Duncan Currie

THE OCEANS
the Law of the Sea Convention as a form of global governance

The ocean under threat

Life came from the ocean. Without the ocean, life on Earth is not possible. The ocean produces and regulates much of the planet's oxygen and water, provides substantial amounts of its nutrient and carbon cycling and supports most of its biological diversity. Fish feed over 3 billion humans, supplying 20% of their animal protein intake (FAO, 2016).

The resilience of the ocean is decreasing. The biodiversity of the high seas, which constitute almost half of Earth's surface, remains largely unprotected from multiple threats. These include pollution, overfishing and destructive fishing, noise, and other new and emerging uses. All are compounded by climate change and ocean acidification.

Severe depletion of coastal and shelf fisheries has long been widely acknowledged, but for many years the open ocean was still considered one of the last great wild places on Earth. We now know that the open ocean, too, is under threat. In 2003, Myers and Worm noted that 90% of all of the open-ocean tuna, billfish and shark were gone (Ward and Myers, 2003). In 2005 Ward and Myers showed the potential for trophic cascades and significant declines in mean trophic level as fishing erodes top-down control (Myers and Ward, 2005; Jackson, 2008). In 2006 Worm concluded that marine biodiversity loss is increasingly impairing the ocean's capacity to provide food, maintain water quality and recover from perturbations (Worm et al., 2006).

These changes carry economic costs: in 2009 the World Bank and the Food and Agriculture Organization warned that overfishing, loss of habitat, pollution, rising sea temperatures, acidity, illegal fishing and subsidies were costing the world economy over $50 billion per year (World Bank and FAO, 2009, p.41). Yet the number of overexploited fish stocks continues to increase (FAO, 2016). In 2010, 67% of fish stocks were overfished, and a new UN report notes that since 2010 there has been an overall decline in highly migratory and straddling stocks (Cullis-Suzuki and Pauly, 2010; Secretary-General to

Duncan Currie is director of Globe Law, and acts as a legal consultant to governments and civil society on issues pertaining to the global commons, particularly climate change and ocean protection.

the Review Conference, 2016, para 16). Fishing has caused trophic cascades, regime shifts, ecosystem-level impacts, and severe declines in sharks, turtles and marine mammals (Ortuño Crespo and Dunn, 2016). Drivers of overfishing include overcapacity, destructive fishing methods, poor governance and weak institutions, loss of spawning and nursery habitat, and the insufficient application of the ecosystem approach and of the precautionary approach (World Bank, 2007). Overfishing has moved to the deep sea, which constitutes the largest source of species and ecosystem diversity on Earth (UN, 2016, ch.36F), with systematic overfishing and few stock assessments.

Two other anthropogenic impacts, climate change and ocean acidification, are multiplying effects on the ocean. It is generally unrecognised that 93% of the planet's anthropogenic heating since the 1970s has been absorbed by the ocean. Yet, ominously, the trend in ocean warming is accelerating (Wijffels et al., 2016). This year the NOAA (National Oceanic and Atmospheric Administration) reported that 2015 was the warmest year within the 136-year reconstructed sea surface temperature records (NOAA National Centers for Environmental Information, 2016). It has been estimated that if the amount of heat that has gone into the upper 2,000 metres of the ocean from 1955 to 2010 had gone into the lower 10 kilometres of the atmosphere, it would have seen a warming of a massive 36°C (Whitmarsh, Zika and Czaja, 2015, p.2). Oceanic algae provide half of the oxygen humans breathe and constitute a major consumer of anthropogenically produced atmospheric CO_2 (Laffoley and Baxter, 2016, p.400).

These trends matter. Sea surface temperature, ocean heat content, sea level rise, melting of glaciers and ice sheets, CO_2 emissions and the atmospheric concentrations are all increasing at an accelerating rate. These have grave consequences for the marine species and ecosystems of the ocean, and for humanity which depends on the ecosystem services. The ocean plays a crucial role in climate regulation (ibid., p.17). Over 90% of global carbon dioxide is eventually stored and cycled through the oceans on long timescales, and the current oceanic uptake is around 30% (Archer, Kheshgi and Maier-Reimer, 1998; Sabine et al., 2004). Climate change may mean the ocean becomes a less effective sink (Sabine et al., 2004). Warming and acidification of the oceans due to climate change comprise an uncontrolled experiment on a global scale. Warming of the ocean surface increases the stratification of the oceans, because warmer and lighter surface waters inhibit upwelling of cooler and denser nutrient-rich waters from below (Schmittner, 2005). Climate change effects on the ocean include coral bleaching, sea level rise, ocean warming, changing currents, melting polar ice and intense weather events (Laffoley and Baxter, 2016).

Ocean acidification, separate from climate change but closely related, is caused by the dissolution of carbon dioxide in the ocean, forming carbonic acid (Feely et al., 2004). Ocean acidification is already 30% over pre-industrial times, and will cause decreased calcification and growth of organisms which are major components of the cycling of carbon and the CO_2 storage capacity of the ocean (Riebesell et al., 2000). Nor are these the only impacts: planetary boundaries represent thresholds beyond which the risk of 'irreversible and abrupt environmental change' to planetary life support systems would make Earth less habitable (Rockström et al., 2009). Nitrogen burdens on the ocean are already estimated to be exceeding the planetary boundary; the ocean acidification boundary and biodiversity are in the high risk zone (Stockholm Resilience Centre, 2016). The cost of damage to the ocean could reach an additional $322 billion per year by 2050 as a result of climate change alone (Noone, Sumaila and Diaz, 2012, p.9).

