Head and Chinderah before gradually narrowing to a width of 120m near Murwillumbah. Here the depth is significantly reduced to approximately 2-3m with the exception of localised areas where flow and flood scour has caused deeper channels to exist.

The major tributaries to the main arm of the Tweed River are the Rous River, Terranora and Cobaki broadwaters. The condition of Tweed catchment river banks have been impacted upon by current and wave action.

Coastal harbour facilities at Tweed Heads are located in Boyds Bay which is about 4km upstream via Terranora Inlet from the river entrance. The area provides mooring facilities for both commercial fishing vessels and recreational boats.



Figure 2 - Tweed catchment and surroundings

2.3 Brunswick Catchment

The Brunswick catchment, which extends from Cape Byron to Kingscliff, consists of a number of waterways including the Brunswick River, Marshalls Creek and Simpsons Creek in the Byron Shire Local Government Area.

The Brunswick River opens to the Pacific Ocean at Brunswick Heads with training walls and twin breakwaters. Upstream, the main arm extends 20 km to the town of Mullumbimby, near the tidal limit. The north arm of Marshalls Creek has a tidal length of 9 km and supports the villages of Ocean Shores and New Brighton. The south arm of Simpsons Creek joins Tyagarah, 11 km south of Brunswick Heads and traverses through mostly uncleared Crown Land that adjoins the coast.

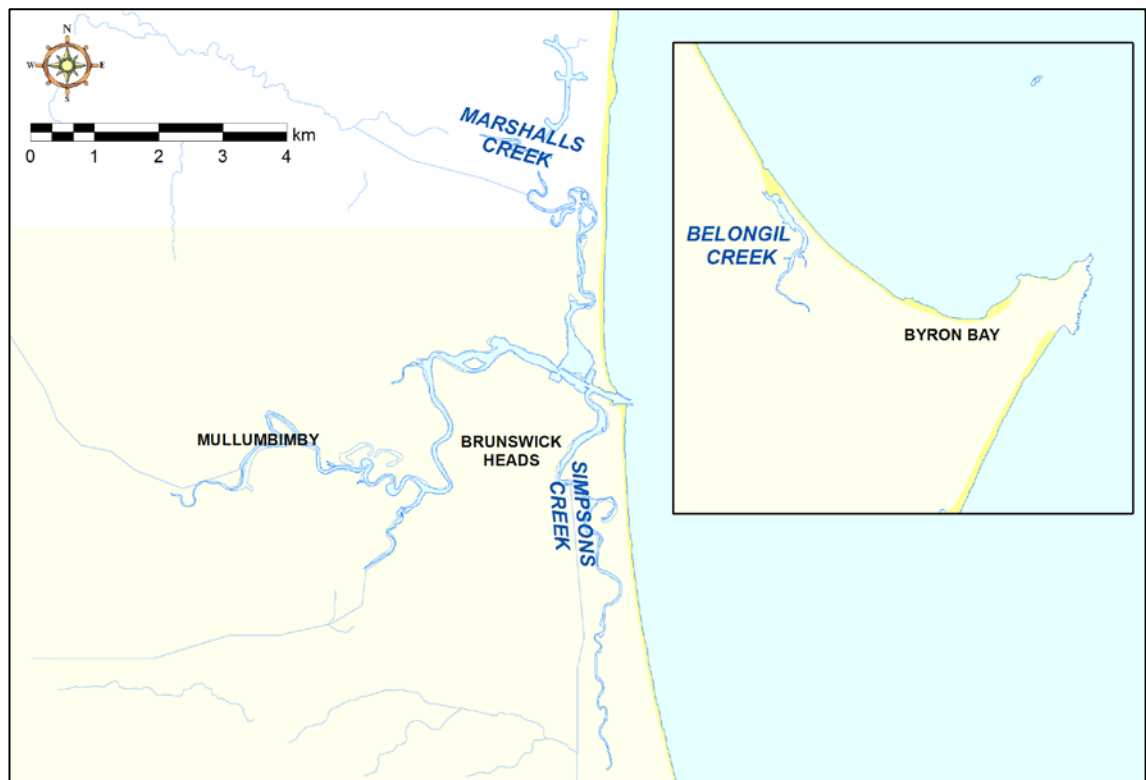


Figure 3 – Brunswick catchment and surroundings

2.4 Richmond Catchment

The Richmond catchment is located south of the Brunswick Catchment and has Evans Head in the south and Cape Byron in the north as coastal boundaries. The major waterways in this area are the Richmond and Evans Rivers.

The Richmond River begins at the NSW-Queensland border and flows 170 km south-east to the Pacific Ocean at Ballina. This catchment falls mainly within the Ballina Shire Council, however parts also fall within City of Lismore Council and Richmond Valley Council.

Although two training walls at Ballina provide protection to vessels and to an extent have stabilised the river entrance, the dynamic Ballina sand bar still exists. Whilst this channel is still navigable, the shifting bars require boaters to take care and due caution during all crossings. Upstream of Ballina on the navigable reaches of the river are the towns of Wardell, Broadwater, Woodburn, Coraki, and Lismore which in the past have been subjected to flooding.

The Evans River is relatively shallow with an average depth of 1.1 m. Training walls at Evans Head open the river entrance to the Pacific Ocean and allow for safe navigation for boat users. Upstream, the river extends 20 km to Woodburn where it joins the Richmond River via the Tucombil Canal. It is operated to mitigate flooding and improve drainage in the mid-Richmond River area. The Evans River is connected to the Richmond River at Woodburn via the Tucombil Canal. Surrounding the river are the Bundjalung and Broadwater National Parks. Evans Head is a popular tourist destination and small commercial fishing port. Along the banks of the river are extensive areas of mangroves, saltmarsh and melaleuca swamp.

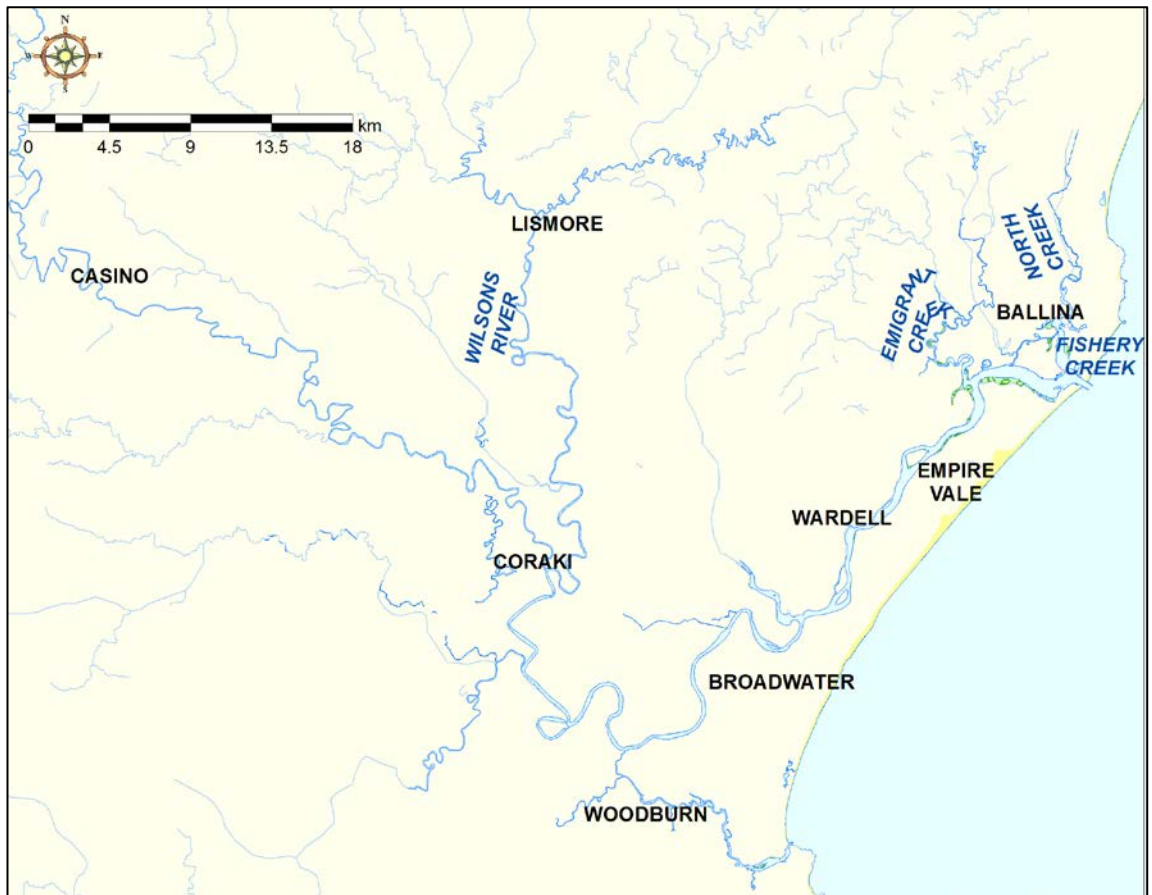


Figure 4 – Richmond catchment and surroundings

2.5 Clarence Catchment

The Clarence River stretching almost 400 km is the largest estuary in the Tweed – Clarence Valley region, at a catchment area of over 130 km². The mouth of the Clarence River is contained within entrance training walls. The towns of Iluka and Yamba are located north and south of the entrance respectively. Remnants of the river extend 60 km up to the Queensland border. The majority of this river is contained within the Clarence Valley Council.

The Clarence River is the second largest river in mainland Australia south of the Tropic of Capricorn, after the Murray River. The river and its tributaries support prawn trawling and other commercial fishing industries.

Like many of the northern rivers, the Clarence River is subject to flooding.



Figure 5 – Clarence catchment and surroundings

2.5.1 Yamba

The Clarence has its own regional seaport at Yamba which is situated at the mouth of the Clarence River. Yamba is one of five internationally recognised ports in NSW, and provides maritime links for export timber and supply vessels to Norfolk Island and a trade link to other South-Pacific markets. The Port of Yamba is Australia’s eastern most sea port offering customs and quarantine classification and unrestricted port of first entry for overseas imports status. The port handles approximately 12,000 mass tonnes of cargo per annum. As a result, the shipping channel depths are maintained to accommodate large vessels.

2.6 Toonumbar Dam

Toonumbar Dam is located over 100 km west of Byron Bay on the Iron Pot Creek in the North Coast Valley. It has a catchment area of 9,800 km² and a storage capacity of 11,000 ML. The dam is located solely within Kyogle Council.



Figure 6 – Toonumbar Dam



3. Waterway users

Recreational boating is a popular past-time in the Tweed-Clarence Valley regional waterways. The waterways are popular among recreational fishers and an increasing number of visiting boaters from Queensland. Other common boating activities in the region include water skiing, wake boarding, PWC operation, sailing, rowing, dragon boat racing, canoeing and kayaking.

Tweed Catchment

The Tweed River is particularly popular for recreational activities, including:

- Fishing from vessels and the shoreline. In 2002, NSW Fisheries introduced restrictions on the operations of commercial fishers in the Tweed River, leading to the development of designated recreational fishing havens. Popular areas include downstream from Boyd's Bay Bridge, Wommin Lake and Crystal Waters;
- Water skiing and wake boarding vessels are concentrated in a few areas of the river. These include the area adjacent to the Fingal Head Boat Harbour, between Chinderah and The Piggery, and Tumbulgum to the Commercial Road Boat Ramp upstream from the Murwillumbah Bridge;
- PWCs are popular throughout most of the estuary. The "wave-zone" area adjacent to the Jack Evans Boat Harbour is a popular PWC area due to the surf-like conditions at the entrance bar;
- Rowing occurs from two rowing clubs located near Boyds Bay Bridge and the Condong to Murwillumbah reach of the river; and
- Non-powered boating activities such as canoeing, sailing and kayaking.

In addition to the recreational activities, the Tweed River also accommodates commercial activities such as fishing, aqua culture, charter and hire and drive operations.

Brunswick Catchment

The Brunswick River and its associated tributaries are highly valued by both non-powered and active recreational users. Recreational activities include:

- Power boating;
- Passive recreation, including fishing;
- Sailing, canoeing and kayaking; and
- Swimming and snorkelling.

As a result of the number of vessels on the relatively small estuaries and the range of activities on the water, conflict between users sometimes occurs, particularly during peak periods. The main conflicts on the Brunswick River seem to be between power boaters, anglers, non-powered craft and surfers (at the bar crossing).

The Brunswick River supports a number of commercial activities such as oyster farming, commercial fishing, and agriculture.

Richmond Catchment

The township of Ballina is well located for cruising vessels on “day sails” along the NSW coast. These vessels tend to stay for a day, weekend or longer. Ballina provides safe mooring for vessels particularly if poor weather is expected on the coast, although the bar will restrict vessel entry if poor weather has already developed.

The Evans River is mostly utilised for recreational fishing from powerboats. It is also a popular waterway for passive activities such as canoeing, kayaking and swimming.

Clarence Catchment

The Clarence River is mainly used for the following recreational activities:

- White water rafting and canoeing, as well as still water canoeing and kayaking in the upper reaches of the Clarence;
- Competitive rowing;
- Sailing;
- Dragon boat racing
- Recreational and commercial fishing; and
- Waterskiing and wakeboarding, particularly at the Watersports Precinct at Seelands.

Toonumbar Catchment

Toonumbar Dam is a very popular area for fishing from vessels, particularly Australian bass. Other recreational boating activities are limited due to an 8 knot speed restriction on the lake.

3.1 Analysis of existing user data

3.1.1 Licence data analysis

There are currently approximately 25,000 boat licence holders in the Tweed – Clarence Valley Region. This represents approximately 4.6% of all boat licence holders in NSW. There are also a large number of boaters from Queensland that visit the area. Interstate registrations accounted for nearly 5% of all licence holders (approximately 25,000) in NSW. Based on anecdotal reports, it is likely that a significant portion of these are Queensland boaters using the Tweed River.

The majority of licence holders in the region carry a General Boat Licence with approximately 7% licensed to operate PWCs. This breakdown of licence types is typical across the State.

An analysis of the 2011 census (between 2006 and 2011) of the catchments in this region has revealed the following:

- Tweed Catchment - the Tweed Shire Council had a population of 85,105 and experienced a population growth of 2.1%;
- Brunswick Catchment - the Byron Shire Council had a population of 29,209 and experienced a population growth of 1.54%;

- Richmond Catchment - Ballina Shire Council, Richmond Valley Council and Lismore Shire Council had a collective population of 104,077 and experienced a population growth of 2.05%;
- Clarence Catchment - there were 49,665 people living within Clarence Valley Local Government Area and the area experienced a population growth of 3.13%; and
- Toonumbar Catchment - there were 9,228 people living within the Kyogle Local Government Area and the area experienced a population decline of 0.30%.

The population growth of the above catchments is below both the national average growth of 8.32% and the NSW average of 5.63%.

3.1.2 Registration data analysis

There are currently approximately 14,000 registered recreational vessels in the Tweed-Clarence Valley region. This represents approximately 6% of all registered vessels in NSW. This figure is greater than the proportion of State-wide licence holders, suggesting that there are less licensed boat drivers per registered boat in comparison with the rest of the State. However, it is important to note that there are smaller boats that may not require licences to use the waterways as well as visiting boats from Queensland.

Open runabouts dominate, accounting for 70% of all registered vessels. Punts and cabin runabouts are also popular, comprising 20% of all vessels. PWCs, yachts, motor cruisers and inflatables have a modest presence on the region's waterways. Some powered catamarans, sailing catamarans, fishing vessels and houseboats are also registered in the region but these represent a relatively small proportion of the region's total registered vessels.

A majority (90%) of all vessels are between 2 and 6 m in length and the average vessel length for the region is 4.6 m. Vessels less than 6 m in length are defined as trailerable. This has a strong influence on the boating access and storage requirements in the region with a strong demand on boat ramps and trailer parking.

3.1.3 Other users

While the above data provides information on licence holders and vessels registered in the Tweed – Clarence Valley region, it does not capture vessels from other regions, in particular from Queensland, that use these waterways. This can add significantly to the local demand at certain times of the year.

Roads and Maritime's licence and registration data does not capture non-powered vessel numbers such as kayaks, canoes, beach-launch sail craft which do not require registration. Based on the estimated total number of these vessel types in NSW, it is estimated that there may be several thousand of these vessels in the Tweed-Clarence Valley region.

