



Transport  
for NSW

Maritime Management Centre

# Transport for NSW Regional Boating Plan Murray - Riverina Region

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# 1. Introduction

The Murray-Riverina 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.

Public information sessions were held at Albury on 9 September 2014, Moama on 10 September 2014 and Mildura on 11 September 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.

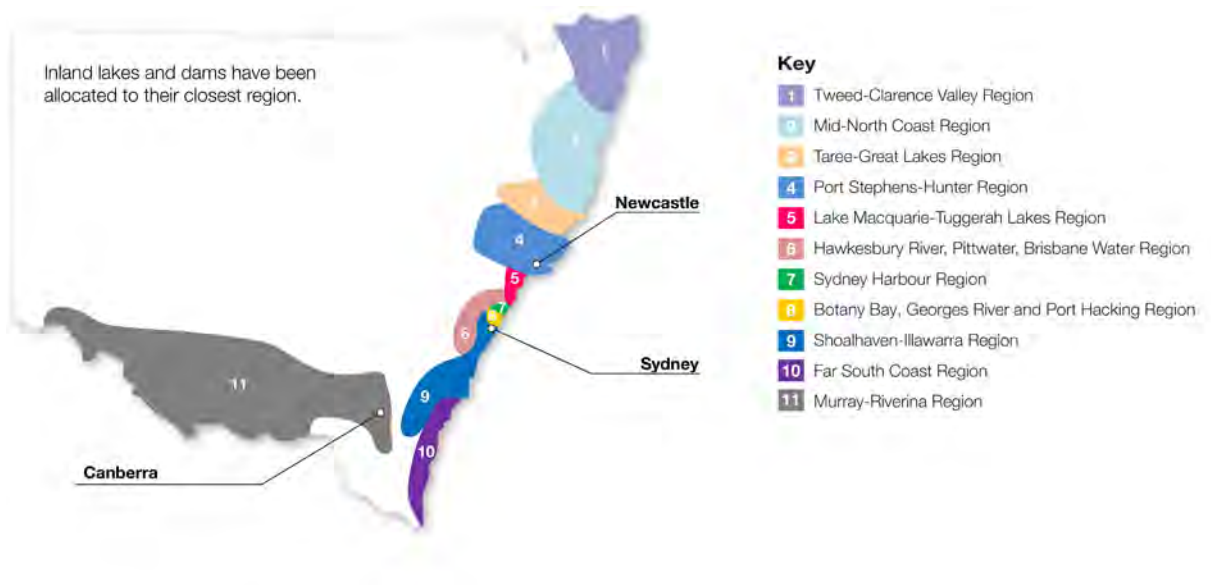


Figure 1 – Map of regions



## 2. Physical character of the waterways

### 2.1 Background

This region consists of the following major waterways: Murray River, Murrumbidgee River, Edward River and Darling River. There are also a number of inland and alpine waterways within the Murray – Riverina region. Some of these waterways are presented below in Table 1.

Table 1 – Inland waterways included in the Murray – Riverina Region

Region	Waterways
Murray – Riverina	Lake Jindabyne, Lake Eucumbene, Tantangara Reservoir, Blowering Reservoir, Jounama Pondage, Mannus Lake, Khancoban Pondage, Talbingo Reservoir, Tumut Pond Reservoir, Three Mile Dam, Geehi Reservoir, Tooma River, Burrinjuck Dam, Googong Reservoir, Lake Wyangan and Lake Albert.

Recreational boating is popular in the region, with users undertaking a wide variety of boating activities. The region supports various commercial vessel operations such as hire and drives and charter vessels. Although the region’s waterways cover considerable distances, recreational boating activities tend to be concentrated at regional centres resulting in high demand in these areas particularly in the summer months. Further details on waterway users are provided in Chapter 3.

The waterways are covered by over 40 councils (listed at Appendix A). Some 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 water usages, flow, water quality, waterfront development, improve public accessibility and to protect the visual character and natural landscape of the waterways.

A number of the waterways in this region are defined as Alpine Waters for which there are additional life jacket requirements. All the occupants of a vessel less than 4.8m in length must wear a life jacket when the vessel is being operated on these waters.

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

## 2.2 Upper Murray catchment

The Upper Murray catchment is located in southern NSW along the NSW-Victoria border and has a catchment of approximately 15,300 km<sup>2</sup> in size. The major waterway in this catchment is the Murray River which commences in the Snowy Mountains and typically marks the border between NSW and Victoria. The NSW border is at the top of the southern bank of the Murray River. The portion of the river within the Upper Murray catchment extends through to Hume Dam. After the Dam, the Murray River flows through the Murray Riverina Catchment in a westerly direction to its outlet near Goolwa on the South Australian coast. Along its route, the river has a few major dams, storage weirs and navigable locks.

Three smaller storages: Khancoban Pondage, Geehi Reservoir and Tooma Reservoir are located in the upper reaches of the catchment. They receive transfers of water from the Snowy Mountains Scheme for release to the Murray and Murrumbidgee valleys.

## 2.3 Murray Riverina catchment

The Murray Riverina catchment is approximately 15,000 km<sup>2</sup> in size. It commences at the Hume Dam (Lake Hume) and includes the Murray River, Lake Mulwala and Edward River.

Lake Hume is approximately 200 km<sup>2</sup> in size and is a popular destination for general boating, water skiing, sailing, canoeing/kayaking and Personal Watercraft (PWC) use. Lake Hume is divided between Victoria and NSW at Bethanga Bridge therefore both Marine Safety Victoria and Roads and Maritime are responsible for boating in the lake under the Marine Safety Legislation (Lakes Hume and Mulwala) Act 2001. The Hume Dam, which regulates the Murray River, is jointly managed by Victorian and New South Wales authorities on behalf of the Murray Darling Basin Authority (MDBA).

Major tributaries of the Murray River in this region are the regulated Edward River, Wakool River, Niemur River, Billabong Creek, Yallakool Creek and Colligen Creek.

Lake Mulwala is created by the Yarrawonga weir on the Murray River and is approximately 45 km<sup>2</sup> in size. With numerous access points, it is a popular destination for power boating, water skiing, sailing, rowing and canoeing.

## 2.4 Benanee catchment

The Benanee catchment is approximately 21,400 km<sup>2</sup> in size. The river basin consists of several creeks, streams and lakes with the largest water storages being Euston and Mildura weirs.

## 2.5 Snowy catchment

The Snowy catchment in NSW is approximately 9,000 km<sup>2</sup> in size and includes the Snowy Mountains Hydroelectric scheme. Some major waterways in the catchment include: the Snowy River, Lake Jindabyne and Lake Eucumbene.

The Snowy River is one of the largest snowmelt rivers in Australia and its main tributaries are the Eucumbene and Thredbo Rivers. Other tributaries include the Mowamba, Maclaughlin, Delegate, Jacobs, Pinch, Deddick, Buchan, Rodger and Brodribb Rivers and Wullwye Creek joining the Snowy River below the Jindabyne dam wall.

Lake Eucumbene is the largest of the Snowy Scheme lakes, approximately 145 km<sup>2</sup> in size with a catchment area of approximately 680 km<sup>2</sup>. Lake Jindabyne is approximately 33 km<sup>2</sup> in size and has a catchment area of 993 km<sup>2</sup>.



### 2.5.1 Snowy Hydro

All Snowy Hydro's water storages were designed to operate through a range of levels, which vary depending on inflows, transfers, releases for electricity generation and in order to meet licence conditions.

Snowy Hydro supports regional tourism by providing for recreational use on most of its water storages. However, due to operational requirements, water levels will rise and fall rapidly often without notice, particularly in smaller storages like Tooma, Tumut Pond, Geehi and Khancoban. For public safety reasons, Snowy Hydro does not encourage recreational use at these smaller storages. Close liaison will be required with Snowy Hydro on any actions undertaken on its water storages.

## 2.6 Murrumbidgee catchment

The Murrumbidgee catchment is approximately 84,000 km<sup>2</sup> in size and includes Canberra and a number of regional cities and towns. The major waterways of the catchment include: Tantangara Reservoir, Blowering Reservoir, Tumut Pond Reservoir, Three Mile Dam, Burrinjuck Dam, Googong Reservoir, Murrumbidgee River, Yanga Lake, Lake Wyangan, Lake Albert and Lake Talbot.

The Murrumbidgee River, a major tributary of the Murray-Darling River system, spans approximately 1,600 km, rising near Cooma and flowing westward towards its junction with the Murray River near Balranald. The Murrumbidgee is regulated downstream of Burrinjuck Dam, with the Tumut, Gudgenby, Naas, Molonglo, Queanbeyan, Cotter and Yass rivers as key tributaries. The Tumut River, the Murrumbidgee's largest tributary, is regulated downstream of Blowering Dam which is part of the Snowy Mountains Hydro-electric Scheme.

The two largest storages in the Murrumbidgee catchment are Blowering Reservoir, which is approximately 45 km<sup>2</sup> in size, and Burrinjuck Dam which is approximately 55 km<sup>2</sup> in size. Talbingo, Tantangara and Googong Dams are also major dams within the catchment area. Three Mile Dam is a relatively small dam located within Kosciuszko National Park near Kiandra.

Yanga Lake covers an area of approximately 14 km<sup>2</sup> and is located within the Yanga National Park on the lower Murrumbidgee River floodplain. Lake Wyangan is a recreational lake located near Griffith.

Lake Albert is approximately 1.2 km<sup>2</sup> in size and has an average depth of 3 m. A boat club and the Wagga Wagga Country Club are situated on the lake which is also circumnavigated by a community walking track.

Lake Talbot is approximately 0.4 km<sup>2</sup> in size and has an average depth of 1.6m. The Lake is located at Narrandera and is used and managed for water based recreation, including powered and unpowered boating, water skiing, canoeing and fishing.

## 2.7 Darling catchment

The Lower Darling catchment is approximately 35,000 km<sup>2</sup> in size. The major waterway is the Darling River and the term 'Lower Darling' refers to the portion of the river regulated by releases from the Menindee Lakes Scheme. Inflows to the Menindee Lakes come from the Barwon-Darling River and the Lower Darling River then flows for 530 km to its junction with the Murray River.

The seven Menindee Lakes are a major feature of the catchment which have been modified for use as water storages, but also have significant environmental and recreational values.



### 3. Waterway users

Recreational boating is a popular pastime in the Murray – Riverina regional waterways. The waterways are popular for recreational fishing, water skiing, wake boarding, PWC operation, sailing, rowing, houseboating, canoeing and kayaking. In addition to NSW users, the waterways are used by a large number of visiting boaters particularly from Victoria and the ACT. The Murray River Review, which was produced by the former NSW Maritime, reported that almost 90% of vessels checked by NSW Maritime on the Murray River were from Victoria. The majority of the population centres along the Murray River are on the Victorian side of the River.

The Snowy Mountains Hydro-electric Scheme, operated by Snowy Hydro, collects, stores, and diverts water through tunnels to power stations to generate power. Water is then released into the Murray and Murrumbidgee Rivers for irrigation. Snowy Hydro supports regional tourism by providing for recreational use on most of its water storages, however operational requirements take priority.

The Murray Darling Basin Authority (MDBA) is required to maximise water availability for the southern Basin States and to deliver their water entitlements. Whilst the MDBA aims to align water deliveries with recreational needs, the supply of water for irrigation, town water supply and to the environment takes priority.

#### Upper Murray catchment

Lake Hume is a popular waterway for recreational cruising, fishing, power boating, PWCs, water skiing and sailing. Recreational clubs such as the Lake Hume Boat Club, the Albury-Wodonga Yacht Club and the Hume Angling Club are located on the lake. Boating activities throughout the remainder of the catchment include:

- Fishing;
- power boating;
- PWCs
- camping;
- kayaking; and
- canoeing.

#### Murray Riverina catchment

Boating activities in the Murray Riverina catchment include:

- water skiing;
- wake boarding
- houseboating;
- fishing;
- kayaking and canoeing and
- major aquatic events.

### **Benanee catchment**

In addition to activities along the Murray River, the Euston and Mildura weirs in this catchment are popular fishing destinations.

### **Snowy catchment**

Recreational activities in Lake Jindabyne include:

- swimming, with buoyed swimming areas provided at The Haven and Claypits;
- fishing;
- sailing, with a course north of Lion Island and Club Island and a smaller course to the west of Lion Island;
- kite sailing and windsurfing;
- water skiing, predominately in the Claypits area;
- wakeboarding;
- PWCs;
- power boating;
- rowing; and
- canoeing, kayaking and rafting.

A number of events are held in the catchment including the XTERRA Triathlon, the Snowy Mountains Trout Festival and the Ski Racing Australia Speed and Marathon Championships .

### **Murrumbidgee catchment**

The Murrumbidgee River and Lake Albert are popular for waterway recreational activities. When the water levels in Lake Albert are high, the water body is used for water skiing, sailing, kayaking, fishing and general recreational boating. In addition, there are several local aquatic user clubs and groups that regularly use the Lake including the Wagga Wagga Boat Club, Wagga Aquatic User Group, Scouting Association and Bidgee Dragons Abreast Club. Annual events such as the Barry Carne water skiing event and triathlon events are also held when there are sufficient water levels.

Lake Talbot at Narrandera is also an extremely popular regional waterway for recreational activities. The water levels of the lake are regulated through a management protocol developed jointly between Murrumbidgee Irrigation, Narrandera Shire Council and NSW Fisheries. The water body is popular for water skiing, kayaking, fishing, long distance swimming and recreational boating activities. Annual events such as the Malabo Series, Classic Australian Wooden Power Boat Association National Get Together, regional water skiing school and triathlon events are also held on the lake. The site facilities have undergone major upgrades over the last 5 years with the establishment of a new boat ramp and staging area, drainage, boat trailer car parking, toilet amenities, seating and erosion sandbagging of the foreshore.

## Darling catchment

Recreational activities in the Darling catchment include:

- fishing;
- swimming;
- small tour operations;
- canoeing, kayaking and rafting; and
- sailing and water skiing on Menindee Lakes.

Communities in the area have a strong connection and history with the region's waterways.

### 3.1 Analysis of existing user data

#### 3.1.1 Licence data analysis

There are currently approximately 45,000 boat licence holders in the Murray – Riverina Region. This represents approximately 8.2% of all boat licence holders in NSW. As mentioned above, the large majority of boaters in this region are from Victoria.

The majority of NSW licence holders in the region carry a General Boat Licence with approximately 6% licensed to operate PWCs which is lower than the State-wide average for PWCs (11%).

#### 3.1.2 Registration data analysis

There are currently approximately 20,000 registered recreational vessels in the Murray – Riverina region. This represents approximately 8.4% of all registered vessels in NSW. This figure is consistent with the proportion of State-wide licence holders. It is important to note that there are smaller boats that may not require licences to use the waterways as well as visiting interstate boats from Victoria.

Of the recreational vessels, open runabouts dominate, accounting for 89% of all NSW registered vessels. Cabin runabouts and PWCs have a modest presence on the region's waterways. Some houseboats, sailing vessels, motor cruisers, inflatables and powered catamarans are also registered in the region but these represent a relatively small proportion of the region's total registered vessels.

A majority (91%) of all vessels are between 2 and 6 m in length and the average vessel length for the region is 4.5 m. Vessels less than 6 m in length are defined as trailerable. This has a significant 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 NSW licence holders and vessels registered in the Murray – Riverina region, it does not capture vessels from other regions, in particular from Victoria that use these waterways. This adds significantly to local demand and usage throughout the year.

Roads and Maritime's licence and registration data does not capture non-powered craft numbers such as kayaks, canoes or beach-launch sail craft which do not require registration. Based on the estimated total number of these vessel types in NSW, there may be significant numbers of these vessels in the Murray - Riverina region, in particular due to the physical characteristics of the waterway which attract these users.

#### 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 that the Murray Inland region and South Coast (both of which incorporates Murray – Riverina) have experienced significant growth. The growth was reported to be approximately 3.9% per annum across all boat sizes. This data excludes vessels from Victoria.



## 4. Safety

### Key findings

- The Murray River has high waterway usage, especially at regional centres and tourist parks. This can result in conflicts between different users of the waterways.
- Large numbers of boaters and vessels are from Victoria. Safety issues can be addressed by continuing to work with Victorian boating regulatory authorities to extend NSW safe boating messaging and education campaigns into Victoria.
- A number of survey respondents raised concerns about the large number of vessels on the waterways as well as the behaviour of waterway users, particularly PWCs and wake boarding vessels.
- Safety in the region could be improved through raised levels of awareness and management of hazards and snags, through improvements to education campaigns, and updated signage at boating locations.
- The Murray-Riverina region is composed of a range of waterways with significantly different physical characteristics. These have specific safety concerns that require targeted campaigns on a local level.

### Actions

- a. Review strategies to improve user behaviour and reduce waterway congestion**
- b. Continue to work with Victorian marine safety authorities and boating groups to extend NSW safe boating messages into Victoria**
- c. Review and improve signage and management of hazards and snags**
- d. Review strategies to target the unique boating safety issues seen in Alpine Waters**

## 4.1 Overview of existing safety activities

The MMC has led a successful 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 Murray – Riverina region), a zero tolerance on-water compliance approach and a host of supporting activities.

Roads and Maritime is responsible for the operational delivery of 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 Murray – Riverina 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 Roads and Maritime Boating Education Officers and 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.

The Murray River marks the border between NSW and Victoria, however NSW has jurisdiction of the water up to the southern bank on the Victoria side. A number of other waterways in this region cross the NSW and Victorian border thus responsibility for boating safety is divided between Roads and Maritime (NSW) and Transport Safety Victoria under the Marine Safety Legislation (Lakes Hume and Mulwala) Act 2001. Within Victorian waters, enforcement of boating rules is usually carried out by Victoria Police and Victorian marine safety authorities.

BSOs also work in partnership with officers of the Department of Primary Industries (Fisheries), Goulburn Murray Water, the Murray Darling Basin Authority 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 Murray – Riverina region are shown on the map included in Appendix B 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:
    - Bays of Lake Jindabyne including Widows Inlet, Rushes Bay and Taylors Inlet;
    - Eucumbene Cove and Lake Eucumbene;
    - Various sections of the Murray River including Tocumwal, Cobram, Barmah, Moama-Echuca, Doms Corner, Ovens River, Bourke Street Canal, Yarrawonga, Mulwala, Mildura, Howlong, Albury and Barham;
    - Wentworth on the Darling River;
    - Woolgarlo and Graces Flats on Lake Burrinjuck, as well as in the vicinity of the dam wall;

- The western side of Yanga Lake;
  - The northern section of Lake Wyangan;
  - The northern and southern ends of Lake Albert;
  - Deniliquin on the Edward River;
  - Ferry crossings on Lake Hume and Speewa on the Murray River.
- 5 knot zone at various sections of Lake Hume including Bonegilla, Ebden and Tallangatta;
  - 8 knot zones at The Haven in Lake Jindabyne, Picnic Point on the Murray River, in the vicinity of Moama-Echuca, South Corowa, parts of the Ovens River and near Wee Jasper on the Goodradigbee River; and
- “no wash” and “no towing” zones.

Further controls exist in the International Regulations for Preventing Collisions at Sea which are observed in NSW by law and include, but are not limited to, the following:

- The skipper (master of the vessel) is responsible for the safety of the vessel and all people on board;
- The skipper must always:
  - keep to a safe speed for the conditions (eg., slower speeds at times of reduced visibility, rough water, congested waterway);
  - keep a proper lookout;
  - be prepared to take action to avoid a collision; and
  - display appropriate navigation lights at night.

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.

Following extensive public consultation, the then NSW Maritime published the Murray River Safety Review in January 2011. The Review addressed a number of concerns arising from incidents on the Murray and community expectations regarding user behaviour. This review has resulted in an increased number of Boating Safety Officer positions being established in the area and the introduction of education campaigns to addresses issues specific to the region. The MMC and Roads and Maritime have already addressed many of the issues raised in the review and will continue to consider and address safety concerns in the region.

## 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:

- irregular riding of personal water craft (20%);
- speeding (15%);
- safety (12%); and
- hazards (10%).



The most significant number of complaints received by Roads and Maritime for the Murray - Riverina region related to the Murray River (over 70%), especially in the vicinity of Albury, Moama and Swan Hill.

### 4.3 Infringements

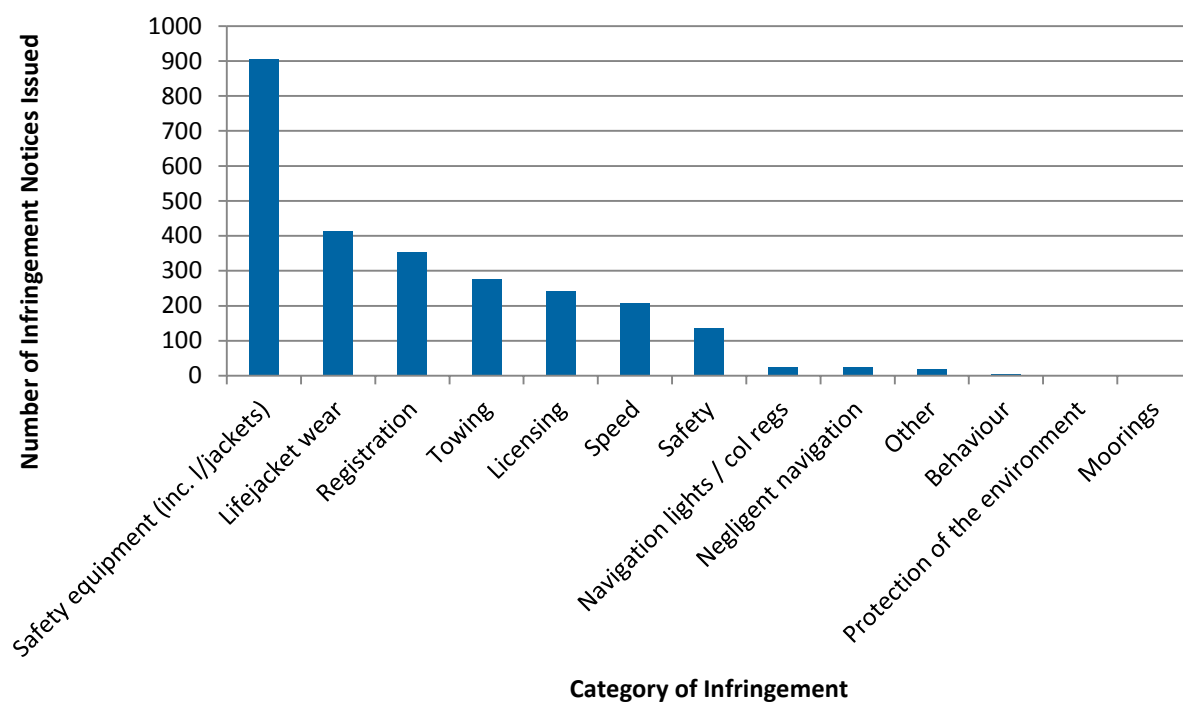
Between 2009 and 2013, the number of penalty notices issued within the Murray – Riverina region accounted for 21.3% (approximately 2,600) of all infringement notices issued throughout NSW. It should be noted that the vast majority of boaters in the region come from Victoria and not NSW. In addition to these penalties, 2,904 formal warnings were issued. The heavily utilised waters of the Murray River accounted for 69% of the region’s infringements.

Approximately 78% of penalty notices issues in the region between 2009 and 2013 were issued to Victorian residents.

As indicated in Figure 2 below, the infringements for which the most penalty notices were issued in the region were for:

- failure to carry the correct safety equipment including lifejackets (50%);
- inadequate or no vessel registration (15%); and
- towing unsafely or contrary to restrictions (10%).

Figure 2 – Infringement analysis



### 4.4 Incidents

In the period between 1 January 2009 and 31 December 2013, there were 158 vessel incidents reported to Roads and Maritime in the region. Most of the incidents occurred on the Murray River with five on Burrinjuck Reservoir, five on Lake Albert and three on Blowering Reservoir. One hundred and twenty-one of the incidents involved recreational vessels, 13 involved an interaction between a recreational and commercial vessel and 24 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 12 fatal incidents in the region during this period which resulted in 12 fatalities. Seven incidents of these incidents took place on recreational vessels. Four of the incidents occurred on the Murray River between Moama and Torrumbary and four took place outside of daylight hours. All but one incident occurred outside of the months of November to February. Three of the incidents involved non-powered craft. Five of the incidents involved a vessel capsizing while three involved a tow sport.

There were also 51 incidents which resulted in serious injury to the victim. A serious injury is classified as one requiring hospitalisation or outpatient treatment. These incidents resulted in 59 injuries. Most incidents involved recreational vessels and 27 took place on the Murray River between Barmah and Torrumbary. Eleven of these incidents involved a PWC. Common incident types were a result of tow sport activities, collisions and fuel induced fire or explosions. An additional 24 incidents resulted in minor injury to 35 persons; 10 of these incidents occurred as a result of a fuel-induced fire or explosion.

#### 4.4.2 Types of vessels

The main types of vessels involved in incidents, where known, were open runabouts (46%), PWCs (17%) and houseboats (16%).

#### 4.4.3 Incident locations

Vessel incidents were concentrated in the following locations.

- 76 incidents on the Murray River between Barmah and Torrumbary; and
- 16 incidents on the Murray River between Cobram and Gillamatong.

#### 4.4.4 Incident cause

Behavioural factors were identified as the primary cause of the majority of incidents. Thirty-seven incidents were the result of a lack of judgment, 13 incidents were attributable to no proper lookout and 12 were the result of excessive speed. Environmental factors were attributable to 19 incidents involving hazardous waters, tidal conditions and weather conditions. This is less than the State-wide average, most likely due to there being no coastal waters in this region. Material factors were attributable to 15 incidents involving failure of a variety of machinery and equipment.

#### 4.4.5 Incident type

The composition of incident types in the Murray - Riverina region were broadly consistent with State-wide averages. The most common type of incident in this region was collision with another vessel (46 incidents) (approximately 29% of the total incidents), which is a slightly lesser proportion than the State-wide average of approximately 32%.

The next most common types of vessel incident observed in the region were collisions with a fixed object (23 incidents), fire or explosion due to fuel (18 incidents) towing injuries (18 incidents), capsizing (14 incidents) and sinking (11 incidents). While there were a number of incidents such as a person being hit by a vessel (6 incidents) or fall overboard (4 incidents).

#### 4.4.6 Incident operation

The majority (90) of incidents occurred when the vessel involved was underway. Of those, 23 vessels were involved in towing activities, highlighting the popularity of tow sports in this region. Fourteen incidents occurred when vessels were at anchor, moored or berthed.

#### 4.4.7 Time of day, month and year

Where the time of the incident is known, 133 incidents occurred during daylight and 25 occurred at night. The majority of incidents occurred during the summer months, corresponding to the heaviest periods of boating activity. This also corresponds with a considerable increase in boating activity during holiday periods.

### 4.5 Key findings

Safety issues raised by stakeholders were largely concerned with waterway congestion and waterway user behaviour. The congestion issues highlighted were largely focused on the Murray River, especially at regional centres and tourist hubs. User behaviour concerns include vessel operators travelling at excessive speeds, creating excessive wash or not observing the correct distances off. Stakeholders specifically mentioned PWC and wake vessel operators as contributing to these concerns. Interstate and State-wide education campaigns are important in supporting this objective, however there are also actions that can be taken at the local level such as targeted campaigns regarding navigation in narrow channels with hazards such as snags and improving the visibility and clarity of signage.

During site visits and through analysis of stakeholder feedback, a large number of hazards such as snags and submerged obstacles were identified across most waterways in the region. This was raised as a significant safety concern by stakeholders. Woody debris is a natural component of river systems and whilst it can become a safety concern, is also integral in creating habitats and stabilising the river bed and riverbanks. It is important that the relevant authorities work cooperatively to manage both safety and environmental concerns appropriately.

The Murray-Riverina region is composed of a range of waterways with significantly different characteristics, such as the Alpine Waters. These waterways pose unique safety concerns due to cold water temperature and significant variations in water level due to rapid drawdowns for hydro power generation functions. In addition, wind and cold weather can lead to dramatic changes of the on-water conditions over a short period of time. These waterways have very different characteristics to the waters of the Murrumbidgee and Murray Rivers, which are relatively shallow, warm and have confined navigation channels. As such it is important to ensure that education, communication and compliance campaigns are targeted at appropriate waterways.

Figure 3 – Examples of safety issues



Example of site-specific signage for Alpine Waters with faded hazard signage in need of update



Snags and other hazards with navigation aids marking channel



Snags and other hazards in water as well as faded signage



Winter conditions on the Alpine Lakes



## 5. Access

### Key findings

- There are a large number of boat ramps in the Murray Riverina region that are spread across a substantial area and cater for users from both New South Wales and Victoria.
- There are a relatively few wharves, jetties and pontoons in the region which is influenced by the fluctuating water levels in many of the waterways which presents challenges for construction.
- Capacity concerns at regional centres and tourist hubs may be addressed by upgrading existing ramps.
- Opportunities to enhance waterway access using pontoons and jetties are limited in some locations due to narrow channels in many rivers and fluctuating water levels in some rivers and many manmade lakes.
- There are a number of management authorities in this region. Closer cooperation and collaboration between authorities could increase efficiency in planning and implementation of waterway infrastructure enhancements.

### Actions

- e. Work with councils and other agencies to improve the design and condition of existing boat ramps including car and trailer parking**
- f. Review opportunities to increase public tie-up areas in conjunction with providing amenities such as sewage pump-outs and toilets at strategic locations**
- g. Work with Snowy Hydro and local councils to explore opportunities to improve waterways access in the Alpine Lakes**

## 5.1 Overview of existing access facilities

Vessels access the waterways of the Murray – Riverina region in several ways including boat ramps, private and commercial moorings and club or private landing facilities. Trailered vessels can be launched and retrieved at public boat ramps, some of which have public facilities available such as trailer parking, fish cleaning tables and toilets. Some public wharves and jetties are also located on the region's waterways and provide alternate access to vessels that are on the water. 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 need of upgrade, poorly maintained and lacking amenities and access facilities.

### Boat ramps

There are approximately 114 formalised boat ramps.

- Location:
  - 43 of these ramps are located on the Murray River;
  - 14 of these ramps are located on the Murrumbidgee River;
  - nine are located on Lake Mulwala;
  - seven are located on Lake Eucumbene;
  - six are on the Darling River;
  - five are on the Edward River;
  - Blowering Reservoir, Burrinjuck Dam and Lake Hume each have four ramps;
  - Lake Albert, Lake Jindabyne, Lake Wyangan, and Talbingo Reservoir each have two ramps; and
  - Bundidgerry Creek, Khancoban Pondage, Lake Benanee, Lake Menindee, Lake Talbot, Lake Urana, Middle Creek, Tantangara Reservoir, Yanga Lake and Yass River each have one ramp.
- Material:
  - 85 are concrete ramps;
  - twelve are earth ramps;
  - eight are composed of gravel or sand; and
  - the remaining 10 are unknown.
- Ownership:
  - 86 of the boat ramps are owned and maintained by council

### Public jetties, wharves and pontoons

Further analysis of the region's infrastructure found that there are 29 access points including wharves, jetties, pontoons and landings.

- Location:
  - 16 are located on the Murray River;
  - Edward River, Finley Lake and Lake Wyangan each have two access points;
  - Lake Talbot, Lake Urana, Little Murray River, Mannus Lake, Murrumbidgee River, Yanga Lake and Darling River each have one access point.

Courtesy moorings

There are no courtesy moorings identified in the Murray – Riverina region, noting that there are no swing moorings in the region due to the physical characteristics of the waterways.

Sewage pump-out facilities

Sewage pump-out facilities are provided at a few locations in the region. These include: Euston (Murray River Terrace), Cobram (Murray River), Deniliquin (Edward River), Dareton (Murray River), near Lock 11 (Mildura, Murray River), Bruces Bend Marina (Murray River), Deep Creek Marina (Murray River) and Moama (Murray River).

Figure 4 – Example access facilities within the region



Boat Launching ramp at Pomona, Darling River



Boat ramp at Club Mulwala



Fort Courage Boat Ramp Upgrade



Dareton - Sewage Pump Out

### 5.1.1 Better Boating Program grants

Through the Better Boating Program, Roads and Maritime has provided grants totalling approximately \$3.4 million for 72 projects in the Murray – Riverina region between 2004/05 and 2013/14. A selection of these can be seen in Figure 6 with all projects listed in Table 2 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.rms.nsw.gov.au/projects/key-build-program/better-boating-program/index.html>.

Table 2 – List of grants provided to Murray-Riverina region through the BBP Projects

Recipient	Project	Final Grant
Albury City Council	Albury City Riverside Precinct Development Study (I & D)	\$30,000*
Albury City Council	Kremur Street Boat Ramp, West Albury (Stage 1 Additional Funding)	\$114,945
Albury City Council	Kremur Street Boat Ramp, West Albury (Stage 1)	\$200,000
Albury City Council	Kremur Street Boat Ramp, West Albury (Stage 2)	\$125,000
Albury City Council	Mungabareena Boat Ramp Extension, Albury	\$43,000
Albury City Council	Upgrades to the Lake Hume Resort Boat Ramp and	\$35,000*

Recipient	Project	Final Grant
	the Bowna Waters Reserve Boat Ramp, Albury	
Balranald Shire Council	Sturt Highway Bridge Boat Ramp at Balranald - Murrumbidgee River	\$30,000
Berrigan Shire Council	Tocumwal Boat Ramp Erosion Control	\$17,438
Berrigan Shire Council	Tocumwal Boat Ramp Upgrade, Tocumwal (Murray River)	\$214,652
Bombala Council	Black Lake Boat Ramp Precinct Upgrade, Bibbenluke	\$49,250
Central Darling Shire Council	Menindee Boat Ramp, Menindee (Darling River)	\$57,500
Central Darling Shire Council	Tilpa Bridge Boat Ramp, Tilpa	\$36,000*
Central Darling Shire Council	Wilcannia Boat Ramp - Baker Park, Wilcannia	\$42,500*
Corowa Rowing Club	Rowers Park Public Launching Ramp and Foreshore Improvements, Corowa (Murray River)	\$17,120*
Corowa Shire Council	Boat Ramp at Ball Park Reserve, Corowa Lagoon (Murray River)	\$129,000
Corowa Shire Council	Mulwala Boat Ramp Upgrade	\$25,000
Deniliquin Council	Construction of Boat Ramps - Edward River, Deniliquin	\$8,428
Deniliquin Council	Deniliquin Public Wharf Upgrade, Deniliquin	\$30,000*
Deniliquin Council	McLeans Beach Boat Ramp Upgrade (Stage 1), Deniliquin	\$88,919
Deniliquin Council	McLeans Beach Boat Ramp Upgrade (Stage 1), Deniliquin (Additional Funding)	\$35,329
Deniliquin Council	McLeans Beach Boat Ramp Upgrade, Deniliquin (Stage 2)	\$87,458
Deniliquin Council	Upgrade of Lawson Syphon Reserve Boat Ramp, Deniliquin	\$5,069
Deniliquin Council	Upgrade of the Sloane Street and Harfleur Street Boat Ramps	\$9,700
Deniliquin Council	Upgrade of Twin Rivers Boat Ramp, Riverina Highway, Deniliquin	\$12,320
Finley Lake Trust	Finley Lake Bank Stabilisation, Finley	\$15,000
Griffith City Council	Lake Wyangan Boat Ramp Access Road Upgrade	\$5,968
Griffith Sailing Club	Lake Wyangan Foreshore and Boat Ramp Development	\$27,482
Gundagai Shire Council	Morleys Creek Boat Ramp, Gundagai (Murrumbidgee River)	\$11,910
Hay Shire Council	Boat Ramp at Soapworks Bend - Hay, Murrumbidgee River	\$5,800
Hay Shire Council	Hay Weir Pool Snag Realignment, Hay	\$5,625*
Junee Shire Council	Toilet Amenities, Sandy Beach Reserve - Murrumbidgee River	\$15,000
Leeton Shire Council	New boat ramp at Gogeldrie Weir (Murrumbidgee River)	\$10,000
Leeton Shire Council	New Boat Ramp at Markeys Beach, Murrumbidgee River - Yanco	\$6,000
Moira Shire Council	Thompson's Beach Boating Facilities Upgrade, Cobram (Murray River)	\$92,400*
Murray Shire Council	Installation of flow meter and identification system for pump-out facilities	\$20,000
Murray Shire Council	Moama Murray River Access Plan	\$10,000
Murray Shire Council	Moama Wharf Upgrade, Horseshoe Lagoon Reserve, Moama	\$95,250*
Murray Shire Council	Picnic Point Bank Stabilisation and Public Pontoon, Mathoura (Murray River)	\$53,695
Murray Shire Council	Picnic Point Reserve (Murray River) Boat Mooring	\$29,500



Recipient	Project	Final Grant
	Facility	
Narrandera Shire Council	Lake Talbot Boat Ramp - Carpark Upgrade, Narrandera	\$143,307
Narrandera Shire Council	Lake Talbot Boat Ramp Amenities Upgrade, Narrandera	\$112,096
Narrandera Shire Council	Lake Talbot Boat Ramp Reconstruction, Narrandera	\$15,000
Narrandera Shire Council	Lake Talbot Boat Ramp Staging Area & Access Road Upgrade, Narrandera	\$26,090
Narrandera Shire Council	Lake Talbot Pontoon	\$5,000
Narrandera Shire Council	Rocky Waterhole Boat Ramp Upgrade, Lake Talbot Reserve, Narrandera	\$32,892
NPWS	Murray Valley Regional Park Boat Ramp Pontoon Facility, Moama	\$55,500*
NPWS	Murray Valley Regional Park Boat Ramp, Moama (Murray River)	\$166,500
NPWS	Regatta Beach Boat Ramp Facilities Improvements (Stage 2), Yanga Lake, Balranald	\$118,750
South Wagga Apex Club	Reconstruction of Apex Park Boat Ramp - Lake Albert	\$25,500
Tumbarumba Shire Council	Jingellic Reserve Boat Ramp Facility	\$38,920
Tumbarumba Shire Council	Khancoban Pondage Boat Ramp Improvement Scheme	\$39,500
Tumbarumba Shire Council	Mannus Lake Floating Pontoon	\$6,582
Tumut Shire Council	Log Bridge Boat Ramp Extension, Blowering Reservoir, Tumut	\$15,115*
Tumut Shire Council	The Pines Boat Ramp Upgrade, Blowering Reservoir, Tumut	\$65,350*
Urana Shire Council	Urana Aquatic Centre - Enhancement Project	\$15,800
Urana Shire Council	Urana Aquatic Centre Seating Enhancement, Urana	\$13,273
Urana Ski & Aquatic Club	Urana Aquatic Centre Shelter Upgrade, Urana	\$6,000
Wagga Wagga City Council	Bosley Memorial Park Amenities Upgrade, Wagga Wagga (Lake Albert)	\$86,000
Wagga Wagga City Council	Bosley Memorial Park Boating Access Improvements, Wagga Wagga (Lake Albert)	\$50,000*
Wagga Wagga City Council	Wiradjuri Reserve Boat Ramp, Wagga Wagga (Murrumbidgee River)	\$38,400
Wagga Wagga City Council	Wiradjuri Reserve Boat Ramp, Wagga Wagga (Murrumbidgee River) - Additional Funding	\$91,600
Wakool Shire Council	Barham Boat Ramp Upgrade, Barham (Murray River)	\$19,309
Wakool Shire Council	Barham Riverside Retaining Wall & River Access Steps, Barham	\$42,463*
Wentworth Angling Club	Fort Courage Boat Ramp Upgrade & New Pontoons - Wentworth (Additional Funding 1)	\$15,090
Wentworth Angling Club	Fort Courage Boat Ramp Upgrade & New Pontoons, Wentworth (Additional Funding 2)	\$33,761
Wentworth Angling Club	Fort Courage Boat Ramp Upgrade, Wentworth (Murray River)	\$59,000
Wentworth Services Angling Club Inc	Renew Existing Boat Ramp - Wentworth, Murray River	\$6,774
Wentworth Shire Council	Bottle Bend Recreational Boating Feasibility & Development Study, Monak (Murray River)	\$15,000*
Wentworth Shire Council	Dareton Waterfront	\$30,000
Wentworth Shire Council	Gol Gol Boat Ramp Steps and Landing	\$2,793
Wentworth Shire Council	Pooncarie Boat Ramp - Darling River	\$20,863
Wentworth Shire Council	Sewage Pump-out Unit Monitoring at Buronga, Dareton & Wentworth	\$21,292

Recipient	Project	Final Grant
Wentworth Shire Council	Wentworth Waterfront Rehabilitation, Wentworth (Darling River)	\$32,000
Sunset Strip Progress Assoc.	Lake Menindee Boat Ramp Upgrade, Sunset Strip	\$15,555
Snowy River Shire Council	Lake Jindabyne Boat Ramp Upgrade (Stage 1)	\$35,047
Lake Eucumbene Chamber Of Commerce	Old Adaminaby Boat Ramp Upgrade	\$19,152
Yass Valley Council	Yass River Boat Ramp Upgrade (Burrui Place), Yass	\$21,800
	<b>TOTAL</b>	<b>\$3,404,332</b>

\* denotes Active projects as of 11/11/2014

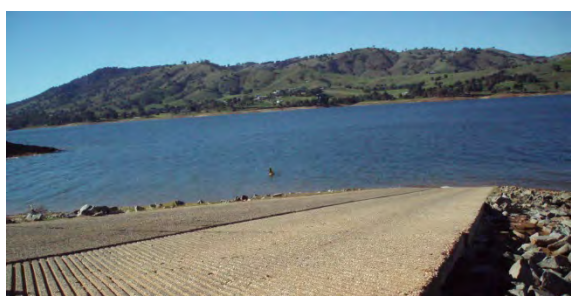
Figure 5 – Completed BBP projects examples within the region



Urana Aquatic Centre Enhancement, Urana



Picnic Point Reserve boat mooring, Murray River



Lake Hume boat ramp, Lake Hume



Lake Wyangan Foreshore and boat ramp, Griffith

## 5.2 Key findings

The Murray-Riverina region has a large number of boat ramps that are spread across a substantial area and cater for users from both New South Wales and Victoria. These boat ramps often offer a relatively basic level of amenity and some could be upgraded to accommodate the number of vessels using them.

