Cyclones and Coral: sea routes through the Great Barrier Reef

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Abstract

The Great Barrier Reef has an iconic position in the history of Australia’s maritime sea routes. Louis-Antoine de Bourgainville in 1768 failed to be the first recorded European to sight the east coast of Australia because the Reef was in the way; Captain Cook in 1770 famously ran the Endeavour onto it and survived; Matthew Flinders, P.P. King and a raft of later naval hydrographers surveyed its labyrinthine passages, and many ships have been wrecked upon it. Shipping inside the reef became the lifeline to all central and north Queensland coastal towns, but a complex system of Pilotage and ship tracking has had to be introduced to protect the shipping from the Coral and the reef itself from the ships. At the same time the main shipping routes run through the middle of a world famous tourist destination and a highly sensitive reef ecosystem. It is estimated that by 2020 some 7,800 ships will travel to and from the 10 major trading ports along the reef each year, over half of them carrying Queensland’s coal exports. The routes they have to follow are narrow and tortuous, winding their way through a World Heritage Listed Marine National Park. The paper looks at the long and unusual history of the Great Barrier Reef route, its significance to communities along it, and more broadly to Queensland and Australia.

Introduction: sea routes as heritage places

In the discussion of routes those on the sea have received relatively little attention (though see Rice 2003; Pearson 2005b). On land, routes might have continuous or occasional physical evidence of their use or construction, or, as in the case of Aboriginal routes, have an associated cultural landscape that has meaning for those who know the creation stories and the resource potential of the route.

At sea there is usually no physical evidence of the route except at the ports a ship visits and the navigation aids along the coasts in the proximity of the route. Shipping routes might be many hundreds of kilometres wide as they cross oceans, and at sea no ship will exactly duplicate the route of another due to differing weather and sea conditions. The open ocean has no landmarks, though it may have indicators of general location in its currents, depth or weather patterns, which have been used by many indigenous navigators around the world. A detailed sense of location in the open sea is usually given only by scientific navigation systems. Away from land a sea route is most definitely intangible.

Sea routes become more defined close to coasts and islands, and such is the case along the Barrier Reef, where the major shipping routes are dictated by the pattern of coast, islands, reefs and reef-free water. In addition, the Queensland coastal shipping routes have a substantial amount of physical evidence, including lighthouses and navigation markers, wrecks of earlier
shipping, coastal settlements and ports, and named islands and landmarks, all of which are carefully charted and used for navigation purposes.

The study of the sea routes of the Great Barrier Reef (GBR) is particularly topical, given the prospect of greatly increased shipping using the narrow, coral-strewn routes through a World Heritage area. The previous assessments of heritage values for World Heritage purposes have focussed on the Outstanding Universal Values of the natural environment, for which the area was inscribed on the World Heritage List. National Heritage Listing assessment by the Commonwealth has identified, among other values, the meanings of the area for indigenous people, including the value of land and sea as ‘storied’ landscapes. While these landscapes include Aboriginal and Torres Strait Islander traditional routes (as discussed below), these routes and the later non-indigenous routes are not the focus of the assessments. The routes through the GBR are ‘places’ as defined by the Australia ICOMOS Burra Charter and in most Australian heritage legislation, places with both tangible and intangible values, as discussed in this paper. The routes within the GBR deserve serious consideration as heritage places.

Frank Broeze argued that the European settlements around the Australian coast should be seen as ‘an archipelago of “islands” of settlement rather than as a continent’ (Broeze 1988:1). The sea routes linking these ‘archipelagos’ were for varying periods of history the only reliable access to these settlements, and in many cases remain important today as trade routes. This is certainly true of the settlements along Queensland’s east coast, a very distinctive cluster of ‘islands’ where communication by land was lengthy and difficult until at least the 1920s. They occupy one of the four distinctive regions of the Australian coast as identified by Campbell Macknight – each region having its own geographical character and historical associations that set it apart from the other regions. The Queensland coast was distinguished by its very hazardous navigation and scarcity of good harbours, and by the absence of confirmed European contact until the late 18th century (MacKnight 1969:2-3). The Great Barrier Reef shares with the north coast of Australia a monsoonal climate, and the prevalence of cyclones during summer. The combination of narrow coral-fringed sea routes and cyclonic winds made the Great Barrier Reef (GBR) a terrifying place for mariners.

The passage between the GBR and the Queensland coast has a long history of use as a sea route. There are multiple historical contexts for the GBR sea route, each with differing characteristics – Aboriginal navigation to and from rivers along the coast and to offshore islands; navigation from the Torres Strait islands to the north Queensland coast; early voyages of European exploration and survey; voyages of local exploration and settlement; sea routes established to supply new settlements and to export regional produce; passenger routes for the community and tourists; and the establishment of navigation aids and a piloting system through the reefs. Because each of these has such a distinctive context, with distinctive motivations, purposes and technologies, each could be considered as a ‘sea route’ in its own right. Hence the paper talks about the GBR sea route but also about multiple sea routes within it, but geographically they are all imprinted on the same stretch of water between the reef and the coast, and through the small number of passages leading into the Coral Sea.