3.1.4 Future demand

In 2010, the then NSW Maritime released a report titled *NSW Boat Ownership and Storage Growth Forecasts to 2026*. The report forecast a continuing growth trend in vessel ownership of 2.9% annually across NSW.

The report used a different regional profile to that being used for the Regional Boating Plan. It identified the North Coast region (which incorporates Tweed – Clarence Valley) has experienced the most significant growth. Despite this growth (approximately 4% per annum across all boat sizes), the North Coast has the second smallest proportion of boats greater than 6 m in length which suggests that most growth is in the <6 m category (trailerable vessels).



4. Safety

Key findings

- Stakeholder consultation suggests high levels of satisfaction with current boating safety measures in the region.
- Analysis of incidents, infringements and complaints show the area is typical of a busy waterway with multiple user types who sometime conflict with each other in the same area.
- The area has a comparatively lower level of compliance with marine safety requirements and a comparatively higher level of bar crossing incidents than other areas of NSW. This may be influenced by the high number of interstate users who are beyond the reach of State based safety and education campaigns.
- A review of signage, navigation aids and education would help enhance boating safety and the overall boating experience.

Actions

- a. Review strategies to improve boating safety across ocean bars.**
- b. Review the placement and planning of navigations aids.**
- c. Review strategies to improve user behaviour.**
- d. Review signage for clarity and visibility.**

4.1 Overview of existing safety activities

The MMC has led a campaign with Roads and Maritime to promote the wearing of lifejackets, especially in small vessels. The campaign is a response to the fact that 9 out of 10 people who drown when boating, are not wearing a lifejacket.

The campaign has been the most comprehensive, targeted program on boating safety in NSW history. It included an extensive and targeted advertising campaign, an innovative mobile lifejacket promotional van which took the safety message to the boating public State-wide (including visits to the Tweed and Clarence Valley), a zero tolerance on-water compliance approach and a host of supporting activities.

Roads and Maritime is responsible for marine safety in NSW, including the operational aspects of the regulation of recreational and commercial boating activity throughout the State. The enforcement role is chiefly performed by BSOs who conduct regular on-water patrols and inspections throughout the Tweed – Clarence Valley waterways to provide boating safety

education and ensure compliance with safety requirements (such as lifejackets), speed, wash, distance off, aquatic licences, commercial operations and mooring requirements.

Roads and Maritime also operate a Mobile Safety Education and Compliance Team which is a team of specialist BSOs who can be deployed throughout NSW.

The BSOs work in close partnership with the local NSW Police Force (both general duties police and the local Marine Area Command), often conducting joint patrols, although police officers are solely responsible for conducting random breath testing on NSW navigable waters.

BSOs also work in partnership with officers of the Department of Primary Industries (Fisheries) and National Parks' rangers in relation to matters of common interest.

- In addition to State-wide regulatory requirements and boating safety campaigns, specific boating safety restrictions that apply in the Tweed – Clarence Valley region are shown on the map included in Appendix A and online at <http://www.rms.nsw.gov.au/maritime/using-waterways/maps/boating-maps.html>. These are summarised as follows:
 - Speed restrictions such as:
 - 4 knot zones, specifically at:
 - Jack Evans Boat Harbour;
 - Yamba Channel;
 - Stotts Channel;
 - River and creek entrances such as Cudgen Creek, Cudgera Creek, Mooball Creek, Rous River;
 - Creeks such as Simpsons Creek, North Creek, Fishery Creek; and
 - Ferry Crossings at Lawrence, Ulmarra and Ballina.
 - 6 knot zone at Boyds Bay Bridge; and
 - 8 knot zones at upstream Cudgen Creek, Cudgera Creek and Mooball Creek, upstream Brunswick River, downstream Evans River, Richmond River near Casino, Shaws Bay, Wooli Wooli River, Sandon River, Toonumbar Dam.
 - “no wash” and “no towing” zones; and
 - Restrictions in the Cape Byron Marine Park, including prohibition on the use of PWCs.

A further restriction is the overall speed limit of 60 knots on NSW navigable waters if any person aged under 18 years is on board a vessel (unless an aquatic licence specifies otherwise).

In addition, there are also a number of general “distance off” restrictions which apply on all NSW waters – for example, vessels travelling at 10 knots or more must remain at least 60 m from people in the water and 30 m from structures, shorelines and other powered vessels. Where it is not possible to maintain the specified distances, a “safe distance” should be maintained. This is the distance which will ensure that a vessel will not endanger or injure people or damage property, having regard to relevant factors such as prevailing weather conditions, visibility, speed and any obstructions.

4.2 Complaints

Analysis of the complaints received by Roads and Maritime during the 5 years leading up to 1 January 2014 reveals that the majority of complaints received related to:

- personal water craft;
- irregular riding of personal water craft;
- navigation hazards;

- speeding; and
- wash

The greatest number of complaints received by Roads and Maritime for the Tweed – Clarence Valley region related to the popular Tweed Heads area.

The consultation feedback closely aligned with complaints data, with suggestions that some boaters in the region conflict with other users as all recreational boaters tend to congregate around the limited access areas.

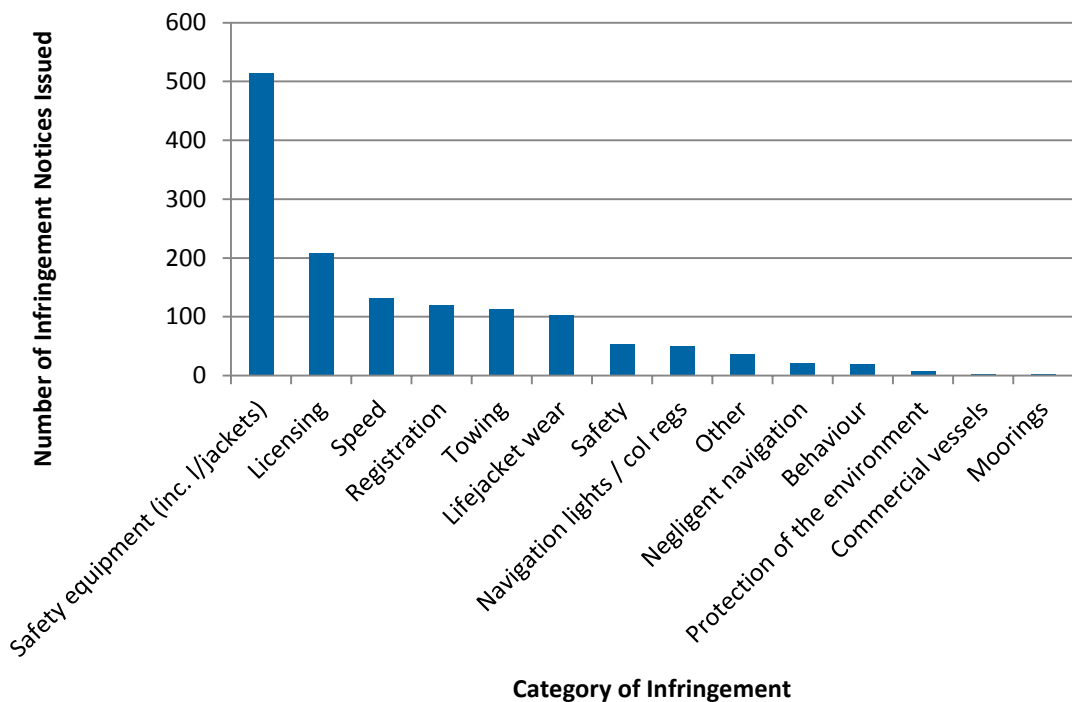
4.3 Infringements

Between 2009 and 2013, the number of penalty notices issued within the Tweed – Clarence Valley region accounted for 11.3% of all infringement notices issued throughout NSW. Approximately 93% of penalties issued were by Roads and Maritime and the remainder were issued by NSW Police. In addition to these penalties, 1,631 formal warnings were issued. The highly trafficked waters of the Tweed River and Terranora accounted for 56% of the region's infringements. The number of penalty notices issued in the region is consistent with other highly traffic waterways across the State.

As indicated in Figure 7 below, the infringements for which the most penalty notices were issued in the region were for:

- failure to carry the correct safety equipment;
- failure to carry the required licence;
- excessive speed; and
- inadequate or no vessel registration.

Figure 7 – Infringement analysis



4.4 Incidents

In the period between 1 January 2009 and 31 December 2013, there were 137 vessel incidents reported to Roads and Maritime in the region. There were 35 incidents on the Tweed River, 17 on the Clarence River, 22 on the Richmond River and another 47 incidents offshore.

Recreational vessels were involved in 107 incidents, seven involved an interaction between a recreational and commercial vessel and 23 involved commercial vessels only. This breakdown of incidents among vessel categories is broadly consistent with State-wide observations.

4.4.1 Incidents resulting in death or injury

There were six fatal incidents in the region during this period which resulted in six fatalities. All of these incidents took place in daylight hours between 6 am and 6 pm and all took place on recreational vessels. Four of the incidents involved powered vessels while two involved non-powered craft. Four of the incidents involved a person falling overboard, while two involved tow sports. Four of the deceased were not wearing an appropriate lifejacket. It is probable that most of these victims would have survived had they been wearing a lifejacket at the time of the incident.

There were 24 incidents which resulted in serious injury. A serious injury is classified as one requiring hospitalisation or outpatient treatment. These incidents resulted in 28 injuries. Seventeen of these incidents took place on the weekend and 22 occurred in daylight hours. Again this highlights the on-water conflicts present in some areas of the region. Four of these incidents involved a PWC which also received a high number of complaints directed towards this vessel type. There does not appear to be a common pattern or trend when analysing the incident types and causes, although a number of serious injuries occurred as a result of tow sport activities or injuries on board the vessel when crossing a bar. An additional 33 incidents resulted in minor injury to 53 persons; 13 of these incidents occurred while trying to cross a coastal bar.

4.4.2 Types of vessels

The main types of vessels involved in incidents, where known, were small powered craft (open runabouts 45%, cabin runabouts 15%) and fishing vessels (9%). Such a large contribution from open runabouts is not surprising given that they comprise 70% of all registered vessels in the region (section 0). Larger motor cruisers (6%), cat-power (6%), PWC (5%), inflatables (5%), sailing vessels (3%), non-powered craft (3%) and others (3%) were not highly represented.

4.4.3 Incident Locations

Vessel incidents were concentrated in the following locations.

- 21 incidents in Ballina between South Head, Munsie Point and Ballina Quays, including Fishery Creek;
- 11 incidents offshore between Point Danger and Fingal Head;
- 11 incidents on the Tweed River at the river entrance and along the western training wall;
- 11 incidents in Terranora Creek between Keith Curran Park and Big Island;
- 13 incidents on the Tweed River Bar;
- 12 Incidents on the Brunswick Bar; and
- 14 Incidents, including one fatality on the Richmond River Bar.

4.4.4 Incident Cause

Behavioural and environmental factors were identified as the primary cause of the majority of incidents. Twenty-four incidents were the result of a lack of judgment, 20 incidents were attributable to bar conditions, 17 to hazardous waters, 10 incidents were the result of weather and four were caused by tidal conditions. This large contribution of incidents due to bar conditions is significantly greater than the state average and will be discussed further in Section 4.4.9. Material factors were attributable to 10 incidents involving failure of a variety of machinery, electronics or the vessel hull which was comparable to the state-wide average.

4.4.5 Incident Type

Incident types in the Tweed – Clarence Valley region were considerably different to State-wide averages. The most common type of incident in this region was vessel capsizing (33 incidents) (approximately 25% of the total incidents), which is a significantly greater proportion than the state-wide average of approximately 12%.

The next most common type of vessel incident observed in the region were collisions (27), bar crossing incidents (18) and swamping (10). The majority of capsizing and swamping incidents were also bar crossings. While there were a number of incidents such as fall overboard (8) and fire (6) which had serious consequences, no other incident types registered more than six incidents.

4.4.6 Incident Operation

Vessel operation at the time of an incident provides some insight into the nature of incidents occurring. While 77 were the result of vessels underway, 23 vessels were crossing a bar and 10 were at anchor, moored or berthed. Again, the number of bar crossing incidents were higher in this region reflecting the dangers associated with bar crossings in this area. There were seven tow sport incidents reported during the period, in line with the State-wide average.

4.4.7 Time of day, month and year

Where the time of the incident is known, 117 occurred during daylight; 68 in the morning and 49 in the afternoon. Twenty incidents occurred at night, with an even spread before and after midnight. January, February and April were the main months when incidents occurred, corresponding to the heaviest periods of boating activity, although a relatively small proportion occurred in November and December. The variation between the summer months and winter months is not as pronounced in the Tweed – Clarence Valley region as it is in other areas of the State. This is likely to be a result of the warm climate the far north coast experiences all year round. Weekends were the most likely days for incidents to occur.

4.4.8 Wind and weather

The river entrances can be subject to rapidly changing weather and tidal conditions, which can cause problems for boaters, particularly in small vessels. Of the incidents where the weather conditions are known, approximately 85% occurred on days with clear visibility and fine weather. However, more than half of the incidents where water conditions are known were described as choppy, rough, very rough or in strong current.

4.4.9 Bar crossings

As noted earlier, bar crossing is a common cause of boating incidents in this region. This is partially because of the number of coastal bars in the region, including the Tweed, Brunswick, Evans, Richmond and Clarence River entrances, and their changing nature. These figures do not reflect the state-wide statistics which demonstrate improved safety awareness and

compliance around crossing bars. Despite the large number of bar crossing incidents, there has only been 1 fatal incident which occurred in 2010, suggesting a positive impact from the introduction of compulsory lifejacket requirements for bar crossings in 2003 and the roll out of bar crossing cameras.

The Crown Lands Division of NSW Trade and Investment (NSWTI) conducts regular surveys of the Tweed (3 monthly) and Richmond River (6 monthly) entrances. At both locations agreed channel parameters have been set – at Tweed through Tweed River Entrance Sand Bypassing Act 1995 and at Ballina after discussion with stakeholders. The agreed parameters provide generally safe bar conditions when the weather/swell is suitable. The surveys are made publicly available and for the information of local boaters and other stakeholders. For example, the most recent Tweed survey is available at: <http://www.tweedsandbypass.nsw.gov.au> .

4.5 Key findings

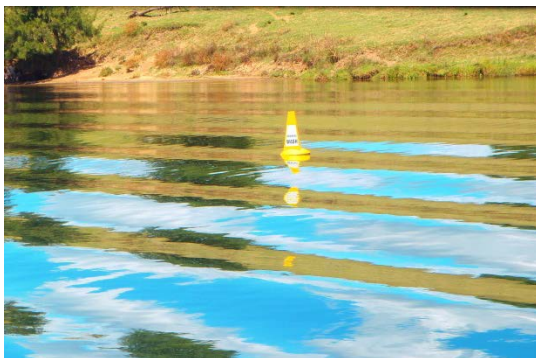
The consultation feedback suggests that boaters in the Tweed – Clarence Valley generally have a positive view about safety on the region's waterways, however Roads and Maritime will need to continue to actively manage safety on the waterways through its compliance activities and education campaigns.

It is also clear that there are areas where action can be taken to improve safety and more broadly the boating experience in the region. Improving the behaviour of waterway users was a common theme across the different stakeholder groups, particularly in areas where there are conflicting uses of the waterway. Interstate and State-wide education campaigns are important to address this issue; however there are also actions that can be taken at the local level such as improving the visibility and clarity of signage and by further educating boaters on negotiating coastal bars.

Numerous examples were identified of faded and/or obscured safety signage, or safety signage that is "lost" among a cluster of signage from a range of other agencies with different purposes (for example, fishing, overhead power lines). Updating existing and installing new navigation aids was also cited as an opportunity to deliver improvements for boaters in the area. Bar crossing safety was also a notable concern in the region.

Roads and Maritime provides a network of bar crossing cameras that are available for live online viewing of bar crossing conditions. Feedback suggested that in addition to the existing ocean bar monitoring cameras at Brunswick River, Tweed Heads, Ballina and Yamba/Iluka, consideration should be given to expanding the network to other legislated bars in the region, such as at Evans Head. Feedback also suggested that opportunities should also be explored to improve communication of bar crossing conditions to boaters.

