SOLITARY ISLANDS SHIPWRECKS SURVEY

14-16 February 2000
and
14 August 2000

CONSERVATION MANAGEMENT PLAN

Buster **(1884-1893)**
Lady of Lorn **(1877-1889)**
ss *Wyong* (1884-1901)
4 anchors on public display

December 2000
Heritage Office
SYDNEY NSW

NSW Heritage Office

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Cover*: Photograph of survey work at the* Buster *(1893) wreck site at Woolgoolga main beach in February 2000. Photo courtesy: David Nutley.*

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Anonymous 2 — Resident of Woolgoolga Caravan Park who supplied a small timber sample from the *Buster* wreck site which has been used for timber identification

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Figure 1: *The Coffs Harbour Jetty, a focus of substantial shipping activity during the nineteenth and into the twentieth century. Photo by David Nutley.*

SOLITARY ISLANDS SHIPWRECKS SURVEY

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Figure 2: *South Solitary island looking towards the Wyong (1901) wreck site located immediately below the light tower. Photo: David Nutley.*

SOLITARY ISLANDS SHIPWRECKS SURVEY

14-16 February 2000
14 August 2000

CONSERVATION MANAGEMENT PLAN

1.0 INTRODUCTION

This report details the inspection of:

- *Buster* shipwreck partially exposed on Woolgoolga Beach, Woolgoolga
- *Lady of Lorn* shipwreck at Moonee Creek, north of Coffs Harbour
- ss *Wyong* shipwreck at South Solitary Island
- anchors on public display at Coffs Harbour

The inspections were conducted as part of the Heritage Office's Maritime Archaeology Program.

The survey work had a number of key objectives:

- to establish the extent and profile of the Woolgoolga wreck site
- to identify the remains

- to locate shipwreck remains reported at Moonee Creek
- to identify the remains
- to record located structure

- to re-locate the wreck site reported at South Solitary Island
- to identify the remains
- to record the site's principle elements

- to continue to research the history of each vessel
- to gain an accurate position for each site
- to develop recommendations for their conservation
- to explore suitable public interpretative options for the remains

An additional task was the recording of historic anchors on public display at Coffs Harbour. Four anchors were located, recorded and their type identified.

The project was coordinated by the NSW Heritage Office through staff Maritime Archaeologists, David Nutley (Project Leader) and Tim Smith.

The offshore surveys were supported by the NSW Marine Park Authority through the assistance of the Solitary Islands Marine Park staff based at Coffs Harbour.

The shore based surveys were supported by Manly Hydraulics Laboratory (a division of DPW&S) through the provision of Colin Browne and Phil Clark.

Figure 3: Location map. Solitary Island Marine Park.
Courtesy: Marine Parks Authority, 1999.

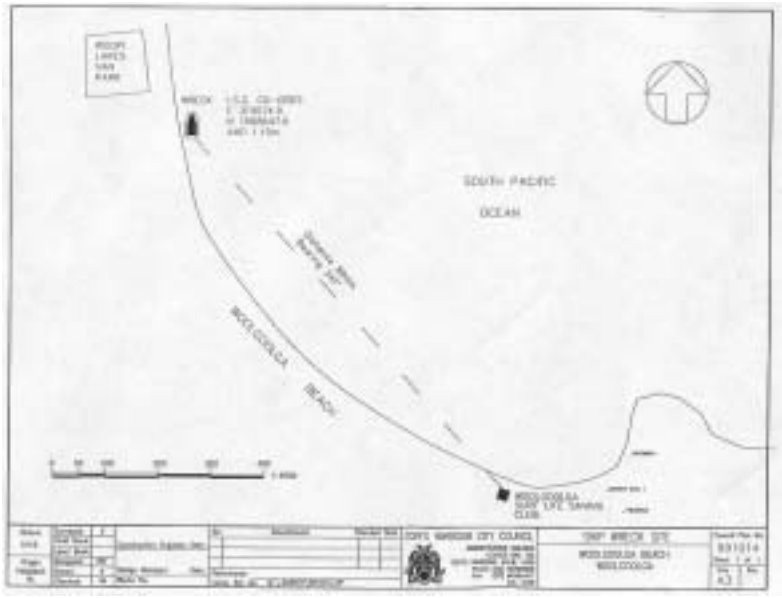

Figure 4: Buster (1893) shipwreck location.
Courtesy: Coffs Harbour Council.

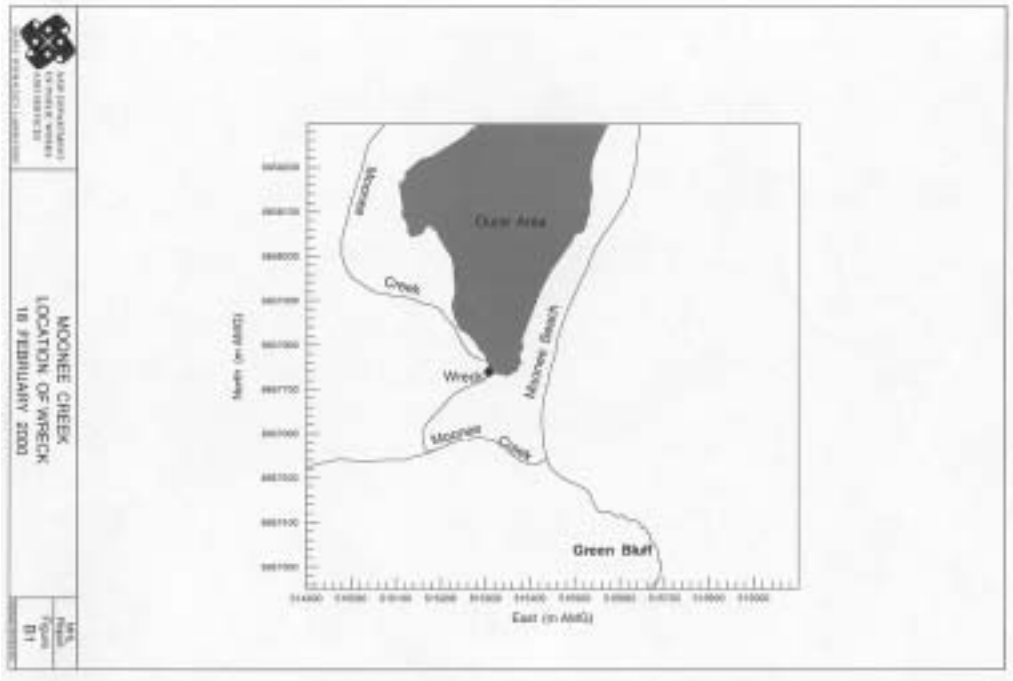

Figure 5: *Lady of Lorn (1889)* shipwreck location.
Courtesy: Manly Hydraulics Laboratory.

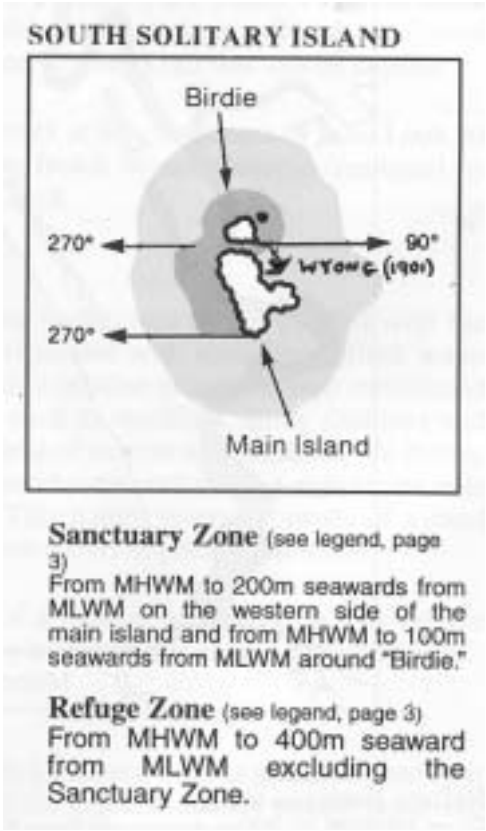

Figure 6: ss Wyong *(1901) shipwreck location.*
The sanctuary Zone appears as the darker shading. Courtesy: MPA, 1999 .p.32.

