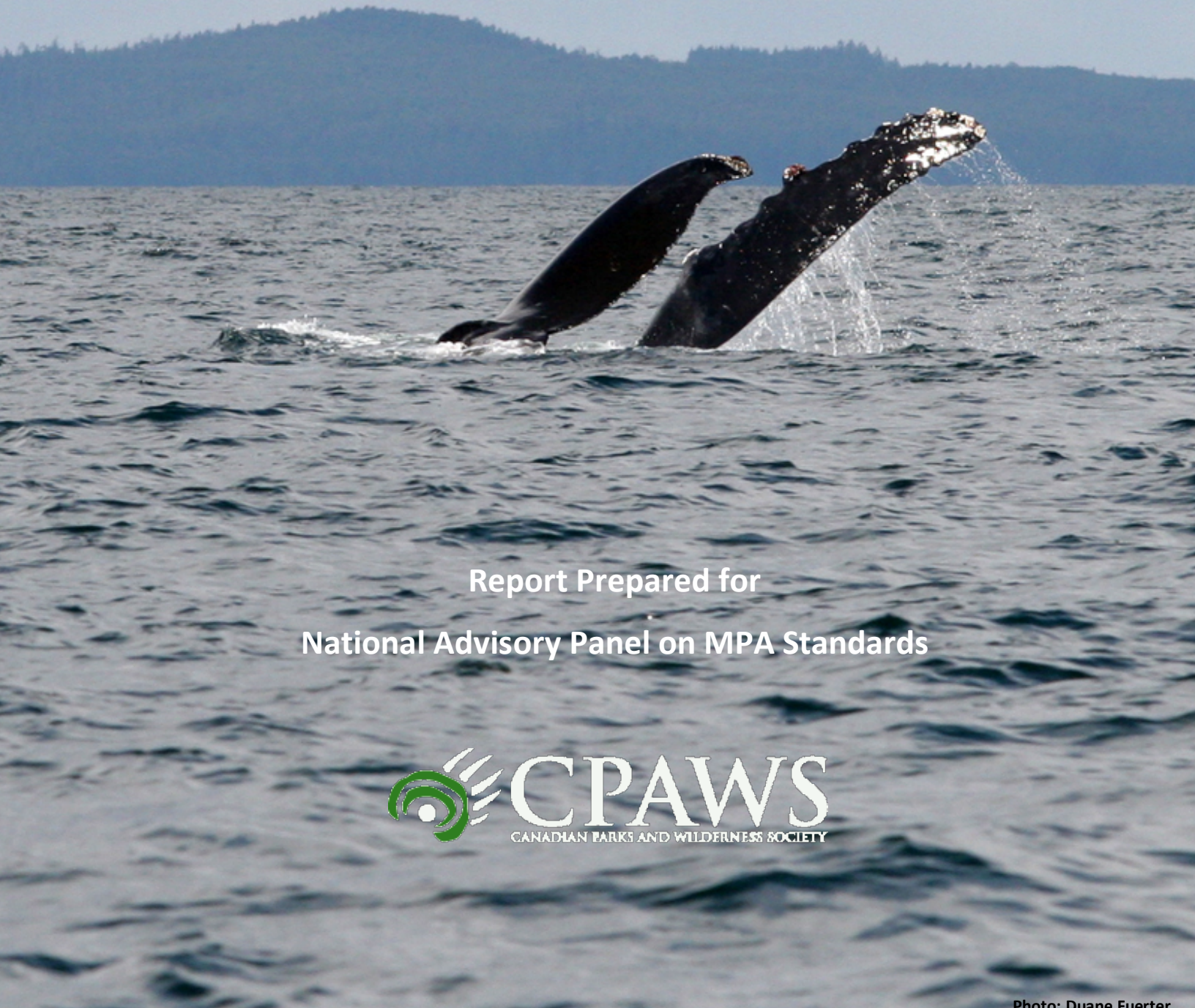
Protection Standards for Marine Protected Areas (MPAs) in Canada