Figure 8 – Examples of safety issues



Hazard buoy (minimise wash) near Rogan Bridge



Multi-user area at Kennedy Road Bridge



5. Access

Key findings

- Access infrastructure in some locations, particularly in close proximity to the coast, do not meet demand during peak periods and generally have poorly organised and insufficient parking facilities.
- Safe ocean access to Tweed, Richmond and Clarence Rivers is important to boating in the region.
- A lack of fuel and sewage pump out facilities in Ballina and fuel facilities on the Tweed impacts on the boating experience in the area.
- Strategic placement of additional facilities, amenities and courtesy moorings may help diffuse the concentrated use of some waterways and could also encourage overnight stays for visiting boats.

Actions

- e. Work with councils to ensure appropriate infrastructure, facilities and amenities are provided at regionally significant locations to meet local demand and encourage visiting/transient boaters.**
- f. Identify appropriate locations for specific waterway user groups and provide suitable infrastructure at these strategic locations to help spread waterway usage and minimise multi-user conflict, particularly on the Tweed River**
- g. Continue support for the Rescuing Our Waterways dredging program.**
- h. Provide courtesy moorings at popular boating locations.**

5.1 Overview of existing access facilities

Vessels access the waterways of the Tweed – Clarence Valley Region in several ways including boat ramps, private and commercial moorings, marina berths, and club or private landing facilities. Trailered vessels are the most common type of vessel in the region and can be launched and retrieved at public boat ramps, some of which have facilities such as trailer parking, fish cleaning tables and toilets. Public wharves and jetties are also located on the region's waterways and provide alternate access to recreational and commercial vessels that are on the water. Formal and informal dinghy storage facilities exist and are used to access moored vessels. Waterfront landowners can also gain direct access to the waterway through private landing facilities.

There is also informal access for smaller vessels (including canoes and kayaks) from a number of public reserves and beaches.

During the site visits, some of the ramps visited were visually identified to be in below average condition, poorly maintained, lacking amenities and access facilities. Further details on some specific improvements to boating access upgrades are provided at Chapter 8.

Boat ramps

There are approximately 69 formalised boat ramps.

- Location:
 - 33 of these ramps are located on the Clarence River or one of its tributaries;
 - 13 are on the Richmond River or one of its tributaries;
 - nine are located on the Tweed River or one of its tributaries;
 - three provide direct ocean access;
 - two on the Brunswick River;
 - two on the Evans River;
 - two on the Wooli Wooli River;
 - two in Toonumbar Dam;
 - one on the Sandon River;
 - one in Cudgen Creek; and
 - one in Mooball Creek.

Public jetties, wharves and pontoons

Further analysis of the region's infrastructure found that there are 55 public access points including wharves, jetties, pontoons and landings.

- Location:
 - 21 are located on the Clarence River or one of its tributaries;
 - 18 on the Tweed or one of its tributaries;
 - nine on the Richmond River or one of its tributaries;
 - three on the Evans River;
 - two on the Brunswick River;
 - one on the Wooli Wooli River; and
 - one in Toonumbar Dam.

Courtesy moorings

There were no courtesy moorings were identified in the Tweed-Clarence Valley region except for those at Julian Rocks in the Cape Byron Marine Park and within the Cook Island Aquatic Reserve.

Figure 9 – Example access facilities within the region



Kennedy Drive Boat Ramp

Wharf North of Boyds Cove

5.1.1 Better Boating Program grants

Through the Better Boating Program, Roads and Maritime has provided grants totalling over \$2.4 million for 41 projects in the Tweed-Clarence Valley region between 2004/05 and 2013/14. A selection of these can be seen in Figure 10 with all projects listed in Table 1 below. It is important to note that the total cost of the projects is not depicted in this table. For total cost of the projects refer to <http://www.maritime.nsw.gov.au/> .

Table 1 – List of Grants provided to Tweed-Clarence Valley through the BBP Projects

Recipient	Project	Final Grant
Ballina Shire Council	Fishery Creek Boat Ramp Improvements	\$34,977
Ballina Shire Council	Fishery Creek Boat Ramp Car Parking Upgrade (Stage 2), West Ballina	\$157,750*
Ballina Shire Council	East Wardell Boat Ramp & Parking Upgrade (Design Stage), Richmond River	\$20,823
Ballina Shire Council	Emigrant Creek Boat Ramp Upgrade (Pontoon), West Ballina	\$43,500
Ballina Shire Council	Wardell Wharf New Pontoon - Bridge Drive, Wardell (Richmond River)	\$34,597
Ballina Shire Council	Keith Hall Boat Ramp Facility	\$30,000*
Ballina Shire Council	Martin St Boat Harbour Precinct Development Concept Study, Ballina	\$40,000*
Ballina Shire Council	Cawarra Park Boat Ramp Carpark Upgrade, Ballina (North Creek, Richmond River)	\$27,500
Ballina Shire Council	Emigrant Creek Boat Ramp Upgrade, West Ballina	\$95,000
Ballina Shire Council	Ballina Yacht Club Boat Ramp Carpark Upgrade - River St, Ballina	\$17,310
Ballina Shire Council	Fishery Creek Boat Ramp Parking Stage 1, Ballina	\$33,770
Ballina Shire Council	East Wardell Boat Ramp Stage 2 (Construction) - Richmond River	\$114,562
Ballina Shire Council	Emigrant Creek Boat Ramp Upgrade (Carpark), West Ballina	\$110,990
Byron Shire Council	Brunswick Heads Boat Ramp Pontoon	\$63,000*
Clarence Valley Council	Crown Street Boat Ramp Jetty, Iluka	\$72,500
Clarence Valley Council	McLachlan Park Wharf & Pontoon Facility, Maclean	\$130,000*
Clarence Valley Council	New Wharf and Pontoon Facility at Harwood, Clarence River	\$137,983
Clarence Valley Council	New Wharf and Pontoon Facility at Ulmarra, Clarence Valley	\$166,589
Clarence Valley Council	Construction of Boat Ramp at Harwood - Clarence River	\$40,000
Clarence Valley Council	Construction of New Boat Ramp & Carpark at Woombah, Clarence River	\$166,501
Clarence Valley Council	Clarence River Wharves Development Plan	\$20,000
Clarence Valley Council	Pontoon at Ford Park, River Street, Yamba - Clarence River	\$25,000
Clarence Valley Council	Brushgrove-Cowper Pontoon (Clarence	\$125,000

Recipient	Project	Final Grant
	River)	
Clarence Valley Council	Yamba Bay Boat Ramp Carpark Improvements	\$68,000
Clarence Valley Council	Hickey Island Boat Ramp Carpark Upgrade, Yamba	\$130,225
Lismore City Council	Multi-Level Boating Wharf, Lismore - Wilsons River	\$62,500
Lismore City Council	Dungarubba Boat Ramp Upgrade, Richmond River	\$40,000
Lismore City Council	North Woodburn Boat Ramp, Woodburn	\$10,000
Richmond Valley Council	Evans Head Boat Ramp Pontoon Upgrade, Evans River	\$34,991
Tweed Marina Industry Assoc.	Slipway Cradle Refurbishment, Tweed Heads	\$6,925
Tweed Shire Council	Chinderah - New Pontoon, Chinderah - Tweed River	\$60,000*
Tweed Shire Council	Condong Boat Ramp Pontoon	\$27,780
Tweed Shire Council	Lakes Drive Pontoon Replacement, Tweed Heads	\$26,004
Tweed Shire Council	Boat Ramp Upgrade - Fingal Head & Condong, Tweed	\$19,891
Tweed Shire Council	Lakes Drive Boat Ramp Upgrade and Jetty - Tweed River	\$53,774
Tweed Shire Council	Install Pontoons at Two Terranora Creek Jetties - Tweed Heads, Tweed River	\$27,569
Tweed Shire Council	Pontoon Upgrades at Tweed Heads South (Dry Dock Road Boat Ramp and Foysters Jetty)	\$25,500
Tweed Shire Council	Tumbulgum Heritage Wharf floating pontoon	\$22,500
Tweed Shire Council	Chinderah Boat Ramp Car Park Reconstruction	\$34,468
Tweed Shire Council	Cudgen Creek Boat Ramp Upgrade, Kingscliff (Cudgen Creek)	\$20,250
Tweed Shire Council	Kennedy Drive Boat Ramp Upgrade, Tweed Heads (Terranora Creek)	\$15,250
	TOTAL	\$2,418,167

* denotes Active projects as of 11/11/2014

Figure 10 – Completed BBP projects examples within the region



Lakes Drive Boat Ramp Upgrade & Pontoon, Tweed



Murwillumbah Heritage Wharf



Terranora Creek Jetties, Tweed Heads



Bushgrove-Cowper Pontoon, Clarence River

5.2 Key findings

The Tweed-Clarence Valley region has a large number of boating access points; however, some of the infrastructure is aged and offers a relatively basic level of amenity. The consultation feedback suggests there is a lack of capacity at many of the more popular access points to accommodate demand at peak times and to keep pace with the expected growth in boat ownership over the next decade. This strain on access infrastructure was identified to be of particular concern at downstream locations close to the ocean for the majority of waterways.

There are numerous opportunities to enhance the boating experience in the region by upgrading existing facilities and the strategic placement of additional access infrastructure. With a significant proportion of waterway usage being focused in close proximity to the coast, facilities in these areas, need to be developed and upgraded to ensure safe waterway access and help minimise user conflicts on the water.

Specific attention needs to be drawn to the Tweed River, where concentrated and increasing waterway usage has resulted in a high demand at existing access facilities and conflicts between the different waterway users. More efficient use of the Tweed River is important to improve boating experience for the different user groups and minimise conflicts between these groups. For example, at Fingal Head there is a concentrated area where power boats, sailing and non-powered crafts all use a single facility to access the water. By spreading this waterway usage over a greater percentage of the waterway, multi-user conflicts can be reduced.

Facilities should be developed at strategic locations to encourage waterway use that is appropriate for the physical characteristics of the waterway. For example, specific areas in the region such as Simpsons Creek are naturally physically restrained and are ideal for non-powered craft use. This will also help to minimise conflict between different user groups.

Consultation feedback also highlighted the importance of maintaining safe ocean access from the Tweed, Richmond and Clarence Rivers and indicated that this was essential to service a large proportion of local and visiting users as well as maintaining the aesthetics and amenity of the waterway.

Regionally significant locations such as Brunswick Heads, Ballina and Yamba Bay have been identified as locations that support significant numbers of local boaters and also encourage, or have the potential to encourage, overnight/transient vessels. The strategic placement of additional access pontoons/jetties, courtesy moorings and the upgrading of boat ramps at these locations as well as the provision of appropriate amenities, will lead to an enhanced boating experience for local and visiting boaters. It may also help enhance the economy of these regional towns.

A lack of on-water fuel and sewage pumpout facilities at Ballina were also identified as an area that would improve the boating experience in the area.

Figure 11 – Examples of access issues



Narrow access at the entrance to Jack Evans Boat Harbour



Woodburn Boat Ramp on Bank Street, limited trailer parking and boat ramp requires improvement



6. Storage

Key findings

- The growth in boat storage capacity across the region will need to keep pace with the forecast growth in vessel numbers.
- Waiting lists for private moorings in popular areas may limit access for boaters.
- Dinghy storage in coastal areas where moorings are concentrated is informal and access to moored vessels can be difficult.

Actions

- Work with Councils and other partners to help deliver projects that support strategic growth in boat storage capacity**
- Optimise configurations of existing mooring fields to improve access and navigation and enable future growth as required**
- Provide dinghy storage racks for areas with high concentrations of moorings.**

6.1 Existing storage

6.1.1 Overview of existing storage types

Storage for vessels is generally provided on-land for smaller trailerable vessel (< 6 m) and on-water for larger vessels (> 6 m); however larger vessels can also be stored on-land, for example at dry-storage facilities, for vessels up to approximately 10 m.

The main types of on-water storage in the Tweed - Clarence region are principally:

- Private moorings
- Commercial moorings
- Commercial marina berths and
- Domestic berths, moorings and other associated storage.

On-water storage at commercial marinas, yacht / sailing clubs, or boating facilities, is provided through berths (floating or fixed), moorings (swing, fore and aft or other) and where space

permits on-land, through dry storage such as a hard-stand or dry-stack. Examples are shown below at Figure 12 and Figure 13.

Figure 12 – Examples of rowing sheds for storage at Grafton, commercial fishing vessels stored at Yamba



Figure 13 – Examples of private moorings, the Sailability shed and commercial fishing berths and rowing club on the Tweed River



Storage at private facilities can be adjacent to private property on domestic jetties, slipways, boatsheds, berths/fore and aft moorings, or, on private swing moorings. Private swing moorings usually also require access to the water with a tender/dinghy and this vessel also requires its own form of storage on-land (Figure 14).

Vessels less than 6 m are most often stored on private property or residential streets on trailers and access the water via boat ramps.

Figure 14 – Examples of private storage in Ballina, at Yamba Marina¹, Brunswick Heads Boat harbour and on-land storage for sail craft



6.1.2 Overview of existing storage volume

There are approximately 1,300 on-water and on-land vessel storage spaces in the region. Of these, less than 250 are private moorings and just over 20 are commercial mooring licences issued and administered by Roads and Maritime. There are also a number of mooring licences administered by NSW Trade and Investment (Crown Lands).

There is much less on-water storage available in this region compared with other areas of the State. This could relate to findings referred to at Section 0 which show that a significant majority (90%) of all vessels are between 2 and 6 m in length and are therefore most likely stored on trailers. Conversely, it is also possible that the lack of on-water storage influences the types of boats used in the area.

While the numbers for each category of storage are in many cases approximate, they can be generally grouped as follows:

Tweed Heads / Brunswick

- Council and commercially operated marinas and associated boating facilities, total around 80 berths;
- Nine berths for commercial fishing vessels;
- A small number of private moorings (<55) as well as a moderate number of domestic jetties and private marina berths (<200);
- Five commercial mooring licences;
- Limited on-land storage / temporary access used by the local sailing club for members with smaller sailing vessels; and
- Boat harbour at Brunswick Heads with a small number of berths (< 35) for visiting vessels, commercial fishing and other commercial operators.

¹ Image obtained from <http://www.realestate.com.au/property-house-nsw-ballina-116411343>

Ballina / Byron Bay / Evans Head

- A small number of private moorings (<30) as well as numerous domestic jetties and private marina berths, in particular in the estates surrounding the Burns Point Ferry Terminal (>130) and on the Richmond River;
- The Fisherman's Coop at Ballina boat harbour, similar to Brunswick Heads, has a small number of berths (< 35) for visiting vessels, commercial fishing and other commercial operators. Ballina Slipway also provides a small number of berths (5) for visiting and local vessels. The Regatta Avenue Harbour provides storage for commercial, visiting and emergency vessels (<30);
- The small boat harbour at Evans Head provide storage for <40 vessels;
- The sailing club in Ballina provides a small amount (<30) of on-land storage for members with sailing vessels (beach launch); and
- There is one commercial mooring licence on Emigrant Creek.

Iluka / Yamba / Clarence River

- There are around 140 private moorings in the Iluka / Yamba and Clarence River (Grafton) as well as numerous domestic jetties and private marina berths, in particular in the estates at Yamba Shores, Crystal, Kolora lakes, Oyster Cove and channel (>300), as well as on the Clarence River;
- The Clarence River Fishermen's Co-operative provides moorings at both Iluka and Yamba for a small number of visiting vessels together with commercial vessels (<50);
- Yamba Marina has 90 floating berths, 15 moorings and a total of 54 hard stand spaces that provide open or under cover dry storage;
- Limited spaces in under cover storage for small runabouts in Yamba; and
- There are 15 commercial mooring licences in the area.

Opportunities to expand marine infrastructure in the Tweed – Clarence Valley region

The Clarence Valley Council and the Port of Ballina Taskforce are both exploring opportunities to expand marine infrastructure, including on and off-water vessel storage to encourage investment and stimulate economic growth.

The Clarence Valley Council Clarence Marine Precinct document encourages domestic and international investors to grow and develop marine based businesses in the Clarence, including targeting opportunities for boat storage to meet demand from NSW and southern Queensland

The Port of Ballina Taskforce is seeking to improve marine infrastructure and the marine environment in Ballina.