2.0 OBJECTIVES

2.1 General

The survey sought to increase knowledge and understanding of the shipwreck heritage of the Solitary Islands region. This was achieved by engaging the maritime archaeological resources of the NSW Heritage Office with those of relevant government agencies, recreational divers and other individuals in the region. The information gained from the surveys will provide the basis for developing appropriate management strategies for each located site. The knowledge and understanding gained from the surveys and subsequent research will assist in guiding appropriate conservation management strategies and public interpretation of the sites.

2.2 Specific

Site 1

- to examine the remains of the shipwreck on the beach at Woolgoolga and to document the extent and profile of the buried portion;
- to obtain timber samples for analysis by which to determine the country of origin of the vessel;
- to identify the wreck site;
- to undertake research into the history of the vessel;
- to obtain an accurate position for this wreck site;
- to complete an archaeological report on the survey work including management recommendations for the site's conservation and interpretation.

Site 2

- to locate the reported remains of an unidentified wreck near the mouth of Moonee Creek, north of Coffs Harbour;
- to obtain an accurate position for this wreck site;
- to document the extent and profile of the remains buried under the sand;
- to obtain core samples of timber for analysis by which to determine the country of origin of the vessel and assist in determining its identity;
- to undertake research into the identity and history of the wreck site;
- to complete an archaeological report on the survey work including management recommendations for the site's conservation and interpretation.

- **Site 3**
- to locate an unidentified wreck reported at South Solitary Island;
- to obtain an accurate position for the wreck site;
- to document the remains in sufficient detail to produce a realistic and scaled representation of the site and to identify the vessel with which they are associated;
- to undertake research into the identity and history of the wreck site;
- to complete an archaeological report on the survey work including management recommendations for the sites conservation and interpretation.

Anchors

- to locate anchors on public display;
- to measure anchors on public display in order to produce scaled drawings;
- to photographically record each anchor in order to add to the Heritage Office's documentation of anchors located throughout NSW.
- to identify the design type of each anchor and approximate age of manufacture.

2.3 Methodology

The NSW Heritage Office had previously established the range of vessel losses within the region and compiled primary research data on all known wreck sites. This information had been incorporated into the NSW component of the Commonwealth *Historic Shipwrecks Database* and the Heritage Office's publication, *Shipwreck Atlas of New South Wales* - Edition 3, 1996. A two-sided A4 *Shipwreck Information Sheet* had also been produced featuring a summary of known losses in the region and distributed to local dive shops, council, historical societies, and via the Office's web site.

The unidentified shipwreck located at South Solitary Island had previously been included in the *Shipwreck Atlas of New South Wales*, following official notification. The *Buster* and Moonee Creek wreck sites had not been included in the atlas charts, pending site investigations and confirmation of positions.

Details of the three wreck sites in question remain scant. Apart from overall dimensions noted in official vessel registers, the only pictorial material located relates to the ss *Wyong*. It is hoped that further research might locate additional representations of these vessels to assist with their interpretation. The archaeological remains therefore survive as a significant resource for further study.

The offshore diving operations at South Solitary Island were conducted within the limits of Australian commercial diving regulation AS2299 (based on DCIEM tables). Dive times at the ss *Wyong* wreck site located in sixteen metres of water were restricted to 25 minutes.

Accurate positions for the wrecks were obtained using GPS. Photo transits were also taken to allow rapid relocation.

The survey of the *Buster* site at Woolgoolga was shore based with access gained through the Lakeside Caravan Park with permission of the owners. The probe survey was undertaken using a 30mm diameter, 3-metre probe attached to a towable 100 cfm (cubic foot per minute) air compressor. The site plan and profile was recorded with a Topcon total station theodolite. Coffs Harbour City Council had earlier generated a general locality plan.

The survey of the Moonee Creek wreck located inside the entrance to Moonee Creek, involved the transportation of equipment over to the lagoon by small punt from the car park. The probe survey was conducted using a 30 millimetre, 3-metre probe attached to a portable water pump.

A boat supplied by the Solitary Islands Marine Park made the survey of the South Solitary Island wreck site possible. Access onto the island was not possible due to the lack of a safe entry point and existing weather conditions.

At the time of the survey, apart from the Anne Moore (1889) at Sandon Head, no other shipwreck sites had been located within the Solitary Islands Marine Park area. Subsequent to the current fieldwork, the site of the ss *Keilawarra* (1886) was detected by an independent diving team lying outside of the Marine Park boundary south of North Solitary Island, and will be the subject of a separate report.

Four anchors were observed on public display at Coffs Habour. A standard Admiralty pattern anchor (painted white) was located in front of the Coffs Harbour Water Police Building at the Marina. Another identical anchor was located adjacent to the nearby Fisherman's Co-op, a Lt Rodgers small palm anchor in a public reserve adjacent to the Coffs Harbour Yacht Club, and a large Admiralty-plan mooring anchor was documented in the grounds of the Coffs Harbour Historical Society & Museum in High Street. As these sites are readily signposted and serviced by sealed road, detailed GPS positions were not required.

Figure 7: *An Admiralty Pattern anchor on display at the Coffs Harbour Water Police office. Photo: David Nutley.*

2.4 The Setting

The three shipwrecks inspected during the current survey are located within the boundaries of the Solitary Islands Marine Park. The Marine Park was gazetted on 2 January 1998 so that the Marine Parks Authority could manage and conserve an area identified an outstanding and productive aquatic environment. The park safeguards habitats to encourage breeding, feeding and the day-to-day existence of fish and other species with minimal disturbance. The Solitary Islands Marine Park was the first in Australia to combine estuaries, beaches, headlands, islands and offshore waters in a single multi use unit. The park is located approximately 600 kilometres north of Sydney and stretches between Sandon Heads and Coffs Harbour, and out to the 50 metre depth zone (MPA, 1999).

Because of its many navigational hazards, notably the Solitary Islands chain, and with a major regional port centred at Coffs Harbour, the area attracted a number of shipping losses from the nineteenth century. At least eighteen (18) vessels are known to have been lost in or near the area of the park, the largest being the 61-

metre iron steamer *Keilawarra* that wrecked in 1886. The three shipwrecks investigated in this report are situated within the southern portion of the park and provide a convenient introduction to the maritime heritage sites to be found. The Heritage Office had earlier inspected another shipwreck located at the extreme northern boundary of the park near Sandon Heads, the *Anne Moore* wrecked in 1889 (Heritage Office, 1999)

3.0 THE SOLITARY ISLANDS SHIPWRECK RESOURCE

3.1 Known shipwrecks of the study region

NAME	TYPE	TONS	BUILT	LOST	LENGTH	WHERE LOST
Ann Moore	Schooner	90	1865	3.7.1889	26.20	Sandon Heads, south of
Aurora	Schooner	580	1876	1917/06	50.343	Solitary Islands, in vicinity of
Beaver	Top sail schooner	77	1849	1851/09/23	20.3	Solitary Islands, ashore
Belmore	Schooner	66	1876	1893.03	30.99	Coffs Harbour ashore
Buster	Brigantine	310	1884	1893/02/17		Solitary Islands, Woolgoolga ashore
Carry Well	Schooner	71	1850	1866/07/12	25.3	Coffs Harbour
Euroka	Schooner	51	1866	1875/03	20.90	Sandon River, inside mouth
Frederick Edavis	Steamer	61	1907	1908/12/26	26.21	Wooli, Bare Point off
Keilawarra	Screw Steamer	784	1878	1886/12/08	61.05	South Solitary Island, north of in collision
Lady of Lorn	Ketch	56	1877	1889/07/19	21.61	Coffs Harbour, nth of at Moonee Beach
Lucynder	Cutter	12	Unk	1867/12/29	Unk	Sandon River, inside
Narara	Schooner	24	1842	1849/05	13.32	Solitary Island, off
Orara	Steamer	66	1894	1895/12/30	21.54	Solitary Islands, Woolgoolga ashore
Port Phillip	Schooner	40	1841	1848/08/26	16.92	Coffs Harbour, (Korffs Beach) ashore
Renown	Unk	Unk	Unk	1933	Unk	Coffs Harbour breakwater
Restless	Brig	258	1862	1872/08/24	35.78	North Solitary Island, ~20mls off
Wanderer	Yawl	15	1928	1929/04/04	16.97	Coffs Harbour, SW wall
Wyong	Screw Steamer	37	1884	1901/11/12	22.61	South Solitary Island, ashore