Due to the fluctuating water levels and narrow rivers, there are a relatively small number of wharves, jetties and pontoons providing alternative access options in the region and there are limited opportunities to upgrade these existing wharves.

Feedback from stakeholders indicated that the condition of existing facilities was the issue of greatest concern. This feedback was largely in relation to boat ramp access particularly during low water levels. Upgrading these facilities to enhance waterway access at low water levels may also encourage waterway users to use a greater number of the existing boat ramps. This can result in spreading waterway usage and minimising capacity constraints seen at regional centres and tourist hubs. Stakeholder feedback also highlighted that existing amenities such as sewage pump-outs and toilets were difficult to access. While future demand may require new boating access facilities over the long term, over the next five years the priority will be to upgrade some existing higher use facilities to increase capacity and meet demand for waterway

access. These upgrades include re-surfacing of boat ramps, improving approach roads and parking layouts and structural upgrading of existing boat ramps and access facilities to continue to provide access, particularly during low water levels. Upgrading or installing jetties, pontoons and wharves to improve access and maintain facilities should also be considered where feasible. Some trailer parking projects may be delivered in conjunction with ramp upgrades.

The Murray River provides boating opportunities for a significant number of users from both Victoria and New South Wales. Whilst Roads and Maritime has jurisdiction over safety on the waterway, the relevant councils from both Victoria and NSW are responsible for waterway access in the respective Local Government Areas. Opportunities to work with the Victorian Department of Transport, Planning and Local Infrastructure should therefore be explored future.

Stakeholders also indicated that there were limited opportunities for boaters to tie up to access facilities in the region. As a result, some boaters tie up to trees which can impact on navigation in the river in some locations. Improvements such as providing temporary access infrastructure for vessels to tie-up to would improve the boating experience. There are opportunities on both sides of the river to consider such facilities.

Similarly, a number of stakeholders suggested a need to improve access facilities in Alpine Waters by upgrading ramps and associated facilities. Given the primary operation of these waters for electricity generation, and consequently fluctuating water levels significant liaison is required with Snowy Hydro and Councils relating to appropriate infrastructure.

Figure 6 – Examples of access opportunities/issues



Inglis Street boat ramp in Mulwala with opportunities for expansion



Kalkite boat ramp.



## 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.
- There are only a few commercial storage facilities in the region.
- Increased popularity in the use of non-powered craft has resulted in informal storage in popular areas of the region. Demand for formal non-powered craft storage is therefore expected to increase.

### Actions

- h. Work with councils and other partners to help deliver projects that support strategic growth in boat storage capacity in the region**
- i. Explore the need for non-powered craft storage**

### 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 Murray – Riverina region are principally:

- Private moorings;
- Commercial moorings;
- Commercial marina berths; and
- Domestic berths and other related storage.

On-water storage at commercial marinas, yacht / sailing clubs, or boating facilities, is provided through berths (floating or fixed), moorings (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.

Figure 7 – Examples of existing storage<sup>1</sup>



Deep Creek Marina Berths



Dry storage facility in Moama (Deep Creek Marina)



Private jetties and undercover storage at Endeavour Park, Mulwala



Merool on the Murray holiday park (Moama)



Rowing storage sheds and trailer at Wentworth

Storage at private facilities can be adjacent to private property on domestic jetties, slipways, boatsheds or berths/fore and aft moorings. In the Murray – Riverina region, storage usually runs parallel to the riverbanks using either piled moorings, berths or longer jetties scattered along the river and concentrated in areas such as Albury, Mildura, and Moama. The most popular mooring types are either fore and aft or post moorings with only a few buoys. In some areas the vessels are moored perpendicular to the river and hence extend into narrow stretches of the waterway which can impede navigation.

In the Alpine Lakes, there is generally no on-water storage, except for a small number of moorings (buoys) on Lake Jindabyne. These moorings currently operate under existing use. In the Southwest Slopes area, storage in dams such as Burrinjuck Dam is provided through either private or in some areas garage style lock-up for short and long term storage at holiday parks.

There is also no storage in areas such as Googong Reservoir, Pejar Dam or Oberon Lake. However it should be noted that boating access in these areas is limited to electric motor powered boats and/or non-powered crafts. These vessels are typically less than 6 m in length

<sup>1</sup> Wentworth Rowing storage photo obtained from Wentworth Rowing Club Facebook page.

and are most often stored on private property or residential streets on trailers and access the water via boat ramps.

#### 6.1.2 Overview of existing storage volume

It is estimated there are approximately 1,200 vessel storage spaces on the water or at associated land facilities in the region. Of these, approximately 820 are private mooring spaces and just over 280 are commercial mooring licences issued and administered by Roads and Maritime.

As with other regions, there are numerous wetland leases administered under licence with NSW Trade and Investment (Crown Lands), some of which are included in the total storage spaces quoted above. However, it is difficult to quantify numbers as the use is usually exclusive to the property owner and they cannot be sub-leased or licensed.

The river systems of the Murray – Riverina region generally provide less on-water storage than coastal estuaries and harbours. Registration data for this region, summarised in Section 3.1.2, highlights that a significant majority (91%) of all vessels are between 2 and 6 m in length and are therefore most likely stored on trailers that require ramp access. This may be due to the physical characteristics of the waterways in the region and lack of on-water storage influencing the types of boats used in the area.

Wake and water skiing vessels are very popular and are more likely to use dry storage, either private or in commercial storage facilities such as shed / garage style storage found in the Moama area.

There are large numbers of houseboats and other commercial vessels such as paddle steamers stored either privately or commercially along the rivers. Storage along berths or jetties is also provided on a long-term basis at holiday parks such as Merool on the Murray near Moama and at Burrinjuck Dam in the Southwest Slopes. Non-powered boating activities are also increasing in popularity in the region, reflecting a trend across NSW.

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

#### **Commercial and other storage**

In addition to private and commercial moorings, there are a small number of commercial storage spaces in this region including at:

- Lake Mulwala Holiday Park – which offers some private berths for hire for visitors.
- Deep Creek Marina / Perricoota Marina (18 km west of Moama) – which has approximately 120 berths primarily for houseboats but also for smaller vessels and is popular with tourists. It also offers private berth sales (freehold houseboat moorings) for houseboats.
- Dockside Marina in Mildura – which provides storage for commercial vessels such as a fleet of houseboats, other hire and drive vessels and general berth storage.
- Echuca, while on the Victorian side of the River, houses the largest fleet of operating paddle steamers in the world and provides moorings for a number of houseboats.
- A small number of hire and drive business – which store small vessels used for the hire and drive are also found along the river systems.

#### **Sailing and other clubs**

There are a small number of sailing clubs in the region, including Wagga Wagga Sailing Club and Lake Jindabyne Sailing Club. There are also clubs on the Victorian side of the border such

as at Albury-Wodonga, Yarrawonga –Mulwala and Mildura. These clubs are land-based and use access points such as river foreshore, ramps or similar to launch their crafts. Storage for these generally smaller vessels can be on-water or land-based, in an open hardstand area, or inside stacks in smaller sheds. In some cases the clubs offer members access to storage. Some of these vessels do not require registration and therefore do not appear on Roads and Maritime registrations statistics.

Other clubs in the region include:

- Wentworth District Rowing Club;
- Mildura Rowing Club;
- Australian Waterski and Wakeboard Federation (Culcairn);
- Mulwala Waterski Club;
- Yarrawonga Mulwala Amateur Canoeing Club;
- Moama Water Sports Club;
- Mildura District Ski Club;
- Brave Hearts Dragon Boat Club; and
- Lake Jindabyne Snow Dragons.

### **Dinghy and non-powered vessel storage**

Dinghy storage is generally not an issue in this region. As with other regions, the growth in the non-powered vessel usage has resulted in increasing demand for storage and access in popular tourist areas along the rivers as well as on some of the Alpine Lakes such as Jindabyne, particularly during the summer months. Apart from any storage at commercially operated hire sites, there is no formalised storage for these types of craft in the region.

## **6.2 Key findings**

Stakeholder and community feedback highlighted a general satisfaction with vessel storage in the region, with the following issue being raised:

- The need for on-water storages such as marinas in the region and the need for storage away from the navigable waters;
- Perception that the design of moorings and berths can lead to poor usage of space and impede the navigable waters;
- Need for dry storage in Albury; and
- Lack of storage for non-powered crafts is becoming a growing issue.

Vessel growth in the region is higher than the State average of 2.9% and this region had the second highest number of boats per person in the State. Although approximately 9% of the regions vessels are over 6 m, the average size of recreational vessel across the State is forecast to increase. The growing demand for on-water storage is also highlighted by the waiting lists for moorings in key locations such as Moama, Perricoota and Mildura. In some mooring areas, no new mooring licences have been issued for several years or longer due to the slow turnover of mooring licence holders.

As noted above, non-powered craft are also popular in this region. Whilst numbers are not easily identifiable since these vessels do not require registration, anecdotal evidence suggests that the popularity of these crafts are growing at an even higher rate than that identified for

registered vessels. Storage options for these vessels will therefore also need to be considered in the future for this region.

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.





## 7. Feedback on Consultation Draft

### 7.1 Feedback Summary

Feedback received from Councils, other stakeholder groups and the general public was supportive of the Key Findings and Actions contained in the Consultation Draft.

#### 7.1.1 Safety

Submissions supported the proposed safety actions in the Consultation Draft, particularly the proposal to investigate ways to spread users along the waterway to minimise congestion and reduce conflicts between different users. The river sharing solution on the Edwards River at Deniliquin was cited as a model that could be adopted elsewhere.

Feedback at the public information sessions also supported the key findings in the Consultation Draft, including the need for additional education and compliance work especially for interstate boaters unfamiliar with NSW boating legislation. In addition, it was suggested that a speed limit should be applied to the entire Murray River unless an aquatic licence is issued and that BSOs should have the powers to breathalyse potentially intoxicated vessel masters. Drinking on the water was noted as a significant safety issues on the Murray River particularly during the summer holiday period.

It was also suggested that arrow markers should be used as navigation aids on certain sections of the Murray River.

#### 7.1.2 Access

The feedback received broadly endorsed the key findings regarding access, with submissions from Councils helping to inform the list of projects identified in Chapter 8 which will receive priority funding allocations as part of the NSW Boating Now program.

Feedback at the public information session supported upgrades to existing boating access points in the region and improvements to vessel tie up facilities on the Murray River. Specific comments were made about the need to upgrade the wharf at Mildura and provide a public wharf at Echuca.

Feedback suggested additional sewage pump out facilities were needed in the region, along with launching facilities for non-powered craft. The need for additional slipway facilities on the Murray River was also noted, especially in Echuca.

Concerns were expressed about the loss of the Maritime Office in Moama.

Stakeholders that use Lake Talbot cited that aquatic weeds and water quality are a problem in the area that is limited boating access to some parts of the Lake. In addition to restricting access, the weeds are also congesting the waterway and changing water flow which is affecting water quality and recreational boating activities.

#### 7.1.3 Storage

The need to identify on water and land based storage options at the key boating areas was highlighted in consultation with Councils and other stakeholders. Commercial vessel operators in particular suggested there is unmet demand for commercial moorings in some parts of the Murray.

#### 7.1.4 Other issues (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.

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

\$3.64 million in NSW Boating Now funding has been allocated to support delivery of the following 28 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](http://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. Improve boating facilities at Apex Park, Lake Hume
2. Install solar lighting at Mungabareena Reserve boat ramp, East Albury
3. Install non-powered vessel launching facility at Wonga Wetlands, East Albury
4. Support concept planning to improve the boating experience at the Murray River Riverside Precinct, Albury
5. Upgrade car/trailer parking at Dareton boat ramp
6. Upgrade boat ramp and car/trailer parking at James King Park, Gol Gol
7. Install pontoons at Balranald Caravan Park boat ramp, Balranald
8. Install pontoons at the Kyalite Reserve boat ramp, Kyalite
9. Install pontoons and widen boat ramp at Euston Reserve, Euston
10. Support investigations into improved boating access at Lake Benanee, Euston
11. First stage of improvements to boating access at Horseshoe Lagoon, Moama
12. Improve boating access at Moama Beach, Moama
13. Upgrade boat ramp and car/trailer parking at Picnic Point, Mathoura
14. Bank reinstatement works at Lake Talbot, Narrandera
15. Install new pontoons at Lake Talbot, Narrandera
16. Upgrade access road and install new toilet facility at the Rocky Waterholes boat ramp, Narrandera
17. Investigate designs for new pontoon at Old Brewery Road, Narrandera
18. Upgrade boat ramp and car/trailer parking at Lions Park, Corowa
19. Upgrade boat ramp and car/trailer parking and install pontoon and sewage pump-out at Purtle Park, Mulwala
20. Install pontoons at McLean Beach boat ramp and Lawson Syphon boat ramp, Deniliquin
21. Extend boat ramp at Mannus Lake, Tumbarumba
22. Reconstruct pontoon at Mannus Lake, Tumbarumba
23. Upgrade boat ramp and car/trailer parking at Apex Park, Lake Albert
24. Investigate opportunities to improve boating access in Lake Jindabyne and Lake Eucumbene
25. Improve boating access at Willoughby's Beach, Murray Valley Regional Park
26. Way-finding signage to Swift's Creek boat ramp, Mathoura
27. Provide non-powered vessel launching facilities adjacent to Edward River Bridge, Mathoua
28. Review and provide sewage pump-out and mooring facilities for houseboats along the Murray River

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

	Action	Delivery
<b>Safety</b>	<b>Review strategies to improve user behaviour and reduce waterway congestion</b>	Roads and Maritime to work with MMC to review current approach to addressing the user behaviour issues identified for this region including education and compliance campaigns. A number of priority boating infrastructure projects under “Access” will assist in reducing waterway congestion by encouraging waterway users to use more of the waterway and separating different user groups.  Roads and Maritime and MMC will explore other opportunities to reduce congestion and separate user groups.
	<b>Continue to work with Victorian marine safety authorities and boating groups to extend NSW safe boating messages into Victoria</b>	The MMC and Roads and Maritime will actively work with Marine Safety Victoria to encourage interstate safety campaigns.
	<b>Review and improve signage and management of hazards and snags</b>	Roads and Maritime will review existing signage and navigation aids across the region and upgrade as required with a focus on the issues raised during stakeholder and community consultations on the Murray Inland Regional Boating Plan. This will include exploring opportunities to increase awareness of hazards in the Murray Inland region such as snags.
	<b>Review strategies to target the unique boating safety issues seen in Alpine Waters</b>	Roads and Maritime and MMC to review the current approach to education, communication and compliance campaigns within the alpine region to improve awareness of the safety concerns and requirements specific to the Alpine area.

<b>Access</b>	<b>Work with councils and other partners to improve the design and condition of existing boat ramps including car and trailer parking</b>	\$3.62 million in NSW Boating Now funds have been allocated to support the delivery of the 28 Priority Regional Projects listed in Table 2.
	<b>Review opportunities to increase public tie-up areas in conjunction with providing amenities such as sewage pump-outs and toilets at strategic locations</b>	
	<b>TfNSW to work with Snowy Hydro and local councils to explore opportunities to improve waterways access in the Alpine Lakes</b>	Project 24 in Table 2 will explore opportunities to improve boating access in Lake Jindabyne and Lake Eucumbene.
<b>Storage</b>	<b>Work with councils and other partners to help deliver projects that support strategic growth in boat storage capacity in the region</b>	MMC has begun working with Crown Lands and industry to identify infrastructure needs to support boat storage facilities and will consider opportunities relevant to the Murray Riverina Region
	<b>Explore the need for non-powered craft storage</b>	While initial consultation suggested there is unmet demand for 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.

# Appendix A – List of Councils

The list of Councils located within the Murray-Riverina region.

Appendix A – Table 1 – List of councils

Councils in the region
Albury City Council
Balranald Shire Council
Berrigan Shire Council
Bland Shire Council
Bombala Council
Boorowa Council
Broken Hill City Council
Carrathool Shire Council
Central Darling Shire Council
Conargo Shire Council
Coolamon Shire Council
Cooma-Monaro Shire Council
Cootamundra Shire Council
Corowa Shire Council
Deniliquin Council
Goulburn Mulwaree Council
Greater Hume Shire Council
Griffith City Council
Gundagai Shire Council
Harden Shire Council
Hay Shire Council
Jerilderie Shire Council
Junee Shire Council
Leeton Shire Council
Lockhart Shire Council

## Councils in the region

Murray Shire Council

Murrumbidgee Shire Council

Narrandera Shire Council

Oberon Council

Palerang Council

Queanbeyan City Council

Snowy River Shire Council

Temora Shire Council

The Council of the Shire of Wakool

Tumbarumba Shire Council

Tumut Shire Council

Unincorporated Far West

Upper Lachlan Shire Council

Urana Shire Council

Wagga Wagga City Council

Weddin Shire Council

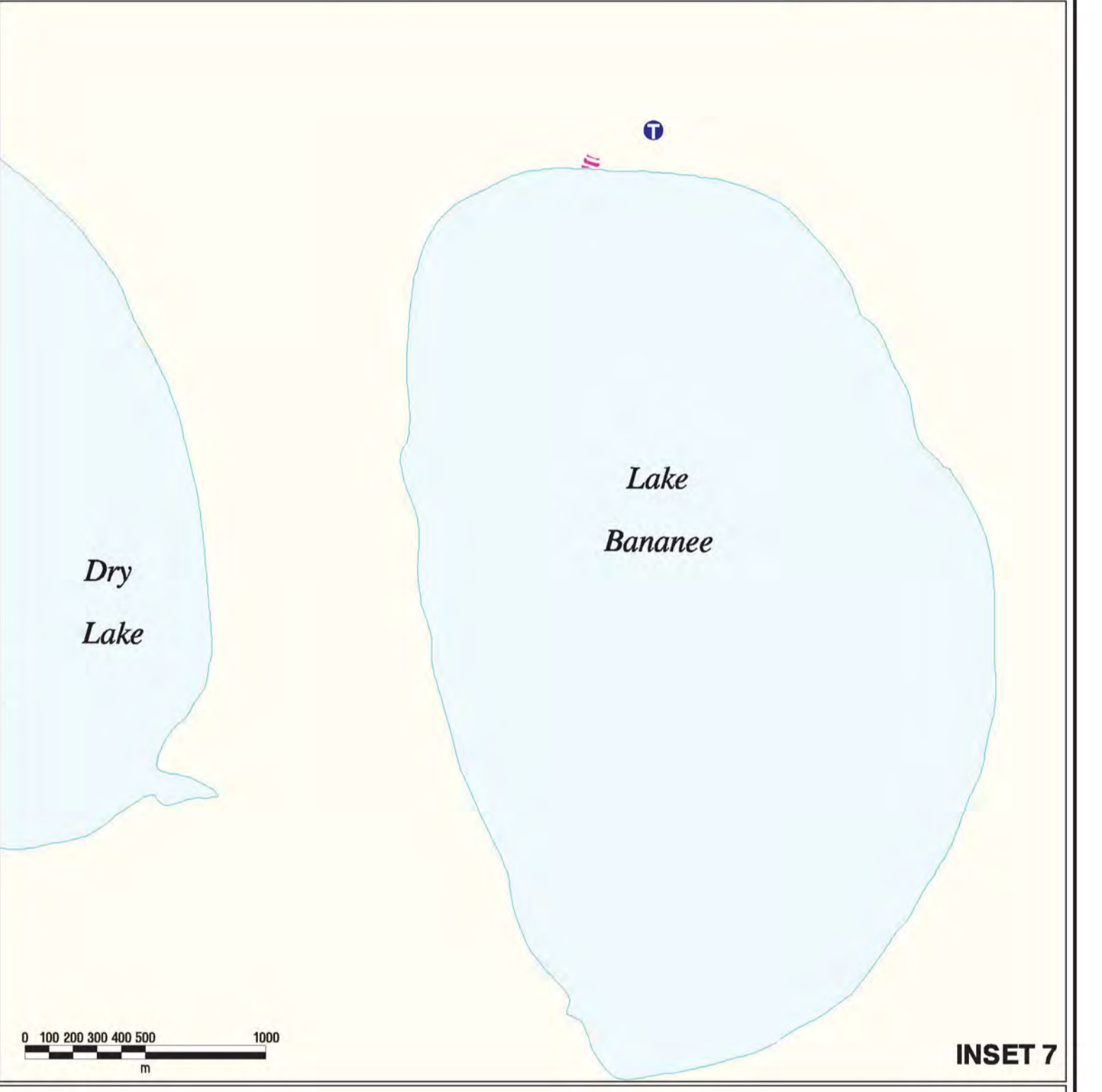
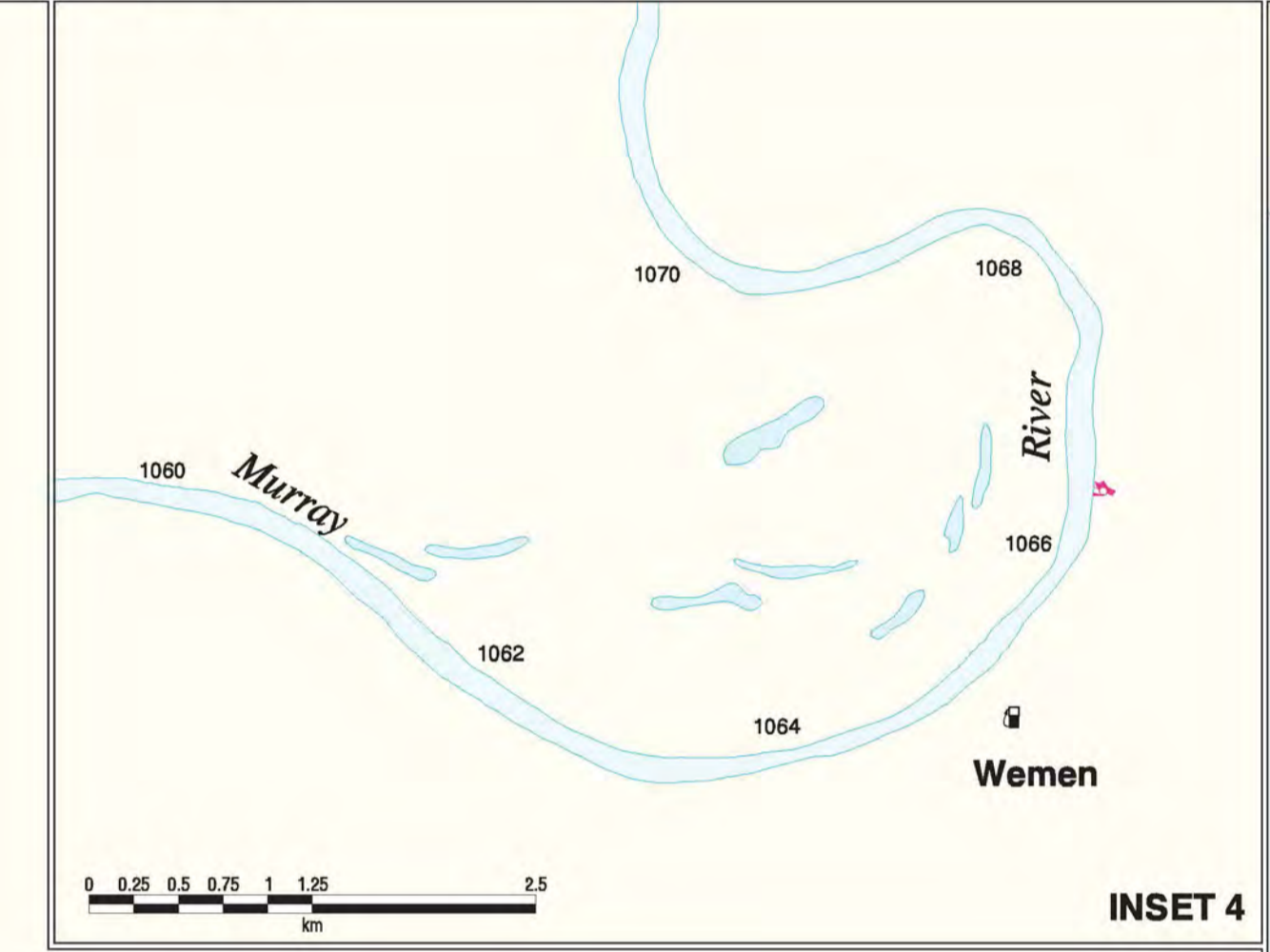
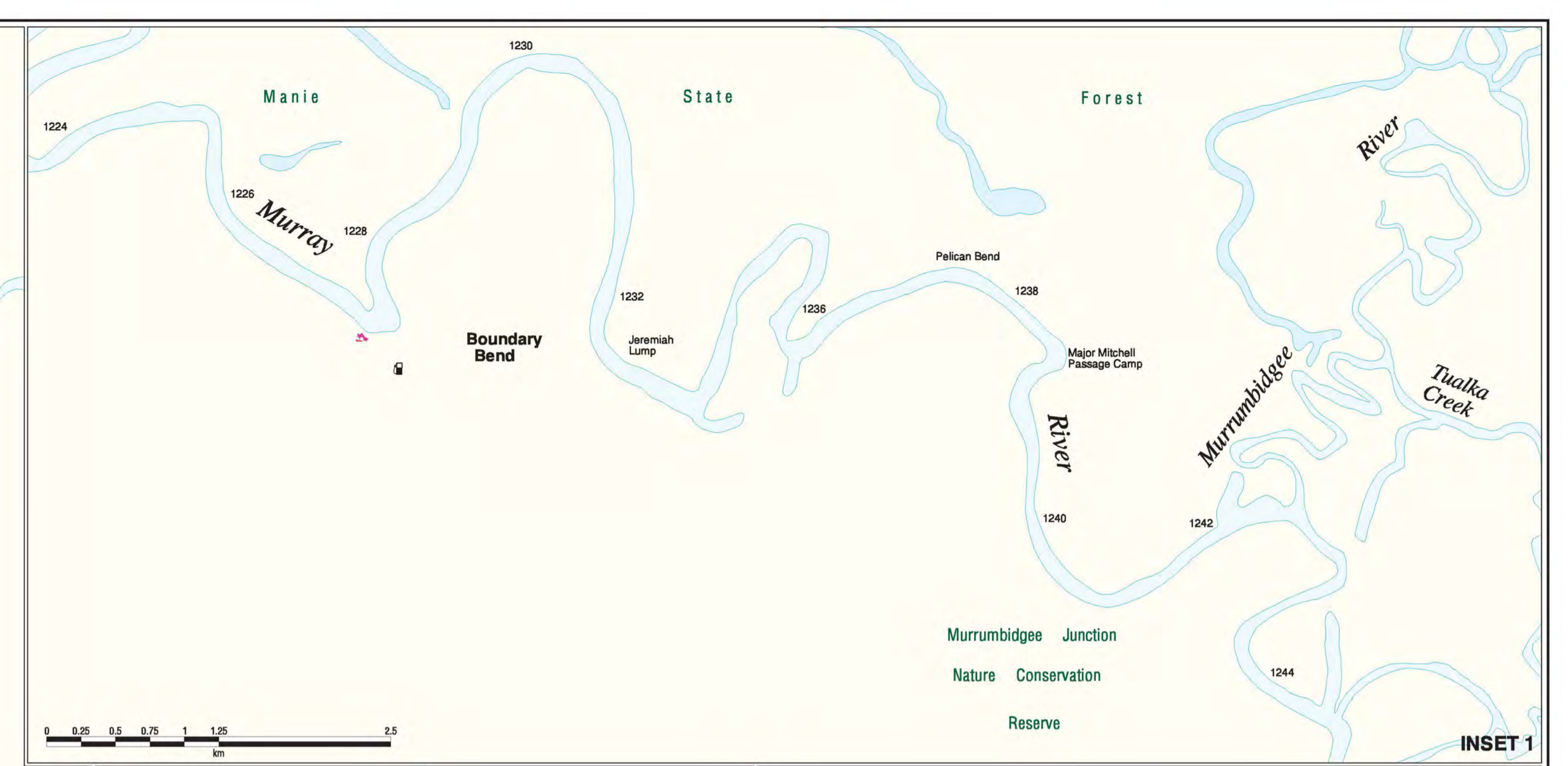
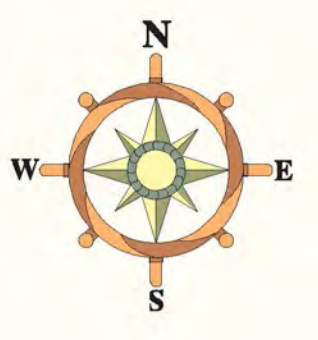
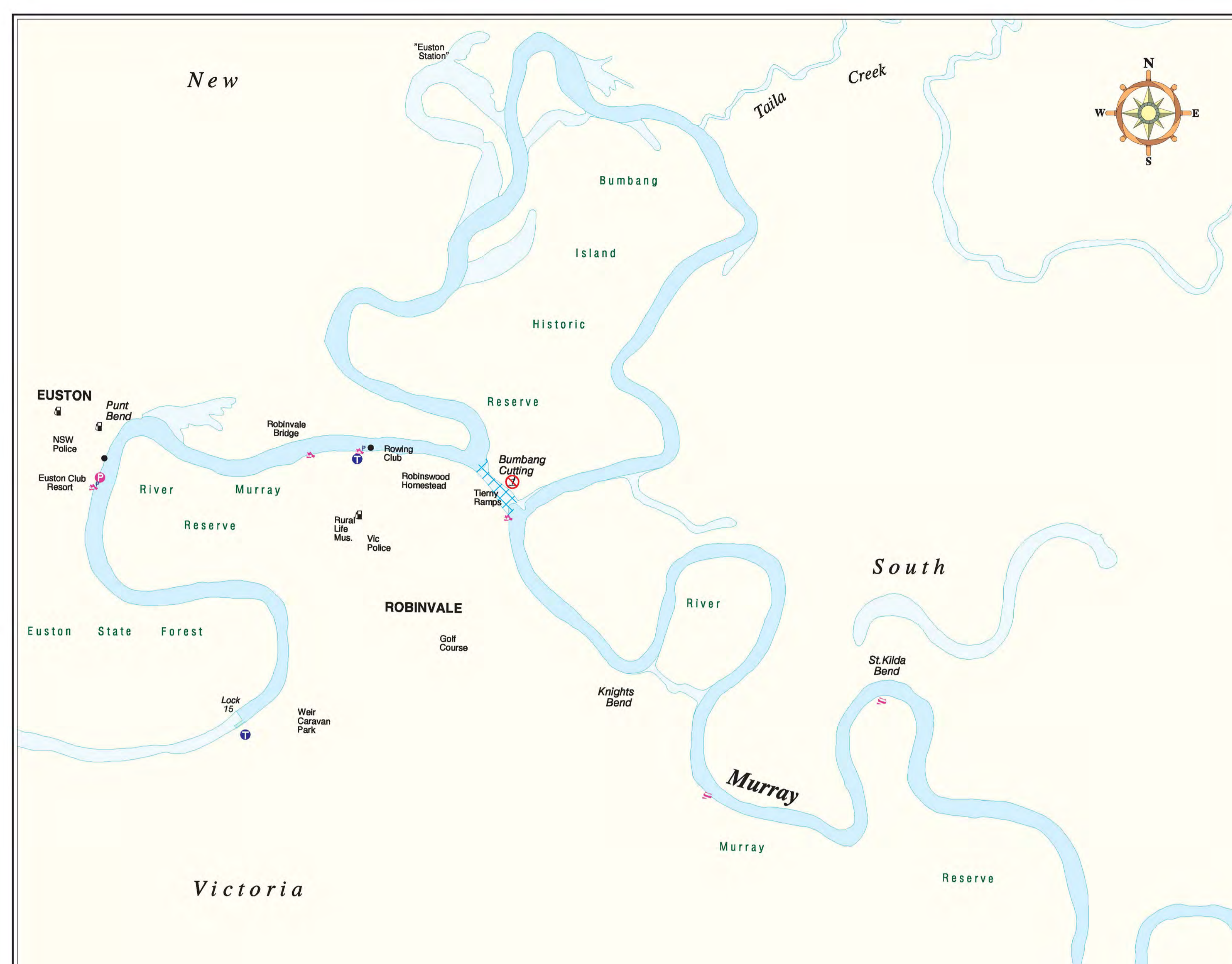
Wentworth Shire Council

Yass Valley Council

Young Shire Council



# Appendix B – Maps



MAP OF  
**Murray River - Euston, Robinvale Area, including Insets for Boundary Bend, Tooleybuc, Nyah, Wemen and Wood Wood.**

**Scale: 0 to 2.5 km**

**NSW GOVERNMENT** Transport Roads & Maritime Services

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Victoria

New

Murray

1318

Tooleybuc Sporting Club

River Walk

1320

Tooleybuc

South

1322

1324

1326

Wales

1328

River

Piangil

Police

0 75 150 225 300 375 750 m

INSET 2

Channel Island

1302

Byerly Bend

River

Murray

1304

Bitch and Pups

1306

Old School Hall

Goodnight

0 50 100 150 200 250 500 m

INSET 6

Nyah

State

Forest

Murray

New

1352

Koraleigh

Gallows Bend

1354

Devils Elbow

South

Nyah Recreation Reserve

Police

1356

Speewa

Nyah Bridge

Croafish Creek

Nyah

1358

Vinifera

River

1360

Wales

River

1362

River

1364

Reserve

Victoria

0 100 200 300 400 500 1000 m

INSET 3

New

1338

Murray

South

1340

Wales

River

Black Stump Bend

Wood Wood

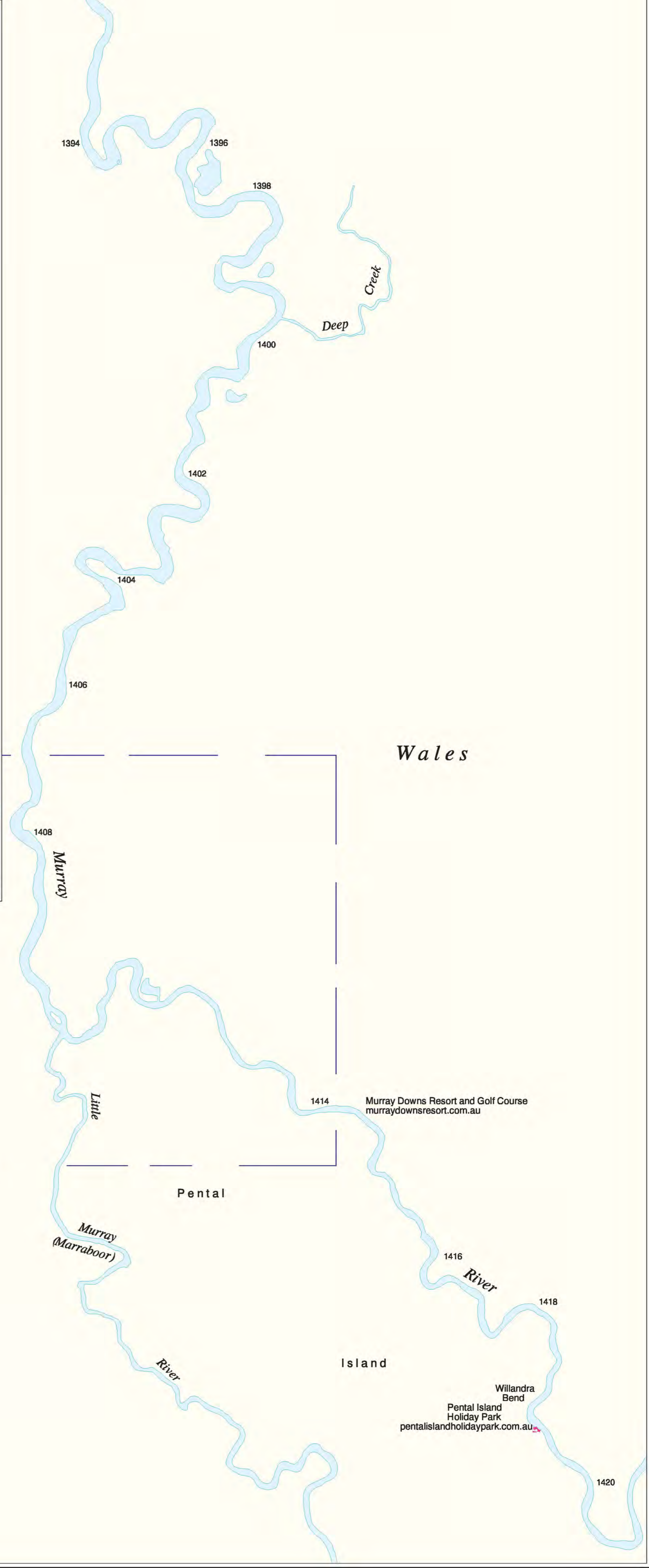
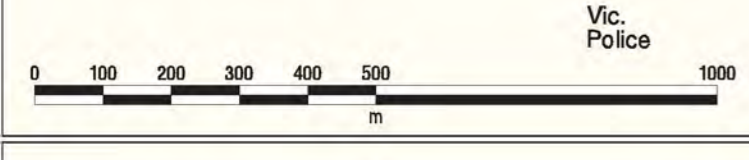
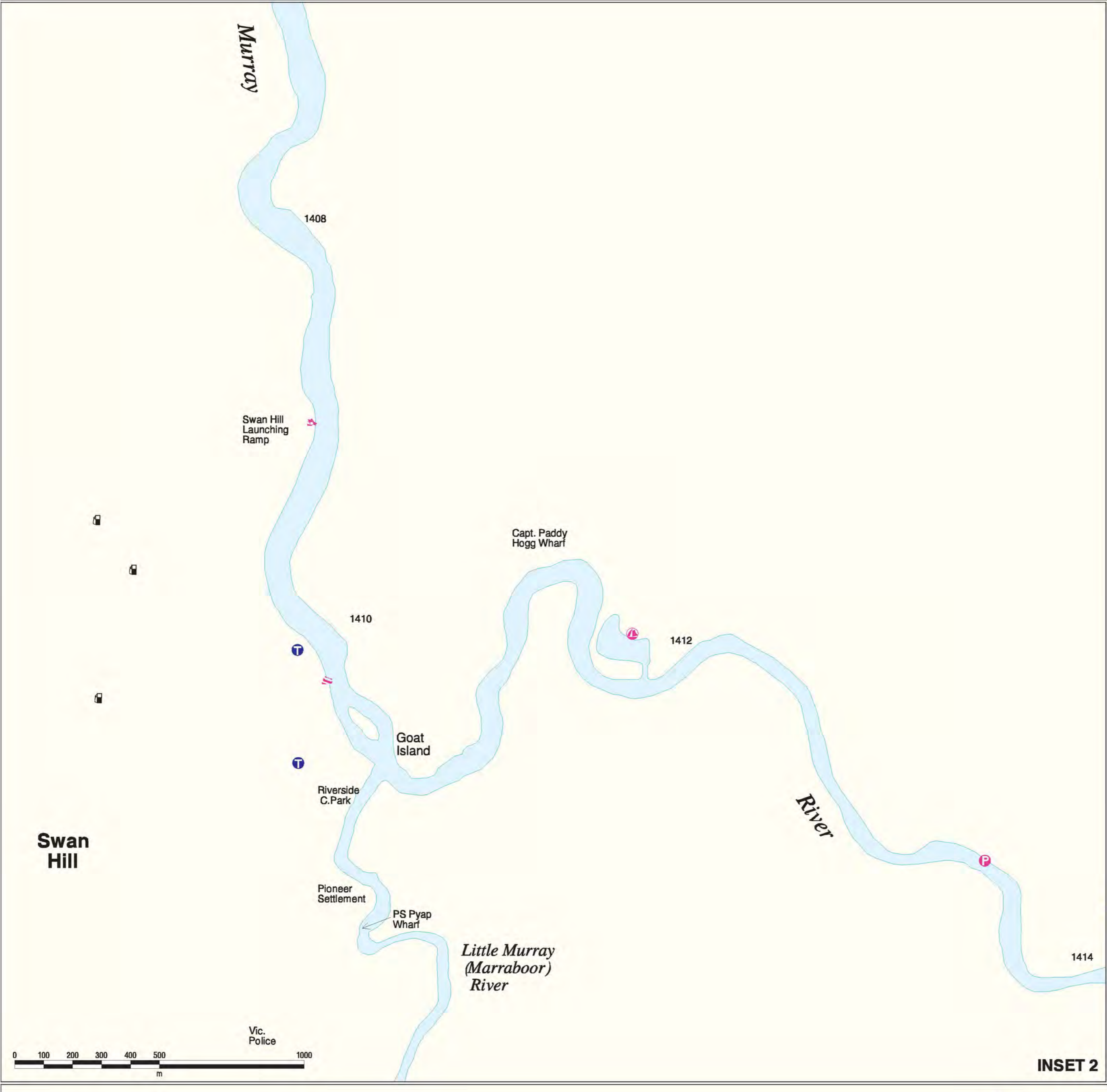
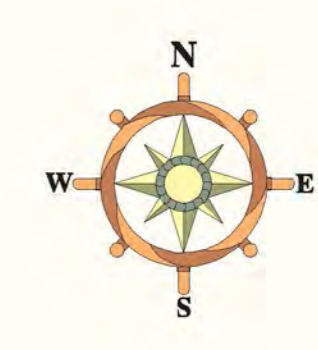
1342

