Advice for consideration in the multi-departmental process to implement minimum standards of the National Advisory Panel on Marine Protected Area Standards

December 2020

This document was developed by staff from the Canadian Parks and Wilderness Society, Ecology Action Centre, the David Suzuki Foundation, Oceans North, West Coast Environmental Law and World Wildlife Fund Canada.

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SeaBlue CANADA

PURPOSE

This document provides advice from SeaBlue Canada, a coalition of environmental non-government organizations with extensive experience in marine protected area (MPA) establishment and management.[1] The advice in this document is based on the Protected Spaces 1 and Protected Spaces 2 recommendation sections of the Final Report of the National Advisory Panel on MPA Standards and the government of Canada's 2019 commitment to apply protection standards to all federal MPAs. Further progress is needed on the panel's remaining recommendations on Crown-Indigenous relations, collaborative planning and design, and marine spatial planning. **We urge the federal government and relevant departments to take action on addressing the remaining recommendations of the panel with primary importance given to advancing Indigenous Protected and Conserved Areas (IPCAs).**

[1] SeaBlue Canada is the Canadian Parks and Wilderness Society, the David Suzuki Foundation, Ecology Action Centre, Oceans North, West Coast Environmental Law and World Wildlife Fund Canada.

SUMMARY OF RECOMMENDATIONS

Government Response to MPA Standards Panel Recommendations
1. As a matter of urgency, relevant government departments should develop a response to the remaining recommendations of the panel, and where necessary seek additional advice on supporting the implementation of Indigenous protected and conserved areas.
Ocean Dumping
2. The Canadian government adopts and incorporates a comprehensive definition of "dumping" within Canadian MPA legislation in order to safeguard biodiversity by ensuring that no harmful substances are dumped within Canadian MPAs. Noting that management actions will vary with vessel size, this definition should include: • ballast water; • sewage (treated and untreated); • grey water (treated and untreated); • effluents from exhaust gas cleaning systems (scrubber liquid effluent); • solid waste (including plastics); • oil discharges; and • aquaculture waste.
3. Long-term management objectives should be established to address other forms of dumping that primarily fall under the jurisdiction of other governments and agencies, such as municipal and residential sewage outflows, agricultural runoff and dumping from coastal and marine industries.
Bottom Trawling and Bottom Fishing
4. Canada should agree to a total prohibition on bottom trawling within all new and existing federal MPAs and Other Effective Conservation Measures (OECMs) in order to safeguard them from the most harmful fishing activities. In existing MPAs where trawling or dredging is permitted, if a full prohibition cannot be achieved, the trawling footprint should be frozen at its current size and the affected area should not be counted toward international marine-conservation targets. We strongly recommend that this second approach for existing MPAs be used minimally.
5. The prohibition on bottom trawling should include all trawling for scientific purposes and fisheries surveys within the bounds of MPAs, OECMs or any other sites that are determined to be sensitive or protected. This practice should be phased out over time, and we strongly support the recommendation, stemming from a recent Canadian Science Advisory Secretariat process, that alternative, non-destructive methods for research and monitoring in protected areas be explored and developed as part of a monitoring and management plan.
6. All bottom fishing activities and those methods known to potentially impact the sea floor should be prohibited unless it can be demonstrated that they do not impact the conservation objectives or ecological integrity of the site.
7. Unless midwater trawling can be proven to not come into contact with the sea floor, for example by

using cameras on the gear as it is fishing, this type of trawling should be prohibited within protected areas.
Oil and Gas
8. An outright prohibition on oil and gas activities within MPAs should be implemented. This could resemble that found in Section 13 of the *Canadian National Marine Conservation Act* (CNMCA). This type of prohibition would standardize all Canadian MPA legislation. Management plans for existing MPAs should be updated to reflect the minimum standards at the earliest five-year management-plan review.
9. The federal government should rescind any existing oil and gas licences within MPAs using its new powers under the *Canada Petroleum Resources Act*[2] where that act applies (Pacific, Arctic). [3]
10. For the Canada–Newfoundland and Labrador Offshore Petroleum Board, as the land tenure process is re-evaluated, all areas that are either protected, slated for protection or where significant benthic areas occur should be exempted from future leasing initiatives.
11. For the Canada–Nova Scotia Offshore Petroleum Board, which we expect will undergo a similar regional-assessment process as was recently undertaken in Newfoundland and Labrador, any areas currently protected or slated for protection or where significant benthic areas occur should be excluded from any future oil and gas leasing or bid-approval process. This should be made clear in any regional-assessment process.
Mining
12. All mining, including sand and gravel extraction should be prohibited in MPAs, similar to the prohibition found in Section 13 of the *CNMCA Act*, which should be enshrined in other MPA legislation to most effectively protect all MPAs from undersea mining. This type of prohibition would standardize all Canadian MPA legislation. It also aligns with international best practice: for example, Australia's *Great Barrier Reef Marine Park Act* 1975 prohibits all mining within the boundaries of the Great Barrier Reef Marine Park.[4]
Additional Activities
13. Open-net pen finfish aquaculture should be prohibited in all MPAs. Entanglement risks of all aquaculture operations, including shellfish aquaculture, should be carefully considered during risk assessments for protected areas that are important for marine mammals.
14. The impacts of shipping should receive additional scrutiny during the risk-assessment phase of MPA establishment, with particular attention paid to the risks of spills, noise and marine mammal strikes. Shipping corridors should be considered wherever possible, with the goal of avoiding protected areas. Where impacts cannot be mitigated, shipping should be prohibited.
15. Seismic activity should be prohibited within any MPA, and the impacts of seismic activity in waters adjacent to MPAs should be considered as part of risk assessments.
16. Renewable-energy developments that require substantive infrastructure or have the potential to

[2] Canada Petroleum Resources Act, RSC 1985, c. 36 (2nd Suppl), ss 12(1), 12.1(1). https://laws-lois.justice.gc.ca/eng/acts/c-8.5/FullText.html
[3] Canada Petroleum Resources Act, RSC 1985, c. 36 (2nd Suppl), ss 12(1), 12.1(1). https://laws-lois.justice.gc.ca/eng/acts/c-8.5/FullText.html
[4] Great Barrier Reef Marine Park Act 1975 (Cth). https://www.legislation.gov.au/Details/C2017C00279

impact the conservation objectives or ecological integrity of a site should not be permitted within protected areas.
Applying Minimum Standards to All Sites Counting as Protected Areas
17. Minimum standards are applied to all areas counted toward protected-area targets.
18. Fisheries and Oceans Canada should work with relevant authorities to apply the MPA minimum standards to ban dumping, bottom trawling, oil and gas activity and mining, following the definitions above, from the 283,365 km^2 of OECMs in Canadian waters, in addition to any future OECMs.[5] This could be accomplished in part through upgrades to Canada's OECM guidance that are explicit about the minimum standards.
19. In the event that all efforts have been made to prohibit oil and gas activities within OECMs but have not succeeded, areas that include oil and gas exploration or development should not be counted toward national or international targets.
20. In the interim, the DFO should ensure that Canada–Nova Scotia Offshore Petroleum Board and Canada–Newfoundland and Labrador Offshore Petroleum Board include marine refuge boundaries in addition to significant benthic areas on their leasing maps in order to provide proponents with complete information on conservation planning in regions of focus for the industry.
21. The relevant authorities should review all existing sites counted toward Canada's marine-protection targets, including provincially designated sites, National Parks, National Wildlife Areas and Migratory-Bird Sanctuaries, and ensure the protection standards apply and are being implemented. Where necessary, the governing bodies should work with provincial governments and other agencies to achieve this.
Legal Implementation of Protection Standards
22. Protection standards for Canadian MPAs and OECMs should be enshrined in legal and regulatory frameworks to ensure the effective, long-term conservation of biodiversity.