3.2 Summary of Shipwreck Inspections

Eighteen (18) vessels are recorded wrecked within or near the boundaries of Solitary Islands Marine Park, located adjacent to the centre of Coffs Harbour, NSW. The earliest built was in 1841, the latest in 1928. The wreck events cover the period 1848 to 1933, while the vessels' cover several major types from standard timber ketches to substantial iron screw steamers. The loss of the steamer *Keilawarra* in 1886 was the worst local shipwreck event and one of the most tragic peacetime maritime disasters to have occurred in NSW. The *Lady of Lorn* was wrecked during a significant gale in 1889 that claimed many vessels along the NSW north coast, eg at Byron Bay.

Confirming the identity of the three inspected shipwreck sites proved relatively simple. In most cases only one likely contender could be identified for each site, based on archival documentation of wreck locations and method of construction. Beginning with the exposed shipwreck on Woolgoolga Beach, only two vessels were known to have gone ashore there. They were the Canadian-built *Buster* and the Australian-built steamer *Orara*. Each of the vessel histories is presented below.

Positive identification of the shipwreck as *Buster* was possible by its location along the beach, the length of the site and dimensions of observed timbers. The wreck site inspected at Moonee Creek was suspected to be the *Lady of Lorn* - the only vessel reported ashore in this location.

Timber identification analysis also assisted in the identification process. The Woolgoolga wreck was constructed from North American timbers compatible with the Canadian-built *Buster*, while the Moonee Creek wreck was built from Australian hardwood, compatible with the *Lady of Lorn*, constructed in NSW.

While two vessels were wrecked in the vicinity of South Solitary Island, only one, the timber steamer *Wyong*, was reported to have driven close inshore on the eastern side. The wreck site inspected here matched these historical descriptions, while the nature of the wreck structure was compatible with a vessel of the *Wyong's* size and type.

The thirteen still unlocated vessels wrecked in the study area await discovery and identification.

3.3 Vessel Histories

3.3.1. *Buster* (1884-1893) - Woolgoolga

The *Buster* (Official Number 85626) was a timber barquentine of 129 feet (39.31 metres) and of 310 tons gross tonnage. Built in Nova Scotia, Canada in 1884, the vessel had a breadth of 31 feet 4 tenths (9.45 metres) and depth of 12 feet (3.65 metres). The *Buster* had one deck, three masts, an elliptic stern and a framework of wood.

Described as a "*really smart looking barquentine of the Nova Scotia build*" (*Clarence and Richmond River Examiner*, 25 March 1893), it was also recorded as a "*standard barquentine*" (C*larence and Richmond River Examiner*, 25 February 1893). Contemporary newspapers allude to a colourful shipping history, noting that the vessel did not have the luck that "*a vessel of her handy size and rig should have had since she came to Australian waters. Her trip from Melbourne with dynamite on board some years ago was exciting and the voyage to Marseilles* (France) *was scarcely less disastrous to her then owner*". It appears that some repairs might have been required as "*recently she had been put into first class order and the promise of some years of useful service*" (*Clarence and Richmond River Examiner*, 25 March 1893).

While little is yet known of the vessel's ownership and operations, it had at one time been registered to Auckland, New Zealand (*British Register of Ships*, 20 of 1885, Auckland). In 1888, registry was transferred to Sydney and the vessel owned and operated by John Williams (*British Register of Ships*, 46 of 1888, Sydney). At the time of loss, the owner was a Mr George John Robinson (*Town and Country Journal*, 25 February 1893).

The *Buster* was lost during a violent storm that led to significant flooding throughout the neighbouring coastal region (*Clarence and Richmond River Examiner*, 21 February 1893).

Departing Sydney, the vessel arrived at Woolgoolga to load timber for Port Chalmers, New Zealand (*Town and Country Journal* 25 February 1893; for Dunedin according to the *Sydney Morning Herald* of 20 February 1893). The voyage did not start very well, for soon after leaving Sydney, gales drove the vessel back to Watsons Bay (*Sydney Morning Herald*, 20 February 1893).

Safely arriving at Woolgoolga, the *Buster* put down two anchors and ran a hawser to the Government 'outer buoy' mooring near to the jetty, still under construction (*Clarence and Richmond River Examiner* 21 & 25 February 1893). Both the sea and wind increased from the south-east as the *Buster* rode about "*like a cork*". At 9am an enormous wave struck the port bow, snapping that anchor's chain cable. Another hawser was paid out to the buoy but the starboard anchor chain subsequently snapped at 10am. For the next nine hours the vessel managed to ride the waves at the single buoy. Another huge sea struck the *Buster* at 6.00 p.m. appearing like "*a wall*" and carrying away one of the remaining hawsers.

The crew feared they would be driven ashore and drowned. They described the "*impenetrable darkness and roar of the sea breaking ashore"* (and the) "*howling of the gale in the rigging*". In driving rain, the last line parted an hour later and the *Buster* drove through the breakers stern first onto the beach. The force of the waves turned the vessel around so that its bows pointed inland. Remaining in the rigging until daylight, the crew were amazed to find the vessel almost dry at low tide but with a strained stem-post and three feet of water in the hold (*Clarence and Richmond River Examiner* 25 February 1893).

The vessel drove ashore approximately 200 yards north of the jetty "*in a good position*" (*Sydney Morning Herald* 20 February 1893). The C*larence and Richmond River Examiner* of 21 February 1893, stated that the vessel came ashore about 10.00 p.m. Captain Carnie and his crew making it ashore.

It was hoped that the vessel might be successfully salvaged with high tides and improving weather (*Clarence and Richmond River Examiner*, 25 February 1893; *Town and Country Journal* 25 February 1893). The damaged hull was favourably assessed by the Marine Surveyor at Woolgoolga. However a dangerous incident occurred when five men attempted to get a line to the buoy in a boat. Capsizing, they made it ashore through a heavy sea "*a good deal shaken and exhausted but alive*" (*Clarence and Richmond River Examiner*, 4 March 1893).

By 7 March it was reported that the *Buster* still lay in the same position but with the bow slightly more buried. Unfortunately the tides were insufficient to float the vessel (*Clarence and Richmond River Examiner*, 7 March 1893). A month after the stranding, the vessel was reported to have suffered severely by storms, although Captain Laidman and his crew from the Underwriters Association had made good progress towards refloating the vessel (*Clarence and Richmond River Examiner*, 25 March 1893). Within days some of the *Buster's* crew and the Underwriters team were taken to Sydney aboard the steamer *Helen Nicoll* as the planks had bulged in the centre with water flowing into the hull (*Clarence and Richmond River Examiner*, 28 March 1893).

