



Wheezer
the lungfish
says, "Save the
Mary River!"

Dam the Mary River? Save the Mary River!

Save the Mary River Coordinating Group

Support and Information Centre, Kandanga Railway, Ph: 5488 4800
<http://www.savethemaryriver.com/> savethemaryriver@gmail.com

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Australian Heritage Council
GPO Box 787
CANBERRA ACT 2601

E-mail: ahc@environment.gov.au

Dear Sir/Madam,

Re: Proposed National Heritage Listing for Cooloola-Great Sandy Region

Thank you for the opportunity to provide comment on the proposed National Heritage Listing for Cooloola – Great Sandy Region. The Save the Mary River Coordinating Group Inc (STMRCG) is a community based group based in the Mary Valley. The Great Sandy Strait is the receiving waters for the Mary River Catchment. We have a membership of over 300 members, including qualified advisors from a wide range of professional backgrounds including expertise relevant to the Great Sandy Straits.

We fully support the proposed nomination for the Cooloola-Great Sandy Region. We believe it is an appropriate recognition of the national cultural and natural values of this extraordinary region. We endorse the submission made by the Mary River Catchment Co-ordination Association

We will confine our comments to the Great Sandy Strait component, and to the following National Heritage criteria relating to the natural environment

- **the place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural history.**

The Great Sandy Strait is listed as a Wetland of International Importance under the Ramsar convention. The Ramsar site includes the tidal waters of the Great Sandy Strait, Mary River, Susan River, Kauri Creek, Tin Can Bay and Tin Can Inlet and the freshwater swamps and patterned fens contiguous with the mangroves on Fraser Island and southwest of Rainbow Beach. It was added to the Ramsar convention for its importance to migratory shorebirds, fisheries, dugong and turtles. It is one of the three most important stopovers in Australia for shorebirds from the northern hemisphere. The Mary River flows into the Great Sandy Strait at its northern end.

Why is the Great Sandy Strait so outstanding? At least 20 species of birds migrate here from as far as Siberia to rest and feed. A total population of between 30,000 and 40,000 individuals was estimated to occupy this area in the summer of 1990 (Department of Environment and Heritage 2001). Eighteen of the 24, migratory wader bird species listed in the Japan-Australia Migratory Bird Agreement (JAMBA) and the China-Australia Migratory Bird Agreement (CAMBA) have been recorded in the Great Sandy Strait (Department of Environment and Heritage 2003-2004).

There are 12 different wetland types including patterned fens which are very rare systems. There is 2800HA of salt marsh, 15,500 ha of mangroves and 12,300 Ha of sea grass (6 species).

It is home to 27 species of Mollusc, 160 species of Fish , 6 species of Turtles and 3 species of Dolphins. The total annual economic value based on coastal economic values is estimated at \$3.72 Billion (Currie 2006)

Some of the EPBC Act listed threatened and migratory species found in the Great Sandy Straits are listed in Table 1. (SKM 2007)

Species Name	Common Name	EPBC Act1 Status	Habitat and Feeding
Mammals			

<i>Megaptera novaeangliae</i>	Humpback Whale	V, M, C	Each winter, humpbacks migrate from foraging grounds in Antarctic waters to breeding grounds in tropical waters of the Great Barrier Reef. Hervey Bay appears to be an important stop over. They are filter feeders that sieve krill and small schooling fish from the water column using baleen plates (Vang, 2002). During the period 1999 to 2005, stranding/s in the Hervey Bay region ³ were recorded during 1999 (3), 2004 (4) and 2005 (1).
<i>Sousa chinensis</i>	Indo-Pacific Humpbacked Dolphin	M, C	riverine waters <20 m deep in tropical and subtropical environments to 34°S on the east coast (Ross, 2006). Regularly seen in the Great Sandy Strait, Tin Can Inlet and Moreton Bay (Bannister <i>et al.</i> , 1996). Not known to be migratory (Ross, 2002). Feeds on fish, some cephalopods and crustaceans, and in association with prawn trawlers in Moreton Bay (Bannister <i>et al.</i> , 1996). During the period 1999 to 2005, stranding/s in the Hervey Bay region ³ were recorded during 1999 (1), 2000 (1), 2001 (2), 2002 (2) and 2004 (2).
<i>Dugong dugong</i>	Dugong	M, O	the Indo-Pacific region with the majority now found in northern Australian waters between Shark Bay in Western Australia and Moreton Bay in Queensland (GBRMPA 2007). This species is known to inhabit the Great Sandy Strait and Hervey Bay. This species feeds exclusively on seagrass.
<i>Xeromys myoides</i>	Water Mouse	V	range of other tidal wetland communities (DEH, 2003). It feeds on invertebrate items and their foraging activities are constrained both by their nocturnal nature and the tide (Van Dyck & Janetzki, 2004). This species has been reported in the Mary River and Great Sandy Strait (EPA, 2007c).
Reptiles			
<i>Chelonia mydas</i>	Green Turtle	V, M, O	Inhabits tropical and subtropical coastal waters worldwide, including northern Australia. Peak breeding season November–March, predominantly on coral cays of the Capricorn Bunker Group of the southern Great Barrier Reef, but also the beaches at Mon Repos near Bundaberg (EPA, 2007b). Feeds on seagrass and algae (Queensland Museum, 1998). During the period 1999 to 2002, strandings in the Hervey Bay region ³ have been recorded during 1999 (98), 2000 (7), 2001 (67) and 2002 (57).
<i>Caretta caretta</i>	loggerhead Turtle	E, M, O	Common in tropical and subtropical coastal waters, including coral reefs, bays and estuaries, worldwide with temperature range of about 16–20°C; can also stray into temperate waters. Known to travel vast distances from birth/nesting beaches.

