

# The 43<sup>rd</sup> Annual MLAANZ Conference

NOOSA

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## Frank Stuart Dethridge Memorial Address

### “OF REEFS AND MEN”\* WHEN THE BEST LAID PLANS GO AWRY, HAVE WE AN ACCEPTABLE WAY FORWARD?

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#### 1 Introduction

It is a great honour to have been invited to deliver this year’s Dethridge Memorial Address. I am conscious that I follow in the footsteps of the many eminent lawyers who have delivered this address since its inception in 1977 and I am humbled by the privilege. I also note with some sadness that it is now some 20 years since the late Justice Richard Cooper delivered this address.

The theme of this year’s conference, *Resources vs the Reef*, is not only topical but of crucial importance to Australia, both from an environmental and economic perspective. I have therefore chosen to address a question that I hope does justice to the conference theme, and one which I hope will also resonate with our New Zealand colleagues whose reefs and coastlines are, as we have seen in recent years, at equal risk of catastrophic damage. Whilst considering the content of this address, I pondered the great body of work that has been done in the attempt to reduce the risks to our reefs that are presented by the shipping industry; work by government agencies both nationally and internationally, by the industry itself and by academics in a wide variety of disciplines, including marine engineering and naval architecture, materials engineering, psychology, economics, environmental science and, yes, even law. But as we know humans and human systems are fallible. So how do we reckon for the occasion when the best laid plans fail to prevent an incident and limitation amounts are inadequate to compensate for the resulting damage? I need to make clear at this point that the views that follow are entirely my own and are not endorsed by, and should not be attributed to, any organisation with which I may be associated.

The Great Barrier Reef Region is defined in the *Great Barrier Reef Marine Park Act 1975*. The Region covers 346,000 square kilometres from the tip of Cape York in the north to just south of Lady Elliot Island. Its western boundary is the mean low water mark and it extends eastwards a distance of between 70 and 250 kilometres. It includes about 70 Commonwealth-owned islands but excludes the 980 Queensland islands and the internal waters of Queensland.

Approximately 70% of the Region lies within Australia’s Exclusive Economic Zone (EEZ), as defined by the United Nations Convention on the Law of the Sea (UNCLOS), which Australia ratified in 1994. The EEZ of a country is the area of water adjacent to a coastal state’s territorial sea extending up to 200 nautical miles out to sea from a coastal state’s baseline or low-water line. Within its EEZ, a coastal state has the right, and indeed the obligation, to conserve and manage the marine resources that lie therein.<sup>1</sup> However, art. 58 preserves for all other

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\* With apologies to Robert Burns,

“To a Mouse on turning her up in a nest with a plough ”

...

*But, Mousie, thou art no thy lane,  
In proving foresight may be vain;  
The best-laid schemes o' mice an' men  
Gang aft agley,  
An'lea'e us nought but grief an' pain,  
For promis'd joy!*

...

states, the freedoms of navigation, overflight and of the laying of sub-marine cables and pipelines as referred to in art. 87. An immediate tension between the protection of the marine environment and freedom of navigation is apparent.

## **2 Trying (& hoping) to avoid the incident**

The first question to consider is whether there is any mechanism available to coastal states to assist them to impose or enforce effective anti-pollution measures before catastrophic accidents occur. It has been suggested by some authors that UNCLOS inhibits a coastal state's ability to enhance its environmental protection in several ways.<sup>2</sup> First, by stipulating in art. 211(5) that any environmental protective measure in a state's EEZ must conform to "generally accepted international rules and standards established through the competent international organisation or general diplomatic conference." The competent international organisation being the International Maritime Organisation (IMO), it is said that if the IMO refuses to accede to a state's request for heightened protective measures, a state cannot act unilaterally.<sup>3</sup> There has been criticism of the IMO's reluctance to alter international shipping rules and standards to accord with environmental concerns and even an allegation that the IMO is "primarily a forum for merchant marine interests" and not for environmental protection.<sup>4</sup> Secondly, pursuant to art. 220(3), states are limited in their ability to enforce protective measures unless the threat of pollution from a vessel within the EEZ crosses a certain threshold, namely the coastal state must "have clear grounds for believing that a vessel" has "committed a violation of applicable international rules and standards for the prevention, reduction and control of pollution from vessels or laws and regulations of that State conforming and giving effect to such rules and standards".<sup>5</sup> Thirdly, UNCLOS does not permit coastal states the freedom to impose protective measures, even in navigationally challenging or ecologically sensitive areas without the IMO's consent under the mechanisms in art. 211(6)(a). Art 211(6)(a) provides that where an area in an EEZ is particularly navigationally challenging or ecologically sensitive, a coastal state may "petition the [IMO] to permit more stringent regulations" in that area. These regulations, however, cannot include "design, construction, manning or equipment standards other than generally accepted international rules and standards".<sup>6</sup>

The IMO took the first step towards assisting coastal states to better manage their environmental duties in conjunction with freedom of navigation within their EEZs through the creation of Particularly Sensitive Sea Areas (PSSA).<sup>7</sup> A PSSA is defined as: "an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities".<sup>8</sup> The designation of an area as a PSSA contains no additional protections per se, nor does it grant any additional autonomy to the coastal state. Rather the designation allows the IMO to consider and pass an "Associated Protective Measure". Associated Protective Measures for PSSAs are limited to actions that are to be, or have been, approved and adopted by the IMO. In 1990, the Great Barrier Reef Region was designated the first PSSA by the IMO.<sup>9</sup> Further to this resolution, the Marine Environment Protection Committee (MEPC) passed a further resolution stating:

[MEPC] RECOMMENDS that Governments recognize the need for effective protection of the Great Barrier Reef region and inform ships flying their flag that they should act in accordance with Australia's system of pilotage for merchant ships 70m in length or over or oil tankers, chemical tankers and gas tankers, irrespective of size navigating the inner route of the Great Barrier Reef between the northern extreme of Cape York Peninsula ... and Hydrographers Passage.<sup>10</sup>

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\*\* Dean of Law, The University of Queensland. I am very grateful to my research assistant, Mr Leo Rees-Murphy, for his invaluable preparatory work for the paper. I am also very grateful to two senior industry colleagues who commented on an earlier draft and corrected any egregious errors. All remaining errors and omissions are mine.

<sup>1</sup> UNLCOS art. 56.

<sup>2</sup> Chelsea Purvis, 'Coastal State Jurisdiction Under UNCLOS: The Shen Neng 1 Grounding on the Great Barrier Reef' (2011) 36 *Yale Journal of International Law* 207, 210ff.