An auction was held at the beach soon after by Messrs. Fraser & Co. with the wreck being sold to Mr George Robertson. Robertson had hopes of dismantling the wreck as its master, Captain Robert Carnie, and three remaining men left for Sydney aboard the steamer *Karuah* (*Clarence and Richmond River Examiner*, 4 April 1893). The Marine Board found the loss resulted from misfortune and did not reprimand Carnie or his crew (*Clarence and Richmond River Examiner*, 4 April 1893 and *British*

Register of Ships, 46 of 1888, Sydney). Calls for improvements to the Woolgoolga jetty were soon made in the local press, particularly in light of difficulties experienced by the *Wrestler* in April and *Victory* in June/July. In April the mooring had been lost (perhaps as a result of the *Buster* stranding), while calls were made for at least two additional moorings to be placed (*Clarence and Richmond River Examiner*, 18 April 1893; *Town and Country Journal* 27 July 1893). By July, a total of 9000 pounds had been allocated for the completion of work (*Town and Country Journal* 27 July 1893).

3.3.2 *Orara* (1894-1896) - Woolgoolga

The timber screw steamer *Orara* (Official Number 101129) was built in 1894 by Rock Davis at Blackwall, Brisbane Water, NSW. With a length of 70 feet 7 tenths (21.37 metres) and breadth of 18 feet 2 tenths (5.5 metres), the one decked, single masted steamer had a gross tonnage of 66 tons. Powered by a quadruple compound engine generating 50 horsepower, the vessel was originally owned by David Henderson of Grafton and had been employed as a passenger steamer on the Clarence River. Unfortunately for the new owners, Messrs. Holmes and Blagney, the uninsured *Orara* was wrecked on its delivery voyage to Fremantle, Western Australia (*British register of Ships*, 40 of 1894, Sydney).

Departing the Clarence River via Sydney on 29 December 1896, the vessel was totally wrecked at Woolgoolga the following day. Steaming into a freshening storm, the vessel got into difficulties when the propeller shaft failed to engage the screw. With the sole anchor previously lost, the steamer drifted inshore at Woolgoolga, striking the reef and carrying over into the bay. Attempts were made to secure the vessel for several weeks and some success was made in getting the hull up onto the beach (*Clarence and Richmond River Examiner* 14, 18 and 25 January 1896). By late February the hull had been abandoned while most of the fittings had been saved (C*larence and Richmond River Examiner* 22 February 1896). It is unclear whether the engine and boiler were recovered.

There was some concern at the subsequent Marine Board Enquiry (State Records New South Wales, 2/10543) whether anyone on board had a master's certificate at the time. Mr John Bradford who had command of the vessel was an engineer and shipwright. He had attempted to have a master and engineer sent up from Sydney but they failed to arrive (*Sydney Morning Herald* 10 March 1896). No blame was later laid on Bradford (*Sydney Morning Herald* 24 March 1896).

3.3.3 *Lady of Lorn* (1877-1889) - Moonee Creek

The Heritage Office's shipwreck database notes only one shipwreck in the immediate vicinity of Moonee Creek. This was the timber ketch *Lady of Lorn* that wrecked there on 19 July 1889. It was one of a number of vessels fatally driven ashore during intense storms and floods that affected the New South Wales north coast. Other vessels lost at this time include the *Fawn*, *Hastings*, *Bannockburn* and *Spurwing* on the beach at Byron Bay and the *Jessie Matilda* at Evans Head.

The *Lady of Lorn* was a small timber vessel of 70 feet in length (21.33 metres) and 54 tons gross. It had a breadth of 18 feet 3 tenths (5.48 metres) and depth of 7 feet 5 tenths (2.14 metres) and was previously registered at Newcastle (*British Register of Ships*, 11 of 1877, Newcastle and 54 of 1884, Sydney). Built at Lake Macquarie, NSW in 1877, the vessel was owned by A.B. Howland and W.F. Sullivan (*Sydney*

Morning Herald 23 July 1889; Mr Bond according to the *Clarence and Richmond River Examiner* of 27 July 1889).

Employed in the timber trade with Nambucca, the ketch had loaded a cargo of 30, 000 feet of sawn timber from this port bound for Sydney (*Newcastle Morning Herald* 25 July 1889). The *Lady of Lorn* was forced to seek the shelter of Trial Bay in the face of a rising gale, anchoring there in company with the schooner *Eliza Allan* (*Clarence and Richmond River Examiner* 3 August 1889).

Conditions at Trial Bay meant that the vessel had to seek the comparative safety of the open sea. The ketch travelled south towards Coffs Harbour and sought the shelter of South Solitary Island (then referred to as "The Solitary") and its lighthouse. Worsening sea conditions drove the vessel ashore at Moonee Beach on the morning of 19 July (also referred to in contemporary papers as Moonee Creek) where it struck about "*50 yards from the main land*" (*Sydney Morning Herald* 23, 24 and 29 July 1889). Within an hour the hull had broken to pieces after the mainmast crashed overboard to seaward, leaving the decks to carry away (*Sydney Morning Herald* 23 and 29 July 1889). The ketch had previously been stripped of most of its sail, including the mainsail, topsails and jib (*Clarence and Richmond River Examiner* 3 August 1889).

The wreck was reported to the local Fernmount Police by Aborigines from the area (*Clarence and Richmond River Examiner* 23 July 1889), while other residents Gabriel Skinner and J. Frazer gave excellent assistance to the crew still stranded on the wreck (*Clarence and Richmond River Examiner* 3 August 1889). The Mate, Baldwin, jumped overboard and managed to be washed ashore in an exhausted state. One of the Able Seamen, Alfred Egmont, attempted to do the same but was washed back to the wreck twice and finally drowned. His body was later recovered and buried ashore (*Sydney Morning Herald* 29 July 1889).

3.3.4 ss *Wyong* (1884-1901) - South Solitary Island

Comparatively few vessels were lost within the Solitary Islands chain. Only one was reported in contemporary sources to have actually struck South Solitary Island. This was the small timber steamer *Wyong,* which ran ashore on the south-eastern end in 1901. Limited remains of a steamer shipwreck had earlier been reported to the Heritage Office in this general location and were suspected to represent this vessel.

The *Wyong* (Official Number 89330) was built by Henry Piper at Balmain, NSW in 1884 and originally named *Midget*. It had a single deck, two masts and was rigged fore-and-aft. The vessel was known to have operated in Brisbane Water servicing Gosford. With a framework of wood, the vessel was rebuilt at Berry's Bay in 1897 and lengthened. Re-registered that year, the *Wyong* had a length of 74 feet 2 tenths (22.55 metres), breadth of 15 feet 6 tenths (4.72 meters) and tonnage of 37 tons gross. New compound surface condensing engines built by Brown at Pyrmont were installed. The cylinders had a diameter of 9 1/2 and 16 1/2 inches respectively and the engine rated at 12-horse power.

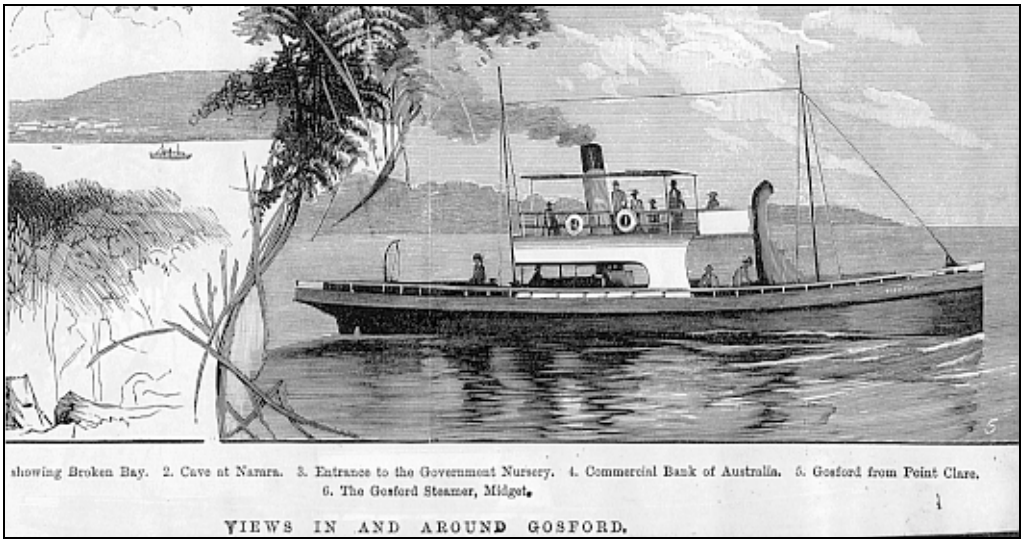

Figure 8: *The Wyong in its earlier guise as Midget.*
From an unknown newspaper clipping at Gosford Library.
Forwarded by Gwen Dundon.

