

CANADA'S FISHERIES ENFORCEMENT FRAMEWORK: DOMESTIC MCS AND INTERNATIONAL COOPERATION

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SENIOR PROGRAM OFFICER



Fisheries and Oceans
Canada

Pêches et Océans
Canada



AGENDA

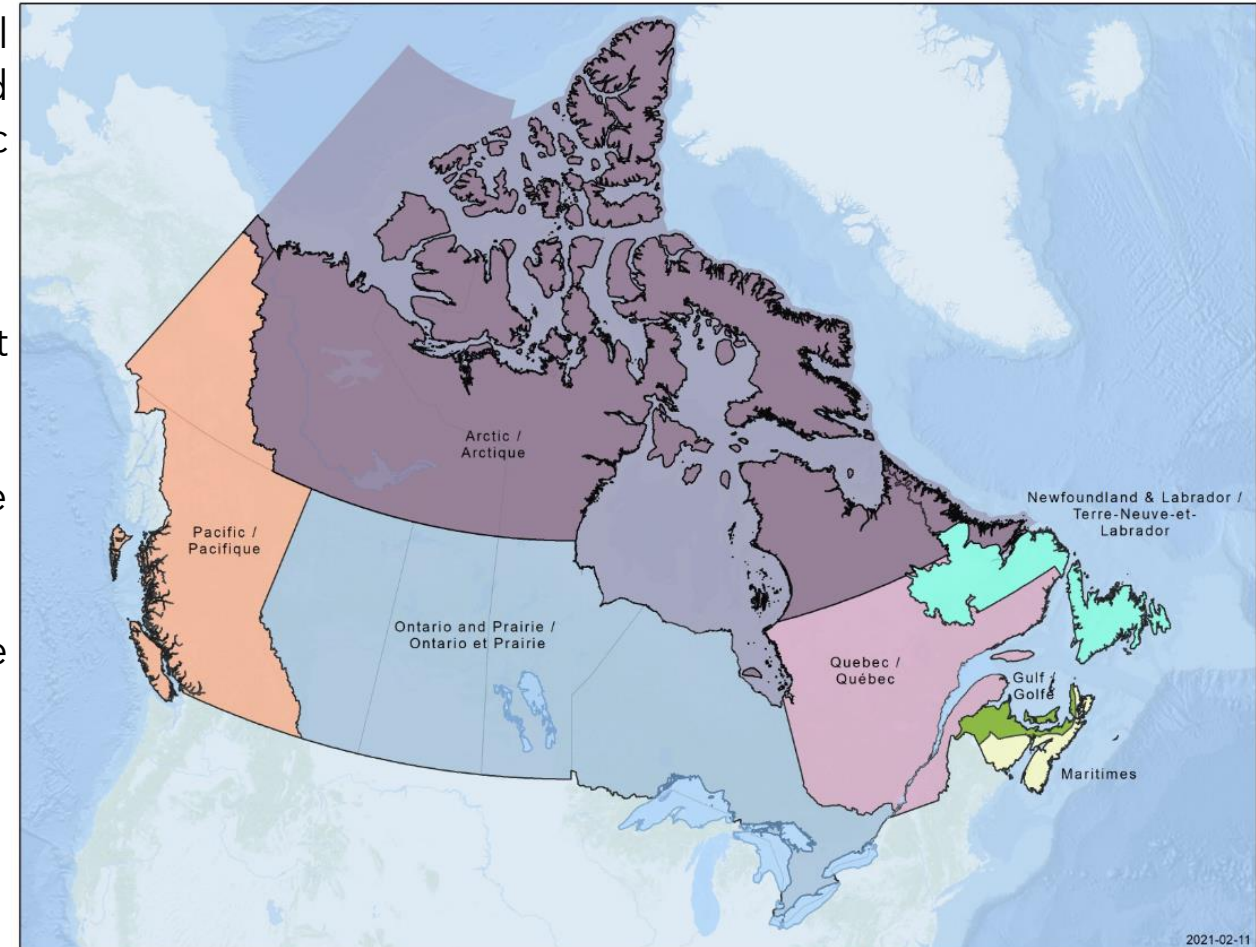
1. About DFO
2. DFO's fisheries enforcement program
3. Our three-pronged approach to promote compliance
4. Canada's international enforcement efforts
5. International Cooperation
6. Indo-Pacific Strategy initiatives





ABOUT FISHERIES & OCEANS CANADA

- Fisheries & Oceans Canada (**DFO**) is the federal department responsible for the conservation and sustainable use of Canada's fisheries and aquatic ecosystems, both marine and inland.
 - Formed in **1868**
- Until recently, responsible for Canada's civilian Coast Guard mandated with marine SAR and navigation safety.
- Canada has the **world's longest coastline** spanning three different oceans - Atlantic, Arctic and the Pacific.
- Oversight over the fisheries resources found within the exclusive economic zone, covering **5.6M km²**
- Value to Canadian economy worth over **\$5.7B annually**
 - Commercial landings is \$3.6B (wild capture in 2023)
 - Aquaculture contributes \$2.1B
 - Canada is the 5th largest fish and seafood exporter in the world.





