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# **The Canadian Coast Guard: Enhancing Offshore Patrol Capability in a More Contested Commons**

by Timothy Choi  
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# POLICY PERSPECTIVE

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## **THE CANADIAN COAST GUARD: ENHANCING OFFSHORE PATROL CAPABILITY IN A MORE CONTESTED COMMONS**

by Timothy Choi

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**A**s climate change stresses global fisheries, the world's oceans are becoming more contested at the same time that coastal states have greater jurisdiction over offshore resources. In the coming decades, Canada's maritime agencies need to be prepared for greater possibilities of contestation at sea between its enforcement assets and illegal, unregulated and unreported (IUU) fishing by foreign vessels. As the federal agency with the largest number of seagoing vessels, the Canadian Coast Guard (CCG) has a potentially significant role to play. This article first conducts a brief review of the past and future IUU fishing challenges Canada faces in waters under its legal jurisdiction. It then examines the current and forthcoming force structure of the CCG's offshore patrol fleet as part of the Department of Fisheries and Oceans' (DFO) Conservation & Protection program. Next, it discusses possible options for enhancing Canada's offshore constabulary capabilities in the coming years. It recommends the development of a ship-borne helicopter-based fisheries enforcement capability to maximize the effectiveness of its forthcoming Arctic and offshore patrol vessels. Canadian fisheries enforcement agents operating on aircraft and foreign vessels as part of international co-operative efforts will be outside the scope of this article, as are satellite-based methods for identifying IUU violations.<sup>1</sup>

## Past and Current Offshore Fisheries Challenges

With 123 vessels, the Canadian Coast Guard (CCG) is the federal government's largest maritime organization in terms of hull numbers.<sup>2</sup> Unlike the coast guards of many other countries, its members are responsible for ensuring the safe use of Canadian waters by seafarers rather than enforcing laws through the threat and use of low-level force. It is predominantly a safety, rather than security (narrowly defined), organization. CCG members do not have law enforcement authority and cannot carry out arrests. For these functions, non-CCG members such as fisheries officers (DFO) or Royal Canadian Mounted Police officers are required. Nonetheless, the CCG provides maritime monitoring services while CCG vessels provide the floating platforms necessary to carry those officials as they conduct their missions at sea.<sup>3</sup> Perhaps the most significant of these missions in the coming decades will be offshore fisheries enforcement. As demand for saltwater protein by populous coastal states like China increases over the coming years and their local waters are depleted, there will be more distant-water fishing vessels seeking out new sources of seafood. This has already involved the use of lethal force by other coastal states' coast guards and

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<sup>1</sup> Fisheries and Oceans Canada, "Canada Wraps Up *Operation North Pacific Guard* to Combat Global Illegal Dishing," Government of Canada, November 1, 2021, <https://www.canada.ca/en/fisheries-oceans/news/2021/11/canada-wraps-up-operation-north-pacific-guard-to-combat-global-illegal-fishing3.html>; Michael Lee, "Company Behind Canadarm Helps Fight Illegal Fishing in the Galapagos Islands," CTV News, June 20, 2022, <https://www.ctvnews.ca/sci-tech/company-behind-canadarm-helps-fight-illegal-fishing-in-the-galapagos-islands-1.5954595>. For a brief discussion of how Canadian law enforcement agents contribute to international fisheries monitoring efforts using non-Canadian assets, see the following Department of Fisheries and Oceans podcast interview with two fisheries officers who served in Operation North Pacific Guard: <https://www.dfo-mpo.gc.ca/about-notre-sujet/publications/deep-dive-baladeau/episode/2022-004-eng.html>.

<sup>2</sup> Canadian Coast Guard, "Fleet of the Canadian Coast Guard," Government of Canada, <https://inter-j01.dfo-mpo.gc.ca/fdat/vessels?status=1&search=close>.