Robertson's at London built the vessel's single steel boiler in 1885 (*British Register of Ships*, 10 of 1885, Sydney and 24 of 1897, Sydney).

At the time of loss, the *Wyong* was described as a tug that had been chartered by the Government to service the Bellinger River (*The Gosford Times*, 15 November 1901). It had apparently only been employed in this work for two months prior to its loss. The *Wyong* left that port on a regular monthly contract to supply the South Solitary Island lighthouse with supplies and mails. It arrived off the island on the morning of 12 November and unloaded its stores and mail. The steamer then waited offshore on the northeast side of the island waiting for the return mail. Suddenly it was realised that the propeller was loose and the tug began drifting ashore. Anchors were let go but they failed to hold because of the water depth close to the island of 18 fathoms or over 30 metres (*Clarence and Richmond River Examiner* 30 November 1901). Captain Radcliffe and his crew of four scrambled into the small boat just in time as the *Wyong* crashed onto the rocks. The crew rowed ten miles for help, arriving at Coffs Harbour.

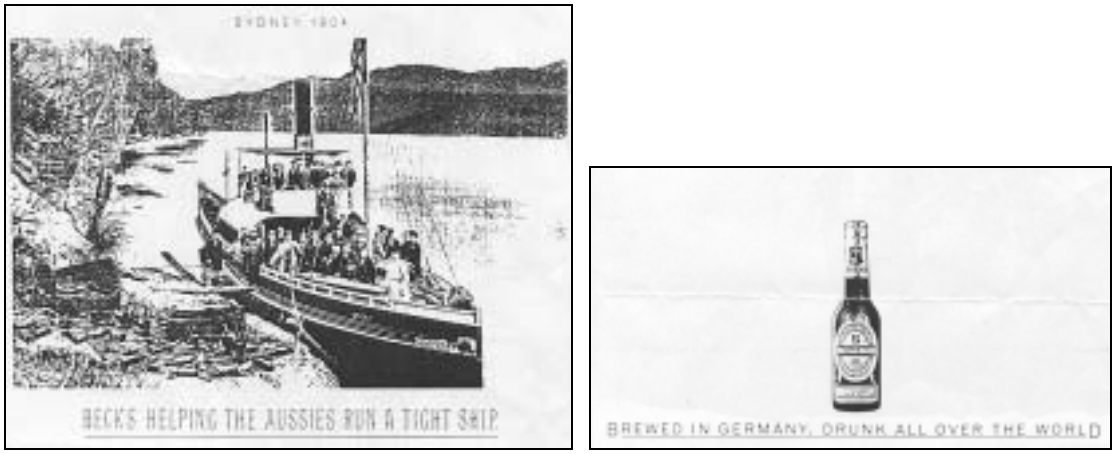

Figure 9: *A depiction of Wyong dated 1904 (three years after its loss!)*
used in an advertisement for the German brewed Beck's Beer.
Unknown source. Courtesy: *Gwen Dundon.*

Busily writing their letters, the lighthouse keeper's family failed to notice the wreck event! It was only later in the day that they *"discovered the wrecked steamer .... on the eastern side of the island with her boiler burst*" (*Clarence and Richmond River Examiner* 16 November 1901). Described as a difficult place to anchor, boats usually waited offshore on the southern side of the island in the ship's boat, with goods and people being transported via a boson's chair and large crane over the waves (*Clarence and Richmond River Examiner* 16 November 1901).

The Marine Board at first considered penalising Captain Radcliffe for having the vessel on the seaward side of the island and for not letting out all his chain cable when half a mile of the land. However, based on his previous he was cleared of all blame. Radcliffe claimed he did not shelter the vessel on the safer lee-side because he could not see the islander's signals from there. He also stated that the *Wyong* had only 35 fathoms (64 metres) of anchor chain aboard, instead of the standard 60 fathoms (110 metres). Further, the vessel bumped regularly over the Bellinger River bar nearly when he took it out (*Newcastle Morning Herald,* 28 November 1901; *Clarence and Richmond River Examiner*, 30 November 1901).

Recreational SCUBA divers relocated the wreck site during the 1960's and undertook extensive salvage. Today, it is known that divers recovered the bronze propeller, valves and piping from the engine and possibly the condenser. This activity probably occurred in 1965 (Max Gleeson, 2000, pers.comm). Employing explosives, the engine is thought to have been entirely recovered about this time (Steve Grace, 2000, pers.comm). There was certainly no evidence for it on the seabed near to the boiler.

4.0 IDENTIFICATION ANALYSIS

4.1 Woolgoolga Wreck

A timber shipwreck was found partially exposed on Woolgoolga Beach in late 1999 following extensive storm activity. Paul Rebuck, a ranger with the Solitary Islands Marine Park, photographed the structure while David Nutley, Senior Maritime Archaeologist at the NSW Heritage Office, undertook initial measurements of the site. The wreck was also inspected by officers from Coffs Harbour City Council who completed a theodolite survey, plotting the wreck in relation to Woolgoolga Beach and the Surf Life Saving Club.

At that time, the bulk of the western side of the hull was exposed to a depth of approximately 70 centimetres. This exposed sections of outer hull planking attached to numerous timber frames, together with the internal "ceiling" planking and a fashion piece comprising part of the "deadwood" from the southern end of the hull. This suggested that only the very lower portion of the hull had survived.

Observed fastenings included timber treenails and iron spikes used to join individual timbers to the frames. Reports by local residents of damage to the shipwreck were investigated. This activity allegedly involved the illegal removal o sections of timber and resulted in the NSW Minister for Urban Affairs & Planning, issuing an immediate media release. The resulting local media coverage and natural reburial of the majority of the wreck reduced this inappropriate activity.

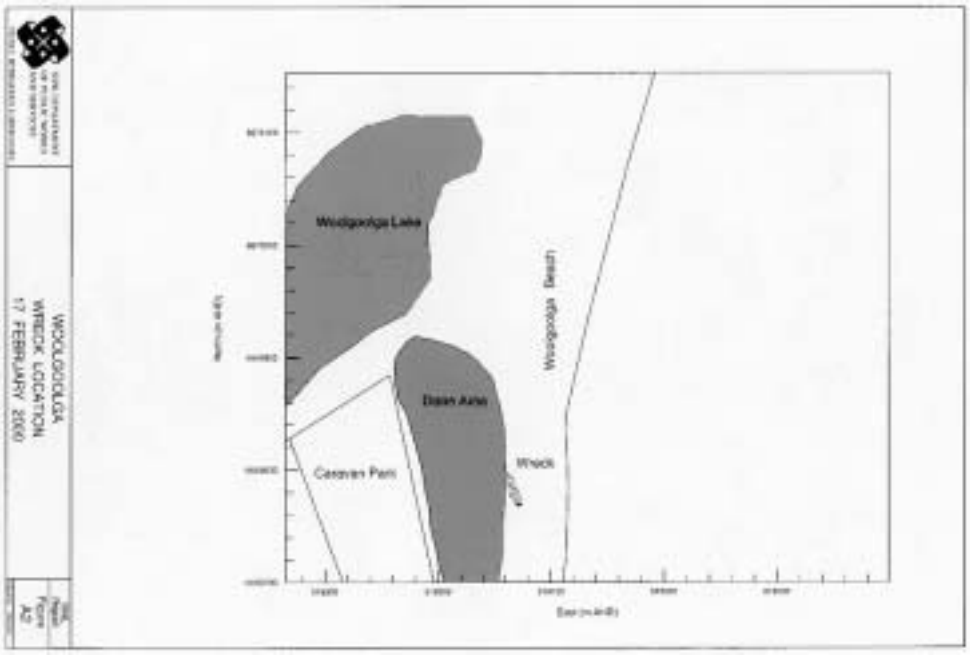

Figure 10: A location map of the Woolgoolga shipwreck showing its relationship to the coastal sand dune and shoreline. Courtesy of Manly Hydraulics Laboratory.