6.2 Key findings

Storage requirements in the region are influenced by the high percentage of trailer boats as well as the number of boaters travelling across the border from Queensland. As described in Chapter 3, this places higher demands on the need for access infrastructure such as boat ramps and on-land storage.

There are, however, long waiting lists at four mooring areas at the Iluka, Yamba and Ballina which suggests these waterways would benefit from additional on-water storage. In addition, stakeholder feedback has also indicated a lack of dry storage, suitable access to deep water for on-water storage and a lack of storage for sail craft in some areas.

Growth in vessel ownership is forecast to increase by at least 2.9% annually in the state and slightly more in this region. In addition, the average size of recreational vessels across the State is forecast to increase. This suggests that moderate increases in boat storage capacity will be required across the region, for both on and off water storage options.

Failing to plan for boat storage growth not only impacts on the experience of boaters in the region but also risks generating negative impacts for the community more broadly.

Increased storage capacity will also be needed for paddle craft and other vessels which do not require registration and therefore do not appear in growth forecasts. Anecdotal evidence suggests that the popularity of these craft is growing at a faster rate than registered vessels.

Analysis from the consultation feedback and site visits has identified three key issues that would benefit from a more strategic approach to boat storage.

Dry Storage

The lack of dry boat storage in the Tweed was identified as an issue during stakeholder consultation. This may be partially addressed in the short term by the small number of development consent applications in the Tweed River, which are seeking to provide storage for varying sizes of vessels on-land. This includes an application for a 38 single level individual storage spaces at North Chinderah for boats and trailer storage that was approved in early June 2014.

Stakeholder feedback in the Tweed also identified the lack of access and storage for all sizes of sail craft and smaller beach launch craft.

In the Clarence, particularly at Iluka / Yamba, the uses and depth of water support a combination of dry storage and on-water storage. There are currently dry-stack 54 dry storage spaces at Yamba Marina where there is also minimal self-storage for smaller runabouts.

As noted above, strategic planning by Clarence Valley Council as part of the Clarence Marine Precinct document seeks to increase tourist visitation and investment in the marine sector, which could include and also support development of both dry storage and on-water storage.

Demand for private moorings

The physical characteristics of the waterways in this region, such as small estuaries and bar crossings have contributed to a much lower number of on-water storage options than in other areas of the State. There are approximately 250 across all the rivers and coastal areas of the region. Around 40% of these moorings (101) are part of four mooring areas (one at Ballina and three at Iluka / Yamba) that have waiting lists of up to 2 years. The current number of applicants on the waiting lists stand at 12 for 21 moorings, 14 for 19 moorings, 16 for 18 moorings and 8 for 43 moorings for these four areas. This data reflects the feedback received from stakeholders about the length of mooring waiting lists in these areas.

A moderate increase in mooring numbers may be required to accommodate current demand in the four areas identified as well as future demand in other areas, particularly the Tweed. Given the physical constraints of the waterways any increase in mooring numbers needs to be carefully planned, with a focus on optimising existing mooring configurations before expanding into new areas.

In March 2014, MMC released the Moorings Review Issues Paper which highlighted the potential for increase mooring capacity through policy and regulatory changes and by using alternate moorings systems such as fore and aft or multi-point moorings. It is noted that alternate mooring systems are not suitable in all areas and may be subject to planning requirements.

Further consultation will take place in 2015 on policy and regulatory reforms arising from the Moorings Review. Funding has been set aside to support the implementation of these reforms as well as more direct measures to help reduce the number of “mooring minders” and reduce mooring waiting lists in popular areas.

Further information about the Moorings Review is available at:

<http://www.transport.nsw.gov.au/engagement/moorings-review-issues-paper>.

Dinghy storage

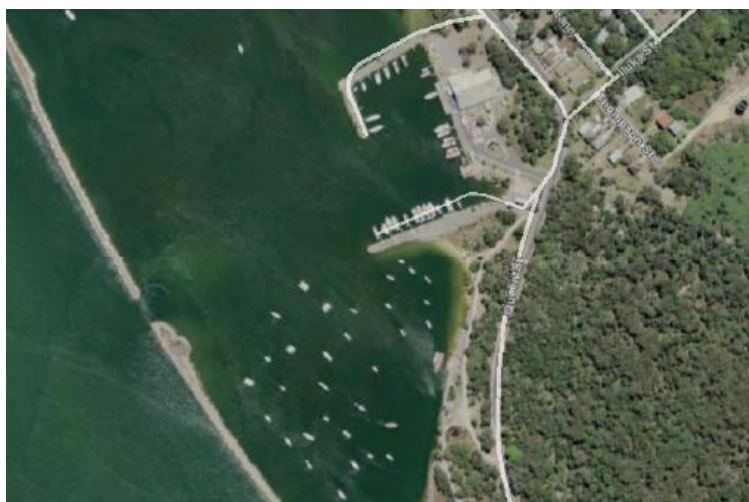
Some stakeholders and councils indicated there has been an increase of dinghies stored on the foreshores and reserves of the Tweed – Clarence Valley region. This issue was more evident in the Tweed than other areas of the region.

Through the Better Boating Program, Roads and Maritime has in the past provided grants to Councils in other regions to assist with the provision of dinghy storage racks. While Councils have not raised specific needs in terms to dinghy storage through this process, the region could benefit from such storage racks in the future, particularly in areas with higher mooring density such as the Tweed, Iluka and Yamba.

Figure 15 – Existing boat storage examples



Yamba



Iluka



7. Feedback on Consultation Draft

7.1 Feedback Summary

The majority of submissions and comments generally supported the key findings and actions contained in the Consultation Draft however some concerns were expressed about the impact of increasing boating activity and boating facilities on the Tweed and Clarence Rivers.

Feedback received from Councils, other stakeholder groups and the general public throughout the region have been taken into account in drafting the final plan and delivery program at Chapter 8.

7.1.1 Safety

Submissions and feedback during the public information sessions were mostly supportive of the proposed safety actions in the Consultation Draft, particularly the need to improve user behaviour. The importance of educating boaters, including those not familiar with the area, about safe behaviour on the Region's waterways was identified as being of considerable importance to improving the safety of the region's waterways.

Other key safety issues raised in addition to those already referred to in the Consultation Draft include:

- The impact of vessel wash on the safety and enjoyment of other users on the waterways was highlighted a number of times during consultation. This is both a non-compliance issue for those not obeying 'no wash' zones and an education issue for boaters that do not understand the impact of their wash on other waterway users.
- A large number of submissions were received regarding the impact of wash on rowing activities around Murwillumbah. Rowing groups expressed concerns about possible changes to existing restrictions on power boating activities, noting that the stretch of river between the Condong bridge and Murwillumbah bridge is well renowned as an ideal location for rowing competitions and training. Others called for additional restrictions to further limit power boating in that part of the river. While no changes to existing arrangements are currently planned, the issue will continue to be monitored by Roads and Maritime.
- There is limited knowledge among some boaters and other stakeholders about the RMS Maritime Division's feedback / complaints line. It was suggested that the purpose of this service should be better advertised.

- The view was expressed that additional on water enforcement/compliance work is required to address poor behaviour of the minority rather than introducing blanket bans that impact all boaters including those that do the right thing.
- The appropriateness of unlimited speed restrictions on the water was questioned, particularly for waterways that are highly used and/or physically constrained.
- The lack of on-water fuelling facilities on the Tweed was raised as an important safety, access and environmental issue.
- Differing views were expressed about restricting boating access to Jack Evans Harbour.

7.1.2 Access

Outside of the Tweed River, there is broad agreement that there are significant opportunities to provide improve boating access infrastructure in the region. Views about the need to improve boating access on the Tweed estuary vary considerably.

Feedback on the Consultation Draft, including Councils' views on priority projects, have helped inform the list of priority projects identified in Chapter 8 which have been identified for funding as part of the NSW Boating Now program.

Other key access boating access issues raised during consultation include:

- In recognition of the aging population, it was recommended that future infrastructure decisions should give greater consideration to improving accessibility.
- The need for improved access for non-powered vessels including sailing craft was noted for the Tweed River, Brunswick Heads, Evans River and the Clarence River near Grafton.
- A number of suggestions were made on dredging requirements on the Tweed Estuary and the Richmond and Clarence Rivers to be considered in future 'Rescuing Our Waterways' dredging program administered by Crown Lands. It is noted that since the Consultation Draft was released, the second phase of the Rescuing Our Waterways program allocated \$100,000 to dredging works on the North Creek (Ballina). In addition up to \$600,000 has been committed to dredging work on the Tweed River and Terranora Inlet, up to \$600,000 has been committed to undertake dredging work at the boat harbour and the Brunswick River channel. Up to \$700,000 has also been set aside to dredge Yamba and Illuka and up to \$600,000 has been allocated to dredge the Evans River.
- Stage 3 of the Rescuing our Waterways program was announced on 18 November 2014 with councils able to apply for up to 50% funding support for dredging projects.
- Broad support for additional infrastructure for boaters to use for short term access to the shoreline, particularly on the Richmond River at Ballina and Parts of the Clarence River.
- The lack of on water fuelling and sewage pump out facilities at Ballina was highlighted as a major issue for boating on the Richmond River.
- Stakeholder feedback has suggested a number of potential locations where boaters would benefit from the installation of courtesy moorings including Jack Evans Boat Harbour; Terranora Creek; Ballina; Emigrant Creek; Maclean; and Yamba.

7.1.3 Storage

Feedback on the Consultation Draft highlighted a demand for additional on water and land based vessel storage options at the key boating areas particularly on the Richmond River near Ballina, and to a less extent on Tweed River where there are different views about increasing boat storage. This includes demand for marina and maritime precinct type developments.

Specific storage issues that were raised on the Consultation Draft include:

- The lack of dry storage options for the Tweed.
- The lack of on-water storage for visiting vessels on the Richmond River at Ballina.
- The need for additional moorings on the Tweed River for both recreational and commercial vessels.
- General support for a dedicated marine precinct on both the Tweed and Richmond Rivers.
- The need to facilitate improvements to the Brunswick Heads Boat Harbour precinct.
- The need for non powered craft storage at Evans Head and Brunswick Heads.

7.1.4 Other Issues – Riverbank erosion

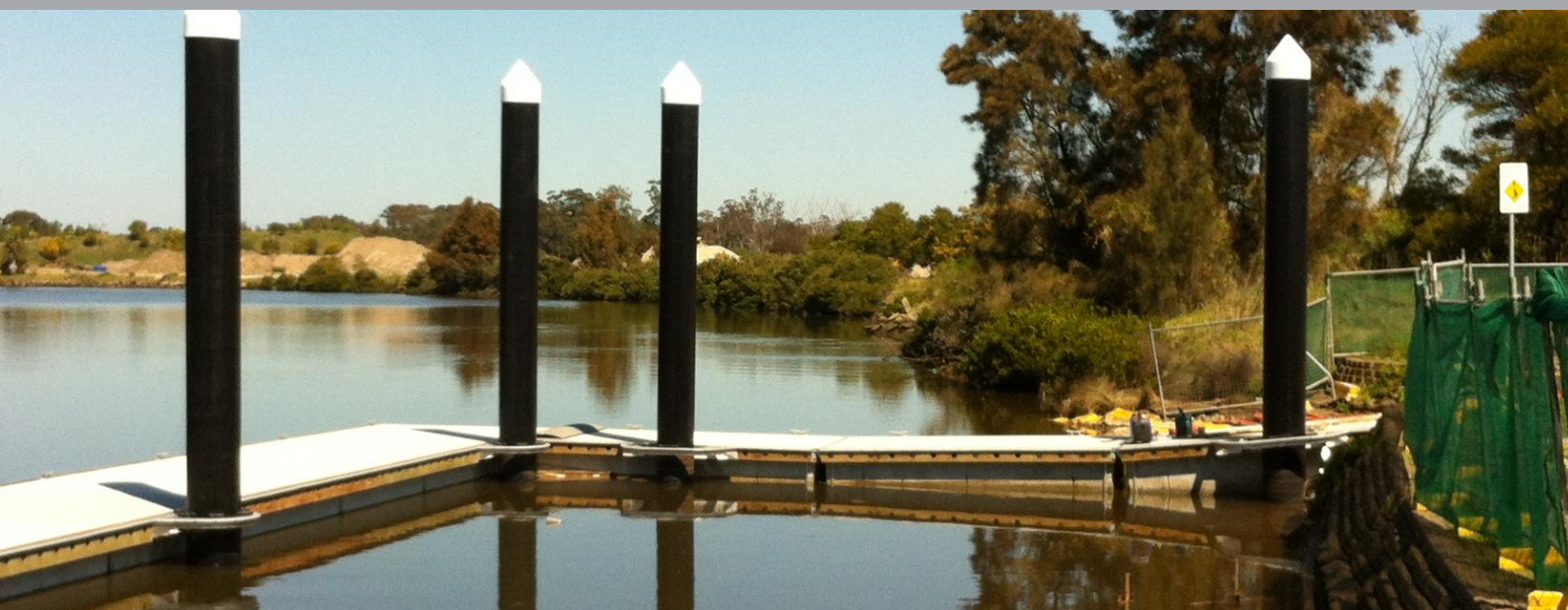
In consulting with stakeholders and the general public on the development of the Regional Boating Plan a number of other issues were identified that do not fit neatly into the categories of safety, access or storage. Riverbank erosion was the most contentious of these issues, with different views between stakeholder groups on the contribution of boating activity to erosion.

Similar issues arose in consultations on a number of other Regional Boating Plans, including in particular, the Upper Williams River in the Port Stephens Hunter Region. In response to the issue, the MMC in Transport for NSW is leading the development of a state wide policy framework to ensure a consistent approach to boating and riverbank management in areas that are subject to boating and erosion.

The policy will be implemented through pilot local management plans to be developed for the Tweed, Clarence and Upper Williams Rivers and will focus on delivering pragmatic solutions to improve these issues. The plans will be informed by scientific evidence and in consultation with boaters and the local community. Funding will be made available under NSW Boating Now to assist in the delivery of infrastructure solutions where appropriate.

Initial consultation on the policy framework has already been held in Tweed Heads and Grafton throughout October and November 2014. Further consultation will be undertaken in 2015 as draft management plans are developed following further scientific investigations.

Further information about this project is available online at <http://www.transport.nsw.gov.au/mmc/erosion>.



8. Delivery Program

8.1 Summary

Table 3 provides a summary of how the actions identified in the Regional Boating Plan will be delivered across the three categories of safety, access and storage. A progress report on the Delivery Program will be published annually.

8.2 NSW Boating Now Funding

\$2.78 million in NSW Boating Now funding has been allocated to support delivery of the following 25 infrastructure projects identified in Table 2 as being a priority for delivery over the next three years.

The total Regional allocation is based on estimated projects costs and the proposed financial contributions from Council and other delivery partners for individual projects. The total Regional allocation may be subject to variation following further negotiations with delivery partners to confirm project scope, design, timeframes, funding contributions and the most efficient project delivery method.

The projects are included as part of *NSW Boating Statement* which includes a total funding commitment of over \$33 million to support the delivery of Priority Regional Projects across NSW. The *NSW Boating Statement* can be downloaded at www.transport.nsw.gov.au/mmc. It includes the full list of Priority Regional Projects for each Region and details on how the Priority Regional Projects were identified.

The *NSW Boating Statement* includes a summary of the categories of funding to be made available over the five years of the NSW Boating Now program, including at least \$10 million to be made available in 2017/18 and 2018/19 to support the delivery of a second round of infrastructure projects. Other funding categories include:

- \$10 million to support the delivery of Major Projects that provide benefits to boaters in more than one region including:
 - Measures to address concerns about the impact of boating on riverbanks
 - Boat storage strategies and pilot projects
 - Establishing slipway facilities in strategic locations
 - Measures to reduce the number of “mooring minders”.
- \$5 million to support the delivery of dedicated off-street boat trailer parking facilities
- \$5 million to be assist with emergency repairs to boating infrastructure, particularly after flood or storm events.