<sup>3</sup> Ibid., "Maritime Security Program," <https://www.ccg-gcc.gc.ca/maritime-security-surete-maritime/program-info-programme-eng.html>.



navies around the world as they have tried to halt IUU fishing in recent years, notably off South America's coasts.<sup>4</sup>

Thus, although much popular attention is focused on the CCG's icebreakers and their role in Canadian Arctic sovereignty, an oft-overlooked area is the CCG's role in supporting Canada's control of its fisheries at the edges of its 200-nautical-mile (NM) exclusive economic zone (EEZ). Canada also has a role in protecting fisheries beyond the 200-NM EEZ, thanks to its membership in the North Atlantic Fisheries Organization (NAFO), which sets out quotas and other limits on fishing in the high seas (beyond 200 NM) off Canada's Atlantic coast. Although Canadian offshore fisheries enforcement actions have not been in the spotlight in recent years, they were a regular feature of the DFO's fisheries patrol fleet prior to their 1995-1997 amalgamation with the CCG.<sup>5</sup>

Thanks in part to the regular enforcement actions that culminated in the mid-1990s turbot war with Spain and the resultant long-term resolution under the United Nations Straddling Stocks Agreement, the CCG has not had to threaten the use of force at the outer edges of Canada's EEZ.<sup>6</sup> Canada's ability to assert its position and ensure it was accepted by the international community was made possible not only by the use of civilian DFO patrol forces, but also by the deployment of the Canadian navy's warfighting forces as platforms for DFO fisheries officers under fisheries patrols (FISHPATs). In the 1980s and early 1990s, the Canadian Atlantic naval fleet had both the numbers and limited operational requirements to allow it to participate in increasing numbers of FISHPATs following the establishment of the 200-NM zone.<sup>7</sup> These included using Iroquois-class destroyers to chase down trawlers in the mid-Atlantic which had kidnapped fisheries officers and deploying Oberon-class submarines to surveil and deter illegal fishing on the Georges Bank maritime boundary with the United States.<sup>8</sup>

The use of Canadian navy platforms to fulfil increased FISHPAT sailing hours was possible during the early '90s due to the end of the Cold War and the limited overseas presence requirements of the Canadian navy (with the exception of Desert Storm). In the subsequent decades, however, Canada's increased foreign policy interests have led to greater use of its naval forces on regular overseas deployments even as its number of ships dwindled due to aging hulls that went unreplaced.<sup>9</sup> This has reduced their availability for domestic support missions such as offshore FISHPATs. Thankfully, there has been a limited need for such domestic operations due to previously settled institutional solutions to Canada's offshore fisheries disputes. However, while solutions like NAFO have been effective, they only apply to fishing fleets belonging to the

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<sup>4</sup> Juliana Castilla and Richard Lough, "Argentina Coast Guard Sinks Chinese Trawler Fishing Illegally," Reuters, March 15, 2016, <https://www.reuters.com/article/us-argentina-defense-china-idUSKCN0WH2QL>; Helen Wieffering, "Fights Over Illegal Fishing Lead to Armed Conflicts, Deaths," Associated Press, March 30, 2022, <https://apnews.com/article/business-environment-middle-east-fish-only-on-ap-88e59a1748ba76fdc5847cc7a44e3fa6>.

<sup>5</sup> Rod N. Stright, *Final Report: Fleet Merger Issues* (Ottawa: Canadian Coast Guard, 1998), 1.

<sup>6</sup> Timothy Choi, "Ready to Secure: A Sea Control Perspective on Canadian Fisheries Enforcement," in *Grey and White Hulls: An International Analysis of the Navy-Coastguard Nexus*, eds. Ian Bowers and Swee Lean Collin Koh (Singapore: Palgrave Macmillan, 2019), 223-244.

<sup>7</sup> Gordon F. Osbaldeston, *All the Ships That Sail: A Study of Canada's Fleets* (Ottawa: Government of Canada, 1990), 34; L. E. Murray, "Maritime Enforcement: The Canadian Federal Government's Marine Fleets and the Navy's Mission," *Marine Policy* 18, no. 6, 1994: 526.

<sup>8</sup> Alan Story, "Seized Trawler is Escorted into St. John's by Destroyer," *Toronto Star*, March 3, 1986; Michael Whitby, "Boomers, Draggers and Black Boxes: The Operational Legacy of Canada's Oberon Class Submarines, 1983-1998," *The Northern Mariner* 23, no. 4, October 2013, 386; Sean M. Maloney, "Canadian Subs Protect Fisheries," *United States Naval Institute Proceedings* 124, no. 3 March 1998, <https://www.usni.org/magazines/proceedings/1998/march/canadian-subs-protect-fisheries>.