Sandy Blair has pointed out that colonial and post-colonial land transport and communications routes in Australia often consist of ‘strong linear concentrations of activity and meaning, with connected sites and features imprinted on a vast continent’ (Blair 2000:15). The GBR has these characteristics, but how do we tease out the activities and meanings to identify the routes of heritage significance?

A few definitions of terms might help in the discussion below:

- **Great Barrier Reef**: A reef system extending from Lady Elliot Island (just north of Bundaberg) in the south, to the Torres Strait in the north. The barrier reef runs parallel to the Queensland coast for nearly 2,000 km, at a distance of as much as 250 km offshore at Shoalwater Bay in the south, to as little as 20 km offshore at Cape Melville in the north. Between the outer barrier reef and the mainland are many hundreds of smaller reefs and reef-fringed islands, which further constraint the shipping route.
• **Sea route**: A route taken by vessels that has been identified as safely navigable and is repeated by other mariners. It may be between coastal ports or across oceans. Sea routes can vary in width from a narrow lock (such as the Panama Canal) or a tight channel between islands, to many hundred-kilometre wide bands of favourable winds in the open ocean.

• **Cultural route**: ‘Cultural route’ is defined in the *ICOMOS Charter on Cultural Routes* definition (ICOMOS 2008). A ‘cultural route’ is:

  Any route of communication, be it land, water, or some other type, which is physically delimited and is also characterized by having its own specific dynamic and historic functionality to serve a specific and well-determined purpose, which must fulfill the following conditions:

  a) It must arise from and reflect interactive movements of people as well as multi-dimensional, continuous, and reciprocal exchanges of goods, ideas, knowledge and values between peoples, countries, regions or continents over significant periods of time;

  b) It must have thereby promoted a cross-fertilization of the affected cultures in space and time, as reflected both in their tangible and intangible heritage; and,

  c) It must have integrated into a dynamic system the historic relations and cultural properties associated with its existence.

In this article, however, I have used the term ‘cultural sea route’ with a less constrained definition than that used by ICOMOS, to mean often-used routes that are heritage places by virtue of having historic, social (including spiritual), and maybe associational aesthetic and scientific values. A brief explanation is provided below.

• **Heritage values**: A shorthand way of referring to the *cultural significance* (the aesthetic, historic, scientific, social or spiritual value for past, present or future generations) of a place (terms as defined in the *Australia ICOMOS Burra Charter*).

In thinking about sea routes as places with potential heritage significance, it should be noted that the ICOMOS cultural route definition seems to limit the range of potential heritage values that can be considered. For example a trade route that does not involve the movement of people and ideas (the historically important iron ore/coal route between Whyalla and Newcastle/Port Kembla for example), or important transport routes that do not meet the limitations of the definition, seem to be excluded, as do the routes of explorers, and to some extent tourist routes, even though a case could obviously be made (and is made in this paper) for applying the Burra Charter definitions and the criteria of Australian heritage registers to each of these, treating routes as heritage ‘places’. Therefore, I have used a less constrained definition that sits better with the Burra Charter understanding of heritage value.

The paper breaks down the multi-layered history of the GBR sea routes (in a very summary way), so that the question of heritage value can be addressed in the final section.

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Figure 1: Map of the Great Barrier Reef, showing the World Heritage Area boundary, the Barrier Reef (speckled band parallel to coast), and the major current (and historic) shipping routes. (Source: Australian Maritime Safety Authority website, http://www.amsa.gov.au)
The history of the Great Barrier Reef sea routes

Aboriginal sea routes

There are more than 70 Aboriginal and Torres Strait Islander Traditional Owner clan groups situated along the Queensland coast from the eastern Torres Strait Islands to just north of Bundaberg. For each the values of the land extend to incorporate the sea and its natural resources. Trade routes existed between the Torres Strait clans and those of the north Queensland coast, plied by outrigger canoes, and cultural exchange was extensive. Along the whole length of the coast cultural sites exist that link clans with land and sea. Sea routes exist from the coast to offshore islands and reefs, and between the islands of the Torres Strait, for ceremonial, trade and resource gathering purposes, and these routes, once sailed in wooden canoes, are now often navigated in modern motorized boats. Hunting and gathering has strong cultural importance, and related special events based on traditional resources have important social significance (Great Barrier Reef Marine Park Authority 2006; Smith 1987).

Professor Isabel McBryde (1997) has argued that Aboriginal exchange and trade routes in central Australia, while having physical elements such as quarries and archaeological sites, are at their heart associative landscapes – places that only have meaning because of inherited ancestral knowledge linking topography and creation story. She has also called them ‘storied landscapes’ (McBryde 2000). In this context, the identification of a route or a landscape simply by reference to its episodic physical remains (the archaeological landscape) ignores the richer range of cultural meaning attached to the storied landscape. The consideration of Aboriginal sea routes in the GBR region is more likely to be meaningful as part of a more holistic assessment of the storied landscapes of the hinterland, coast and reef combined.