<sup>3</sup> *ibid.*

<sup>4</sup> *ibid.*; David S Ardia, 'Does the Emperor have no clothes? Enforcement of international laws protecting the marine environment' (1997) 19 *Michigan Journal of International Law* 497, 534-535.

<sup>5</sup> Chelsea Purvis, above n 2, 211.

<sup>6</sup> UNCLOS art. 211(c).

<sup>7</sup> IMO Assemb. Res. 720(17)

<sup>8</sup> IMO Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas, IMO Assemb. Res. A.982 (24), Annex, para. 2.2

<sup>9</sup> IMO Resolution A.982.

<sup>10</sup> IMO Doc MEPC.44(30) 16 November 1990.

An amendment to the *Great Barrier Reef Marine Park Act 1975* made it an offence to navigate without a pilot in a compulsory pilotage area or to enter an Australian port after navigating in a compulsory pilotage area without a pilot.

In 2003, Australia and PNG jointly requested that the IMO extend the Great Barrier Reef PSSA and its associated compulsory pilotage regime to the Torres Strait. This was a controversial request, it being the first time that the IMO was asked to consider whether compulsory pilotage, imposed as an associated protective measure after designation as a PSSA, was permissible in a strait used for international navigation.<sup>11</sup> The *Report of the Legal Committee on the Work of its Eighty-Ninth Session* noted that the committee remained divided on resolving the legality of compulsory pilotage in straits used for international navigation.<sup>12</sup> It designated the Torres Strait as an extension of the Great Barrier Reef PSSA and, in similar terms to the previous recommendation of 1990:

RECOMMENDS that Governments recognize the need for effective protection of the Great Barrier Reef and Torres Strait region and inform ships flying their flag that they should act in accordance with Australia's system of pilotage for merchant ships 70m in length or over or oil tankers, chemical tankers and gas tankers, irrespective of size when navigating:

- (a) the inner route of the Great Barrier Reef between the northern extreme of Cape York Peninsula ... and Hydrographers Passage; and
- (b) the Torres Strait and the Great North East Channel between Booby Island...and Bramble Cay...<sup>13</sup>

The controversy came to the fore when, in May 2006, the Australian Maritime Safety Authority (AMSA) issued a Marine Notice announcing revised pilotage requirements in the Torres Strait.<sup>14</sup> Mariners were informed that:

A new compulsory pilotage area for the Torres Strait will be specified in Marine Orders Part 54...significant penalties will apply to a master or owner who fails to comply with the compulsory pilotage requirements in the *Navigation Act* and Marine Orders Part 54.

There followed a diplomatic protest by the United States and Singapore. The former took the view that Australia's institution of a compulsory pilotage regime was contrary to international law as reflected in UNCLOS. The latter was concerned that Australia had apparently accepted that the IMO's "recommendation" was no more than that, and so did not provide a legal basis for the imposition of a mandatory pilotage scheme through the Torres Strait.<sup>15</sup> Australia responded swiftly and issued Marine Notice 16/2006 which made clear that the pilotage requirements did not apply to sovereign immune vessels and that Australian domestic legislation offered defences from prosecution for failure to carry a pilot due to "unavoidable cause". It indicated that it would not stop, board or arrest ships who failed to carry a pilot whilst they transited the strait.

Whether Australia's position is defensible on a strict interpretation of UNCLOS is a matter for the public international lawyers to debate. It suffices for present purposes to observe that the compulsory pilotage regime continues in the Torres Strait and, as has been observed, by excluding sovereign immune vessels, some of which may nevertheless choose to use the pilotage system on a voluntary basis, Australia has excluded the class of vessel that was one of the main concerns of those who were the strongest advocates against the compulsory pilotage regime.<sup>16</sup> Those who remain wedded to a purist's reading of UNCLOS might wish to consider whether a continued unrestricted right to transit an international strait is more compelling than the prospect of awaiting a catastrophic event.

In 2014, Australia submitted another proposal to IMO to extend the existing Great Barrier Reef and Torres Strait PSSA into the Coral Sea. The proposal was accepted by the Marine Environment Protection Committee and came into effect in June of 2015.<sup>17</sup> The recommendation covers approximately 564,000 square kilometres of the Coral Sea and provides for three Associated Protective Measures: a new recommendatory area to be avoided and two two-way routes, Diamond Passage and Holmes Reef. These three Associated Protective Measures came into effect on 1 January 2016.

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<sup>11</sup> Lieutenant-Commander Jeanine B Womble JAGC, USN, 'Freedom of Navigation, Environmental Protection, and Compulsory Pilotage in Straits used for International Navigation' (2012) 61 *Naval Law Review* 134, 142.

<sup>12</sup> IMO Doc LEG 89/16 4 November 2004, para 241.

<sup>13</sup> Designation of the Torres Strait as an Extension of the GBR PSSA IMO Doc MEPC.133(53) 22 July 2005.

<sup>14</sup> Marine Notice 8/2006.

<sup>15</sup> Lieutenant-Commander Jeanine B Womble above n 11, 144-145.

<sup>16</sup> *ibid*, 151.

<sup>17</sup> MEPC 268(68).

In addition to the PSSA regime, on 7 October 2014, the Australian Government released a plan for managing shipping traffic in the Great Barrier Reef, Torres Strait and Coral Sea. The North-East Shipping Management Plan was jointly developed by Queensland and Commonwealth agencies over a period of two years and takes into account projected shipping growth to the year 2032.

Integral components of the North-East Shipping Management Plan are the Under Keel Clearance Management System (UKCM) and vessel traffic services for the Great Barrier Reef and Torres Strait (REEFVTS), in conformity with Australia's obligations under the Safety of Life at Sea Convention (SOLAS) as implemented in Australia by the *Navigation Act 2012*. The UKCM system uses vessel information and hydrodynamic modelling to predict the motion of the ship and the latest bathymetry and environmental data from tide, stream, wind and wave sensors to estimate a vessel's under keel clearance in real time. The system is used for vessels transiting the Prince of Wales Channel in the Torres Strait.<sup>18</sup>

It complements the recent extension of REEFVTS, the coastal vessel traffic service which monitors and communicates with vessels moving through the Great Barrier Reef or Torres Strait using surveillance systems including AIS, radar, automated position reporting via Inmarsat-C polling and VHF radio reports. These systems and various others are integrated into a traffic information module (TIM). The TIM display uses electronic navigational charts and ship position and track information is displayed using data from AIS, radar or Inmarsat-C polling. This makes real or near real time monitoring possible and automated arms are used to monitor ships in the area covered by REEFVTS.<sup>19</sup> The Great Barrier Reef and Torres Strait Reporting System (REEFREP) is a key part of REEFVTS and requires vessels of 50 metres or more, oil tankers, liquefied gas carriers or chemical tankers regardless of size, and vessels involved in towing such vessels, including those on overseas, interstate or intrastate voyages to identify themselves and their intended passage through the region.<sup>20</sup> Consistent with the right to innocent passage as was discussed in relation to compulsory pilotage, warships, naval auxiliary and government owned or operated vessels are encouraged but not required to report to REEFVTS.