ABOUT OUR ENFORCEMENT AGENCY - C&P

- DFO possesses one of the world's largest dedicated fisheries enforcement agency, the **Directorate of Conservation & Protection (C&P)** - currently comprised of nearly 800 officers and program staff nation-wide deployed at over 100 locations.
- Mandated with ensuring compliance of **Canada's federal fisheries and oceans protection legislation** in order safeguard fisheries, fish habitat, and vulnerable aquatic species.
 - Domestic fisheries, endangered species, marine mammal protection, EEZ and high seas fisheries compliance and marine protected areas.
- **Armed regulatory law enforcement** agency responsible for delivering inspection and enforcement activities over land, sea, and air.





CANADA'S FISHERIES ENFORCEMENT PROGRAM MODEL

- C&P's fisheries enforcement model is based on **3 pillars**:
 - Outreach and public engagement - seeks to promote voluntary compliance of stakeholders.
 - Core fisheries MCS program to verify compliance and enforce legislation.
 - Specialized enforcement activities to support investigations.
- Activities are **intelligence informed**.





CANADA'S REGULATORY FRAMEWORK

- Canada relies on a **robust statutory legal framework** to ensure compliance with fisheries requirements and provide **strong regulatory enforcement powers**, including for inspections and investigations, to federal fishery officers, via:
 - Federal Legislation - Acts and regulations
 - Legally-binding conditions of licence (linked to Acts/regulations)
 - All based upon federal legislation - which can result in criminal prosecution if serious.





PILLAR 1 - PUBLIC EDUCATION AND STAKEHOLDER ENGAGEMENT

- Compliance Promotion and consultation with stakeholders
 - Engagement with commercial, recreational and indigenous fisheries stakeholder groups.
- Public communication of fisheries requirements
 - Publishing of fisheries regulations online, booklets, email notifications on changes.
- Fishery officer community engagement





PILLAR 2 - MCS ACTIVITIES

- Canada's traditional **MCS system is resource-intensive** and relies heavily on conducting fisheries compliance patrols at sea, on land and in the sky via program vessels, patrol vehicles and aircraft.
- Patrol assets:
 - Approx. 500 patrol vessels under 14M
 - Four (4) surveillance aircraft
 - Extensive land-based fleet - vehicles, ATVs, snowmobiles
 - Drones
 - Large patrol vessels supported by Canadian Coast Guard





AERIAL SURVEILLANCE

- Canadian-made Dash 8 long-range fisheries surveillance aircraft equipped with advanced surveillance technologies:
 - Advanced radar tracking
 - Integration with onboard data management systems
 - Military-grade optical and thermal sensors
 - High altitude operating capability
- Missions delivered by Canadian contractor PAL AEROSPACE and directed by DFO fishery officers to fulfill fisheries enforcement compliance priorities.