Report Prepared for

National Advisory Panel on MPA Standards

CPAWS
CANADIAN PARKS AND WILDERNESS SOCIETY

Photo: Duane Fuerter

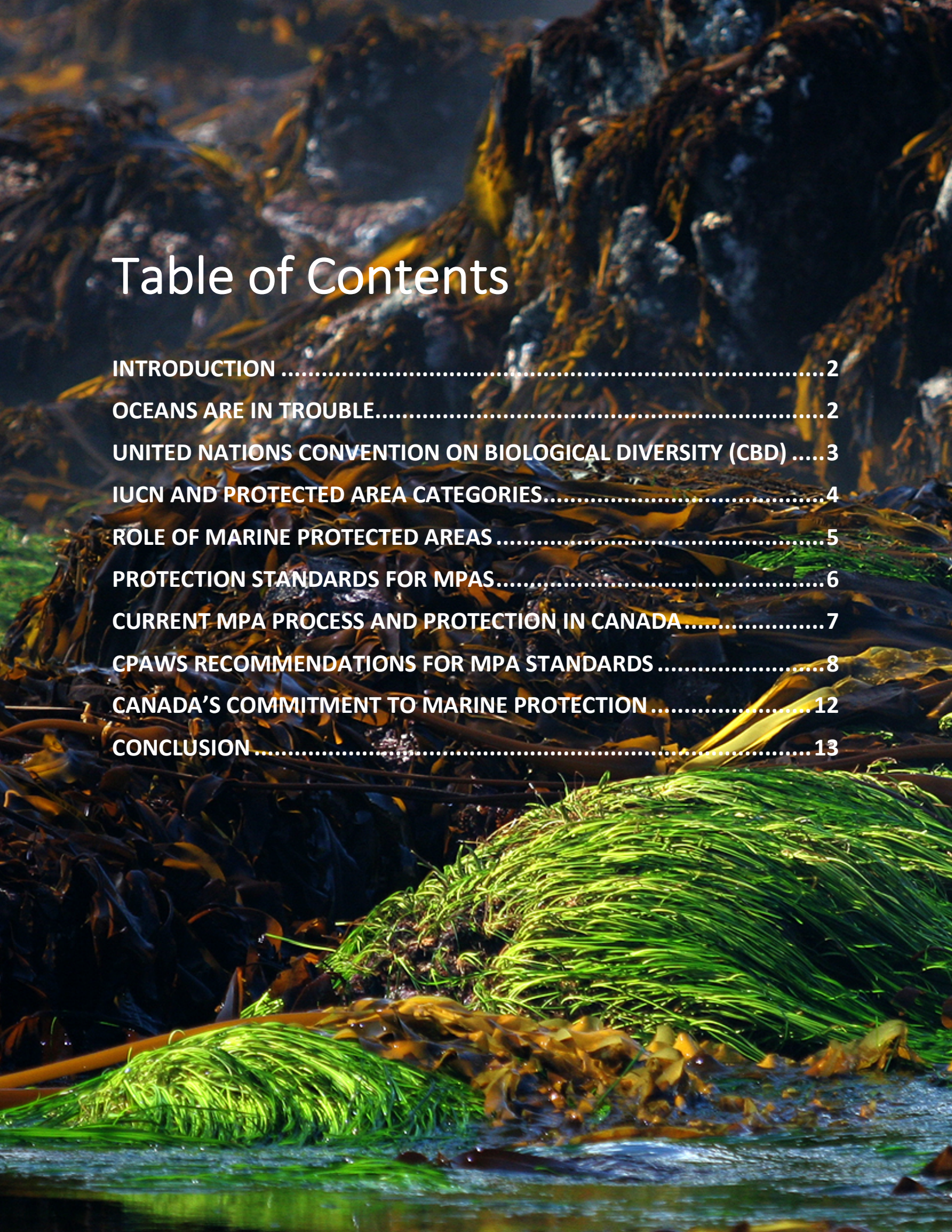


Table of Contents

Introduction

The Canadian Parks and Wilderness Society (CPAWS) is pleased to provide a written submission to the National Advisory Panel on Marine Protected Area Standards. CPAWS is a national non-profit organization that was established in 1963. We are the leading voice for public land, water and ocean protection in Canada. CPAWS is comprised of 13 chapters nation-wide that have experience and expertise in protecting land and water through the establishment of both terrestrial and marine protected areas (MPAs).

CPAWS staff have represented the conservation sector on the planning and management committees for many MPAs in Canada including Gwaii Haanas, the Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs, and St. Anns Bank – to name only a few. CPAWS works with communities, indigenous peoples, scientists, stakeholders, and decision-makers to find science-based solutions for the effective protection of ecologically important areas for generations to come. CPAWS has been involved in all levels of MPA establishment, from identification of candidate sites such as the proposed Scott Islands marine National Wildlife Area and the Hecate Strait glass sponge reefs, to developing final management plans for designated MPAs, such as Gwaii Haanas National Marine Conservation Area and Haida Heritage Site.

CPAWS would like to thank the Panel for the opportunity to present in Vancouver (Alexandra Barron), Moncton (Roberta Clowater), and Ottawa (Sabine Jessen). This submission will review and expand upon the information that was shared during these presentations.

Oceans are in Trouble

The state of ocean is deteriorating. Human activity has a huge impact on marine ecosystems and continues to touch every part of the global ocean. Findings from a recent study revealed that only 13% of global oceans are undamaged by humanity[1]. Since the rise of humanity, we have caused the loss of 83% of all wild mammals and specifically 80% of marine mammals and 15% of fish[2]. Knowing this, it may not come as a surprise that we are in the midst of a biodiversity crisis, with some scientists even arguing that the sixth mass extinction has begun[3].

There is a large and growing body of evidence showing that ocean ecosystems within Canada are in trouble. The rapid decline of North Atlantic right whale or the southern resident killer whale populations are only two, of many, recent examples of the large and growing body of evidence that from coast to coast to coast, that enhanced protection for the ocean is needed. WWF-Canada's Living Planet Report highlighted that wildlife and habitats are experiencing increased pressure from human activities. The report revealed that from 1970 to 2014, half of the monitored wildlife species, including fish, declined in abundance. More specifically, in Atlantic Canada, monitored marine fish populations decreased by an average of 38%[4] between 1970 and 2014.

Without meaningful marine protection, these trends will become increasingly common. A network of protected areas is critical to ensuring that ocean species and habitats are adequately protected, and

---

[1] Jones et al. (2018). The Location and Protection Status of Earth's Diminishing Marine Wilderness. Current Biology. (28). 1-7

[2] Bar-On, Y.M., Phillips, R., Milo, R. (2018). The Biomass Distribution on Earth. Proceedings of the National Academy of Science. 115(25), 6506-6511.

[3]Ceballos, G., Ehrlich, P.R., Dirzo, R.(2017). Biological annihilation via the ongoing sixth mass extinction signalled by vertebrate population losses and declines. PNAs. 114(30).

[4] WWF Canada. (2017). Living Planet Report. http://assets.wwf.ca/downloads/WEB_WWF_REPORT_v3.pdf?_ga=2.20074042.383554269.1532711434-1348282354.1532711434

healthy, resilient coastal and marine ecosystems continue to function and provide the many ecosystems services upon which we all depend.

United Nations Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) came into force in 1993 and was developed in response to the growing recognition that biological diversity was a global asset of tremendous value to present and future generations, but also that species and ecosystems were under increasing threat from human activities.[5] Canada was the first industrialized country to sign and ratify the CBD. There are currently 193 Parties to the CBD. According to the Convention on Biological Diversity (CBD) and the International Union for the Conservation of Nature (IUCN), MPAs provide for the *in-situ* conservation of biodiversity, recognizing that the long-term viability of species and ecosystems depends on their being to evolve in natural conditions.[6]

In 2010, the parties to the CBD adopted a Strategic Plan for Biodiversity for 2011-2020, including the Aichi Biodiversity Targets.[7] Target 11 is focused on the need to increase and improve protected areas, including MPAs and sets the target of at least 10% protection of the ocean:

> By 2020, at least 17 per cent of terrestrial and inland water areas 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 landscape and seascape. Well-governed and effectively managed protected areas are a proven method for safeguarding both habitats and populations of species and for delivering important ecosystem services. Particular emphasis is needed to protect critical ecosystems such as tropical coral reefs, sea-grass beds, deepwater cold coral reefs, seamounts, tropical forests, peat lands, freshwater ecosystems and coastal wetlands. Additionally, there is a need for increased attention to the representativity, connectivity and management effectiveness of protected areas.[8]