			<p>Recorded in coastal waters of all Australia states but most abundant in northern Australia. (EPA 2006b; Queensland Museum 1998).</p> <p>Peak regional breeding season late November to late January in the Capricorn Bunker and Swains Groups of the southern Great Barrier Reef and beaches of the Bundaberg coast (EPA 2007b). Feeds on molluscs, crustaceans, sea urchins and jellyfish (Queensland Museum 1998). During the period 1999 to 2002, strandings in the Hervey Bay region³ have been recorded during 1999 (53), 2000 (13), 2001 (28) and 2002 (17).</p>
<i>retmochelys imbricata</i>	Hawksbill Turtle	rtle V, M, O	<p>Inhabits tropical waters of Indo-Pacific, including northern Australia, and central Atlantic waters. Peak breeding season January–April in northern Great Barrier Reef and Torres Strait. Feeds on sponges and algae (Queensland Museum 1998).</p> <p>During the period 1999 to 2002, strandings in the Hervey Bay region³ have been recorded during 1999 (3), 2000 (11) and 2001 (3).</p>
<i>Lepidochelys olivacea</i>	Olive Ridley Turtle	E, M, O	<p>Inhabits shallow, protected waters, especially over soft-bottomed habitats. Pantropic but rarely found around oceanic islands. In Queensland they occur along the southern coast and throughout the Great Barrier Reef and Torres Strait. Queensland breeding population known from isolated nestings at five locations within the Gulf of Carpentaria; breeding occurs throughout the year although is most common from April to November (EPA 2006b). During the period 1999 to 2002, one individual was reported stranded in the Hervey Bay region³ during 2000.</p>
<i>Natator depressus</i>	Flatback Turtle	V, M, O	<p>Inhabits soft bottom habitats over the continental shelf off northern Australia, Papua New Guinea and Irian Jaya; is the only marine turtle without a global distribution. Appears to feed on a range of animals including hydroids, siphonophores, gastropods, squid and cuttlefish, in turbid, shallow water north of 25°S and in depths of 10 to 40 m. Within Queensland it breeds at Mon Repos near Bundaberg and in the Gulf of Carpentaria (DEW&R 2006b; EPA 2007b).</p> <p>During the period 1999 to 2002, strandings in the Hervey Bay region³ have been recorded during 1999 (2), 2001 (2) and 2002 (6).</p>
<i>Dermochelys coriacea</i>	Leatherback Turt	V, M, O	<p>This species has the widest distribution of all marine turtles, inhabiting tropical and temperate seas worldwide. An oceanic species, adapted to living in deep, cold waters, although appearing to prefer temperate feeding grounds. Recorded feeing all Australian states and found year round in larger bays,</p>