Nyah State Forest

Victoria

0 75 150 225 300 375 750 m

INSET 5

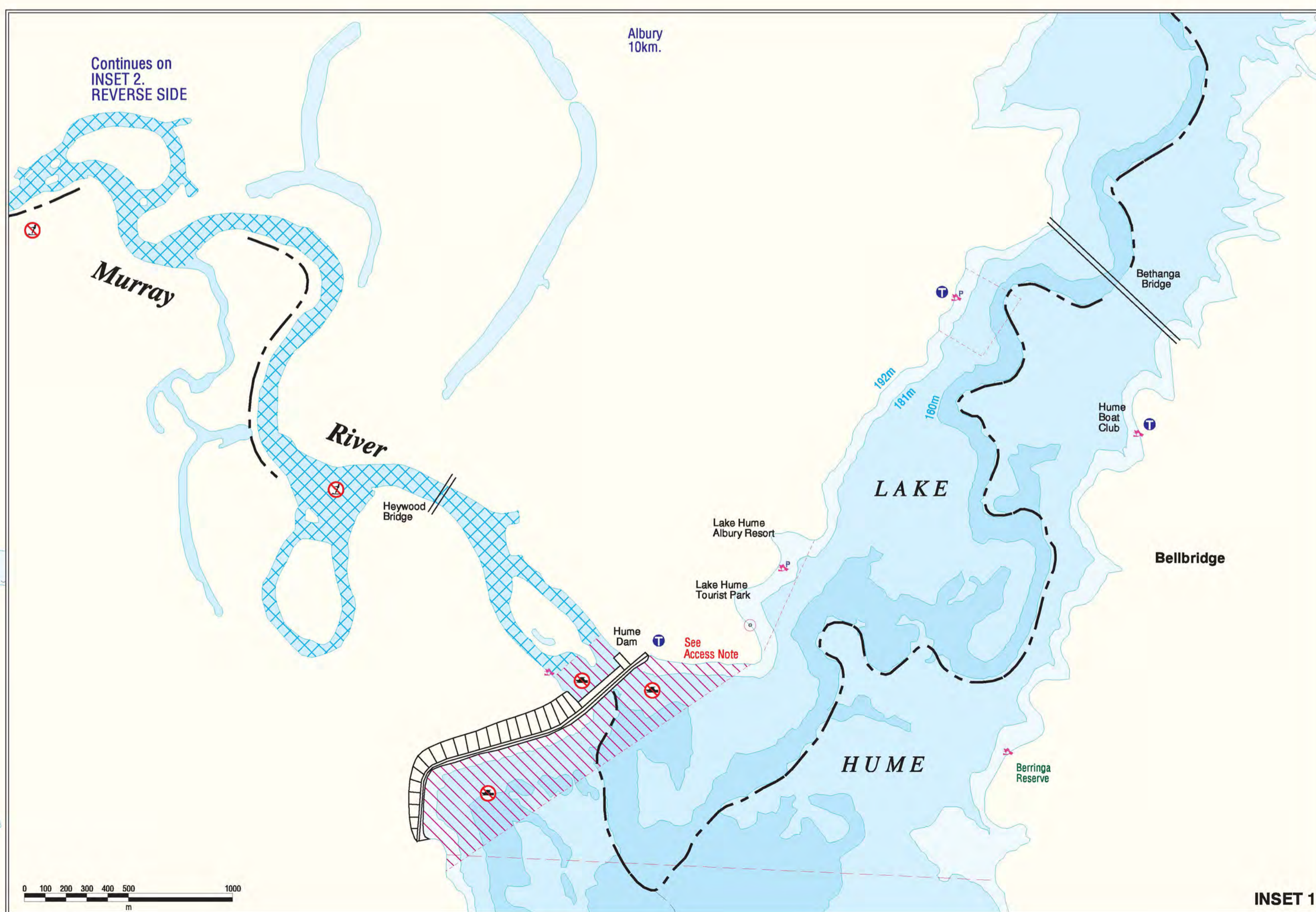
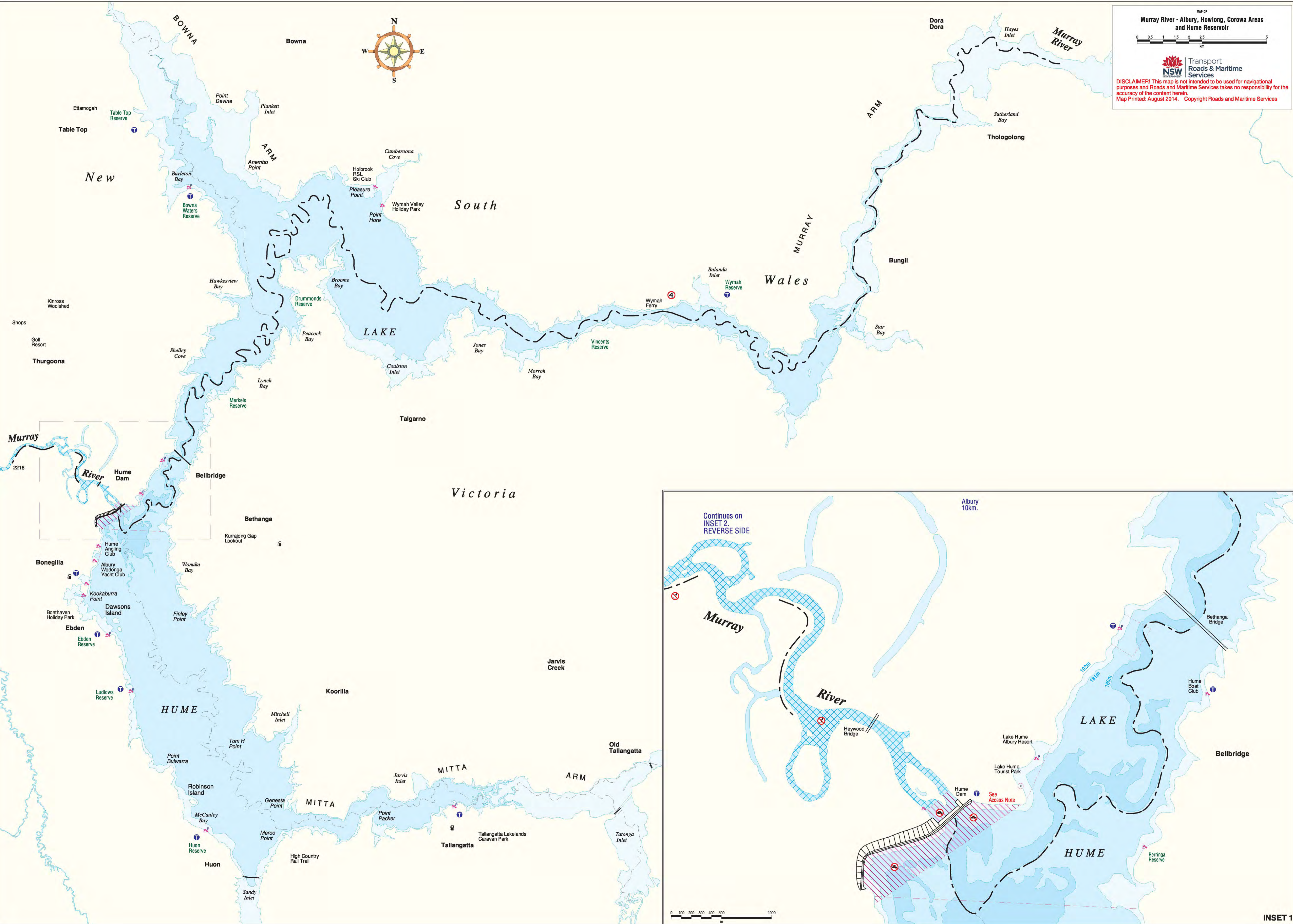
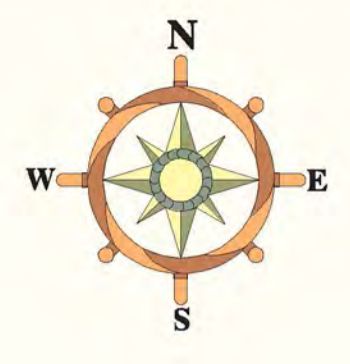


MAP OF  
**Murray River - Swan Hill Area, including  
 Insets of Murrumbidgee, Barham and Gunbower to Torrumberry.**

NSW GOVERNMENT  
 Transport  
 Roads & Maritime  
 Services

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New South Wales

COROWA

Mulwala 37km.  
SEE MAP 19.

Bundalong  
51 River Km.  
SEE MAP 19.

Howlong 27km.  
44 River Km.  
SEE INSET 3.

Corowa 27km  
44 River Km.  
SEE INSET 4.

New

Howlong

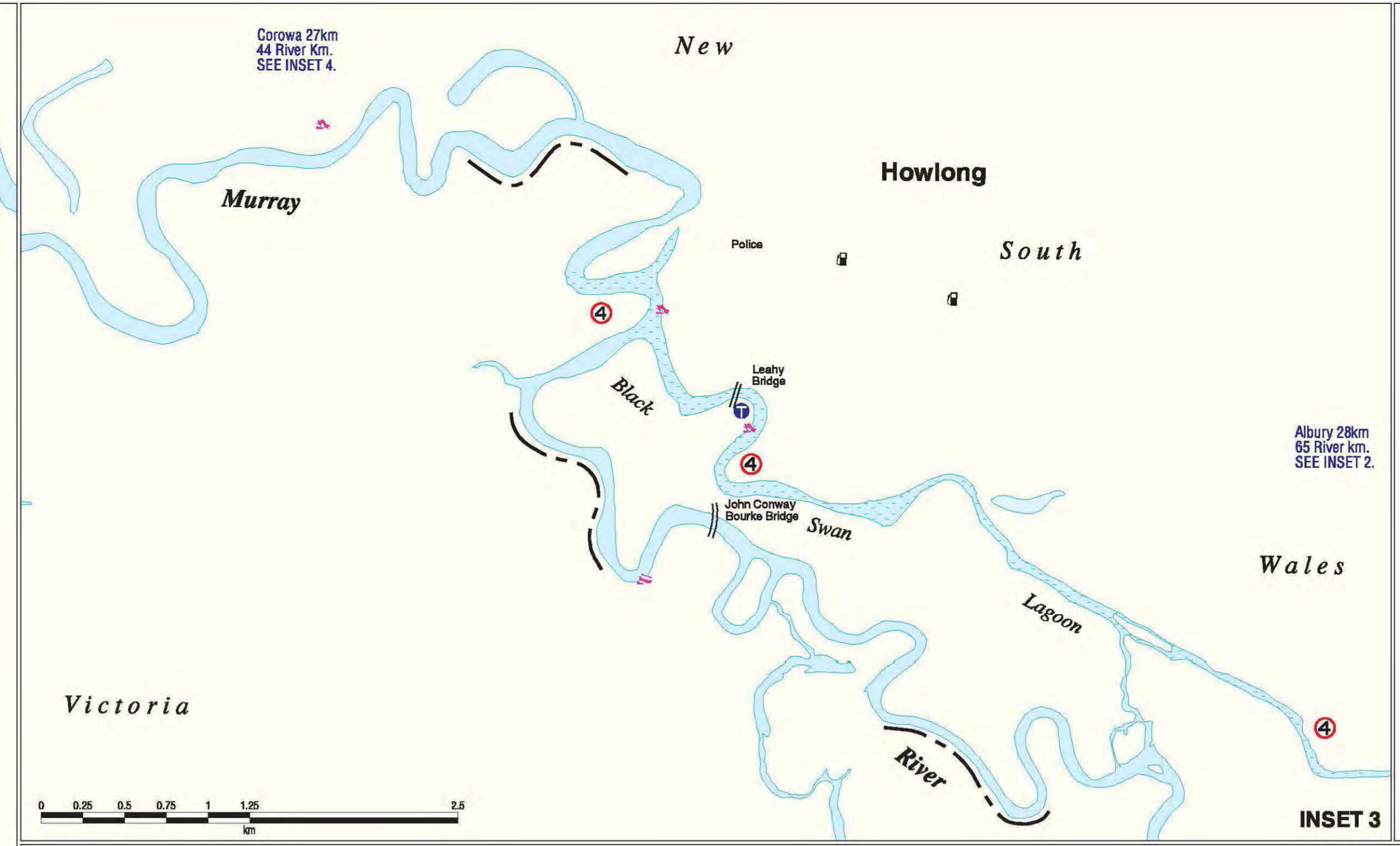
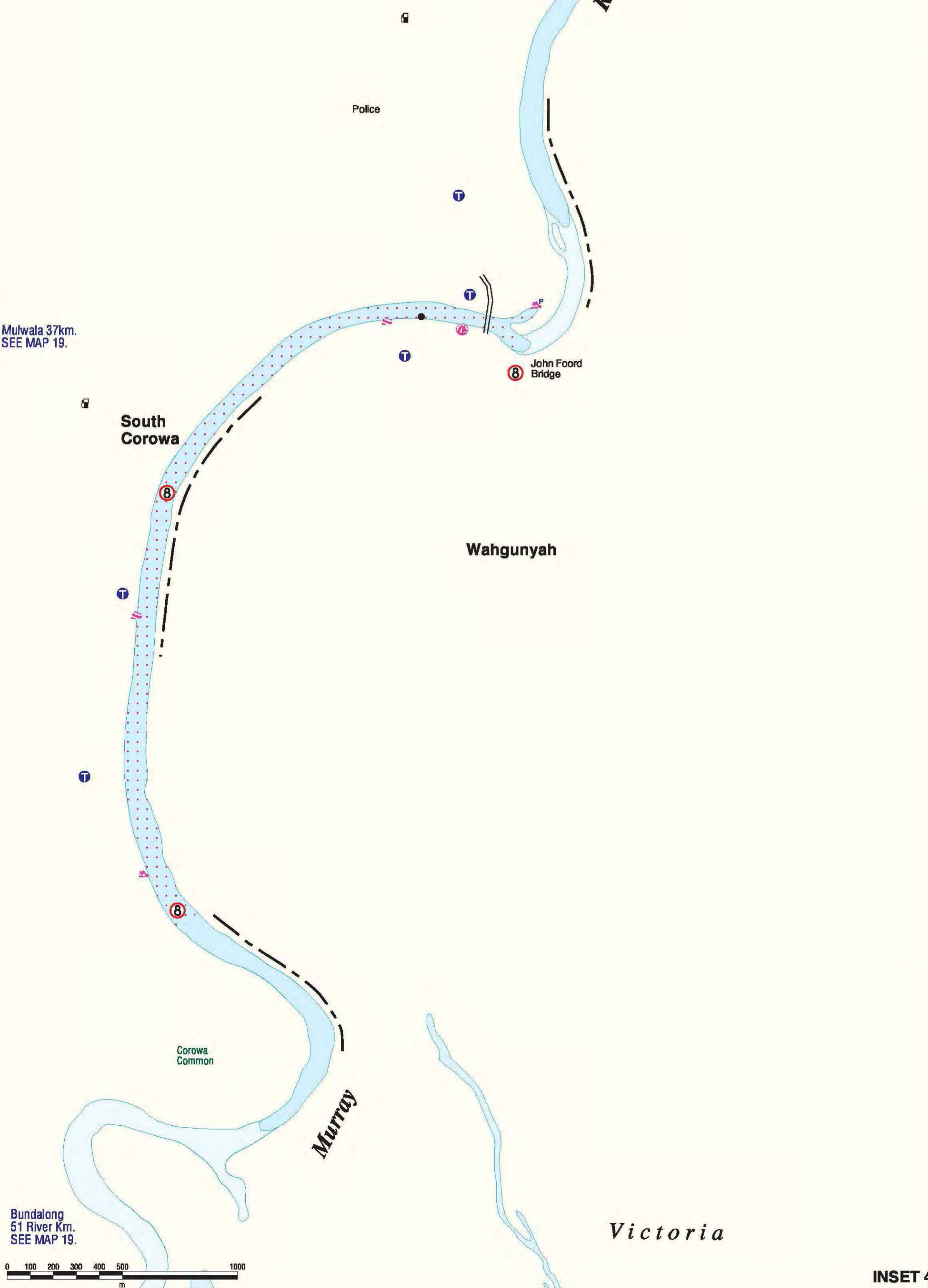
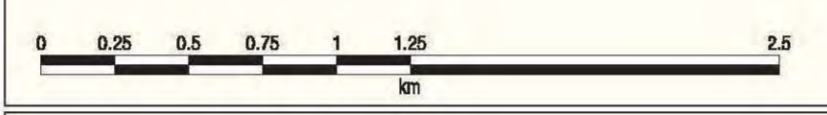
South

Wales

Albury 28km  
65 River km.  
SEE INSET 2.

INSET 3

Victoria



New

North Albury

South

Wales

ALBURY

Howlong 31km  
65 River Km.  
SEE INSET 3.

Murray

West Albury

Pool

Union Bridge

South Albury

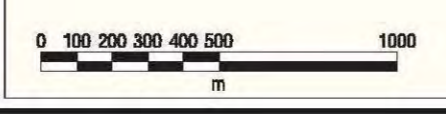
Willow Bank

Gateway Island

Police

WODONGA

Victoria

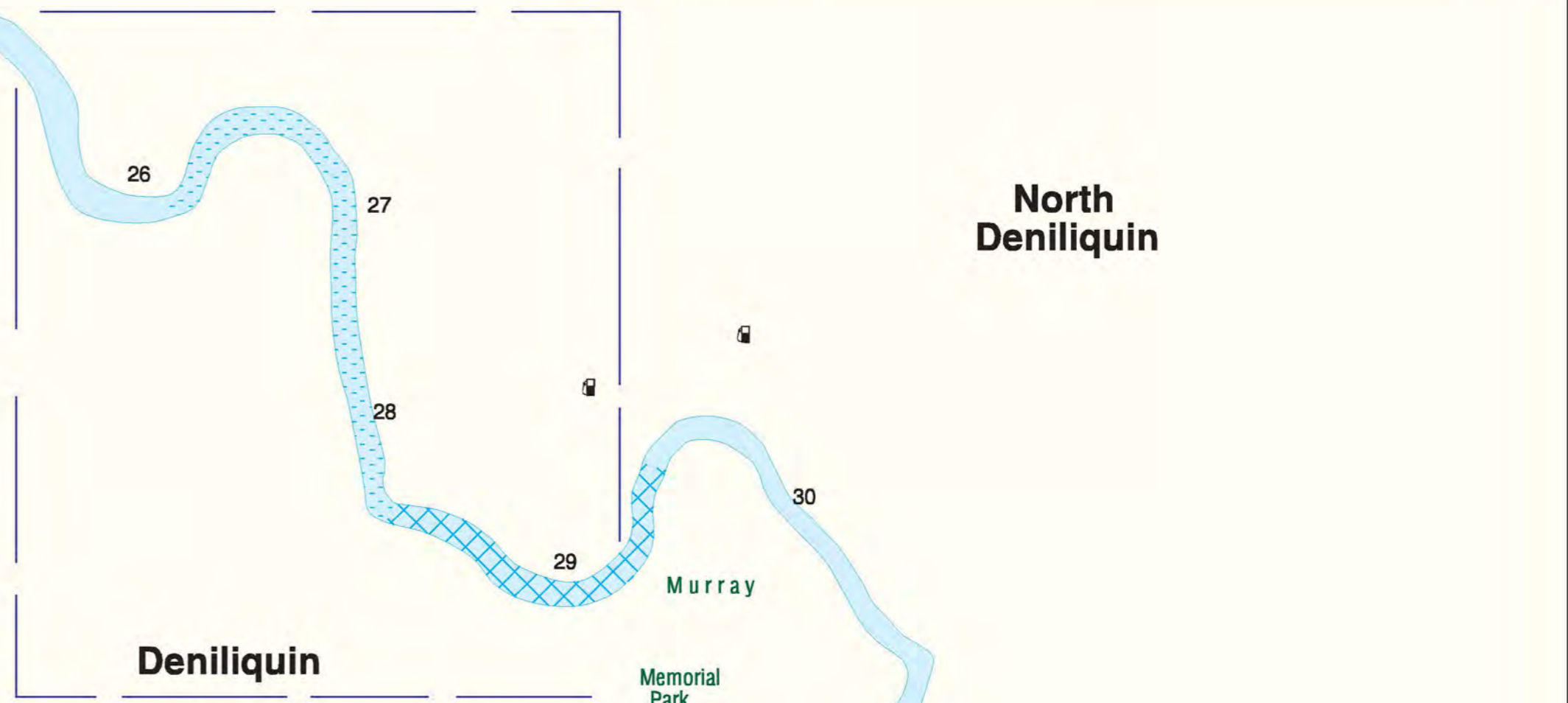
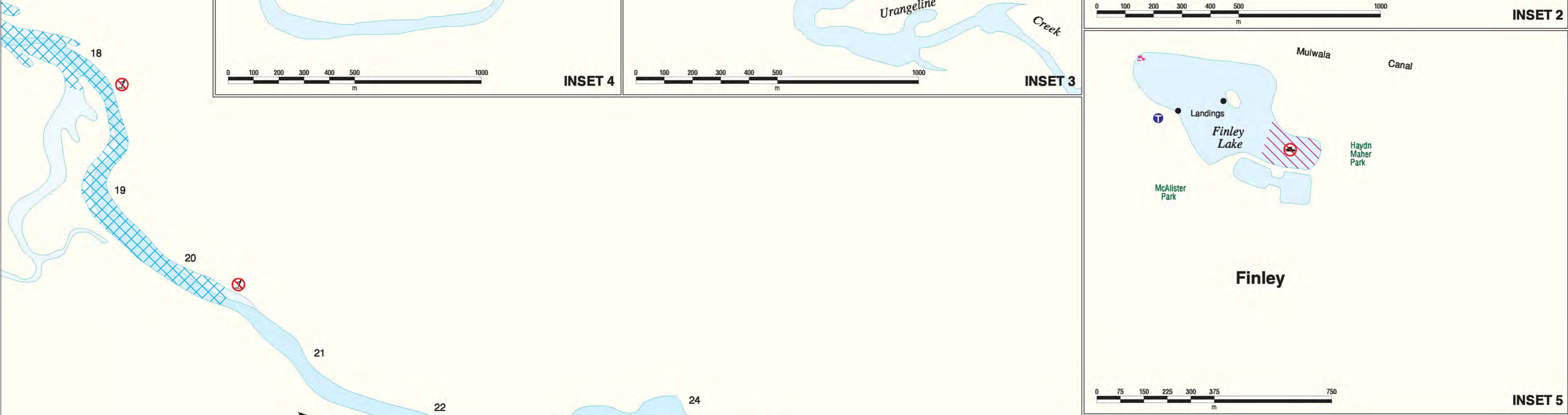
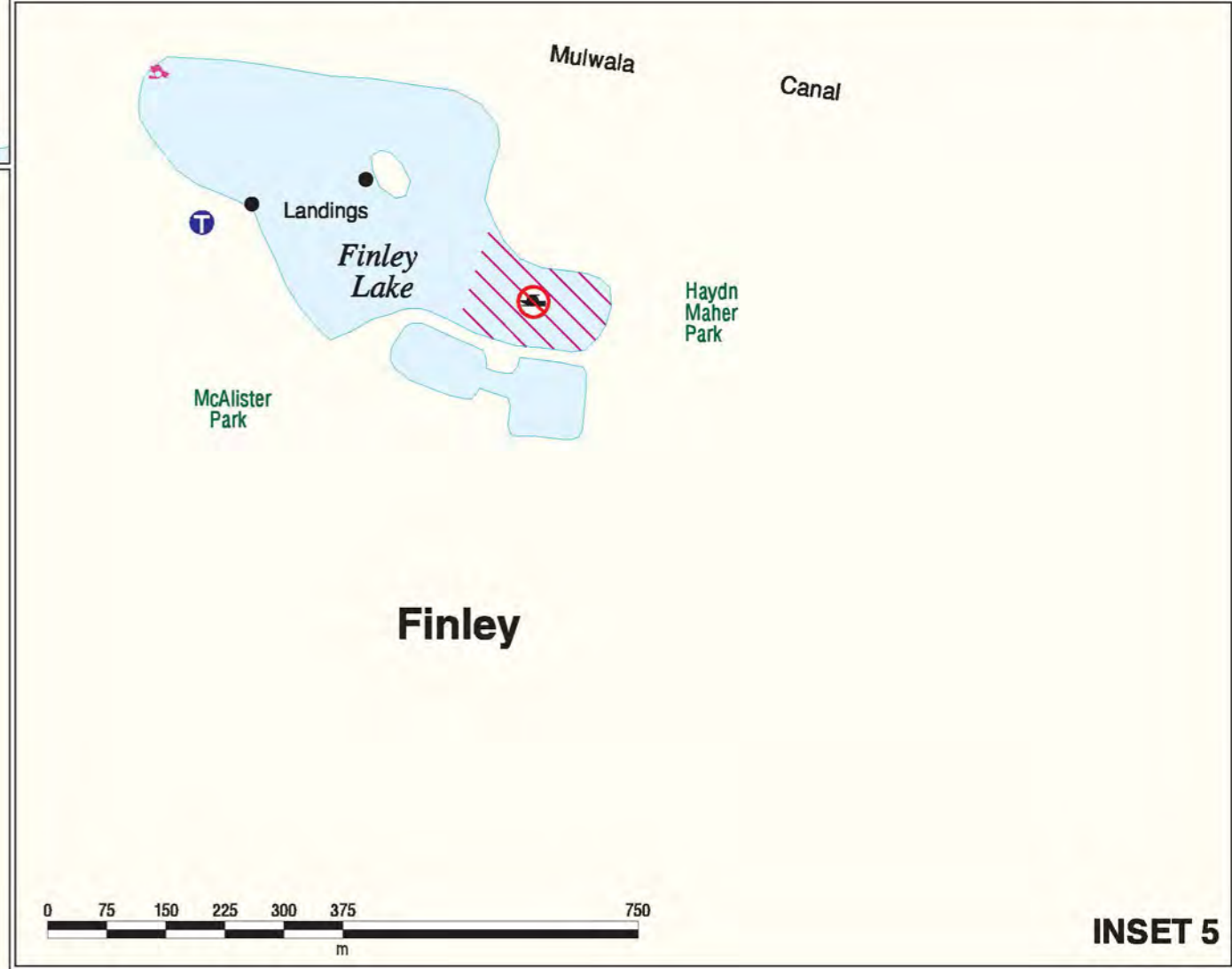
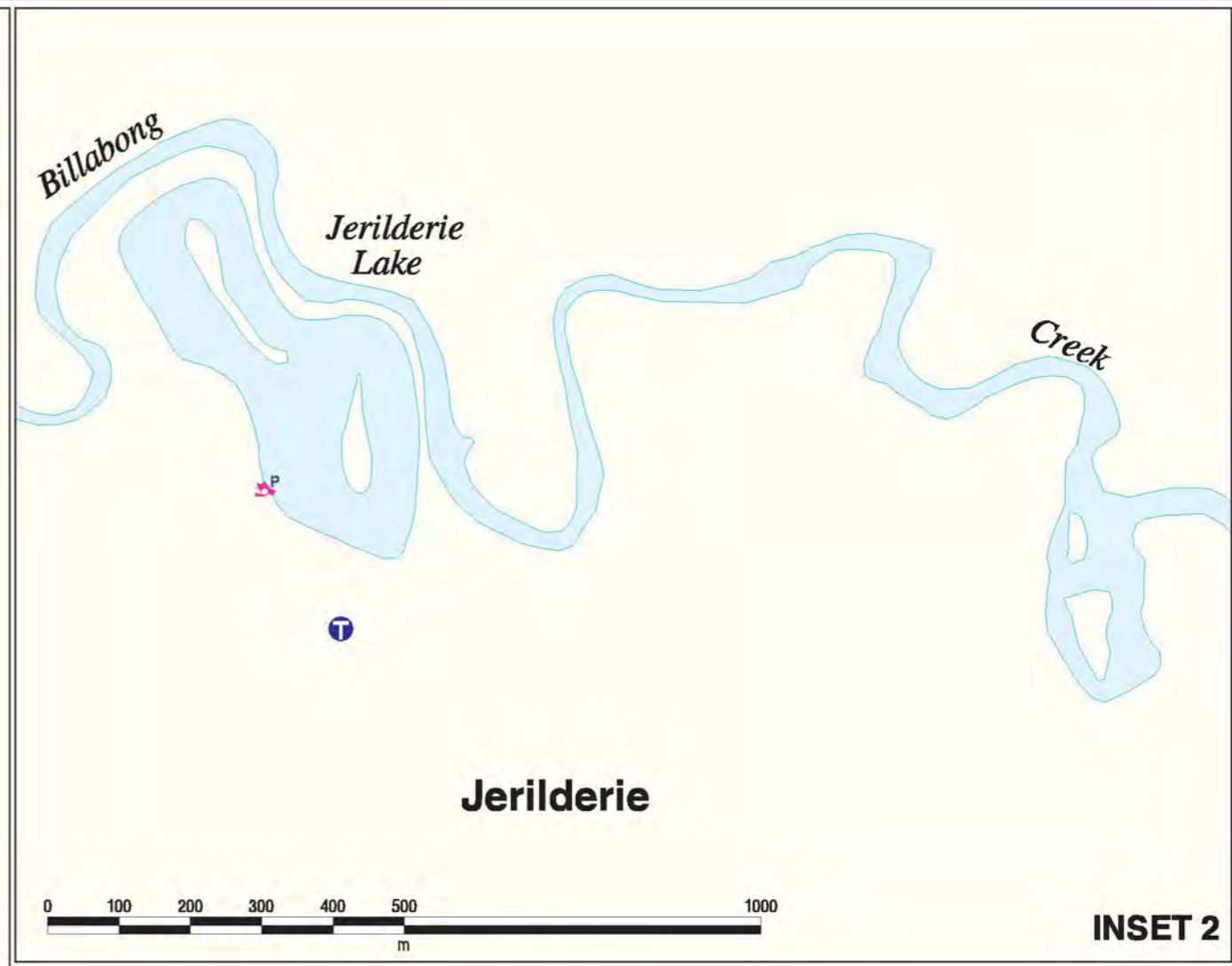
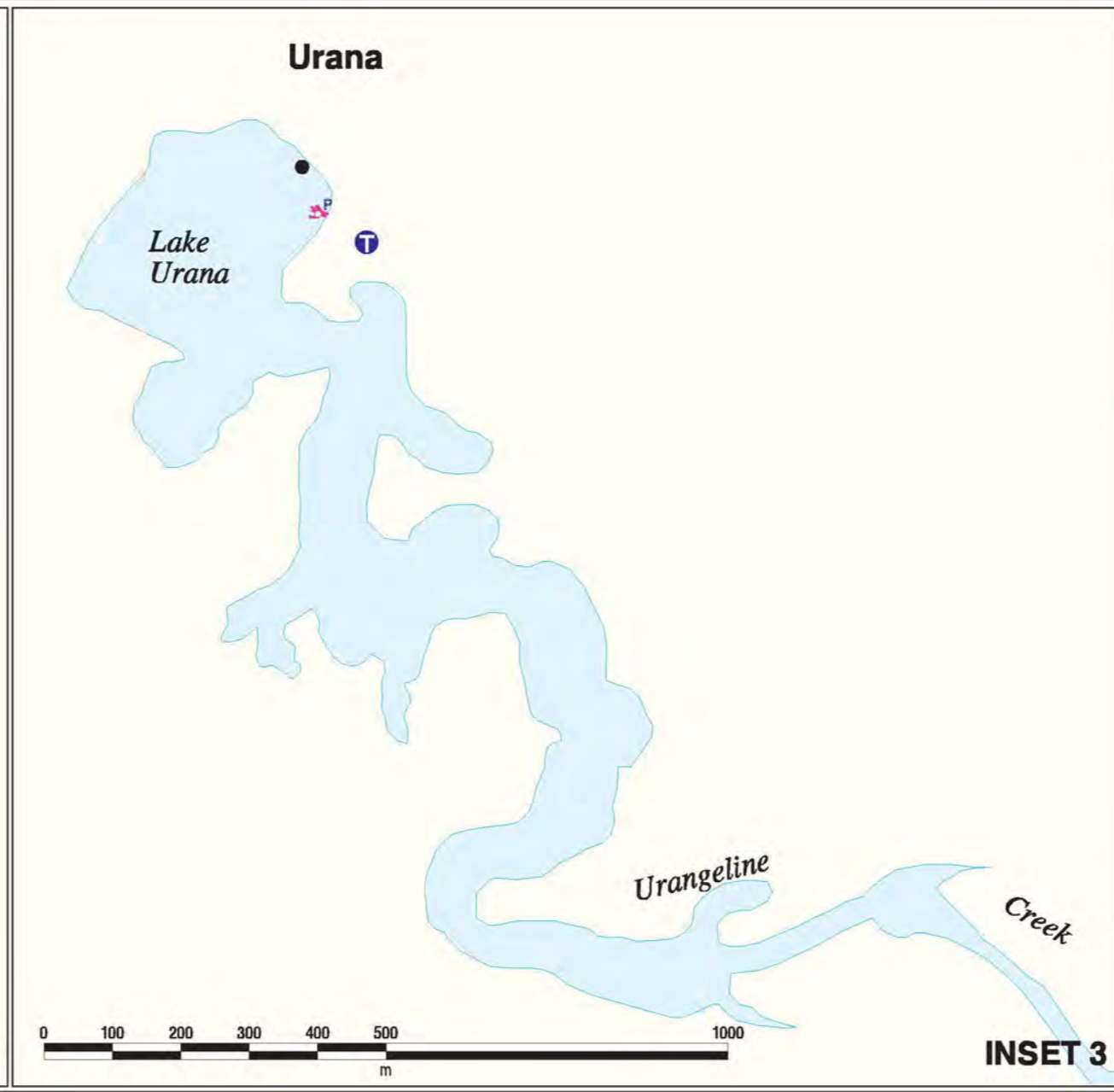
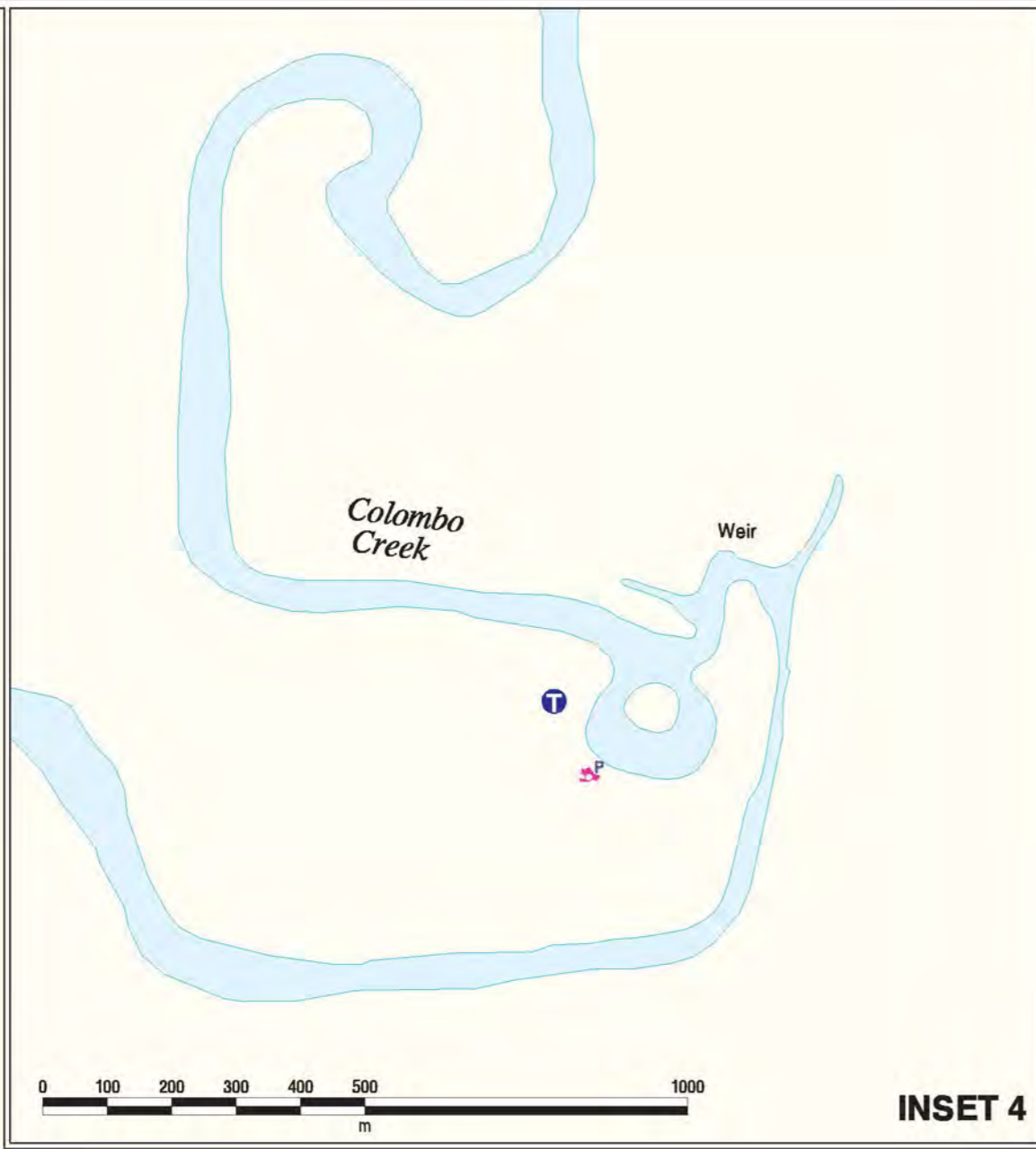
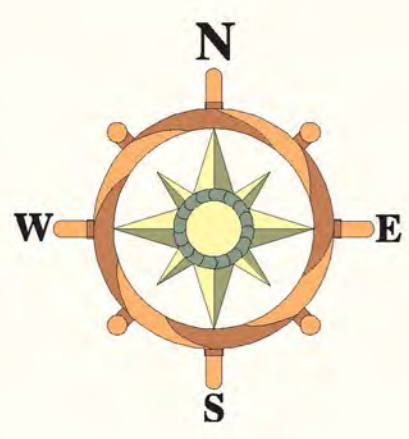


INSET 4



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INSET 1.  
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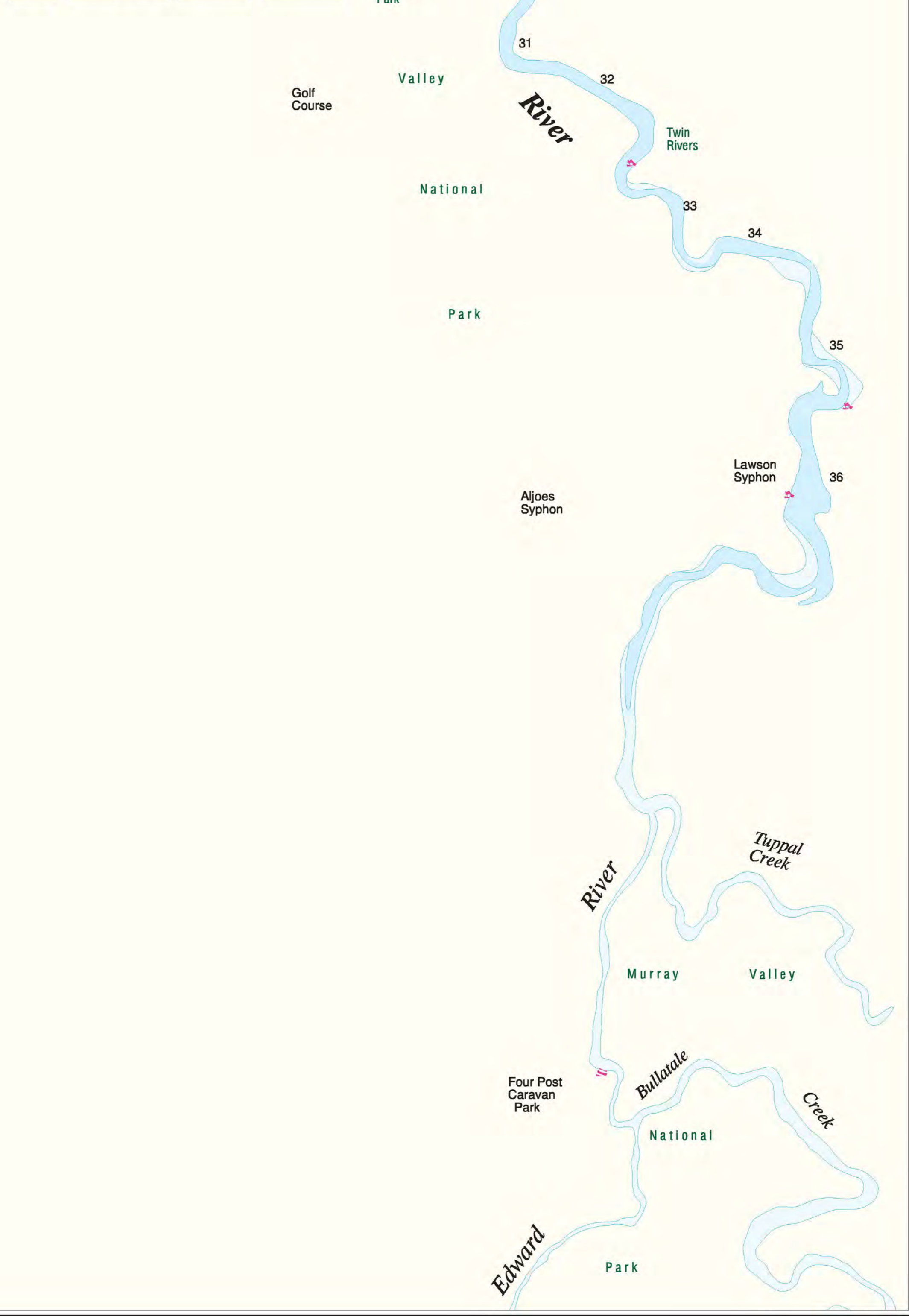
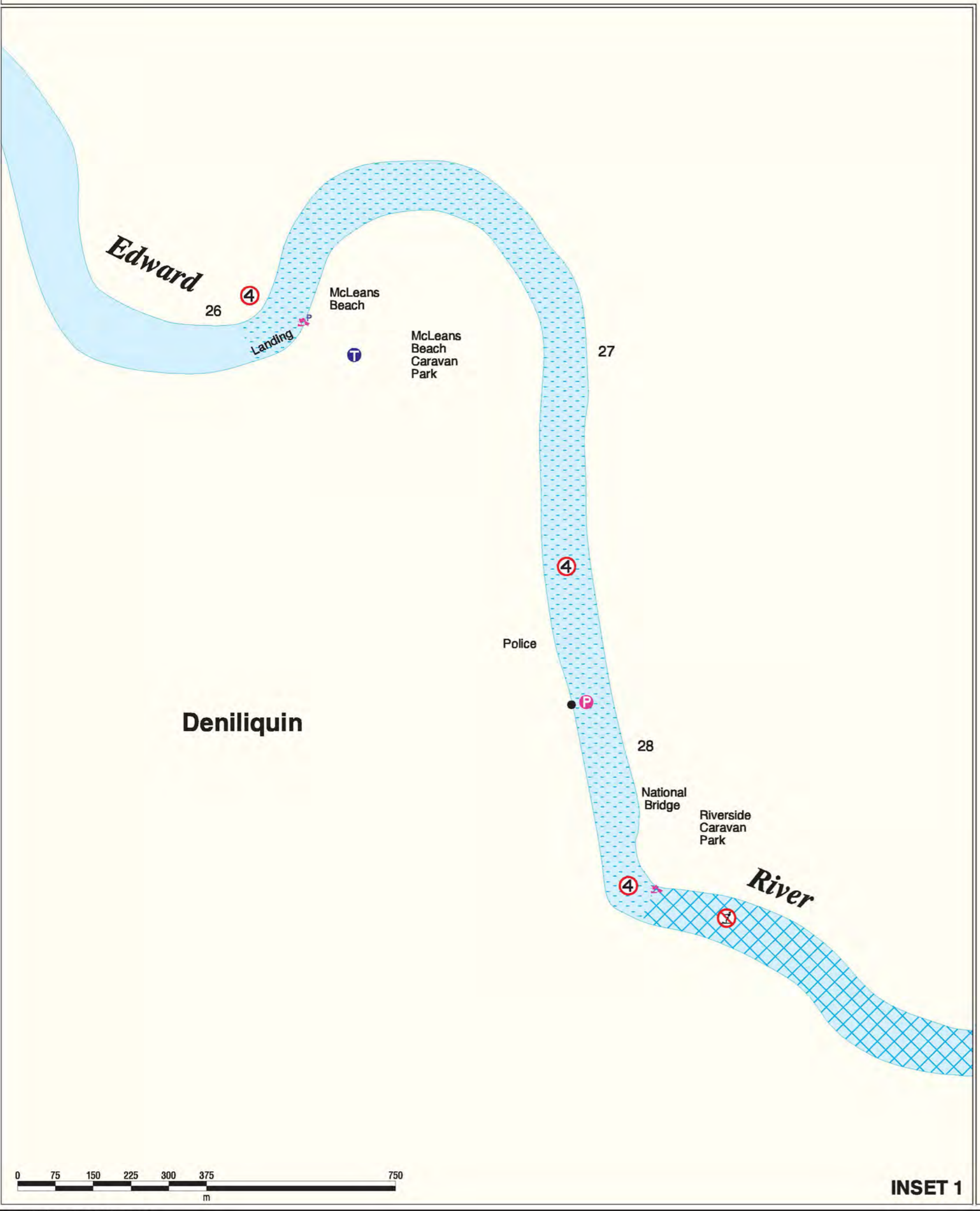
INSET 2



