

An aerial photograph of the Shoalhaven Estuary, showing a large body of water with a sandy beach on the right, a forested area in the center, and a residential area on the left. The water is a deep blue, and the surrounding land is green with some brown patches. The sky is clear and blue.

NSW | MARITIME

SHOALHAVEN ESTUARY

**Safe Boating Plan
2009 - 2013**

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SHOALHAVEN ESTUARY SAFE BOATING PLAN

January 2009

1 OVERVIEW

1.1 *Aims*

This Safe Boating Plan is a guide for boating activities on the Shoalhaven River. It aims to:

- ◆ Promote maritime safety;
- ◆ Maximise enjoyment of the waterway and minimise user conflicts via education and information campaigns; and
- ◆ Promote the provision of appropriate infrastructure.

1.2 *NSW Maritime's Role*

NSW Maritime is responsible for the regulation of commercial and recreational boating on navigable waterways of NSW. NSW Maritime manages commercial and recreational boating through:

- administration of NSW marine legislation;
- encouraging a culture of on-water safety via education programs, Safe Boating Plans and policies and enforcement of boating laws;
- issuing of recreational boat driver licences and boat registrations;
- management of mooring areas;
- surveying and registering commercial vessels and the certification of crews;
- placement and management of navigation aids and signs;
- funding for regional boating infrastructure; and
- issuing aquatic licences for major aquatic events, and assisting with associated on water control activities.

1.3 *Safe Boating Plans*

Safe Boating Plans are a guide to shared use and access to a particular waterway to the benefit of recreational and commercial users alike. Safe Boating Plans are designed to be responsive to changing

conditions and boating patterns, and are reviewed when necessary but generally every five years from the date of adoption by NSW Maritime.

2 THE SHOALHAVEN RIVER

The Shoalhaven River is a major community resource for the people of the South Coast of NSW. The river hosts a range of recreational and commercial boating activities, as well as aquatic events including the Australian Wakeboarding Titles, rowing and sailing regattas and fishing competitions. Recreational activities include fishing, water skiing, wakeboarding, sailing, rowing, canoeing, kayaking, swimming and river cruises. Commercial activities include fishing, aquaculture, charters, and hire and drive operations.

2.1 Recreational Activities

The following table outlines the dominant recreational activities along different parts of the River.

Reach	Degree of Usage	Type of Usage	Facilities
Shoalhaven Heads area	Moderate to high	Popular for sightseeing, bird watching, fishing and swimming. Some water skiing, wakeboarding, sailing and PWC use.	Moorings and 3 boat ramps at Shoalhaven Heads.
Crookhaven Heads and Greenwell Point area.	Moderate to high	Popular for fishing, sailing and river cruises. Is a conduit to the ocean across the bar at Crookhaven Heads.	Regional boat ramp at Crookhaven Heads, three boat ramps at Greenwell Point. Ramp and pontoon jetty with disabled access at Orient Point.
Shoalhaven Heads to Nowra Bridge	Moderate to high	Popular for fishing, sailing, rowing and river cruises.	Nowra Sailing Club (includes boat ramp). Two caravan parks adjacent to the river.
Nowra Bridge to Humbug Reach	Very high (both water and land based activities).	Popular for waterskiing, rowing and river cruises.	Shoalhaven Ski Park. Camping grounds at Nowra Animal Park. Cabbage Tree Creek Reserve, Yarrunga Reserve, Thompson Point Reserve, Depot Farm Reserve. Rowing Club. Boat ramps at Greys Beach and ski park.
Humbug Reach to Long Reach.	High	Popular for water skiing and river cruising. Picnicking at Cabbage Tree Creek Reserve and Crams Road Reserve.	Gypsy Point, Cabbage Tree Creek Reserve and Crams Road Reserve.

Reach	Degree of Usage	Type of Usage	Facilities
Long Reach to Calymea Reach.	Moderate	Wakeboarding and water skiing between Long Reach and "Bundanon". Canoeing, kayaking and swimming at Bangalee Scout Camp and Camp Kaloona.	Bangalee Scout Camp and Camp Kaloona. Bangalee Reserve (with public wharf and public toilet). Several private boat ramps.
Calymea Reach to Burrier.	Low	Barringella Reach and Calymea Reach used for swimming, canoeing and kayaking. Camping at private boat ramp at downstream end of Barringella Reach, on the point opposite "Barringella", and opposite "Bundanon". Some fishing. Access limited by lack of public boat launching facilities, difficult navigation conditions, and distance from Nowra.	Gradys Riverside Retreat

**Source: Shoalhaven River Estuary Data Compilation Study, Umwelt (Australia) Pty Ltd 2005*

2.2 Commercial Uses

Currently, 15 offshore commercial vessels operate from the Shoalhaven River, primarily based on the Lower Shoalhaven with access to the ocean past a training wall and bar. A number of inshore commercial vessels operate within the estuary itself, predominantly houseboats, hire and drive craft and small tinnies. These make use of both the lower and upper Shoalhaven.

Commercial Activity

Commercial Activity	Number of Operators	Number of Vessels
Fishing	15	18
Hire & Drive	2	11
Passenger	1	1
Work/Utility	5	7

3 THE SHOALHAVEN BOATING PLAN

The Shoalhaven Estuary Boating Plan is divided into two major sections, the Lower Estuary and the Upper Estuary. These reflect the variation in activity type and differences in geomorphology. These are further divided into Subsections, outlined below.

Lower Estuary: Covers the main river from the Nowra Traffic Bridge, east to Crookhaven Heads and includes Broughton Creek, Shaws Creek, Shoalhaven Heads, Crookhaven River and Curleys Bay.

Sub-Sections:

- A: Crookhaven Heads to Berrys Canal
- B: Crookhaven River / Curleys Bay
- C: Berrys Canal to Old Man Island
- D: Shoalhaven Heads / Berrys Bay
- E: Old Man Island to Numbaa Island
- F: Broughton Creek
- G: Numbaa Island to Nowra Traffic Bridge

Upper Estuary: Covers the main river from the Nowra Traffic Bridge, west to the extent of the tidal limit at Burrier and includes Nowra Creek, Cabbage Tree Creek, Mundamia Creek, Calymea Creek and Bangalee Creek.

Sub Sections:

- H: Greys Beach to Thompson Point
- I: Thompsons Point to Long Point (incl Humbug Reach)
- J: Long Point to Gypsy Point
- K: Long Reach
- L: "Riversdale" to Burrier

The Plan includes a number of concepts and actions applicable on an estuary-wide basis, followed by specific initiatives relevant to an individual section or subsections. The implementation of the Plan is in accordance with the following timeframes:

- **Short Term:** within one year of the adoption of this plan.
- **Medium Term:** within three years of the adoption of this plan.
- **Long Term:** within the first five-year cycle of this plan.
- **Ongoing:** on a recurring or "as required" basis.