In addition to technical responses such as those outlined above, much research is being conducted into the human factors, such as fatigue, and the manner in which humans interact with the design and layout of control centres on board ships in an attempt to mitigate the risk of human factors contributing to or causing a catastrophic incident.<sup>21</sup>

Human factors of course played a significant role in the two most recent shipping disasters in Australian and New Zealand waters, those of the *Shen Neng 1* in April 2010 and the *Rena* in October 2011. We have heard much of the *Shen Neng 1* incident in recent days and of both incidents at previous conferences so I do not propose to traverse the facts once more in any detail. Suffice to say that when the bulk carrier *MV Shen Neng 1* ran aground on the Douglas Shoal, the vessel had loaded 68,000 tonnes of coal from the port of Gladstone and was en route to Bayuquan, China. The Chief Mate, deeply fatigued having had insufficient sleep while the ship was loading in Gladstone, failed to effectively monitor the ship's position and alter the ship's course.<sup>22</sup> The ATSB Report found that there was no effective fatigue management system in place to ensure that the bridge watch keepers were fit to stand a navigational watch. By the time that the Chief Mate had taken a position from the GPS and realised that the ship was entering into the shallow waters surrounding the Douglas Shoal it was too late.<sup>23</sup>

In the case of the *Rena*, whilst sailing from Napier to Tauranga, the master "became obsessed with the need to arrive at the pilot station outside Tauranga Harbour by 0300 hours".<sup>24</sup> The master became aware of unfavourable currents that might impede his progress so he authorised the watchkeepers to deviate from the planned course lines on the chart to shorten the distance and to search for the least unfavourable currents. The second mate took over the watch and made a series of course adjustments towards Astrolabe Reef to make a short cut. When the mate arrived on the bridge to prepare for arrival at the port, he assumed control having received virtually no

<sup>18</sup> [https://www.amsa.gov.au/forms-and-publications/Publications/ukcm\\_pamphlet.pdf](https://www.amsa.gov.au/forms-and-publications/Publications/ukcm_pamphlet.pdf).

<sup>19</sup> <https://www.amsa.gov.au/navigation/services/reefvts/>.

<sup>20</sup> Marine Order 63.

<sup>21</sup> See for example van Leeuwen et al, 'Sleep, sleepiness, and neurobehavioral performance while on watch in a simulated 4 hours on/8 hours off maritime watch system' (2013) *Chronobiology International: The Journal of Biological and Medical Rhythm Research* 1; Lutzhoft, M and Ringsberg, J, 'Research, design, and operations' (2012) 49 *Marine Technology* 80; Abeyisiriwardhane et al 'Human factors for ship design; exploring the bottom rung' (2014) 156 *International Journal of Marine Design* 153.

<sup>22</sup> ATSB, *Independent investigation into the grounding of the Chinese registered bulk carrier Shen Neng 1 on Douglas Shoal, Queensland, 3 April 2010*, MO-2010-003 No. 274 Final.

<sup>23</sup> *ibid*, 25.

<sup>24</sup> *Maritime New Zealand v Balomaga and Relon*, DC Tauranga CRI-2011-070-7734, 25 May 2012, [5].

information on where the ship was, where it was heading, or what immediate dangers to navigation he needed to consider. The *Rena* ran aground at full speed on Astrolabe Reef.<sup>25</sup>

The grounding of the *Shen Neng 1* is the most significant ship grounding incident ever assessed in the Great Barrier Reef Marine Park. The environmental consequences of the grounding were grave. An estimated 10 tonnes of bunker oil leaked. Up to 20 tonnes of paint containing the banned substance tributyltin (TBT), along with copper and zinc, from the hull of the *Shen Neng 1* remains on the Douglas Shoal. Areas with "severe" injury defined as where 50% or more of the seabed has been crushed, scraped, smothered or otherwise physically injured have been estimated to be up to 400,000 m<sup>2</sup>. The 2014 Great Barrier Reef Outlook Reported noted that at best, it was expected the site of impact would take decades to recover. The anti-fouling chemicals will be affecting marine life at the site. These chemicals combine with pulverised reef to damage corals and others both at the grounding site and surrounding area. To date, however, resources have been unavailable for the clean-up and restoration of the area.<sup>26</sup>

In the case of the *Rena*, approximately 350 tonnes of fuel oil were discharged along with the contents from the 1368 containers on board which included meat and milk powder, household goods and toxins such as trichloroisocyanuric acid and ferrosilican.<sup>27</sup>

Clearly the plans that had been put in place by the Australian and New Zealand Governments to ensure safe shipping in their respective waters failed to achieve their purpose. Was there anything else that could have been done?

Following the grounding of the *Shen Neng 1*, public outrage fuelled demands for the Australian government to intervene and impose tougher standards for the protection of the reef. One particular proposal that gained significant attention was to extend the requirement for compulsory pilotage beyond the inner route and parts of the Torres Strait to the entire Great Barrier Reef. This remains a policy of the Green's "plan to save the Great Barrier Reef".<sup>28</sup> The WWF-Australia Great Barrier Reef Campaign Director Richard Leck claimed in a press release that, "It must be compulsory for a local pilot to navigate these massive ships through the Great Barrier Reef to reduce the potential risk of another disaster like the *Shen Neng* oil spill off Gladstone in 2010".<sup>29</sup> The Australian Conservation Fund has also supported an extension of compulsory pilotage.<sup>30</sup> A less radical proposal is to extend the compulsory pilotage system to the Palm passage and the Grafton passage.<sup>31</sup> Proponents of this proposal point to the success that compulsory pilotage in the Inner Route of the Great Barrier had, reducing the number of incidents by more than 50% the year after it was introduced.

Governmental Reports were prepared almost immediately after the *Shen Neng 1* incident with the ATSB releasing its preliminary report on 15 April 2010 and AMSA releasing a separate report on "Improving Safe Navigation in the Great Barrier Reef" in that same month. The Final Report of the ATSB was released in April 2011.<sup>32</sup> AMSA declined to recommend a system of compulsory pilotage throughout the Great Barrier Reef. This is a reflection of the fact that despite the northern inner route remaining a treacherous path with its inherent shoals, restricted searoom, limiting depths and reefs as well as being subject to strong trade winds, and tidal streams, the waters of the southern inner route are not regarded as navigationally challenging. As the AMSA report of the *Shen Neng 1* Incident stated: "the coastal waters off Gladstone and around the Capricorn and Bunker group of islands are relatively open and not navigationally complex, it was decided that a compulsory pilotage scheme for the area was not warranted".<sup>33</sup> It was acknowledged that there were serious practical difficulties with such a scheme including infrastructure and resources constraints, but also the significant skill shortages in the maritime industry overall, including suitably qualified pilots.