OFFSHORE FISHERIES PATROLS

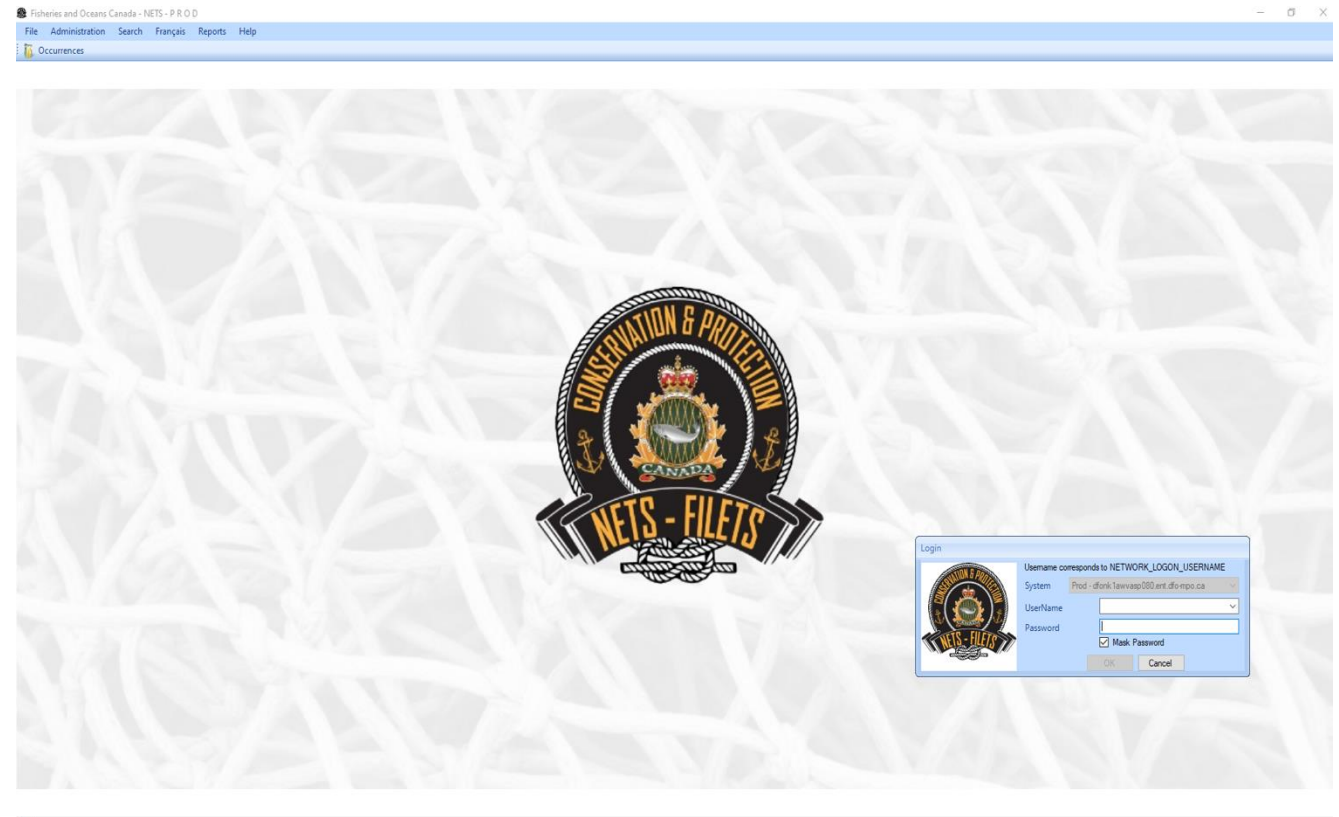
- DFO conducts persistent mid-shore and offshore maritime patrolling on both Pacific and Atlantic coasts aboard Coast Guard- operated patrol vessels.
- Dedicated maritime patrol units supplement MCS activities of local enforcement detachments.





DATA MANAGEMENT SYSTEMS

- DFO maintains a national compliance management database to track data on inspections and investigations, supporting in-port and at-sea risk-based decision making by officers through **access to compliance history** of vessels and fishing entities.
 - Real-time support through enforcement dispatch centres to verify compliance history.
- Access for enforcement to internal databases on licenses and authorizations.
- Access to dedicated aerial surveillance mission systems for real-time data on vessel targets.





FISHER-DEPENDENT MCS DATA REQUIREMENTS

- Requirements may be fishery-specific, but generally, legally-required record keeping is required to support compliance and enforcement.
- Logbook Records (e-log or paper)
- Hail-in and Hail-out Records :
 - Fisher may be required to phone in or digitally submit data on when they embarked and return on fishing trip - may include skipper, crew details, coordinates, and catch reporting information.
- Fish sales declarations
- In-transit authorizations for foreign FVs transiting through Canadian fisheries waters

2020 CANADIAN PACIFIC ALBACORE TUNA LOGBOOK - PLEASE PRINT CLEARLY										Submission Deadline: 1-Nov-2020	
VESSEL NAME		VRN	SKIPPER Name:		Tel:	Email:					
			OWNER Name:		Tel:	Email:					
Date (mm/dd)	Time (hh:mm)	LAT (xx yy)	LONG (xxx yy)	Water Temp (F)	Species Code	TUNA KEPT		BY-CATCH RELEASED		Vessel Trip Data (Required) (Please start NEW page for NEW trip)	
						Count	Avg Wt	Count	Avg Wt	FIN	TRIP #
Nov 23/20	START 12:00				ALB						30736
		(N) S	E (W)	68.0	SK1	3	13				X (3)
	STOP 17:00	35°02	136°25		SBD						12
Length (cm)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	
Nov 24/20	START				ALB						Trip Offload Data (Required) (Enter all offload data on FIRST page of trip)
		(N) S	E (W)	70.8	YTC	2	6				Date (mm/dd) 11/17/20
	STOP 17:00	32°28	138°24		SBD						
Length (cm)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	
Nov 25/20	START				ALB						Port [REDACTED]
		(N) S	E (W)	72.1							Buyer [REDACTED]
	STOP 17:15	30°02	140°20		SBD						
Length (cm)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	
Nov 26/20	START				ALB						Sales Slip #
		(N) S	E (W)		SK1	1	22				OFFLOAD FISH WT (lbs)
	STOP 17:20	27°39	142°17		SBD						To Buyer 63088
Length (cm)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	Dock Sales 500
Nov 27/20	START				ALB						Take Home 100
		(N) S	E (W)	76.8	SK1	3	8				TOTAL OFFLOAD 63688
	STOP 17:30	25°17	144°11		SBD						
Length (cm)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	
Date:	Comment:										Page ____ of ____ for Trip ____
Date:	Comment:										