The other key Aichi target relevant to the panel's work is Target 6, which is focused on the sustainable management of living marine resources. It seems that the lack of numerical goals, has made this target of less focus, but it is a very important target for countries to achieve. It states the following:

> By 2020 ALL (emphasis added) fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits. Overexploitation is a severe pressure on marine ecosystems globally, and has led to the loss of biodiversity and ecosystem structure. Harvests of global marine capture fisheries have been reduced from the unsustainable levels of a decade and more ago. However, overfishing still occurs in many areas, and fisheries could contribute more to the global economy and food security with more universal commitment to sustainable management policies. This target should be regarded as a step towards ensuring that all marine resources are harvested sustainably.[9]

---

[5] https://www.cbd.int/history/

[6] https://www.cbd.int/convention/guide/default.shtml?id=action

[7] https://www.cbd.int/nbsap/training/quick-guides/

[8] https://www.cbd.int/doc/strategic-plan/targets/T11-quick-guide-en.pdf

[9] https://www.cbd.int/doc/strategic-plan/targets/T6-quick-guide-en.pdf

IUCN and Protected Area Categories

IUCN is considered the global authority on the status of the natural world and the measures needed to safeguard it. IUCN was instrumental in the creation of many key international conventions, including the United Nations World Heritage Convention and the United Nations Convention on Biological Diversity. IUCN is the only environmental organization in the world with official observer status at the United Nations. IUCN is made up of 1300 states, government agencies, NGOs, and indigenous organizations. Canada is a member of IUCN and a signatory to the UN Convention on Biological Diversity – in fact the Secretariat for the CBD is located in Montreal.

CPAWS is a member of IUCN, and individual staff experts at CPAWS are members of the World Commission on Protected Areas, one of 6 IUCN commissions. CPAWS was represented on the OECM task force, established by this commission, that was asked by the Convention on Biological Diversity to develop the guidance for parties (governments) to the convention on how to implement OECMs. IUCN harnesses the expertise of 10,000 global experts in the work that it does. The development of IUCN protected area standards involved a huge number of global experts in protected areas, including many Canadians.

The IUCN protected area management categories are a global framework recognized by the Convention on Biological Diversity for categorizing the vast array of protected area management types. Efforts to develop these categories date back to 1933, and the 2008 guidelines and the 2013[10] update were developed over a complex process involving hundreds of experts around the world and spanning over 4 years. The IUCN is clear that with only 6 categories it is impossible to capture every local nuance. Here is what they wrote:

> "Squeezing the almost infinite array of approaches into six categories can never be more than an approximation...they represent a critical overarching framework that helps to shape the management and the priorities of protected areas around the world.

The IUCN guidelines on protected area categories clearly describes each category and compares the categories to each other in order to provide additional guidance and examples of how the categories can best be applied. Each phrase of the IUCN protected area definition is also explained with examples.[11] IUCN is very clear that only areas where the main objective is conserving nature can be considered protected areas, and in cases of conflict with other goals, nature conservation must be the priority.[12] Another principle is that protected areas should aim to maintain or ideally increase the degree of naturalness of the ecosystem being protected – this applies to all categories. IUCN stresses that "the overriding purpose of a system of protected areas is to increase the effectiveness of in-situ biodiversity conservation." It should be emphasized that in the case of none of the IUCN categories is large-scale industrial harvest a permitted activity, not even in categories V and VI. For example:

> Category VI protected areas may also be particularly appropriate to the conservation of natural ecosystems when there are few or no areas without use or occupation and where those uses and occupations are mostly traditional and low-impact practices, which have not substantially affected the natural state of the ecosystem.

[10] https://www.iucn.org/sites/dev/files/import/downloads/iucn_assignment_1.pdf
[11] Ibid p8-9
[12] Ibid p10

And Category Ib is described as follows:

> The key objectives are biological intactness and the absence of permanent infrastructure, extractive industries, agriculture, motorized use, and other indicators of modern or lasting technology.

We provide these examples in order to emphasize that in none of the IUCN defined categories of protected areas are large-scale industrial and/or extractive activities permitted. In many cases, IUCN categories have not been correctly applied, either in Canada or in other countries.

Role of Marine Protected Areas

Marine protected areas are a proven conservation strategy that provide numerous benefits to ecosystem services and functions by safeguarding large and diverse ecosystems, creating safe havens for vulnerable species, and allowing low-resiliency communities to recover and rebuild.[13] Global analyses have found that effective MPAs produce:

- 160%[14] to 440%[15] increase in biomass compared to unprotected waters,
- 5% increase in fish density per year[16]
- 28% increase in individual size of fish[15]
- 20% increase in the number of species[15] and
- 75% increase in abundance of indicator species[13]

MPAs have also been proven to be effective in the protection of migratory and highly mobile animals, such as whales and seabirds, by protecting critical migration routes, feeding grounds and other aggregation sites, from harmful human activities.[17] [18] [19] In addition to helping mobile species, MPAs are an effective tool for fisheries management and biodiversity conservation in the face of climate change impacts and changing ocean conditions[20]. By reducing and managing the impacts of human activities, MPAs can help to increase or maintain the resilience of ocean ecosystems in the face of climate change. As species move with changes in oceanic conditions brought about by climate change, networks of connective MPAs can ensure that there are suitable and healthy habitats available in which the ecosystem structure and function have been maintained. In addition to this important adaptation role, MPAs can also play a role in mitigation by protecting sources of carbon in the ocean.[21]

In concert with ecological benefits, there are numerous studies that point to various socioeconomic benefits of MPAs including supporting fisheries as rebuilding populations spill over into surrounding

---

[13] Coleman, M. A., Palmer-Brodie, A., and Kelaher, B. P. (2013). Conservation benefits of a network of marine reserves and partially protected areas. *Biol. Conserv.*

[14] Gill, D. A., Mascia, M. B., Ahmadia, G. N., Glew, L., Lester, S. E., Barnes, M., et al. (2017). Capacity shortfalls hinder the performance of marine protected areas globally. Nature 543, 665–669.