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<sup>25</sup> Transport Accident Investigation Commission, Marine Inquiry 11-204, *Container ship MV Rena grounding on Astrolabe Reef, 5 October 2011*, (November 2014).

<sup>26</sup> Great Barrier Reef Marine Park Authority, *Great Barrier Reef Outlook Report 2014*, 138.

<sup>27</sup> Bevan Marten, 'Limitation of Liability in Maritime Law and Vessel-sourced Pollution: A New Zealand Perspective' [2013] *New Zealand Law Review* 199, 200.

<sup>28</sup> <http://greens.org.au/save-the-reef>

<sup>29</sup> [http://awsassets.wwf.org.au/downloads/pr\\_92percent\\_of\\_australians\\_concerned\\_about\\_dangers\\_of\\_shipping\\_through\\_the\\_reef\\_9may13.pdf](http://awsassets.wwf.org.au/downloads/pr_92percent_of_australians_concerned_about_dangers_of_shipping_through_the_reef_9may13.pdf)

<sup>30</sup> Australian Maritime Digest, 1 July 2010.

<sup>31</sup> Australian Maritime Safety Authority, *The delivery of coastal pilotage services in the Great Barrier Reef and Torres Strait, Review Panel Report*, (October 2008), 27.

<sup>32</sup> ATSB, *Independent investigation into the grounding of the Chinese registered bulk carrier Shen Neng 1 on Douglas Shoal, Queensland, on 3 April 2010*, MO-2010-003 No. 274 Final.

<sup>33</sup> Australian Maritime Safety Authority, *Improving Safe Navigation in the Great Barrier Reef*, (April 2010), 8.

So even if coastal states were given greater control over the EEZ to enable them to implement compulsory pilotage regimes in what would otherwise be considered waters that should be left unimpeded for international navigation – this would not necessarily be a panacea. Suggestions that Australia “could probably have prevented the *Shen Neng I* wreck”<sup>34</sup> are perhaps overstated.

At the time of the incident, REEFVTS provided coverage of the Torres Strait and the northern part of the Great Barrier Reef. The southern limit of REEFVTS was at latitude 22°S, about 120 miles north of Gladstone. AMSA did propose an extension of the REEFVTS to the southern limits of the PSSA – 27 kilometres north of Bundaberg,<sup>35</sup> and Australia and the IMO were able to reach an expedited solution to the coverage of the REEFVTS. The relevant submission was lodged with the IMO on 23 April 2010, only 20 days after the grounding. It was addressed by IMO’s Sub-Committee on the Safety of Navigation in July 2010 and was considered for adoption by the Maritime Safety Committee in late November 2010. The IMO approved this submission in December 2010, and it came into force 1 July 2011.

So far as events post the *Rena* are concerned, following certain recommendations by the Transport Accident Investigation Commission,<sup>36</sup> in December 2015, Maritime New Zealand conducted a Coastal Navigation Safety Review which, in particular, considered observations made by the Transport Accident Investigation Commission in relation to upgrading Aids to Navigation (AtoNs).<sup>37</sup>

### **3 When left with the mess**

As has been extensively reported, the Commonwealth commenced proceedings against the *Shen Neng I* claiming approximately \$120 million in damages. Those proceedings were settled on Monday 19 September 2016, with the P&I insurer agreeing to pay the Commonwealth \$39.3 million, of which \$4.3m was allocated to the reimbursement of the initial clean-up costs, undertaken by AMSA, and the balance of \$35m available to GBRMPA to undertake the removal of the polluted rubble from the reef.

The Chairman of the GBRMPA, Dr Russell Reichelt, released a statement on 19 September, in which he expressed the view that damage to the Great Barrier Reef caused by such negligence should be made good by the shipowner or their insurer and not left to the Australian taxpayers to fund repairs. He also expressed his view that it was clearly unsatisfactory that it had taken more than six years to reach the settlement, during which time the clean-up has become only more difficult because of the dispersal of the debris.

Whilst the Minister for the Environment and Energy, the Hon Josh Frydenberg MP, in his media release of the same day stated unequivocally that the funds are “sufficient for the clean-up”, the real costs will not be known until the task is completed. Further, the contribution to the settlement for the initial clean-up costs incurred by the Commonwealth only represents slightly more than half of those actual costs.

Similarly, in late 2012, the New Zealand government settled the claim with owners of the *Rena* for \$27.6 million. The limitation cap was said to be \$11.5 million but costs incurred by the various government agencies had already exceeded \$47 million so New Zealand taxpayers were left with a significant shortfall.<sup>38</sup>

Once more, despite the best laid plans...Australian and New Zealand taxpayers will be left with at least a proportion of the costs necessary to effectively complete the clean-up and the shipowners and their insurers have not in fact have made good the whole of the damage caused by the respective shipowners’ negligence.

At this point, it is important to remember that this consequence should come as no surprise to the relevant Ministers, nor to the relevant government agencies, nor even to the Greens, as such an outcome will often be the natural consequence of Australia’s obligations under international law.

The focus of the claim in the *Shen Neng I* was of course the *Convention on the Limitation of Liability for Maritime Claims* (LLMC 96) but it is not the only convention which limits the liability of shipowners for pollution damage.

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<sup>34</sup> Chelsea Purvis, above n 2, 215.

<sup>35</sup> Australian Maritime Safety Authority, *Improving Safe Navigation in the Great Barrier Reef*, (April 2010) 10.

<sup>36</sup> Transport Accident Investigation Commission, Marine Inquiry 11-204, *Container ship MV Rena grounding on Astrolabe Reef, 5 October 2011*, (November 2014), 55-57.

<sup>37</sup> Maritime New Zealand, *New Zealand Coastal Navigation Safety Review*, (December 2015), 74.

<sup>38</sup> Bevan Marten, above n 27, 200.

The *International Convention for the Prevention of Pollution of the Sea by Oil* 1973, more commonly referred to as MARPOL was introduced as a response to a spate of tanker accidents in 1976-1977.<sup>39</sup> MARPOL regulates almost all aspects of ships and shipping that have the potential to impact on the marine environment, expanding over six annexes. MARPOL has been Implemented in Australia by the *Protection of the Sea (Prevention of Pollution from Ships) Act* 1983.