			estuaries and rivers of eastern Australia. Occasionally seen in the SEQ region during breeding season, from August–September with peak in December– January, with nestings confined to a 100 km stretch of coastline from Bundaberg north to Round Hill. However there are no large rookeries in Australia; they appear to feed in Australian waters and breed in neighbouring countries such as Papua New Guinea and Solomon Islands (EPA, 2006b; 2007b). Feeds on jellyfish (Queensland Museum, 1998).
Birds			
<i>Ardea alba</i>	Great Egret	M (wetland & marine)	The species is found across most of Australia in floodwaters, rivers, shallows of wetlands and intertidal mud-flats.
<i>Ardea ibis</i>	Cattle Egret	M (wetland & marine)	Species occurs either permanently or seasonally, across most of the higher rainfall pastoral lands of coastal and subcoastal Australia. It can also be found in pasture amongst stock and occasionally in the shallows of wetlands.
<i>Charadrius mongolus</i>	Lesser Sand Plover	M (wetland)	Species occurs predominantly in coastal and estuarine habitats. Species common in the Great Sandy Strait.
<i>Gallinago hardwickii</i>	Latham's Snipe	M (wetland)	Species uncommon in the Great Sandy
<i>Heteroscelus brevipes</i>	Grey-tailed Tattler	M (wetland)	Species occurs predominantly in coastal and estuarine habitats. Species common in the Great Sandy Strait.
<i>Limosa lapponica</i>	Bar-tailed Godwit	M (wetland)	Species occurs predominantly in coastal and estuarine habitats. Species common in the Great Sandy Strait.
<i>Nettapus coromandelianus albipennis</i>	Australian Cotton Pygmy-geese	M (wetland)	The major centres of population for the species are the Dawson, Fitzroy, Burdekin and Barron River catchments (Blakers <i>et al.</i> , 1984). Locally common in suitable habitat near Brisbane. Cotton Pygmy-Geese are found on freshwater lakes, swamps and large water impoundments. They congregate in flocks on permanentwater-bodies during the dry season.
<i>Numenius madagascariensis</i>	Eastern Curlew	M (wetland)	Species occurs predominantly in coastal and estuarine habitats.
<i>Numenius phaeopus</i>	Whimbrel	M (wetland)	Species occurs predominantly in coastal and estuarine habitats. Species common in the Great

			Sandy Strait.
<i>Pluvialis fulva</i>	Pacific Golden Plover	M (wetland)	The species migrates from the arctic tundra of western Alaska and far northern Russia to the beaches and mudflats of Australia's coastline.
<i>Pluvialis squatarola</i>	Grey Plover	M (wetland)	Species occurs predominantly in coastal and estuarine habitats. Species common in the Great Sandy Strait.
<i>Rostratula benghalensis s. lat.</i>	Painted Snipe	M (wetland)	This species primarily occurs along the east coast from north Queensland (excluding Cape York) to the Eyre Peninsula in South Australia, including the majority of Victoria and NSW. Scattered records indicate that it may also occur in western Queensland, throughout Western Australia and the Northern Territory (Marchant & Higgins 1993). The Painted Snipe inhabits inland and coastal shallow freshwater wetlands (Smith 1991). The species occurs in both ephemeral and permanent wetlands, particularly where there is a cover of vegetation, including grasses.
<i>Tringa nebularia</i>	Greenshank	M (wetland)	Species occurs predominantly in coastal and estuarine habitats. Species common in the Great Sandy Strait.
<i>Xenus cinereus</i>	Terek Sandpiper	M (wetland)	Species occurs predominantly in coastal and estuarine habitats.
<i>Apus pacificus</i>	Fork-tailed Swift	M (marine)	The Fork-tailed Swift breeds from central Siberia eastwards through Asia. This species is migratory, wintering south to Australia. The species habitat is aerial over a variety of habitats.
<i>Sterna albifrons</i>	Little Tern	M (marine)	The species is found in almost exclusively coastal, sheltered environments. However, the species may also occur several kilometres from the sea in harbours, inlets and rivers (Smith 1990). In Australia, the Little Tern occurs from Shark Bay in Western Australia, around northern and eastern Australia, to the east coast of Tasmania and around to the Gulf of St Vincent in South Australia.
1 The status of the species under the EPBC Act: E – Endangered, C – Cetacean, M – Migratory, O – Marine, V – Vulnerable			2 EPA annual cetacean and pinniped marine strandings report for waters between 24-25°S during 1999-2005 (Haines, Limpus & Flakus 2000; Haines & Limpus 2001; 2002; Limpus, Currie & Haines 2003; Greenland, Limpus, Currie & Brieze 2004; Greenland, Limpus & Brieze 2005; Greenland & Limpus 2006)

- **The place has outstanding heritage value to the nation because of the place's potential to yield information that will contribute to an understanding of Australia's natural history.**

Some little is known of many of our endangered species. For example the dugong is listed as "migratory" in the EPBC Act listed species.

However, recent studies would suggest that this is not a correct description for the populations living in the Great Sandy Strait. Janet Lanyon of the Marine Vertebrate Ecology Research Group, based at the School of Integrative Biology, University of Queensland, asserts that the dugong is definitely NOT a migratory species (personal communication). In *Lanyon unpublished data*, studies indicate that there has been probable low gene flow between populations based in Moreton, Hervey, and Shoalwater Bays, based on a genetic study recently conducted. The study suggests that dugongs in the region do not necessarily move around much, if at all, so that moving to other foraging areas may not be a realistic option.