<sup>9</sup> Namely, the four Iroquois-class destroyers and two Protecteur-class replenishment ships.



institution's members. This means the fleets of other countries like China are not under the same jurisdiction and control, requiring direct Canadian enforcement presence and potential force should such fleets appear in and around Canada's EEZ.

Canada's ability to conduct offshore FISHPATs is limited today. While both the Royal Canadian Navy's Halifax-class frigate fleet and Kingston-class coastal defence vessels can be employed for FISHPATs, recent years have seen only the latter employed in such a capacity, possibly due to the former's globe-ranging deployments.<sup>10</sup> The new Harry DeWolf-class Arctic and offshore patrol vessels are technically ideal for this task given their long endurance, active fin stabilizers to deal with heavy seas and extra accommodations for fisheries officers, but their missions in the Arctic and the Caribbean may limit their availability for offshore FISHPATs on the east and west coasts. Future overseas tasks will also call the RCN's AOPVs away from Canadian shores, further limiting such availability. With all these commitments, it is uncertain whether the RCN can fulfil its traditional platform role in supporting fisheries officers in the event of an intensified fisheries patrol effort.

Thus, it is necessary to re-examine the offshore patrol role of Canada's civilian fleet. As climate change makes southern waters more inhospitable to local fisheries, they may migrate northwards into waters with temperatures more suitable for their survival.<sup>11</sup> Such waters may include those within Canada's EEZ or NAFO's areas of authority. Current measures for controlling, patrolling and enforcing fisheries conservation in areas of Canadian jurisdiction may no longer suffice. Increased presence at sea with an ability to surveil, interdict, halt and arrest violators will likely be required in the coming decades. The CCG will be the seagoing agency in this regard, and it is vital to understand how ready it is and how it could be further readied for a world in which the aforementioned "commons" are more contested.

## Current Constabulary Force Structure

Current CCG offshore fisheries enforcement forces date from the Cold War. During the 1980s, the Canadian government authorized the creation of an armed boarding program for the DFO's patrol fleet, equipping fisheries officers with firearms and shipboard weapons. Such weaponry included pistols, MP5 submachine guns and .50 calibre heavy machine guns.<sup>12</sup> This greater degree of force was implemented to reduce response times in the event of resistance from IUU transgressors, which otherwise would require the armed capabilities of RCN vessels to ensure compliance.<sup>13</sup> In recent decades, such weapons have been less visible on deployed vessels and crews, throwing into

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<sup>10</sup> Joanie Veitch, "Happy Days for HMCS Goose Bay," *Lookout Newspaper*, September 23, 2021, <https://www.lookoutnewspaper.com/happy-days-hmcs-goose-bay/>; Canadian Armed Forces, "Fisheries Patrols," Government of Canada, October 16, 2017, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/fishpats.html>.

<sup>11</sup> Ben Goldfarb, "Feeling the Heat: How Fish Are Migrating from Warming Waters," *Yale Environment 360*, June 15, 2017, <https://e360.yale.edu/features/feeling-the-heat-warming-oceans-drive-fish-into-cooler-waters>; Regin Winther Poulsen, "An Ever-Moving, Unloved Fish is Stirring Chaos in the North Atlantic," *The Atlantic*, February 13, 2021, <https://www.theatlantic.com/science/archive/2021/02/fish-divided-north/618003/>.

<sup>12</sup> Joseph Gough, *Managing Canada's Fisheries: From Early Days to the Year 2000* (Sillery, QC: Septentrion, 2007), 385.

<sup>13</sup> Thomas Siddon, speech given to St. John's Board of Trade on June 13, 1986, reproduced in "Canada Toughens Offshore Enforcement," *Fo'c'sle* 6, no. 1, 1986: 3.



doubt the readiness of CCG patrol ships and crews to deal with challenging non-compliant fishers. At the very least, the lack of visibility has reduced such weaponry's deterrent value.