Table 2 – Priority Regional Projects

1. Upgrade Lennox Head boat ramp (North Creek Road)
2. Upgrade Brunswick Street Boat Ramp, Ballina
3. Support improvements to boating access facilities at Captain Cook Park, Ballina
4. Support for development of project plan for Trawler Harbour, Ballina (Boatharbour Road)
5. Extend pontoon at Fishery Creek Boat Ramp, Ballina
6. New pontoon at Faulks Reserve, West Ballina
7. Investigate access improvements at Emigrant Creek, West Ballina
8. New boat ramp and pontoon at Keith Hall, Richmond River
9. New pontoon at East Wardell Boat Ramp (Byron Street)
10. Condong Boat ramp improvements and toilet facilities, Clarrie Purnell Park
11. Canoe launch facility in Tweed River at Byangum
12. Relocate and upgrade pontoon at Budd Park, Murwillumbah
13. Car park and river bank stability improvements at Murwillumbah boat ramp (Commercial Road)
14. Replace pontoon and provide disabled access at Fingal boat harbour (Lighthouse Parade)
15. Parking upgrade at Terranora Creek boat ramp, Tweed Heads (Kennedy Drive)
16. Boat ramp improvements at Oxley Park, Chinderah
17. Replace timber jetty with pontoon at Tumbulgum
18. Further support for improvements to boating facilities at McLachlan Park, Maclean
19. Upgrade boat ramp and parking at Brushgrove-Cowper (off Wingfield Bridge)
20. New pontoon at Flo Clarke Park, Lawrence
21. Investigate access improvements for the Clarence River Canoe and Kayak Trail
22. Investigate location for sewage pump out in the upper Clarence River
23. Boating access improvements in Yamba
24. Upgrade Iluka jetty (Spencer St)
25. Support development of Master Plan for Brunswick Heads Boat Harbour

Table 3 – Implementation of Boating Safety, Access and Storage Actions

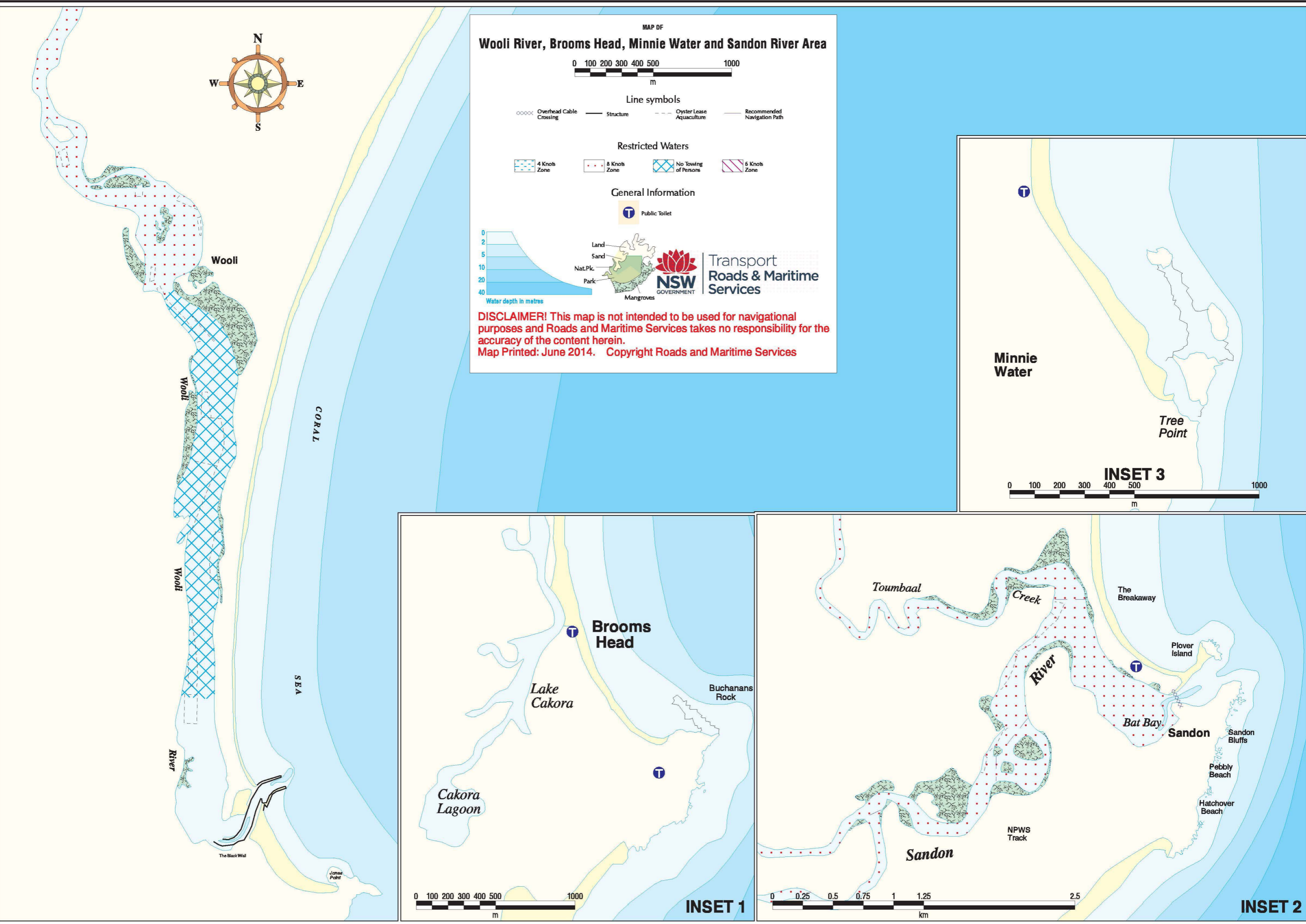
	<i>Action</i>	<i>Delivery</i>
Safety	Review strategies to improve boating safety across ocean bars.	Roads and Maritime will work with MMC to review and update the education, communication and compliance campaigns to raise awareness of safety issues associated with crossing coastal bars. Roads and Maritime will explore options to expand the existing network of bar crossing cameras and to improve communication of conditions at bar crossings and ocean access ramps
	Review the placement and planning of navigations aids.	Roads and Maritime will review and upgrade its program for managing and replacing navigation aids across the region.
	Review strategies to improve user behaviour.	Roads and Maritime will work with MMC to review current approach to addressing the user behaviour issues identified for this region. This will include : <ul style="list-style-type: none"> • conducting education campaigns in south-east Queensland • reviewing other strategies to minimise conflict between different waterway users • explore opportunities to address the impacts of vessel wake on other waterways users
	Review signage for clarity and visibility.	Roads and Maritime to review and upgrade as required existing signage across the region. This includes working with other government agencies and telecommunication companies to improve clarity of signage and removing obsolete signage.
Access	Work with councils to ensure appropriate infrastructure, facilities and amenities are provided at regionally significant locations to meet local demand and encourage visiting/transient boaters.	\$2.78 million in NSW Boating Now funds have been allocated to support the delivery of the 25 Priority Regional Projects listed in Table 2.

	<p>Identify appropriate locations for specific waterway user groups and provide suitable infrastructure at these strategic locations to help spread waterway usage and minimise multi-user conflict, particularly on the Tweed River</p>	<p>A number of the priority boating infrastructure projects referred to in Table 6 will help to spread waterway usage away from the main boating areas and encourage separation of waterways user groups.</p> <p>Roads and Maritime and MMC will continue to work with councils and other user groups on other strategies to spread out usage of the waterways and minimise on-water conflicts.</p>
	<p>Continue support for the Rescuing Our Waterways dredging program.</p>	<p>MMC and Roads and Maritime will continue to support the Rescuing Our Waterways dredging program and will work with Crown Lands on a longer term strategy for navigation dredging in NSW.</p> <p>Since the Consultation Draft was released, Rescuing Our Waterways round 2 funding has been allocated to North Creek Ballina (\$100,000). In addition up to \$600,000 has been committed to dredging work on the Tweed River and Terranora Inlet, up to \$600,000 has been committed to undertake dredging work at the boat harbour and the Brunswick River channel. Up to \$700,000 has also been set aside to dredge Yamba and Illuka and up to \$600,000 has been allocated to dredge the Evans River.</p>
	<p>Provide courtesy moorings at popular boating locations.</p>	<p>Roads and Maritime to investigate the feasibility of installing courtesy moorings at the following locations that were identified during consultation on the draft Tweed Clarence Regional Boating Plan: Jack Evans Boat Harbour; Terranora Creek; Ballina; Emigrant Creek; Maclean; and Yamba.</p>
<p>Storage</p>	<p>Work with Councils and other partners to help deliver projects that support strategic growth in boat storage capacity</p>	<p>While consultation suggested there is demand for additional boat storage capacity in the region, this has not been identified as a priority project at this time. However, opportunities to improve storage in the region will be considered for funding under the second round of NSW Boating Now funding allocations.</p>
	<p>Optimise configurations of existing mooring fields to improve access and navigation and enable future growth as require</p>	<p>The MMC will undertake further consultation in 2015 on policy and regulatory reforms arising from the Moorings Review. Funding has been set aside to support the implementation of these reforms as well as more direct measures to help reduce the number of “mooring minders” and reduce mooring waiting lists in popular areas.</p> <p>In addition, funding will be made available from NSW Boating Now Major Projects allocation to trial alternate mooring systems at a number of pilot sites across the state.</p>

	<p>Provide dinghy storage racks for areas with high concentrations of moorings.</p>	<p>While initial consultation suggested there is unmet demand for dinghy and non powered craft storage in the region, this has not been identified as a priority project at this time. The need for such storage will be assessed again for funding under the second round of NSW Boating Now funding allocations.</p>
<p>Other Issues (erosion)</p>	<p>Develop pilot local management plans focusing on the delivery of pragmatic solutions to address riverbank erosion.</p>	<p>MMC is leading the development of a state wide policy to ensure a consistent approach to boating and riverbank management in areas that are subject to boating and erosion. The policy will be implemented through pilot local management plans to be developed for the Tweed, Clarence and Upper Williams Rivers and will focus on delivering pragmatic solutions to improve these issues. The plans will be informed by scientific evidence and in consultation with boaters and the local community.</p> <p>Further information about this project is available online at http://www.transport.nsw.gov.au/mmc/erosion.</p>

Appendices

Appendix A – Maps



**MAP OF
Woolli River, Brooms Head, Minnie Water and Sandon River Area**

0 100 200 300 400 500 1000
m

Line symbols

Overhead Cable Crossing	Structure	Oyster Lease Aquaculture	Recommended Navigation Path
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Restricted Waters

4 Knots Zone	8 Knots Zone	No Towing of Persons	6 Knots Zone
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General Information

Public Toilet

0
2
5
10
20
40

Water depth in metres

Land

Sand

Nat.Pk.

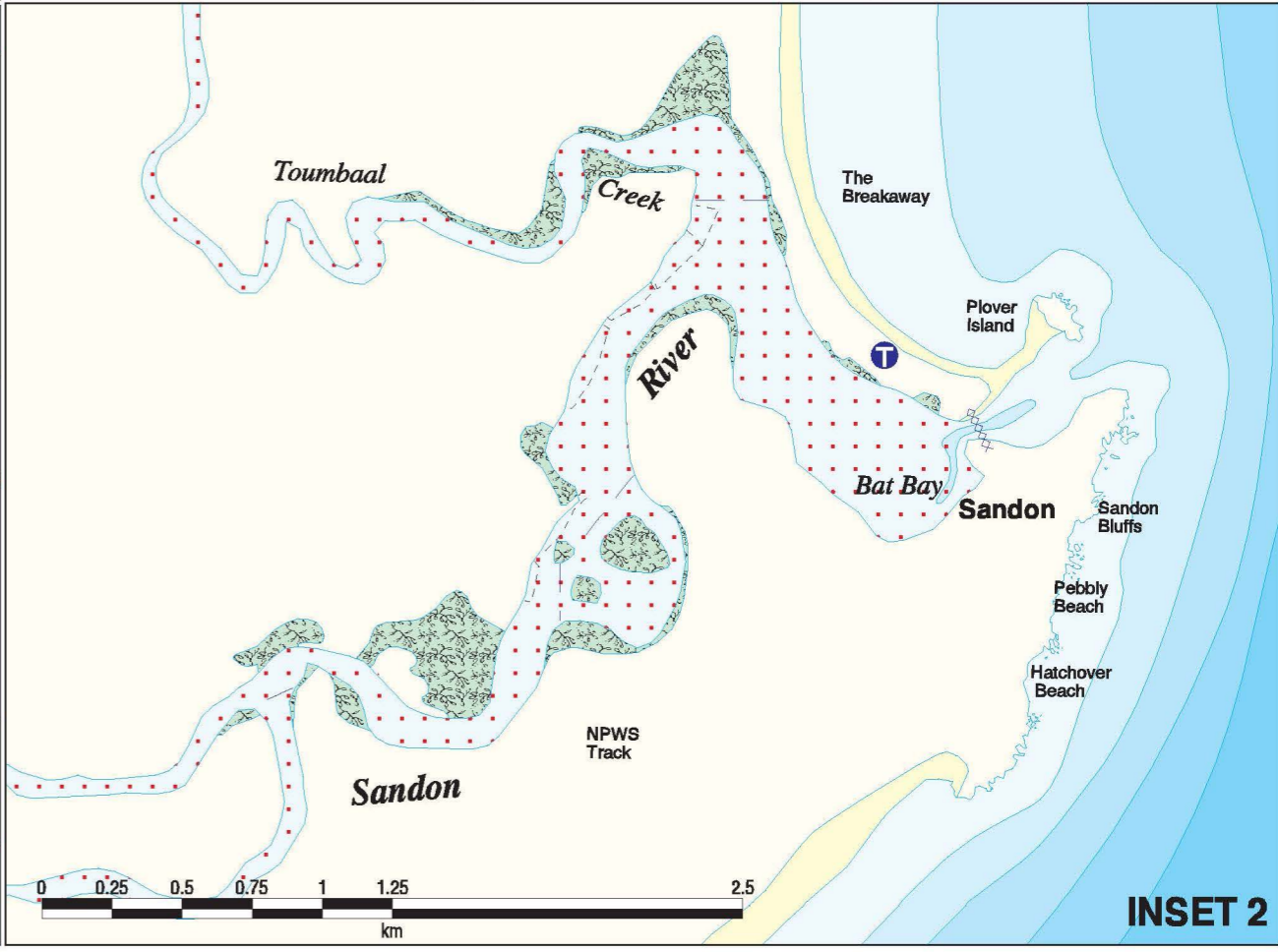
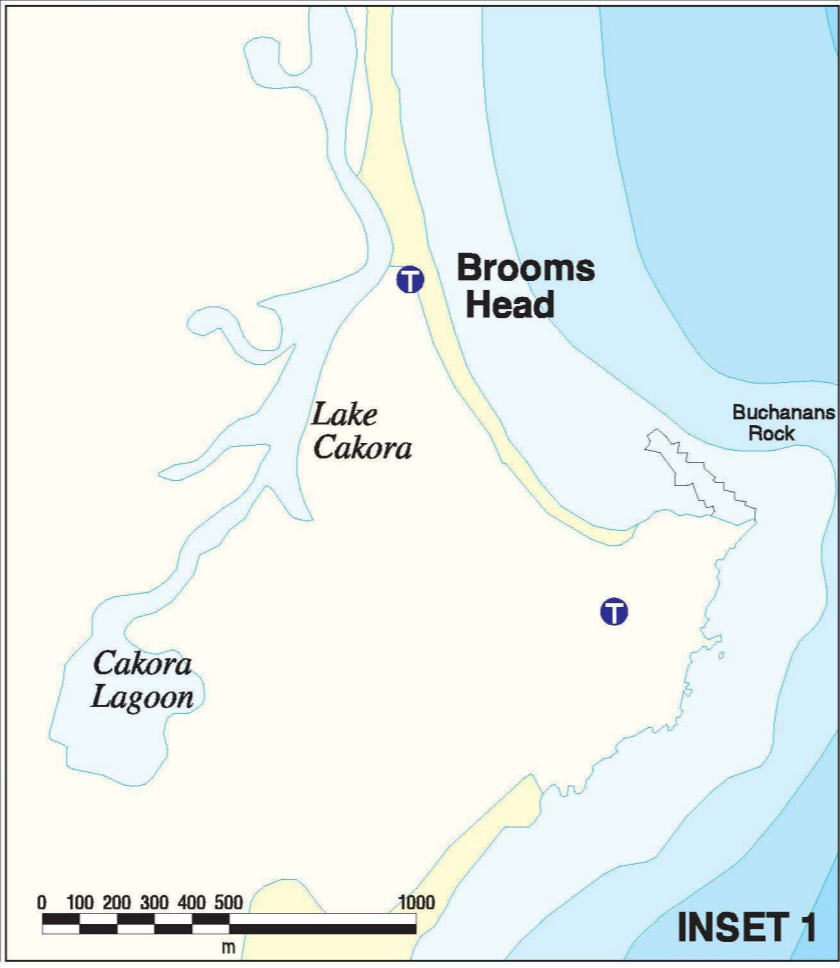
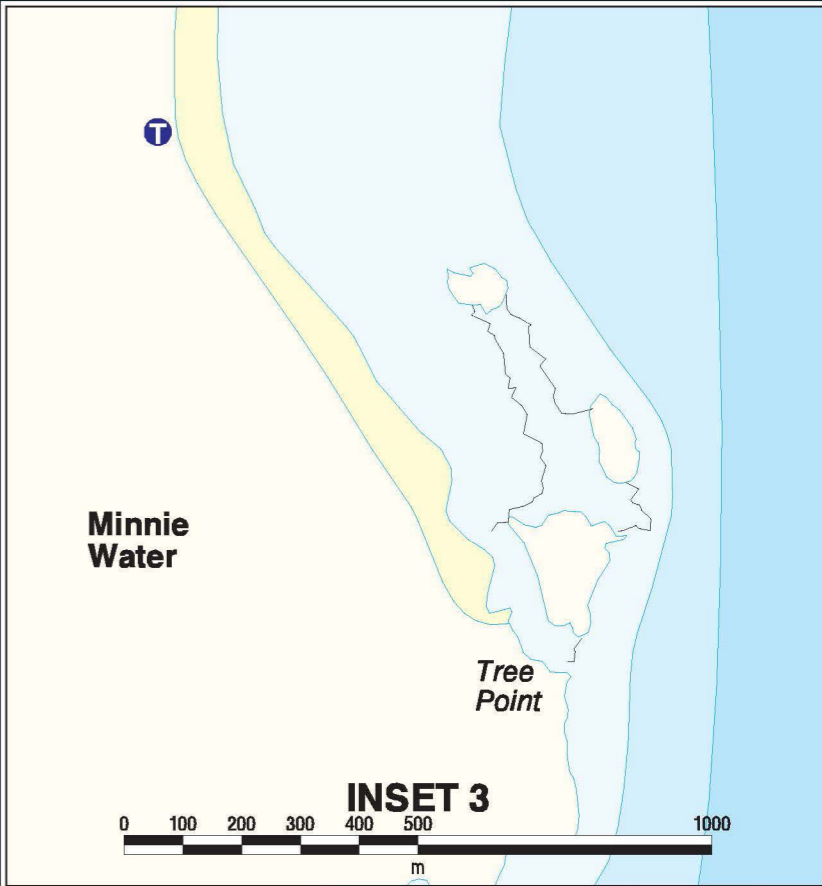
Park