[15] Lester, S. E., Halpern, B. S., Grorud-Colvert, K., Lubchenco, J., Ruttenberg, B. I., Gaines, S. D., et al. (2009). Biological effects within no-take marine reserves: a global synthesis. Mar. Ecol. Prog. Ser. 384, 33–46.

[16] Molloy, P., McLean, I. B., and Côté, I. M. (2009). Effects of marine reserve age on fish populations: A global meta-analysis. J.Appl. Ecol

[17] Hoyt, E. (2012). Marine Protected Areas for Whales, Dolphins and Porpoises: A world handbook for cetacean habitat conservation and planning. Routledge

[18] Lascelles, B. G., Langham, G. M., Ronconi, R. A., and Reid, J. B. (2012). From hotspots to site protection: Identifying Marine Protected Areas for seabirds around the globe. Biol. Conserv. 156, 5–14.

[19] Schofield, G., Scott, R., Dimadi, A., Fossette, S., Katselidis, K. a., Koutsoubas, D., et al. (2013). Evidence-based marine protected area planning for a highly mobile endangered marine vertebrate. Biol. Conserv. 161, 101–109

[20] McLeod,E., Salm, R., Green, A, and Almany, J. (2009). Designing marine protected area networks to address the impacts of climate change. Front. Ecol. Environ. 7, 362370

[21] https://www.iucn.org/resources/issues-briefs/marine-protected-areas-and-climate-change and Simard, F., Laffoley, D. and J.M. Baxter (eds). (2016). Marine Protected Areas and Climate Change: Adaptation and Mitigation Synergies, Opportunities and Challenges. Full report. Gland, Switzerland: IUCN. https://portals.iucn.org/library/sites/library/files/documents/2016-067.pdf

waters,[22] and supporting blue economies and sustainable uses, such as tourism. For example, ocean-based tourism supports over 4000 jobs in the Bay of Fundy, and results in over $125 million in economic activity for New Brunswick alone[23]. A 2012 analysis of Scotland's proposed MPA network calculated potential economic benefits of £10 million.[24] According to the Organization for Economic Cooperation and Development, a recent comprehensive study found that protecting 10% of the ocean in MPAs would provide US $622- 923 billion in ecosystem service benefits over a period of 35 years.[25] Furthermore, the same study found that increasing protection from 10-30% would produce benefits that would outweigh any costs, with ratios between 3.17 and 19.77.

Protection Standards for MPAs

Although there is an increasing body of science on best practices for effective MPA design and management, there are currently no minimum protection standards for MPAs in Canada. Levels of protection can vary from fully-protected "no-take" areas to partially-protected multiple-use areas, to "paper parks" with little or no regulation of activities.[26] A fully protected, no-take area is one in which fishing, oil and gas activities, and mining, are prohibited. Fully protected areas should also prohibit, or at least limit, other industrial uses including aquaculture, shipping, dredging, and renewable energies.

Numerous studies show that partially protected areas provide only limited benefits;[27] they may help to prevent future degradation of marine ecosystems but they are unlikely to support the recovery of vulnerable populations.[28] A recent global analysis found that the most effective MPAs (i.e., those that produce greater species abundance, diversity and/or biomass) are fully-protected, no-take areas that are large, mature, physically isolated and well-enforced.[29] However, the study also found that the majority of MPAs that had only one or two of these features were not ecologically distinguishable from un-protected, fished sites.

Scientific studies have clearly shown that MPAs with weak protection will not only limit conservation benefits, but also hinder economic benefits.[27,29] Based on the scientific evidence, in order to effectively protect biodiversity and produce any benefits for fisheries, MPAs need to prohibit industrial activities such as commercial fishing, oil and gas, mining and shipping, since these activities are known to negatively impact ecosystem health and function.[30] Canadians in all regions of the country have demonstrated an understanding of the magnitude of these threats and support the need to create more protected areas in order to safeguard the natural world. This has been highlighted in several nation-wide polls including most recently, a major public opinion survey, commissioned by the University of

---

[22] Cullis-Suzuki, S., and Pauly, D. (2010). Marine Protected Area Costs as "Beneficial" Fisheries Subsidies: A Global Evaluation. *Coast. Manag.* 38, 113–121.

[23] Gardner, Michael, and MacAskill, Gregor. (2010). Economic Impact of the New Brunswick Ocean Sector 2003-2008. Report prepared by Gardner Pinfold Consulting Economists Ltd., Nova Scotia, New Brunswick, for Fisheries and Oceans Canada and New Brunswick Department of Agriculture, Aquaculture and Fisheries. 40 pp.

[24] www.scotlink.org/files/publication/LINKReports/Valuing_the_benefits_MPA_Network_Scotland_Report_%28final%29.pdf

[25] https://www.oecd.org/environment/resources/Marine-Protected-Areas-Policy-Highlights.pdf

[26] Jessen, S., Morgan, L. E., Bezaury-Creel, J. E., Barron, A., Govender, R., Pike, E. P., et al. (2017). Measuring MPAs in Continental North America: How Well Protected Are the Ocean Estates of Canada, Mexico, and the USA? *Front. Mar. Sci.* 4, 1–12.

[27] Lester, S. E., and Halpern, B. S. (2008). Biological responses in marine no-take reserves versus partially protected areas. *Mar. Ecol. Prog. Ser.*

[28] Rife, A. N., Aburto-Oropeza, O., Hastings, P. A., Erisman, B., Ballantyne, F., Wielgus, J. (2013). Long-term effectiveness of a multi-use marine protected area on reef fish assemblages and fisheries landings. *J. Env. Man*

[29] Edgar, G. J., Stuart-Smith, R. D., Willis, T. J., Kininmonth, S., Baker, S. C., Banks, S., et al. (2014). Global conservation outcomes depend on marine protected areas with five key features. Nature 506, 216–220.

[30] Canadian Parks and Wilderness Society. (2015). Dare to be Deep – Are Canada's Marine Protected Areas really 'protected'? Annual report on Canada's progress in protecting our ocean. Ottawa: Canadian Parks and Wilderness Society. 49pp.