[5] *Canada's marine protected and conserved areas* (2020, July 17). http://www.dfo-mpo.gc.ca/oceans/conservation/areas-zones/index-eng.html

BACKGROUND


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Canada has positioned itself as a world leader in ocean protection by joining the Global Ocean Alliance and calling for progress toward protecting 30% of our global oceans by 2030. This is an important step toward rebuilding ocean resilience. The government of Canada's 2019 commitment to apply protection standards to all new federal MPAs marked a shift in Canada's approach to marine conservation. Historically, in the absence of protection standards, prohibitions and exceptions for ocean activities have been negotiated for each MPA as conservation objectives are agreed upon and as the area is established through the regulatory process. As a consequence, federal MPAs lacked consistent standards of protection from harmful human activities, and many MPAs either explicitly or implicitly allow extractive activities, including commercial fishing and oil and gas activities.[1]

This disparity in protection has arisen in part because of the inconsistent and diverse legal frameworks governing MPAs: there are no outright prohibitions on extractive or industrial activities in MPAs in the *Oceans Act* or the *Canada Wildlife Act*.[6] And while the *Canada National Marine Conservation Areas Act* (*CNMCA Act*) prohibits undersea mining and oil and gas activities within National Marine Conservation Areas (NMCAs), it is silent on harmful fishing practices. As a result, Canadian MPA law and policy has failed to provide a baseline of protection for all MPAs to ensure effective in situ conservation of biodiversity. The situation has also created uncertainty and a lack of clarity for rights holders and stakeholders and has increased the time and effort required to designate new MPAs.[7]

SeaBlue Canada strongly believes that, especially in a time of climate and biodiversity crises, conservation must be the top priority in establishing protected areas. The MPA standards announcement in April 2019 was a welcome step forward for ocean protection in Canada. Now the conversation has shifted to focus on how these standards can be clearly defined and enacted to ensure that they contribute to effective in situ conservation of biodiversity in Canada's MPAs.

It is important to note that these protection standards do not currently apply to provincially designated sites or other effective area-based conservation measures (OECMs) put in place under the *Fisheries Act.* However, as these sites are counted toward Canada's marine-protection targets and thus are expected to deliver the same conservation and biodiversity protection outcomes as an MPA, they must be afforded the same level of protection. We address this issue later in the document (see "Applying minimum standards to all sites counting as protected" below).

[6] Oceans Act, SC 1996, c 31; *Canada Wildlife Act*, RSC 1985, c W-9
[7] *Canada National Marine Conservation Areas Act*, SC 2002, c 18.

In this document, we provide advice on ocean dumping, bottom fishing, oil and gas development and mining. In each section, we provide a suggested definition and rationale, review impacts and current management or governance context and then present our recommendations. We also identify and offer recommendations for a number of activities not included in the minimum standards but which present a significant conservation concern and require robust management or evaluation. Finally, we present practical recommendations for implementing the minimum standards, including legal options.

OCEAN DUMPING

Definition

In Canadian legislation, "dumping," "disposal," "discharge," and "deposit" are used synonymously and/or considered a component of another's definition. Without clarity, prohibiting dumping under the new standards for MPAs may become subject to interpretation.

SeaBlue Canada considers a comprehensive definition of dumping in MPAs to include those from shipping and vessels as well as coastal development, marine industries and potential future activities.

With respect to shipping and vessels, the definition of dumping should include the release of all harmful substances from all types of vessels: commercial vessels, including cargo ships, tankers, tugs and barges, ferries, cruise ships and other large commercial tourism vessels; fishing vessels; and recreational vessels.

The list of harmful substances should include:

- sewage (treated and untreated);
- grey water (treated and untreated);
- ballast water exchange;
- effluents from exhaust gas cleaning systems (scrubber liquid effluent);
- solid waste (including plastics, fishing gear, aquaculture debris and garbage);
- oil discharges; and
- feed, fish waste, escapees, chemicals and debris that may be discharged into the water column from open-net pen aquaculture.[8]

We recognize that municipal sewerage, coastal industries and, in some provinces, aquaculture fall under the

[8] As currently written and applied, the Aquaculture Activity Regulations do not prevent deleterious substances from entering the water column during the course of aquaculture operations.

jurisdiction of other agencies and governments. However, these activities can pose real and significant threats to marine ecosystems. Where inclusion under the minimum standards might not be feasible, we provide specific recommendations below that apply to multi-jurisdictional management processes, including site-specific advisory committees. In some cases, aspects of dumping included here will need to be addressed after an MPA is established.

Other activities we consider to meet the definition of dumping include:

- discharging coastal sewer and stormwater;
- discharging waste (including marine debris) from coastal industrial activities such as forestry, power stations and pulp mills;
- disposing of dredging and mining waste; and
- new activities such as the augmentation of the marine environment through iron fertilization and other place-based attempts to address ocean acidification.

These activities should be required to undergo a formal impact assessment, as they may have undesired long-field effects in protected spaces.

Impacts

The dumping of sewage, grey water, solid waste, scrubber liquid effluent, ballast water and oil threatens marine habitats and ecosystems as well as coastal communities. For example, sewage and grey water can increase the amount of nutrients in surrounding water and spread harmful bacteria and disease, posing risks to human health.[9,10,11] Discharging ballast water can introduce non-native species and negatively affect native species and ecosystems.[12] Lastly, the toxicity of scrubber liquid effluent, oil and garbage can affect the physiological processes, foraging and reproduction of marine birds, mammals, fish and other organisms.[13,14,15,16]
Open-net pen aquaculture results in the release of escapees, fish waste (solid and dissolved), pathogens, nutrients and feed, and other chemicals into adjacent waters, which can affect local ecological systems.[17] It can also generate significant amounts of solid waste from damaged or displaced infrastructure (e.g. plastic nets and tubing) and can result in mass escapes of farmed salmon into the marine ecosystem, which can negatively affect wild salmon in many ways.[18]

Municipalities and communities can be a major source of pollution through the release of sewage via sewers and storm drains, at times resulting in coliform levels that pose a public health concern. In addition to coliform, sewage contains harmful chemicals as well as pharmaceuticals and medications, which can poison and produce harmful

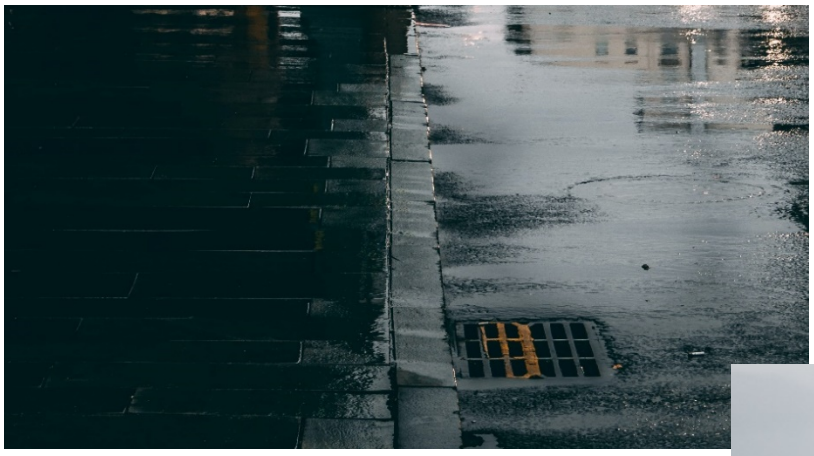
[9] Nowlan, L. and Kwan, I. 2015. Cruise Control – Regulating Cruise Ship Pollution on the Pacific Coast of Canada. West Coast Environmental Law. Retrieved from: https://georgiastrait.org/wp-content/uploads/2015/02/CruiseControl_WCEL.pdf
[10] Geburzi J.C. and McCarthy M.L. How Do They Do It? – Understanding the Success of Marine Invasive Species. In: YOUMARES 8 – Oceans Across Boundaries: Learning from each other (eds, Jungblut S., Liebich V. and Bode M.), https://doi.org/10.1007/978-3-319-93284-2_8 (Spring, 2018).
[11] Bellis K.X.T, Peet R.T., Irvine R.L., Howald G. and Alsop G.J. Beyond biodiversity: the cultural context of invasive species initiatives in Gwaii Haanas. In: Island invasives: scaling up to meet the challenge. 494–496 (IUCN, 2019).
[12] Ricciardi, A. Tracking marine alien species by ship movements. Proceedings of the National Academy of Sciences of the United States of America 113(20): 5470-5471, doi:10.1073/pnas.1605152113 (2016).
[13] Johannessen, D. I. et al. Marine environmental quality in the North Coast and Queen Charlotte Islands, British Columbia, Canada: A review of contaminant sources, types, and risks. 101 (Fisheries and Oceans Canada, Sidney, BC, 2007).
[14] Nowlan, L. and Kwan, I. 2001. Cruise control: Regulating cruise ship pollution on the Pacific coast of Canada. Retrieved from: https://www.wcel.org/publication/cruise-controlregulating-cruise-ship-pollution-pacific-coast-canada
[15] International Maritime Organization (IMO). 2019. Scrubber Environmental Impact Literature Review. Retrieved from: https://1u594u31nvw01cjgyx4gvsr15ge-wpengine.netdna-ssl.com/wp-content/blogs.dir/1/files/2019/08/MEPC-74-INF.10-Scrubber-Environmental-Impact-Literature-Review-Panama-2019.pdf
[16] Moore-Maley, B. L., Ianson, D. and Allen, S.W. 2018. The sensitivity of estuarine aragonite saturation state and pH to the carbonate chemistry of a freshet-dominated river. Biogeosciences 15(12): 3743-3760.
[17] Dauda, A. B., Ajadi, A., Tola-Fabunmi, A. S., & Akinwole, A. O. (2019). Waste production in aquaculture: Sources, components and managements in different culture systems. Aquaculture and Fisheries, 4(3), 81–88. https://doi.org/10.1016/j.aaf.2018.10.002
[18] Ford, J. S., & Myers, R. A. (2008). A global assessment of salmon aquaculture impacts on wild salmonids. *PLoS Biol*, *6*(2), e33.