The *International Convention of Civil Liability for Oil Pollution Damage* 1992 or CLC 92 is intended to create a regime of civil liability for the consequences of oil pollution from oil tankers. The CLC requires eligible tankers to pay the premium to one of the P&I clubs to give insurance indemnity for clean-up costs and damage caused by oil spills from tankers. In return for the imposition of strict liability, the CLC limits the liability of shipowners and their insurers for damage caused by oil pollution. CLC 69 was first given force by the *Protection of the Sea (Civil Liability) Act* 1981, which has since been amended to give force to the CLC 92.

The CLC has been supplemented by the *Fund Convention*, which provides a second tier of compensation provided by the International Oil Pollution Compensation Fund (IOPCF) over and above that provided by shipowners and their insurers. The (IOPCF) requires the oil companies to pay the costs of the scheme by raising a levy based on the amount of contributing oil that is imported or exported. In Australia the *Fund Convention* has been implemented by the *Protection of the Sea (Oil Pollution Compensation Fund) Act* 1993.

These conventions, however, do not provide compensation for damage caused by spills of oil when carried as fuel in ships' bunkers. For that purpose, there is the *Bunker Convention* which entered into force on 21 November 2008.<sup>40</sup> Under the *Bunker Convention* provisions, the polluting shipowner is liable for pollution damage caused in the state party's territory, territorial sea or EEZ and for the preventive measures taken in relation to the spill. The upper limit of liability is not laid down in the *Bunker Convention* but is that which applies under the LLMC 1976. In Australia, the convention has been implemented by the *Protection of the Sea (Civil Liability for Bunker Oil Pollution Damage) Act* 2008.

Under these various conventions victims of oil pollution damage can seek damages for injury to property, economic loss and pure economic loss.<sup>41</sup> However, the IMO has traditionally resisted recognising damages for impairment of the environment and injury to natural resources. This has been reflected in the definition of the 'pollution damage' in the CLC, a definition which is also incorporated into the *Fund and Bunker Conventions*. Under Article 1(6) of the CLC the definition of oil pollution damage compensation for the impairment to the environment is limited to "costs of reasonable measures of reinstatement actually undertaken or to be undertaken". Unhelpfully, "reinstatement" is not defined in the convention. New Zealand has adopted a similar definition in s 342 of its *Marine Transport Act* 1994.<sup>42</sup>

Thus, oil damage has been somewhat privileged and little attention has been given to any compensation regime that might assist in a case like the *Shen Neng 1* when the residual damage has not been caused by oil. Neither the *Bunker Convention*, nor the *HNS Convention* (had it been in force), provide compensation for environmental reinstatement caused solely by physical impact and residual noxious substances left behind.

So what can or should be done when one of Australia's natural assets suffers damage for which there is no, or no sufficient, mechanism for cost recovery from the polluter. Having signed up to the various aforementioned limitation conventions, can I suggest as a matter of first principles, that it is not acceptable for governments to attempt to bully foreign shipowners or their insurers into payments which exceed the limits of liability agreed to under those international conventions. Australia could of course denounce the conventions and follow a route similar to that taken by the US after the Exxon Valdez disaster when it introduced the *Oil Pollution Act* 1990 (OPA 90). OPA 90, when combined with US tort law, provides for a comprehensive means of addressing oil

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<sup>39</sup> [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx).

<sup>40</sup> [http://www.imo.org/en/About/conventions/listofconventions/pages/international-convention-on-civil-liability-for-bunker-oil-pollution-damage-\(bunker\).aspx](http://www.imo.org/en/About/conventions/listofconventions/pages/international-convention-on-civil-liability-for-bunker-oil-pollution-damage-(bunker).aspx).

<sup>41</sup> The *Convention on Liability and Compensation for Damages in Connection with the Carriage of Hazardous and Noxious Substances by Sea* (the *HNS Convention*) 1996 and its 2010 Protocol was produced by the IMO to deal with damage caused by such substances carried, either packed or in bulk, but it has not yet entered into force.

<sup>42</sup> **pollution damage** means damage or loss of any kind and –

- (a) includes the cost of any reasonable preventive measures taken to prevent or reduce pollution damage and any damage or loss occurring as a result of those measures; and
- (b) includes the costs of reasonable measures of reinstatement of the environment that are undertaken or to be undertaken; and
- (c) includes losses of profit from impairment of the environment; but
- (d) does not include any costs in relation to the impairment of the environment other than the costs referred to in paragraphs (b) and (c).

pollution, albeit without reference to the international regime. Under OPA 90, the president of the United States designates federal trustees, governors of each state designates state and local trustees, and the governing body of any Indian Tribe designates their trustees. Each of the trustees assesses the natural resource damage to their trusteeship and develops and implements a restoration plan for natural resources under their trusteeship.<sup>43</sup> §2701 (20) provides an all-embracing definition of "natural resources":

Land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the exclusive economic zone), any State or local government or Indian tribe, or any foreign government.

OPA 90 then utilises a broad definition in determining liability. §2702(b)(2)(A), (C)-(E) provides:

- (A) Damages for injury to, destruction of, loss of, or loss of use of, natural resources, including the reasonable costs of assessing the damage, which shall be recoverable by a United States trustee, a State trustee, an Indian tribe trustee, or a foreign trustee.  
...
- (C) Damages for loss of subsistence use of natural resources, which shall be recoverable by any claimant who so uses natural resources which have been injured, destroyed, or lost, without regard to the ownership or management of the resources.
- (D) Damages equal to the net loss of taxes, royalties, rents, fees, or net profit shares due to the injury, destruction, or loss of ... natural resources, which shall be recoverable by the Government of the United States, a State, or a political subdivision thereof.
- (E) Damages equal to the loss of profits or impairment of earning capacity due to the injury, destruction, or loss of... natural resources, which shall be recoverable by any claimant.

The measure of damages available under §2702(b)(2)(A) is defined in §2706 as:

- (A) the cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resources;
- (B) the diminution in value of those natural resources pending restoration; plus
- (C) the reasonable cost of assessing those damages.

An example of the application of OPA 90 to the restoration of natural resource damage can be seen with the *Athos I*. In 2004, after striking several submerged objects during attempts to berth, she discharged approximately 263,371 gallons of Venezuelan crude into the Delaware River. In the course of the immediate clean-up, 221,910 gallons of oil and 17,761 tons of oily solid was recovered. The *Athos I* Trustees elected to allow for natural recovery of the environment as the primary restoration effort. At first blush, this would seem to permit the responsible party to avoid paying for the harms done. However, in such circumstances, OPA 90 does not permit such an outcome and the Trustees identified and evaluated a wide range of project alternatives, valued at approximately \$26 million, that were deemed capable of compensating the public for the damage done to the natural resources.<sup>44</sup> Of course, such a possibility is not available under any of the international convention regimes.