Northern British Columbia and CPAWS. This survey revealed that Canadians overwhelmingly believe protected areas are necessary and want about half of our land and sea protected for nature[31]

Current MPA process and protection in Canada

When it comes to MPAs, Canada is just beginning to catch up to the international community.[17] Since committing to meeting the CBD Aichi Target 11 of protecting at least 10% of coastal and marine areas by 2020, Canada recently been making good progress on ocean protection. According to Fisheries and Oceans Canada, as of December 2017, Canada has protected 7.76% of its marine territory.[32] Despite an increase in marine protection efforts, a 2016 analysis by CPAWS revealed that Canadian MPAs are weakly protected and less than 0.01% of Canadian waters are fully protected.[33] Since this publication several MPAs have been designated; however, the inconsistency in the implementation of Oceans Act MPAs and Other Effective Conservation Measures (OECMs) in Canada continues to pose concerns about an approach that seems to favour quantity over quality.[34,35] Reaching the target would be meaningless if the protected areas do not ensure the long-term protection of biodiversity or achieve the intended conservation objectives. To be credible on this file, Canada needs to re-focus our energies on ensuring quality of protection and science-based protection standards are needed to do this.

The lack of science-based protection standards for MPAs in Canada is a significant challenge to MPA designation and effectiveness.[36] Inconsistent regulations erode confidence in marine conservation initiatives and create an environment where there is little trust among stakeholders, who often feel singled out by the inconsistent application of regulations. As a result, every single human activity must be negotiated for each MPA, even when activities are in direct contravention of the conservation objectives. This also has the effect of prolonging stakeholder consultation, resulting in very lengthy and expensive MPA designation processes.[37]

A 2016 analysis by CPAWS found that the majority of Canadian MPAs are weakly protected; less than 0.01% of Canadian waters are in fully protected, no-take areas.[26] Since this analysis was published a number of new MPAs have been designated such as St. Anns Bank MPA, which includes measures to fully protect 75% of the area from fishing and 100% of the area from oil and gas, which will consequently increase the total percentage of fully protected Canadian waters. However, not all proposed MPAs provide the same level of protection. Proposed sites like the Laurentian Channel MPA, which could permit oil and gas development in 80% of the area, and the Scott Islands marine National Wildlife Area which does not restrict any existing activities, do not adequately protect the biodiversity of these areas. According to the best available science, these "MPAs" will produce limited, if any, benefit to biodiversity or fisheries. Consequently, poorly protected areas should not contribute to the percentage of Canada's marine conservation targets. The importance and immediate need for strong protection standards for all areas counting towards Target 11 (MPAs, OECMs, Indigenous Protected Areas) is evident. CPAWS is pleased that the Panel has been mandated to use the IUCN Guidance [25] as a baseline for developing

---

[31] http://cpaws.org/uploads/SpaceForNature_SurveyReport_ENG_FINAL.pdf

[32] http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201804_03_e_42994.html#ex4

[33] Jessen, S., Morgan, L. E., Bezaury-Creel, J. E., Barron, A., Govender, R., Pike, E. P., et al. (2017). Measuring MPAs in Continental North America: How Well Protected Are the Ocean Estates of Canada, Mexico, and the USA? Front. Mar. Sci. 4, 1–12.

[34] https://www.hakaimagazine.com/news/is-canada-taking-shortcuts-to-hit-its-marine-protection-targets/

[35] https://www.thestar.com/news/gta/2017/12/29/the-federal-government-says-it-has-protected-almost-8-of-canadas-oceans-heres-why-its-math-is-questionable.html

[36] Fox, H. E., Mascia, M. B., Basurto, X., Costa, A., Glew, L., Heinemann, D., et al. (2012). Reexamining the science of marine protected areas: Linking knowledge to action. *Conserv. Lett.*

[37] McCrea-Strub, A., Zeller, D., Rashid Sumaila, U., Nelson, J., Balmford, A., and Pauly, D. (2011). Understanding the cost of establishing marine protected areas. *Mar. Policy*.

recommendations for minimum standards for MPAs in Canada. We urge the Panel to support their application in Canada.

CPAWS Recommendations for MPA Standards

Anthropogenic stressors, including climate change and pollution, create a combined scenario of cumulative environmental effects that have been shown to exacerbate negative impacts to the marine ecosystems when acting in concert.[38] All types of harmful human stressors and associated impacts should be explicitly addressed in MPA legislation, protection standards and management plans.

A soon to be published study by Devillers et al. at Memorial University has shown how industry influence led to weakened protection measures and reduced the size of the Laurentian Channel MPA.[39] Similarly in BC, despite evidence on the negative impact on sea bird colonies,[40] the area of interest for the Scott Islands marine National Wildlife Area has been shrunk to avoid areas important to seabirds in order to accommodate fishing interests. This approach to MPA development compromises the objectives and effectiveness of MPAs to appease industry and sacrifices long-term gain to reduce short-term costs. In order for MPAs to work, and to provide the in-situ conservation of biodiversity and fisheries, activities which are known to be harmful to marine life must be prohibited.

CPAWS strongly recommends that the panel support the IUCN guidelines and their application to Canada. We urge you to highlight the activities that will undermine protection of biodiversity in MPAs, and therefore should not be allowed in any of Canada's MPAs, in keeping with the IUCN guidelines. CPAWS is particularly concerned about the double standard of protection that currently exists between our terrestrial and marine protected areas. More detailed specific prohibitions are outlined later in this document. **The IUCN guidelines apply to both terrestrial and marine protected areas, and clearly articulate that any activities in protected areas must advance and be compatible with the protection of biodiversity.** [41] Recently the IUCN has provided an updated guidance document on applying the global conservation standards to MPAs and states that "Any industrial activities and infrastructural developments (e.g. mining, industrial fishing, oil and gas extraction) are not compatible with MPAs."

CPAWS recommends that the minimum standards for MPAs and other areas counting towards conservation targets include the following:

i. Prohibitions on bottom trawling and disturbance of bottom habitat (dumping and dredging)

All commercial fishing activities impact marine habitats and communities in a variety of ways.[42] As stated in the IUCN guidelines for applying protected area management categories to MPAs, "…commercial and recreational fishing always has some level of ecological impact..."[43] Commercial fishing methods such as bottom trawling and dredging cause severe destruction to fragile seafloor habitats and communities that support a diversity of marine life.[44] Catch of inadvertent species,

---

[38] Crain, C. M., Kroeker, K., and Halpern, B. S. (2008). Interactive and cumulative effects of multiple human stressors in marine systems. *Ecol. Lett.* 11, 1304–1315.