physiological and behavioural effects in marine species, including changes to reproduction and predator avoidance. Coastal industries such as forestry, pulp and paper mills, power stations and others can release various toxic and harmful substances including debris, chemicals and heated water, which can have a variety of effects. Although some of these impacts might be occurring at relatively low levels, they all present a risk to marine ecosystems, which inevitably put them at odds with MPA regulations and conservation objectives.

There have been proposals and pilot projects to augment ocean productivity and reduce the impacts of climate change, ranging from the addition of iron to ostensibly improve ocean productivity[19] to proposals for reducing ocean acidification. There may be other unanticipated developments that release potentially deleterious substances into the environment. The impacts of these activities are generally unknown, and as such they will require a formal impact assessment as well as a consideration of their effects on adjacent marine ecosystems, including any areas slated for or under protection.

Current status

While the *Oceans Act* does not contain specific language around dumping, regulations for some, but not all, MPAs created under the act prohibit any person from carrying out any activity—including depositing, discharging or dumping any substance or causing any substance to be deposited, discharged or dumped—within or in the vicinity of the MPA that is likely to result in the disturbance, damage, destruction or removal of any living marine organism or any part of its habitat.[20] That said, specifics about what dumping entails are not made clear in the text of the statute or regulations.



There is a limited set of prohibitions established by the *CNMCA Act*, which addresses shipping impacts, including a ban on disposal of substances unless permitted. While the *Canada Wildlife Act* does not include language specific to prohibiting dumping, the Scott Islands Protected Marine Area Regulations prohibit all activity that is likely to disturb, damage or destroy wildlife or wildlife habitat, including dumping, discharging and introducing invasive species, among other impacts from shipping, unless otherwise in compliance with the *Canada Shipping Act.* [21]

[19] Omand, G. (2016, April 24). *Controversial Haida Gwaii ocean fertilizing experiment pitched to Chile*. CBC https://www.cbc.ca/news/canada/british-columbia/haida-gwaii-ocean-fertalizing-chile-1.3550783

[20] The Gully Marine Protected Area Regulations, SOR/2004-112; Musquash Estuary Marine Protected Area Regulations, SOR/2006-354; Gilbert Bay Marine Protected Area Regulations, SOR/2005-295; Eastport Marine Protected Area Regulations, SOR/2005-294; Tarium Niryutait Marine Protected Areas Regulations, SOR/2010-190; Bowie Seamount Marine Protected Area Regulations, SOR/2008-124.

[21] Scott Islands Protected Marine Area Regulations, SOR/2018-119.

The *Fisheries Act* prohibits the disposal and deposit of certain substances, including the deposit of deleterious substances of any type in water frequented by fish, but does not include any specific prohibitions on dumping within OECMs.[22]

One of the challenges in regulating dumping is that it is not clearly or comprehensively defined in Canadian legislation. Canadian laws use several different terms to describe dumping, including "dumping," "disposal," "discharge" and "deposit," many of which can and do apply to harmful dumping in the ocean. For example, the *Canada Shipping Act* refers to "dumping" under the term "discharge" and encompasses the direct or indirect discharge of a pollutant into the water.[23] The *Canadian Environmental Protection Act* does not explicitly mention dumping but refers to disposal of substances at sea and the deposit of substances on the ice in the area of the sea, among others.[24]

These terms and accompanying provisions all fall short because they do not specifically include many substances that are harmful to the marine environment, including sewage, effluent, grey water, garbage, scrubber liquid effluent or dredged material, because they are considered part of a vessel's normal operations. The minimum standard on dumping must include these substances if it is to effectively protect MPAs.

[22] *Fisheries Act*, RSC 1985, c F-14, s 36.
[23] Canada Shipping Act, 2001, SC 2001, c 26, s 165: "discharge means a discharge of a pollutant from a vessel, or a discharge of oil from an oil handling facility engaged in loading to or unloading from a vessel, that directly or indirectly results in the pollutant entering the water, and includes spilling, leaking, pumping, pouring, emitting, emptying, throwing and dumping."
[24] Canadian Environmental Protection Act, 1999 SC 1999, c 33, s 122, "disposal".

Recommendations

1. The Canadian government should adopt and incorporate a comprehensive definition of “dumping” within Canadian MPA legislation in order to safeguard biodiversity by ensuring that no harmful substances are dumped within Canadian MPAs. Noting that management actions will vary with vessel size, this definition should include the disposal of:
    - sewage (treated and untreated);
    - grey water (treated and untreated);
    - ballast water exchange;
    - effluents from exhaust gas cleaning systems (scrubber liquid effluent);
    - solid waste (including plastics);
    - oil discharges; and
    - aquaculture waste.
2. In addition to this, long-term management objectives should be established to address other forms of dumping that primarily fall under the jurisdiction of other governments and agencies, such as municipal and residential sewage outflows, agricultural runoff and dumping from coastal and marine industries.
3. Safe disposal of shipping and vessel traffic waste will require additional onshore facilities in many areas. As part of MPA establishment, the risk-assessment process should include the availability of onshore facilities to deal with this waste, and augmenting these facilities should be part of MPA management.

BOTTOM TRAWLING AND OTHER BOTTOM-FISHING ACTIVITIES

Definition

Trawling and dragging fisheries involve towing heavy nets, chains and doors across the ocean floor to catch fish, crustaceans and shellfish. While DFOs minimum protection standards refer specifically to bottom trawling, this term can encompass a number of bottom-contact fisheries that use heavy gear, including scallop dredging, shrimp, otter, and beam trawling, and hydraulic dredging.

Bottom fishing includes any fishing that takes place using fishing gear that makes contact with the sea floor. Bottom fisheries may use traps, nets or lines. Midwater trawling can also impact the sea floor and should be considered a form of bottom fishing unless measures are in place to ensure no bottom contact is made.[25] While the National Advisory Panel on MPA Standards focused only on bottom trawling in its recommendations, SeaBlue Canada includes bottom fishing within the recommendations in this document. Considering bottom fishing in this way is

[25] NAFO CEM https://www.nafo.int/Portals/0/PDFs/COM/2019/comdoc19-01.pdf

consistent with how Canada currently implements its OECM protected areas under its Policy to Manage the Impacts of Fishing on Sensitive Benthic Areas (SBA Policy), which includes all bottom-contract fishing gear. It is also consistent with the United Nations General Assembly (UNGA) Resolution 61/105, agreed to by Canada and other states, which references bottom-fishing activities.