Sydney resident, Les Brown had officially reported the shipwreck to the Heritage Office in 1996 but up until 1999, no archaeological recording of the structure had been attempted. Concerned residents had collected several isolated timbers washed out of the site by storms in early 2000. A portion of one of these was used for timber identification analysis.

Located on Woolgoolga Beach one kilometre north of the Woolgoolga Surf Life Saving Club, the wreck lies immediately south of the entrance to Woolgoolga Lake and adjacent to the Lakeside Caravan Park situated in Lake Road. The shipwreck lies high on the beach largely above the high-tide mark and was found to run just under the present-day frontal sand dune at its northern extremity.

During the February 2000 inspection, sand levels had again increased across the beach, leaving the shipwreck largely covered over. The exposed portion was reduced to approximately seven frames marking the western side of the hull, together with four large iron spikes protruding some 60 centimetres beyond the sand. These were quickly identified as iron “rider knees” positioned in the lower hull, a common fastening or bracket, that ran down the inside surface of a timber hull and bolted to it, and also connected to the underside of a deck above providing additional strength.

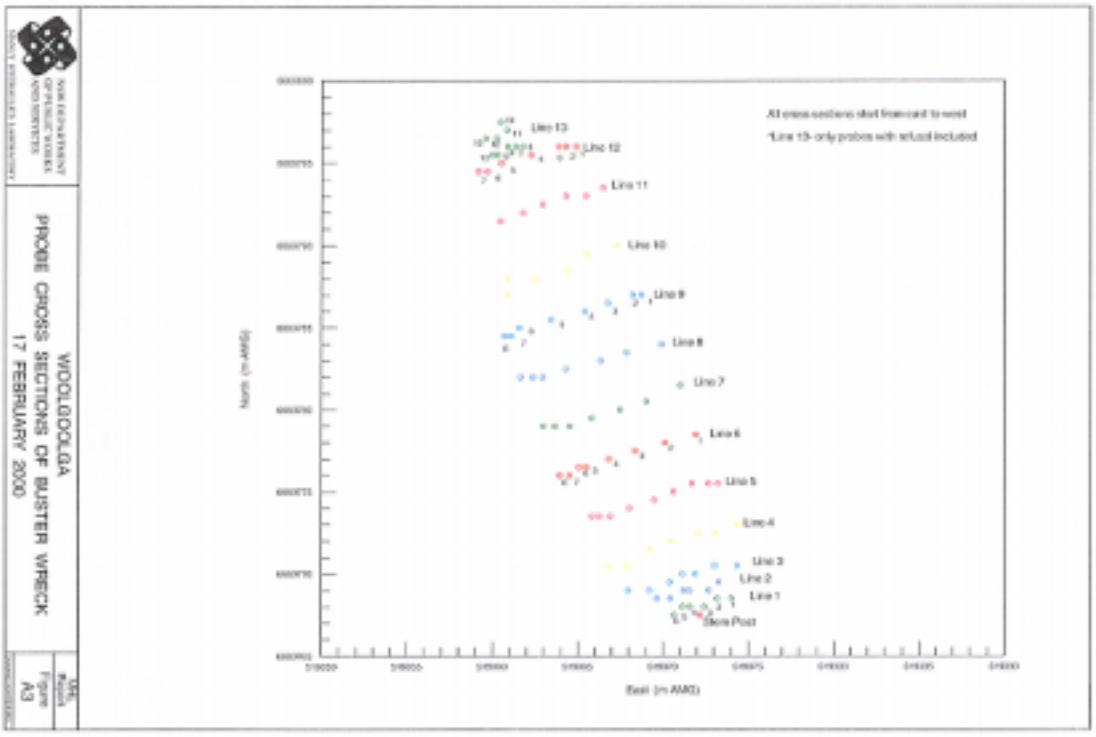

Figure 11: A chart of the plotted probe positions
showing the extent of the buried portion of the timber hull.
Courtesy of Manly Hydraulics Laboratory.

One of the main survey aims was the delineation of the site, including both exposed and buried portions. This was achieved by conducting an air probe survey around the site and recording the depth and location of each timber contact using a theodolite. The centre-line of the wreck was found by this process to lie on a bearing of approximately 340° with what was presumed to be the bow (from historical reports) facing north.

Probes were taken at regular metre intervals across the hull at approximately 90 degrees to the presumed keel line. By recording the depth of each probe contact, a three-dimensional model of the buried surface of the hull could be generated. Probes were continued across the site until no timber contacts were made, denoting that no significant structure existed beyond that point. Over 90 positive probes were obtained during the day's survey, resulting in a buried timber hull 32 metres long by 8.5 metres at the widest point, being mapped. This compared well with the known dimensions of the *Buster* that measured 39.31 metres by 9.45 metres at the upper deck level. It is to be expected that the topsides of the vessel carried away as a result of the wrecking process, contemporary salvage, breakdown of the hull and burial process. This is evident in photographs of the remaining wreck structure that shows that every hull frame is broken off and weathered to a smooth surface.

A timber sample was analysed by the Timber Research Unit of the Queensland Department of Primary Industries and found to be *Douglas Fir* (*Pseudotsuga menziesii*). A native timber common to the west coast of North America, it is also known as *Oregon Pine* (although botanically not a pine). The timber is obtained in Canadian British Columbia and on the Pacific coast of the United States and has a pale to medium red-brown colour with conspicuous growth rings. A commercial softwood, it is typically straight-grained, resinous, and noted for its strength and ease of working (Johnson, 1979: 264).

Figure 12: *View of the Woolgoolga shipwreck taken in 1999 showing the high level of hull exposure at that time. Courtesy of Paul Rebuck. Solitary Islands Marine Park Authority.*

Figure 13: *View of the 2000 Heritage Office survey of the site. Photo: David Nutley.*

4.2 Moonee Creek Shipwreck

Shipwreck remains at Moonee Beach were reported to the Heritage Office by officers of the Solitary Islands Marine Park Authority in 1999. It was believed that they might form part of the sailing vessel *Lady of Lorn*, wrecked there in 1889.

The buried section of timber had been occasionally sighted within Moonee Creek following storm activity. It is evident that the profile of Moonee Creek and its course changes with flood or heavy storm activity. At times this has led to the exposure of a limited section of timber hull. Local residents helped to direct the survey team to the seaward bank of the creek where they had last observed the remains. This is at a point near to the mouth of Moonee Creek from where it turns and breaks out over Moonee Beach to the sea.

Figure 14: *View of the survey operation at Moonee Creek. Photo: David Nutley*.

The area forms part of the Moonee Beach Nature Reserve managed by the National Parks & Wildlife Service, and is bordered in the south by Green Bluff headland and in the north by Look-at-me-now Headland. The wreck site is reached via Moonee Road which exits the Pacific Highway, thirteen kilometres north of Coffs Harbour. Parking is available at the Moonee picnic reserve at the end of the road that lies opposite the shipwreck remains.

A snorkel search of the target area was conducted but no exposed timbers were identified. Using a small water pump fitted to the team's punt, a three-metre probe survey was commenced. Probes were sunk along the existing sandbank but failed to make any contact with definite buried timbers. A large area of still water within the study region could be discounted as it was composed of established clay layers probably predating the wreck event. The search was moved further out into Moonee Creek within the main part of the flow. With the help of local residents, a refined target area was examined based on the last sightings. This proved accurate and within a short time, buried timbers could be identified. These were found to lie approximately 30 centimetres under the sand bed of the creek. Probes were continued until the total extent of buried structure could be delimited. It proved to be an extremely small area measuring approximately 3 x 5 metres in extent.