The contemporary picture of degradation of Earth's oceans is not pretty. In fact, it is somewhat terrifying. What, then, is the 'emerging global community' doing by way of response?

The Law of the Sea

The United Nations Convention on the Law of the Sea (UNCLOS), negotiated in 1982 and in force since 1994, today has 168 states parties (164 of the 193 UN member states, plus the European Union and two small island territories).[1] The convention contains strong provisions to protect the marine environment:

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- article 192 requires parties to protect and preserve the marine environment, and article 194 requires them to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life;
- articles 123 and 197 contain a duty to cooperate, which the International Tribunal for the Law of the Sea has said is a fundamental principle in the prevention of pollution of the marine environment under part XII of the convention and general international law.[2]

These obligations were highlighted in a recent arbitration between the Philippines and China concerning China's actions in the South China Sea.[3] The tribunal held that article 192 imposes a duty on states parties.[4] This general obligation extends both to protection of the marine environment from future damage and to preservation in the sense of maintaining or improving its present condition. The tribunal

observed that 'Article 192 thus entails the positive obligation to take active measures to protect and preserve the marine environment, and by logical implication, entails the negative obligation not to degrade the marine environment'.[5] Since international law requires that states ensure that activities within their jurisdiction and control respect the environment of other states or of areas beyond national control,[6] states have a positive duty to prevent, or at least mitigate, significant harm to the environment when pursuing, in that case, large-scale construction activities.

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This duty informs the scope of the general obligation in article 192. Articles 192 and 194, which concerns pollution, found the tribunal, 'set forth obligations not only in relation to activities directly taken by States and their organs, but also in relation to ensuring activities within their jurisdiction and control do not harm the marine environment'.[7] Being an obligation of due diligence, or of conduct, this requires a 'certain level of vigilance in their enforcement and the exercise of administrative control'.[8] The tribunal also reiterated its finding that 'the duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law'.[9]

The tribunal then found that China has, through its toleration and protection of, and failure to prevent, Chinese fishing vessels engaging in harmful harvesting activities of endangered species, breached articles 192 and 194(5) of the convention.[10] How, then, to turn these obligations into action?

Global action for ocean protection

One crucial tool of ocean protection is the implementation of marine protected areas, including marine reserves (Lubchenko et al., 2003). In 2010, in Aichi target 11, governments called for a representative network of marine protected areas to be established by 2020.[11] Without an implementing agreement under UNCLOS, it would be difficult to establish marine protected area networks, assess cumulative impacts or develop a benefit-sharing regime for marine genetic resources. An overarching, legally binding mandate and framework setting out goals and purposes could provide for integrated marine protected areas in areas beyond national jurisdiction (ABNJs), providing international support for areas in need of protection, complemented by measures adopted at the regional level (Currie, 2014, 2013).

In 2012, assembled for the Rio+20 conference, the international community developed priorities for the promotion of sustainability. The outcome document, The Future We Want (UNCSD, 2012, paras 113, 158), stressed the crucial role of healthy marine ecosystems, sustainable fisheries and sustainable aquaculture for food security and nutrition, and in providing for the livelihoods of millions of people. It also highlighted the importance of the conservation and sustainable use of the oceans and seas and of their resources for sustainable development and protecting biodiversity and the marine environment and addressing the impacts of climate change. States therefore committed to protecting and restoring the health, productivity and resilience of oceans and marine ecosystems, and to maintaining their biodiversity, enabling their conservation and sustainable use for present and future generations, and to effectively applying an ecosystem approach and the precautionary approach in the management of activities affecting the marine environment. The conference also agreed on specific measures on fisheries (ibid., para 168), and reaffirmed the importance of area-based conservation measures. These included marine protected areas consistent with international law, based on best available scientific information, as a tool for conservation of biological diversity and the sustainable use of its components.

These are all worthy goals and commitment, and hard fought through long nights of negotiations. But the challenge is, as it always has been: how to implement them? One key paragraph held the seeds of real progress: building on the work of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction – the so-called 'BBNJ' working group – and before the end of the 69th session of the UN General Assembly, states further committed to addressing, on an urgent basis, the issue of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, including by taking a decision on the development of an international instrument under UNCLOS by September 2015 (ibid., para 162).

That short paragraph was probably the most hard fought of the document, for the ocean at least, and for good reason: it committed the General Assembly to taking a decision in a time-bound way on whether to develop an international instrument. This would be the third implementing agreement under UNCLOS, the first two having addressed seabed mining and fisheries. It would specifically address marine biodiversity, which was all but ignored in the convention, having been negotiated in the 1970s before the importance of biodiversity was really understood.