[39] Devillers, R., Pressey, R. L., Grech, A., Kittinger, J. N., Edgar, G. J., Ward, T., et al. (2015). Reinventing residual reserves in the sea: Are we favouring ease of establishment over need for protection? *Aquat. Conserv. Mar. Freshw. Ecosyst.*

[40] Werner, T. B., Northridge, S., Press, K. M. C., and Young, N. (2015). Mitigating bycatch and depredation of marine mammals in longline fisheries. *ICES J. Mar. Sci.*

[41] https://www.iucn.org/sites/dev/files/content/documents/applying_mpa_global_standards_final_version_050418.pdf

[42] Canadian Science Advisory Secretariat. (2010) Potential impacts of fishing gears (excluding mobile bottom-contacting gears) on marine habitats and communities. [Accessed February 1, 2018].

[43] Day, J., Dudley, N., Hockings, M., Holmes, G., Laffoley, D., Stolton, S., et al. (2012). Guidelines for Applying the IUCN Protected Area Management Categories to Marine Protected Areas. Gland, Switzerland: IUCN.

[44] Fuller, S. D., Murillo, F. J., Wareham, V., & Kenchington, E. (2008). Vulnerable marine ecosystems dominated by deep-water corals and sponges in the NAFO convention area.

entanglement and ecosystem imbalance through the removal of top predators and foundation species are other documented impacts from these activities.[42] Polling by WWF Canada shows that the majority of Canadians, 87%, believe MPAs should not allow bottom trawling.[45]

ii. Prohibitions on oil and gas and mineral exploration and development

All aspects of oil and gas industry, from exploration to production, pose serious threats to marine species and ecosystems. Seismic surveys, used to find oil and gas deposits, involve the use of high intensity sounds that can be heard up to 4,000 kilometers away and can occur almost daily for up to a year.[46] As whales rely heavily on sensitive hearing for feeding and communicating, analyses have found that these emitted sounds have been linked to a wide range of impacts from prey avoidance and changes in behaviour,[47] to stranding events, death and population decline.[48] Upon production, an oil rig poses numerous threats to marine life through strike- and flare-related seabird death as well as oil spills. An estimated 250,000 sea birds were thought to have died as a result of the Exxon Valdez oil spill in 1989.[49]

The recent announcement of Natural Resources Canada and the Canada Newfoundland and Labrador Offshore Petroleum Board approving a joint decision to lease the protected waters of the Northeast Newfoundland Slope prove that this is a real problem requiring immediate attention. The majority of Canadians are in agreement as demonstrated by over 10,000 submissions against the plan to allow oil and gas in the proposed Laurentian Channel MPA. This shows the depth of public support for oil-free MPAs. Furthermore, a poll by WWF Canada showed that 80% of Canadians believe that MPAs should not allow oil and gas activities. [45]

iii. Restrict Shipping and Vessel Traffic

Due to Canada's large shipping and marine cargo industry, the effects of shipping traffic and infrastructure should not be underestimated. The shipping industry poses many risks to the marine environment including: habitat destruction by port infrastructure, invasive species distribution, pollution and contamination, ship-strike fatalities, and noise pollution from vessel traffic.26 Scientists found that the background shipping noise is so loud in the St. Lawrence Estuary, that Belugas have to increase the frequency of their calls, effectively "shouting" to communicate.[50] Disruptions in socializing, hunting and feeding risk affecting reproductive success and use of critical feeding ground, resulting in potentially dire consequences for entire whale populations.[51] CPAWS believes that more study of shipping impacts is urgently needed, and that shipping and vessel traffic must not compromise the MPA conservation objectives and that anchoring must not be allowed in sensitive benthic areas within MPAs. In addition, more work is required to move shipping lanes out of sensitive areas that are important for seabirds, whales and other species.

---

[45] http://d2akrl9rvxl3z3.cloudfront.net/downloads/wwf_environics_report_mar26.pdf

[46] Weller, D., Ivashchenko, Y., Tsidulko, G., and Burdin, A. (2002). Influence of seismic surveys on western gray whales off Sakhalin Island, Russia in 2001. [Accessed January 31, 2018].

[47] Weilgart, L. (2013, November). A review of the impacts of seismic airgun surveys on marine life. In *CBD Expert Workshop on Underwater Noise and its Impacts on Marine and Coastal Biodiversity. London, United Kingdom* (pp. 1-10).

[48] Engel, M. H., Marcondes, M. C., Martins, C. C., Luna, F. O., Lima, R. P., & Campos, A. (2004). Are seismic surveys responsible for cetacean strandings? An unusual mortality of adult humpback whales in Abrolhos Bank, northeastern coast of Brazil. *Paper submitted to the IWC Scientific Committee, SC/56 E*, *28*.

[49] Piatt, J. F., & Ford, R. G. (1996, February). How many seabirds were killed by the Exxon Valdez oil spill. In *American Fisheries Society Symposium* (Vol. 18, No. 1993, pp. 2-5).

[50] Scheifele, P. M., Andrew, S., Cooper, R. A., Darre, M., Musiek, F. E., & Max, L. (2005). Indication of a Lombard vocal response in the St. Lawrence River beluga. *The Journal of the Acoustical Society of America*, *117*(3), 1486-1492.

[51] Lusseau, D. (2009). Vessel traffic disrupts the foraging behavior of southern resident killer whales. *Endang Species Res* 6, 211–221.

iv. Prohibitions on wind farms and tidal power development

It is critical that MPAs, and other areas being counted towards international targets address potential and future activities in addition to current threats. While renewable energy offers a mechanism to decrease our dependence on fossil fuels, there is evidence that there are consequences for the marine environment. As a result, such activities should be restricted in areas designated for conservation purposes.

v. Prohibitions on open-net pen aquaculture

The potential for and number of negative impacts associated with open-net pen aquaculture exceed that of closed, land-based facilities. While the degree of impact on the marine environment varies depending on the species involved, the magnitude or scale of the activity and local environment, impacts are often grouped into four broad categories: ecological interactions, genetic consequences, disease and parasites, and habitat alteration.[36] These impacts are not only detrimental to the ecological environment but also to local fisheries. Communities such as those along the Eastern Shore of Nova Scotia fought hard to keep open-net pen aquaculture out of their shorelines.[37] The Eastern Shore Islands were recently announced as an area of interest for a future MPA and in order for this site to work for both wildlife and local communities, it is critical that the MPA acts as a permanent solution to the threat of open-pen finfish aquaculture.