WHITE PAGES: Send to CHMSF, c/o H. Seiff, General Delivery, Gabriola Island, BC V9R 1X8 (tel 250-247-8258 fax 888-908-1382) Tunalogbook@shaw.ca YELLOW PAGES: Retain for your files



FISHER-INDEPENDENT MCS DATA REQUIREMENTS

- Generally, Canada relies upon Third-Party contractors to deliver various fisher-independent programs, including:
 - Dockside monitoring data and verification upon catch landing
 - At-sea observer programs
 - VMS
 - Electronic monitoring (EM)
- Non-compliance is reported to C&P for prioritization - including follow-up actions by enforcement personnel such as inspection and investigations.

EM Observe™ Vessel Reference Guide

ARCHIPELAGO MARINE RESEARCH

Start or stop Video Recording Manually | Start a System Function test | End Tip or Swap Data Drives | Check Disk Storage Space

FTCN

IP CAM 1 - Automatic | C1 - Preview | C2 - Preview

Video recording (red banner) | Video not recording (black banner)

C3 - Preview | C4 - Preview | C5 - Preview

C6 - Preview | C7 - Preview

2012-09-30 19:31:33

48° 25.6912' N | 123° 23.9193' W | Victoria Harbour

19

AND -18 PSI | AN0 448 PSI | AN0 -526 PSI

Enter a comment to describe a current event or activity

System Messages

Pressure Sensor Value
Black background - sensor operational but PSI value not above threshold

Pressure Sensor Value
Green background - PSI value above threshold (video should be recording)

Pressure Sensor Value
Red background - sensor not operational



PILLAR 3- SPECIALIZED ENFORCEMENT CAPABILITIES AND SUPPORT



- Canada's Program within C&P is supported by specialized programs, including:
 - Digital forensics teams capable of extracting and analyzing digital data extracted from computers, onboard navigation systems, phones and other digital devices.
 - Dedicated Major or Complex Investigation Teams
 - Intelligence officers and specialized programs capable of conducting covert investigations into serious illegal operators.





ENFORCEMENT ACTIVITIES INFORMED BY INTELLIGENCE

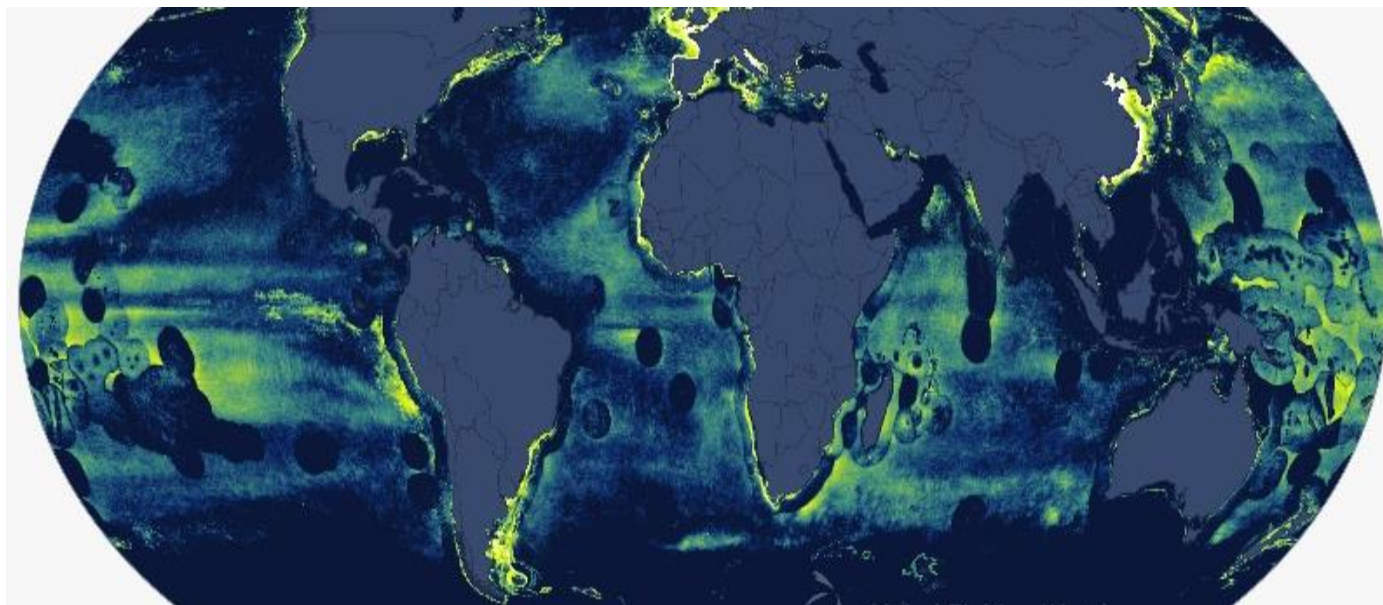
- Canada's C&P is supported by a National Fisheries Intelligence Service (NFIS), comprised of intel officers and analysts.
- Enforcement officers collaborate with intel officers and analysts to conduct field-reporting on activities deemed to have intelligence-value.
- Program develops intelligence products to support risk-based priority setting for strategic, tactical and operational decision making.