MAP OF  
**Edward River Deniliquin Area, including  
Insets of Jerilderie, Urana, Finley and Colombo Creek**

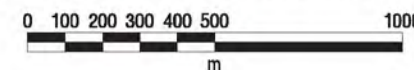
**NSW** Government  
Transport  
Roads & Maritime  
Services

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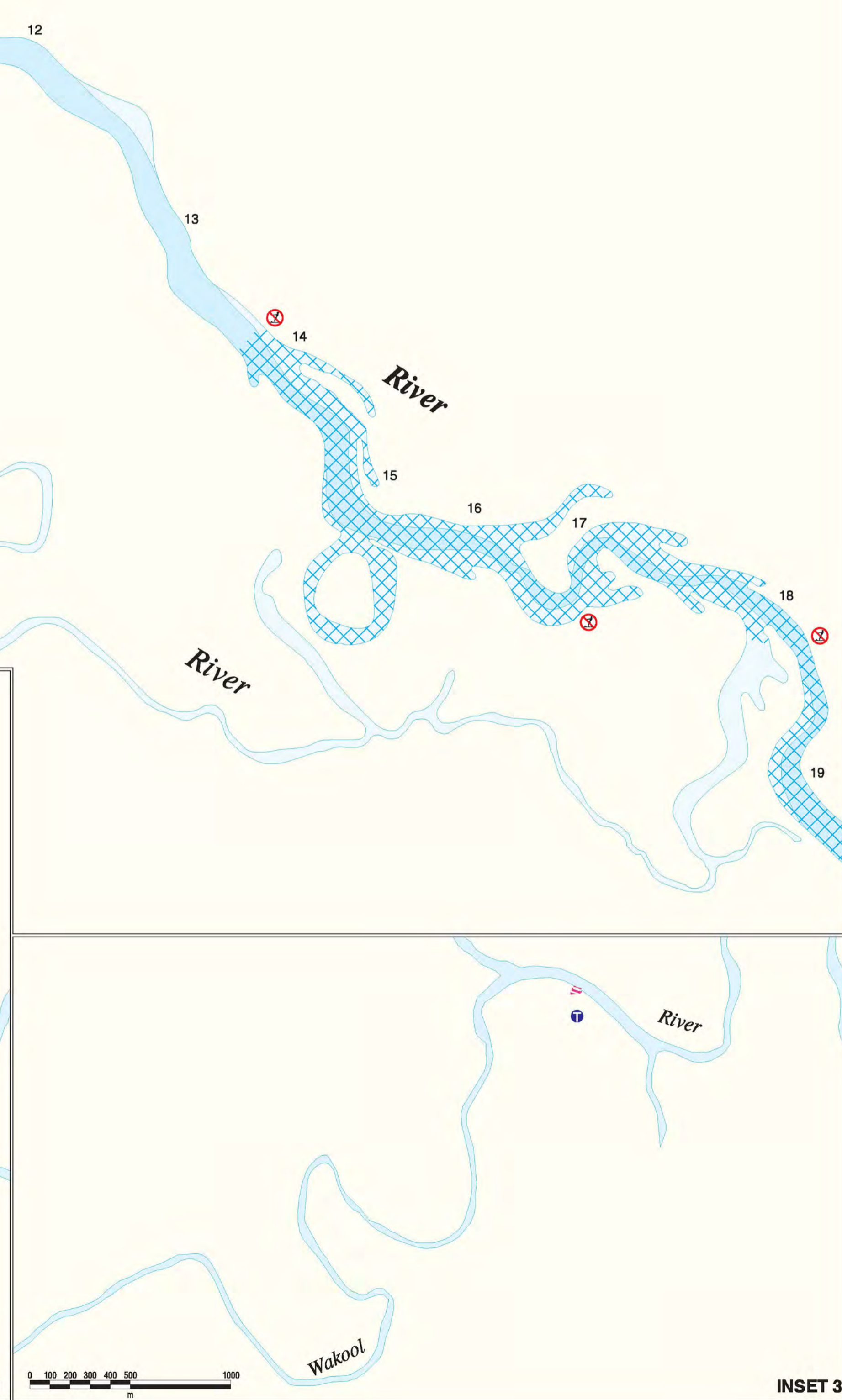
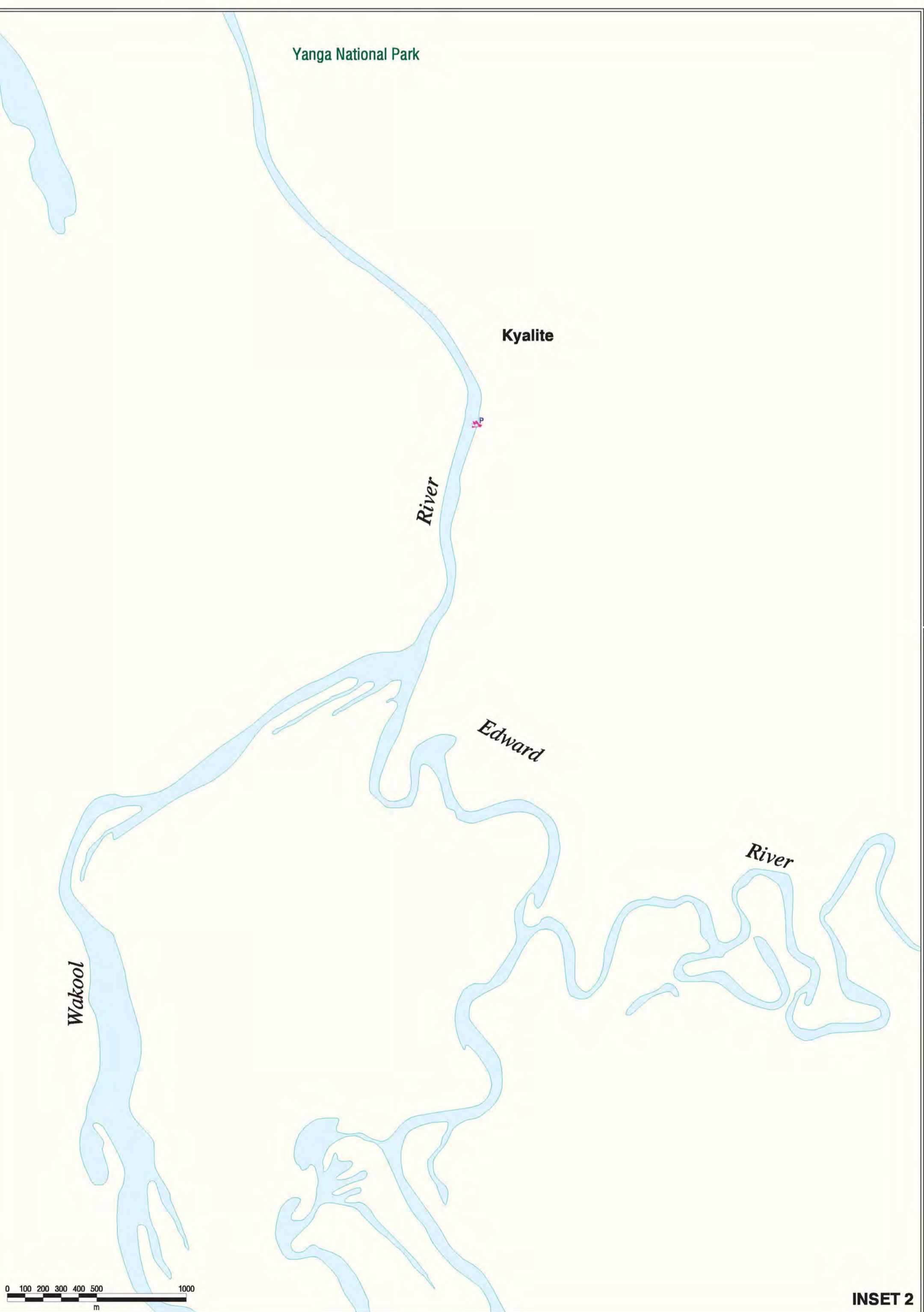
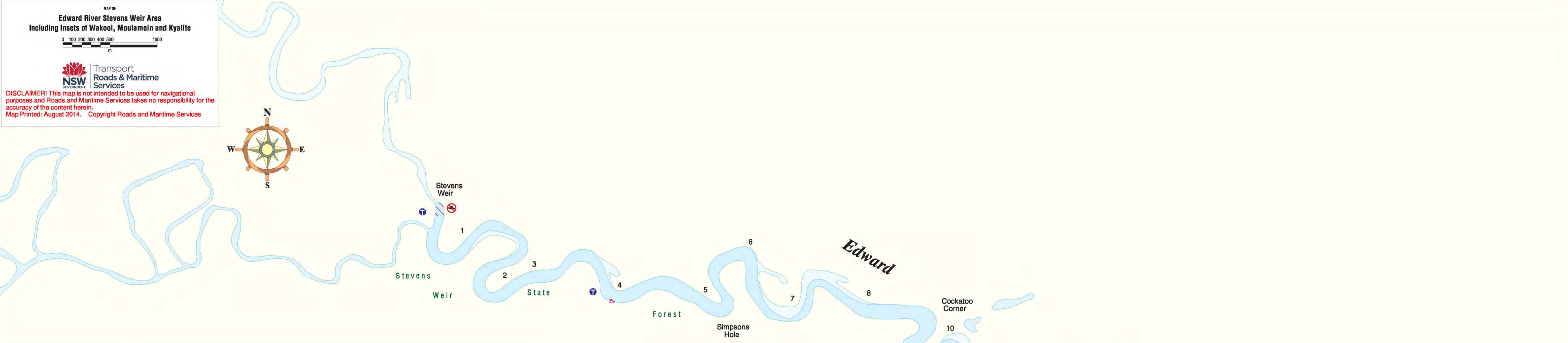
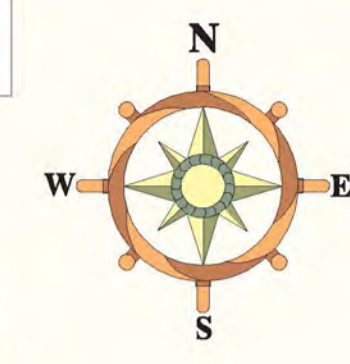


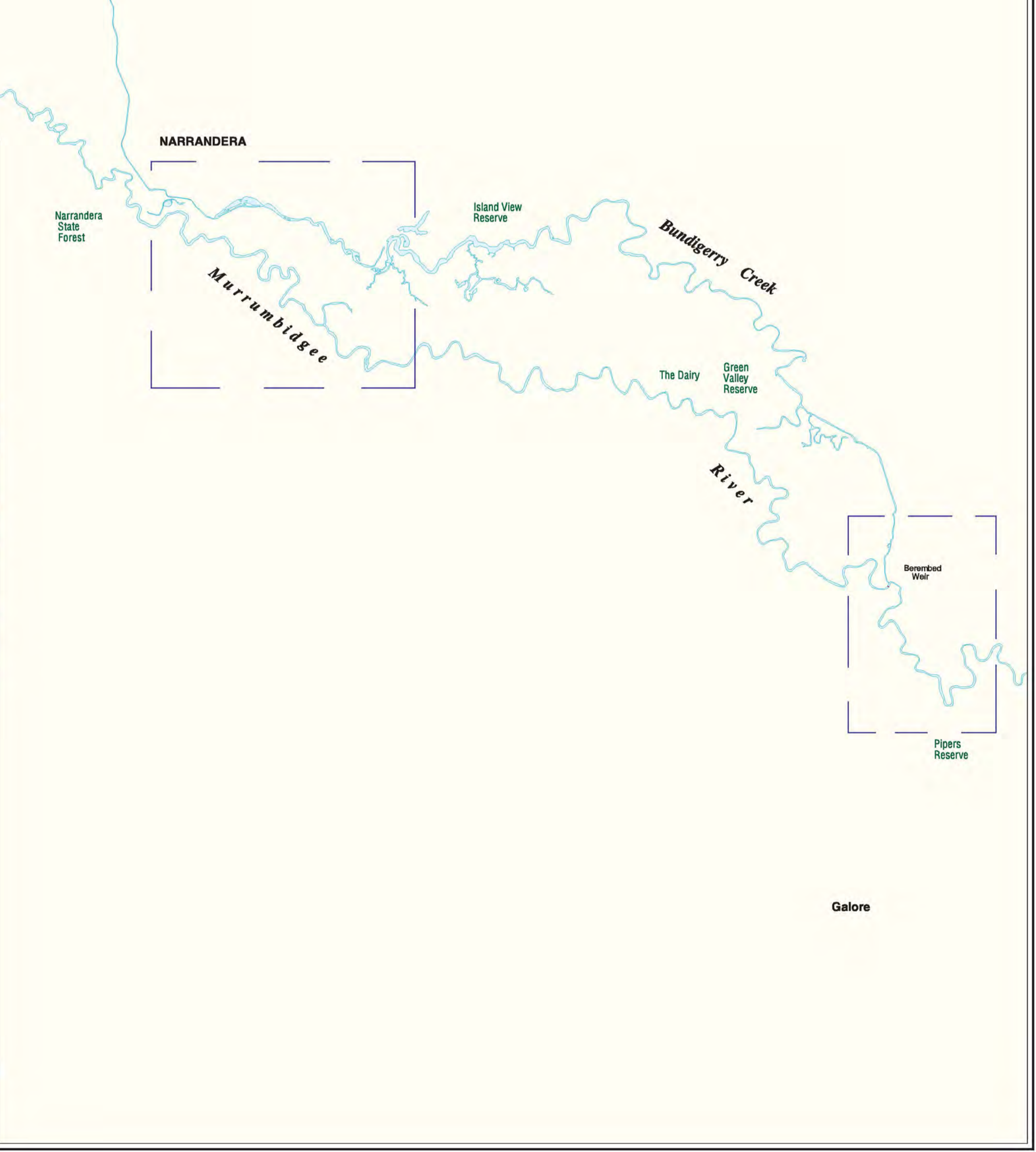
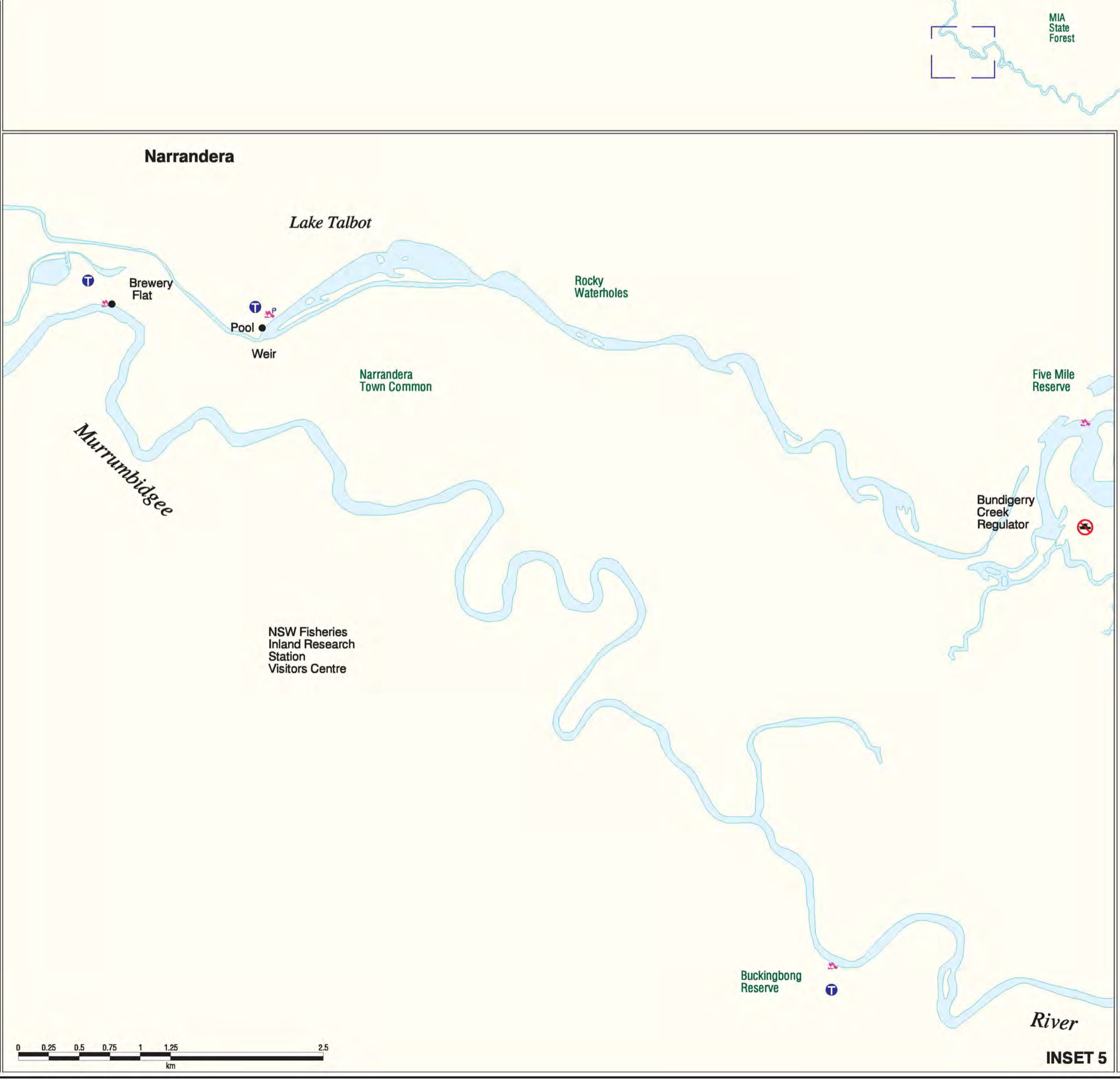
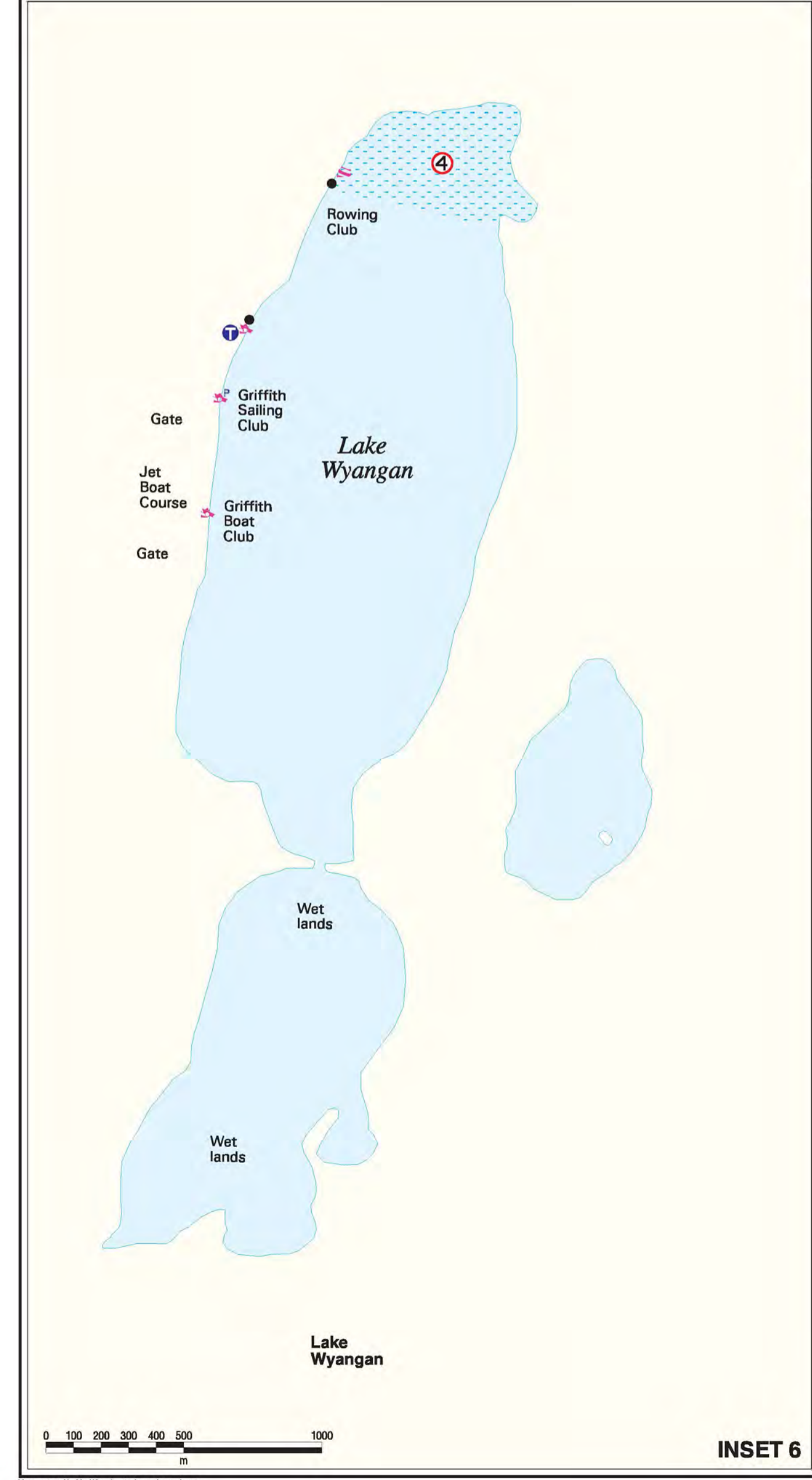
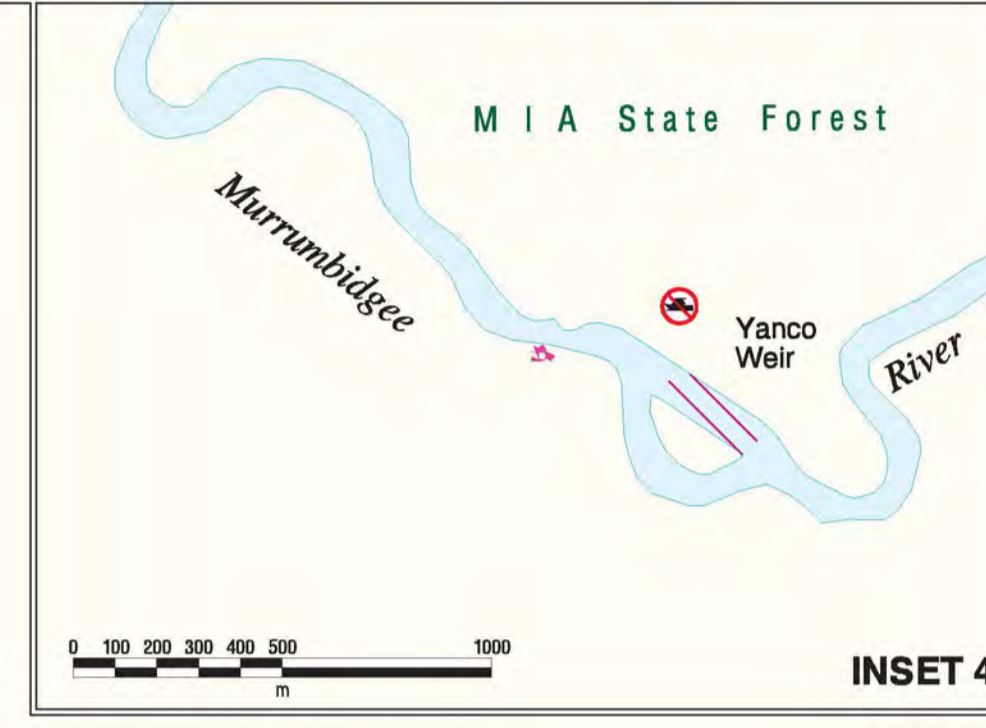
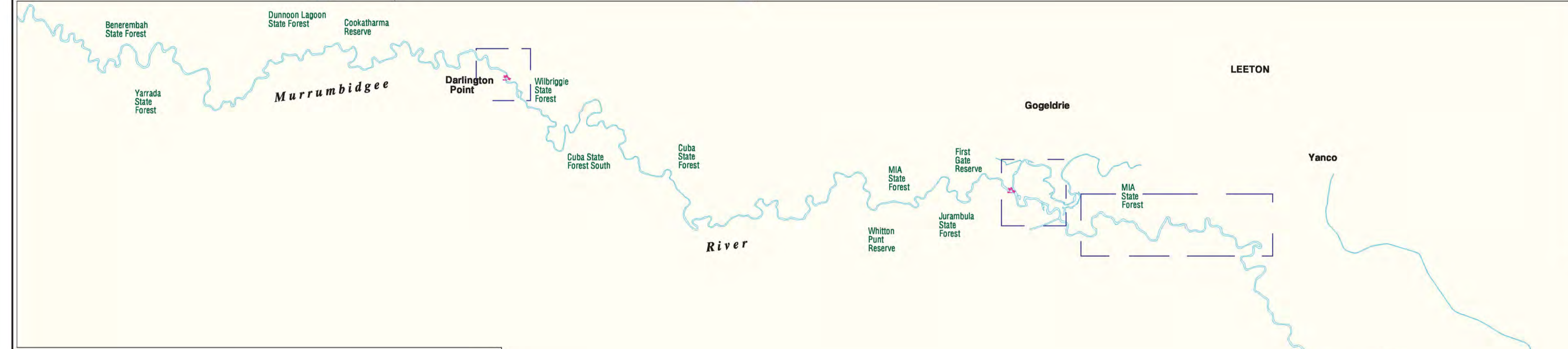
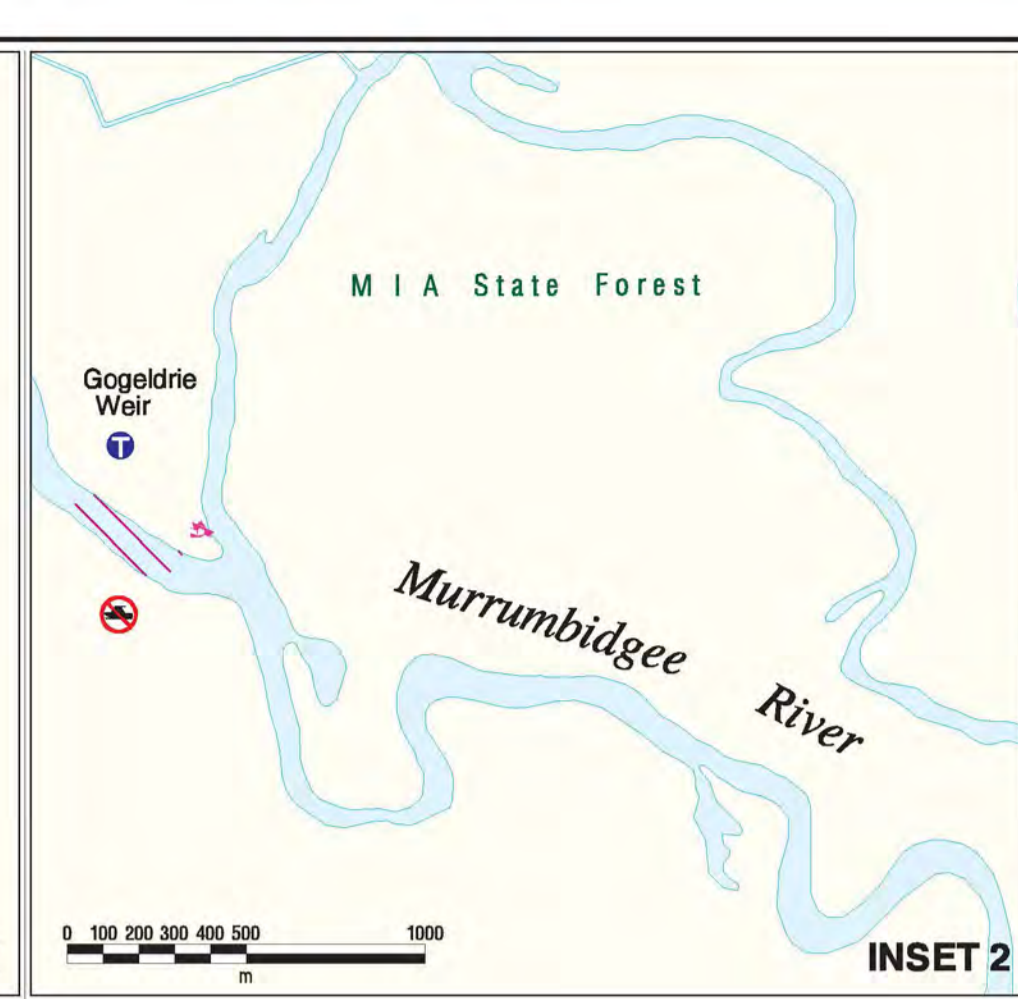
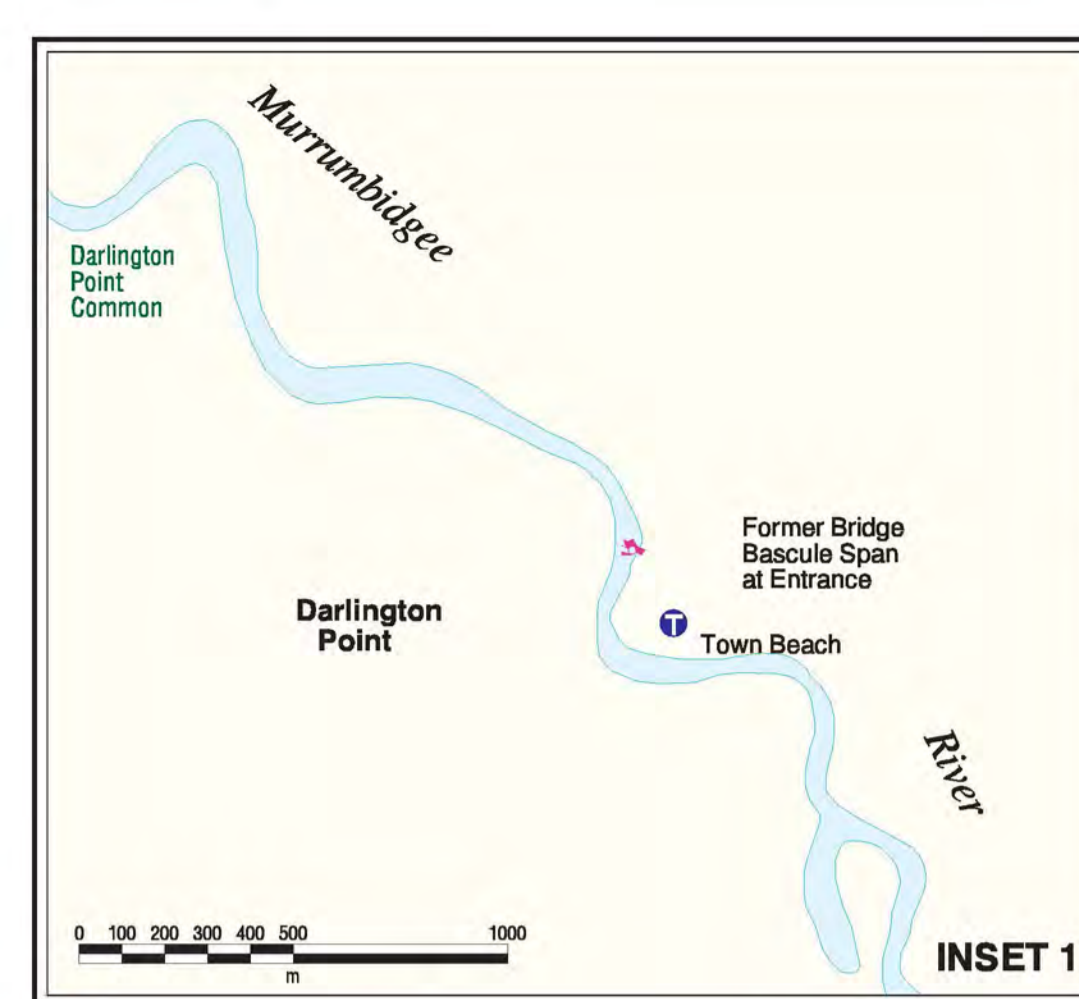
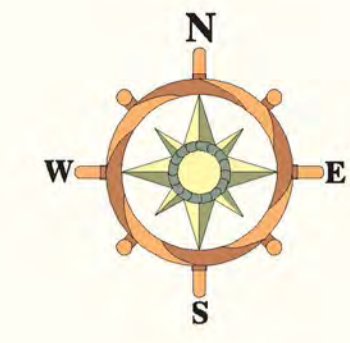