4 ESTUARY–WIDE CONCEPTS AND ACTIONS

4.1 Marine safety

Issues:

◆ **Traffic Bridges**

Traffic bridges crossing navigable waters may impede vision and lines of navigation, or pose boating safety concerns with people fishing, swimming or diving from the bridge.

The strategies adopted in this boating plan are aimed at mitigating the risk of vessel incidents, accidents, including the potential installation of navigation lights, an upgrade for warning signage and designation, where necessary, of spans for each-way vessel traffic.

NSW Maritime will also continue to enforce the relevant provisions of the *Water Traffic Regulations* prohibiting travelling at speed, skiing or aquaplaning under bridges.

◆ **Commercial Fishing Grounds**

NSW Maritime is aware of concerns raised by professional fishermen with regard to vessels mooring in popular meshing or hauling grounds. Locations of known hauling grounds and appropriate management strategies have been included in the location specific management sections of this plan. NSW Maritime will seek support from the Department of Primary Industries Fisheries for an education program to encourage non-fishing vessels to avoid impeding professional fishermen by undertaking recreational activity or mooring while hauling is in progress in these areas. It is noted that the *Fisheries Management Act 1994* contains provisions relating to obstructing recognised hauling grounds where they are mapped by the Department.

◆ **Recreational vessels**

River traffic is not spread evenly over all reaches of the river. More heavily trafficked areas include Shoalhaven Ski Park, Gypsy point, Long Reach, Bundanon, Greenwell Point and the area adjacent to Greys beach Boat Ramp. NSW Maritime will undertake an ongoing education program, including signage to encourage users of these areas to share the waterway and be aware of the impacts of their activities on other users.

Actions:

Action	Time Frame
◆ Liase with the Department of Primary Industries Fisheries concerning potential conflict between commercial fishers and the boating community during hauling operations.	• Ongoing
◆ Enforce existing “distance-off” regulations for boaters traversing under traffic bridges.	• Ongoing
◆ Liaise with Roads and Traffic Authority regarding navigation lighting on Shoalhaven River bridges	• Medium Term

◆ Install "Slow down under bridge" signage.	• Medium Term
◆ Where necessary, consider marking only one span as the navigation channel under particular bridges along the River.	• Medium Term
◆ Education program for high traffic areas, including signage where appropriate.	• Ongoing

4.2 Navigation Aids and Moorings

Issues:

◆ **Navigation Aids**

The Shoalhaven Estuary has a total of 94 navigational aids of various types. There are 24 navigational lights and approximately 60 signs indicating restrictions such as 4 knot zones, No Wash areas, and cautions for shallow water.

Many stakeholders felt the current configuration of channel markers was adequate. However some submissions requested:

- Improved navigation markers at the boat ramp located at the end of Hay Avenue, Shoalhaven Heads; and
- Large signage announcing "***Danger Shallow Areas, No Marker Buoys***" immediately up river of the current marker limit at Bamarang.

◆ **Moorings**

NSW Maritime moorings are valued as a convenient and cost-effective means of vessel storage on the Shoalhaven. Moorings are currently located as follows:

LOCATION	PRIVATE	COMMERCIAL
Shoalhaven River	1	3
Shoalhaven Heads	21	0
Greenwell Point	47	3
Orient Point	8	-

Stakeholders expressed support for additional recreational boating infrastructure including moorings, provided matters such as sewage discharge and appropriate siting were addressed.

Actions:

With respect to navigation aids, by 2013 NSW Maritime will:

- Install navigation aids in the previously unmarked section of the river from the current marker limit at Bamarang to the extent of the tidal influence at Burrier;
- Install kilometre signs at intervals along the main river indicating distance from the river mouth;
- Number all navigation aids and update maps accordingly.
- Review the existing configuration of navigation aids on the estuary and where appropriate replace and/or install new marks.

With respect to moorings, by 2013 NSW Maritime will:

- Review the existing ceiling for moorings.
- Consider the need for additional courtesy and emergency moorings on the Shoalhaven.
- Ensure mooring placement complies with relevant Department of Primary Industries Fisheries Habitat Management Plans and has regard for commercial fishing grounds.
- Ensure appropriate waste management procedures for moored vessels are developed; and
- Undertake an education campaign targeting mooring apparatus maintenance.

4.3 Wharves, Jetties and Boat Ramps

The table below lists each of the estuary's boat ramps and facilities:

LOCATION	LANES	PARKING (Cars & Trailers)	JETTY / PONTOON
Wharf Rd – Berry, Broughton Creek	1	40	No
Bomaderry Ramp – Bomaderry Creek	1	20	Yes
Broughton Creek Ramp, Broughton Creek	1	Street Only	No
Crookhaven Ramp, Crookhaven River	2	80	Yes
Greenwell Point – Bowling Club, Crookhaven River	1	30	Yes
Greenwell Point – West Street, Crookhaven River	1	6	Yes
Greenwell Point –Wharf, Crookhaven River	1	100	No
Greys Beach – Nowra, Shoalhaven River	3	50	Yes
Nowra Wharf – Nowra, Shoalhaven River	1	6	Yes
Orient Point - Crookhaven River	1	25	No
Hay Ave Ramp – Shoalhaven Heads	1	10	No
River Rd Ramp – Shoalhaven Heads	1	10	No
Wharf Rd Ramp – Shoalhaven Heads	1	6	No
Shoalhaven Ski Park, Shoalhaven River	1	50	No

Issues:

The following issues have been raised by stakeholders:

- Limited public access to the river, especially upstream of the Nowra Bridge. Of the 11 boat ramps on the river, only two are located on the Upper Shoalhaven and one of these is privately owned.
- The Upper Shoalhaven River Waterway Users Study 2004 suggested there is an uneven distribution of boat usage with *"a higher concentration of boating activity around the Nowra Animal Park / Shoalhaven Ski Park area"*. The study suggested there is potential *"to alleviate excessive boat use in the Nowra Bridge to Humbug Reach section by encouraging waterway users to relocate to under-utilised reaches further up stream."*

Actions:

NSW Maritime supports the provision of additional launching facilities, particularly on the upper estuary. This would reduce overcrowding at the Greys Beach launching facility, and reduce the number of vessels cruising through busy areas en route to destinations upstream. A reduction in vessel activity around the Nowra Bridge to Humbug Reach area would lessen impact on the more eroded sections of river in this area.

NSW Maritime provides grant funding for infrastructure projects that benefit the boating community. Under its Maritime Infrastructure Program (MIP) projects are initiated by a proponent such as the local Council or community groups, who normally provide 50% of the overall funding of each project.