Figure 15: *Recording the buried timber remains identified as part of the ketch,* Lady of Lorn*. Photo: David Nutley.*

Divers, by limited hand fanning, could briefly expose the buried timbers until the tidal flow reburied them again. By these means however, several planks could be identified bound to transverse frames attached by wooden treenails. The method of construction was consistent with a comparatively small timber sailing vessel. The timbers were photographed and sketched, although the difficulty in maintaining any level of visibility constrained their recording.

Two degraded timber samples were extracted using a coring tool, one from a plank and another from a treenail fastening. It was evident that further levels of timber planking existed beneath, but these could not be sufficiently viewed for recording. A position for the remains was later adduced from topographical maps.

The timber samples were again analysed by the Timber Research Unit of the Queensland Department of Primary Industries. They were found to be an Australian hardwood, probably Spotted Gum (Corymbia citriodora). The timber, common to New South Wales and Queensland, is noted for its toughness (Johnson, 1979: 241). This identification lent support to the hull remains being identified as part of the *Lady of Lorn*, built in NSW. While this is the only section of hull reported at Moonee Creek, it is possible that other sections exist under the wide expanse of Moonee Beach.

The site can be confirmed as *Lady of Lorn,* particularly as this was the only vessel wrecked in the immediate vicinity. The historical records indicated that the ketch was thrown onto the beach and quickly broke up. It is likely that this section of hull later washed over the beach and into the creek during periods of extreme storm activity, or that it was perhaps carried to the creek during probable salvage operations by local residents.

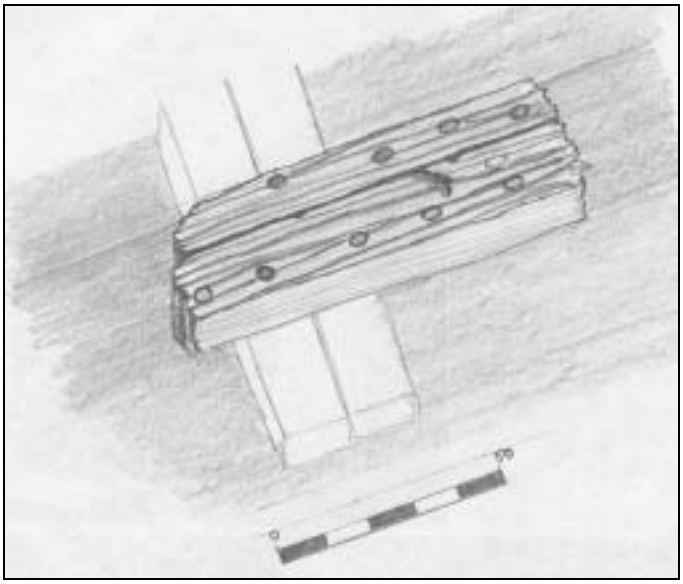

Figure 16: *Drawing of the buried timber remains located in Moonee Creek. The bottom timber are representative only of buried portions that were not visible due to sand movement. Tim Smith.*

4.3 South Solitary Island Wreck

Sydney diver, John Gillies, reported the wreck site at South Solitary Island to the Heritage Office, having previously visited the wreck during the 1960's. The only indication of its location was a single transit photograph. Further details of the site were subsequently obtained by local dive charter operators (particularly Mike Davey of Jetty Dive, Coffs Harbour) who had been to the area.

These discussions confirmed that the site comprised a single iron or steel boiler located in approximately 15 metres of water on the south eastern side of the island and close inshore. This position matched the historical account of the ss Wyong wreck event of 1901. This vessel was lost ashore on the eastern side of South Solitary Island while waiting for a signal from the lighthouse keeper. When the vessel's propeller failed, currents drove it against the shore to become a total wreck.

Figure 17: The boiler located at South Solitary Island.
Photo: David Nutley.

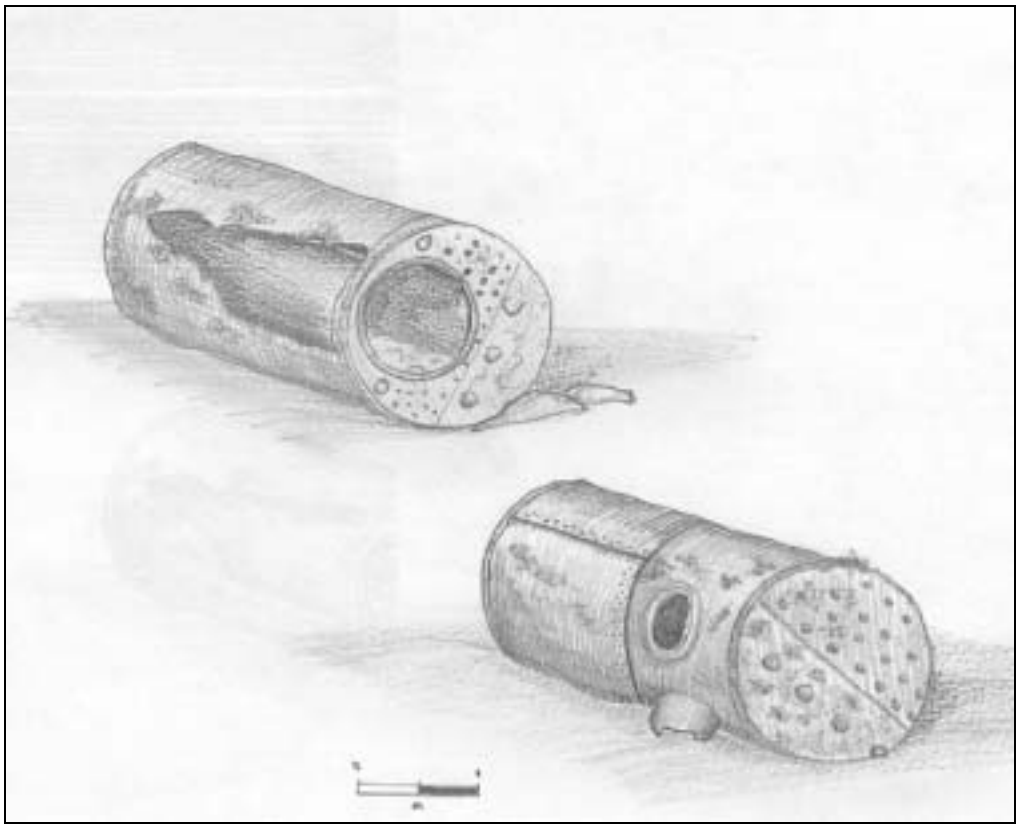

Figure 18: Drawing of the boiler located in sixteen metres of water.
Tim Smith.

The diving operation was made possible by the provision of a boat and support divers from the Solitary Islands Marine Park staff located at Coffs Harbour. The MPA vessel was positioned against the eastern side of the island and Marine Park rangers entered the water on snorkel and soon located the boiler. The full diving team then entered the site and began inspecting the area. This included undertaking a measured sketch of the boiler together with obtaining still photographs and video footage. Other members conducted a wider search and located some unidentified metal elements that require future recording and analysis.

The boiler was found lying upside down on a sand and shell substrate in 16 metres of water. Identified as a standard scotch boiler, it had a single furnace at one end directed towards the island in which sat a large turtle. The boiler measured 2.24 metres in length and 1.60 metres (~ 5 feet 3 inches) in diameter and was resting on what appeared to be the remains of the uptake of the steam dome. The boiler equates with a five-foot example in the old measurements.

The boiler's shell plating was damaged on its underside (visible as the present "top" surface), exposing the furnace flue inside. This damage was possibly caused by abrasion when the boiler was once sitting upright on the seafloor.