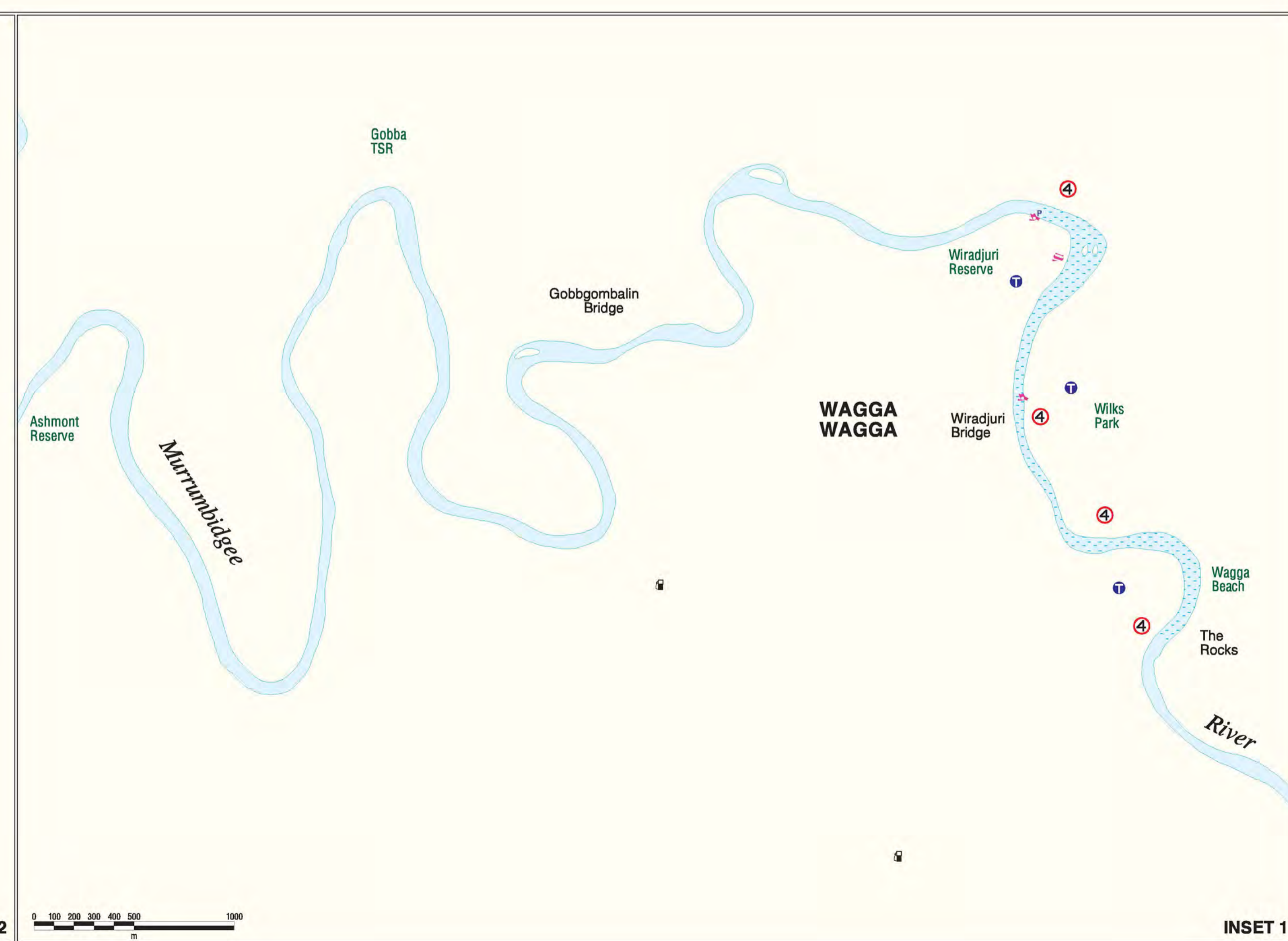
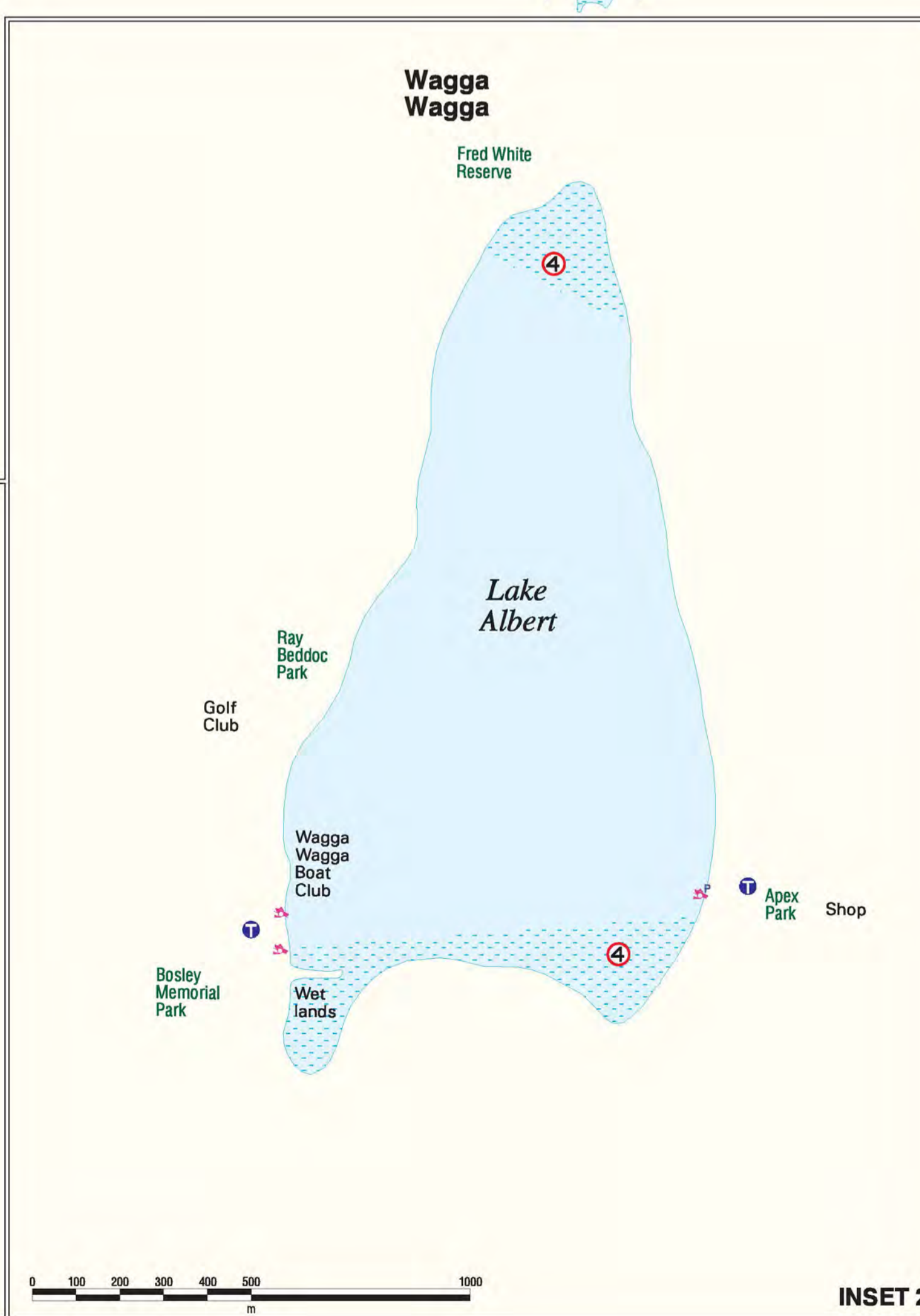
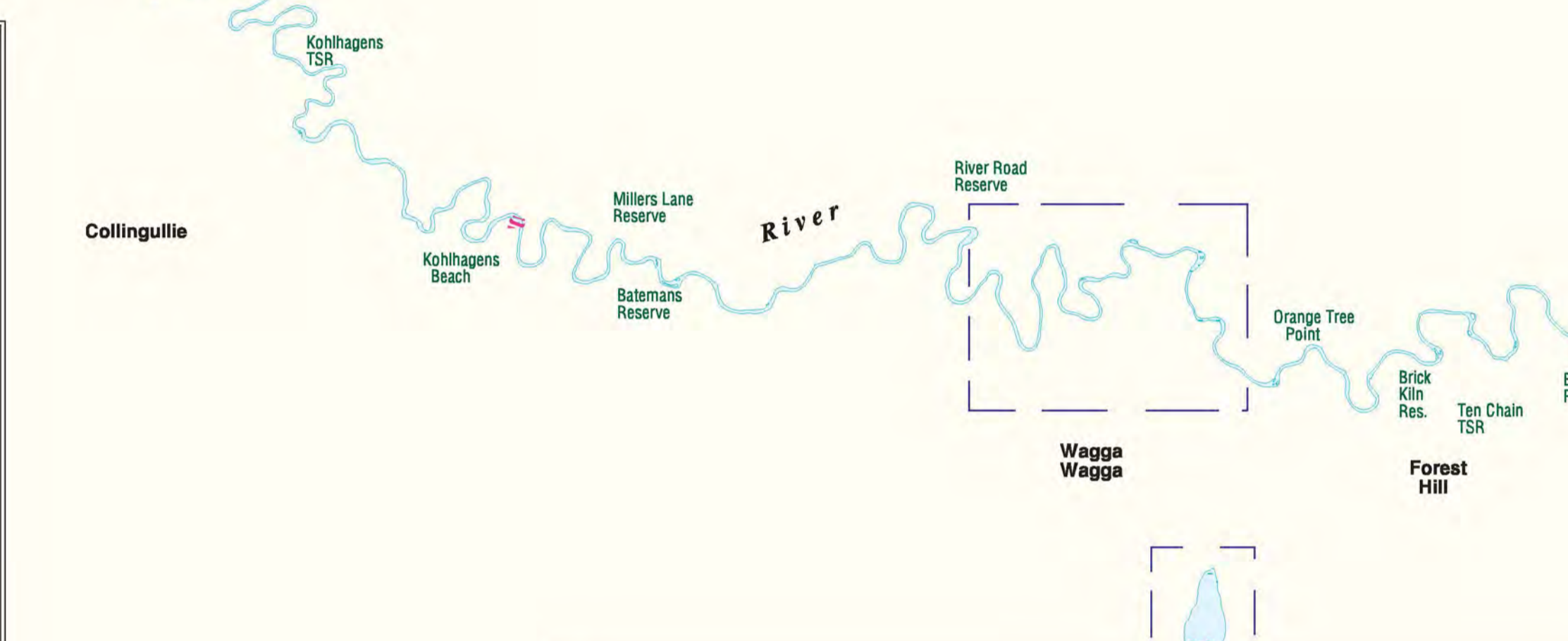
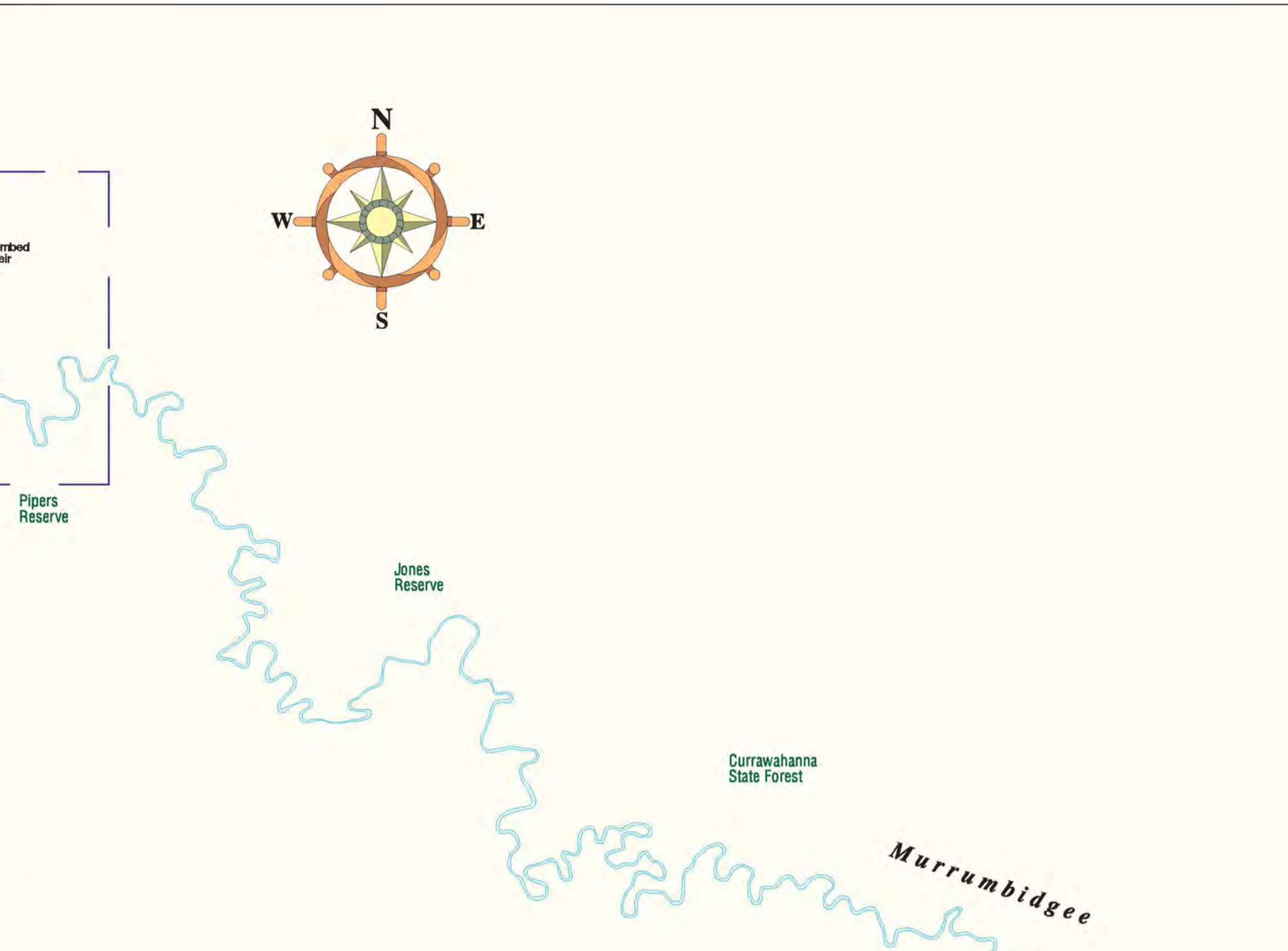
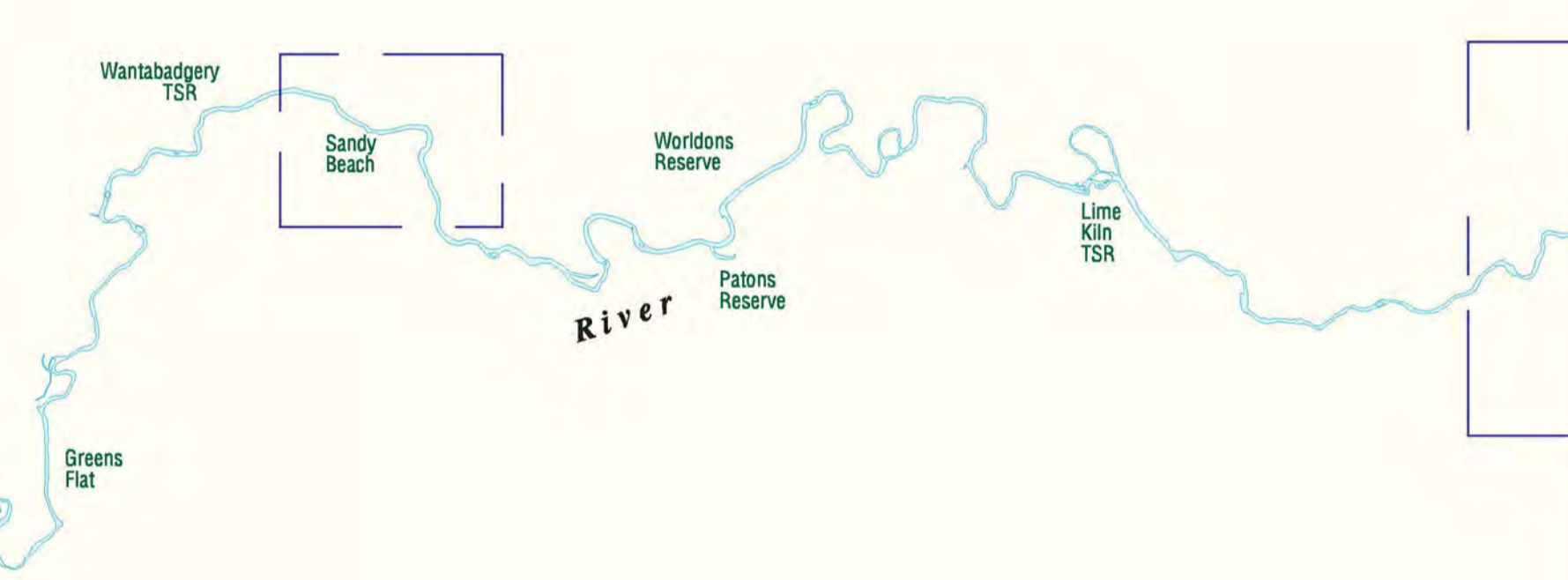
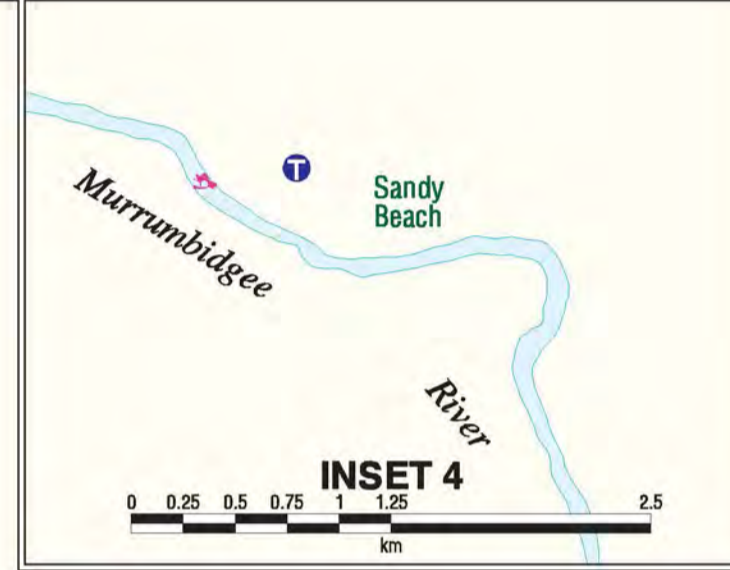
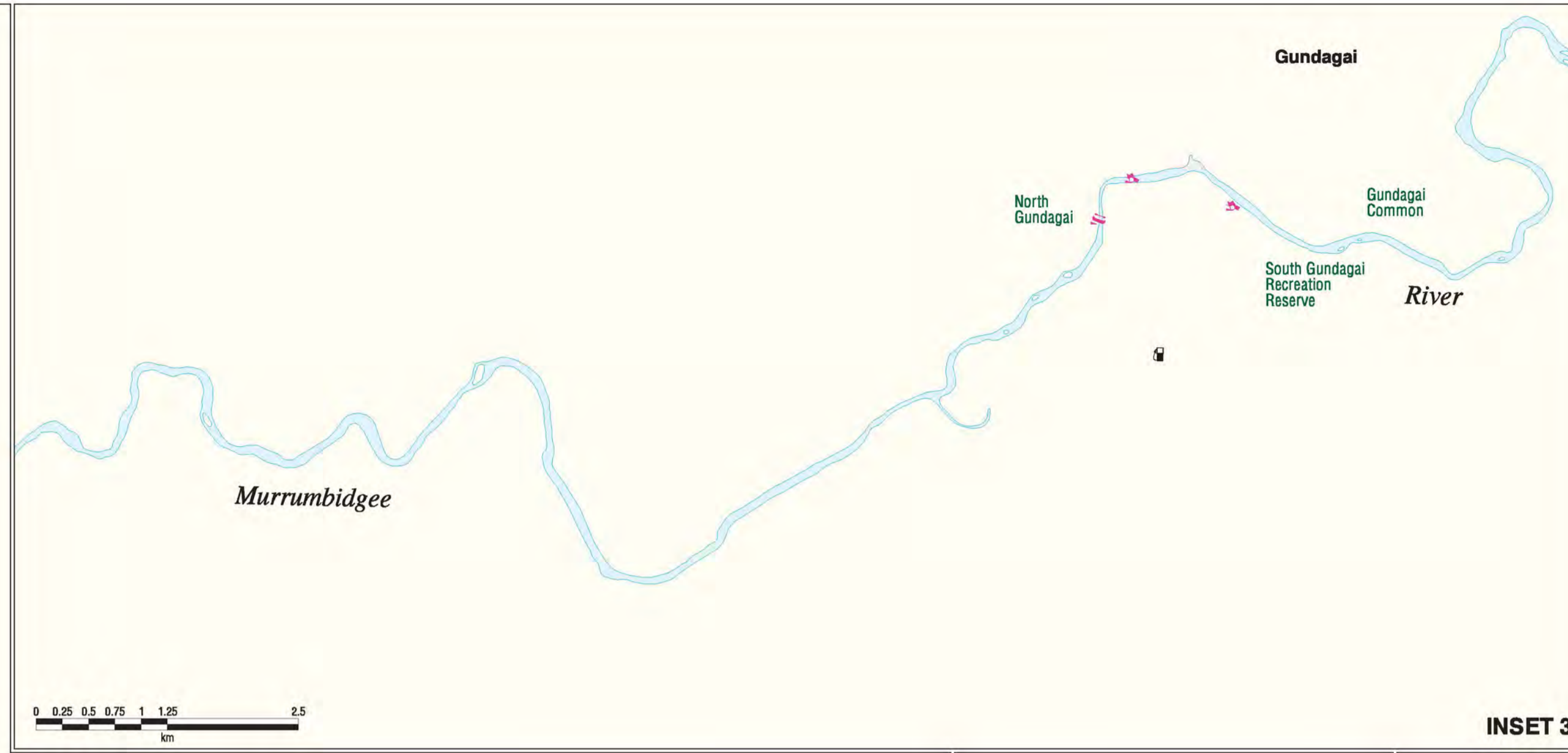
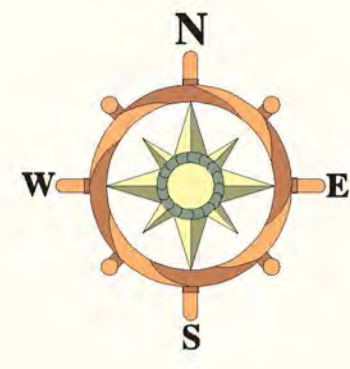
MAP OF  
Edward River Stevens Weir Area  
Including Insets of Wakool, Moulamein and Kyalite



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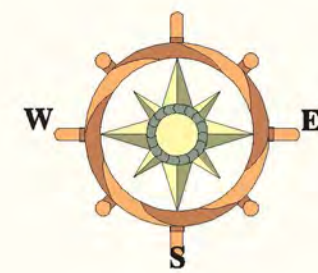
**MAP OF Murrumbidgee River, Wagga Wagga Area Pipers Reserve to Gundagai**

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**INSET 6**

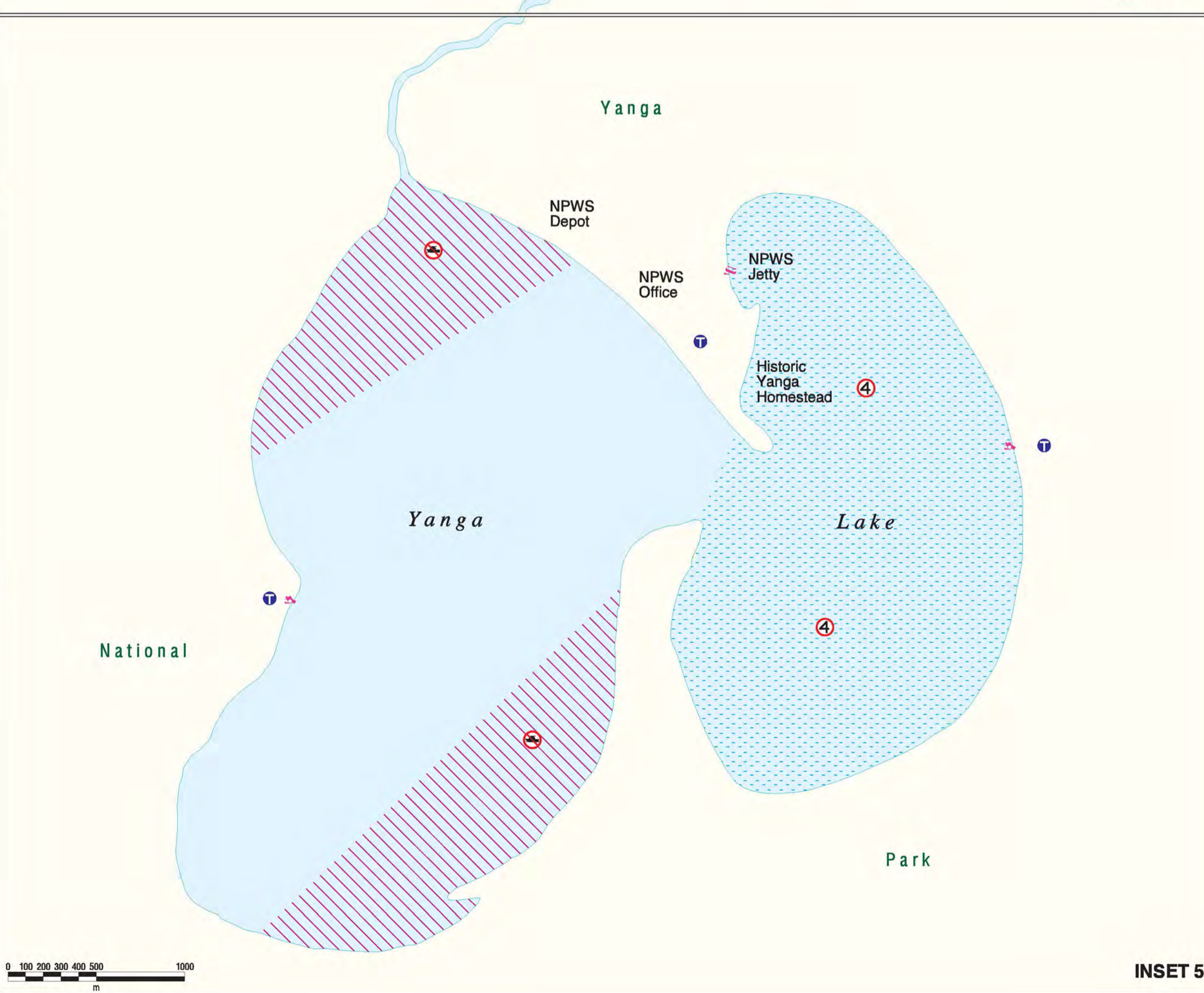
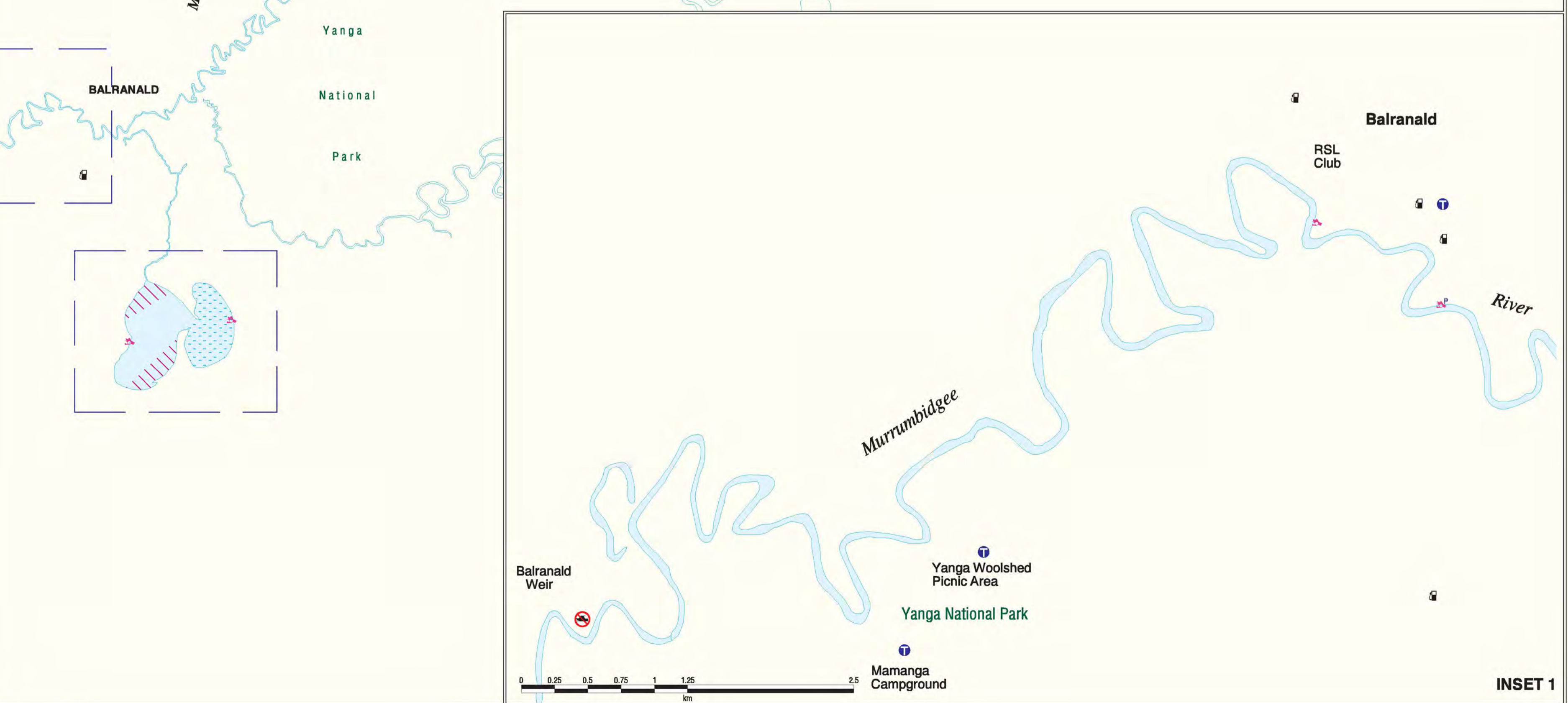
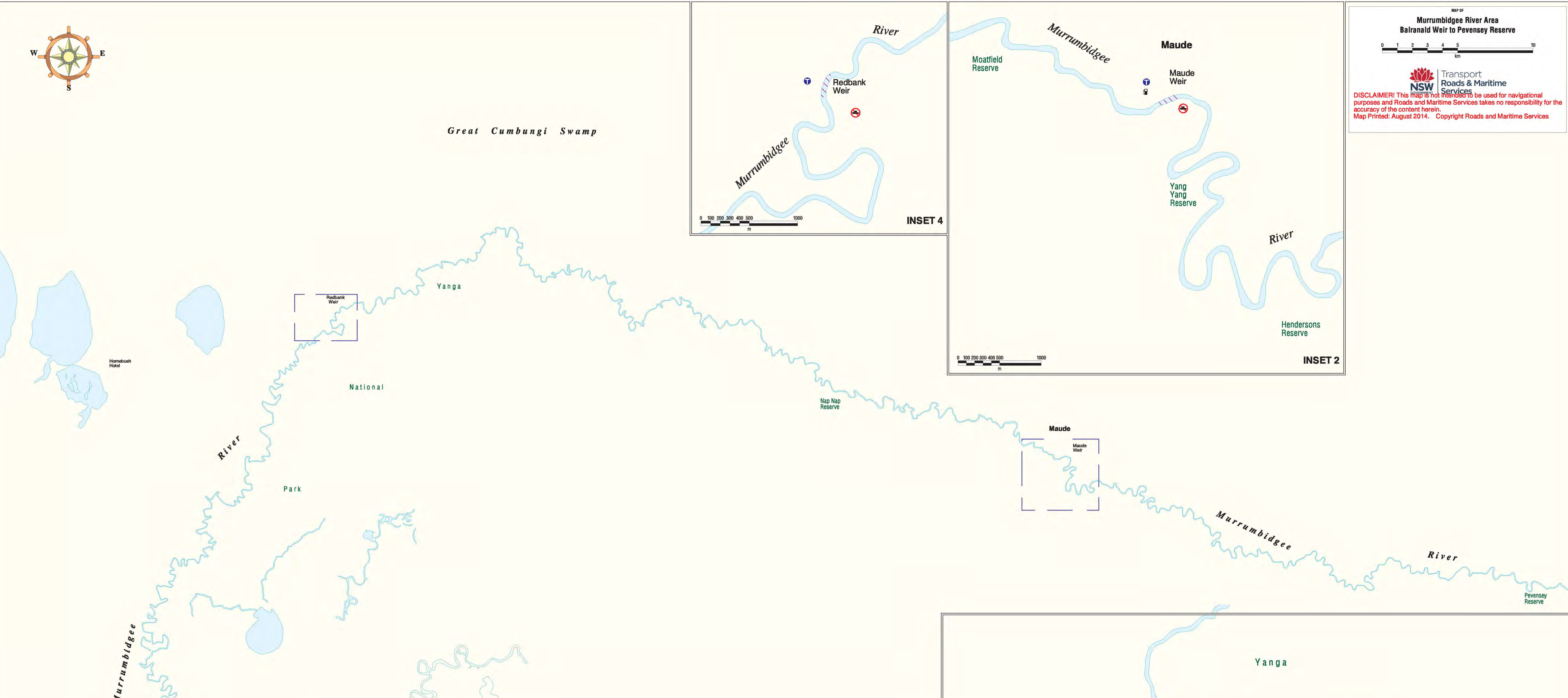
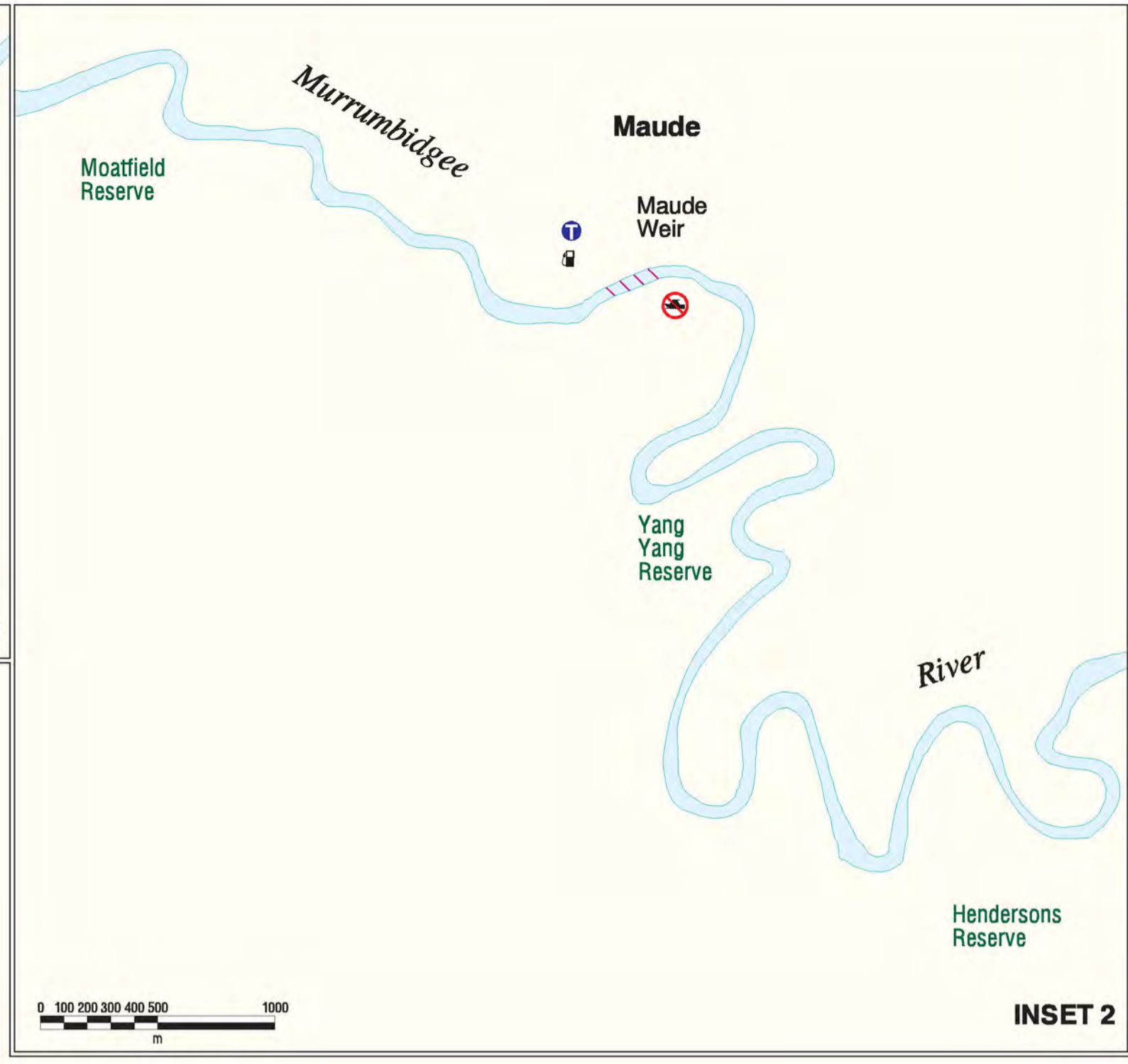
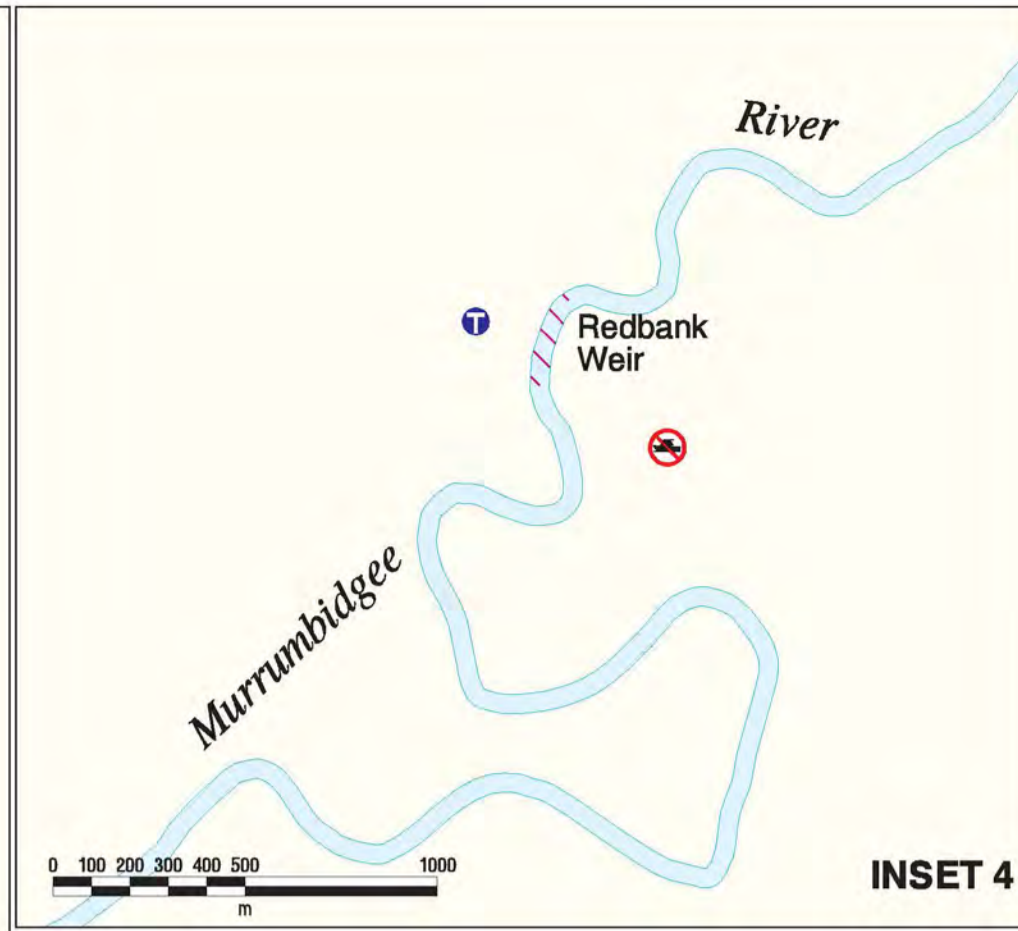
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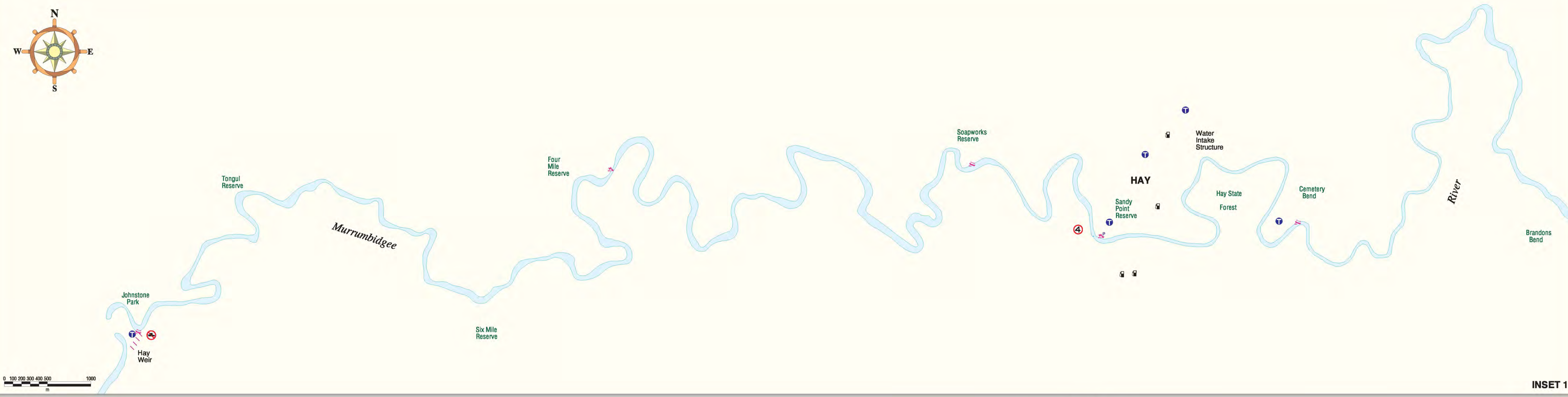
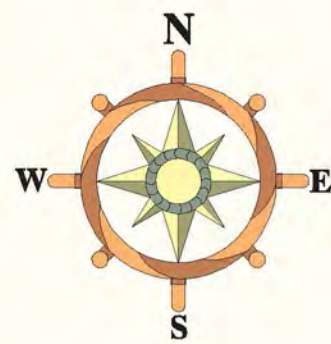


MAP OF  
**Murrumbidgee River Area**  
Balranald Weir to Pevensey Reserve

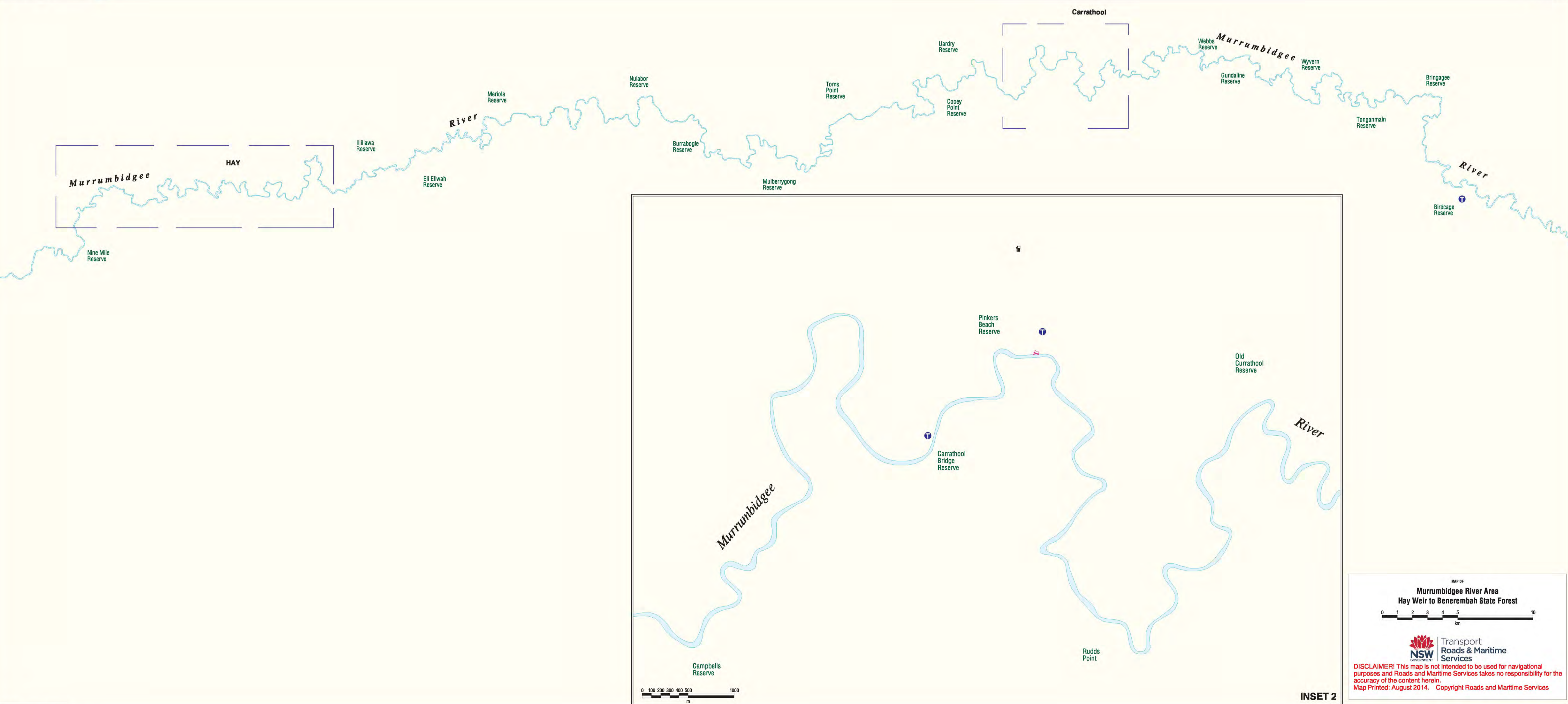
NSW Transport  
Roads & Maritime  
Services