Exploration and the surveying of sea routes

The first confirmed European to visit the region was the Spaniard Luis Váez Torres, who in late 1606 sailed east to west through the coral maze that was later given his name – Torres Strait. Torres does not appear to have recognised the existence of the continent to his south, and his account remained generally unknown to seamen for over 150 years (Hilder 1980). The Frenchman Louis-Antoine de Bougainville nearly became the first European to sight the east coast of Australia when he approached the Barrier Reef in the La Boudeuse and Etoile while on a voyage from the New Hebrides in 1768, but was repulsed by what is now named Bougainville Reef, some 200 km east of Cooktown (Bougainville 2002).

Two years later Lieut. James Cook in the Endeavour found himself forging a passage northwards inside the Great Barrier Reef, though Cook had no knowledge of the reef system’s existence, the first reef he encountered being at Green Island off what is now Cairns, then striking Endeavour Reef the following night. Cook had been in shoal waters from Sandy Cape northwards, but the vast size and impenetrable nature of the Barrier Reef was hidden to him. As Cook sailed north over a three month period he landed no fewer than 13 times on the Queensland coast and offshore islands, starting at Bustard Bay, searching for water or fresh food (see list in Pearson 2005a:66). His longest stay ashore was at Endeavour River (now Cook Town), where he repaired the reef-bitten Endeavour from 17 June to 5 August 1770.

Leaving Endeavour River, Cook headed into reef-infested waters. He climbed high points at Point Lookout and on Lizard Island to try to see a way through the maze of reefs, and was able to see a passage through the outer reef to the east through which he took the Endeavour (Cook 14 August 1770 in Beaglehole 1955). It is now called Cook’s Passage.

Cook expressed his understandable relief at being free of the shoal waters inside the Barrier Reef, and out in open waters, but the relief was short-lived. He was determined to find a passage between Australia and New Guinea, if one existed, and to do this he had to keep in touch with the reef and the coast. As he sailed to the west to regain contact with the coast the Endeavour was carried by the swell and the currents once again towards the reef. With no wind to help, the boats pulled the ship to keep her off the reef, and eventually an opening Cook called Providential Passage was seen and the ship sailed through it into the shelter of the outer reef (Cook 17 August in Beaglehole 1955). Cook worked his way again through shoal
but protected waters for the next four days, when he found the strait around Cape York into what was later named Torres Strait.

Cooks chart of the Queensland coast was updated in part by Flinders’ chart published in 1814 (in which he first named ‘the Great Barrier Reefs’), and was superseded by the publication of Phillip Parker King’s more detailed charts in 1824 (David 1984:55). Subsequent detailed surveys by Capt. Owen Stanley, Lieuts. Blackwood and Yule in HMS Rattlesnake, Fly and Bramble, and Capt. Denham in HMS Herald, and later in the century and into the next by survey vessels HMS Lark, Alert, Dart, Penguin, Calloipe and Fantome provided a sound knowledge of the major passages through the GBR (Bowen 2002:77-106; Pearson 2005a).

The work of the hydrographers has not ended, with the ongoing survey of deep-draught routes such as a deviation of the Inner Route off Princess Charlotte Bay (LADS Passage) opened in 2004, and the discovery of the Hydrographers Passage, a new deep-draught passage through the outer Great Barrier Reef east of Mackay in 1981-83, which provided safe access to the Coral Sea for coal ships, cutting 800 km of the round voyage to Japan (Hardstaff 1995; Stevens 2001:232-233).

The routes of the explorers and hydrographers are of historical importance, and specific sites along them may be of heritage value, but the routes themselves were perhaps no more nor less significant than most other exploration routes. They do not meet the criteria for ‘cultural route’ as defined by ICOMOS, and their individual heritage values as historic routes would have to demonstrated in comparison with other routes of the era of exploration.

European settlement and the growth of passenger and cargo sea routes

The initial European settlement of the GBR region of the Queensland coast took place in the third quarter of the nineteenth century. Ports were progressively opened along the coast, initially following or facilitating the inland spread of pastoralism through central and northern Queensland, then providing service ports for new goldfields and the spread of the sugar industry. From the 1960s new ports have been developed to provide bulk loading of coal from the Bowen Basin coalfields for international export. Table 1. summarises the pattern of port establishment.
**Table 1: Establishment of GBR ports**

(Sources: Bowen 2002; Gibson-Wilde 1884; Gordon 1859; web sites of Port of Townsville, Ports North, Gladstone Ports Corporation; Taylor 1980)