The back end plate of the boiler was intact and several rows of the boiler stay nuts could be delineated under the marine growth covering. These nuts secured the internal longitudinal stays that connected the front tube plate of the boiler to this back end plate. Visible on the front end plate were numerous fire tubes in symmetrical rows either side of the furnace opening. Two "sludge holes" or possibly "inspection doors" are located either side of the furnace opening for access and cleaning. The boiler was of double-riveted construction and the plate seam lines could be readily identified. A single manhole was visible on the upper side.

Scotch boilers were a natural development of the preceding cylindrical boiler type. They were more robust and could generate a working steam pressure of up to 200 pounds per square inch. The design incorporated greater ability to roll iron plates leading to greater strength, thicker plating and fewer riveted joins. Scotch boilers could accommodate greater steam pressures and were developed from the 1870's and have been fitted into vessels well into the twentieth century. They were originally made of iron, then incorporated steel sections, until they were entirely constructed of steel. Scotch boilers used fresh water in a closed circuit system. The steam originating from the boiler fed into the engine, then through a condenser where the water was re-circulated to the boiler. These boilers, like the earlier cylindrical types, only required stays across the two flat faces.

Many examples can be found on New South Wales wreck sites ranging in size up to sixteen feet in diameter. They are usually the most high profile feature of a steam shipwreck (Riley, 1998). A boiler of slightly over five feet diameter is at the very small end of the scale and indicates that it was fitted into a small vessel with a comparatively simple engine. This is consistent with the tug *Wyong* that measured only 22.55 metres in length (74 feet). The absence of any hull remains is also consistent with the loss of a timber vessel in such a volatile environment. A timber-hulled steamer would be expected to have completely broken apart against the rocky face of the island, any remnants settling on the shallow sea floor would soon be broken down by the action of surge against the reef bottom and marine organisms unless quickly buried.

Heavier items are expected to survive in this inshore environment, principally the engines, boilers, anchors and propeller gear. There has been no sign of the compound (two cylinder) marine engine during the current inspection or through earlier divers visits. This could indicate that the engine was successfully salvaged, or that it has severely broken down and has not yet been located.

Weather conditions precluded a systematic search of the vicinity, particularly close up under the cliffs and out into deeper water. These areas need to be fully searched in order to determine the potential for further wreck material. The site was souvenired by sports divers in the 1960's prior to heritage legislation being enacted in New South Wales. This could explain the absence of small fittings across the site.

Apart from the size of the boiler, it is of the type expected on a steamer constructed in 1884 and wrecked in 1901. Its location also agrees with historical accounts of the loss. The boiler can therefore be associated with the *Wyong* wreck site with a fair degree of certainty.

It is possible that the boiler is the original one fitted into the *Wyong* and built in the United Kingdom. Boilers however had a limited life span and were frequently replaced during the life of a working vessel. It is possible that the present boiler is a replacement made a-new during the major engine refit recorded in 1897. Additional detailed recordings of the boiler are required.

4.4 Anchors on public display

4.4.1 Admiralty Pattern Anchor at Coffs Harbour Water Police

A prominently displayed iron anchor is mounted outside of the Water Police headquarters at Coffs Harbour. Painted white on a concrete plinth, the anchor is of the common "Admiralty Pattern". Developed by Admiral Sir William Parker for the Royal Navy, the design was introduced in 1841 (Upham, 1983:19). Known as the standard or new-style anchor, it is the most commonly observed type on vessels from that period.

It is also commonly found in archaeological contexts within Australia. The anchor was a development of the earlier Admiralty Old Plan Long Shanked Anchor commonly observed throughout the eighteenth and into the very early nineteenth century. The new style was noted for the graceful curve of its arms, an elliptical cross-section and a pronounced bill or pea at the point of the palms.

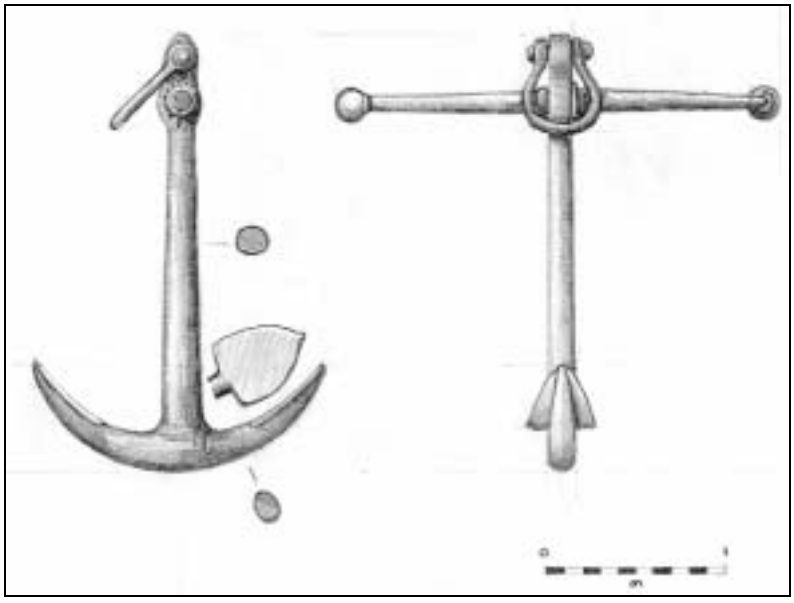

Figure 19: Admiralty anchor (painted white) at Coffs Harbour Water Police. Recorded by D. Nutley and T. Smith. Drawn by Tim Smith.

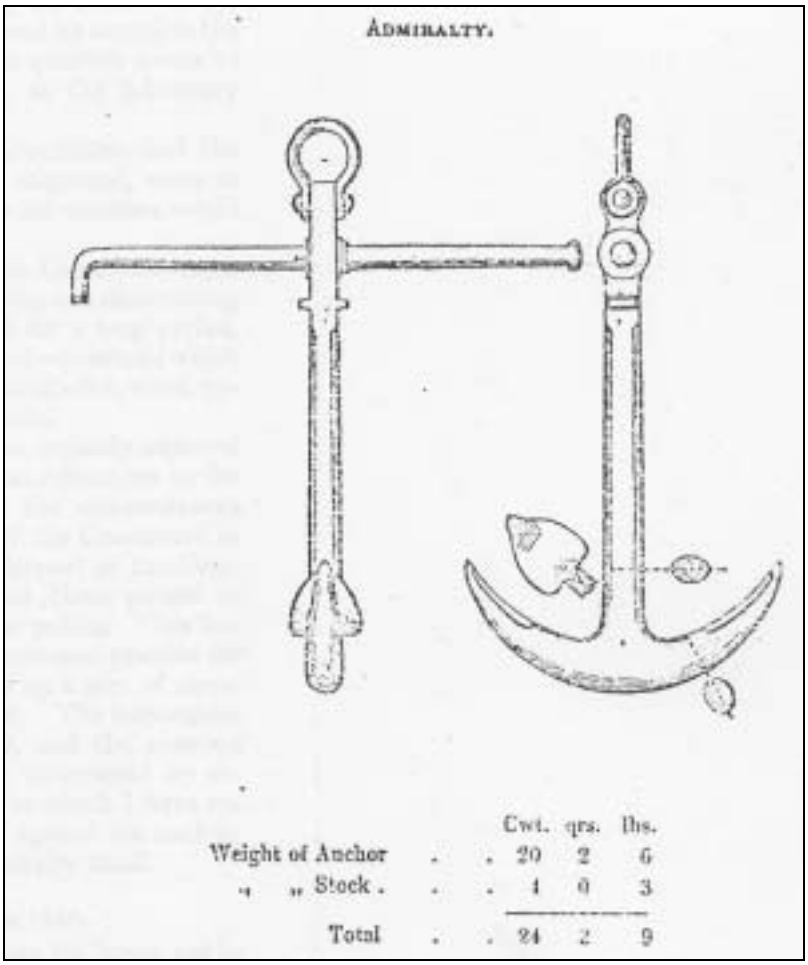

Figure 20: Admiralty anchor with iron stock after: Cotsell, 1856.