During the life of this plan, NSW Maritime will liaise with the Shoalhaven City Council over the issue of additional boat ramps and where possible assist in sourcing grant funding for the construction of new facilities and/or improvements to existing infrastructure.



4.4 Vessel wastes

Issue:

Stakeholders raised concerns regarding appropriate management of sewage, bilge water, oil/fuel spillage and/or general litter, both in the water and around service facilities.

The greatest contributors to poor water quality are land-based stormwater, septic and sewerage systems. However, discharge of sewage and other pollutants from vessels may contribute to localised water quality problems, especially in heavily trafficked areas.

Actions:**◆ “Sewage Pollution from Vessels” Strategy**

Water quality degradation due to the impacts of boating is being addressed through Maritime’s “Sewage Pollution from Vessels” strategy. Key initiatives include:

- adoption in 2003 of amendments to the *Marine Pollution Regulation 2001*:
 - prohibiting discharge of untreated sewage in certain areas;
 - requiring that passenger-carrying commercial vessels and houseboats install toilets and holding tanks to prevent sewage discharge into NSW waterways; and
 - imposing a 500 metre buffer from environmentally sensitive areas for the discharge of treated sewage. (This effectively makes the whole of the Shoalhaven Estuary a no-discharge zone for both treated and untreated sewage);
- an education campaign to inform the boating community of its responsibilities in managing sewage discharge from vessels.

◆ Moorings

Mooring applications are subject to an assessment process to ensure they do not unduly impact on marine flora and fauna, particularly seagrass.

◆ Pump-outs and fuelling facilities

NSW Maritime generally recommends that Development Approvals for new berthing facilities, such as marinas, incorporate appropriate pump-out facilities for vessels. A pump-out facility is currently located at Nowra Wharf. NSW Maritime supports an additional facility on the estuary and will work with Shoalhaven City Council to investigate the location such a facility in the vicinity of Greenwell Point.

NSW Maritime also recommends that developments containing fuelling facilities have satisfactory safeguards to prevent contamination of the waterway due to oil and fuel spillage.

4.5 Seagrasses

Issue:

Seagrass beds are sensitive to the impacts of mooring and anchor chains or boat propellers, and can also be damaged by poorly monitored dredging and marine construction activities.

Actions:

NSW Maritime will continue to educate boaters regarding compliance with Department of Primary Industries Fisheries ‘*Fish Habitat Protection Plan No.2: Seagrasses*’ including avoiding driving their boat across shallow, weedy areas or anchoring in or near seagrass beds.

A permit from the Department of Primary Industries Fisheries is already required to place moorings near seagrass beds. During the life of this plan Maritime will also work with the Department on developing seagrass-friendly mooring designs.

4.6 Riverbanks

Issue:

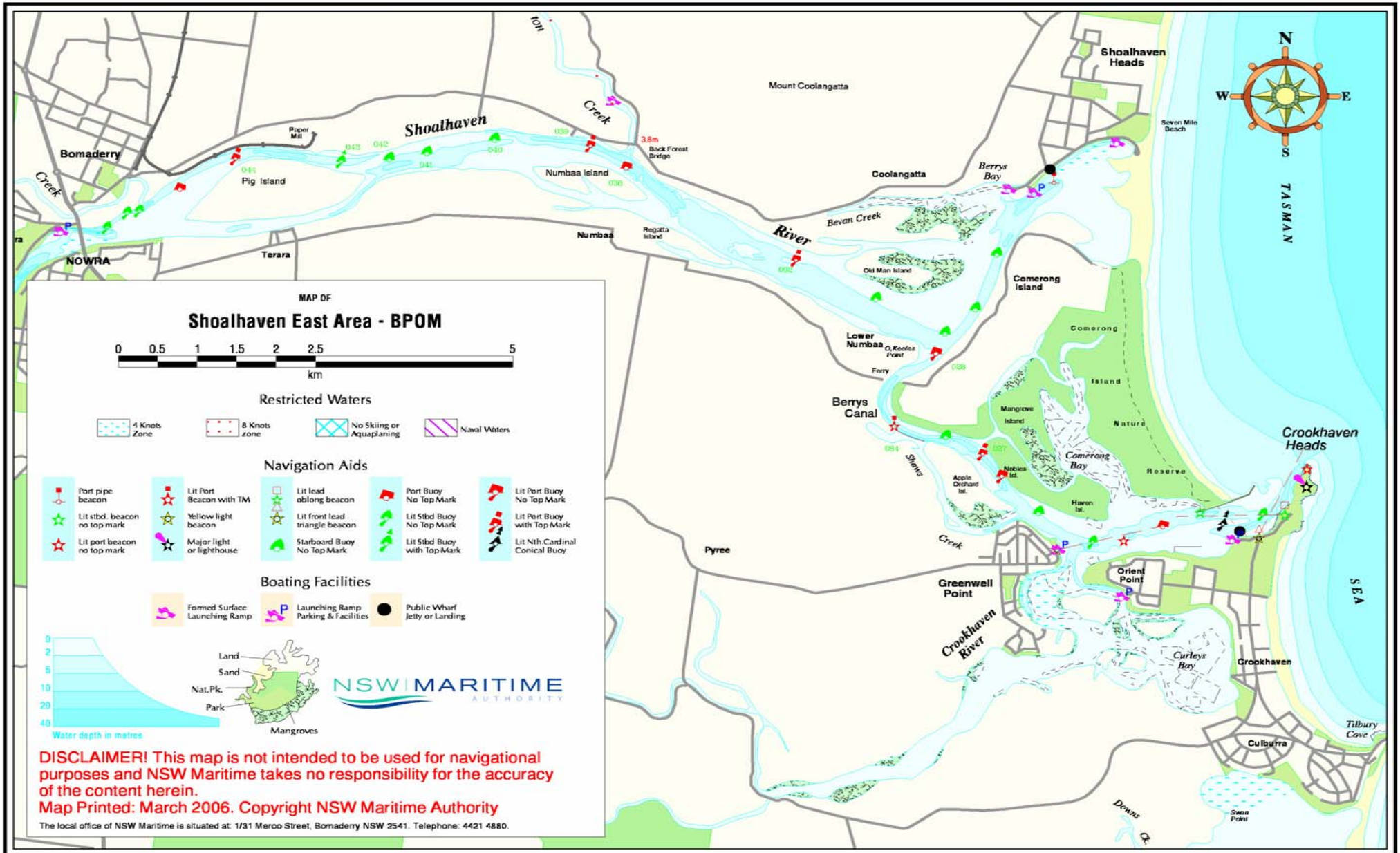
Many stakeholders expressed concern over the impact of vessel wash on river bank erosion

Actions:

By 2011, NSW Maritime will:

- Identify areas of the estuary with high erosion potential from boat wake, and where wake could result in unsafe boating;
 - Assess the need for wake management zones in those areas;
 - Consider the need for recommended areas for wake creating boating activities;
 - Review existing navaid configurations to guide vessels away from sensitive areas;
 - Enforce existing distance-off regulations to ensure safe boating and mitigate potential erosion from vessel traffic;
 - Undertake an education program aimed at reducing the incidence of erosion-producing vessel waves caused by actions such as power turning.
 - Identify additional future access points, particularly on the upper estuary, to reduce congestion at the Greys Beach launching facility and the number of vessels cruising through sensitive areas en route to destinations upstream.
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5 LOWER ESTUARY



LOWER ESTUARY

General Description

The lower estuary covers the main river from the Nowra traffic Bridge, east to Crookhaven Heads and includes Broughton Creek, Shaws Creek, Shoalhaven Heads, Crookhaven River and Curleys Bay.