The CCG's offshore fisheries patrol fleet is comprised of three vessels in the Atlantic, which is where the majority of Canadian offshore fisheries concerns lie. These three ships are the two 1970s-vintage Cape-class ships, Cape Roger and Cygnus, and the newer 1987-built Leonard Cowley. With an average age older than that of the CCG's much-maligned icebreakers, all three vessels were built in response to Canada's promulgation of its 200-NM EEZ. They are all roughly similar in size, the Cape class being around 62.5m in length and displacing around 1,250 tonnes and the Cowley at 72.4m long at 2,200 tonnes.<sup>14</sup> Although all three had some degree of aviation facilities at the start of their lives, only the Cowley retains an operational helicopter deck and hangar. This ship-borne (organic) helicopter capability was trialled during the late 1980s and early 1990s as part of an intensified fisheries enforcement effort, but the results of these trials remain elusive and the capability itself has clearly not continued to the present day.<sup>15</sup> This is evidenced not least by the 2011 replacement of the helicopter hangar with a workshop on the Cape Roger and the use of Cygnus' hangar-less helicopter deck for containerized equipment.<sup>16</sup> In terms of armament, none of them is equipped with anything more than optional .50 calibre heavy machine guns, of which the Cape Roger fired numerous rounds during the arrest of the Spanish trawler Estai in the 1995 turbot war. A fourth modern OPV, the Sir Wilfrid Grenfell, was recently transferred to the Pacific, where its armament potential is being removed, possibly in line with the lower level of IUU threats on that coast.<sup>17</sup>

Under the National Shipbuilding Strategy, the two older Cape classes, and perhaps the Cowley as well, are being replaced with two new vessels. These new offshore patrol vessels are a modified variant of the RCN's Harry DeWolf-class AOPVs.<sup>18</sup> Announced by the Trudeau government in May 2019, the two new CCG AOPVs feature significant changes from their RCN counterparts in line with the CCG's requirements. These include a lower crew requirement, a shift of all crew cabins to spaces with windows, the removal of permanent armament (namely the 25mm cannon on the bow), a reconfigured stern working deck with new equipment, a new operations room for improved search-and-rescue co-ordination and the addition of over nine pieces of scientific equipment, such as echo sounders and temperature probes to ensure the ships' relevance for tasks outside of conservation and protection.<sup>19</sup> Both ships, at around 6,600 tonnes and 103m long with active fin stabilizers, will certainly be much more seaworthy and spacious compared to their

<sup>14</sup> Technical and Operational Services Directorate, *Ships of the Canadian Coast Guard* (Ottawa: Canadian Coast Guard, 1998), 49-53.

<sup>15</sup> Siddon; L. S. Parsons, *Management of Marine Fisheries in Canada* (Ottawa: National Research Council of Canada and Department of Fisheries and Oceans, 1993), 634.

<sup>16</sup> Canadian Coast Guard, "Vessel Details: CCGS Cape Roger," Government of Canada, <https://inter-j01.dfo-mpo.gc.ca/fdat/vessels/44>; Canadian Coast Guard, "Vessel Details: CYGNUS," Government of Canada, <https://inter-j01.dfo-mpo.gc.ca/fdat/vessels/44>.

<sup>17</sup> Author's discussions with Anthony Potts, former CCG director of the Maritime Region Fleet, January 13, 2022; Canadian Coast Guard, "Canadian Coast Guard Celebrates 60th Anniversary With Open House in Victoria, Start of Operations on the West Coast for CCGS Sir Wilfrid Grenfell," Government of Canada, June 11, 2022, <https://www.canada.ca/en/canadian-coast-guard/news/2022/06/canadian-coast-guard-celebrates-60th-anniversary-with-open-house-in-victoria-start-of-operations-on-the-west-coast-for-ccgs-sir-wilfrid-grenfell.html>.

<sup>18</sup> Public Services and Procurement Canada, "Arctic and Offshore Patrol Ships – Canadian Coast Guard," Government of Canada, July 26, 2022, <https://www.tpsgc-pwgsc.gc.ca/app-acq/amd-dp/mer-sea/sncn-nss/arctique-coastgd-eng.html>.