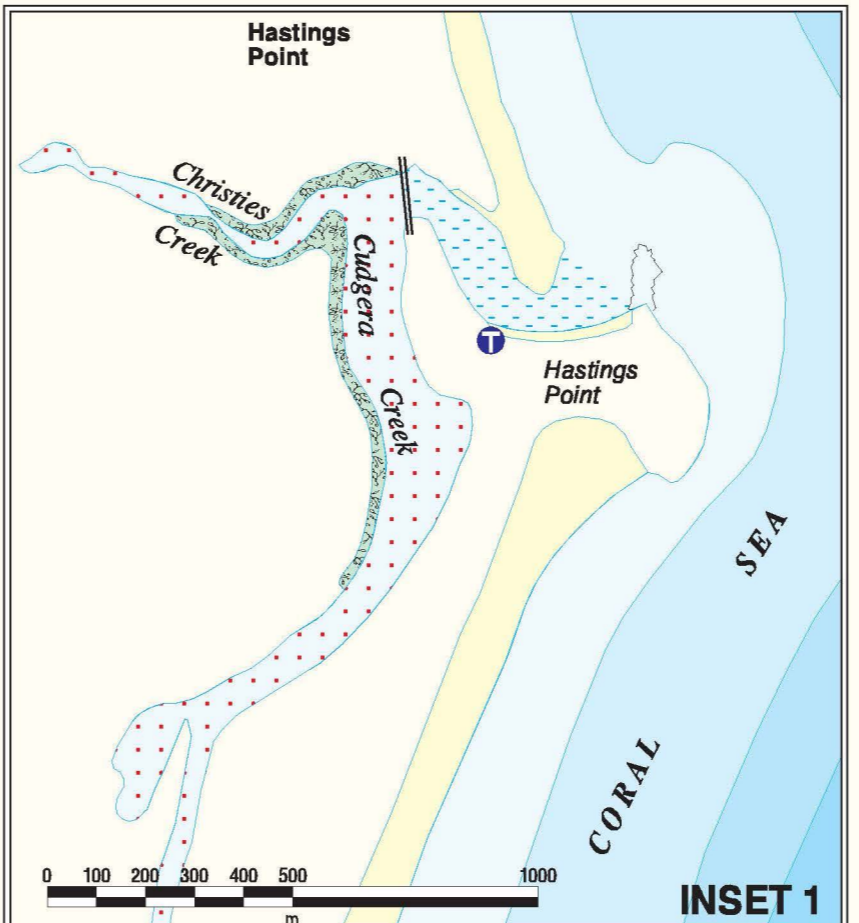
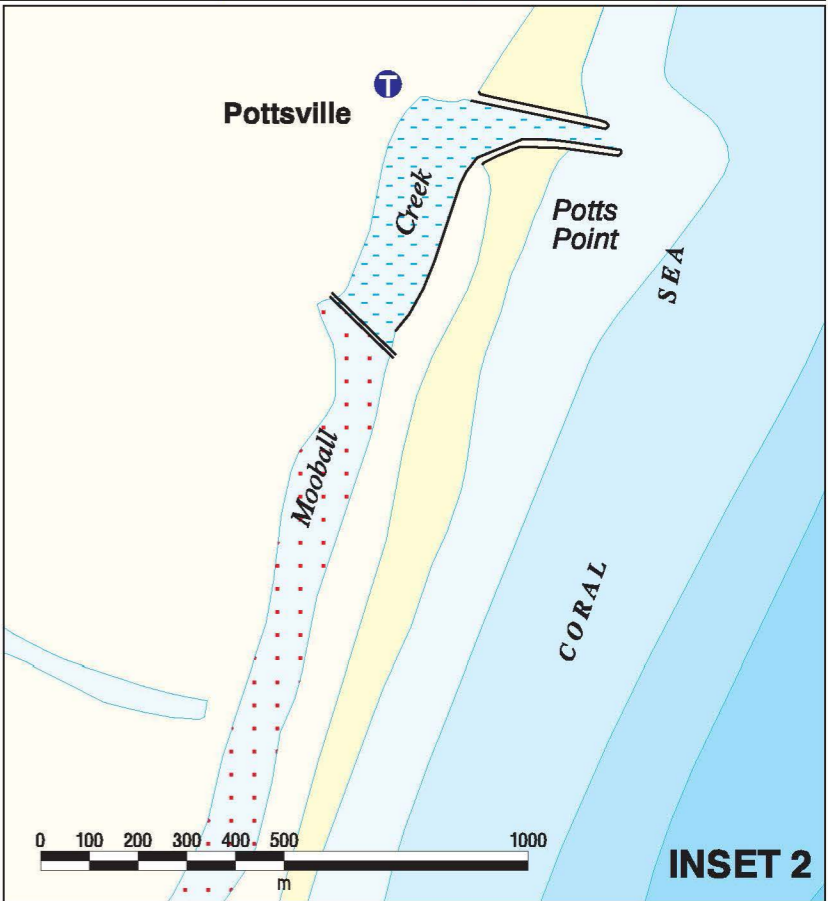
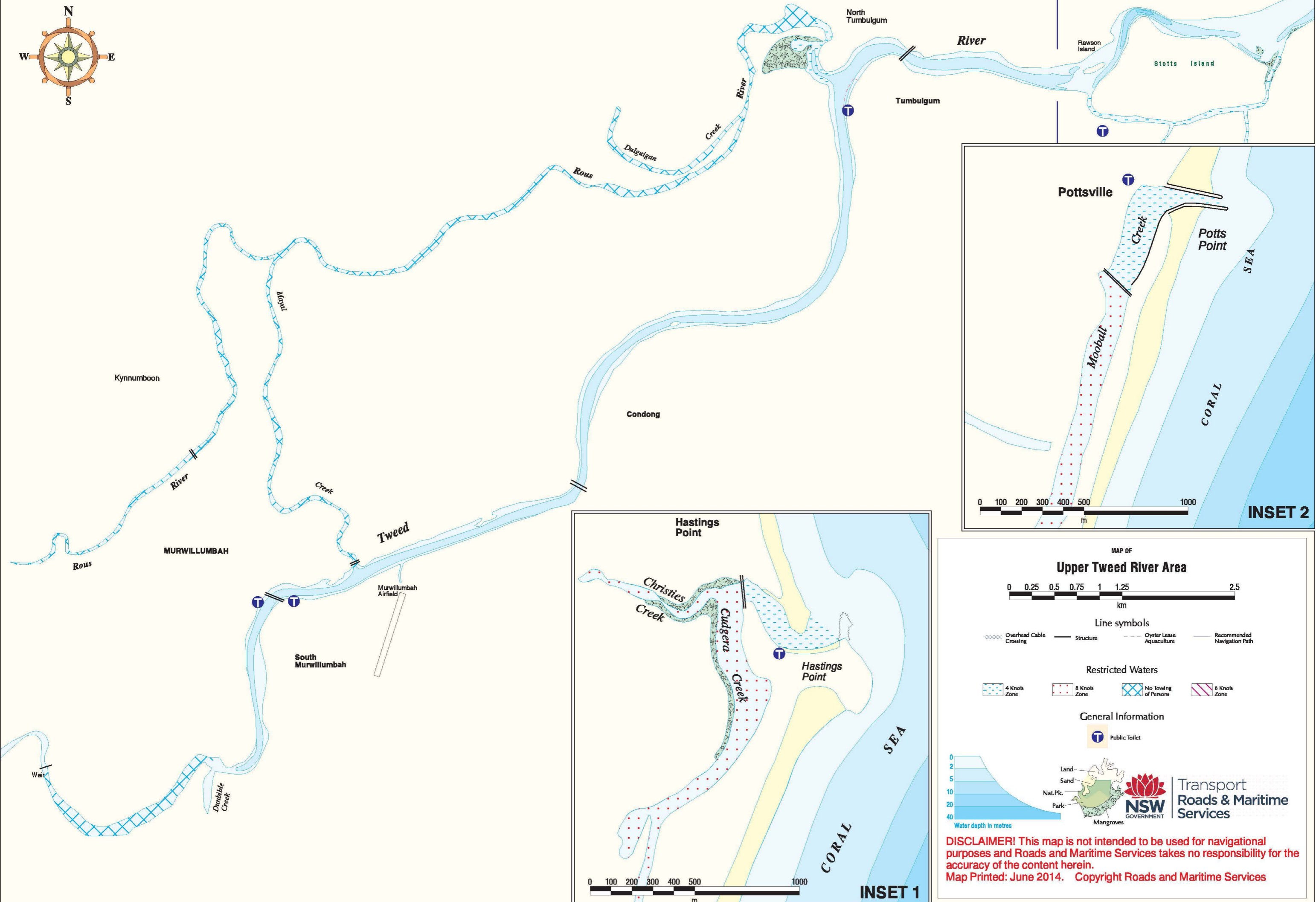
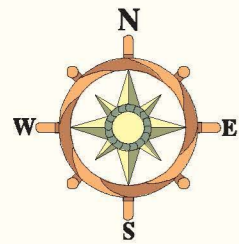
Mangroves

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MAP OF
Upper Tweed River Area

0 0.25 0.5 0.75 1 1.25 2.5
km

Line symbols

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Restricted Waters

--	--	--	--

General Information

Public Toilet

0

2

5

10

20

40

Water depth in metres

Land

Sand

Nat.Pk.

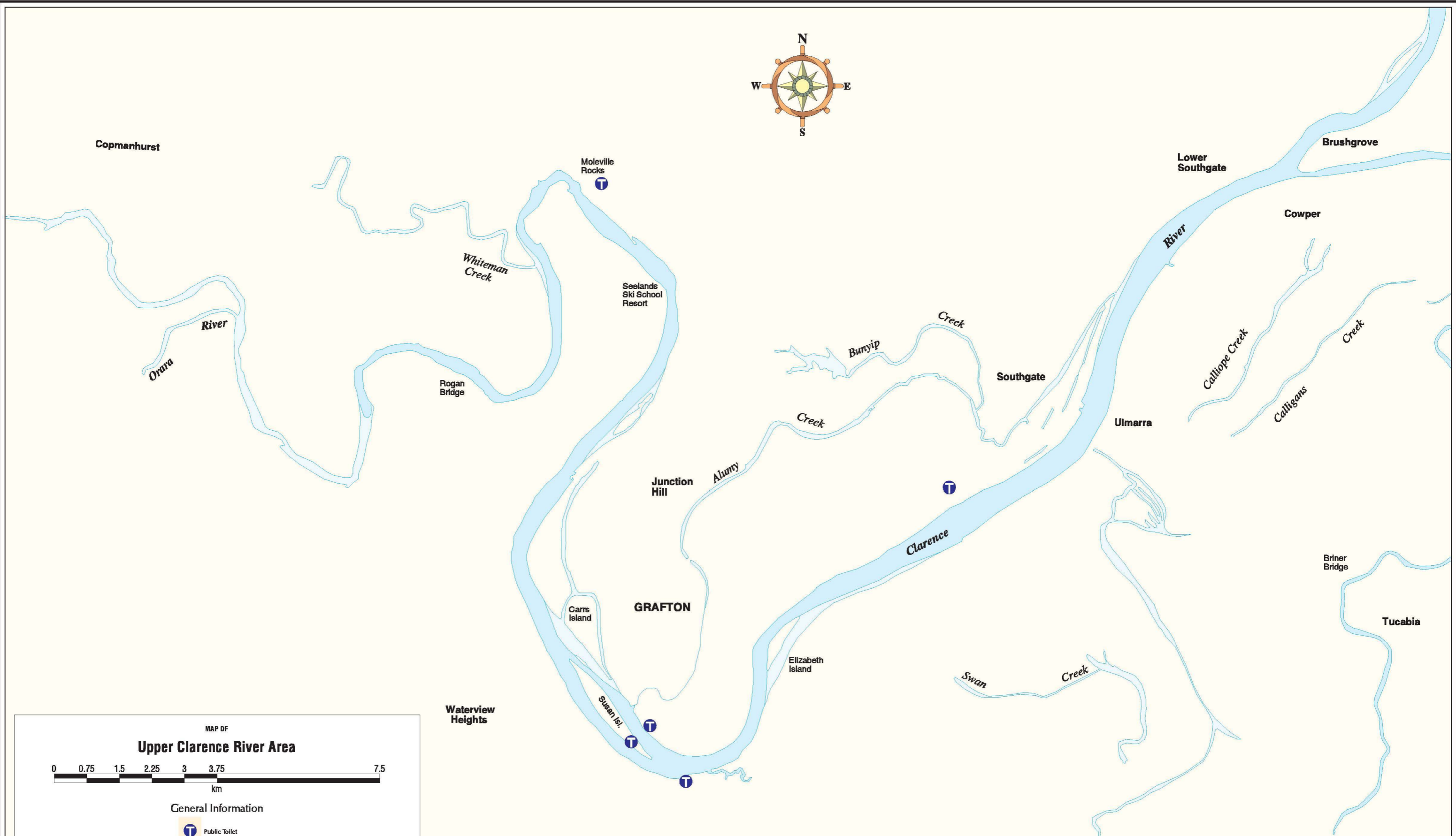
Park

Mangroves

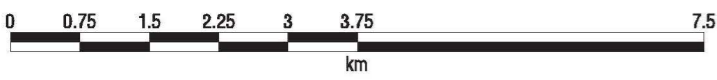
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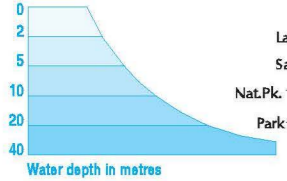
MAP OF
Upper Clarence River Area