<table>
<thead>
<tr>
<th>Year</th>
<th>Port</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>1853</td>
<td>Gladstone (Port Curtis)</td>
<td>Established as a penal settlement in 1847, abandoned after 3 months. Settled as a pastoral port 1853, and made a port of entry 1859.</td>
</tr>
<tr>
<td>1855</td>
<td>Rockhampton</td>
<td>Service port for pastoral settlement, and the ill-fated Canoona goldrush in 1858.</td>
</tr>
<tr>
<td>1861</td>
<td>Bowen (Port Denison)</td>
<td>Service port for pastoral settlement, and first officially designated township on the reef coast.</td>
</tr>
<tr>
<td>1863</td>
<td>Mackay</td>
<td>Service port for pastoral settlement.</td>
</tr>
<tr>
<td>1864</td>
<td>Townsville</td>
<td>Commenced as port to service Robert Town’s pastoral stations, then became a government town. Became service port for Ravenswood (1868) and Charters Towers (1872) goldfield, and for the pastoral and sugar industries.</td>
</tr>
<tr>
<td>1864</td>
<td>Somerset</td>
<td>Established as a port-of-call and relief station on the Torres Strait route. Abandoned 1877 when Thursday Island settlement established.</td>
</tr>
<tr>
<td>1869</td>
<td>Cardwell (Rockingham Bay)</td>
<td>Service port for the Gilbert Goldfield and pastoral industry.</td>
</tr>
<tr>
<td>1873</td>
<td>Cooktown</td>
<td>Service port for the Palmer River goldfield, but use declined with the goldfield’s decline.</td>
</tr>
<tr>
<td>1876</td>
<td>Cairns</td>
<td>Established as a port for the Hodgkinson River goldfields, overtaking Port Douglas in 1891. Major commercial and tourism port in north Queensland.</td>
</tr>
<tr>
<td>1877</td>
<td>Port Douglas</td>
<td>Established as a port for the Hodgkinson River goldfields. Declined as Cairns became the local mine rail terminus, and in 1924 the rail terminus from Brisbane.</td>
</tr>
<tr>
<td>1883</td>
<td>Mourilyan</td>
<td>Established to service Mourilyan sugar mill. Bulk loading of sugar from 1960, woodchips and logs from 2011.</td>
</tr>
<tr>
<td>1895</td>
<td>Lucinda Jetty</td>
<td>Built as export jetty for CSR sugar plantations in the Ingham area. Current 6 km long jetty completed 1979.</td>
</tr>
<tr>
<td>1967</td>
<td>Cape Flattery</td>
<td>Export loader for silica sands.</td>
</tr>
<tr>
<td>1971</td>
<td>Hay Point</td>
<td>Export loaders for the Bowen Basin Coalfields.</td>
</tr>
<tr>
<td>1984</td>
<td>Abbot Point</td>
<td>Export loader for the Bowen Basin Coalfields.</td>
</tr>
</tbody>
</table>
The port towns were often linked to their hinterland by railways, increasing their catchment for the export and import of goods by sea – Rockhampton was linked to Westwood in 1867 and on to Emerald in 1879; Townsville to Charters Towers in 1882 and on to Winton in 1899; Cooktown to Laura in 1885; Mackay to Mirani in 1885; Cairns to Kuranda in 1891 and on to Atherton by 1903. Meanwhile the main rail line development progressively extended from the south into western Queensland, leaving the coast and its hinterland to be serviced by sea. The coastal railway system was a relatively late development, linked to Gladstone in 1896, on to Rockhampton in 1903, Townsville in 1921, and finally reached Cairns in 1924.

If the sea routes are judged to have heritage values, then perhaps the extension of the sea transport system inland via the railways has also to be considered, as augmenting the reach of the sea links, and finally, for many purposes, replacing them.

In the early years of settlement the ships servicing the northern ports were often owned by the pastoral companies expanding the pastoral frontier, or by their affiliates, but the established commercial shipping lines soon entered the growing market. The Queensland Steam Navigation Company (QSN) was established by an Act of Parliament in 1861 with a charter for ‘trading with steam and other vessels between Brisbane and Rockhampton and to and from other ports and places’. The QSN became the direct competitor of the Australian Steam Navigation Company (ASN) which had developed a monopoly on the embryonic north Queensland trade from 1860. A price cutting war ensued, with ASN absorbing QSN in 1868. Stimulated by the change in steamer routes enabled by the opening of the Suez Canal in 1869, the Eastern and Australian Steam Navigation Company was formed in 1873 to connect with the English mail service at Singapore and carry Queensland mails via Torres Strait to Brisbane. The route was taken over by the British India Company in 1880, and this company also serviced the growing Queensland frozen meat trade (Bowen 2002: 118-121; Taylor 1980:46-47).

In 1881 the Queensland Steamship Company (QSS) was formed to provide feeder services for the British India Company. In 1885 the two companies combined to form the British India and Queensland Agency Company, and in turn it acted as agent for QSS to purchase ASN and form Australasian United Steam Navigation Company (AUSN), which dominated Queensland coastal shipping for the next 50 years. Howard Smith Shipping was the other major shipping line operating on the Queensland coast from the 1870s, and it and AUSN established cooperative working arrangements. AUSN was not to trade beyond Melbourne, while Howard Smith was not to trade beyond Mackay, the two firms sharing the sugar trade from Maryborough, Bundaberg and Mackay (Taylor 1980:47-48).

The large-scale of these operations tends to mask their local significance. The lines linked the major ports of the north with the major ports of the south and into Asia, but in the process also serviced the minor ports and provided a lifeline for Queensland communities. For example, ASN Co’s schedule from Townsville in 1879 was: ‘Departs every Monday at noon for Bowen, Mackay, Broadsound, Gladstone, Brisbane, Sydney and Melbourne. Departs every Wednesday afternoon for Cardwell, Herbert River, Cairns, Port Douglas and Cooktown’ (Townsville Herald 1 Jan 1879). The regular calls by ships with cargo and passengers was critical to the economic and social success of the small coastal towns, and by 1884 a small fleet of Townsville-based coastal steamers, such as that operated by Howard Smith Shipping, was running regular weekly services to the small communities that were generally sited at the mouths of rivers north and south in the region, filling in the gaps left by the larger ships (Farquhar 2002:24; Gibson-Wilde 1984:116). The mail services relied on the sea routes. An express mail service was created in 1898, with the railway carrying mail to Gladstone, then AUSN carrying it northwards. This ran until 1924 when the northern rail system was completed (Taylor 1980:47-48).