Impacts

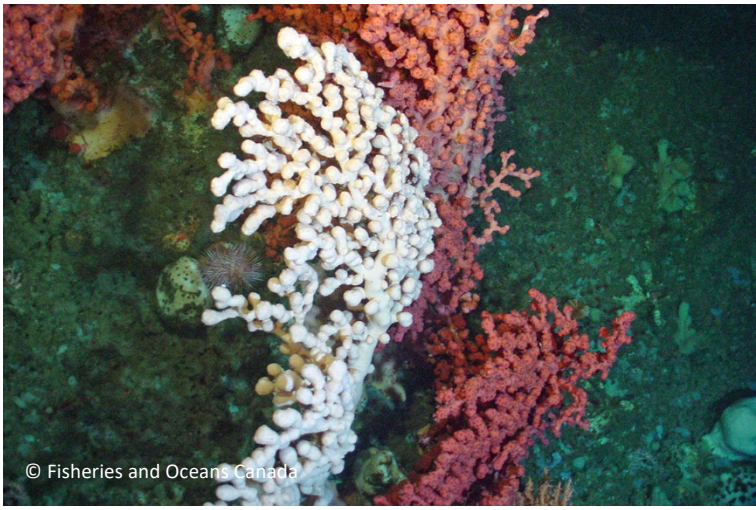
There is global scientific consensus that bottom trawling is one of the most damaging fishing methods. Bottom trawling is particularly detrimental to biodiversity within MPAs through the damage and destruction of marine habitats caused by the gear, the large-scale and unselective extraction of fish and invertebrate species, and the indirect consequences of both of these on marine food webs and ecosystem function.[26] Trawl and dredge equipment is particularly damaging to seabed habitat. It damages and destroys habitat-forming structures on the sea floor (e.g. rocky reefs, deep water corals and sponges), re-suspends sediments (thus impacting filter feeding organisms) and reduces the diversity and abundance of organisms associated with sea floor habitats.[27] There is also growing evidence that the re-suspension of sediments releases carbon and toxins that had been sequestered into the sea floor sediment back into the ocean.

The impacts of bottom fishing vary depending on gear and the environment. Corals and sponges can be significantly impacted by any bottom-contact fishing gear, including traps and bottom longlines. When being placed and retrieved, even fixed gear can be moved along the seabed, exacerbating impacts. Midwater trawls are also known to make contact with the sea floor when targeting certain species, as indicated by the somewhat regular presence of groundfish and benthic species in midwater trawl catches.

[26] Chuenpagdee, R. et al. (2003) Shifting gears: assessing collateral impacts of fishing methods in US waters. Frontiers in Ecology and the Environment, 1: 517–524. doi:10.1890/1540-9295(2003)001[0517:SGACIO]2.0.CO;2; Fuller, S.D. et al. 2008. How We Fish Matters: Addressing the Ecological Impacts of Canadian Fishing Gear. Retrieved from http://www.livingoceans.org/sites/default/files/HowWeFish.pdf

[27] See for example: Hiddink et al. 2017 Global analysis of depletion and recovery of seabed biota after bottom trawling disturbance. Proceeding of the National Academy of Sciences, 114(31): 8301-8306. www.pnas.org/cgi/doi/10.1073/pnas.1618858114; Althaus et al. 2009. Impacts of bottom trawling on deep-coral ecosystems of seamounts are long-lasting. Marine Ecology Progress Series, 397: 279-294. doi: 10.3354/meps08248; Ardron, J.A. (2005) Protecting British Columbia's Corals and Sponges from Bottom Trawling. A report by Living Oceans Society (v. 1.0).

Current Status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While the majority of the *Oceans Act* MPA regulations expressly or constructively prohibit bottom trawling within MPAs, bottom-trawl fishing gear is permitted within several sites, including the Basin Head, SGaan Kinghlas–Bowie Seamount MPA Gilbert Bay and Tarium Niryutait MPAs.[28] Bottom-trawl fishing is permitted within portions of the Scott Islands marine National Wildlife Area and within multiple use zones of Gwaii Haanas NMCA Reserve.[29] The DFO also currently conducts trawl surveys within MPAs for scientific monitoring purposes.

In 2006, the UNGA adopted Resolution 61/105, calling for the impacts of bottom fishing in the high seas to be avoided in areas where vulnerable marine ecosystems are known to or are likely to occur and calling on States to not authorize fishing to proceed where significant adverse impacts cannot be avoided.[30] In response to the commitments in UNGA 61/105, as well as to its own science advice,[31] the DFO adopted the SBA Policy in 2019.[32] Prior to this, the DFO had closed some areas to bottom trawling on the East Coast to protect deep-sea coral populations in the Northeast Channel, adjacent to Georges Bank. Canada has used the SBA Policy as a regulatory guide to establish OECMs, known as marine refuges in Canada, and in some of these areas, no bottom fishing is permitted. This includes using traps and bottom longlines, which are not included within the minimum standards but can have significant impact on sensitive benthic ecosystems. Midwater trawling is not currently included in the minimum standards. However, it is prohibited within the Hecate Strait/Queen Charlotte Sound Glass Sponge Reefs MPA due to the risk of the gear hitting the sea floor.[33]

Canada has recently supported a motion at the International Union for Conservation of Nature (IUCN) World Conservation Congress calling for guidance to ensure that industrial fishing, including fishing that uses trawling gear that is dragged or towed across the sea floor or through the water column, is not allowed in MPAs and OECMs.[34] In addition, subsequent UNGA resolutions continue to urge states to take action to ensure bottom-trawling impacts on the high seas are minimized, with implementation varying by management organization.[35]

[28] Bottom trawling is constructively prohibited in Bowie Seamount MPA, Eastport MPA, Endeavour Hydrothermal Vents MPA, Hecate Strait and Queen Charlotte Islands Glass Sponge Reefs, Musquash Estuary, St. Anns Bank MPAs and Tuvaijuittuq Interim MPA. It is expressly prohibited within Anguniaqvia niqiqyuam MPA, see SOR/2016-280, s 4, Sched 2, and SGaan-Kinghlaas Bowie Seamount MPA, see "Fisheries Notice: FN0089-SGaan Kinghlas Bowie Seamount Marine Protected Area - Portions of Areas 101 and 142 - Closure of all Bottom Contact Fishing Activities" (20 February 2018).
[29] Gwaii Haanas Gina 'Waadluxan KilGuhlGa Land-Sea-People Management Plan (November 2018).
[30] *Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments,* GA Res 61/105, UNGAOR, 61st Sess, UN Doc A/Res/61/105, (2006).
[31] DFO 2006. Impacts of Trawl Gears and Scallop Dredges on Benthic Habitats, Populations and Communities.2006/025
[32] *Policy for managing the impacts of fishing on sensitive benthic areas*. (2009, March 23. https://dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/benthi-eng.htm
[33] Hecate Strait and Queen Charlotte Sound Glass Sponge Reef MPA Regulations https://laws-lois.justice.gc.ca/eng/regulations/SOR-2017-15/page-1.html
[34] "Motion 066 - Guidance to identify industrial fishing incompatible with protected areas", IUCN World Conservation Congress (1 September 2020).
[35] GA Res 64/72, UNGAOR, 64th Sess, UN Doc A/Res/64/72, (2009); GA Res 66/68, UNGAOR, 66th Sess, UN Doc A/Res/66/68, (2011).

Recommendations

4. Canada should agree to a total prohibition on bottom trawling within all new and existing federal MPAs and OECMs in order to safeguard them from the most harmful fishing activities. In existing MPAs where trawling or dredging is permitted, if a full prohibition cannot be achieved, the trawling footprint should be frozen at its current size and the affected area should not be counted toward international marine-conservation targets. We strongly recommend that this second approach for existing MPAs be used minimally.
5. The prohibition on bottom trawling should include all trawling for scientific purposes and fisheries surveys within the bounds of MPAs, OECMs or any other sites that are determined to be sensitive or protected. This practice should be phased out over time, and we strongly support the recommendation, stemming from a recent Canadian Science Advisory Secretariat process, that alternative, non-destructive methods for research and monitoring in protected areas be explored and developed as part of a monitoring and management plan.[36]
6. All bottom-fishing activities and those methods known to potentially impact the seafloor would be prohibited unless it can be demonstrated that they do not affect the conservation objectives or ecological integrity of the site.
7. Unless midwater trawling can be proven to not come into contact with the sea floor, for example by using cameras on the gear as it is fishing, this type of trawling should be prohibited within protected areas.