Lower Estuary Features

The lower Shoalhaven has within its boundaries a number of islands most notably Pig, Numbaa, Old Man, Comerong, Apple Orchard, Nobles, Haven, Mangrove and Goodnight Islands. There are two vehicular ferries that cross the river near Numbaa Island and between O'Keefes Point and Berrys Canal. Aquaculture in the form of oyster leases is located adjacent to Bevan Island, Berrys Bay, Goodnight Island and in Curleys Bay. A major mangrove regeneration project has been underway on the southern shore between Pig and Numbaa Islands with a further section on the northern shore east of Broughton Creek.

There are 77 private moorings (PMLs) and 3 commercial moorings (CMLs) in this area.

Major fish hauling grounds:

- to the east of Old Man and Bevan Islands,
- east of Numbaa Island and at the Shoalhaven / Broughton Creek confluence,
- west of Numbaa Island and between Pig Island and the Paper Mill.

Note: Hauling is not permitted between 8:00am Saturdays and 5:00pm Sundays.

Boat Ramps

Wharf Rd – Berry, Broughton Creek
Bomaderry Ramp – Bomaderry Creek
Broughton Creek Ramp, Broughton Creek
Crookhaven Ramp, Crookhaven River
Greenwell Point – Bowling Club, Crookhaven River
Greenwell Point – West Street, Crookhaven River
Orient Point - Crookhaven River
Nowra Wharf Ramp

Navigation Aids

19 Lit Aids
33 Unlit Aids


Special Events



Australian Wakeboarding Titles; Rowing Regattas; Sailing Regattas; Canoe/Kayaking Regattas in Broughton Creek; Triathlons - swim leg






LOWER ESTUARY – VALUES

This area of the estuary is valued for its:





- Recreational Activities including:
 - Sailing
 - Boating
 - Fishing
 - Swimming
 - Bird watching
- Habitat areas for a variety of aquatic, avian and terrestrial species.
- Comerong Island Nature Reserve
- Infrastructure including fuelling points and launching ramps.
- Moorings as convenient means of larger vessel storage.
- Commercial fishing opportunities

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
A: CROOKHAVEN HEADS TO BERRYS CANAL					
<p>Main vessel access to the ocean. Used by fishing vessels both commercial and recreational. Greenwell Point is a popular area for access to the river. Activities include cruising, fishing, swimming, and canoeing.</p>	 <ul style="list-style-type: none"> Regional Boat Ramp Greenwell Point – West Street Crookhaven Ramp Orient Point Greenwell Point - 47 private & 3 commercial Orient Point 8 private 	<p>Safety issue for vessels crossing or operating adjacent to the bar at the entrance to the Crookhaven River.</p>	<p>Mitigate the risk of incidents occurring on the bar.</p>	<p>Continue existing education strategy, particularly:</p> <ul style="list-style-type: none"> ▪ Deliver a range of bar crossing seminars to boaters. ▪ Continue highlighting information on crossing bars at licence seminars. ▪ Continue to promote NSW Maritime's bar crossing brochure through the Bomaderry operations centre. ▪ Include lead marks and how to use them in educational strategies. 	Ongoing
		<p>Stakeholders raised concern over safety issues in this section due to high levels of traffic, narrow channels, speed and the diversity of activities undertaken here.</p>	<p>Mitigate the risk of boating related accidents and incidents on this section of the estuary.</p>	<p>Safety actions to include:</p> <ul style="list-style-type: none"> ▪ Install high visibility bar crossing signage. ▪ Review of the effectiveness and appropriateness of existing navigation aids and signage. ▪ Compliance and education programs. ▪ Review the need for speed restrictions immediately upstream of the Crookhaven boat ramp 	<p>Short Term</p> <p>Ongoing</p> <p>Medium term</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
		<p>Suggestions from stakeholders regarding facilities in this area include:</p> <ul style="list-style-type: none"> ▪ Upgrade of Greenwell Point wharf and ramp including disabled access. ▪ Pump-out facility also at Greenwell Point ▪ Fuel bunkering facility to prevent potential damage to the local environment. ▪ The placing of a limit on the number of moorings in this area. <p>Environmental concerns raised by stakeholders include:</p> <ul style="list-style-type: none"> ▪ Bank erosion along the eastern side of Apple Orchard Island, Nobles Island, Greenwell Point and Orient Point. ▪ The need for minimal wash signage at Greenwell Point to protect mangrove restoration. ▪ Commerong Nature Reserve. 	<p>Improved infrastructure for the boating community.</p> <p>Minimise the risk of damage to river banks.</p> <p>Protection of restoration projects and Nature Reserves from adverse boating impact.</p>	<p>Liaise with Shoalhaven City Council (the Agency responsible for decisions regarding ramps/wharves etc) regarding grant funding offered from NSW Maritime's Maritime Infrastructure Program (MIP) for the preparation of Development Applications and environmental reports for the Greenwell Point boat ramp and jetty upgrade.</p> <p>Moorings configurations to be reviewed. Ensure moorings do not encroach on sea grass beds.</p> <p>The Foreshore Definition Study does not recommend boating restrictions in these areas, however NSW Maritime will continue to monitor and review the situation during the life of this plan.</p> <p>The shallow waterways of Comerong Bay provide a natural navigation restriction for a wide range of vessels. NSW Maritime, however, will continue to monitor boating activity with a view to minimising impact on the Reserve.</p>	<p>Medium Term</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>
B: CROOKHAVEN RIVER / CURLEYS BAY					
<p>Relatively quiet and shallow waterway where the majority of the estuary's aquaculture takes place. There are significant areas of oyster leases west of Goodnight Island and the eastern side of Curleys Bay.</p>	<p> Oyster leases in the bay west of Goodnight Island</p> <p> Greenwell Point – Bowling Club</p>	<p>Extensive oyster leases are located in Curleys Bay and in the bay to the west of Goodnight Island.</p> <p>Stakeholders wish to limit the impact of boating in this area to protect the industry.</p>	<p>Minimise the impact of poor boating practices.</p>	<p>Investigate the need for a pump-out facility at Greenwell Point.</p> <p>Extend existing 4 knot zone to include an area extending from a line running easterly from the public wharf at Greenwell Point to Orient Point and south encompassing Goodnight Island.</p> <p>Monitor and review existing management strategies.</p>	<p>Medium Term</p> <p>Short Term</p> <p>Ongoing</p>