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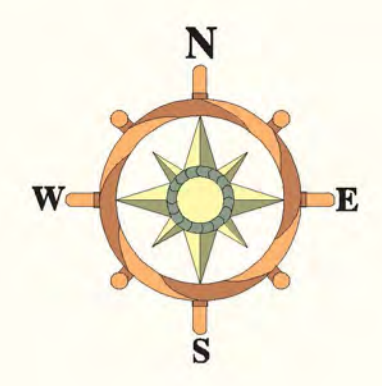
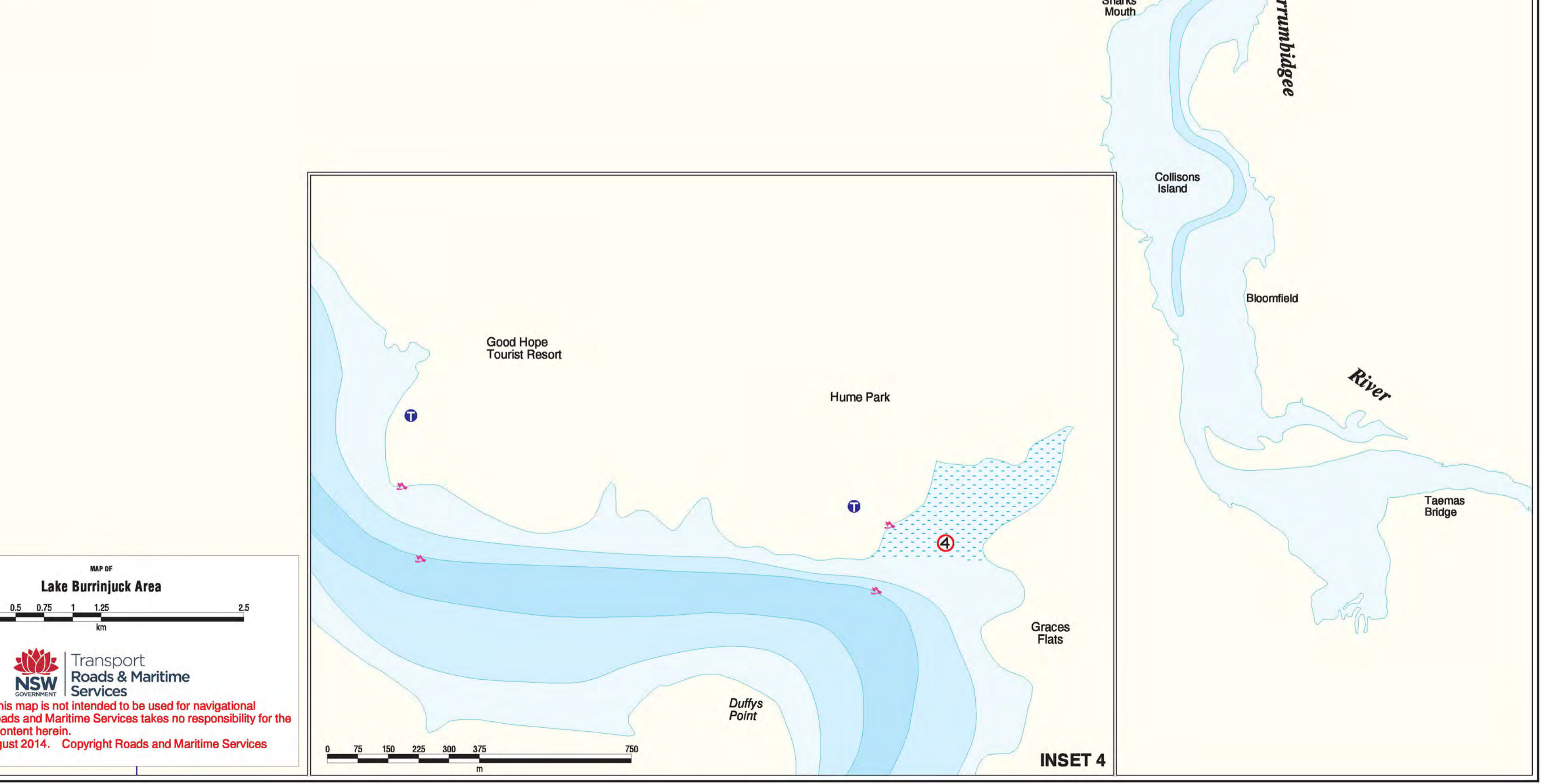
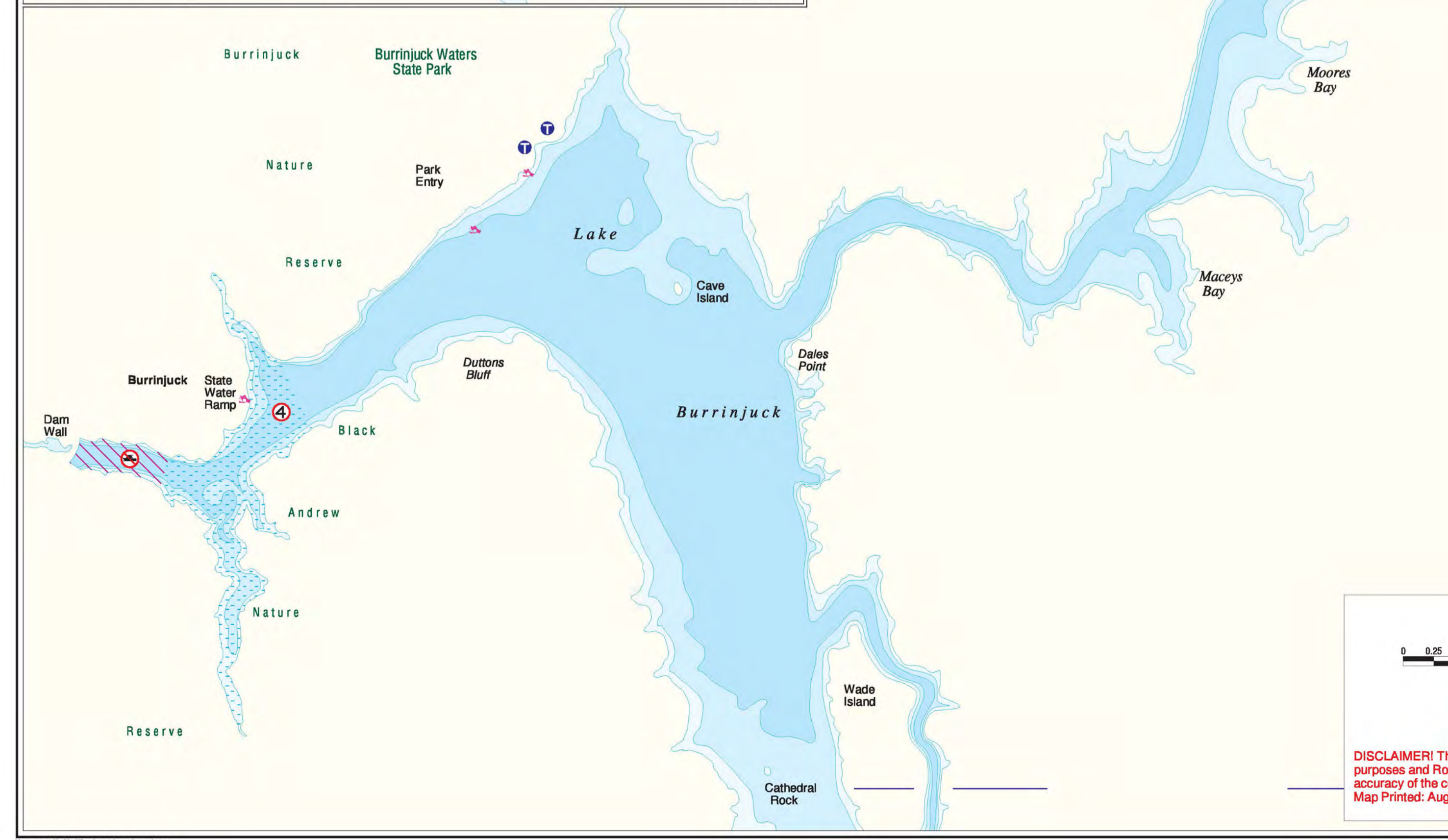
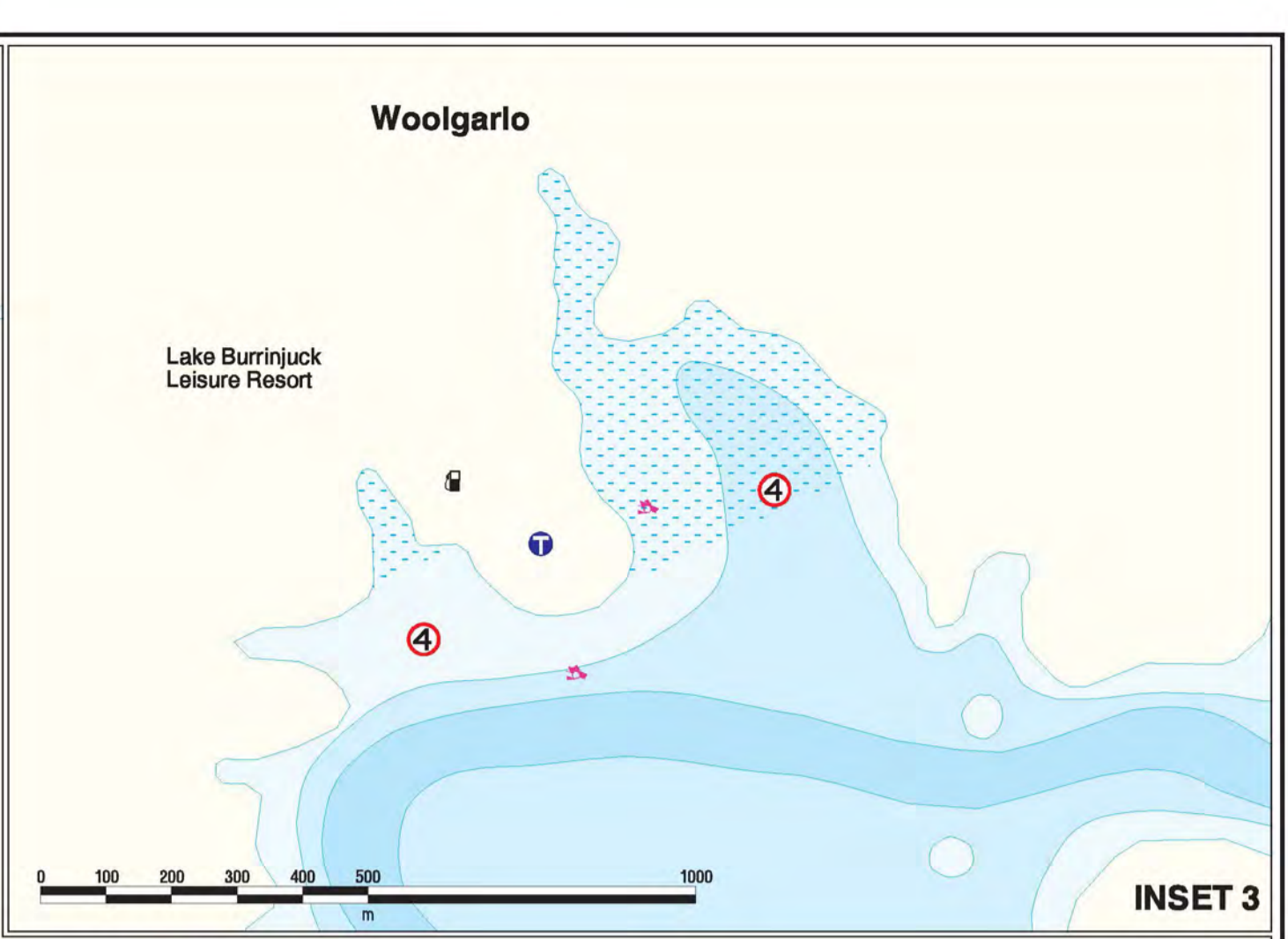
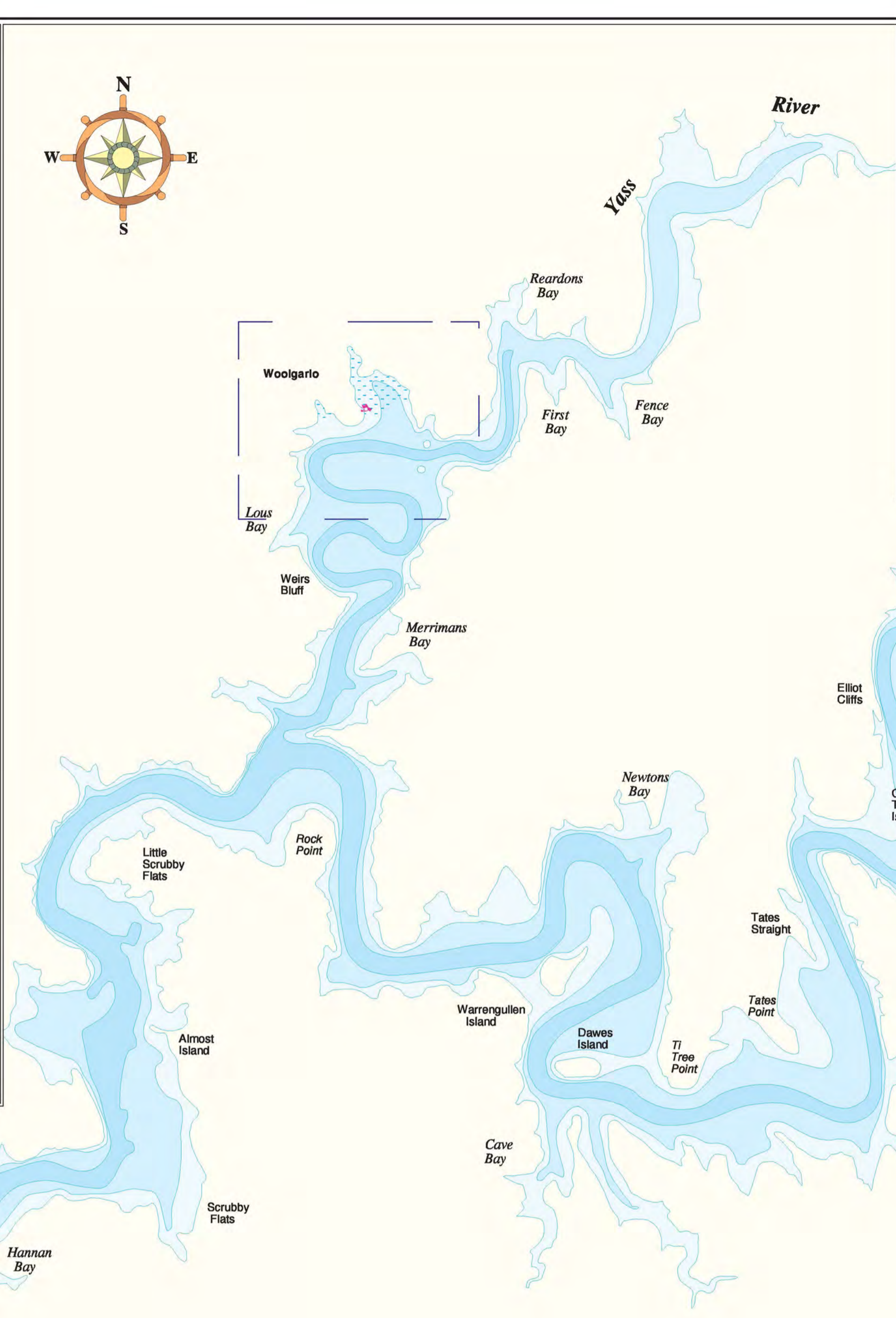
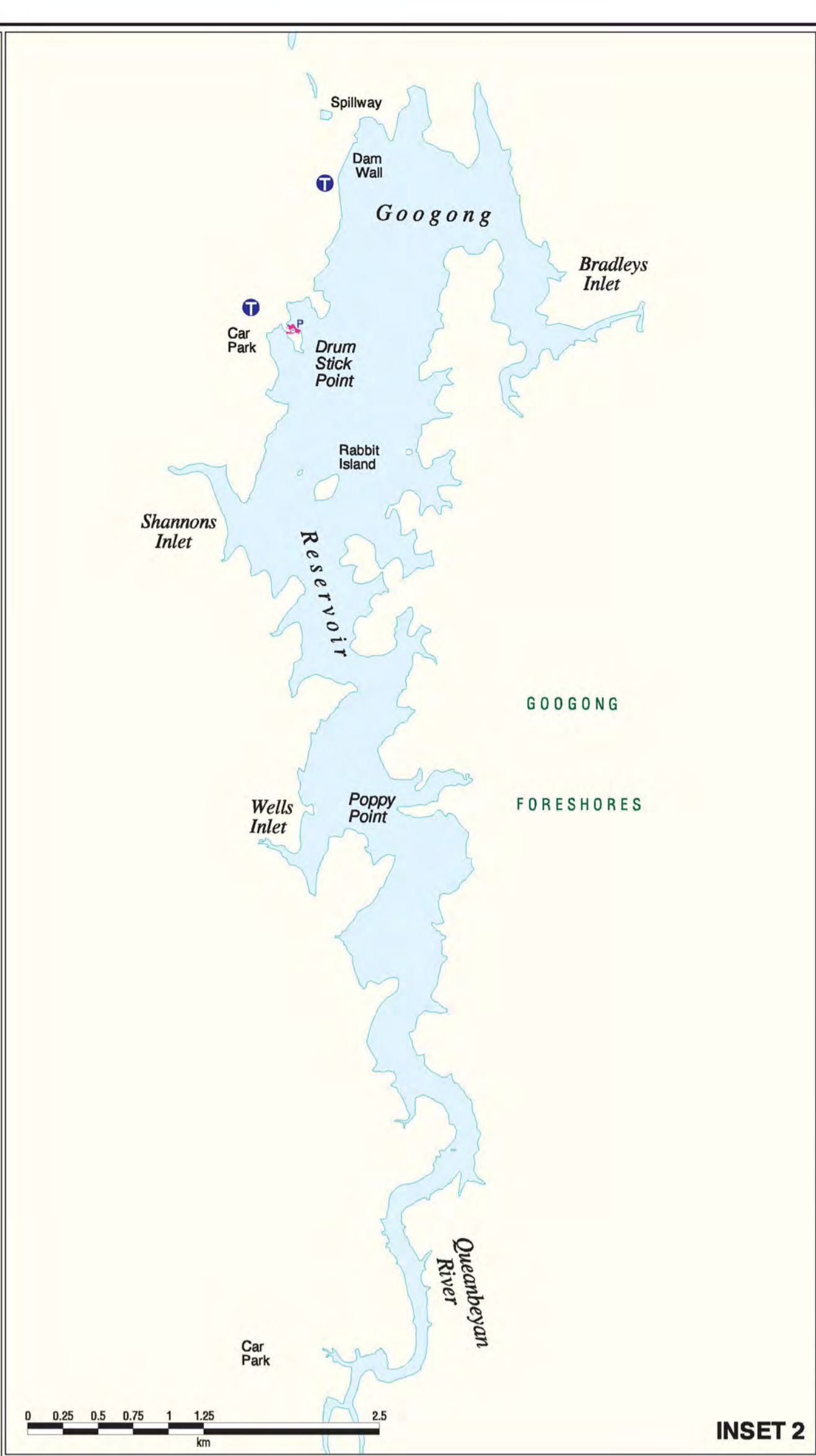
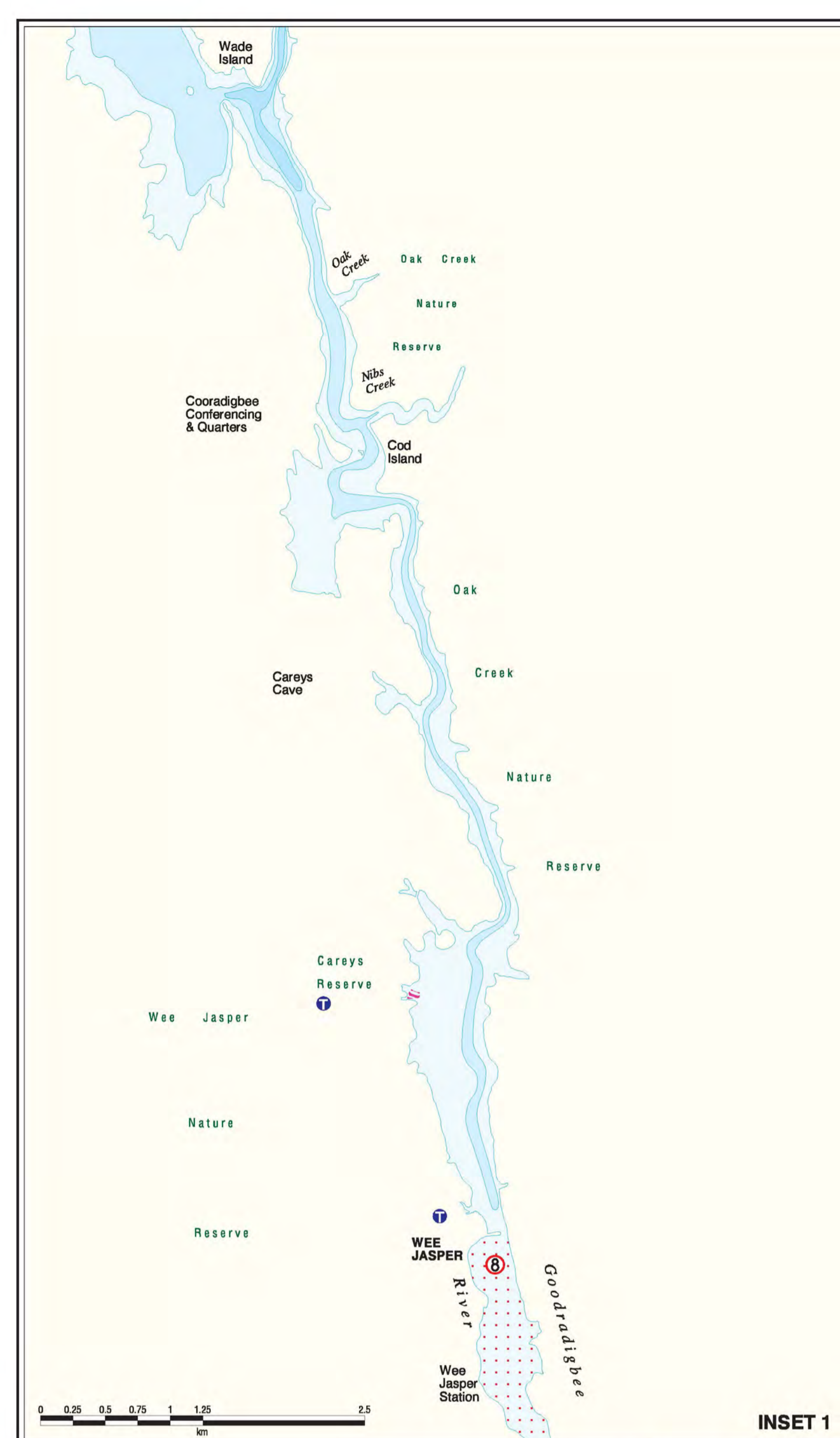


INSET 2

MAP OF  
**Murrumbidgee River Area**  
Hay Weir to Beneberbah State Forest

NSW GOVERNMENT  
Transport  
Roads & Maritime  
Services

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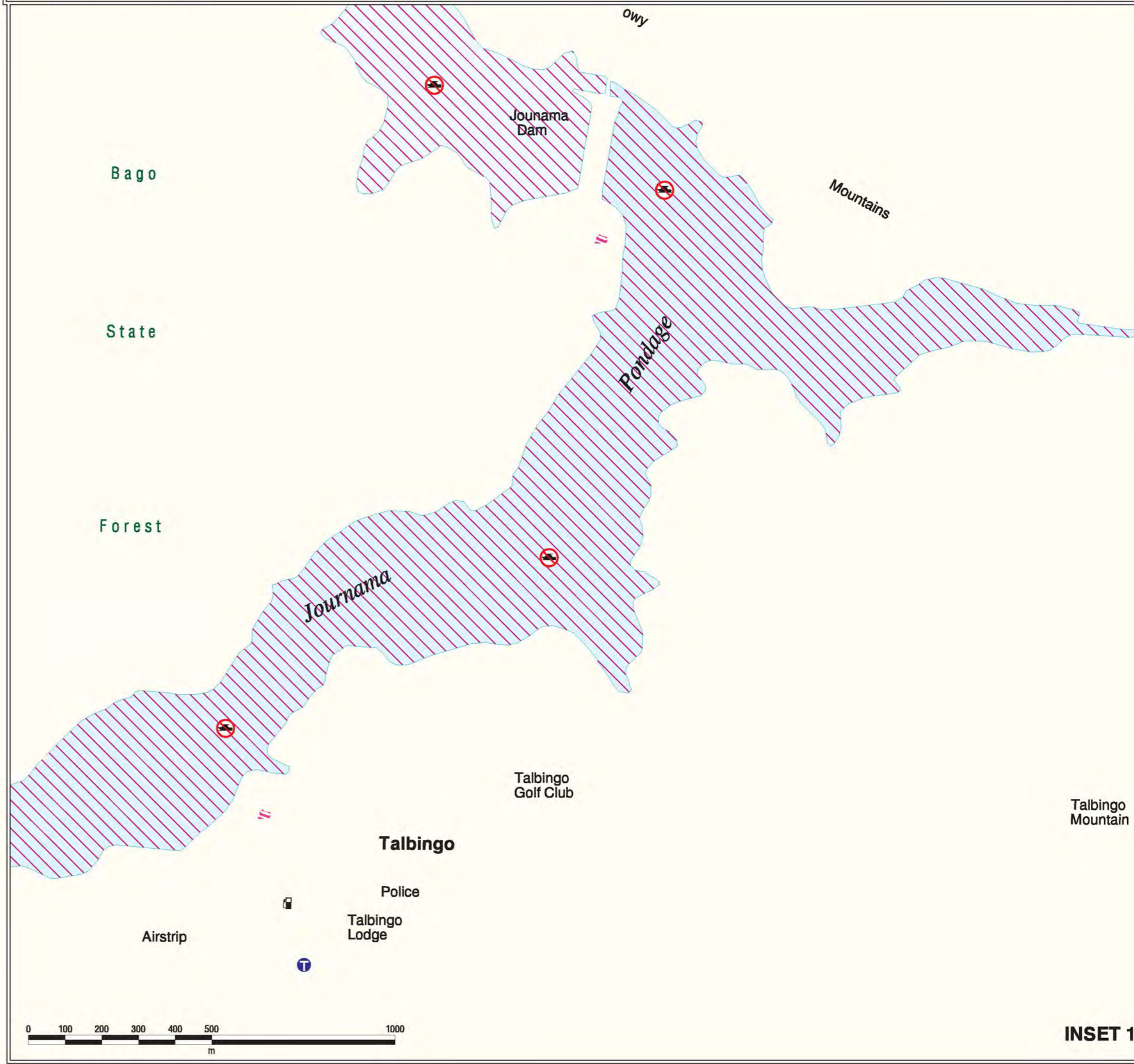


MAP OF  
**Lake Burrinjuck Area**

0 0.25 0.5 0.75 1 1.25 1.5 2.5  
km

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Transport  
Roads & Maritime  
Services

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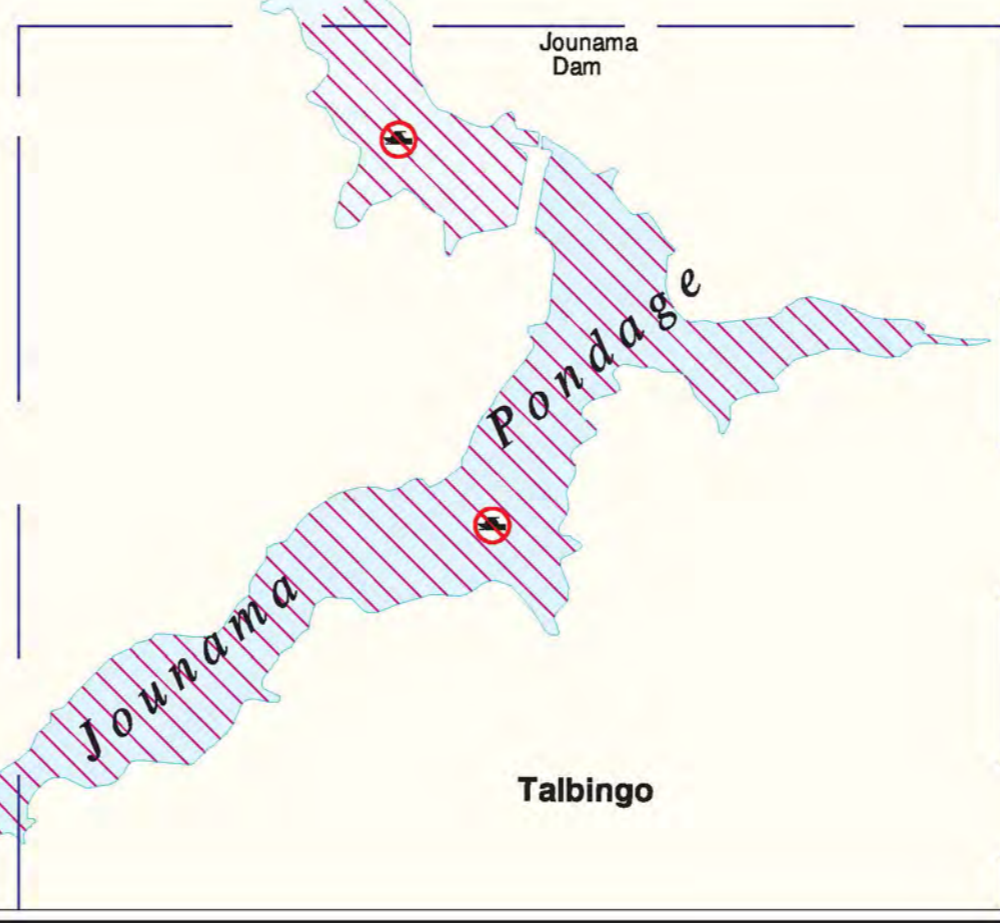


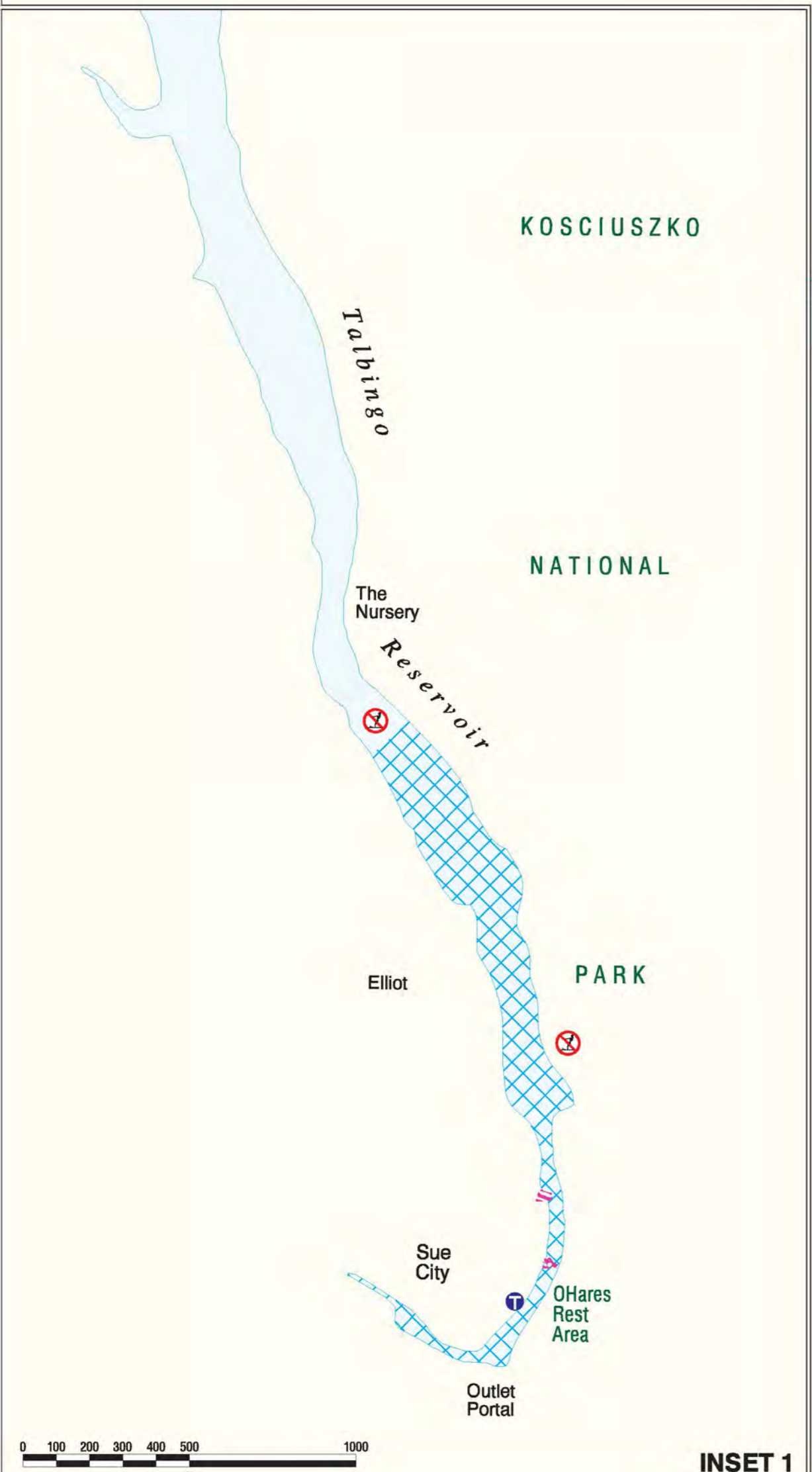
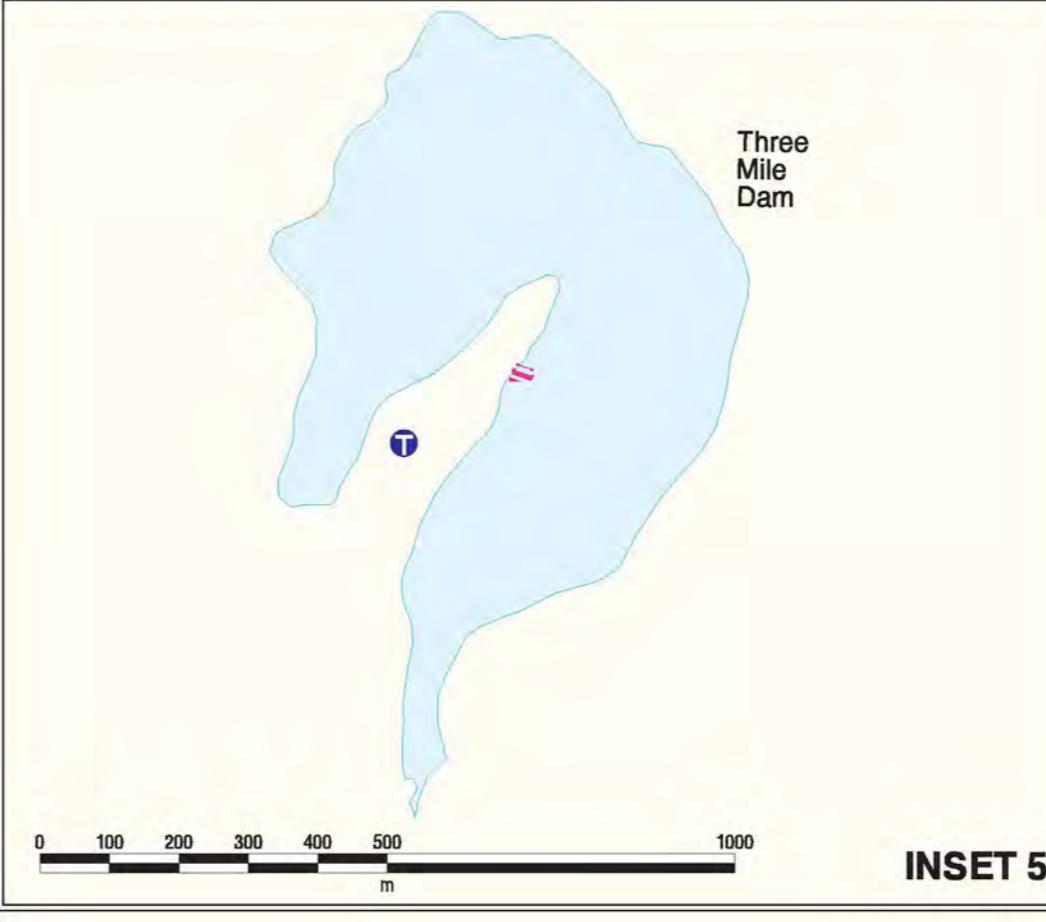
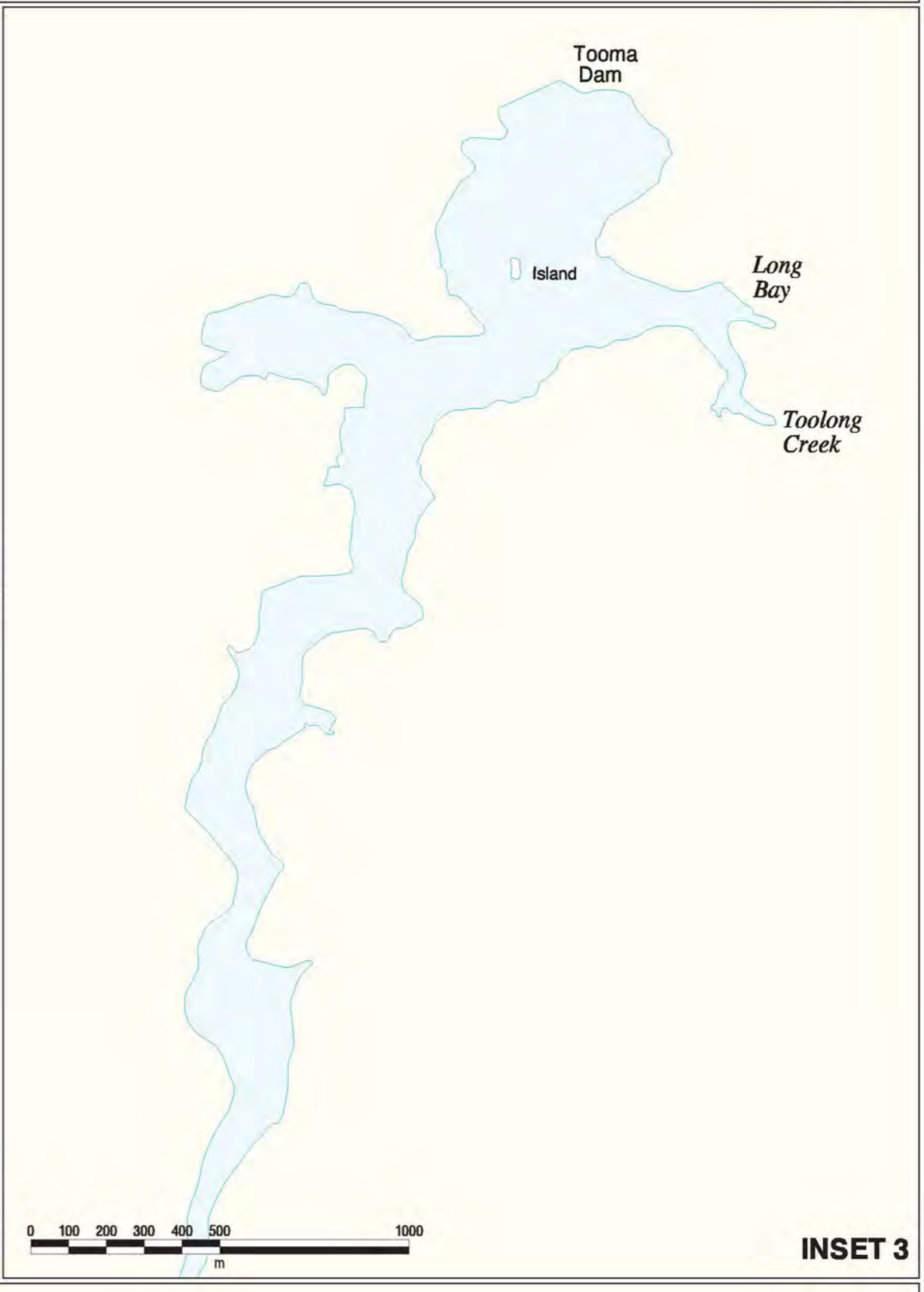
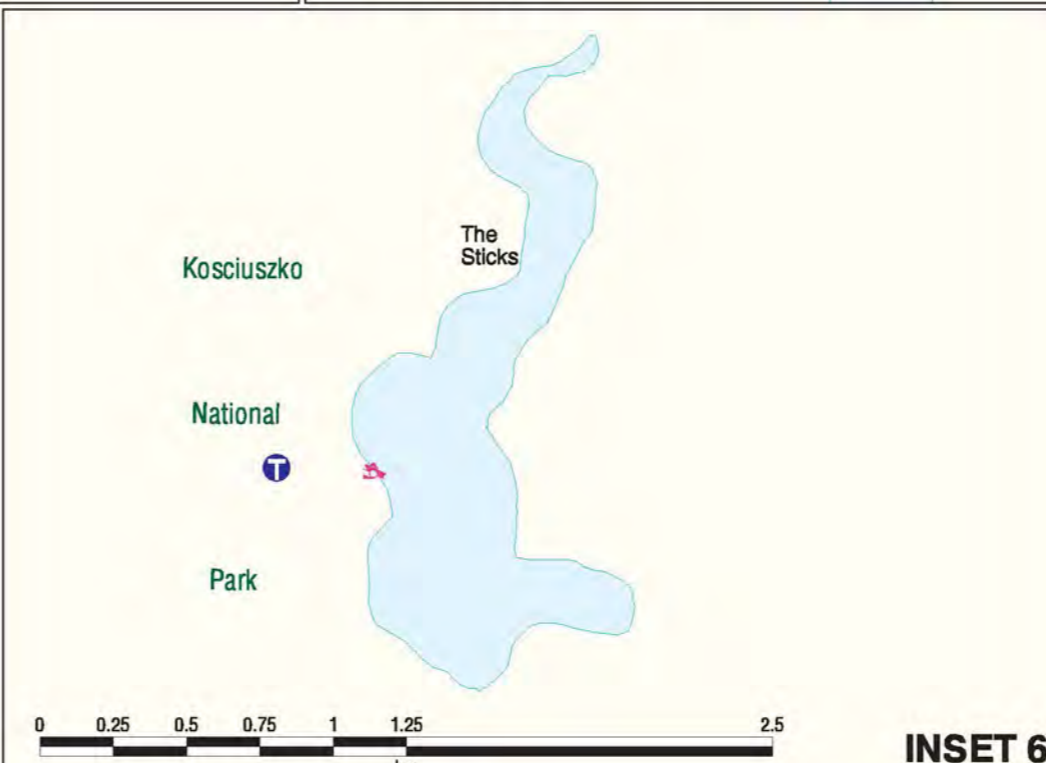
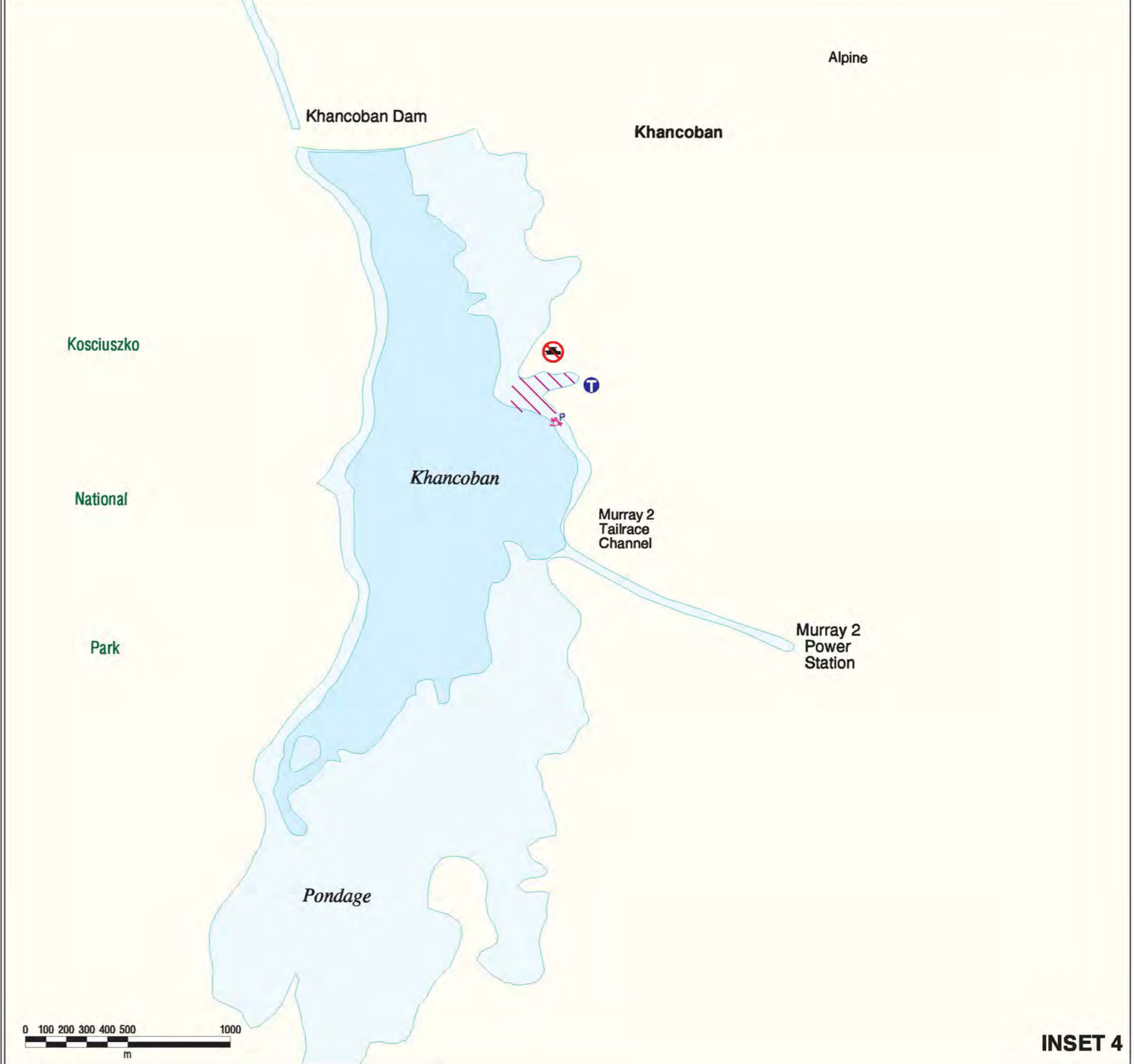
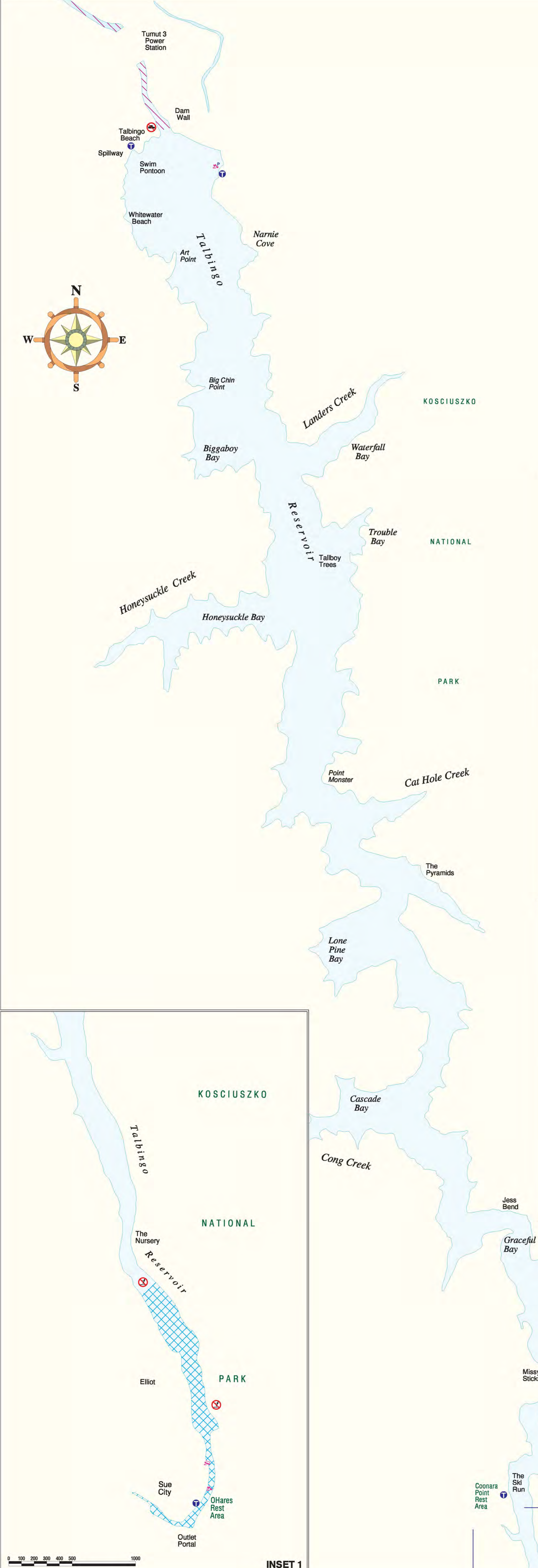
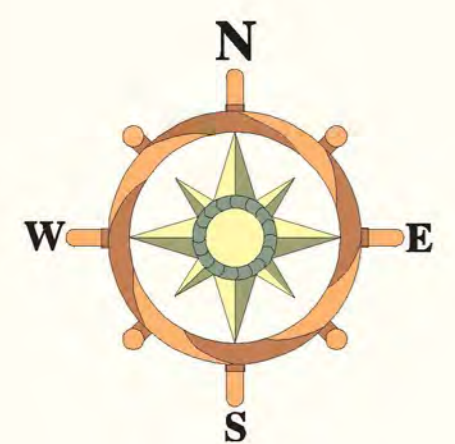
**MAP OF Blowering & Talbingo Dams Area**