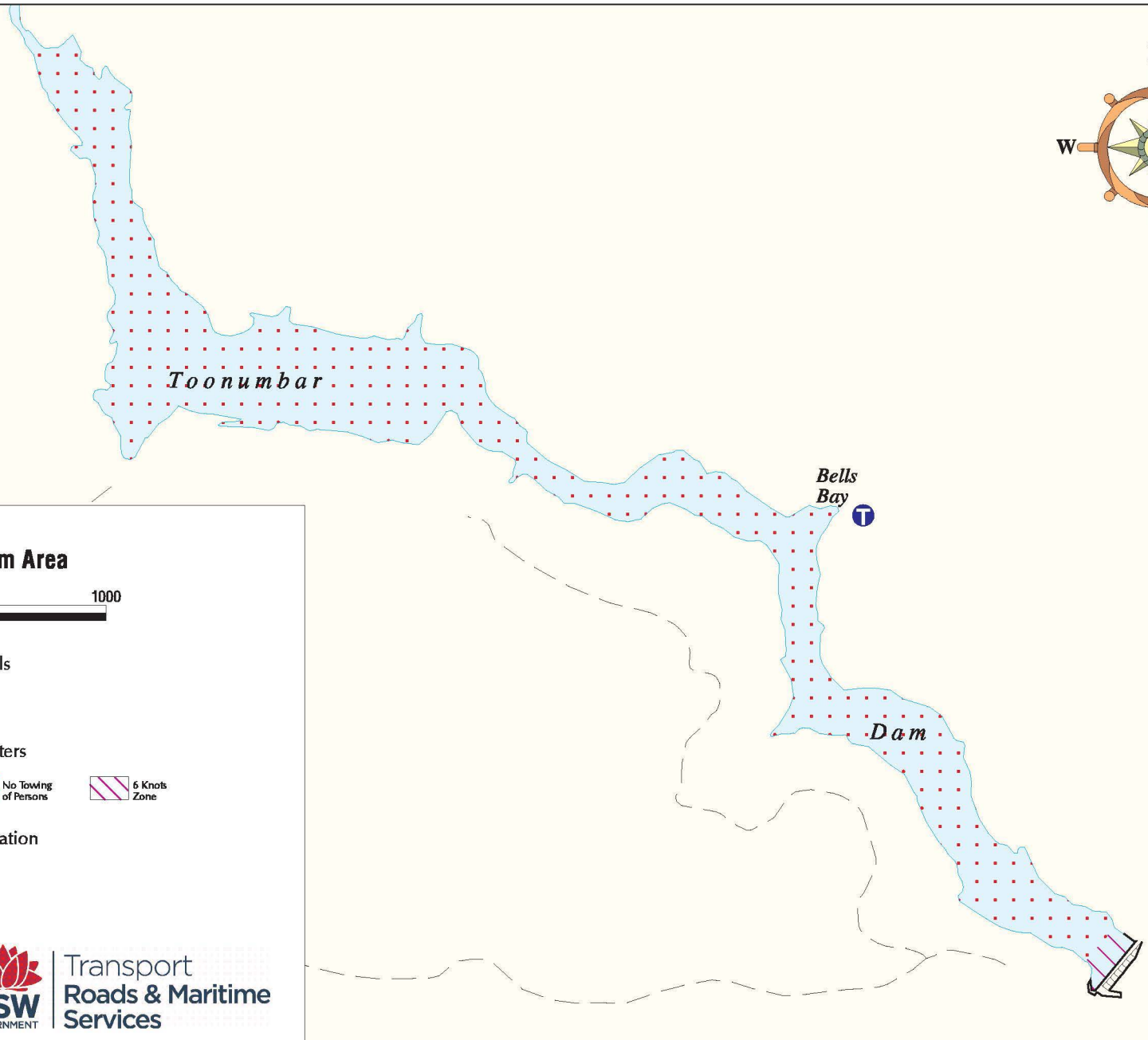
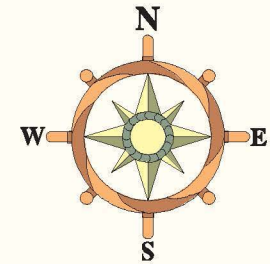
General Information



Public Toilet



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MAP OF
Toonumbar Dam Area

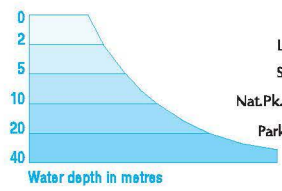


Line symbols
— Structure

Restricted Waters

- 4 Knots Zone
- 8 Knots Zone
- No Towing of Persons
- 6 Knots Zone

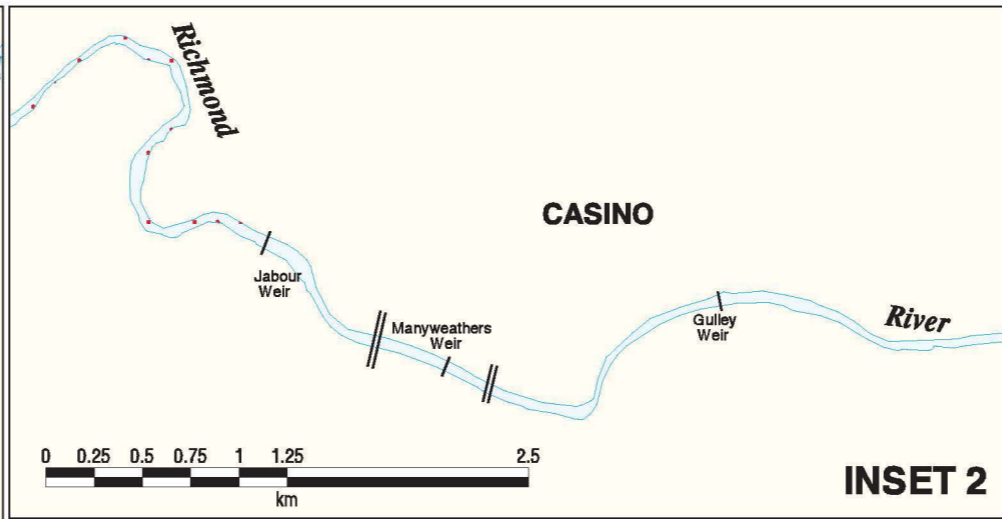
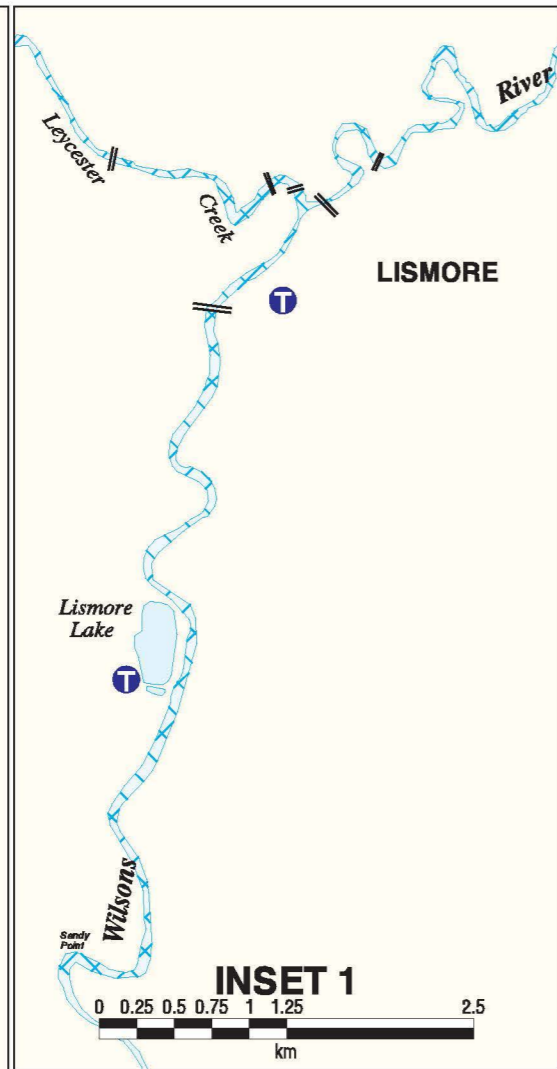
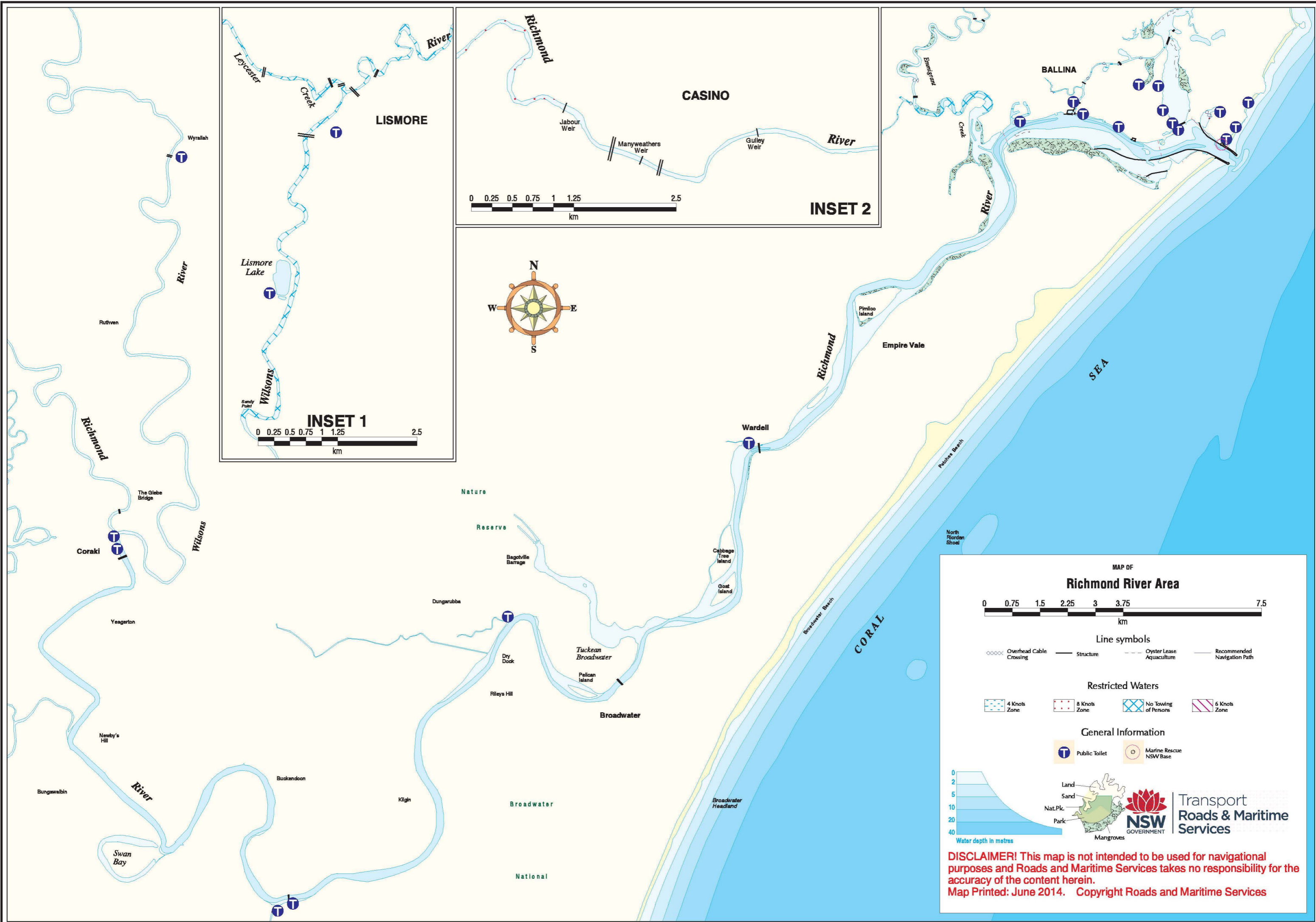
General Information



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Kyogle
25km.



**MAP OF
Richmond River Area**

0 0.75 1.5 2.25 3 3.75 7.5
km

Line symbols

--	--	--	--

Restricted Waters

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General Information

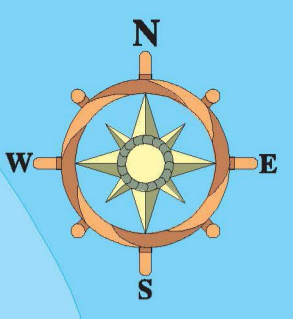
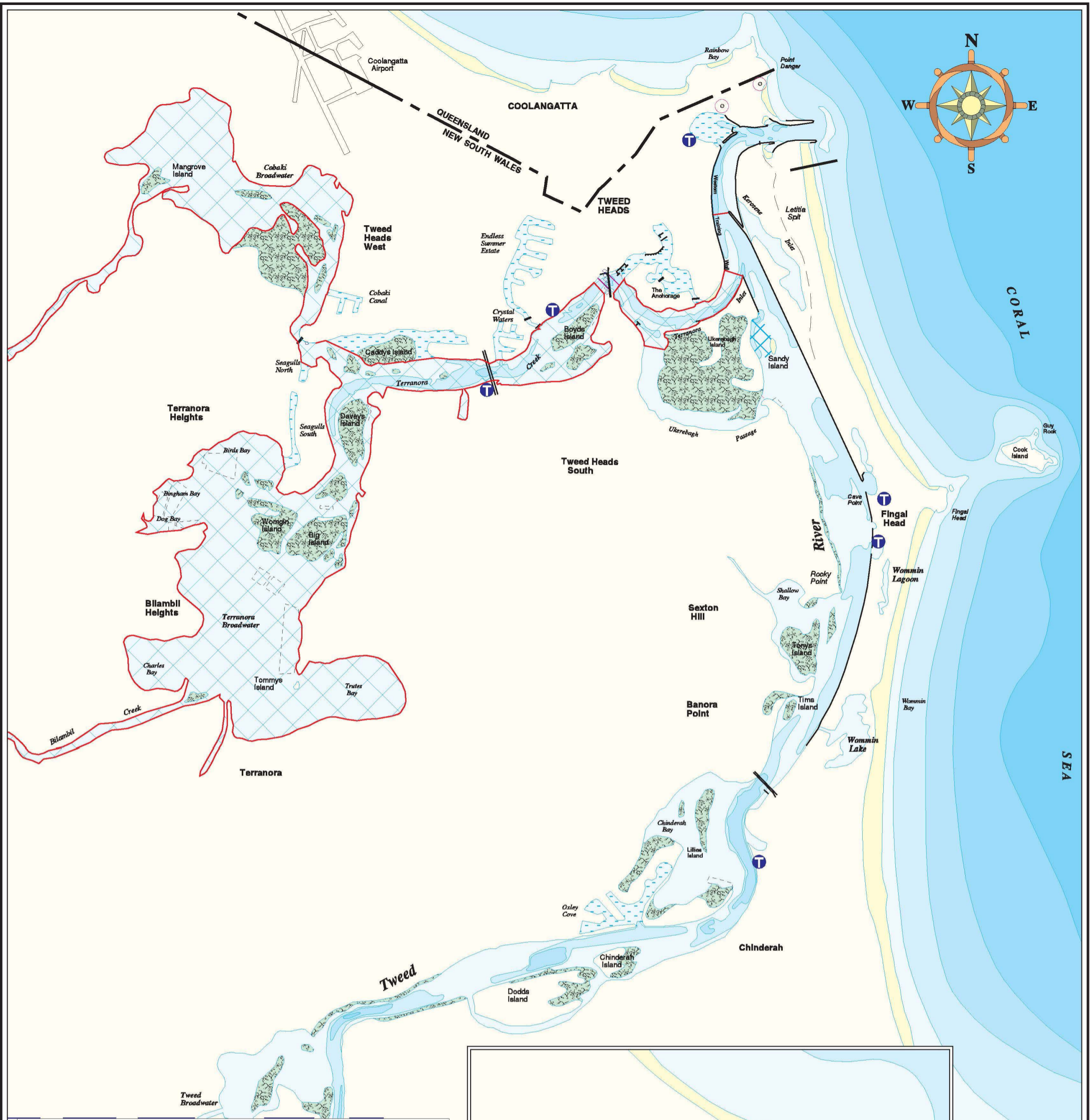
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Water depth in metres