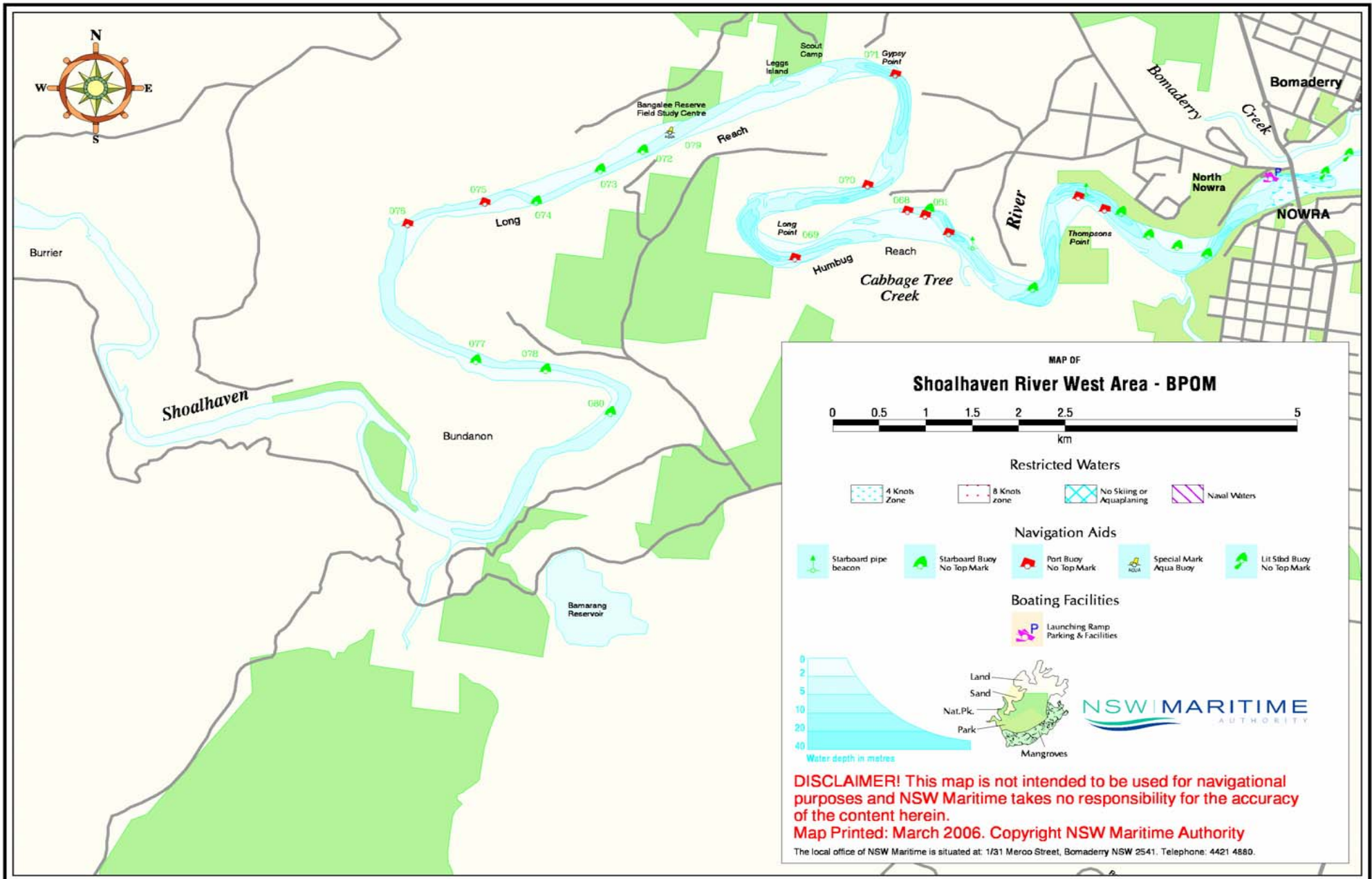
ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
C: BERRYS CANAL TO OLD MAN ISLAND					
<p>Narrow man-made canal connecting the Crookhaven River to the Shoalhaven River. A vehicular ferry crosses the canal south of O'Keefes Point.</p> <p>113 Oyster Leases covering 153 hectares between Old Man and Bevan Islands.</p>	 Caution Ferry Cables	<p>Safety issues include:</p> <ul style="list-style-type: none"> Comerong Island ferry, particularly variations in cable depth due to prevailing conditions. Narrow navigation channel from O'Keefes Point to Berrys Canal. <p>Environmental issues include:</p> <ul style="list-style-type: none"> Erosion of the western bank from O'Keefes Point to Berrys Canal; and the western length of Comerong Island. Bird species listed under the NSW Threatened Species Act including the Little Tern and the Sooty and Pied Oyster Catchers inhabit the shallows and mud flats around Old Man Island and the waterways between Old Man and Bevan Islands. 	<p>Minimise the risk of vessel accidents / incidents.</p> <p>Minimise the impact of poor boating practices.</p>	<p>Install signage indicating vessels are not to proceed while ferry is in motion – they are to wait until ferry arrives at opposite bank, then pass astern and at 4 knots.</p> <p>The Foreshore Definition Study does not recommend boating restrictions in these areas.</p> <p>The shallow waterways of surrounding Old Man Island provide a natural navigation restriction for a wide range of vessels.</p>	<p>Short Term</p> <p>Ongoing</p> <p>Ongoing</p>
D: SHOALHAVEN HEADS / BERRYS BAY					
<p>Formerly the main entrance for the Shoalhaven River, it is now rarely open to the sea. A narrow navigation channel connects Shoalhaven Heads with the main river. Fishing, swimming, canoeing, kayaking, sailing and bird watching are the predominant activities in this area.</p> <p>Fish hauling sites to the east of Old Man and Bevan Islands. Hauling is not permitted between 8:00am Saturdays and 5:00pm Sundays.</p>	 East of the boat ramp  Ramp, parking & facilities  Public Wharf  21 private & 0 commercial	<p>Stakeholders raised the issue of speed in the dredged channel from the boat ramp at the beach end of the estuary to the Berrys Bay boat ramp. It has been suggested that those involved in more passive activities such as rowing, canoeing and swimming are becoming increasingly at risk.</p> <p>It has also been suggested that existing navigation markers and signage need improvement and reconfigured.</p>	<p>Minimise the risk of accidents.</p>	<p>The number of recorded incidents and accidents in this area is extremely low, however, NSW Maritime will review existing speed and navigation aid configurations.</p>	<p>Short Term</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
<p>Important aquaculture area especially around Bevan Island – 113 leases covering 152.9 hectares.</p>		<p>Bird species listed under the NSW Threatened Species Act including the Little Tern and the Sooty and Pied Oyster Catchers inhabit the shallows and sandbars at Shoalhaven Heads.</p> <p>Stakeholders have suggested the launching ramps at Shoalhaven Heads need to be updated and enlarged to handle the increase in vessel usage. Improvements to fish cleaning facilities at these ramps need improving.</p>	<p>Minimise the impact of poor boating practices</p> <p>Improved infrastructure for the boating public.</p>	<p>The shallow waterways in this area provide a natural navigation restriction for a wide range of vessels. The area east of the Hay Ave wharf and ramp has been made a 4 knot speed restriction.</p> <p>Liaise with Shoalhaven City Council (the Agency responsible for decisions regarding ramps/wharves etc). Offer assistance in procuring grant funding from NSW Maritime's Maritime Infrastructure Program (MIP) for improvement to existing facilities.</p>	<p>Short Term</p> <p>Medium Term</p>
<p>E: OLD MAN ISLAND TO NUMBAA ISLAND</p>					