The Queensland ports and their regions were, until at least the 1920s, heavily dependent on shipping for the carriage of goods and passengers to and from southern cities, and the ships provided the major source of news and social interaction with the rest of the state and nation. The coastal steamship companies, recognising the potential provided by the increasing movement of people along the coast as the regional population grew, started introducing specialised passenger ships around Australia from the 1880s. Howard Smith’s Buninyong and Gabo worked the east coast and Queensland ports from 1883. Other lines followed. AUSN’s
Kuranda (928 tonnes) became the most regular and best-known vessel in North Queensland waters during the first quarter of the 20th century.

‘Old hands around Townsville waterfront still remember the regularity of her (Kuranda’s) voyages; reminiscing that one could set one’s clock by her departure from Townsville and her return at the end of the week. Residents of the half-dozen small ports along the way, as well as the Port of Cairns, eagerly looked forward to receiving the mail and general supplies as well as welcoming passengers disembarking at their ports.’ (Taylor 1980:189)

The success of the Kuranda caused the NZ Union Steamship Company to place the Mourilyan (1,349 tonnes) on the same service. Others followed suit, with AUSN, Adelaide Steamship Company, Howard Smith and Melbourne Steamship Company placing increasingly large and up-to-date steamers on the north Queensland route into the twentieth century (Taylor 1980:190-194).

This was part of a national trend, and it declined as coastal shipping declined nationally – in 1914 with a population of over 5 million, Australia had 31 high-class steamers of 2,000 to nearly 10,000 tonnes in operation on the coast. By 1927 with a population of 6 million, the interstate passenger liners had been reduced to just seven (the same number as in 1884) (Taylor 1980:196-197). After 1927 only a handful of new passenger/cargo ships entered the trade, the Manoora (10,856 tonnes) in 1935 and the Kanimbla (10,985 tonnes) in 1936 being the last to do so. By the late 1930s airlines were making a major inroad into the passenger market. In 1938, for example, airlines nationally carried 158,903 passengers, while coastal passenger liners carried 114,841 (Plowman 2007:120-121). Many of the air passengers would have formerly travelled by ship.

During WWII most of the larger passenger liners were requisitioned for wartime service, and only a handful of large passenger liners returned to coastal service after the war. By 1948 only the Manunda, Marella and Ormiston serviced north Queensland, joined by the Kanimbla in 1950. The big ships normally operated as far north as Cairns during the winter months, the Kanimbla, Manoora and Manunda doing so through the mid-1950s, with three departures every four weeks from Melbourne and Sydney (Plowman 2007:148, 155, 161).

The large liners are gone, but even larger cruise ships visit Queensland ports today. The biggest change in shipping in recent decades, however, has been related to the growth of central Queensland coal industry. The export of coal has seen an increase in large commercial shipping in the GBR region to 4,800 vessels a year (2012), just over half of which are coal carriers. Projections by the Queensland Resources Council estimates that by 2020 some 7,500 large commercial vessels are expected to travel to ports along the reef each year, with up to 4,500 of them being coal ships, and the remainder being general cargo and bulk commodity vessels, and tourist ships (Queensland Resources Council 2012).

**Tourism and cruise shipping**

Tourism had long attracted visitors to the GBR and north Queensland, and the shipping companies drew on this attraction. Howard Smith Shipping, for example, owned tourist facilities, including the Kuranda Hotel on the scenic railway behind Cairns (Farquhar 2002:24). Books such as Edmund
Branfield’s 1908 *Confessions of a beachcomber*, about his lifestyle on Dunk Island promoted the attractions of the Barrier Reef islands to a wider public (Colfelt 1989:199).

Cruising by small ships had been an aspect of GBR tourism since at least the 1890s, when irregular day-cruises from Cairns to Green Island began. Small tourist facilities or resorts were established on Green, Daydream, Brampton, Hayman, Linderman and Heron Islands in the 1930s, and the Queensland Government Tourist Office was created to publicise the region (Bowen 2002:287; Colfelt 1989:61,101,105,119,129,219). As rail, and from 1936 ANA airlines from Townsville and 1938 from Cairns, further reduced demand for passenger liners, the shipping companies began to rely more heavily on the excursion and cruise market. AUSN began weekend excursions from Cairns to the Hinchinbrook Passage in 1938 (Plowman 2007:119).