Land Sand Nat.Pk. Park Mangroves

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MAP OF Lower Tweed River Area

0 0.25 0.5 0.75 1 1.25 2.5
km

Line symbols

- Overhead Cable Crossing
- Structure
- Oyster Lease Aquaculture
- Recommended Navigation Path

Restricted Waters

- 4 Knots Zone
- 8 Knots Zone
- No Towing of Persons
- 6 Knots Zone

General Information

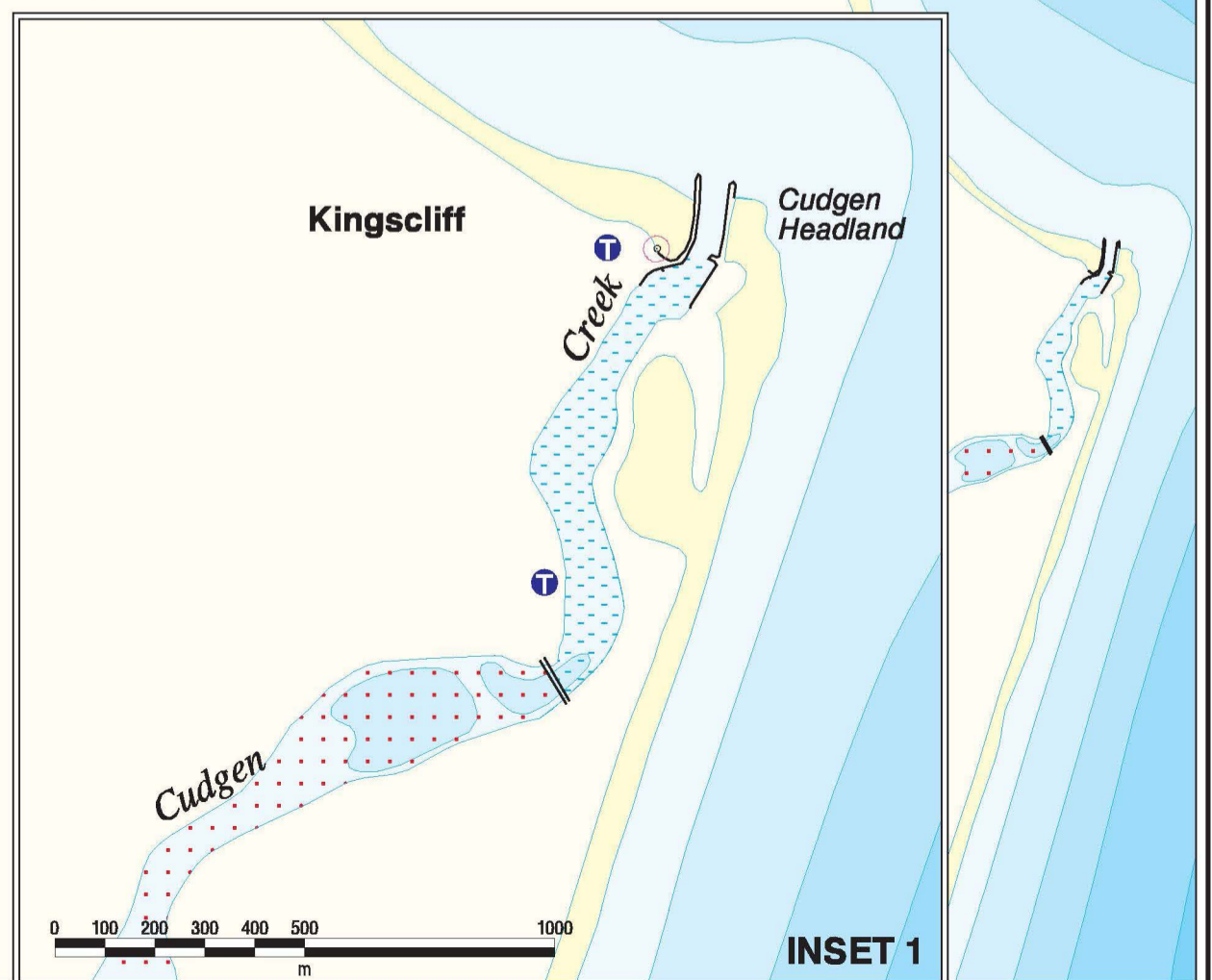
- Public Toilet
- Marine Rescue NSW Base

Water depth in metres

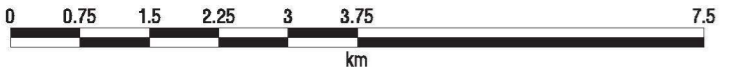
Land
Sand
Nat.Pk.
Park
Mangroves

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MAP OF
Lower Clarence River Area



Line symbols

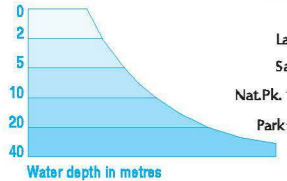
- Overhead Cable Crossing
- Structure
- Oyster Lease Aquaculture

Restricted Waters

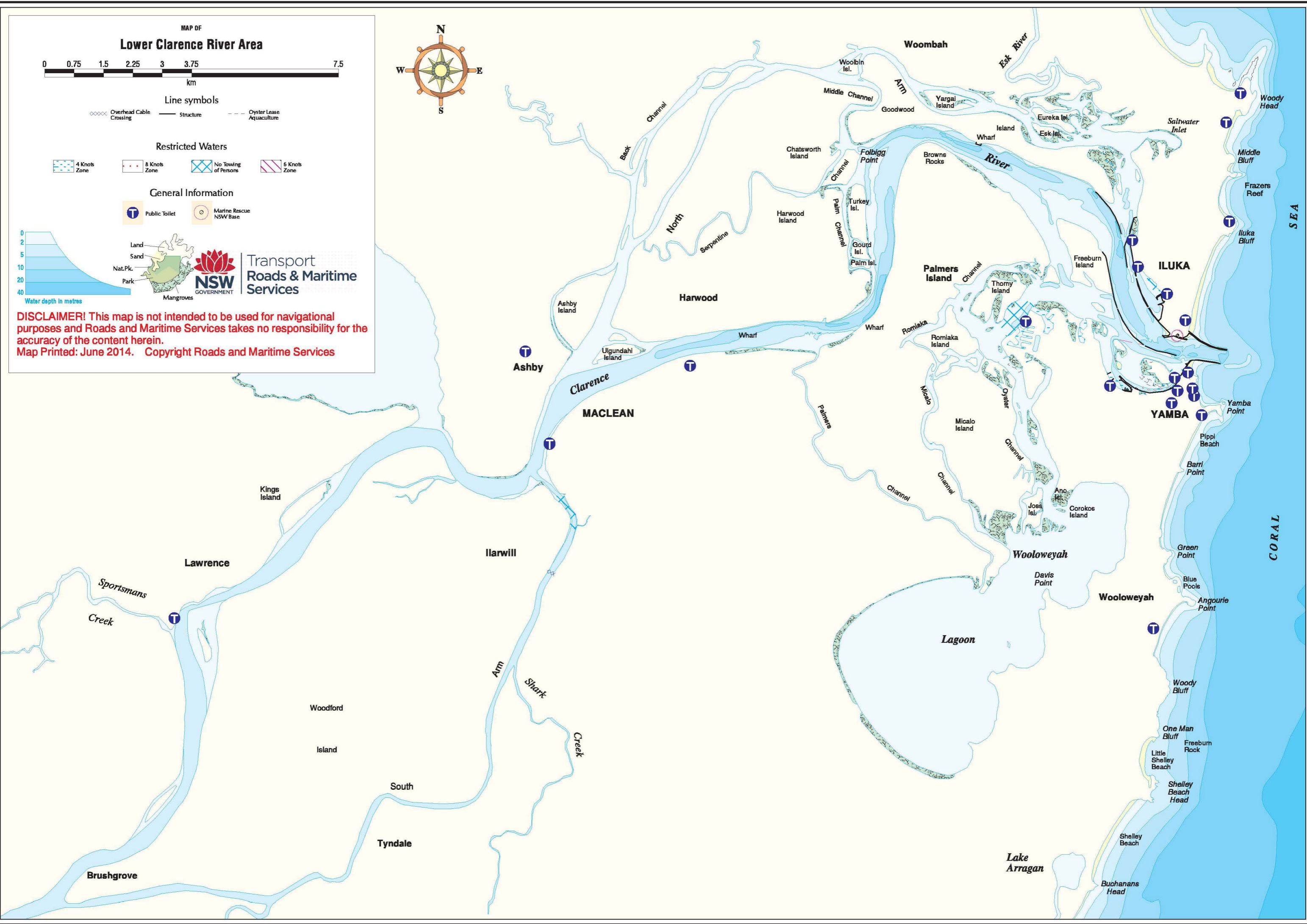
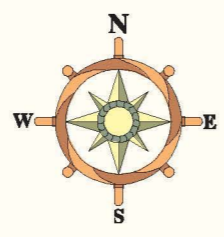
- 4 Knots Zone
- 8 Knots Zone
- No Towing of Persons
- 6 Knots Zone

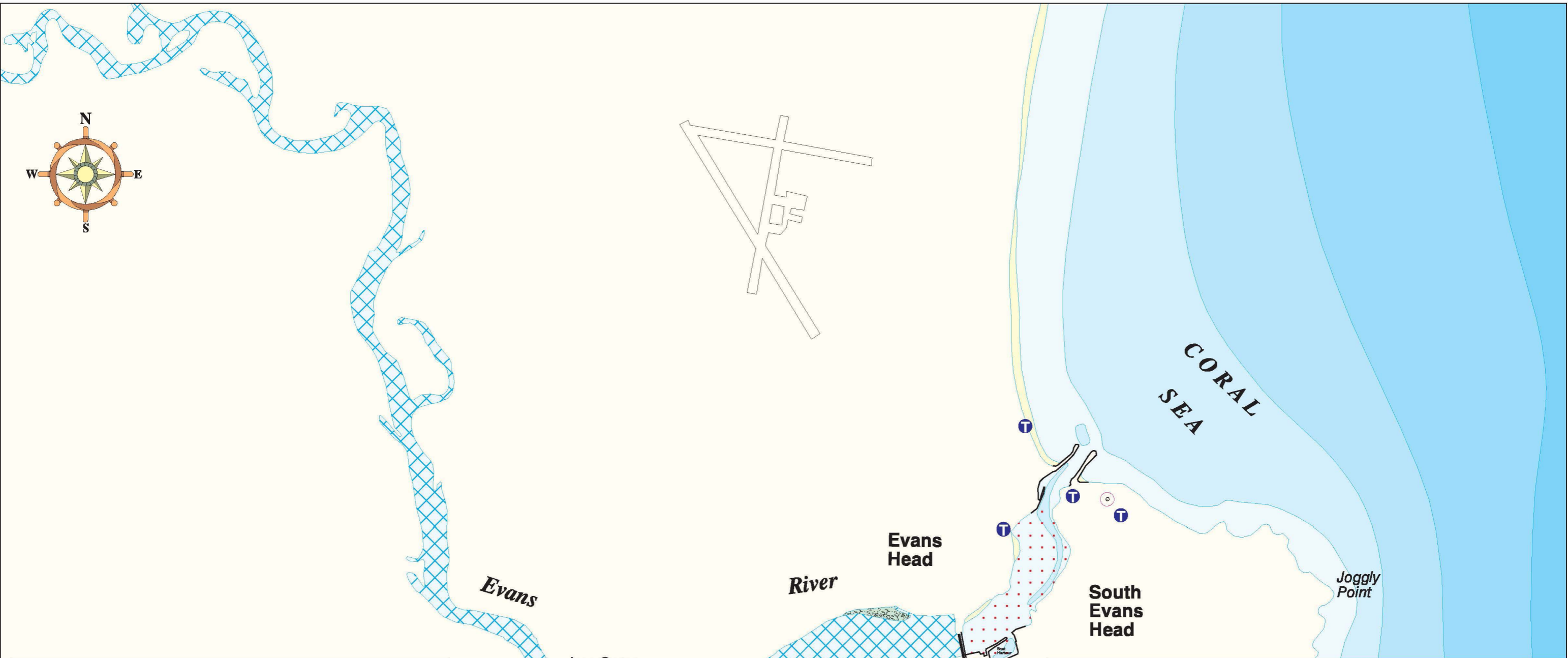
General Information

- Public Toilet
- Marine Rescue NSW Base



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**MAP OF
Evans River & Byron Bay Area**

0 100 200 300 400 500 1000
m

Line symbols

- Overhead Cable Crossing
- Structure
- Oyster Lease Aquaculture
- Recommended Navigation Path

Restricted Waters

- 4 Knots Zone
- 8 Knots Zone
- No Towing of Persons
- 5 Knots Zone

General Information

- Public Toilet
- Marine Rescue NSW Base

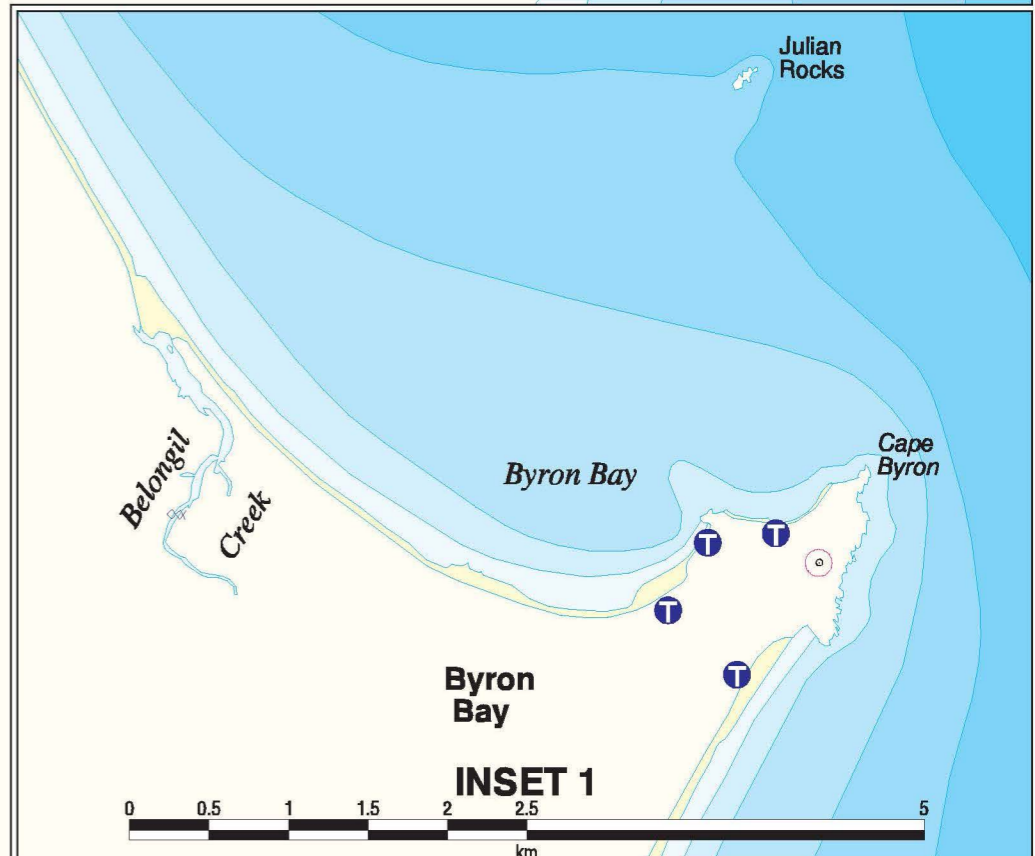
Water depth in metres

Land
Sand
Nat.Pk.
Park
Mangroves

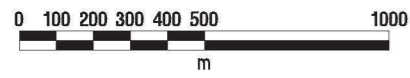
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MAP OF
Brunswick River Area



Line symbols

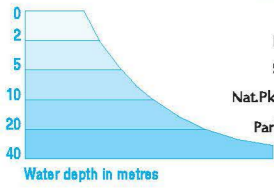
— Structure - - - Oyster Lease
Aquaculture

Restricted Waters

4 Knots Zone 8 Knots Zone No Towing of Persons 6 Knots Zone

General Information

Public Toilet Marine Rescue NSW Base



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