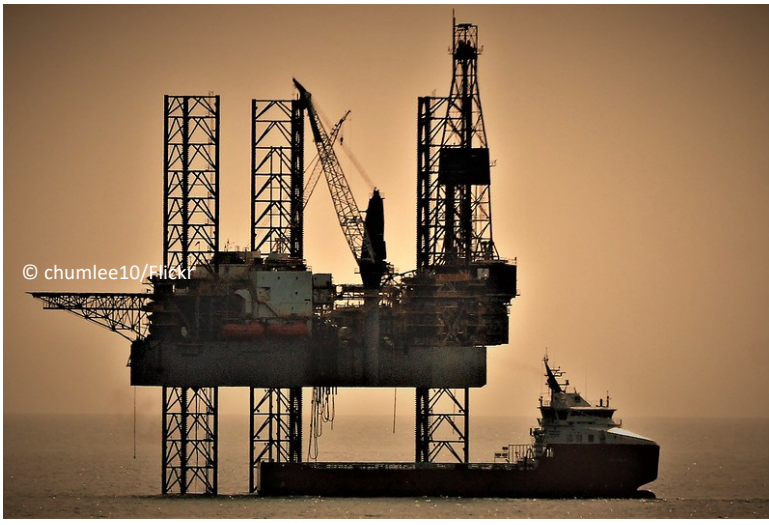
OIL AND GAS

Definition

SeaBlue Canada considers oil and gas activity to encompass all exploration and extraction processes, including seismic testing, exploratory drilling, development, and production (including pile driving and construction of rigs and other associated infrastructure), and transshipping.

Impacts

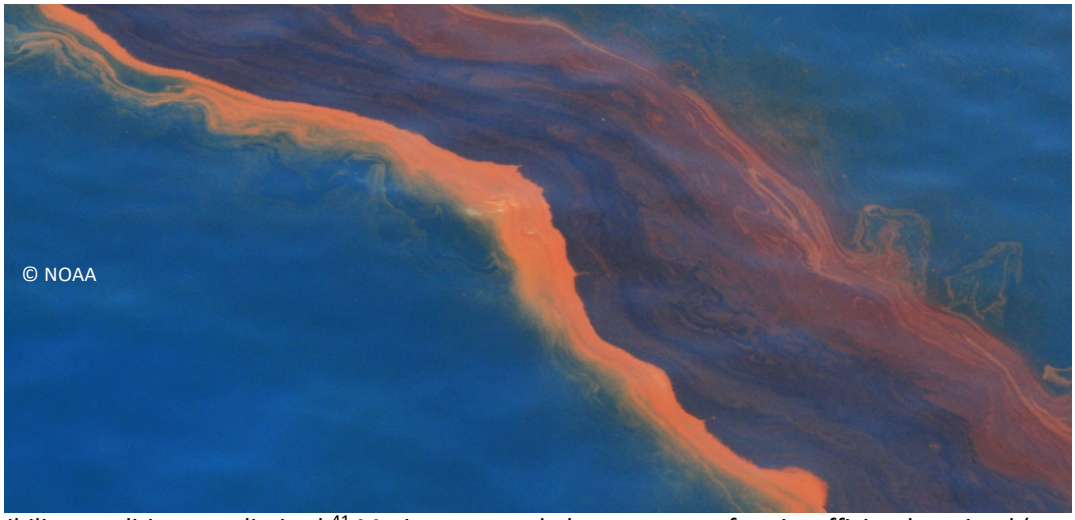
Industrial activities associated with oil and gas exploration, development and production can impact marine life in several ways. The placement of infrastructure, drill mud and cuttings piles, and dredging can result in disturbance, burial or destruction of benthic invertebrates, while the re-suspension of fine seabed material from these processes can increase turbidity and negatively affect the physiology of filter-feeding demersal fishes and invertebrates.[37] These impacts are particularly problematic when they damage or destroy slow-growing foundation species like corals and sponges.



[36]"Fisheries and Oceans Canada. (2018). *Science Advisory Report 2018/043* https://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_043-eng.html
[37] Oak, T.G. 2020. Oil and gas exploration and production activities in areas with defined benthic conservation objectives: A review of potential impacts and mitigation measures. DFO Can. Sci. Advis. Sec. Res. Doc. 2020/040. vi + 55 p.

Spills and discharges, ranging from small discharges associated with routine activities to rare, catastrophic events like the Deepwater Horizon blowout, are also a concern.[38] The impact of discharges and spills on marine biodiversity depends on many factors, including the scale of the event, the type of discharge, the containment and remediation efforts employed and the vulnerability of species that come into contact with toxic materials.[39,40] Large-scale spills or blowouts, while rare, can have particularly devastating impacts—either individual or cumulative—on deep-sea and coastal foundation species (e.g. corals, seagrasses, salt marsh grasses) and on surface-dwelling fauna that are highly susceptible to oiling (e.g. seabirds, marine mammals), as evidenced by major incidents such as the Exxon Valdez and Deepwater Horizon spills.[39] Smaller incidents can also have severe localized effects, such as the impact of the 2016 Nathan E. Stewart spill on Heiltsuk fisheries, which remain closed.

There is also growing recognition that noise associated with seismic surveys can have a range of negative impacts on marine life. For relatively well-studied marine mammals, documented impacts include disruption of behaviour (e.g. feeding, breeding), interference with acoustic communication, displacement, stress and physical injury (e.g. hearing damage).[27] Most whales are rarely visible at the surface, especially those that dive deep—and they're even harder to



see when visibility conditions are limited.[41] Marine mammal observers are often insufficiently trained (specifically in the use of passive acoustic monitoring), inadequately rested and not necessarily listened to when they have sighted a marine mammal.[42] In addition, ramp-ups or soft starts do not appear to be consistently and reliably effective in causing whales to move away from the source vessel, especially given large variations in whale behaviour, with some groups swimming away from the sound source whereas others approached even relatively loud noise levels.[43,44,45]

[38] Beyer, J., et al., Environmental effects of the Deepwater Horizon oil spill: A review, Marine Pollution Bulletin (2016), http://dx.doi.org/10.1016/j.marpolbul.2016.06.027
[39] Lee, Kenneth (chair), Michel Boufadel, Bing Chen, Julia Foght, Peter Hodson, Stella Swanson, Albert Venosa. (2015). Expert Panel Report on the Behaviour and Environmental Impacts of Crude Oil Released into Aqueous Environments. Royal Society of Canada, Ottawa, ON. ISBN: 978-1- 928140-02-3
[40] Cordes, E.E. et al. 2016. Environmental impacts of the deep-water oil and gas industry: a review to guide management strategies. Front. Environ. Sci. 4:58. doi: 10.3389/fenvs.2016.00058
[41] Barlow, J. and Gisiner, R. 2006. Mitigating, monitoring and assessing the effects of anthropogenic sound on beaked whales. Journal of Cetacean Research and Management, 7(3), pp.239-249.
[42] DFO. 2010. Guidance Related to the Efficacy of Measures Used to Mitigate Potential Impacts of Seismic Sound on Marine Mammals. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2010/043. http://www.dfo-mpo.gc.ca/Library/341565.pdf
[43] Dunlop, R.A. et al. 2017. Response of humpback whales to ramp-up of a small experimental airgun array. Marine Pollution Bulletin. 103: 1-2.
[44] Wensveen et al. 2017. Lack of behavioural responses of humpback whales indicate limited effectiveness of sonar mitigation. Journal of Experimental Biology. 220(22): 4150-4161.
[45] Ibid.

Emerging evidence is also revealing the significant negative impacts of seismic testing on fish and invertebrate species, which are less well studied, including physical trauma (e.g. hearing damage) and behavioural disruption.[46,47]

Finally, increased vessel activity resulting from oil and gas exploration, development and production (e.g. drill rigs, service and supply ships, tanker traffic) can increase disturbance of surface-dwelling pelagic species and could lead to increased ship strikes for specific species (e.g. critically endangered North Atlantic right whales).