CANADA'S INTERNATIONAL FISHERIES ENFORCEMENT PROGRAM

- Canada supports international efforts to combat illegal fishing and protect marine biodiversity globally through several lines of activity delivered from **C&P's International Fisheries Enforcement Program**.
- Primary Function: To coordinate and deliver activities on behalf of Canada to combat **IUU fishing beyond Canada's EEZ** in accordance with international laws and treaties.





DFO'S INTERNATIONAL EFFORTS

Our efforts to combat IUU fishing track along the following four (4) lines of activity:



High Seas Operations



Partner Technical Assistance



Partnerships with Expert NGOs



International Fisheries Management Fora





HIGH SEAS ENFORCEMENT OPERATIONS

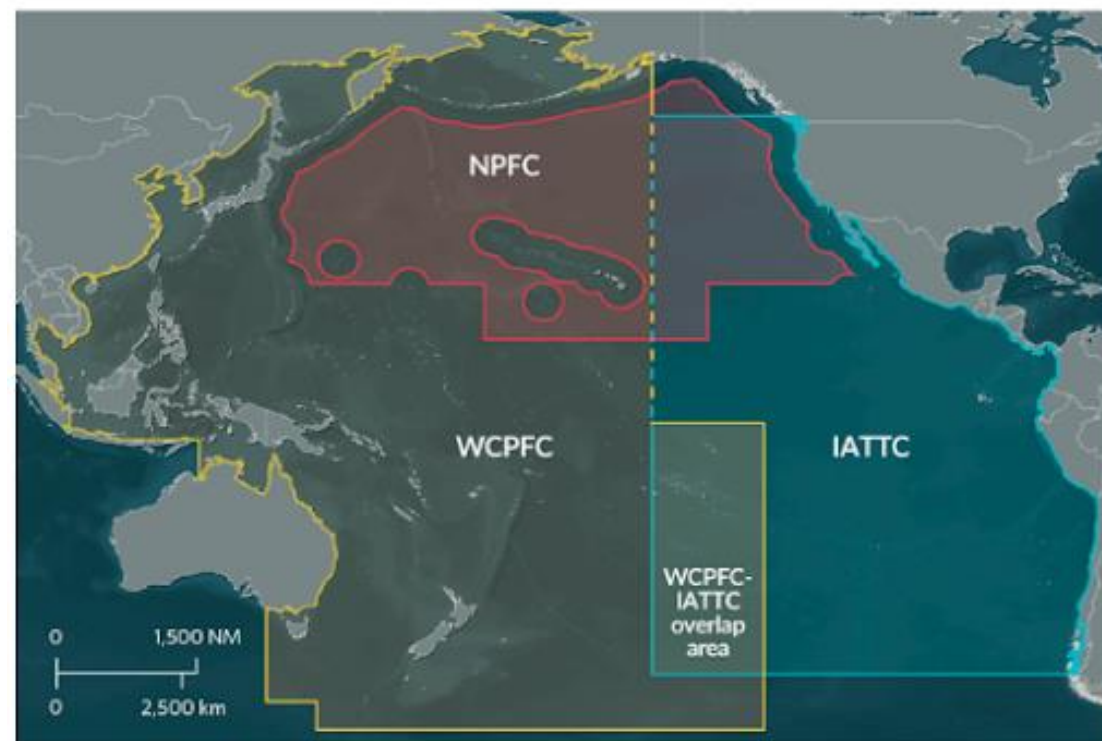
- Canada has been actively engaged in high seas fisheries enforcement in the Pacific since the 1990s and in the Atlantic since the 1970s.
- First Pacific high seas enforcement missions were conducted pursuant to OPERATION DRIFTNET in 1993, following the 1992 UN ban on large-scale high seas drift nets.
- Since the 90's, several North Pacific coastal states have coordinated their enforcement and surveillance actions to combat IUU fishing activities, including through the North Pacific Anadromous Fisheries Commission (NPAFC) and more recently, through high seas boarding provisions granted through the North Pacific Fisheries Commission (NPFC).