0 0.25 0.5 0.75 1 1.25 1.5 1.75 2 2.25 2.5 km

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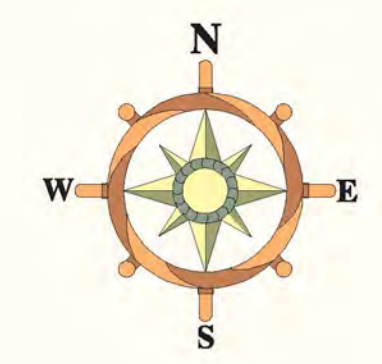
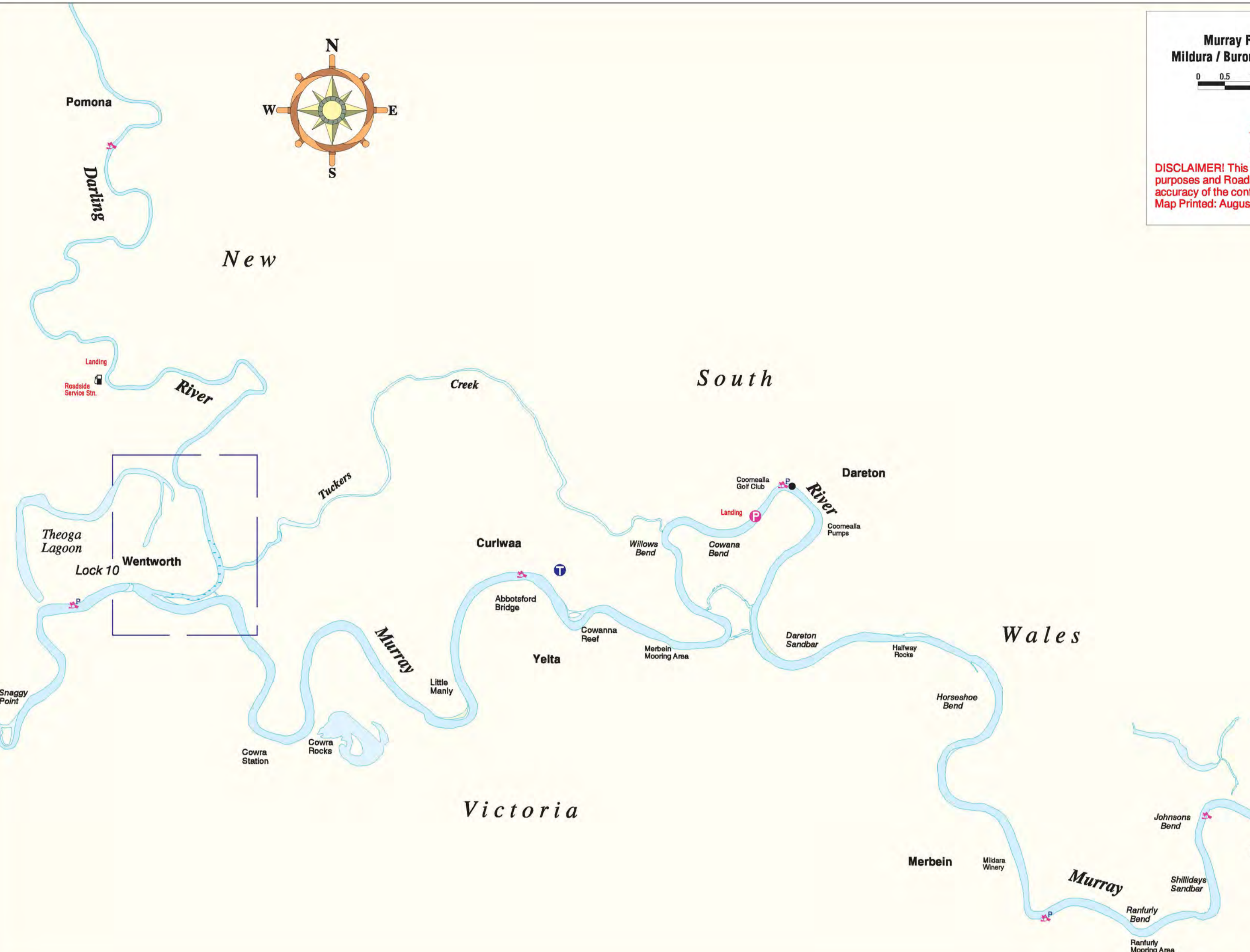
MAP OF  
**Talbingo, Tumut Pond, Tooma, Three Mile Dams  
Geehi Reservoir and Khancoban Pondage areas**

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Map generated by MapInfo on 30 Aug 14 by anob1



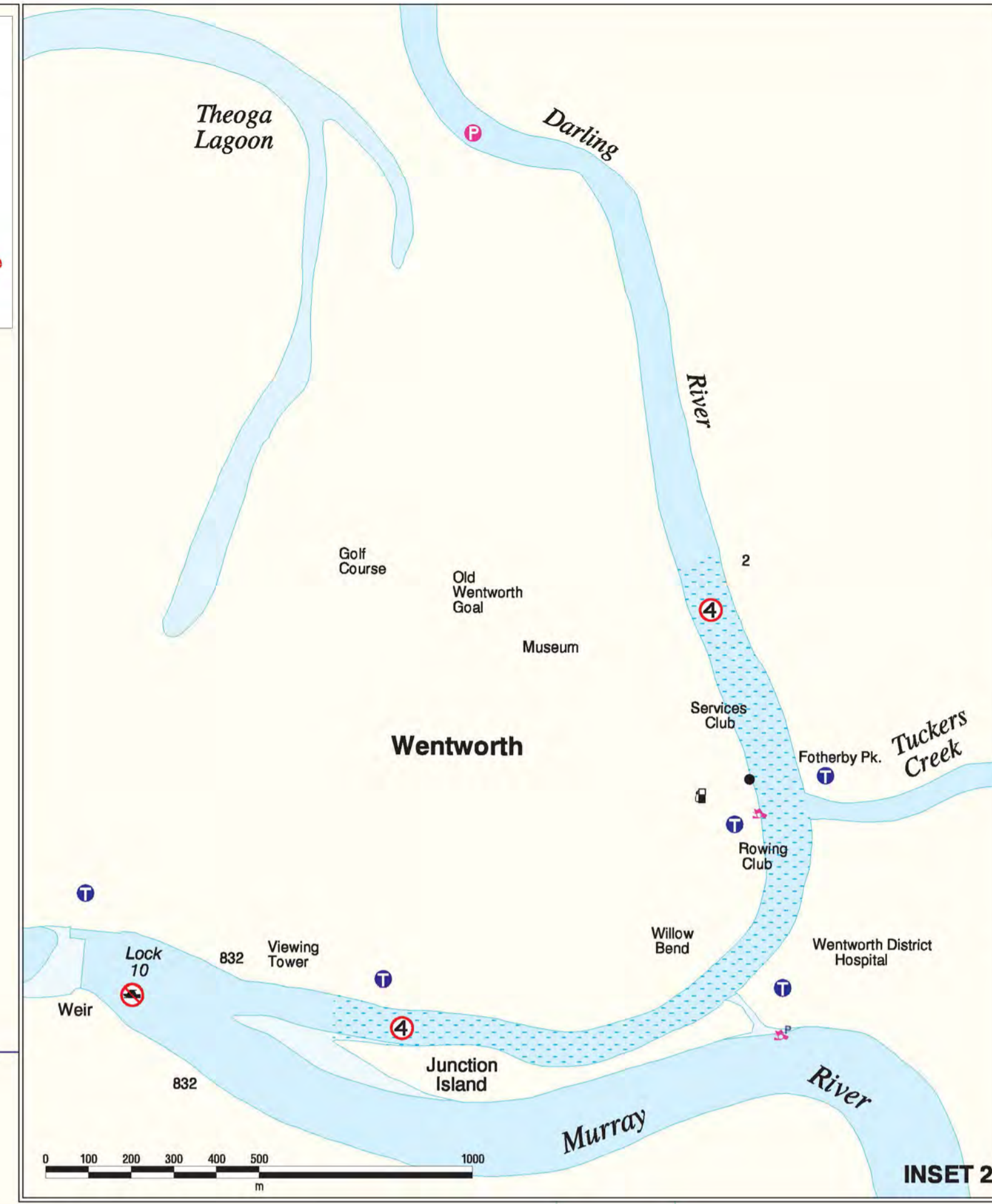


MAP OF  
**Murray River - Wentworth to Wickets, including Mildura / Buronga, Wentworth & Wickets to Colignan Insets**

0 0.5 1 1.5 2 2.5 5  
 km

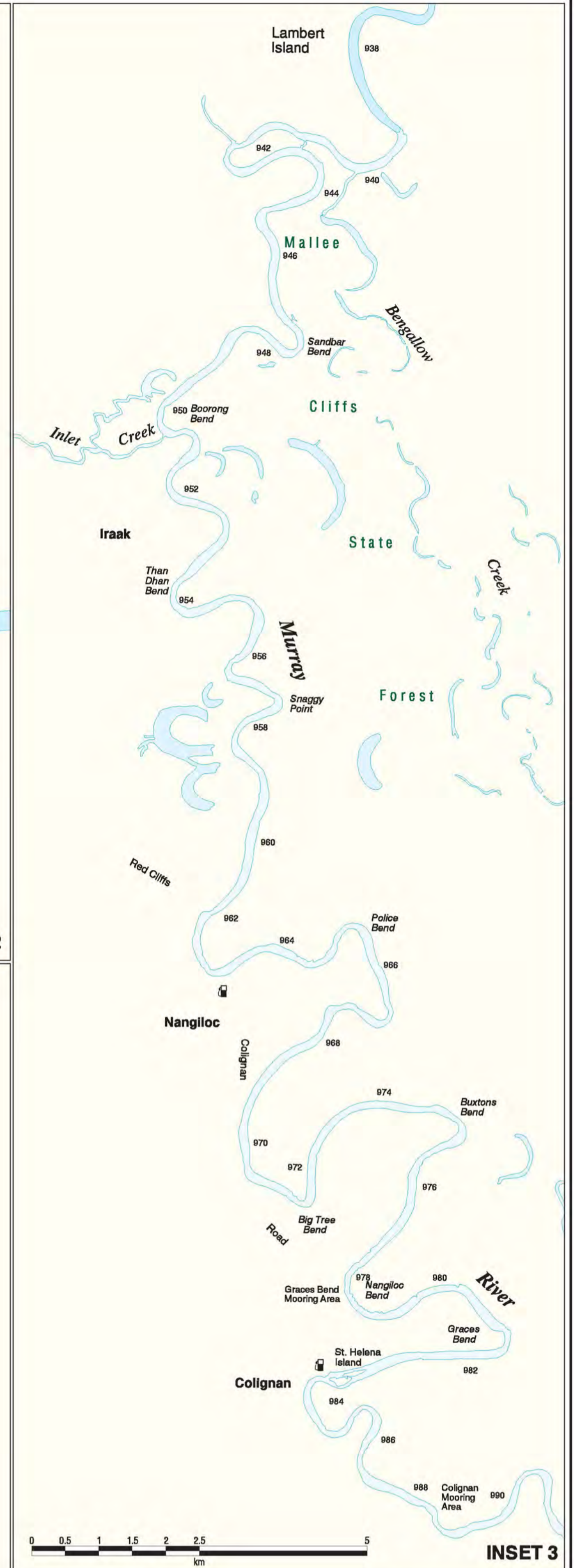
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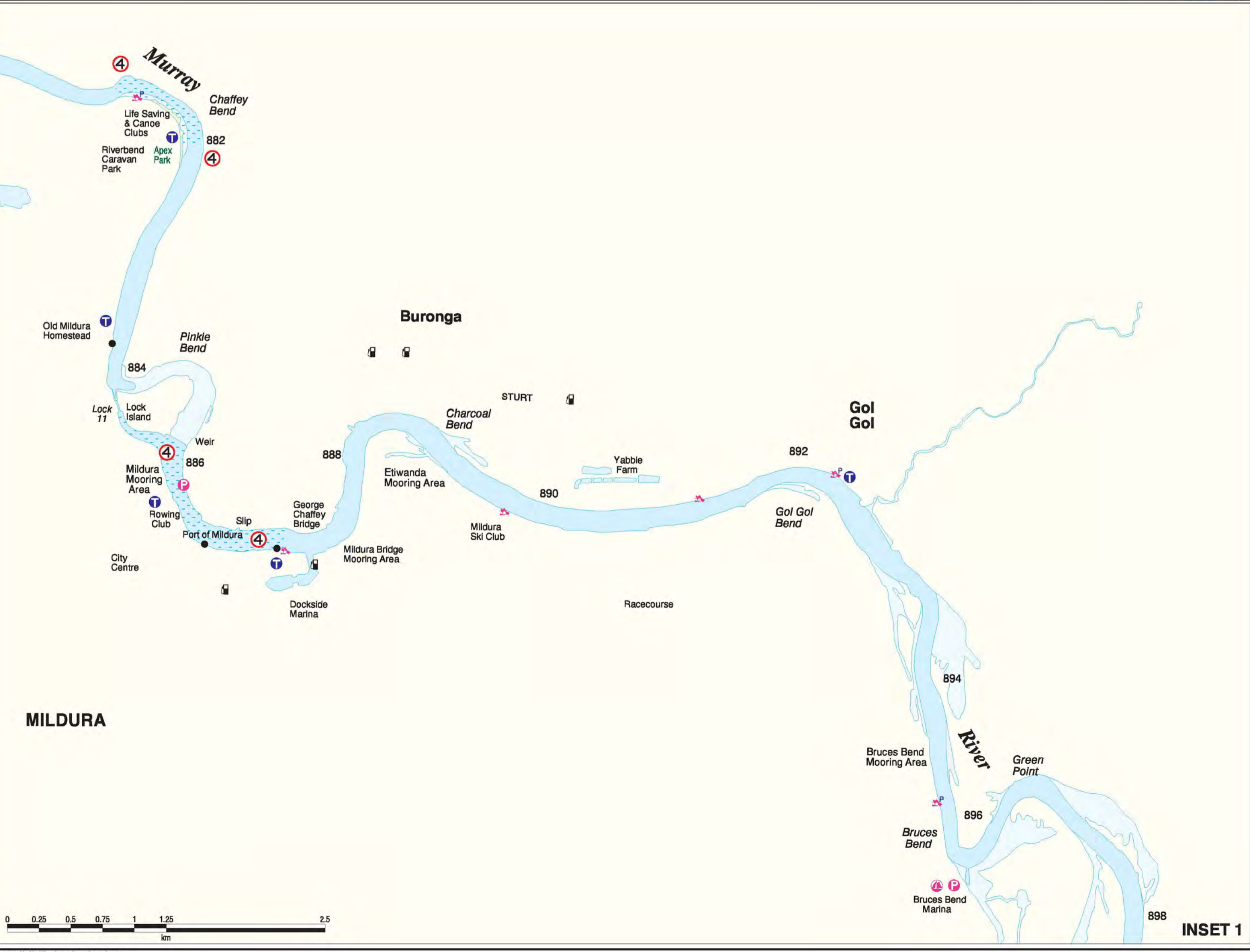
0 100 200 300 400 500 1000  
 m

**INSET 2**



0 0.5 1 1.5 2 2.5 5  
 km

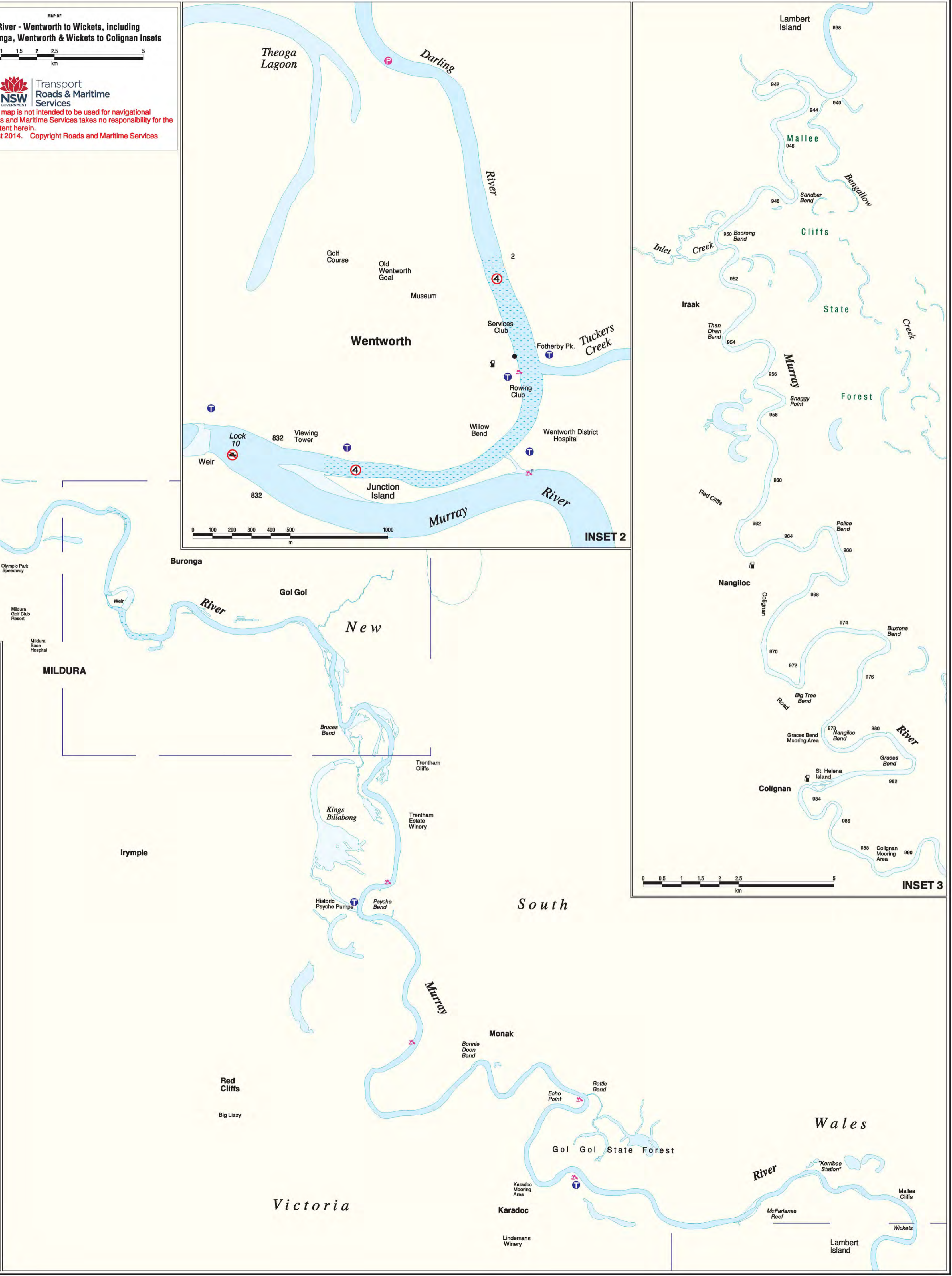
**INSET 3**



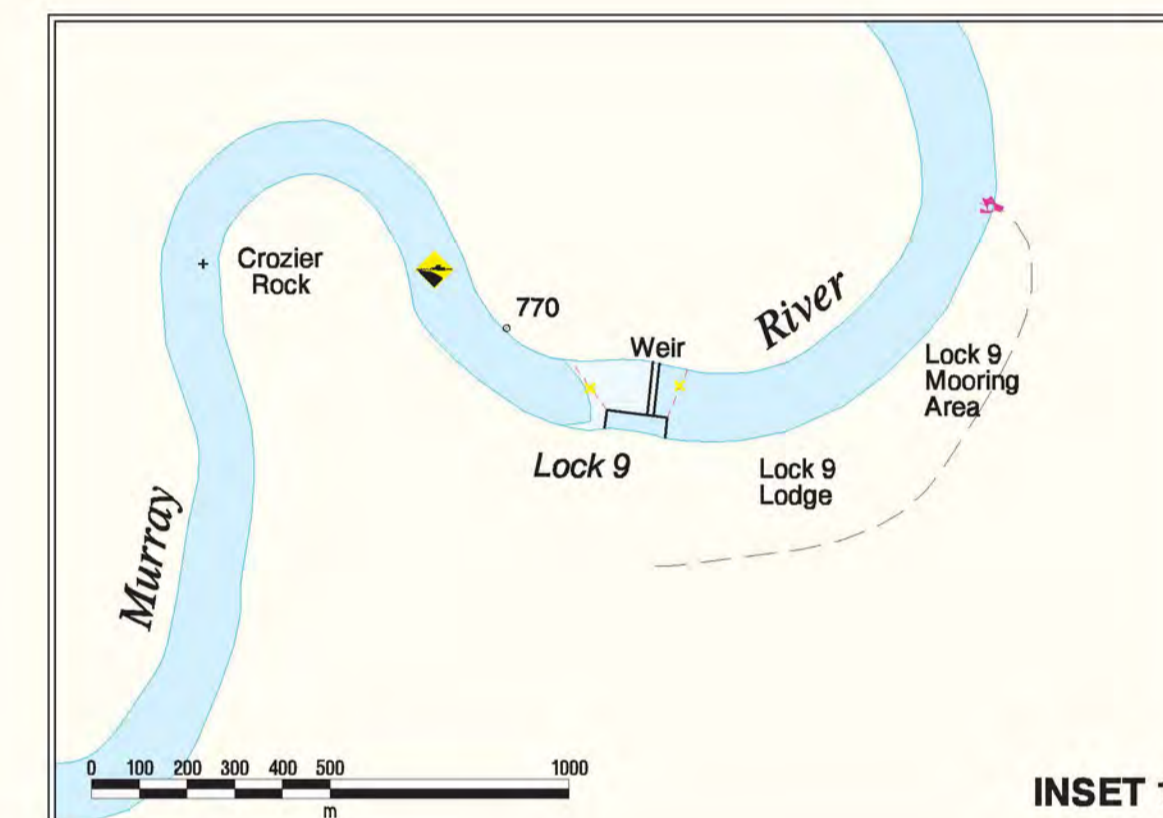
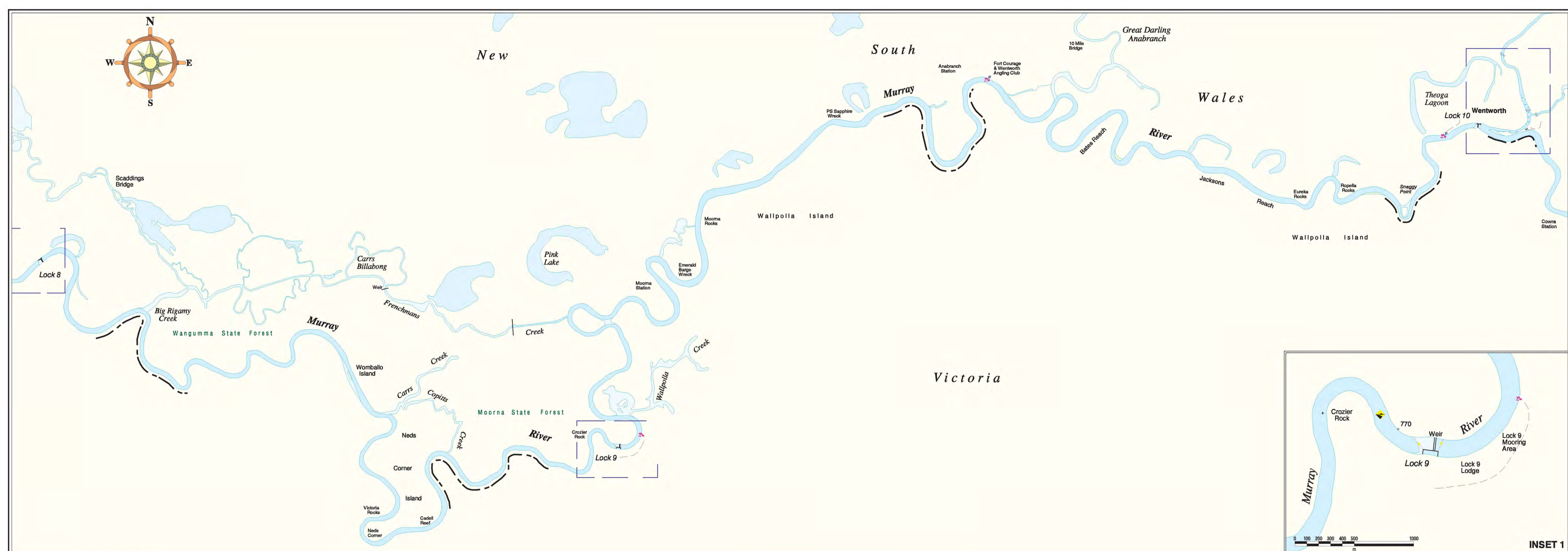
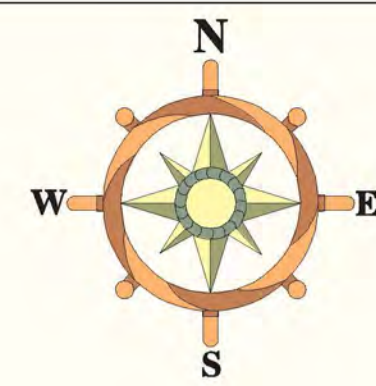
0 0.25 0.5 0.75 1 1.25 2.5  
 km

Map generated by MapBoard on 19 Aug 14 by enson1

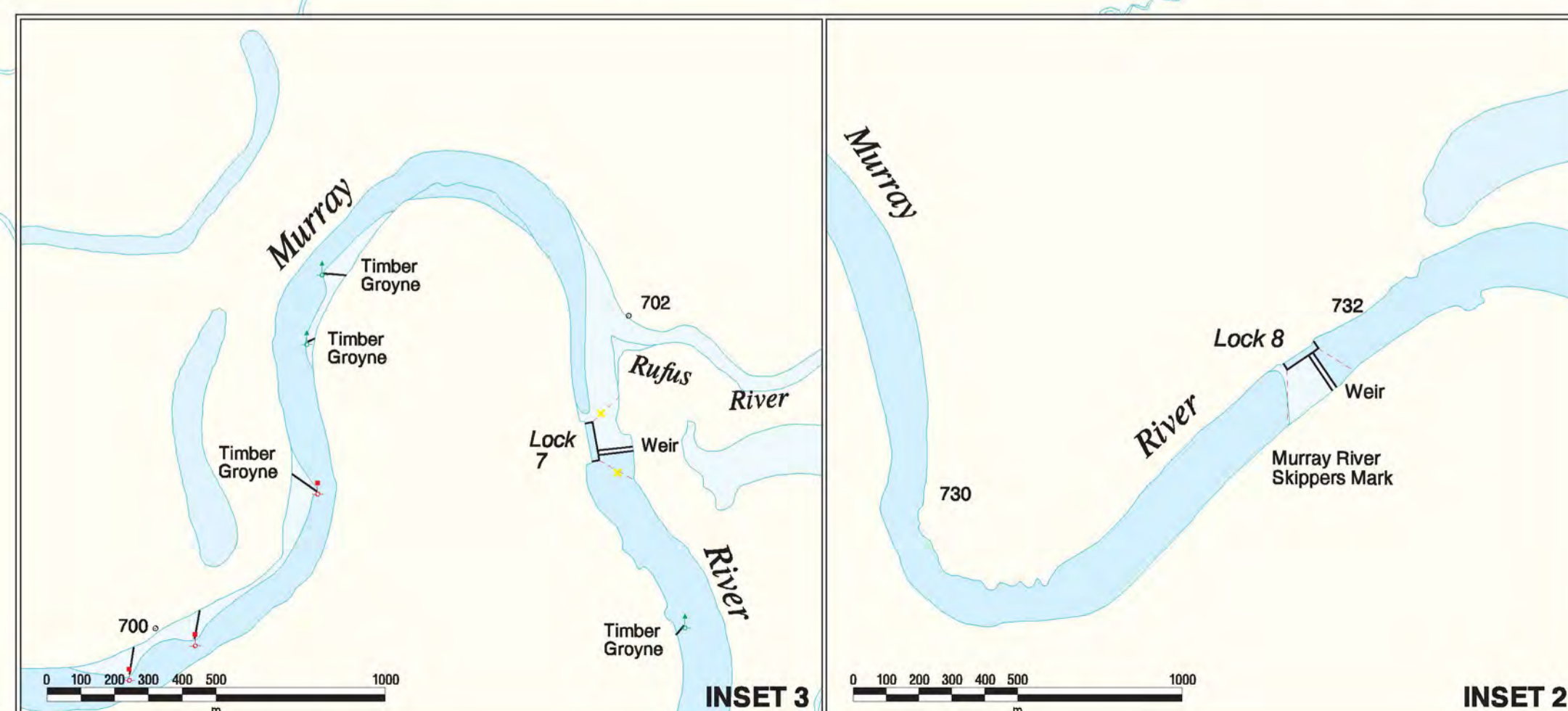
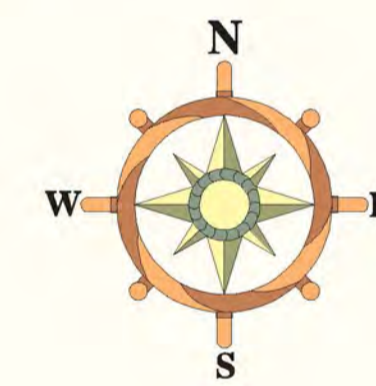
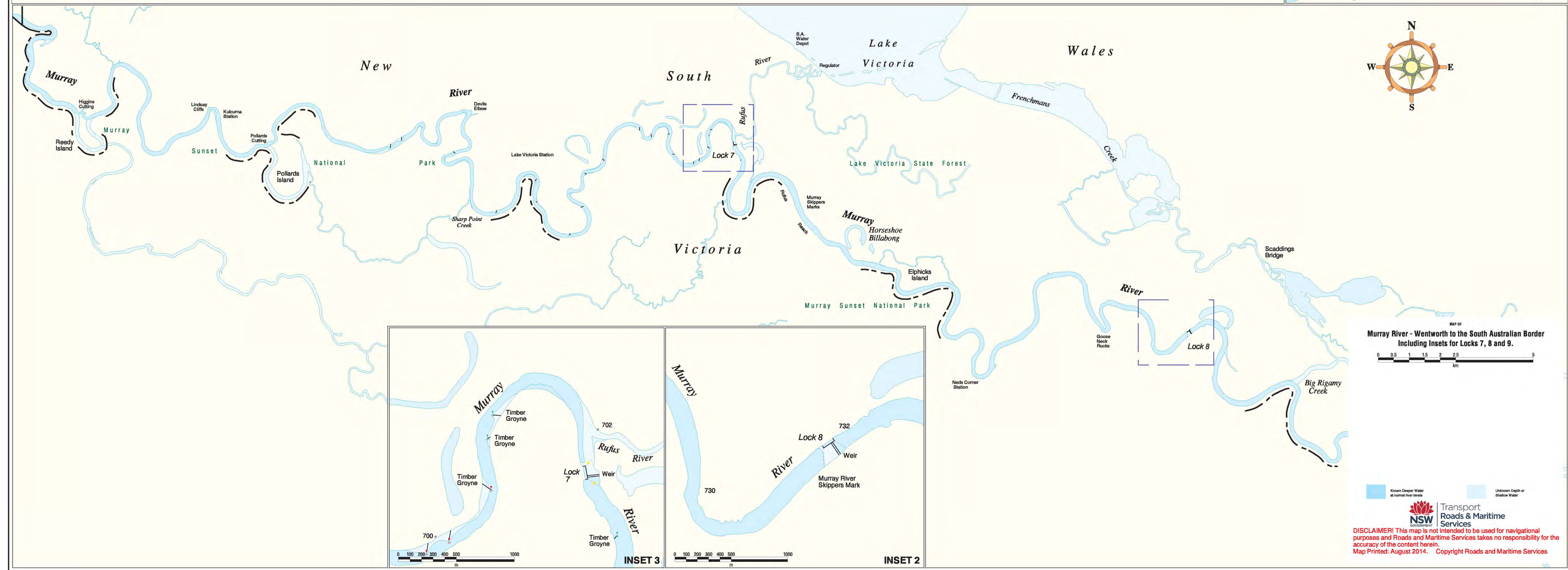
**INSET 1**



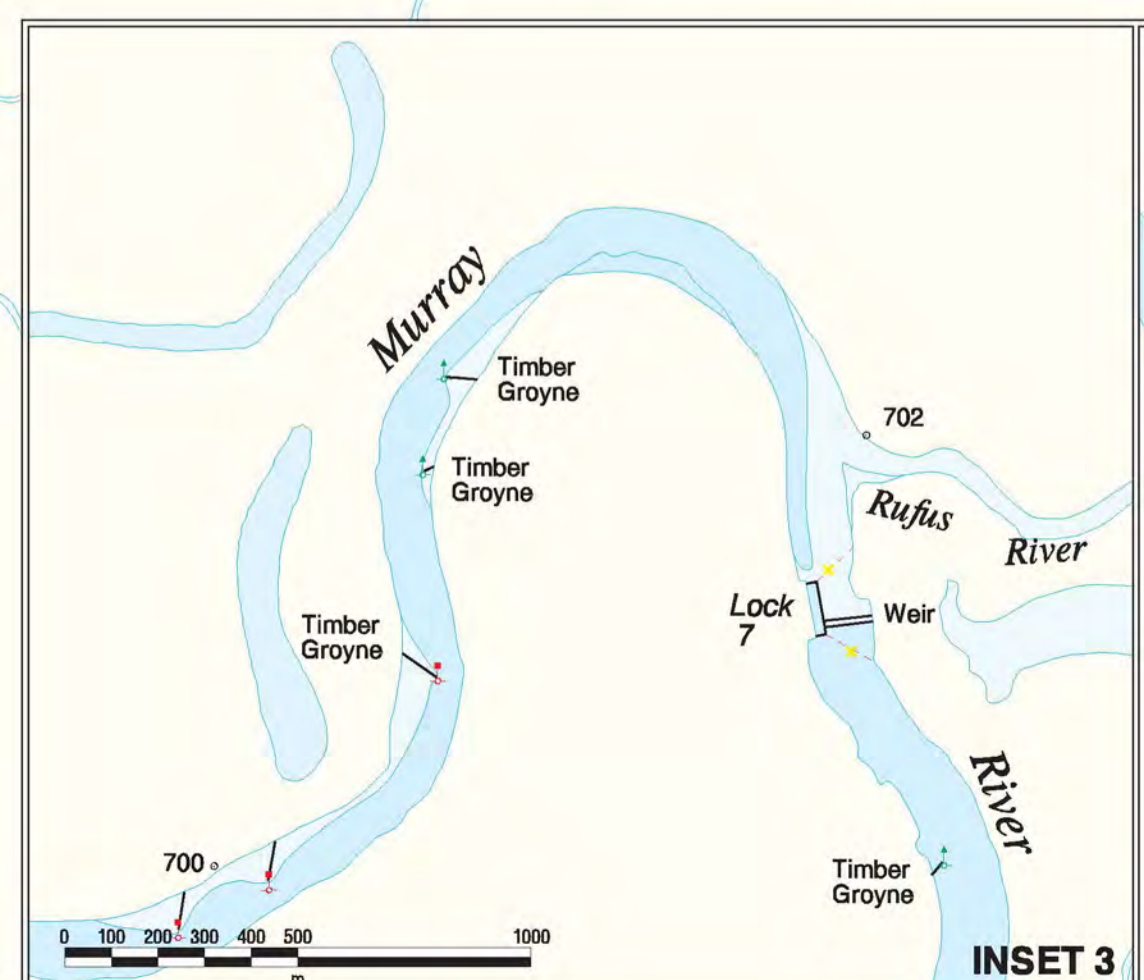
Map generated by MapBoard on 19 Aug 14 by enson1