The very wide scope of liability promulgated by OPA 90, coupled with its approach to the recoverable damages for natural resource damage, has received much criticism, particularly in respect of its unilateral nature.<sup>45</sup> Nevertheless, the hue and cry suggesting that tankers would no longer enter US waters has come to nought.

The US approach has, in large measure, been implemented in the European Union. On 21 April 2004, the EU issued Directive 2004/35/CE on environmental liability with regard to the prevention and remedying of environmental damage. The Directive, however, in Article 4(2) expressly excepts from its ambit environmental damage or imminent threat of such damage arising from an incident in respect of which liability or compensation falls within the scope of the international conventions listed in Annex IV, being the CLC, Fund, Bunker, HNS, Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels and, by Article 4(3) provides that the Directive is without prejudice to the right of the operator to limit his liability in accordance with national legislation implementing the LLMC or the CLNI.

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<sup>43</sup> see generally in relation to the US position, Colin de la Rue & Charles B Anderson, *Shipping and the Environment* (2<sup>nd</sup> ed, Informa 2009), Chapter 4.

<sup>44</sup> S. Eric Lee, 'Waning Conventions: Remedying Natural Resource Damage Caused by Vessel-Source Oil Pollution Under the Existing Regimes and the Need to Reconvene' (2010) 35 *Tulane Maritime Law Journal* 293, 305-6.

<sup>45</sup> *ibid*, 301; and see Stathis Palassis, 'Reconciling the International and United States approaches to civil liability for oil pollution damage' (2007) *Environmental & Planning Law Journal* 106.



S. Eric Lee, in advocating for what he describes as “a more thoughtful and more comprehensive OPA-styled convention” suggests that “comprehensive liability would provide adequate compensation to the international community for natural resources damage while paying a curtesy [*sic*] to vessel owners by finally forming a predictable, formulaic, and fair approach to the remediation of natural resource damages that is truly consistent throughout the world.”<sup>46</sup> I doubt the P&I Clubs would be quite so enthusiastic.

After the *Pacific Adventurer* lost 31 containers of ammonium nitrate overboard and spilled 270 tonnes of heavy fuel oil that washed up on Queensland beaches in March 2009, the Australian Government successfully lobbied in the international community and persuaded the IMO Legal Committee in April 2012 to raise the limits of liability under the Limitation of Liability for Maritime Claims Convention by 51%. The changes are also applicable to a shipowner’s liability limit under the *Bunker Convention* and the *Wreck Convention*. Had those amendments been in force at the time of the *Shen Neng 1* incident, the limitation amount would have been in the vicinity of \$50 million.

As we know, it is virtually impossible to break the limit of liability prescribed under any of the above conventions. And so we have seen an increasing trend, at least in Australia, to attempt to establish multiple funds under the convention on the basis that there was more than one distinct occasion on which damage was caused.

The Federal Court of Australia gave detailed consideration to the phrase in *The APL Sydney*.<sup>47</sup> On 13 December 2008 the *APL Sydney* was ordered to anchor in Port Phillip Bay to await the allocation of a berth before unloading in Melbourne. A gale was blowing and the ship dragged its anchor and ruptured a gas pipeline lying on the bottom of Port Phillip Bay, which was used to transport gas from a refinery on one side of the Bay to factories on the other side of the Bay. The factory owners brought claims in the Federal Court for their losses. The shipowner claimed its rights to limit and constituted a fund in the Federal Court. The claimants argued that there had in fact been four distinct occasions which had caused the loss and thus contended that the fund established was inadequate. The evidence was that the pipeline had stayed intact for 35 minutes and there were three subsequent manoeuvres of the ship using her engine that may have caused new loss or damage. After a trial lasting four weeks, during which the minutiae of the ship’s movements and the masters actions were explored in detail, Rares J found that there were two distinct occasions that occurred in direct connection with the operation of the *APL Sydney* that gave rise to the claims for loss of or damage to property and consequential loss resulting therefrom within the meaning of Arts 2(1)(a) and 6(1) of the Convention. The first occasion comprised the events that preceded the actual occasion of the anchor fouling the pipeline (at 1544-1545) when he found that the Master should have weighed anchor and sailed clear despite the contrary instructions of Harbour control to await a pilot. The second comprised a chain of events leading to and immediately following the rupture of the pipeline (at 1620-1621) after the windlass had failed, the pilot reboarded and the ship’s engines were put ahead on the basis that the dragging anchor would be clear.<sup>48</sup> However, the anchor was not clear, with the result that the pipeline then ruptured.

Rares J framed the relevant test thus:

Where a single act, neglect or default of a shipowner places him in such a relationship that, as a matter of commonsense, it is a cause of loss or damage suffered by a third party, that third party will have a claim under Art 2 of the Convention. And, such a claim will be caused by an occurrence and, so, will arise on that distinct occasion for the purposes of Arts 6, 7, 9 and 11.

But where a subsequent act, neglect or default of the same shipowner separately operates to cause different or separately identifiable loss or damage to the same third party, or to others, then a new claim or claims will arise on that later distinct occasion. The latter occasion is distinct because, first there is a new event (the separate act, neglect or default), secondly, there is new loss or damage and thirdly, the new cause is, as a matter of common sense, not a necessary or inseparable consequence of the earlier act, neglect or default.<sup>49</sup>

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<sup>46</sup> S. Eric Lee, *Waning Conventions: Remediating Natural Resource Damage Caused by Vessel-Source Oil Pollution Under the Existing Regimes and the Need to Reconvene* (2010) 35 *Tulane Maritime Law Journal* 293, 315.

<sup>47</sup> *Strongwise Ltd v Esso Australia Resources Ltd (the APL Sydney)* [2010] FCA 240, (2010) 185 FCR 149.

<sup>48</sup> *Ibid* [361].

<sup>49</sup> *Ibid* [78] - [79]. For the reasons for judgment for the final order constituting the two limitation funds see *Strongwise Ltd v Esso Australia Resources Ltd (The APL Sydney) (No 2)* [2010] FCA 575, (2010) 185 FCR 237.