<p>This straight stretch includes the confluence with Broughton Creek. Mangrove regeneration is taking place on the northern shore east of Broughton Creek. Fishing and sailing are the main activities undertaken here.</p> <p>Fish hauling sites to the east of Numbaa Island and at the Shoalhaven / Broughton Creek confluence. Hauling is not permitted between 8:00am Saturdays and 5:00pm Sundays.</p>		<p>Mangrove re-generation on the northern bank east of the Broughton Creek / Shoalhaven River confluence.</p> <p>Erosion as identified in the Foreshore Definition Study on the northern side of Numbaa Island and the northern bank of the main river.</p> <p>Bird species listed under the NSW Threatened Species Act including the Little Tern and the Sooty and Pied Oyster Catchers inhabit the shallows and mud flats north of Numbaa Island.</p>	<p>Support mangrove regeneration</p> <p>Minimise the impact of poor boating practices.</p>	<p>Erect minimal wash signage adjacent to the mangrove re-generation area.</p> <p>Arrange for NSW Maritime boating maps to show mangrove re-generation and minimal wash zones.</p> <p>The Foreshore Definition Study does not recommend boating restrictions in these areas.</p>	<p>Short Term</p> <p>Short Term</p> <p>Ongoing</p> <p>Ongoing</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
F: BROUGHTON CREEK					
<p>A narrow waterway that is navigable to the launching ramp at Wharf Road bridge near Berry. It is popular fishing location. The whole creek is an 8 knot limit.</p>	  <p>Berry Launching Ramp</p>	<p>Safe navigation under the Back Forest Bridge.</p> <p>Wash caused by vessels travelling at 8 knots.</p>	<p>Reduce the risk of boating accident and incidents.</p> <p>Minimise the risk of damage caused by vessel wash.</p>	<p>Liaise with the Roads and Traffic Authority regarding the installation of navigation lighting on both sides of the bridge.</p> <p>Studies have concluded that vessels travelling at 8 knots produce more wash than those travelling at either 4 knots or less or on the plane. NSW Maritime proposes to remove the existing 8 knot restriction and replace it with a "No Towing" restriction combined with "No Wash" restrictions.</p>	<p>Short Term</p> <p>Short Term</p>
G: NUMBAA ISLAND TO NOWRA TRAFFIC BRIDGE					
<p>This area is notable for its narrow navigation channels. Also prominent is Pig Island and a large area of shallow water between it and the traffic bridge. Bomaderry Creek enters the Shoalhaven here.</p> <p>A vehicular ferry crosses the river from the southern shore to Pig Island.</p> <p>This area is popular for fishing, rowing and sailing. The rowing course extends to Pig Island.</p> <p>Nowra Sailing Club is located on the southern bank just downstream from the traffic bridge.</p> <p>Fish hauling sites to the west of Numbaa Island and between Pig Island and the Paper Mill. Hauling is not permitted between 8:00am Saturdays and 5:00pm Sundays.</p>	 <p>Bomaderry ramp</p>  <p>Caution Ferry Cables</p>	<p>Mangrove re-generation on the south bank stretching between Pig and Numbaa Islands.</p> <p>Navigation on the approaches to the Pig Island vehicular ferry.</p> <p>Bird species listed under the NSW Threatened Species Act including the Little Tern and the Sooty and Pied Oyster Catchers inhabit the shallows on the western side of Pig Island.</p> <p>Erosion as identified in the Foreshore Definition Study on:</p> <ul style="list-style-type: none"> The northern bank west of 	<p>Support mangrove regeneration.</p> <p>Minimise the risk of vessel accidents / incidents.</p> <p>Minimise the risk of damage to river banks.</p>	<p>Erect minimal wash signage adjacent to the mangrove re-generation area. Monitor compliance.</p> <p>Arrange for NSW Maritime boating maps to show mangrove re-generation and minimal wash zones.</p> <p>Install signage indicating vessels are not to proceed while ferry is in motion – they must wait until ferry arrives at opposite bank, then pass astern and at 4 knots.</p> <p>The Foreshore Definition Study does not recommend boating restrictions in these areas.</p>	<p>Short Term</p> <p>Short Term</p> <p>Short Term</p> <p>Ongoing</p> <p>Ongoing</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
		<p>Broughton Creek</p> <ul style="list-style-type: none"> ▪ The southern side of Pig Island. ▪ The northern bank adjacent to the Paper Mill. <p>Stakeholders have expressed concern over the narrow navigation channel and mix of active and passive activities from the Nowra Traffic Bridge to Bomaderry Creek confluence. It has been suggested that a 4 knot speed restriction be introduced here.</p> <p>Concern was also expressed over safe navigation in Bomaderry Creek due to its narrow nature, shallow water and frequent snags found there.</p>	<p>Minimise the risk of vessel accidents / incidents.</p>	<p>The existing 4 knot zone is to be extended and will start from the eastern side of the entrance to Bomaderry Creek and then within a line extending in a south-westerly direction to a point approximately 100 metres downstream from the Nowra Sailing Club.</p> <p>Place a 4 knot speed restriction over the entirety of Bomaderry Creek.</p>	<p>Short Term</p> <p>Short Term</p>