INSET 1



INSET 2



INSET 3

MAP OF  
Murray River - Wentworth to the South Australian Border  
Including Insets for Locks 7, 8 and 9.  
0 0.5 1 1.5 2 2.5 3 5  
km

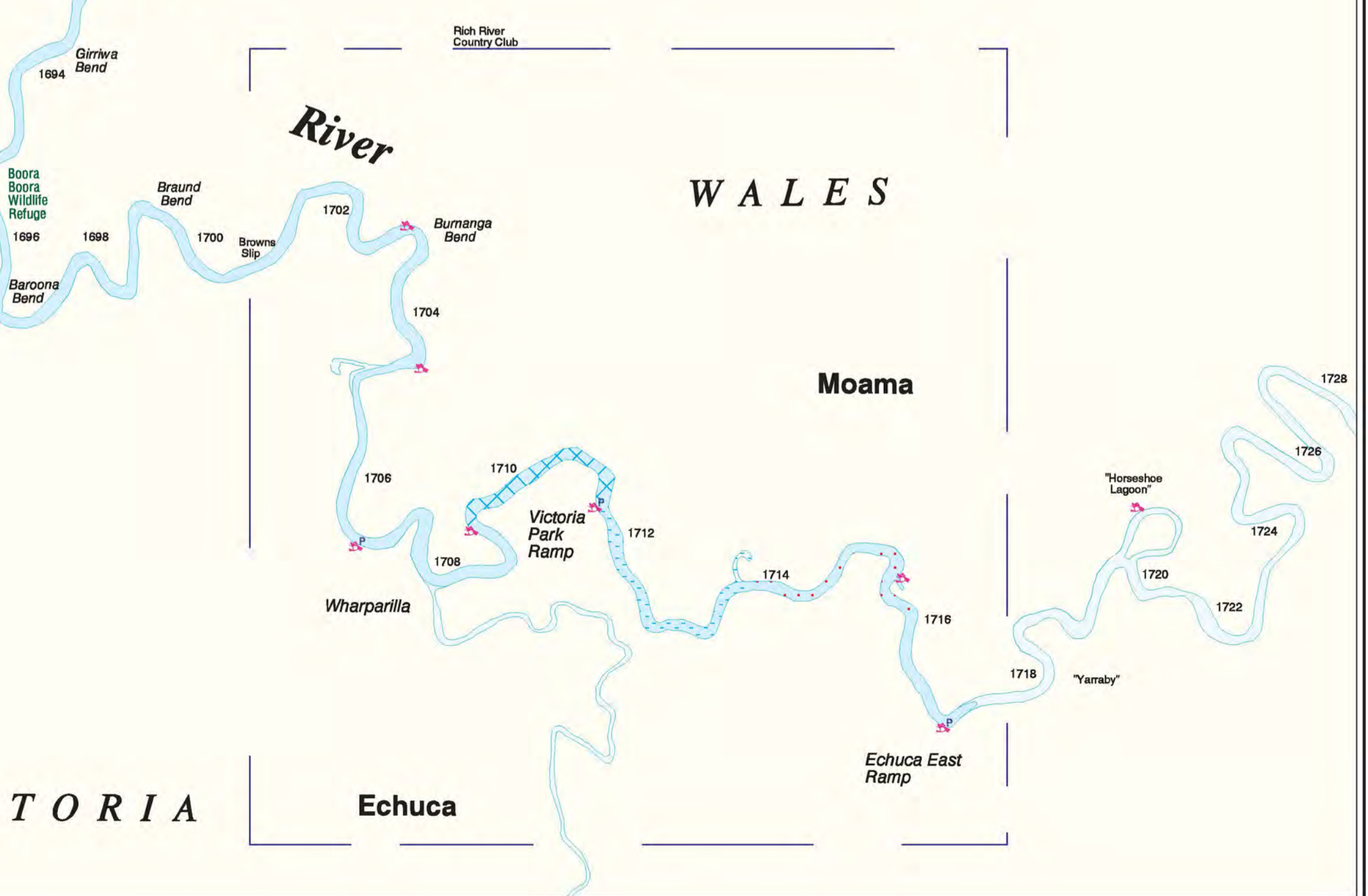
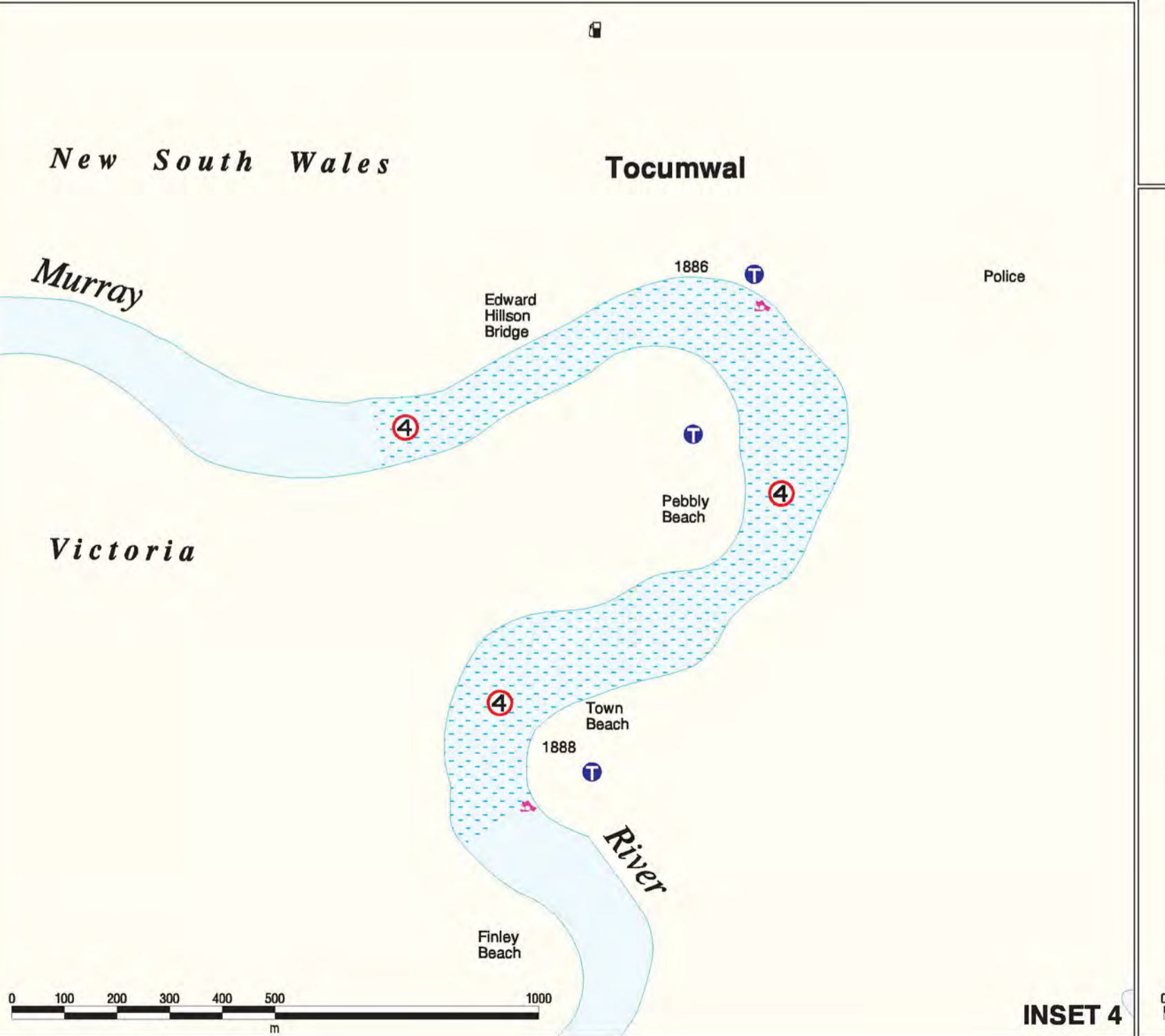
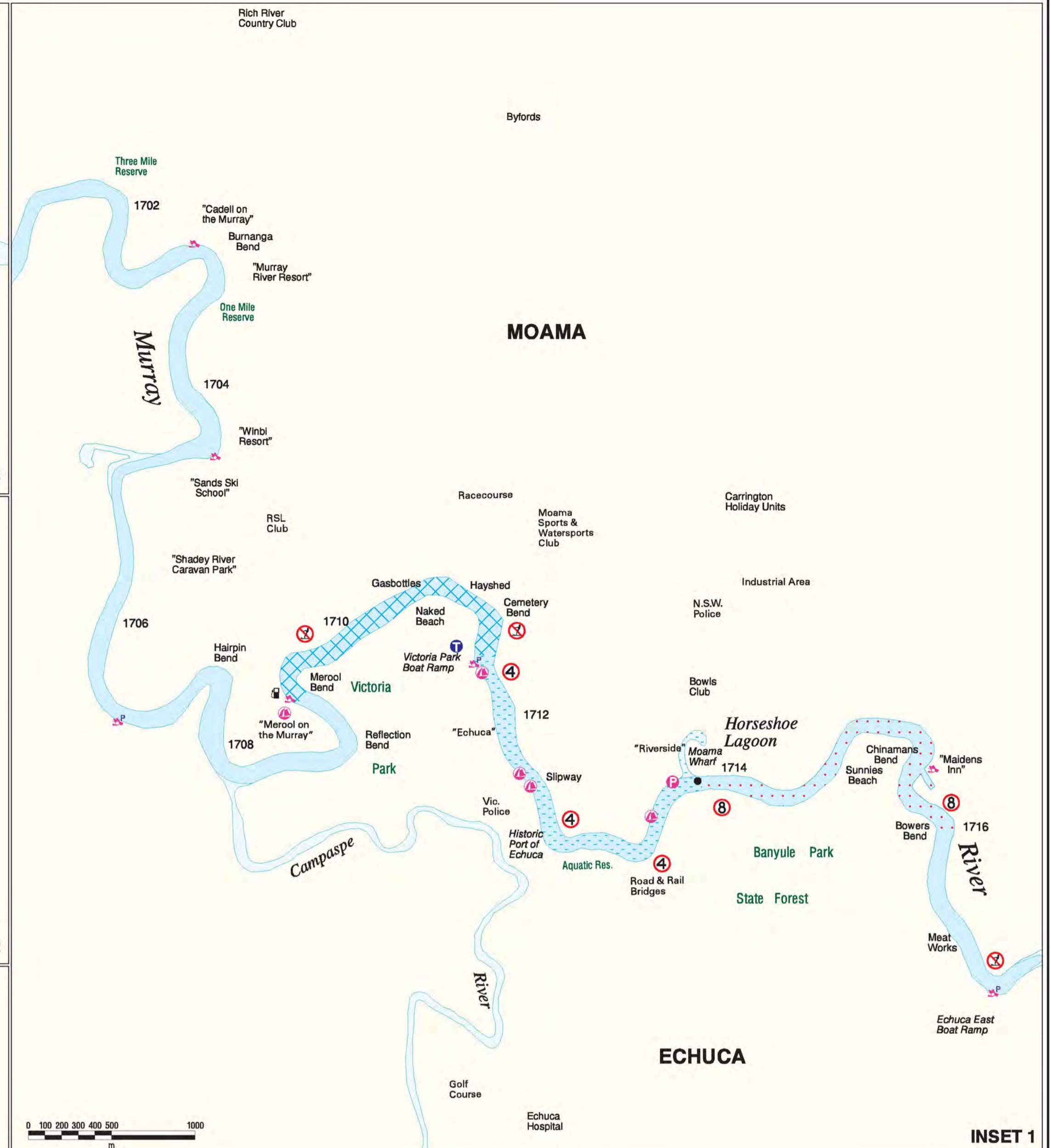
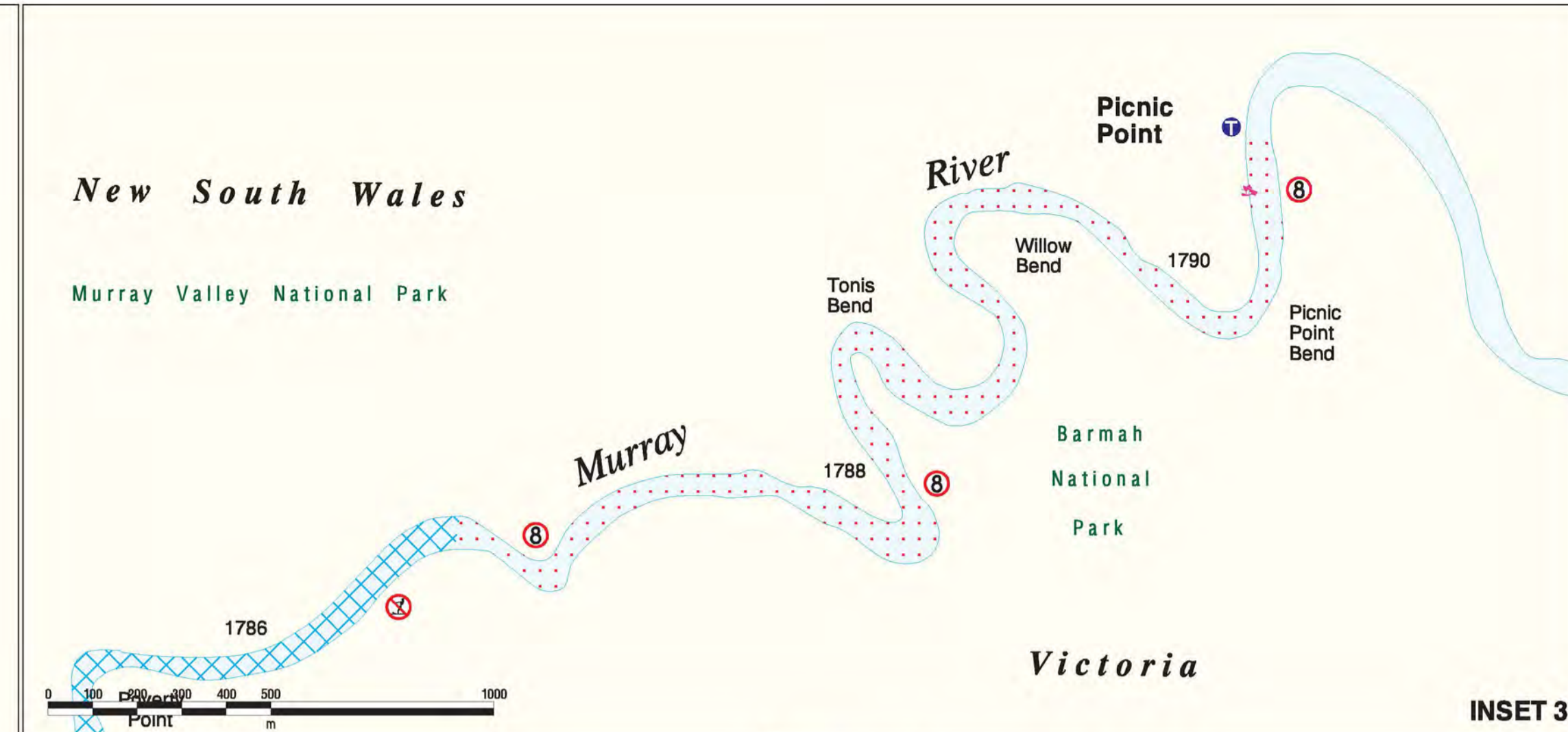


MAP OF  
**Murray River - Torrumbary to Moama / Echuca Area**  
 Insets for Barmah, Picnic Point, Tocumwal and Cobram / Barooga

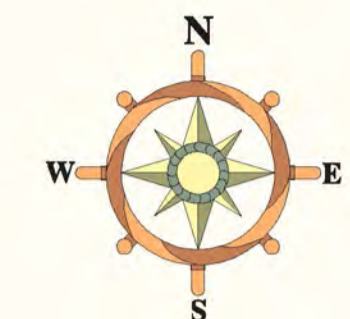
0 0.25 0.5 0.75 1 1.25 1.5 2 2.5  
 km

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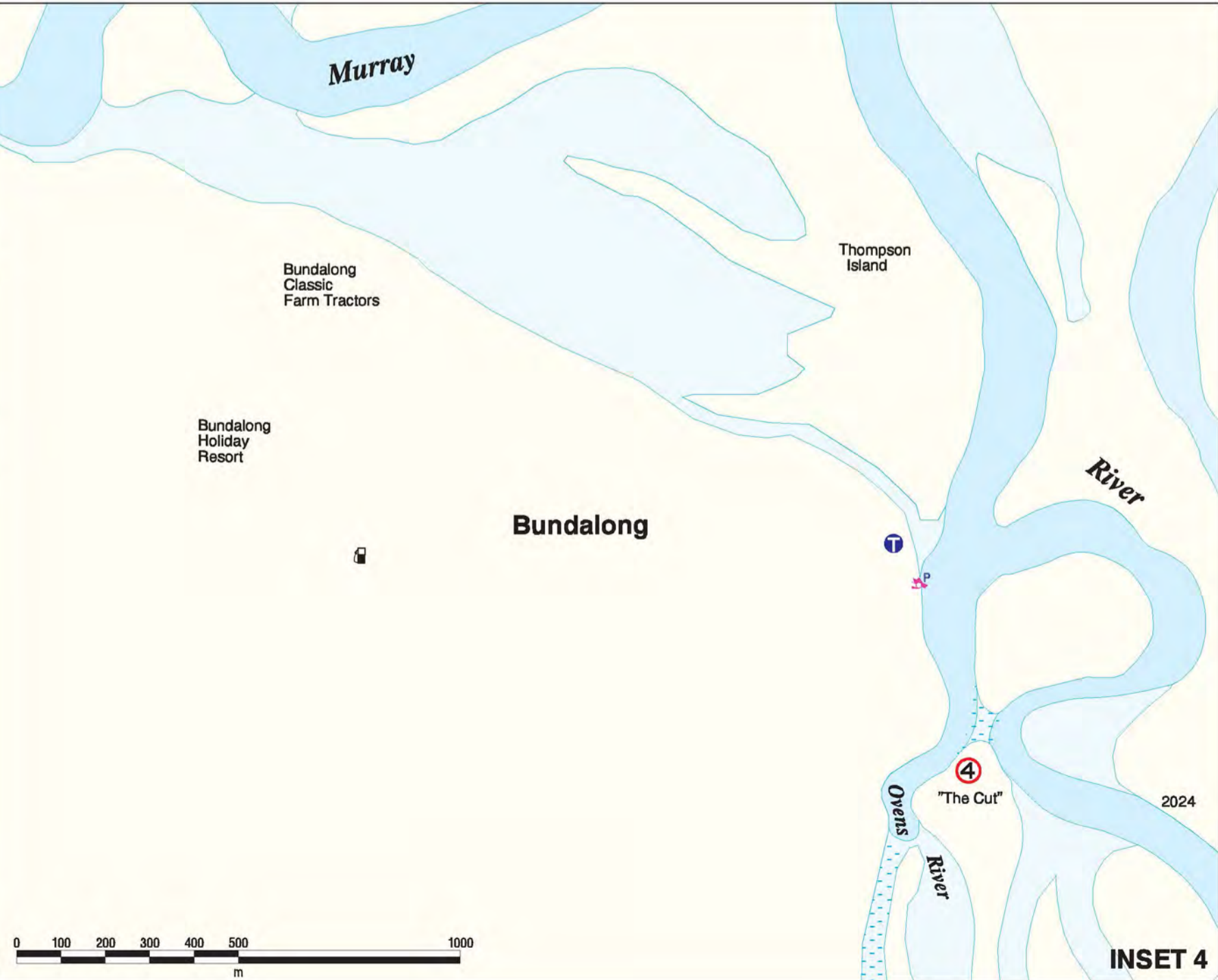
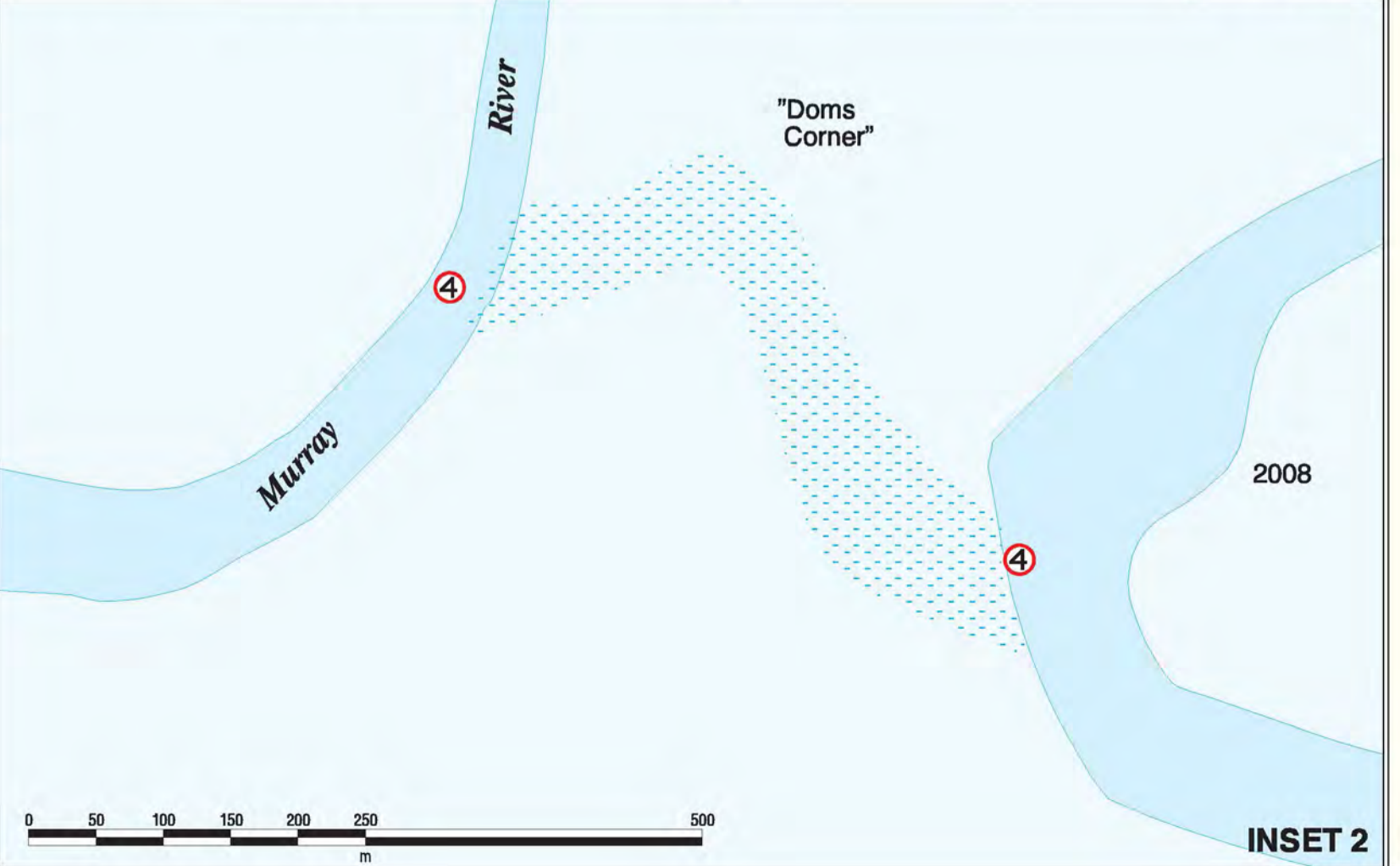
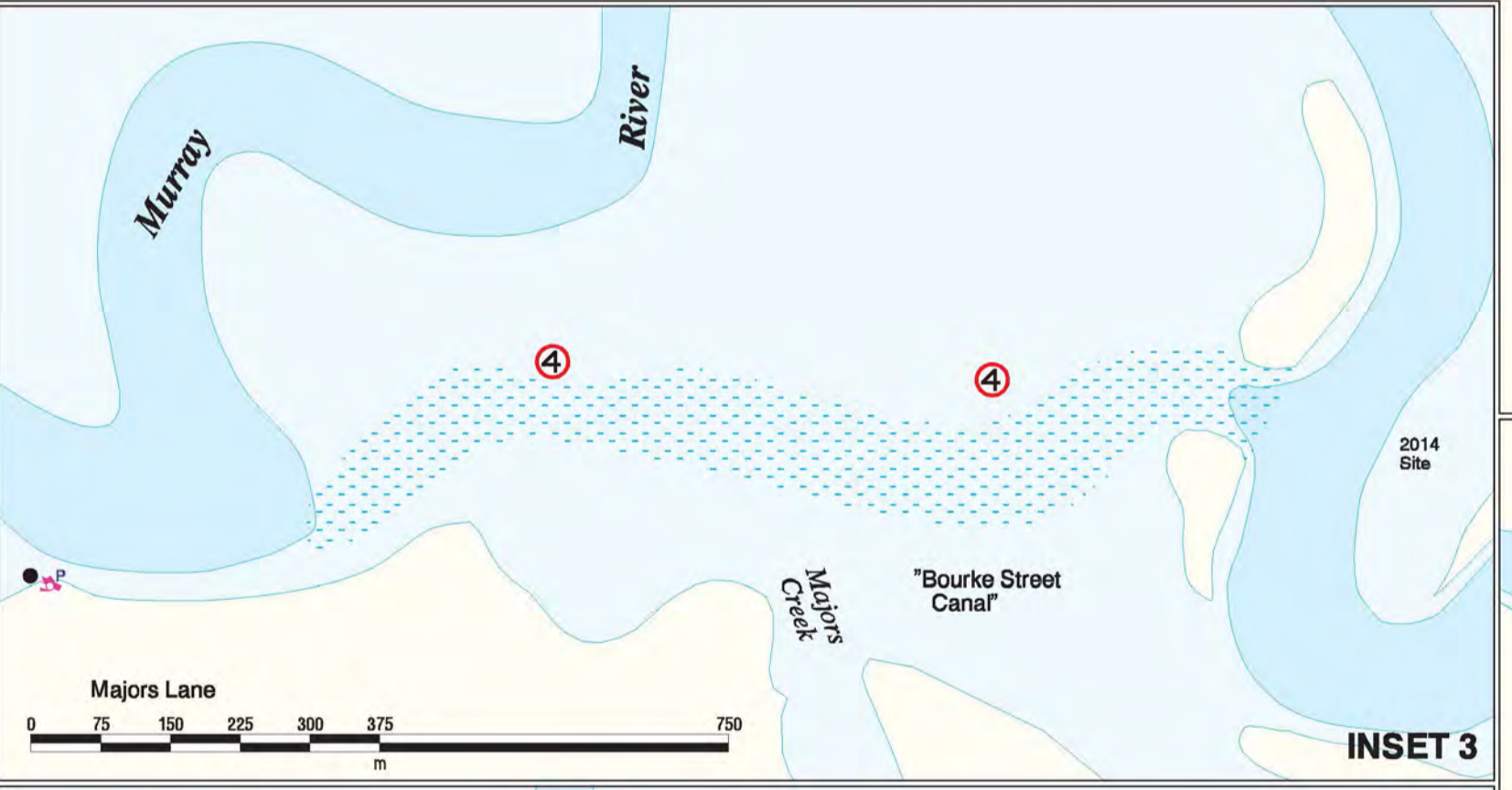
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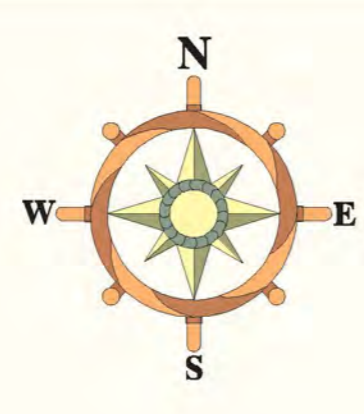
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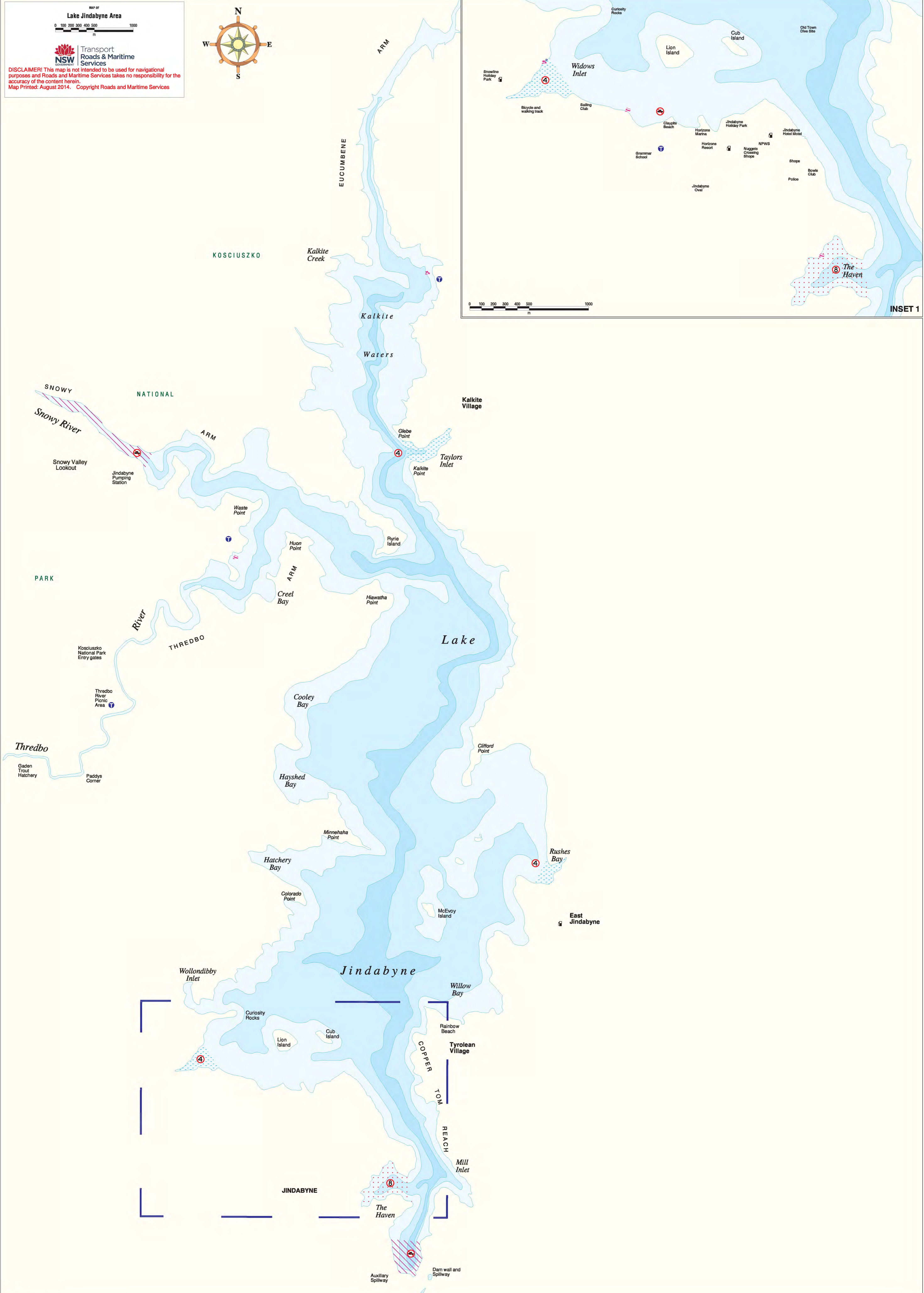
MAP OF  
**Lake Jindabyne Area**

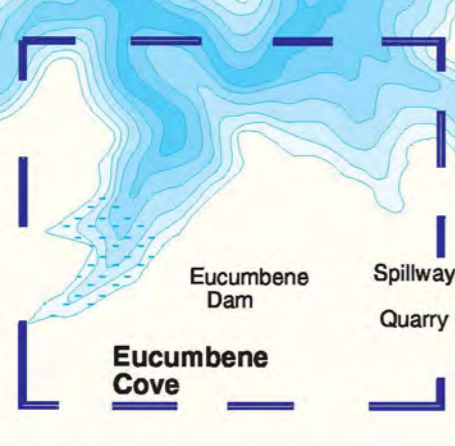
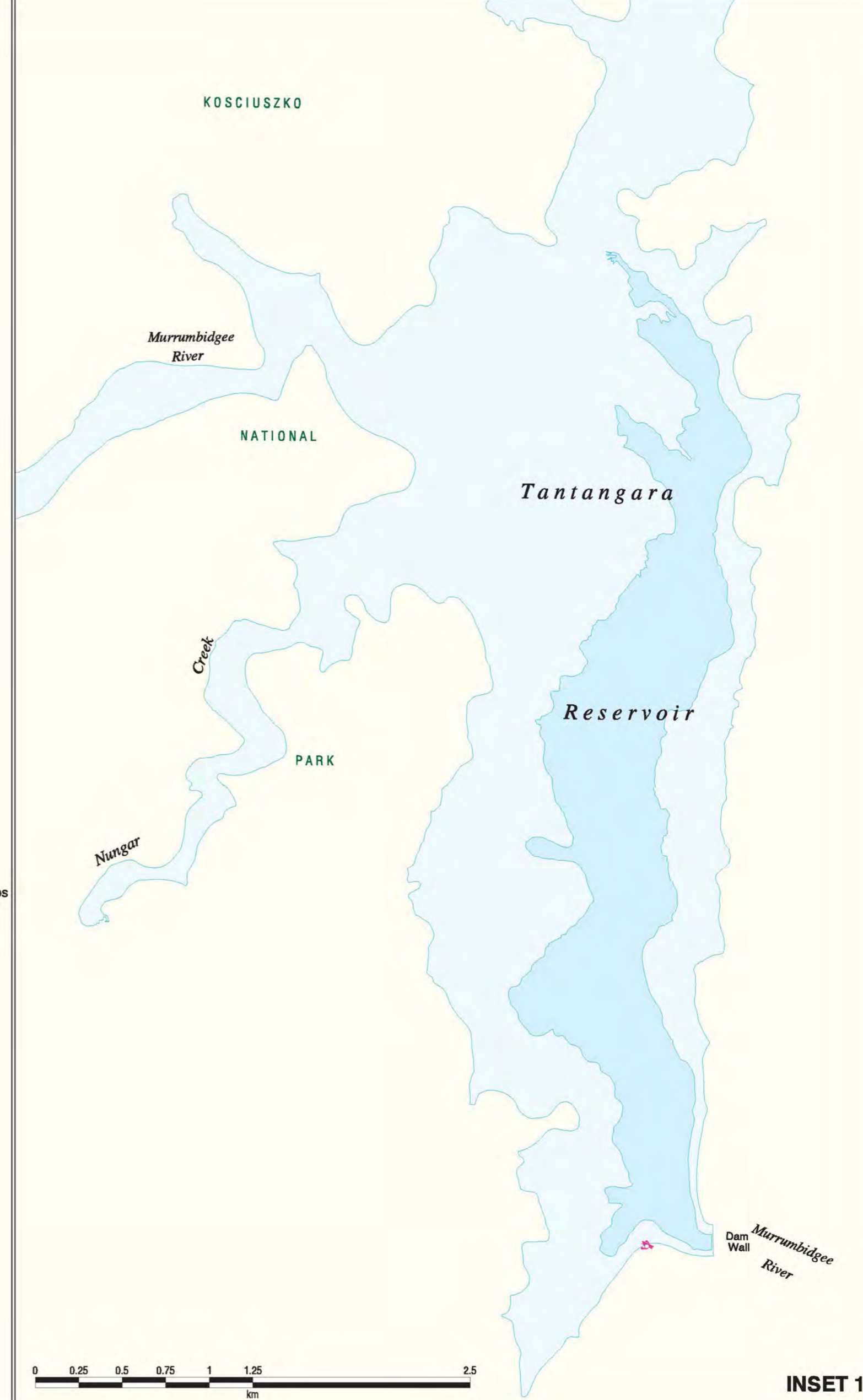
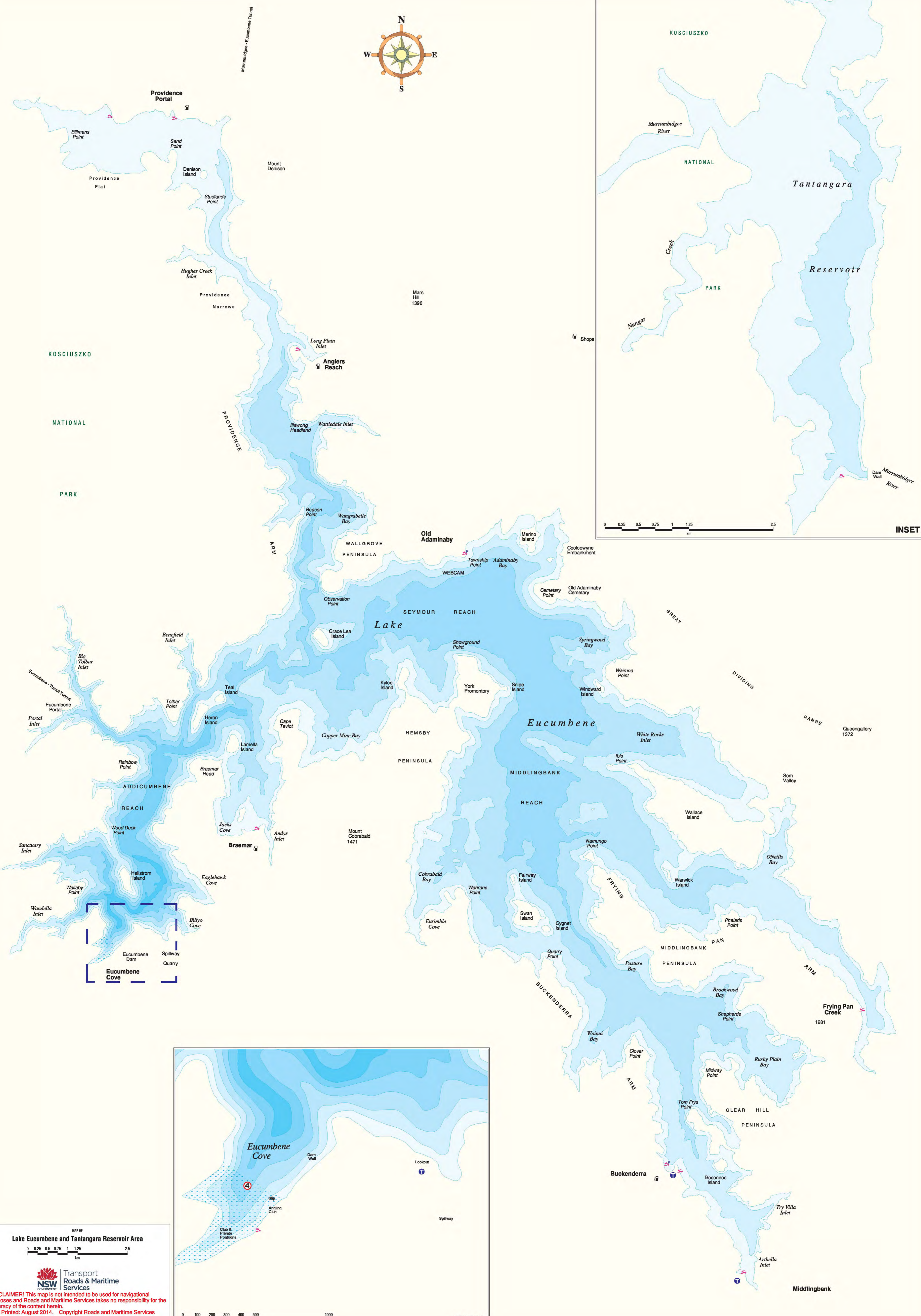
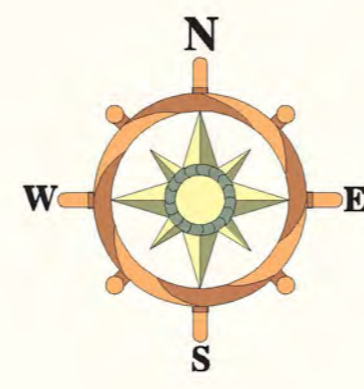
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**INSET 1**





MAP OF  
**Lake Eucumbene and Tantangara Reservoir Area**

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