*The APL Sydney* is an illustration of the significant preliminary skirmishes in which parties might need to engage simply to establish the size of the fund available even before embarking upon a trial of the action, and this is despite the relative simplicity of the text of Art 6(1).<sup>50</sup> It is perhaps also noteworthy that a significant basis of the decision of Finkelstein J in an earlier interlocutory skirmish involving the same incident,<sup>51</sup> was said to be the need to avoid technical interpretation (in favour of a 'bona fide' interpretation) of Art 2. It is respectfully submitted, that the technicality which attends the judgment of Rares J, although somewhat concomitant with the view expressed above about the proper interpretation of Art 2, may suffer from the vice about which Finkelstein J expressed concern to the extent that in this case, the language of Art 6 has been strained beyond its intended meaning. As Professor Gaskell has noted, prior to the tonnage limitation system in the LLMC and its predecessor, the 1957 Convention, the limiting event was the voyage. Consequently, if there were two collisions during a voyage, eg as Professor Gaskell suggests, one on leaving Southampton and the other on approach to Brisbane, there was only one limit. The LLMC was negotiated on the basis that in such circumstances, there could be two limits.<sup>52</sup> From a reading of the Travaux Préparatoires of both the 1957 and the 1976 Conventions, it seems unlikely that it was ever the intention to create several limits of liability out of what, on a common sense approach, is a single casualty. Such an approach is likely to undermine the longstanding insurance arrangements available within the international shipping industry.

A similar approach was taken in the *Shen Neng 1* by the Commonwealth, which argued for the establishment of three limitation funds. It was said that the initial grounding due to the admitted negligence of the Chief Officer was the First Distinct Occasion. It was alleged further that the Master's failure to monitor the vessel's positional changes subsequent to the initial grounding meant that he failed to notice that the anchor was dragging and that his negligent failure to do so or to arrest the movement of the vessel by 2010 on 3 April 2010 was an act of improper seamanship that gave rise to the Second Distinct Occasion. Finally, it was claimed that the Master's decision eventually to weigh anchor in an attempt to float the vessel off the reef gave rise to the Third Distinct Occasion.

Had the Commonwealth been successful in this approach, the total limitation amount available would have been in the order of \$120 million. But as we know, the settlement sum was about a third of that. And let's assume that even \$120 million would be insufficient. What then?

The definitions of pollution damage under the regimes currently in force in Australia and New Zealand do not, on their face, extend to damage to the environment itself.<sup>53</sup> The IOPC Funds have however developed criteria to govern the assessment of claims for reinstatement costs. In October 2002, the Assembly approved a revised text on environmental damage in the 1992 Fund Claims Manual.<sup>54</sup> The current text reflects those revisions;<sup>55</sup>

#### ENVIRONMENTAL DAMAGE AND POST-SPILL STUDIES

##### Scope of compensation

- 3.6.1 Under the 1992 Conventions compensation for impairment of the environment is limited to loss of profit from such impairment and costs of reasonable measures of reinstatement actually undertaken or to be undertaken.
- 3.6.2 Examples of acceptable claims for economic loss due to environmental damage include a reduction in revenue for a marine park or nature reserve which charges the public for admission or a reduction in catches of commercial species of marine products directly affected by the oil...
- 3.6.3 In most cases a major oil spill will not cause permanent damage to the marine environment due to its great potential for natural recovery. Whilst there are limits to what measures can be taken to improve on natural processes, in some circumstances it is possible to enhance the speed of natural recovery after an oil spill through reasonable reinstatement measures. The costs of such measures will be accepted for compensation under certain conditions.
- 3.6.4 In view of the fact that it is virtually impossible to bring a damaged site back to the same ecological state that would have existed had the oil spill not occurred, the aim of any reasonable measures of reinstatement should be to re-establish a biological community in which the organisms characteristic of that community

<sup>50</sup> The importance of accurately pleading multiple distinct occasions to ensure adequate disclosure was made pellucid in *Commonwealth of Australia v Shenzhen Energy Transport Co Ltd (The Shen Neng 1)*[2015] FCA757.

<sup>51</sup> *Qenos Pty Ltd v The Ship APL Sydney* (2009) 187 FCR 282.

<sup>52</sup> Nicholas Gaskell, 'Compensation for Offshore Pollution: Ships and Platforms' in M Clarke (ed) *Maritime Law Evolving* (Hart, 2013) 73.

<sup>53</sup> Colin de la Rue & Charles B Anderson, *Shipping and the Environment* (2<sup>nd</sup> ed, Informa, 2009) 487.

<sup>54</sup> 92FUND/A.7/29.

<sup>55</sup> 1992 Fund Claims Manual October 2013 edition 2005 Revision 38-39.

at the time of the incident are present and are functioning normally. Reinstatement measures taken at some distance from, but still within the general vicinity of, the damaged area may be acceptable, so long as it can be demonstrated that they would actually enhance the recovery of the damaged components of the environment. This link between the measures and the damaged components is essential for consistency with the definition of pollution damage in the 1992 Conventions (see sub-section 1.4).

3.6.5 In addition to satisfying the general criteria for the acceptance of claims for compensation set out in Section 2, claims for the costs of measures of reinstatement of the environment will qualify for compensation only if the following criteria are fulfilled:

- The measures should be likely to accelerate significantly the natural process of recovery.
- The measures should seek to prevent further damage as a result of the incident.
- The measures should, as far as possible, not result in the degradation of other habitats or in adverse consequences for other natural or economic resources.
- The measures should be technically feasible.
- The costs of the measures should not be out of proportion to the extent and duration of the damage and the benefits likely to be achieved.

#### **4 An alternative funding mechanism?**

So is there any other approach that Australia could consider to shield the Australian taxpayer from the risk of there being insufficient funds to reinstate or to compensate for natural resource damage?

As things stand presently, AMSA maintains a \$10 million pollution response reserve to meet the immediate costs of maritime pollution incidents caused by oil pollution and to cover the shortfall where claims exceed the limitation of liability of shipowners. This reserve must be topped up from other sources of funding in the event that those responsible for the damage cannot, or are not required, to meet such costs. The initial \$10 million was acquired through the 2010 increase in the Protection of the Sea Levy following the *Pacific Adventurer* incident. Effective from 1 July 2014, the Levy was reduced from 14.25 cents to 11.25 cents per net registered ton per quarter.<sup>56</sup> As the levy is imposed on the basis of the quantity oil carried by ships, the use of the reserve is, or at least is thought, to be restricted to oil clean-up costs only.