<sup>19</sup> Other additions include bilge keels to minimize rolling at low speeds, bridge wings to improve visibility along the ship's sides, new bridge consoles for the smaller CCG crew and science laboratories. Information provided by Irving Shipbuilding during an online technical briefing on March 30, 2022.



predecessors. They also have room for up to four fast-response boats and a hangar and heli-deck, though it remains to be seen how the CCG will integrate any of those increased capabilities into an expanded fisheries enforcement effort. Small boats are certainly in use on the current OPVs to carry out their inspection duties, but the drastic increase in the number of available small craft offers expanded tactical opportunities that the CCG will have to learn to exploit. This may prove challenging given the much smaller crew size with which the CCG expects to operate its AOPVs, as there may not be enough boarding parties available to conduct simultaneous boat operations.

Ultimately, there is little indication that the CCG is expanding its ability to surveil and enforce Canadian and international fisheries regulations at and beyond the 200-NM limit despite the increasing likelihood of IUU fishing threats from distant-waters fishing fleets like those of China. While the two new CCG AOPVs increase the crew comfort, endurance and scientific and Arctic capabilities of the offshore patrol force, each ship can only be in one place at a time. If IUU challenges in and around Canadian waters approach or exceed those experienced during the height of the turbot war when the DFO had five OPVs to work with, the CCG will be hard-pressed to provide the presence necessary to deter or arrest violators.<sup>20</sup>

## Options for Enhancing Canadian Offshore Fisheries Enforcement

The fundamental challenge with the current trajectory for the CCG's offshore fisheries enforcement mission is insufficient presence due to a lack of hulls. With only two ships scheduled to enter service, availabilities will be limited in the event of regular suspected violations of Canadian or NAFO regulations. This will be exacerbated by the need for ships to regularly enter refit and maintenance, meaning only one can be expected to be available at any time. Furthermore, potential shifts in fisheries due to climate change may require each patrol ship to cover even more areas than today.

There are a number of possible solutions to address this lack of hulls, each with its pros and cons, and some of which government has previously explored.

First, the DFO's fisheries officers can more heavily leverage RCN assets as they have been doing for the last several decades. With a much higher number of large ocean-going vessels, the RCN certainly has more platforms that can support fisheries enforcement in the blue water of the EEZ's outer limits. However, the RCN's increase in global participation has curtailed, and will continue to curtail, their platforms' availabilities for missions close to home. This applies not just to the Halifax-class frigates, but to the smaller Kingston-class maritime coastal defence vessels as well, which have been sent overseas to west Africa and northern Europe. Further limiting the RCN's availability for offshore constabulary missions close to home is the large crewing requirement for the Halifaxes, which exerts an extra strain on their ability to deploy in the face of RCN personnel shortages. This limitation was thrown into sharp focus in the summer of 2022 when the RCN's

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<sup>20</sup> The five DFO OPVs during the mid-1990s were Cape Roger, Cygnus, Leonard J. Cowley, Sir Wilfred Grenfell and Mary Hichens, Technical and Operational Services Directorate, *Ships of the Canadian Coast Guard*, 49-53.



Atlantic fleet could not deploy another frigate once both Halifax and Montreal returned home from their near-simultaneous deployment to Europe in the first few months of Russia's 2022 invasion of Ukraine.<sup>21</sup>

Second, the CCG could try employing its 2010s-built Hero-class mid-shore patrol vessels to help provide more presence offshore. The Hero class has the CCG's second largest patrol vessels and is the most numerous class, with nine in the fleet. However, their relatively small sizes (42.8m long and seven metres wide) make them even smaller than the legacy Cape-class OPVs.<sup>22</sup> The poor seakeeping inherent to smaller vessels has worsened due to the decision to exclude active fin stabilizers from the ships' design to save weight and reduce underwater resistance.<sup>23</sup> This has led to a drastic curtailment of available patrol times in poor weather even as larger civilian fishing vessels remained in operation. The mid-life modernization of the Hero class is expected to install the stabilizers (or suitable alternative), but it remains uncertain how much that would improve the ships' ability to sail in offshore waters.<sup>24</sup> The stabilizers will reduce rolling from side to side but will do little to reduce pitching fore and aft due to the short hull that cannot ride across larger North Atlantic wavelengths.<sup>25</sup>

Third, Canada could adopt the Danish model. This would see the elimination of an armed role for CCG vessels and embarked fisheries officers and shift the entire responsibility onto the RCN. This means either deploying fisheries officers only on RCN ships or eliminating dedicated fisheries officers and instead training RCN officers in the finer points of fisheries inspections as well as imbuing them with powers of arrest. Aside from the legislative and training difficulties of such a dramatic shift, there are also operational implications. This includes drastically curtailing the hours available to RCN vessels for carrying out overseas/foreign deployments. In an era of intensified militarized geopolitical concerns, it is unlikely that this would be acceptable.