The post-war services were advertised both as line routes and as holiday cruises, and reflected the seasonal nature of northern tourism, rather than the all-seasons demand of commercial travellers. This did little to halt the erosion of demand caused by the growth of the airlines, and the *Manunda* was removed from service in 1956. By 1959 the *Manoora* and the *Kanimbla* were advertising their three-week round trips to Cairns (at £104/15/0) simply as cruises, stopping at Brisbane, Townsville and Hayman Island, a modern tourist resort opened by Reginald Ansett in 1950 (Colfelt 1989:119; Plowman 2007:176). *Kanimbla* undertook a series of cruises to Japan and Hong Kong from 1958-60, in her absence leaving *Manoora* as the only large passenger ship operating on the Australian coast. Finally, *Kanimbla* was sold in January 1961, followed by the *Manoora* in July (Plowman 2007:181), thus ending the Australia coastal passenger services by large ships. Subsequent tourist shipping operations were mainly from coastal ports out to the reef, rather than along the coastal sea route.

**Hazards, navigation aids, the Pilot Service and sea routes**

The GBR is a region with, for Australia, unique navigation hazards. The coral reefs and islands along the coast limit the extent of water deep and wide enough for safe ship passage. The Inner Route channel between the Barrier Reef and the coast is 96 km wide at the southern end, but only 7 km wide off Cairns. At Rattlesnake Point, 113 km north of Cairns it is just 2.8 km miles wide, and at the northern end of the route as narrow as 1.6 km in places (Reid 1988:142). Added to this hazard is the risk of cyclones. The Australian east coast has experienced some 207 tropical cyclones since 1858, most of them impacting of the GBR. Australia’s deadliest cyclone, and its first recorded Category 5 cyclone, named *Mahina* by Clement Wragge, the
colony’s meteorologist, struck Princess Charlotte Bay north of Cooktown in March 1899. The bay had been used by pearling vessels since the 1860s, and 80 luggers and 8 larger schooners were moored in the bay when the cyclone hit.

Fifty four of the luggers were totally lost while 12 were wrecked but later refloated, and five of the schooners and the Government’s nearby light ship were also lost. At least 307 crew members perished. A number of local Aboriginal people were also drowned when they attempted to rescue shipwrecked men, and an Aboriginal woman, Mohara, was awarded a silver medal by the colonial government for her bravery in getting her two sisters ashore after the lugger they were on was wrecked (Grainger 2008; Bureau of Meteorology 2013).

Perhaps the most famous ship lost in a cyclone on the GBR was Adelaide Steamship Company’s passenger liner S.S. *Yongala* (3,664 tonnes), which disappeared with 47 crew and 73 passengers in a cyclone off Cape Bowling Green, south of Townsville, in March 1911 (Plowman 1981:130). Figure 5 shows the massing of cyclone courses over the GBR from 1906 to 1950.

With coral and cyclones, navigation of the Inner Route is complicated and dangerous and before the construction of lighthouses ships normally anchored at night, slowing the passage time. Compared to this, the option of using the Outer Route through the Coral Sea, to cross the Barrier Reef via Raine, Olinda, Middle or some other passage before approaching the Torres Strait looked quicker and simpler. In 1854 insurance underwriters expressed concern at the loss of 70 ships and 150 lives in a short period of time, and between 1891 and 1919, 201 steamers and 187 sailing ships were wrecked or run aground on the Great Barrier Reef route, 144 being total losses with the death of 162 people (Foley 1982:14-17; Reid 1988:142). Most of these were from collisions with reefs. The narrow twisting inner passage, especially north of Cooktown, combined with the violence of cyclones, made the GBR routes, both inner and outer, dangerous places for shipping, no matter how well they were surveyed. Yet most of the early surveyors of the reef waters stressed the advantages of the inner route, and Captain Robertson of HMS *Pioneer* went as far as to call it ‘one great and secure harbour’ (quoted in Bowen 2002:113).

The development of the system of navigation aids along the inner route is well documented. The identification and demarking of navigation channels was particularly important given the limited extent of deep water between the reef and the coast. Starting in 1844 with the building of the Raine Island unlit beacon to mark the main route from the outer route through the Barrier Reef to Torres Strait, the first lighthouse on the Barrier Reef sector of the coast did not appear until 1868 (Bustard Head), and by Federation in 1901 twelve additional lights had been built along the reef route by the colony. However, only three of these, one lighthouse and two lightships, were in the 650 km section between Cooktown and Thursday Island, the most dangerous section of the route (Bowen 2002; Reid 1988:15, 97, 100, 144, 121-123).

When the Commonwealth took full responsibility for coastal navigation in 1915, it commenced a program of lighting the section of the route north from Cairns to Torres Strait, constructing mainly automated lights on 17 metre high steel towers located on islands and reefs. Seven were completed by 1918 and by 1923 there were 17 lights north of Cairns, of which the Commonwealth had built 12. As a result, by the 1930s the Torres Strait / Inner Barrier Reef route was the one of the two major shipping routes to eastern Australia. (Reid 1988:144-145)

The other main plank in the provision of safe navigation of the GBR was the establishment of a pilot service. The colony had made efforts in this direction for many years, but it was not until 1884 that the Torres Strait Pilot Service was inaugurated by the Marine Board of Queensland. The use of a pilot, however, was not compulsory (Bowen 2002:122; Foley 1982:passim). This remained the case until 1991, when compulsory pilotage for vessels over 70 m was regulated between Cairns and Cape York, Hydrographers Passage, and Torres Strait and the Great North East Channel (Reef Pilots n.d.). A ship tracking system, to provide monitoring and feedback to ship navigators, was expanded to cover the whole reef in 2011, following the grounding of the coal carrier *Shen Neng 1* in 2010. The GBR is now the most regulated sea route, for its length, in the world.
The challenge of assessing the cultural heritage significance of the GBR sea route