Similarly, but with a significantly larger reserve, Canada maintains the Ship-source Oil Pollution Fund of Canada (SOPF). The SOPF was established under amendments to the former *Canada Shipping Act* that came into force on 24 April 1989 and has been governed by Part 6 of the *Marine Liability Act* (MLA) Chapter 6 since 8 August 2001. As from 2 January 2010, the SOPF is governed by Part 7 of the MLA.<sup>57</sup> Originally the Marine Pollution Claims Fund, it was funded by a levy of 15 cents on every tonne of oil imported or exported into Canada imposed from 15 February 1972 until 1 September 1976. During that period a total of \$34,866,459.88 was collected and credited to the MPCF from 65 contributors, including oil companies, power generating authorities, pulp and paper manufacturers, chemical plants and other heavy industries.<sup>58</sup>

During the fiscal year commencing 1 April 2015, pursuant to the provisions of the MLA, the Minister of Transport has the statutory power to impose a levy of 49.75 cents per metric tonne of "contributing oil" imported into or shipped from a place in Canada in bulk as cargo on a ship. The levy is indexed annually to the CPI. No levy has been imposed since 1976. In that same fiscal year, the maximum liability of the SOPF was \$165,837,463 for all claims from one oil spill.<sup>59</sup>

As it was conceived, the SOPF is, in effect, a fourth layer of compensation in the event that compensation from the shipowner under the CLC or the Funds with respect to spills in Canada from oil tankers, is insufficient to cover all established claims arising from such spills. It is not, however, limited to spills from sea-going tankers of persistent oil, as is the 1992 IOPC Fund.<sup>60</sup>

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<sup>56</sup> [amsa.gov.au/about-amsa/recent-events/2014](http://amsa.gov.au/about-amsa/recent-events/2014).

<sup>57</sup> [www.ssofund.ca](http://www.ssofund.ca) (2016-09-08).

<sup>58</sup> *ibid.*

<sup>59</sup> *ibid.*

<sup>60</sup> *ibid.*

In addition to being a fund of last resort, the fund is also one of first resort. Claimants can file their claims directly with SOPF, which takes over the task of recovering compensation from the shipowner or other responsible party to the extent that the administrator finds the claim to be established.<sup>61</sup>

Is it wholly inconceivable to consider framing the terms on which such a fund might be liable for claims that extended to reinstatement, repair or compensation for natural resources damage, funded by an increase in the existing Protection of the Sea Levy, which you will recall was reduced from 14.25 cents to 11.25 cents per net registered ton per quarter? Such an approach will necessarily require amendments to the underlying legislation but it is not difficult to conceive of a regime that might provide an additional fund for environmental damage unrelated to oil. The terms of liability could quite easily mirror those outlined in the most recent edition of the 1992 Fund Claims Manual. That of course is a political decision but an increase in the types of ships subject to the levy, coupled with a modest increase in the levy, may be relatively palatable at a time when it is apparent to the general public that shipowners and their insurers may not always be required fully compensate for significant damage caused by the negligence of those responsible for the ship. One might also be tempted to get some financial advice from whoever has been managing the Canadian Fund.

If we were to consider a fund that might be available for environmental reinstatement or natural asset compensation, so as to attempt to make whole the natural resources and the public's loss of those resources that are damaged or destroyed, very difficult issues of natural resource valuation arise. I won't venture today into the economic literature concerning how we might value natural assets or even account for them in national balance sheets so as to conceive of an economy-wide capital maintenance charge so as to avoid leaving future generations to pay the price of dealing with current excess consumptions of our natural assets – not least because I am not an economist and have scant understanding of that literature. Suffice it to say that there is an emerging body of literature on the recognition of the capital value of natural assets and accounting methodologies to assist governments to know whether natural assets are being maintained or enhanced, rather than just ignored as is the case with usual GDP calculations.<sup>62</sup> In addition, Canada has recognised the concept of ecosystems services. These are "the direct and indirect contributions of ecosystems to human well-being" and include 22 main service types within the categories of provisioning services (eg food, water, raw materials), regulating services (eg air quality regulation, erosion prevention, pollination), habitat services (eg maintenance of life cycles of migratory species, maintenance of genetic diversity) and cultural and amenity services (eg aesthetic information, opportunities for recreation and tourism, spiritual experience).<sup>63</sup> The Supreme Court of Canada opened the door for governments to sue for the loss of such values in *Canadian Forrest Products v British Columbia*<sup>64</sup> although British Columbia neither properly pleaded, nor adduced any evidence, of such values. The Court was left to observe that it was neither appropriate or necessary to pronounce on the specific methodology that could be employed in valuation of environmental losses.<sup>65</sup>

## 5 Conclusion

As is described in the Reef Outlook Report 2014, shipping, which includes vessel greater than 50 metres in overall length or carrying specialised products regardless of length (oil tankers, chemicals or liquefied gas carriers, cruise ships and super yachts) has increased substantially over the past two decades. In 2012-13, there were 9619 voyages through the Great Barrier Reef and Torres Strait Region and the number of vessel calls to ports adjacent to the Region is forecast to increase by about 250% over the next 20 years.<sup>66</sup> The Report also notes the global trend towards longer, deeper draft ships.<sup>67</sup> The Report also notes that, despite the steady increase in shipping activity in the Region, the number of reported ship groundings and collisions has remained relatively stable.<sup>68</sup> This is no doubt due to the significant improvements in safety management within the industry and domestically through measures such as compulsory pilotage, REEFVTS and UKCS as already observed.

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<sup>61</sup> Ship-source Oil Pollution Fund Claims Manual 2014 Edition.

<sup>62</sup> Frank Maes (ed), "Marine Resource Damage Assessment: Liability and compensation for environmental damage" (Springer, 2005); Atkinson, Bateman and Mourato, 'Recent advances in the valuation of ecosystem services and biodiversity' (2012) 28 *Oxford Review of Economic Policy* 22; Dieter Helm, 'Taking Natural Capital Seriously' (2014) 30 *Oxford Review of Economic Policy* 109; Dieter Helm, 'Natural Capital: Valuing the Planet' (Yale University Press 2015).

<sup>63</sup> Martin Olsynski, 'Environmental Damages after the Federal Environmental Enforcement Act: Bringing Ecosystem Services to Canadian Environmental Law?' (2012) 50 *Osgoode Hall Law Journal* 129, 140-141.

<sup>64</sup> 2004 SCC 38, 2 SCR 74.

<sup>65</sup> *ibid*, [153].

<sup>66</sup> Great Barrier Reef Marine Park Authority, *Great Barrier Reef Outlook Report 2014*, 135.

<sup>67</sup> *ibid*.

<sup>68</sup> *ibid*, 137.

Nevertheless, when an incident does occur, the damage can often go uncompensated: physical damage to the reef, pollution from antifoulant paint, chemical spills, oil spills, increased noise, vessel strikes on wildlife, vessel-based waste discharge, the introduction of exotic marine species and marine debris. In short, the degradation of all those factors against which the overall state of the Great Barrier Reef is measured; its biodiversity, the health of its ecosystem, and its heritage values.

It is incumbent on those of us in a position to do so to ensure that when the next catastrophic incident happens, as it surely will, we have at hand the means to assess the true value of what has been lost or damaged and resources appropriate to ameliorate the consequences.