Current status

Oil and gas activities are prohibited within NMCAs by section 13 of the *CNMCA Act*.[48] Currently, seismic testing, exploratory drilling, oil and gas production and pipelines are expressly permitted within the Tarium Niryutait MPA on the coast of the Yukon and Northwest Territories.[49] In other *Oceans Act* MPAs and in national wildlife areas, the absence of a statutory prohibition leads to ambiguity and the potential for exploitation in the future. For example, the seabeds of several MPAs are protected only to certain depths, conceivably allowing directional drilling into the seabed of these MPAs in the future.[50] Another example is the DFO's 2017 management plan for the Gully MPA, which states that oil and gas exploration may be possible as long as it does not disturb, damage, destroy or remove marine animals or their habitat.[51] There remains an active significant discovery licence in the Gully MPA, though no development has occurred.

Similarly, although the Musquash Estuary MPA in New Brunswick has been withdrawn from prospecting through a provincial order-in-council, the provincial government has nevertheless reserved its "right to all coal, minerals, oils and natural gas, bituminous shale and mines in the transferred lands."[52]

There is currently a federal moratorium on offshore drilling in the Arctic, federal and provincial moratoriums on offshore oil and gas activities in British Columbia and at least two moratoriums on oil and gas development in the Atlantic, including in the Gully MPA.[53] While these moratoriums have been effective, they are temporary and could theoretically be overturned; for example, although the Arctic moratorium is "indefinite," it is reviewable every five

[46] Carroll, A.G. et al. 2017. A critical review of the potential impacts of marine seismic surveys on fish & invertebrates. Mar. Poll. Bull. 114: 9-24. http://dx.doi.org/10.1016/j.marpolbul.2016.11.038

[47] Weilgart, L., 2018. The impact of ocean noise pollution on fish and invertebrates. Report for OceanCare, Switzerland. https://www.oceancare.org/wp-content/uploads/2017/10/OceanNoise_FishInvertebrates_May2018.pdf

[48] *CNMCA Act* s 13. "No persons shall explore for or exploit hydrocarbons, minerals, aggregates or any other inorganic matter within a marine conservation area."

[49] Tarium Niryutait Marine Protected Area Regulations, SOR 2010/190.

[50] Eastport MPA Regulation, SOR/2005-294, s 1(1), protected to a depth of 2m; Basin Head MPA Regulation, SOR/2005-293, s 1(1) seabed is protected to a depth of 2m; Anguiniaqvia niqiqyuam MPA Regulation, SOR/2016-280, s 2(3), seabed is protected to a depth of 5m; St. Anns Bank MPA Regulation, SOR/2017-106, s 2(2), seabed is protected to a depth of 5m; Hecate Strait/Queen Charlotte Sound Glass Sponge Reefs MPA Regulation SOR/2017-15 ss 3(2), 4(2), 5(2), seabed is protected to a depth of 20m.

[51] Government of Canada, "The Gully Marine Protected Area Management Plan," Fisheries and Oceans Canada, (Nova Scotia: 2008) at 36. The Management Plan states: "The Regulations do not remove existing sub-surface rights to petroleum within the MPA boundary…nor do they explicitly prohibit oil and gas activities or prevent the issuance of future petroleum rights. Under the Regulations, proponents may apply to the Minister of Fisheries and Oceans Canada for approval to conduct activities within the MPA and the Minister may approve activities within Zone 3 of the MPA if effects are within the natural variability of the ecosystem and if the activities will not result in damage or disturbance to Zones 1 and 2.The CNSOPB Gully Policy has prohibited exploration within the MPA since 1998. https://www.dfo-mpo.gc.ca/oceans/mpa-zpm/gully/index-eng.html)

[52] Musquash Estuary Management Plan, p 6. http://waves-vagues.dfo-mpo.gc.ca/Library/344113.pdf

[53] http://pm.gc.ca/eng/news/2016/12/20/united-states-canada-joint-arctic-leaders-statement; The moratorium in the Gully MPA has been maintained by the Canada-Nova Scotia Offshore Petroleum Board since 1998. The second moratorium is a jointly declared federal-provincial moratorium in George Banks, an area south of Nova Scotia that is not an MPA but is a valuable marine ecosystem and a productive fishing ground. *Georges Bank Protection Act*, SC 2015, c 39; http://www.cbc.ca/news/canada/nova-scotia/georges-bank-moratorium-extended-1.3338283

years. The moratoriums do not address existing licences in the protected area, creating uncertainty for licence holders and for the public about environmental protection in the long term.

Given that Atlantic Canada is the only place where active oil and gas operations are occurring in the marine environment, Canada must address the conservation issues posed by the fact that the statutes governing offshore oil and gas activities in Newfoundland and Labrador and Nova Scotia currently supersede other federal legislation prohibiting oil and gas development within MPAs.[54]

Recommendations

8. An outright prohibition on oil and gas activities within MPAs should be implemented. This could resemble that found in Section 13 of the *CNMCA Act*. This type of prohibition would standardize all Canadian MPA legislation. Management plans for existing MPAs should be updated to reflect the minimum standards at the earliest five-year management-plan review.
9. The federal government should rescind any existing oil and gas licences within MPAs using its new powers under the *Canada Petroleum Resources Act*[55] where that act applies (Pacific, Arctic).
10. For the Canada–Newfoundland and Labrador Offshore Petroleum Board, as the land tenure process is re-evaluated, all areas that are either protected, slated for protection or where significant benthic areas occur should be exempted from future leasing initiatives.
11. For the Canada–Nova Scotia Offshore Petroleum Board, which we expect will undergo a similar regional-assessment process as was recently undertaken in Newfoundland and Labrador, any areas currently protected or slated for protection or where significant benthic areas occur should be excluded from any future oil and gas leasing or bid-approval process. This should be made clear in any regional-assessment process.

MINING

Definition

Seabed mining refers to all processes associated with extracting submerged minerals and deposits from the sea floor. This encompasses both mining for aggregates, such as sand and gravel, and deep-sea mining for minerals.

Impacts

[54] *Canada–Newfoundland and Labrador Atlantic Accord Implementation Act*, SC 1987, c 3, s 4; *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act*, SC 1988, c 28, s 4.
[55] RSC 1985, c 36 (2nd Suppl), ss 12(1), 12.1(1).

Sand and gravel are mined from the seabed, and these products can be used to make concrete, to build roads and for infilling, among other uses. Dredging for this material can destroy benthic ecosystems, such as seagrass beds; can create plumes of sediments, which can drift for kilometres; and can cause coastal erosion.[56,57] Aggregate dredging can result in noise and light pollution from the installation and operation of rigs and other infrastructure as well as increased marine traffic to service operations. Removal of substrates, even in relatively small amounts, can reduce habitat for marine species and change bathymetry and rugosity.

Knowledge of deep-sea ecosystems is sparse, and there are therefore substantial gaps in our understanding of potential impacts from mining and extractive activities in these environments. However, it is known that environments of interest for seabed mineral extractions are comprised of ecosystems with extremely low rates of change or growth (e.g. abyssal plains, seamounts) and/or support fragile ecosystems with high occurrences of endemic species (e.g. hydrothermal vent systems).[58] Due to the slow growth rates of many deep-sea organisms and the isolation of these habitats from other potential source populations, recovery rates of an ecosystem may be very slow.[59] Furthermore, the cumulative impacts from multiple extraction sites in an area are also a concern.

In addition, seabed mining would generate mining effluent water plumes that would contravene existing Canadian legislation. Section 36 of the *Fisheries Act* prohibits the release of deleterious substances into water frequented by fish, and the Metal and Diamond Mining Effluent Regulations promulgated under section 36 impose limits on mine water effluent, including a limit on total suspended solids of 15 mg/L per month.[60] All seabed-mining scenarios are projected to generate return-effluent water plumes that far exceed these limits.

Current Status

Mining is prohibited within NMCAs by section 13 of the *CNMCA Act*.[61] It is not addressed in the *Oceans Act* or the *Canada Wildlife Act*, though no *Oceans Act* MPAs currently list seabed mining as an allowed activity, nor does the Scott Islands marine National Wildlife Area. The Wildlife Area Regulations under the *Canada Wildlife Act* prohibit any commercial or industrial activity.[62]

There are currently no deep-sea mining leases in Canada's offshore area; however, as the technology for this type of extraction develops, the environmental effects of seabed mining may pose a threat to Canada's MPAs.