Finally, the CCG could add an enforcement capability to its helicopters and re-examine the possibility of permanently embarked helicopters on its OPVs. With the much larger heli-deck and permanent hangars of the new CCG AOPVs, this is a perhaps easier prospect in the coming years compared to the past attempts on the old Cape-class OPVs. The large sizes of the AOPVs mean there is ample room for both aviation facilities and workshops and science equipment, all of which are being designed into the AOPVs from the start instead of being installed ad hoc later in life. Helicopters equipped with new low-light/infrared imaging and surface-search radars operating off even limited numbers of ships at the outer edges of the Canadian EEZ would dramatically improve Canada's ability to surveil and gather evidence of any prospective violations across a wide

<sup>21</sup> Lee Berthiaume, "Canadian Frigates Not Involved in NATO Naval Task Forces for First Time Since 2014," *Globe and Mail*, August 9, 2022, <https://www.theglobeandmail.com/canada/article-canadian-warships-not-involved-in-nato-naval-task-forces-for-first/>.

<sup>22</sup> Canadian Coast Guard, "Vessel Details: CCGS A. LEBLANC," Government of Canada, <https://inter-j01.dfo-mpo.gc.ca/fdat/vessels/147>.

<sup>23</sup> Paul Withers, "Coast Guard's \$227M Ships Rock 'Like Crazy,' Making Crews Seasick, Unable to Work," CBC News, February 11, 2019, <https://www.cbc.ca/news/canada/nova-scotia/coast-guard-ships-can-t-handle-rough-seas-1.5009312>.

<sup>24</sup> Canadian Coast Guard, "Letter of Interest: CCGS Corporal McLaren M.M.V.," Solicitation No. F7044-210331/A, File No. 038mc.F7044-210331 (Ottawa: Public Works and Government Services Canada, 2021), 27 (21.0 Stabilization System). [https://buyandsell.gc.ca/cds/public/2021/06/03/3a2290a721704647e516c5e636e75e9a/ABES.PROD.PW\\_MC.B038.E28243.EBSU000.PDF](https://buyandsell.gc.ca/cds/public/2021/06/03/3a2290a721704647e516c5e636e75e9a/ABES.PROD.PW_MC.B038.E28243.EBSU000.PDF).

<sup>25</sup> The importance of longer hulls for reducing crew discomfort by allowing the ship to span multiple wavelengths typical of the North Atlantic was a rationale for the large sizes of the Danish navy's Arctic patrol vessels, where a length of 72m was found to be necessary to span two wavelengths: Per Herholdt Jensen, *Grønlandssejlerne: Flådens Inspektionskuttere og Inspektionsfartøjer* (Frederiksværk, Denmark: Nautius Forlag, 2010), 193-194.



range of weather conditions and across a much wider area. To ensure compliance with the finer points of Canadian and NAFO fisheries regulations, such as caught species and net mesh sizes, these helicopters would have to be equipped with personnel hoists that can lift fisheries officers on and off suspected violators. Although heli-borne inspections and boarding have been common tactics for the Danish and Norwegian fisheries inspection authorities, only the Canadian Armed Forces uses them in Canada. The current CCG helicopters lack such hoists (the absence of which also impedes their effectiveness for search-and-rescue), and fisheries officers do not appear to be trained for such tactics.