HSBI AS A TOOL FOR INTERNATIONAL FISHERIES ENFORCEMENT COOPERATION

- Canada has **increasingly pursued high seas boarding and inspection (HSBI) as a mechanism to increase our cooperation** and coordination with international partners.
 - Grounded in international law such as the **UN Fish Stocks Agreement**, they provide a legal mechanism to not only increase transparency and accountability for high seas fisheries but also strengthen regional and international cooperation - where adopted.
- Canada is actively conducting HSBI in cooperation with international partners within 3 RFMOs - 2 in Pacific/1 in Atlantic
- 3 out of the 4 main Pacific regional fisheries management organizations (RFMO) have adopted **HSBI** framework, permitting member countries to board and conduct inspections of foreign-flagged vessels on the high seas.





HSBI AS A MECHANISM FOR INTERNATIONAL FISHERIES ENFORCEMENT COOPERATION

- HSBI and RFMO convention framework promote increased cooperation **between inspecting state and flag state**, both through HSBI mechanisms and Convention obligations that hold flag states responsible for investigating fleets where potential violations are raised.
- Most HSBI frameworks encourage multi-national and joint compliance campaigns.

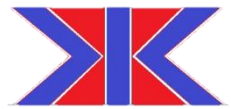




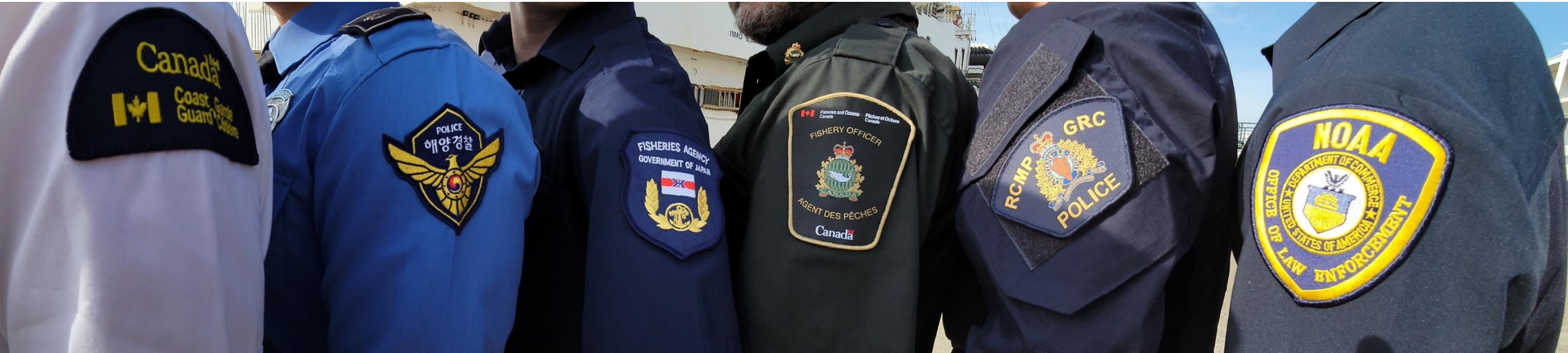
OPERATION NORTH PACIFIC GUARD



- Since 2019, Canada has participated in cooperative multinational fisheries enforcement operations under **North Pacific Guard** - working with partner nations to conduct high seas fisheries compliance inspections of high seas fleets on the water, air, and from space using remote sensing satellites.
- US Coast Guard "shiprider" deployments - 2019+
- Close coordination with Japanese Government to facilitate Canadian aerial inspection campaigns.
- Canadian-led HSBI operations - 2023+