It is apparent, therefore, from the more recent studies, that the dugong is reliant on local seagrass meadows for its survival. Only 10% of the seagrass in the Great Sandy Strait is a species that the dugong will feed on, being *Halophila* sp and *Halodule* sp. According to research conducted by the Marine Vertebrate Ecology Research Group, "significant populations of dugong are found in the Burrum Heads area, and in the Great Sandy Straits, south of the mouth of the Mary River, around Kauri Creek. It is known that flow from local rivers affects both the seagrass beds, and the dugongs that feed there but there is still little understanding of the complex interactions of the ecosystem.

- **The place has outstanding heritage value to the nation because of the place's importance in demonstrating the principal characteristics of:**

- (ii) A class of Australia's natural environments**

The Great Sandy Strait is internationally recognised as an area of high biodiversity and is one of the least modified large, enclosed coastal passages in southern Queensland.

The diversity of marine and intertidal habitats include mud and sand flats, seagrass beds, mangrove forests, salt flats and salt marshes. The area is considered one of the most important summer roosts for trans-equatorial migratory birds in Australia and also contains a number of habitats of internationally and nationally threatened terrestrial and marine animals and plants.

- **The place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.**

The Great Sandy Strait is recognised as a popular tourist destination.

Tourism statistics for Great Sandy Region AUSS\$ 30,863,000 (OESR 2007) comprising of Cooloola : AUSS\$ 4,250,000, Maryborough: AUS \$ 12,896,000 and Hervey Bay: AUS \$ 13,717,000

CONCLUSION

We note that listing on the National Heritage List carries with it a requirement for the development of a Management Plan, and scrutiny by the Environment Minister under the powers of the EPBC Act. The Great Sandy Strait component of the Cooloola-Great Sandy Region is outstanding in its beauty and biodiversity and needs protection for future generations.

The last decade has seen flows in the Mary River down to about half of what we have become accustomed to due to climate shift and changes in land use in the catchment. This is the same trend that that is occurring in the Murray Darling Basin.

The number of dams, weirs and barrages in the Mary, Burrum and Burnett catchments have rapidly increased in the past 30 years and now the flows into the Great Sandy Strait Ramsar Wetlands and Hervey Bay are seriously restricted. Impacts from these infrastructures include unstable riverbanks, decreased and modified environmental flows

and devastating decline in fisheries and ecosystems. These are long term impacts and are cumulatively increasing with increasing demands for water

There has been a loss of over 40 km of tidal influenced river from the construction of 2 barrages on the lower end of the Mary catchment. These were once important nursery areas for marine fish such as salmon, barramundi, mullet and prawns. Current operation of these and other dam structures on the Mary River do not have any environmental flow requirements. Volume flows from the Mary River provide important cues affecting the behaviour of nearshore and resident estuarine fauna and influence the productivity of estuaries (Brizga et al. 2005)

Ribbe (2006) in a study on hyper salinity in Hervey Bay, has revealed that a contributing factor is the lack of freshwater flows from both the Burnett and Mary rivers. In particular, since 1980 runoff has declined and was only larger than the minimum evaporation rate for the region in less than 10 % of all instances. This period corresponds to an increase in tidal barrage and dam infrastructure, within both the Burnett and Mary Rivers This preliminary research may be revealing the first impacts on estuarine ecosystems (Ramsar wetlands) from infrastructure related flow reductions to the Great Sandy Straits Ramsar wetlands.

These findings also raise serious questions as to what effect **further reductions in freshwater flows**, under the Mary Basin Water Resource Plan, the Northern Pipeline Interconnector (stage 1 and 2) and the Traveston Crossing Dam proposal, will have on Matters of National Environmental Significance within the Great Sandy Strait and World Heritage areas of the Great Barrier Reef and Fraser Is.

We fully support the listing of the Cooloola-Great Sandy Region and in particular the Great Sandy Strait on the National Heritage List, and look forward to this occurring as soon as possible.

References:

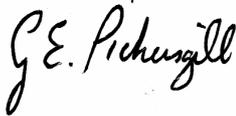
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Ribbe . J 2006 ,”A study into the export of saline water from Hervey Bay, Australia”
Mary Basin Technical Advisory Panel. 2005. Mary Basin Draft Water Resource Plan – Environmental Flow Assessment Framework and Scenario Implications. Queensland Department of Natural Resources, Brisbane

SKM 2007. Traveston Crossing Dam Environmental Impact Statement. Vol 9. Matters of National Significance.

Finally, if you require further information please contact the undersigned.

Yours Sincerely,

A handwritten signature in black ink that reads "G.E. Pickersgill". The signature is written in a cursive style with a large, prominent 'G' and 'P'.

Glenda Pickersgill *on behalf of the Research Section of the Save the Mary River Coordinating Group Inc*
Ph 07 54843150 Email: pickerg@bigpond.com