6 UPPER ESTUARY



UPPER ESTUARY

General Description

The upper estuary covers the main river from the Nowra traffic Bridge, west to the extent of the tidal limit at Burrier. It includes Nowra Creek, Cabbage Tree Creek, Mundamia Creek, Calymea Creek and Bangalee Creek,

Upper Estuary Features

The upper Shoalhaven has within its boundaries a number of recreational sites and facilities namely Nowra/Riverside Animal Park, Nowra Ski Park, Bangalee Reserve, "Riversdale" Artists Retreat at Bundanon and Gradys Riverside Retreat at Burrier. Roy (2000) indicates there are two types of stable banks between Nowra and Burrier – exposed bedrock, often on the outside of bends; and well vegetated, established point bars. Additionally, there are a number of straight stretches or reaches including Long Reach, Humbug Reach, Calymea Reach and Barringella Reach.

There are 3 commercial moorings and 2 commercial operators on the upper estuary. Shoalhaven River Cruisers & Shoalhaven House Boats. The latter having 2 boats "Getaway", with 3 moorings.

Major fish hauling grounds:

- Adjacent to the Nowra Golf Club
- Between Nowra/Riverside Animal Park and Cabbage Tree Creek
- Humbug Reach east of Long Point

Note: Hauling is not permitted between 8:00am Saturdays and 5:00pm Sundays.

Prawn hauling sites:

- Adjacent to the Nowra Golf Club
- Between Nowra/Riverside Animal Park and Cabbage Tree Creek
- Gypsy Point
- Bundanon at the eastern end of Calymea Reach
- At the bend joining Barringella and Burrier Reaches

Boat Ramps

Greys Beach Nowra Boat Ramp
 Nowra Ski Park Boat Ramp (Private)
 Gradys Riverside Retreat (Private)

Navigation Aids

0 Lit Aids
 27 Unlit Aids




Special Events




Rowing Regattas
 Sailing Regattas

UPPER ESTUARY – VALUES

This area of the estuary is valued for its:

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ▪ Recreational Activities including: <ul style="list-style-type: none"> - Rowing, canoeing and kayaking - Boating including skiing, wakeboarding etc - Fishing - Swimming | <ul style="list-style-type: none"> ▪ Commercial fishing opportunities ▪ Marine flora and fauna habitat ▪ Cultural heritage of facilities such as “Riverdale” |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
H: GREYS BEACH TO THOMPSON POINT					
<p>This area is one of the busiest on the estuary due to the excellent launching facilities at Greys Beach.</p> <p>Activities include skiing, wakeboarding, rowing and fishing.</p> <p>The Nowra Rowing Club is located on the southern bank.</p> <p>Nowra Creek enters the Shoalhaven from the south.</p> <p>Fish hauling and prawning sites adjacent to the Nowra Golf Club. Hauling is not permitted between 8:00am Saturdays and 5:00pm Sundays.</p>	 Greys Beach  West of Nowra traffic bridge  Nowra Creek	<p>Speed has been raised as an issue by a number of stakeholders. There is potential risk of incidents concerning vessels speeding to and from the frequently used Greys Beach launching facility.</p> <p>Stakeholders have raised the issue of activities such as wakeboarding and skiing conflicting with passive activities such as rowing, canoeing and kayaking being undertaken in this area.</p> <p>The Nowra Rowing Club suggests an extension of the existing 4 knot zone west of the Nowra Traffic Bridge due to safety and wash problems for rowers.</p>	<p>Minimise the risk of boating incidents and accidents in the section of the river.</p>	<p>Install education signage at the Greys Beach launching facility.</p> <p>Develop an education campaign to encourage awareness of other activities.</p> <p>Extend existing 4 knot zone upstream to the beginning of the rock cliff on the southern bank (approximately 200m upstream from the rowing club) across to a line approximately 200m upstream from the storm water drain on the northern bank.</p>	<p>Short Term</p> <p>Short Term</p> <p>Short Term</p> <p>Short Term</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
		<p>The Foreshore Definition Study (FDS) has designated the following areas as having severe erosion:</p> <ul style="list-style-type: none"> An area adjacent to the Nowra Golf Club and opposite the mouth of Nowra Creek. An area on the inside of the bend extending around both sides of Thompsons Point. 		<p>With regard to the area adjacent to Nowra Golf Club, NSW Maritime has moved the main navigation channel away from the bank towards the centre of the river by the installation of navigation markers. To further protect this area Maritime will install another starboard marker downstream of navaid no. 057 to further guide boaters away from the northern bank.</p> <p>Regarding Thompsons Point, the placement of port (red) channel markers towards the centre of the river and away from the damaged bank encourages boaters to travel wider even though the channel is deep enough to accommodate boating.</p> <p>NSW Maritime will review the effectiveness of these actions during the life of this plan.</p> <p>It is considered that the placement of additional vessel access points on the upper estuary would reduce the amount of vessel traffic motoring from Greys Beach to destinations upstream and therefore reducing vessel impact in this area.</p>	<p>Short Term</p> <p>Short Term</p> <p>Ongoing</p> <p>Medium Term</p>
I: THOMPSONS POINT TO LONG POINT (incl Humbug Reach)					
<p>This area is popular for holidaying, camping, swimming and all types of towing activities. The Shoalhaven Ski Park and Riverside/Nowra Animal Park are located in this area.</p> <p>Cabbage Tree Creek enters the Shoalhaven from the south.</p>	<p> Cabbage Tree Creek</p> <p> Mundamia Creek</p> <p> Shoalhaven Ski Park</p>	<p>Stakeholders raised the following safety issues:</p> <ul style="list-style-type: none"> Speed to and from the Shoalhaven Ski Park launching facility is an issue due to its high usage and the mixture of boating and swimming adjacent to the 	<p>Minimise the risk of boating accidents.</p>	<p>Create a no-boating zone on the western side of the ramp at Shoalhaven Ski Park for passive activities such as canoeing and swimming. The zone would encompass an area commencing from the tree approximately 80 metres west of the boat ramp,</p>	<p>Short Term</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
<p>Fish hauling and prawning sites are located adjacent to the Nowra Animal Park and Shoalhaven Ski Park. Fish hauling also takes place on the inside bend of Humbug Reach. Hauling is not permitted between 8:00am Saturdays and 5:00pm Sundays.</p>		<p>ramp. Stakeholders suggested a 4 knot speed restriction for this area.</p> <ul style="list-style-type: none"> ▪ Speed and congestion in the narrow channel on the northern outer bend of Humbug Reach. <p>Environmental issues other than erosion include:</p> <ul style="list-style-type: none"> ▪ The need to target the disposal of general waste such as plastic bags, cans and bottles. ▪ Loud music emanating from wakeboarding vessels. <p>The Foreshore Definition Study (FDS) has designated the following areas as having severe erosion:</p> <ul style="list-style-type: none"> ▪ The outer bend of the river opposite Shoalhaven Ski Park and Nowra Animal Park. ▪ Areas on the inside bend along the southern side of Humbug Reach extending west from Cabbage Tree Creek. ▪ An area on the outer bend extending along Humbug Reach. 		<p>extending into the river as far as the existing starboard navaid (No. 064) then 80 metres upstream to a point parallel with the shore (a new navaid to be installed at this point) and then back to the shore. To be reviewed by 2011 with consideration of replacement with a 4kt zone or similar, if warranted.</p> <p>Education campaign including signage at launching facilities.</p> <p>Vessel restrictions would be of little benefit in the prevention of further erosion of the bank opposite Shoalhaven Ski Park. The geomorphological nature of the river in this area (with its relatively acute outer bend) indicates that flood, wind and tide are more likely to be the primary causes of erosion.</p> <p>The bank on the southern side of Humbug Reach, while considered by the FDS to have severe erosion, is located a significant distance from the main navigation channel situated towards the northern bank. NSW Maritime does not agree that erosion on this bank is due to vessel waves.</p> <p>With regard to the outer bend extending along Humbug Reach, there are both natural and man-made rock formations along with significant fragmites beds protecting the bank. The channel</p>	<p>Ongoing</p> <p>Short Term</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
		<p>The Foreshore Definition Study (FDS) has designated the following areas as having severe erosion:</p> <ul style="list-style-type: none"> ▪ The outer bend of the river opposite Long Point. ▪ The northern bank upstream from Long Point. ▪ The outer bend downstream from Gypsy Point. 		<p>The geomorphological nature of the river in this area (with its relatively acute outer bend) indicates that flood, wind and tide are more likely to be the primary causes of erosion.</p> <p>Boating restrictions in this area are not supported,</p>	Ongoing
K: LONG REACH					
<p>This is an approximately 5km stretch of river with a narrow navigation channel traversing the large areas of shallow water.</p> <p>Activities include picnicking at Bangalee Reserve, pleasure cruising, wakeboarding, skiing, canoeing and kayaking.</p> <p>A commercial houseboat business (Houseboats on the Shoalhaven) operates from the southern bank upstream from Bangalee Wharf.</p>	<p>Bangalee Reserve picnicking area</p> <p>Bangalee Reserve Wharf</p> <p>Camp Kaloona</p>	<p>Safety issues raised by stakeholders include:</p> <ul style="list-style-type: none"> ▪ The shallow and narrow nature of this section of the river especially at low tide. ▪ Wakeboarding and skiing activities in the narrow navigation channel traversing expanses of shallow water. ▪ The need for an additional “Shallow Water” marker closer to the northern bank adjacent to Bangalee. It is suggested that many vessels currently do not see existing marker just to the west of the wharf. ▪ Potential incidents between active and passive activities. <p>Other Environmental issues raised include:</p>	<p>Minimise the risk of boating accidents.</p>	<p>Replace the existing special mark upstream of Bangalee Wharf with a starboard buoy and install an additional starboard buoy between this mark and Bangalee Wharf due to shallow water and narrow channel.</p> <p>Realign navigational aids to more appropriately depict the channel.</p> <p>Education campaign including signage at launching facilities.</p>	<p>Short Term</p> <p>Short Term</p> <p>Ongoing</p> <p>Ongoing</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
		<ul style="list-style-type: none"> ▪ Noise from vessels particularly those involved in wakeboarding activity and the accompanying loud music. ▪ The need to target the disposal of general waste such as plastic bags, cans and bottles. <p>The Foreshore Definition Study (FDS) has designated the following areas as having moderate to severe erosion:</p> <ul style="list-style-type: none"> ▪ The bank adjacent to the flood plain extending the southern side of the river. ▪ The outer bend adjacent to "Riversdale". 	<p>Reduce the risk of conflict as well as the potential for vessel accidents and incidents.</p>	<p>See towing and speed restriction actions above.</p> <p>Re: the bank adjacent to the flood plain extending the southern side of the river. This bank is adjacent to a large section of shallow water and the main navigation channel is located towards the far side of the river.</p> <p>Re: the outer bend adjacent to "Riversdale". Relocate port buoy no. 076 at the upstream end of Long Reach towards the centre of the river to widen the channel and draw vessels away from the outer bend.</p> <p>Boating restrictions in this area are not supported,</p>	<p>Short Term</p> <p>Ongoing</p>
L: "RIVERSDALE" TO BURRIER					
<p>This section of river includes the Reaches of Calymea, Barringella and Burrier.</p> <p>It is almost exclusively shallow water and signifies the end of navigation aids and signage.</p> <p>Located in this area is the</p>		<p>Safety issues raised by stakeholders include:</p> <ul style="list-style-type: none"> ▪ The need for more prominent signage depicting "Danger Shallow Areas, No Marker Buoys". ▪ The suggestion of a 4 knot speed restriction in the area 	<p>Minimise the risk of boating accidents.</p>	<p>Liaise with Department of Lands for the results of a recent hydrographic survey to be used to determine the location of additional navigation markers to be installed from the last navaid (starboard mark No. 080) to Gradys Riverside Retreat.</p>	<p>Short Term</p>

ACTIVITIES	INFRASTRUCTURE	ISSUES	OUTCOMES	ACTIONS	TIME-FRAME
<p>"Riversdale" artists retreat.</p> <p>This section is popular for passive activities such as canoeing, kayaking, holidaying, camping and picnicking.</p> <p>Prawn hauling is undertaken at the bend between Barringella and Burrier Reaches.</p>		<p>around Grady's Riverside Caravan Park in support of the predominant passive activities undertaken there.</p> <p>Other Environmental issues raised include:</p> <ul style="list-style-type: none"> ▪ Noise from vessels particularly those involved in wakeboarding activity and the accompanying loud music. ▪ The need to target the disposal of general waste such as plastic bags, cans and bottles. ▪ Stakeholders request the maintenance of cultural heritage provided by "Riversdale" and its associated beauty and tranquillity. <p>Severe erosion has been identified on the outer bend immediately upstream of "Riversdale" extending approximately 3 km upstream. The FDS has recommended boating restrictions.</p>		<p>Create a 4 knot speed restriction from the far western end of Burrier Reach extending to the end of navigable water approx 600-1000m upstream (an area adjacent to Grady's Riverside Caravan Park.) Further consultation in 2009 regarding a possible extension of 4kt zone by 500m-1000m downstream, on navigations safety grounds</p> <p>Education campaign including signage at launching facilities.</p> <p>Shallow water already precludes significant boating activity.</p> <p>NSW Maritime will continue to monitor the impact of boating activity during the life of this plan, However, boating restrictions are not supported at this time.</p>	<p>Short Term</p> <p>Short Term</p> <p>Ongoing</p>