The recent audit on salmon farming in Canada by the federal Commissioner of the Environment and Sustainable Development revealed that salmon farms in Atlantic Canada and British Columbia are not properly managing farms to protect wild fish from threats posed by salmon farming, and there is a lack of regulation and monitoring.[38] This provides further evidence that open-net pen aquaculture, particularly finfish, should be prohibited in areas where conservation is a priority.

vi. MPA Management Standards

In addition to having strong regulations. to be effective MPAs must be well managed, monitored and enforced. Continual effort, capacity and resources are required to ensure that MPAs are well managed and able to achieve the conservation objectives. A recent study assessing the relationship between management structures (such as staff capacity, effective enforcement and informed management plans) and ecological impacts among 62 MPAs world-wide found that many MPAs failed to meet thresholds for effective management processes with widespread shortfalls in staff and financial resources.[14] The authors found that MPAs with adequate staff capacity had ecological gains 2.9 times greater than MPAs with inadequate capacity. The results show that implementation of MPAs without sufficient investment of human and financial capacity leads to limited, if any, benefits.

An integral aspect of MPA management involves effective enforcement and scientific monitoring. Studies show that a successful adaptive management plan involves enforcement strategies and using enforcement performance measures to inform ongoing management outcomes.[52] Tried and tested enforcement measures include:

- increasing and maintaining adequate monitoring/enforcement presence,
- promoting compliance through education and outreach,
- utilizing technology (i.e. vessel monitoring systems and aerial surveys),
- strengthening partnerships with indigenous and coastal communities and utilizing programs like the Guardian Watchmen, and
- imposing MPA violation sanctions and improving litigation.

In remote or large areas, where maintaining on-site presence can be challenging, beneficial technologies such as Vessel Monitoring Systems, remote radar, buoy- or platform-based radar, satellite vessel tracking, Automatic Identification Systems (AIS), improved visual capture systems, underwater acoustic sensors, remote video cameras, and aerial surveys are all recommended as effective enforcement tools.[52]

An effective MPA management plan also requires long-term scientific monitoring of the biological features to develop the management effectiveness evaluation. Through scientific monitoring, the conservation outcomes can be measured to determine whether predetermined management objectives are being achieved.[53] A successful example of this in Canada is the recently announced closure of bottom contact fishing within the SGaan Kinghlass-Bowie Seamount MPA in British Columbia. The Archipelago Management Board (AMB), which comprises representatives from the Council of Haida Nation, Parks Canada and DFO, has conducted extensive surveys of the ecosystem and fishing impacts, resulting in adjustments to proposed management measures.[54] The AMB has also commissioned studies of the impacts of vessel traffic on the species and ecosystems at the seamount.

v. Indigenous Approaches

In 2009, recognizing that MPAs would only be effective if they respected First Nations rights, concerns and interests, and wanting to fully understand how best to engage with First Nations in a respectful way on MPAs, CPAWS commissioned research to encourage broader understanding and identify promising approaches for collaboration on MPAs with First Nations. CPAWS published two reports: *Promising Approaches for Collaboration with First Nations on MPAs in British Columbia*,[55] which was based on a larger report *First Nations and Marine Protected Areas: An introduction to First Nations Rights, Concerns and Interests Related to MPAs on Canada's Pacific Coast.*[56] The research for these reports involved a series of interviews with First Nations on the BC coast, and with staff of First Nations organizations. CPAWS recognized First Nations as communities and governments with marine resource authorities with a pivotal role in MPA identification, establishment and management. Among the conclusions from this research were:

> The foundations for improving collaboration with First Nations on MPAs are: respect for rights and title; strengthened relationships; clarity around the potential benefits and risks of MPAs for First Nations; and situating MPAs in their broader ecological, spatial or policy/planning context. If ENGOs and governments work authentically towards those basic priorities, they can maximize the potential for earning support for MPAs from skeptical First Nations and for effective collaboration with those that are open to MPAs. This work also sets the stage for development of new tools or adaptation of existing mechanisms that will achieve the benefits of MPAs while addressing First Nations rights, concerns and priorities. Options with promise that particularly deserve support and/or further exploration include: tailoring MPAs to address First Nations interests, shared authority for MPAs, and pursuing MPA objectives at the regional and coast-wide scale.[57]

---

[52] Davis, B. C., & Moretti, G. S. (2005). Enforcing US marine protected areas synthesis report. NOAA. https://repository.library.noaa.gov/view/noaa/11356. (Accessed February 2, 2018)

[53] Addison, P. F. E., Flander, L. B., and Cook, C. N. (2015). Are we missing the boat? Current uses of long-term biological monitoring data in the evaluation and management of marine protected areas.

[54] https://www.newswire.ca/news-releases/haida-nation-and-canada-increase-protection-at-the-sgaan-kinghlas---bowie-seamount-marine-protected-area-670142283.html

[55] http://cpawsbc.org/upload/First_Nations_MPAs_Summary_Report_Oct2009.pdf

[56] http://cpawsbc.org/upload/First_Nations_MPAs_Full_Report_Oct2009.pdf

[57] http://cpawsbc.org/upload/First_Nations_MPAs_Summary_Report_Oct2009.pdf - page 3

Over the intervening time, CPAWS has sought to build relationships and partnerships with First Nations in BC and other Indigenous organizations elsewhere in Canada with an interest in protection of marine ecological and cultural values in their traditional territories. We have been advocates for true co-governance in the marine realm, for not only MPAs but broader ocean management.