The challenge facing the assessment of the heritage values of the GBR sea route has several components. Firstly, the methodology for the analysis and assessment of sea routes as cultural routes is not yet well developed. The delineation of sea routes is, at least in part, conceptual rather than physical. While the ports and land-based transport infrastructure and navigation way-points provide a partial physical context for the GBR sea route, the route as a whole was plotted on mental maps (as well as on real maps) which reflected the life experiences of generations of Australians.

The GBR sea routes hence constitute a linear associative cultural landscape – the history of the islands, waterways, reefs and mainland that mark the route, together with the navigational knowledge and collective memory of past maritime activities and events, imbue it with meaning that is not necessarily represented by material culture evident in the landscape itself. For heritage assessment this raises the issues of the identification of the attributes of values, and of the boundaries that encompass them.

Another challenge is rationalizing the definitional differences between the ICOMOS Charter on Cultural Routes and the Australia ICOMOS Burra Charter, the latter paralleling the approach used in Australian national and state heritage criteria. Some aspects of the GBR sea routes appear to address the criteria implicit in the ICOMOS Charter on Cultural Routes definition of cultural route. The Aboriginal and Torres Strait Islander sea routes used in the traditional hunting and gathering of the natural resources of the reef, and the trading, ceremonial and social activities that go with it, might do so, in reflecting the ‘interactive movements of people as well as multi-dimensional, continuous, and reciprocal exchanges of goods, ideas, knowledge and values between peoples [and] … regions … over significant periods of time’. The ‘regions’ involved are clan-based, or in the context of Torres Strait-mainland exchange culture based, and the interchange is between sometimes distant neighbours, providing a mechanism for the exchange of cultural information and cross-fertilization that eventually reached from the Torres Strait to southern Queensland. It may be, however, that the Aboriginal traditional owners view their association with the reef more in terms of a storied cultural landscape that integrates mainland and reef, rather than just as a cultural sea route, though some specific sea routes may be of great importance in their own right. The relationship between cultural routes and cultural landscapes in this context, and the relevance of separating one from the other for heritage place identification purposes, seems worthy of greater consideration in a World Heritage, National Heritage and State heritage context.

The history of passenger ships on the GBR route may, in some aspects, also meet the ICOMOS ‘cultural routes’ definition, in that a substantial movement of people was involved as well as goods, and the linking of the GBR into the mental map of Australians as the coral coast of the tropical north was fostered for purposes of GBR tourism from the 1930s onwards. Reciprocally, the shipping routes were the means by which the GBR region was linked into the mainstream developments in Australian culture through the nineteenth and into the twentieth centuries.

The potential cultural heritage significance of the sea routes through the GBR, however, is broader than the category ‘cultural routes’ as defined by the ICOMOS Charter on Cultural Routes would suggest. They have historical values reflecting the development of the entire region and state, and they may have current social values for Queensland communities who at one time depended on them, and for whom they still have immense economic importance. The challenge is to assess the strength of these values, a process in which comparative assessment has a strong role to play, as does the elucidation of values to the community.

The GBR sea routes have a multi-layering of historical associations that make them in combination more significant historically than many other sea routes. The very fact that the waterway is so tightly constrained by the presence of reefs in close proximity to a coast, for a length of over 2,000 km, makes it a highly unusual sea route, and one that required the development of special navigation control systems to make it safely navigable. The route is comparable with the shipping route through the protected Patagonian channels extending from southern to central
Chile, and the Inside Passage route along the west coast of British Columbia and Alaska, both of which are about 1,200 km long. The GBR, however, has considerably greater environmental hazards, and services a far more highly settled coast and hinterland than the North and South American examples. Along the GBR route the coastal settlement of Queensland took place from the mid-nineteenth century, with the development of a number of major trading ports. These ports, most notably Rockhampton and Townsville, serviced the pastoral and mining expansion of central and northern Queensland. A case could be made for the listing of the route under Queensland and National heritage register criteria because of its critical role in the history of the state, and of a huge section of the nation’s coast.

Initial work has been undertaken in identifying the community’s attachment to the GBR (McIntyre-Tamwoy 2004). While this did not address issues directly related to the sea routes, it did identify tensions in the relationship between a community that has personal and shared associations with the land and seascape, and a management regime that is seen to be focused on World Heritage with a largely natural environment approach to valuing features, according to uniqueness, best representation, and rarity. The study showed that ‘emotional attachment to places in the land and seascape are based on a combination of highly personalised experiences and a distilled understanding on the part of individual members of the community of ‘community history’’ (McIntyre-Tamwoy 2004: 24), but as yet the extent to which the sea routes figures in that emotional attachment has not been demonstrated. While it is clear that historically there was a dependence on and a collective valuing of the GBR sea route by the north Queensland community, the extent and nature of contemporary social values has yet to be clearly elucidated.