SIR WILFRID LAURIER

INSPECTION
DES PÊCHES

Canada



IMO 8320434





OP NPG 2026 HSBI SUMMARY



Distance Patrolled
9,600 nm



Boardings and Inspections
39



Additional drone inspections
2



Potential Violations
35



10



OP NPG 2026 AERIAL SUMMARY



Number of Flights
33



Distance Flown
47,000 nm



Flight Time
254 hrs



Vessels observed
366



Potential Violations
56

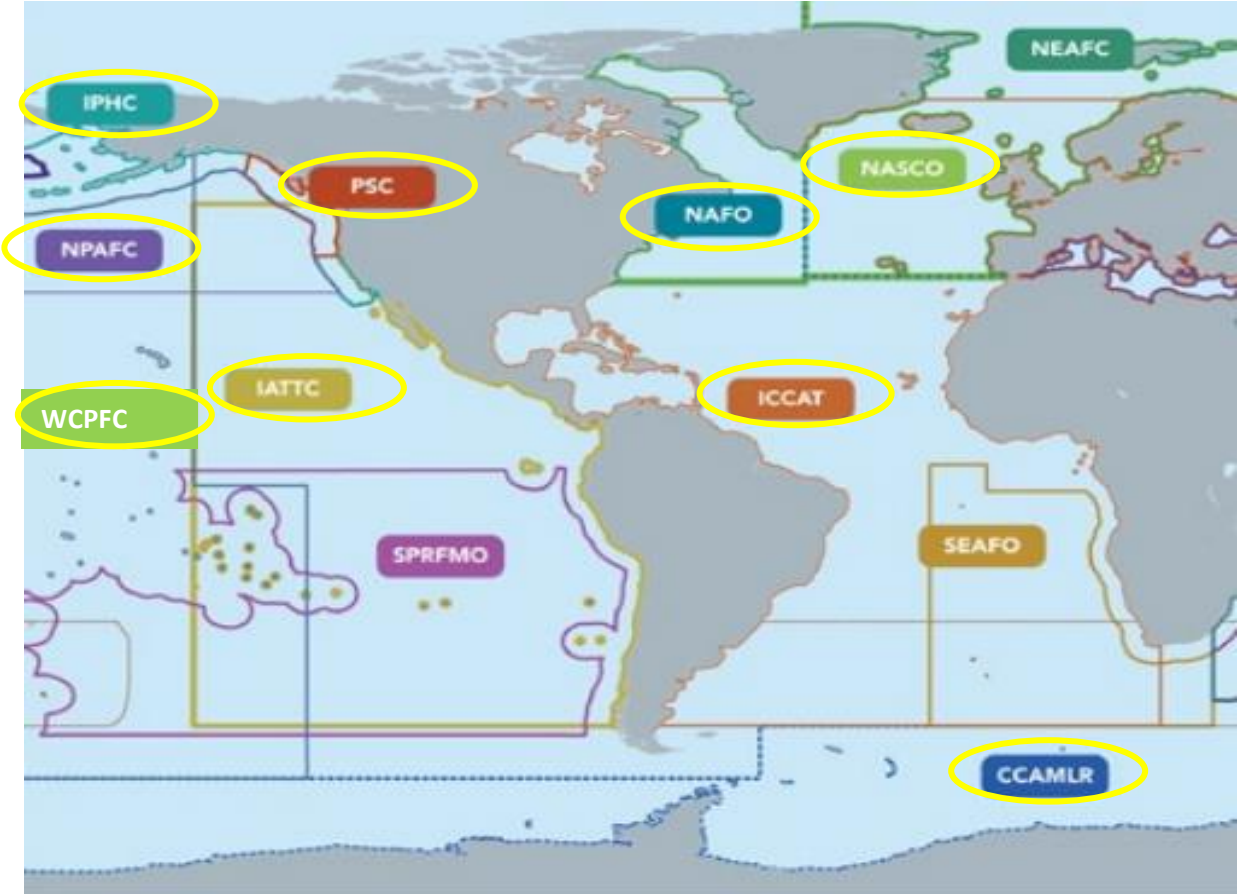


Joint Patrols
8



INTERNATIONAL FISHERIES POLICY FORA

- Canada belongs to **9 RFMOs**, where it takes a strong position to adopt robust conservation and management measures and compliance regimes, such as HSBI.
- RFMO compliance and commission meetings present ongoing opportunities for collaboration amongst like-minded member states on a host of potential fisheries compliance-related areas that support efforts to curb IUU and promote compliance regimes.