The Rio agreement followed an agreement in 2011 on a 'package' of elements. Then, states participating in the BBNJ at UN headquarters agreed to work towards the establishment of an intergovernmental negotiating process that would 'address the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, in particular, together and as a whole': marine genetic resources, including questions on the sharing of benefits; measures such as area-based management tools, including marine protected areas; environmental impact assessments; and capacity-building and the transfer of marine technology.[12]

Finally, in January 2015, states negotiating in the BBNJ meeting recommended to the General Assembly that it develop an international, legally binding instrument under the convention on the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (UN AHWG, 2015); this was affirmed by the General Assembly in June 2015.[13] That resolution initiated a preparatory committee to report back with substantive recommendations on the elements of a draft text of a binding instrument under UNCLOS. The preparatory committee has since had two sessions (March–April and August–September 2016), with the third scheduled for March–April 2017.[14] The sessions have been well attended and, under able chairmanship from Trinidad and Tobago, have made good progress.

Throughout the process the High Seas Alliance, founded in 2011 and comprising 33 non-governmental organisations in addition to the International Union for the Conservation of Nature (IUCN), has worked through briefing papers, advocacy at UN meetings, through states and through organising and participating in workshops to inspire, inform and engage the public, decision makers and experts.[15]

The BBNJ process has been notable for its transparency and for the engagement of civil society with delegations and the United Nations, and facilitated by the UN's Division for Ocean Affairs and the Law of the Sea.[16] By the end of its 22nd session in 2018, the UN General Assembly will decide on whether, and when, to convene an intergovernmental conference to elaborate the text of an internationally legally binding instrument. Another important process in oceans governance is the adoption of the Sustainable Development Goals. After intensive years of lobbying, a stand-alone ocean goal (goal 14) was agreed, to conserve and sustainably use the oceans, seas and marine resources for sustainable development.[17]

a whole. It needs effective management and development of ocean space resources beyond national jurisdiction for the benefit of all countries and the sharing of those benefits (Pardo, 1993, p.39).

These prescient words from the father of the Law of the Sea Convention may finally become reality through the BBNJ process. The process of effecting change in the oceans is slow, difficult and often frustrating, but it is essential if humankind is to move from the failed international 'freedom of exploitation' model to a global 'benefit-sharing and good governance' model. With transparency and accountability, and the partnership of diplomacy and civil society, the kind of cooperation and consultation promised in UN Convention on the Law of the Sea may finally bear fruit, and global governance for the protection of the oceans take hold.

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Conclusion

The ocean has for centuries been seen as a free-for-all. As recently as the 1980s the principle of complete freedom of navigation, trade and fishing on the high seas, developed by Grotius in Mare Liberum, first published in 1609, was reflected in the negotiations over UNCLOS.

The past century, however, has shown that these freedoms are not to be taken as unlimited, and in particular that the freedom to exploit is exactly what is causing global degradation of the oceans.

In 1990, Greenpeace and other non-governmental organisations convened a conference on 'Freedom for the seas in the 21st century', under the leadership of Professor Jon Van Dyke of the University of Hawaii. Arvid Pardo, whose 1967 speech to the UN General Assembly had stimulated the development of the 'common heritage of mankind' concept and UNCLOS itself, personally presented a paper. Pardo observed that the international community must resolve the dichotomy between the need to use and exploit ocean space and the need to avoid the consequences of such use. This, he argued, leads to a need to establish a new legal order governing ocean space as

1 http://www.un.org/depts/los/convention_agreements/texts/unclos/closindx.htm.
2 *Case concerning Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v. Singapore)*, Case 12, order of 8 October 2013, https://www.itlos.org/en/cases/list-of-cases/case-no-12/#c702, para 92.
3 South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China), Permanent Court of Arbitration, case 2013-9, award 12 July 2016, http://www.pcacases.com/web/view/7.
4 Ibid., para 941.
5 Ibid.
6 Citing Legality of the Threat of Use of Nuclear Weapons, Advisory Opinion, ICJ Reports 1996, p.226, at pp.240-2, para 29.
7 South China Sea arbitration, para 944.
8 Ibid.
9 Ibid., *citing MOX Plant (Ireland v. United Kingdom) Provisional Measures, Order of 3 December 2001*, ITLOS Reports 2001, para 82.
10 Ibid., para 992.
11 Aichi Biodiversity Targets, 2010, target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes. https://www.cbd.int/sp/targets/.
12 Letter dated 30 June 2011 from the co-chairs of the Ad Hoc Open-ended Informal Working Group to the president of the General Assembly, document A/66/119, §I.1(a) and

(b), http://www.un.org/depts/los/biodiversityworkinggroup/biodiversityworkinggroup.htm.
13 UN General Assembly resolution 69/292 (19 June 2015), http://www.un.org/en/ga/69/resolutions.shtml.
14 See http://www.un.org/depts/los/biodiversity/prepcom.htm.
15 http://www.highseasalliance.org/.
16 http://www.un.org/depts/los/doalos_activities/about_doalos.htm.
17 2030 Agenda for Sustainable Development, General Assembly resolution 70/1: *Transforming our World: the 2030 Agenda for Sustainable Development*, 25 September 2015: see http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-14-life-below-water.html

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