While it is premature to make a definitive heritage assessment on the basis of the highly summarised history presented here, it is worthwhile considering how the GBR sea route might satisfy the Australian heritage criteria. The discussion below is based on the HERCON criteria, agreed by Council of Australian Governments (COAG) and now adopted by all Australian jurisdictions as a basis for their individual heritage legislation.

Some observations relating to the HERCON criteria are as follows:

a) Importance to the course or pattern of our cultural or natural history.

The history of the development of the GBR sea route in several of its manifestations was important in setting the course and pattern of Australian and Queensland history:

- The pattern of Aboriginal and Torres Strait Islander use of the GBR routes was integral to the social, economic and political economy of indigenous North Queensland. It was one element of a much broader cultural landscape within which resource utilization, trade, social interaction took place;
- Cook’s running survey of the east coast, so dramatically highlighted in the GBR region, was a stimulus to the British settlement of New South Wales (as the whole east coast was named);
- the surveying of the inside GBR route established a relatively safe passage to Indonesia and south-east Asia, establishing Australia’s first post-European settlement contact with its northern neighbours;
- the supply of coastal outposts by sea facilitated the pastoral and mining expansion of central and northern Queensland that underpinned the state’s growing economy and the success of its separation from NSW;
- the identification of new passages from coal loading ports to the Coral Sea in the late 20th century has been critical to the massive development of the Queensland export coal industry; and,
- the World Heritage listing of the GBR together with a worldwide increase in cruise shipping has seen a resurgence of cruise liner usage along the GBR route, which has in turn shaped the pattern of port activity and of local economies.

a) Possession of uncommon rare or endangered aspects of our cultural or natural history.

The GBR sea route is rare in a global context as one of the few long-distance shipping routes...
through passages sheltered from the open sea. The relative safety of the route has been underpinned by over 150 years of development of what is now an extensive system of coastal navigation aids, backed up by compulsory pilotage and a sophisticated ship tracking and monitoring system that makes the GBR the most regulated sea route, for its length, in the world. These characteristics also make the GBR route also an unusual and rare shipping route in the Australian context.

b) Potential to yield information that will contribute to an understanding of our cultural or natural history.

The combined study of the geographical evidence and the historical record will undoubtedly contribute to the better understanding of the GBR route in Australian and Queensland history, but this is not the context within which this criterion is usually understood (which is more about the potential of the place itself to yield information).

c) Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments.

The GBR sea route is perhaps uniquely able, in Australia, to demonstrate a wide range of characteristics of a shipping route, relying as it does on detailed hydrographic survey, the establishment of an elaborate system of navigation aids (lighthouses, lightships, beacons and electronic ship monitoring systems), and local port navigation systems.

d) Importance in exhibiting particular aesthetic characteristics.

The GBR sea route is through a very scenic and beautiful region, with channels winding between tropical islands and dramatic coastal features, but these scenic qualities are probably coincidental rather than being central to its heritage values.

e) Importance in demonstrating a high degree of creative or technical achievement at a particular period.

The development of the navigation aid and pilot system for the GBR route demonstrates a technical achievement at various periods during its history, from the early Federation establishment of a light system over 2000 km of sea route, to the recent development of the ship tracking and monitoring system to protect the GBR (and the ships) from shipping disasters. These developments are outstanding both in the national context and globally.

f) Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of the continuing and developing cultural traditions.

The importance of the GBR routes to the Aboriginal and Torres Strait Islander communities has been largely subsumed into the assessment of associations with wider cultural landscapes and with traditional rights to marine resources. Further consideration of the identification and importance of sea routes to Indigenous communities is needed to determine if they have values in their own right, or just in these broader contexts.

The consideration of the importance of routes generally, and sea routes in particular, to local and larger communities is in its infancy. While it is clear that historically there was an economic and social dependence on, and a collective valuing of, the GBR sea route by the north Queensland community, as indicated above the extent and nature of contemporary social values has yet to be clearly elucidated. If such specific values do exist, they are likely to be different than those expressed historically, since the use and functions of, and therefore the likely associations with, the sea routes have constantly changed over time.

g) Special association with the life or works of a person, or group of persons, of importance in our history.

The GBR has associations with many persons notable at a national or state level. These include James Cook and the many explorers and hydrographers of the GBR, and those associated with the design and implementation of the navigation aid systems since the 1840s. These associations could be easily documented for national or state heritage registration.
Conclusion

The paper suggests that the GBR sea route does have heritage value in its own right. The challenge is in expanding this argument to the level of documentation required for national and/or state heritage nomination. The definition of the extent and components of the GBR route (or routes), and the appropriate boundaries that encompass these routes pose methodological challenges, but these are not dissimilar to the methodological issues surrounding other intangible heritage values that many jurisdictions are currently addressing. In this process both historical research and the exploration of community values, both Indigenous and non-indigenous, is central. The state and national heritage authorities would also have to consider how the largely intangible sections of the sea route could be incorporated into their registers, and what the planning and control implications might be. This would take place within the overall context of the sea route running through the GBR World Heritage Area, where many of these issues have already been successfully addressed.

References