Recommendations

[56] Pearce, F. (2019, February 5). *The Hidden Environmental Toll of Mining the World's Sand*. YaleEnvironment360. https://e360.yale.edu/features/the-hidden-environmental-toll-of-mining-the-worlds-sand
[57] United Nations Environmental Program (2014). Sand, rarer than one thinks. https://na.unep.net/geas/archive/pdfs/GEAS_Mar2014_Sand_Mining.pdf
[58] Levin, L.A., Mengerink, K., Gjerde, K.M., Rowden, A.A., Van Dover, C.L., Clark, M.R., Ramirez-Llodra, E., Currie, B., Smith, C.R., Sato, K.N., Gallo, N., Sweetman, A.K., Lily, H., Armstrong, C.W., and Brider, J. 2016. Defining "serious harm" to the marine environment in the context of deep seabed mining. Marine Policy. 74: pp. 245-259.
[59] Van Dover, C.L. 2011. Mining seafloor massive sulphides and biodiversity: what is at risk? ICES Journal of Marine Science 68(2), 341-348. doi:10.1093/icesjms/fsq086
[60] *Fisheries Act*, s 36; Metal and Diamond Mining Effluent Regulations, SOR/2002-222, Sched 4.
[61] *CNMCA Act*, s 13. "No persons shall explore for or exploit hydrocarbons, minerals, aggregates or any other inorganic matter within a marine conservation area."
[62] Wildlife Area Regulations, s 3(k).

12. All mining, including sand and gravel extraction, should be prohibited in MPAs, similar to the prohibition found in Section 13 of the *CNMCA Act*, which should be enshrined in other MPA legislation to most effectively protect all MPAs from undersea mining. This type of prohibition would standardize all Canadian MPA legislation. It also aligns with international best practice: for example, the *Great Barrier Reef Marine Park Act* 1975 in Australia prohibits all mining within the boundaries of the Great Barrier Reef Marine Park.[63]

OTHER ACTIVITIES

It is important to note that when new MPAs are being created, not all types of activities are proposed to be managed under the minimum standards. These include but are not limited to aquaculture, shipping and seismic activity. These activities should be given more scrutiny when risk assessments are being conducted, management measures are being proposed and as part of MPA monitoring. All of these activities impact protected areas and marine populations.

Aquaculture Impacts

While the DFO's 2019 minimum protection standards do not include a ban on open-net pen finfish aquaculture, we wish to reiterate our strong position that this industry does not belong within any protected marine areas due to its demonstrated negative impacts on local water quality, benthic nearshore food webs and wild salmon populations on the East and West Coasts.[64]

We outlined these impacts and considerations under the dumping prohibition. We would note that these impacts can also be an issue from other forms of aquaculture, including shellfish aquaculture (debris). Furthermore, aquaculture operations (open-net pen and other forms) can produce additional impacts through entanglement risk, infrastructure and increased vessel traffic to service facilities.

Shipping Impacts

Commercial shipping causes a variety of impacts on marine environments beyond dumping. Vessel strikes, especially when watercraft are travelling above 10 knots, are a recognized cause of mortality for cetaceans worldwide and pose a real risk to many species found in Canadian waters.[65,66] Low-frequency underwater

[63] Great Barrier Reef Marine Park Act 1975 (Cth).
[64] Ford, J. S., & Myers, R. A. (2008). A global assessment of salmon aquaculture impacts on wild salmonids. PLoS Biology, 6(2), 0411–0417. https://doi.org/10.1371/journal.pbio.0060033
[65] Transport Canada (2020). Protecting North Atlantic right whales from collisions with vessels in the Gulf of St. Lawrence https://tc.canada.ca/en/marine-transportation/navigation-marine-conditions/protecting-north-atlantic-right-whales-collisions-vessels-gulf-st-lawrence
[66] DFO. 2017. Assessing the risk of ship strikes to humpback (Megaptera novaeangliae) and fin (Balaenoptera physalus) whales off the west coast of Vancouver Island, Canada. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2017/038. https://waves-vagues.dfo-mpo.gc.ca/Library/40619709.pdf

noise has doubled since 1960, largely due to shipping.[67] This has impacted marine life by interfering with communication, hunting and feeding; by forcing animals to avoid preferred habitats; and by increasing stress hormones, ultimately leading to fewer offspring and higher death rates.[68] Heavy fuel oil (HFO) is banned in some regions of the world due to its harmful effects, but it has yet to be phased out in Canada [69,70] HFO spills are nearly impossible to clean up and can persist in the marine environment for months, threatening marine life and coastal communities. Additionally, burning HFO produces more soot than using alternative fuel options does. This soot affects air quality and contributes to both local warming and climate change. Anchoring can cause damage to benthic habitats, like those of corals and sponges, and can persist for decades[71] and create sediment plumes that smother ecosystems and increase turbidity.[72] It has been prohibited within the core protection zone of the Hecate Strait/Queen Charlotte Sound Glass Sponge Reef MPA to prevent damage to the reefs. In the Arctic, ice-breaking ships destroy and fragment important habitat and disturb and harm marine mammals.[73]

Seismic Impacts

As noted above, seismic activities occur as part of oil and gas exploration. However, other applications of seismic and sonar testing that can have similarly harmful effects must be considered in areas within and adjacent to MPAs. Options that currently exist to mitigate the impacts of seismic testing, primarily monitoring, are largely unproven in their effectiveness. The Canadian Science Advisory Secretariat's report Review of the Statement of Canadian Practice with Respect to the Mitigation of Seismic Sound in the Marine Environment states that business-as-usual mitigations are not sufficient to avoid unnecessary impacts on marine species.[74]

Marine Renewable Energy

Marine renewable-energy development, in particular offshore tidal and wave energy, is an emerging industry, which is still in the testing phase globally. While it is possible that the environmental impacts of these types of energy developments could be minimal, they are currently not well understood. They should therefore be prohibited within MPAs unless it can be demonstrated that they do not impact the conservation objectives or ecological integrity of a site. Offshore wind is a more developed industry globally, and the environmental implications more well known. It needs large-scale infrastructure and should also not be permitted, as IUCN guidance clearly states that industrial activities that require substantial infrastructure should not be permitted within protected areas.[75]

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[67] International Maritime Organization (2020). Ship Noise http://www.imo.org/en/MediaCentre/HotTopics/Pages/Noise.aspx#:~:text=Noise%20on%20ships&text=IMO%20adopted%2C%20in%202012%2C%20a,noise%20levels%20on%20board%20ships.

[68] WWF-Canada (2017). Underwater Noise from Arctic Shipping: Impacts, Regulations and Recommendations. https://wwf.ca/wp-content/uploads/2020/03/Underwater-noise-from-Arctic-Shipping-impacts-regulations-and-recommendations_April-2017.pdf

[69] DeCola, E. and Robertson, T. (2018). Phasing Out the Use and Carriage for Use of Heavy Fuel Oil in the Canadian Arctic: Impacts to Northern Communities https://wwf.ca/wp-content/uploads/2020/03/Phasing-Out-the-Use-and-Carriage_July-2018.pdf

[70] Fritt-Rasmussen, J., Wegeberg, S., Gustavson, K., Rist Sorheim, K., Daling, P.S., Jorgensen, K., Tonteri, O. and Holst-Anderson, J.P. (2018). Heavy Fuel Oil (HFO). Denmark: The Nordic Council of Ministers.

[71] Huvenne, V. A. I., Bett, B. J., Masson, D. G., Le Bas, T. P., & Wheeler, A. J. (2016). Effectiveness of a deep-sea cold-water coral Marine Protected Area, following eight years of fisheries closure. *Biological Conservation*, *200*, 60-69.