Since the publication of these reports over 9 years ago, First Nations in BC have taken great strides on MPAs and marine planning in their traditional territories. They have become equal partners with provincial and federal governments in the development of a MPA network for the Northern Shelf Bioregion, and are involved in co-management of individual MPAs, including Sgaan Kinglass/Bowie Seamount MPA off Haida Gwaii, and Gwaii Haanas Haida Heritage Site/National Marine Conservation Area Reserve. Through the Marine Planning Partnership[58] and the development of marine use plans for their traditional territories in the Northern Shelf Bioregion in BC, First Nations have identified potential MPAs and signalled the management intent for the protection management zones through the use of IUCN categories. Ensuring that cultural and ecological values of these areas are protected, has been a key focus for the First Nations in the region. The work in BC could serve as an instructive model for other Indigenous organizations and communities in Canada.

We are very excited to see the concept of Indigenous Protected Areas (IPA) receive more attention in Canada. Our experience working with the Haida Nation in Haida Gwaii, particularly on Gwaii Haanas Haida Heritage Site has demonstrated the importance of the IPA concept for ensuring protection of cultural and ecological values, and for establishing indigenous authority over these critically important areas.

IUCN has also provided some guidance on protected areas and Indigenous peoples' territories, and governance in this context, and intends to develop specific guidance on this issue, working with indigenous organizations.[59] IUCN notes that: "…the recognition of ICCAs (indigenous and community conserved areas) that fully meet protected area definitions and standards in national and regional protected area strategies is one of the most important contemporary developments in conservation." IUCN identifies four broad types of protected area governance, including governance by indigenous peoples and local communities.[60]

Canada's Commitment to Marine Protection

Over the past two years there has been tremendous effort from the Canadian government to meet its marine conservation targets, including draft amendments to the Oceans Act under Bill C-55 that would allow for the establish interim protection for sites while they are being considered, among other things. Without interim protection measures, harmful activities continue to damage ecosystems while an MPA is being developed.[61] Freezing the footprint may prevent damage from new activities, but it would not stop damage from existing activities, especially when existing activities have been scientifically proven to pose significant threats to known ecological values.

For example, during the designation process of the Hecate Strait and Queen Charlotte Sound glass sponge reef MPA, scientists learned that there was ongoing or recent damage in some regions from bottom contact fishing gears, like prawn traps and long lines.[62] The reefs are thousands of years old and

[58] MaPP – Marine Planning Partnership - http://mappocean.org/

[59] https://www.iucn.org/sites/dev/files/import/downloads/iucn_assignment_1.pdf - page 28-31

[60] Ibid p 26-31

[61] Ardron, J. A., Clark, M. R., Penney, A. J., Hourigan, T. F., Rowden, A. A., Dunstan, P. K., et al. (2014). A Systematic Approach towards the Identification and Protection of Vulnerable Marine Ecosystems. [Accessed February 1, 2018].

[62] Leys, S. P. Personal Communications.

may take hundreds of years to recover from damage, if they ever do.[63] The Hecate Strait and Queen Charlotte Sound glass sponge reefs were known to be at risk for 15 years before being designated as an MPA. The longer an MPA consultation process takes, the longer species and ecosystems remain at risk.

Over the past decade, there has been a global push to establish MPAs. Countries like the United Kingdom, the United States of America, Mexico, Chile, and Palau have embraced large, effective MPAs. After years of slow progress, minimal MPA coverage and drawn out consultation processes, Canada is running to catch up to meet the international targets. Most of Canada's MPAs are small, and current protection standards for existing MPAs are weak.

Despite some misgivings about certain sites and protection standards, Canada has made a commendable push in marine conservation over the past couple of years. The government's amendments to the Oceans Act are a good start. A positive shift in protection standards is the addition of "ecological integrity" as a criterion for the establishment of MPAs at the request of Elizabeth May and on the recommendation of Environmental NGOs.[64] This would be in keeping with the language in the UN Convention on Biological Diversity, which refers to maintaining ecological integrity of protected areas in order to ensure effective management.[65] Other improvements include the incorporation of interim protections into the Oceans Act, as well as measures to support the prohibition of oil and gas activities, and the proceedings of the National Advisory Panel on MPA Standards.

Conclusion

MPAs offer a powerful tool to protect biodiversity, but the quality of MPAs is compromised in Canada, largely due to weak regulation and lack of standards. In order to be a global leader in ocean conservation, Canada needs rigorous standards in legislation for all protected areas counting towards Aichi Target 11, to ensure coastal and marine areas are properly protected for generations to come

Not only would adopting the 2016 IUCN resolution make good ecological sense, it makes good economic sense. In their report on MPA economics, management and policy, the OECD cite a recent global study by Brander et al. published in 2015, which calculated the total ecosystem service benefits of 10% coverage of MPAs between $US 600 and 900 billion and found that the benefits of expanding no-take areas by 10% and 30% far exceeded any short-term economic costs.[66]

The National Advisory Panel on MPA Standards has the opportunity to shape the future of marine protection in Canada by establishing science and traditional knowledge-based standards that will effectively protect ocean ecosystems. CPAWS would like to sincerely thank the National Advisory Panel on MPA Standards for your efforts to create a better future for our oceans. We look forward to reviewing the results of your work.

[63] Leys, S. P., Mackie, G. O., and Reiswig, H. M. (2007). The Biology of Glass Sponges. *Adv. Mar. Biol.*

[64] http://elizabethmaymp.ca/publications/2017/12/07/bill-c-55-government-passes-elizabeth-mays-amendments-on-marine-protected-areas/

[65] https://www.cbd.int/doc/strategic-plan/targets/T11-quick-guide-en.pdf

[66] Brander, L., Baulcomb, C., Sruc, E., Amrit, J., Van Der Lelij, C., Eppink, F., et al. (2015). The benefits to people of expanding Marine Protected Areas Final report Alistair McVittie (SRUC, Edinburgh). [Accessed February 1, 2018].

Report Prepared By

Sabine Jessen, National Director, Ocean Program, CPAWS
Ross Jameson, Ocean Conservation Manager, CPAWS British Columbia
Roberta Clowater, Executive Director, CPAWS New Brunswick
Meghan Borland, Marine Specialist, CPAWS Nova Scotia

For more information, please contact:
sabine@cpaws.org

CPAWS
CANADIAN PARKS AND WILDERNESS SOCIETY

506-250 City Centre Ave, Ottawa ON KIR 6K7

Telephone (613) 569-7226 | Toll Free: 1-800-333-WILD (9453) | Fax: (613) 569-7098

info@cpaws.org | www.cpaws.org