An added bonus of a helicopter-capable fisheries inspection capability would be its use in ice-covered waters. With the expectation of increased Arctic fishing activity due to climate change and following the eventual end of the Central Arctic Fishing Moratorium, it is possible that ice-strengthened foreign fishing vessels may make their way into waters of Canadian jurisdiction. Existing methods of boarding via rigid-hull inflatable boats may not be feasible in ice-covered waters, depending on the concentration of sea ice. Helicopters provide a convenient solution to that problem, ensuring all identified vessels can be inspected regardless of the oceanic conditions at play. While refitting helicopters (or buying new ones) and training their crews and fisheries officers will impose a not-insignificant financial cost, they are likely by far cheaper than building additional OPVs and hiring their crews or carrying out a wholesale shift towards using only the RCN for sea-based fisheries enforcement.

## Conclusion

The current fisheries enforcement situation works well for Canada due to a relatively low demand for the use of violent force at sea in our waters. However, such a peaceful situation off our coasts is unlikely to continue should existing trends in distant-water fishing fleets extend to Canadian waters, thanks to climate change. During Canada's historical challenges with the need to employ force to support its fisheries regulations in the 1980s and 1990s, using DFO offshore patrol vessels as the tip of the spear was a success while the Canadian navy's warships provided both additional inspection platforms and the threat of escalation. This helped bring about long-term solutions such as NAFO's neutral-observers program and the UN's Straddling Stocks Agreement, supported by NAFO members' willingness to abide by regulations and punish violators under their flags. However, the increased demand of the RCN's warships over the past two decades and for the foreseeable future for global operations will prevent their use for domestic offshore contingencies. At the same time, fishing fleets belonging to states that are not part of NAFO, such as China, cannot be addressed by existing institutional measures and will require at-sea enforcement and deterrence via the threat or use of force.

In this context, it is vital to enhance the CCG and DFO's offshore conservation and protection capabilities without putting significantly more stress on their respective institutions, budgets, crews and officers. Of the multiple options available, the quickest path forward will likely be to add a fisheries inspection capability to the CCG's helicopters. This would require new training for



pilots and fisheries officers, new hoists and sensors for the helicopters and additional budgeted flight hours. While the DFO currently operates fixed-wing surveillance aircraft for fisheries enforcement, they can only observe violations of boundaries and macro-level activities, like whether nets are in the water or not. They can't identify the extent to which violations are taking place in terms of species type, net sizes, catch totals and bycatches. Identifying such violations requires personnel on and inside the hulls of fishing vessels, who can only be delivered via small boats or helicopters.

Small boats lack the range and speed to significantly extend their parent vessel's eyes and ears and their boarding parties are subject to the co-operation of the crew whose vessel is being boarded. (The 1995 turbot war saw the Spanish trawler Estai's crew throwing the boarding ladder of an RCMP boarding party overboard, for instance). Helicopters, meanwhile, greatly extend the ship's surveillance horizon while enabling inspection parties to board suspected violators with only minimal co-operation. The CCG already operates helicopters, while the RCAF and RCN already train for helicopter-based boarding of ships, so training in the tactical aspects should be minimal. It will take time to identify and procure the necessary hoists and sensors for the CCG helicopters, but there is some time before the CCG's new patrol vessels enter service and before foreign fishing fleets potentially expand their search to Canadian waters. Ultimately, adding the equipment, training and procedures for a CCG/DFO shipboard helicopter fisheries inspection capability will greatly enhance Canada's ability to surveil and enforce waters under its jurisdiction for an increasingly risky future.

## ► About the Author

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**Timothy Choi** is completing his Ph.D. at the University of Calgary's Centre for Military, Security and Strategic Studies, where his dissertation is entitled, "Controlling the Northern Seas: The Influence of the Exclusive Economic Zone on the Development of the Norwegian, Danish, and Canadian Naval Forces." It asks how the Danish, Norwegian, and Canadian maritime forces developed in response to the adoption and legitimization of the 200 nautical mile exclusive economic zone, and whether smaller forces have generalizable differences in such responses compared to larger ones. This has seen him sailing with Danish and Norwegian patrol vessels to gain deeper insights into the tactical level of peacetime naval activities. He is a former Smith Richardson Predoctoral Fellow at Yale University's International Security Studies, where he worked with Professor Paul Kennedy, and is also a Research Fellow at Dalhousie University's Centre for the Study of Security and Development. He serves on the editorial board of and is the photo editor at the Canadian Naval Review. He currently works as a consultant on naval matters for the British American Security Information Council.

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