[72] Leatherbarrow, K.E. (2006. Monitoring environmental impacts of recreational boat anchoring on eelgrass (Zostera marina L.) and benthic invertebrates in the Gulf Islands National Park Reserve of Canada. https://dspace.library.uvic.ca/handle/1828/1858

[73] WWF-Canada (2017). Shipping through Sea Ice: Impacts on Marine Habitats and Best Practices. https://wwf.ca/wp-content/uploads/2020/03/Shipping-through-sea-ice-imapcts-on-Marine-Habitats-and-best-practices_April-2017.pdf

[74] Fisheries and Oceans Canada. (2020). *Review of the statement of Canadian practice with respect to the mitigation of seismic sound in the marine environment*. http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2020/2020_005-eng.pdf

75 "IUCN WCPA, 2018. Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPA). Delivering effective conservation action through MPAs, to secure

Recommendations

13. Open-net pen aquaculture should be prohibited in all MPAs. Entanglement risks of aquaculture operations, including shellfish aquaculture, should be considered for protected areas that are important for marine mammals.
14. The impacts of shipping should receive additional scrutiny during the risk-assessment phase of MPA establishment, with particular attention paid to the risks of spills, noise and marine mammal strikes. Shipping corridors should be considered wherever possible, with the goal of avoiding protected areas. Where impacts cannot be mitigated, shipping should be prohibited.
15. Seismic activity should be prohibited within any MPA, and the impacts of seismic activity in waters adjacent to MPAs should be considered as part of risk assessments.
16. Renewable-energy developments that require substantive infrastructure or have the potential to impact the conservation objectives or ecological integrity of a site should not be permitted within protected areas.

APPLYING MINIMUM STANDARDS TO ALL SITES COUNTING AS PROTECTED

It is imperative that Canada ensure quality protection for all areas that are counted towards national and international protected-area targets.

Currently, a third of Canada's progress toward its marine-conservation targets comes in the form of OECMs, where only fishing activity is regulated, and another 10,000 km^2 are under provincial jurisdiction, which means they are not subject to minimum standards. There are also a number of sites counted that are marine components of migratory-bird sanctuaries, national wildlife areas and national parks. While these are federally protected MPAs and therefore should fall under the jurisdiction of the minimum standards, most of these sites currently lack clear management directions for marine areas and activities. The expectation is that these sites will also be reviewed and managed in line with the minimum standards.

While we understand that the mandate of the task force is to define and implement minimum protection standards for federal MPAs, we feel that it is important to reinforce our strong view that the DFO, Environment and Climate Change Canada, Parks Canada, Natural Resources Canada and other relevant regulators (e.g. offshore petroleum boards) should


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ocean health & sustainable development. Version 1.0. Gland, Switzerland. 4pp. https://www.iucn.org/sites/dev/files/content/documents/applying_mpa_global_standards_final_version_050418.pdf

work together toward applying these standards to all sites, especially OECMs. According to the IUCN, OECMs that are counted toward international targets should exclude all industrial activities to ensure that these areas truly provide effective in situ conservation of biodiversity.[76] As indicated in the ministerial response to the recent regional assessment of offshore oil and gas exploratory drilling east of Newfoundland and Labrador, the minimum protection standards adopted for federal MPAs could be applied to OECMs.[77] SeaBlue Canada completed an analysis of Canadian OECMs in January 2019.[78] We provided specific recommendations at that time and reiterate them in general terms below. By applying minimum standards consistently across all sites counting toward Canada's marine-conservation targets, Canada can maintain its credibility on the international stage and set an example for other nations to follow.


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Recommendations

17. Minimum standards are applied to all areas counted toward protected-area targets.
18. The DFO should work with relevant authorities to apply the MPA minimum standards to ban dumping, bottom trawling, oil and gas activity and mining, following the definitions above, from the 283,365 km^2 of OECMs in Canadian waters, in addition to any future OECMs.[79] This could be accomplished in part through upgrades to Canada's OECM guidance that are explicit about the minimum standards.
19. In the event that all efforts have been made to prohibit oil and gas activities within OECMs but have not succeeded, areas that include oil and gas exploration or development should not be counted toward national or international targets.
20. In the interim, the DFO should ensure that Canada–Nova Scotia Offshore Petroleum Board and Canada–Newfoundland and Labrador Offshore Petroleum Board include marine refuge boundaries in addition to significant benthic areas on their leasing maps in order to provide proponents with complete information on conservation planning in regions of focus for the industry.
21. The relevant authorities should review all existing sites counted toward Canada's marine-protection targets, including provincially designated sites, national parks, national wildlife areas and migratory-bird sanctuaries, and ensure the protection standards apply and are being implemented. Where necessary, the governing bodies should work with provincial governments and other agencies to achieve this.

LEGAL IMPLEMENTATION OF PROTECTION STANDARDS

The primary goal of MPAs is to conserve biodiversity, and activities permitted within MPAs should not compromise

[76] IUCN (2016). IUCN Resolutions, Recommendations and other Decisions. Gland, Switzerland: IUCN. 106pp. https://portals.iucn.org/library/sites/library/files/documents/IUCN-WCC-6th-005.pdf
[77] Government of Canada. (2020). *Ministerial response to the regional assessment committee report for offshore exploratory drilling east of Newfoundland and Labrador*. https://iaac-aeic.gc.ca/050/evaluations/document/134936?culture=en-CA
[78] SeaBlue Canada (2019). A Technical Review of Canada's Other Effective Area Based Conservation Measures: Alignment with DFO Guidance, IUCN WCPA Guidance and CBD SBSTTA Guidance. https://seabluecanada.org/wp-content/uploads/2019/01/SeaBlue-OECM-Report-FinalJan17_WEB.pdf
[79] *Canada's marine protected and conserved areas* (2020, July 17). Fisheries and Oceans Canada. URL) http://www.dfo-mpo.gc.ca/oceans/conservation/areas-zones/index-eng.html

this objective. In order to ensure that MPAs provide strong and effective protection in the long term, MPA standards must be enshrined in law and regulations. Additionally, providing a legal backing to MPA standards will ensure greater clarity and certainty for MPA stakeholders and all ocean users. It also ensures that protection standards are legally enforceable, greatly increasing the government's ability to uphold these standards and provide real protection for MPAs.

There are several ways to grant legal status to protection standards. First, the standards can be included in the laws governing MPAs. This method has been successfully employed in some Canadian MPAs. For example, the *CNMCA Act* prohibits exploring for or exploiting hydrocarbons, minerals, aggregates or any other inorganic matter and prohibits ocean dumping or waste disposal within a marine-conservation area. The Wildlife Area Regulations under the *Canada Wildlife Act*, though designed primarily for terrestrial areas, contain some far-reaching prohibitions that could also apply in marine wildlife areas: hunting and fishing are not allowed, nor is damaging, destroying or removing a plant and destroying or molesting animals, carcasses, nests or eggs, for example.[80] The prohibitions in these statutes and the *Oceans Act* can be updated to reflect the protection standards noted in this document.

Another option is to introduce a regulation under each of the *Oceans Act*, *CNMCA Act*, and *Canada Wildlife Act* that outlines the activities prohibited within protected areas designated under the respective act. All three acts empower the governor-in-council to pass this type of regulation.[81] This option would be an efficient and effective way to ensure the protection standards have legal backing.

A third option is to prohibit specific activities known to damage marine species and habitats within the definition of MPAs provided in each act, following the example of marine life reserves in California, as defined in the *California Marine Life Protection Act*:

> "Marine life reserve," for the purposes of this chapter, means a marine protected area in which all extractive activities, including the taking of marine species, and, at the discretion of the commission and within the authority of the commission, other activities that upset the natural ecological functions of the area, are

[80] Wildlife Area Regulations, CRC, c 1609, s 3.
[81] The Oceans Act, s 35(3)(c), provides authority for federal Cabinet to enact regulations "prohibiting classes of activities within marine protected areas"; the *CNMCA Act*, s 16(1)(e), allows Cabinet to pass regulations "restricting or prohibiting activities or regulating the use of facilities in marine conservation areas or in any zones"; and the *Canada Wildlife Act*, s 12(i), allows Cabinet to pass regulations that "prescribe measures for the conservation of wildlife… (iii) in any protected marine areas established pursuant to subsection 4.1(1)."

prohibited. While, to the extent feasible, the area shall be open to the public for managed enjoyment and study, the area shall be maintained to the extent practicable in an undisturbed and unpolluted state.[82]

For OECMs designated under the *Fisheries Act*, we recommend measures that comprehensively address fishing activities within the area. We also recommend applying section 34 of the act with relation to protecting fish habitat and not authorizing harmful alteration, damage or destruction. In order to address harmful activities that fall outside the scope of the *Fisheries Act,* OECMs should be protected through additional complementary regulations under the relevant legislation.

Recommendations

22. Protection standards for Canadian MPAs and OECMs should be enshrined in legal and regulatory frameworks to ensure the effective, long-term conservation of biodiversity.

[82] California Fish and Game Code, §2852(d) (2016)