MONGABAY Features Videos Podcasts Specials Articles Shorts Donate

Shark-fishing gear banned across much of Pacific in conservation 'win'

PHILIP JACOBSON
8 DEC 2022 CHINA ILLEGAL WILDLIFE TRADE

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REGIONAL INTELLIGENCE COOPERATION

- In recent years, DFO has further prioritized initiatives that **strengthen the capacity of international partners** to disrupt illegal fishing, addressing both technological and human capacity.
- The development of the **Dark Vessel Detection (DVD)** platform in 2020 is the highlight of these efforts. It is a satellite-based surveillance system built for the Canadian government by space technology contractor **MDA Space Ltd.**



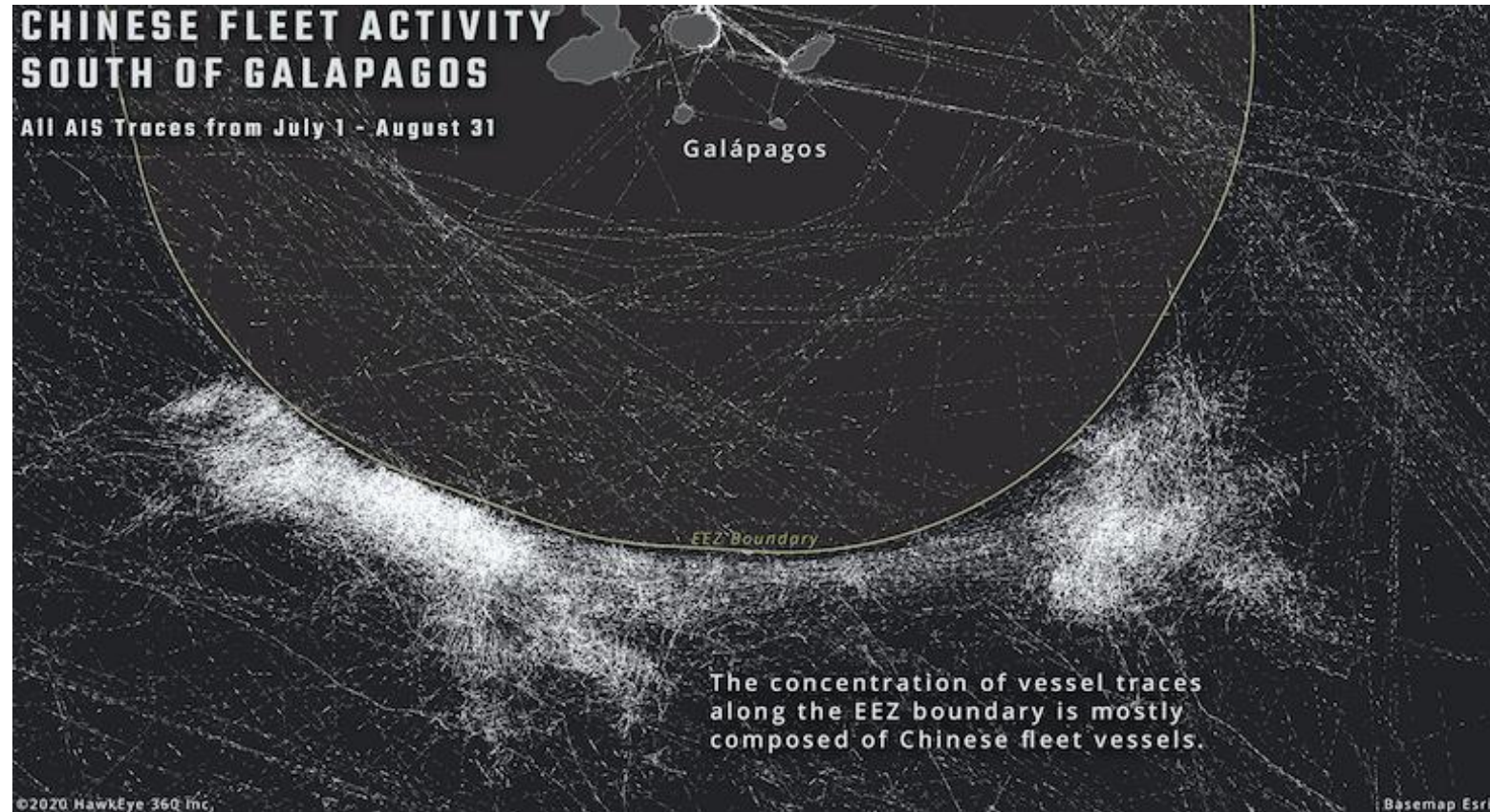
The Five Eyes (FVEY)





CAPACITY DEVELOPMENT / DARK VESSEL DETECTION

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2020 Chinese squid fleet activity along Ecuador’s EEZ - significant tracking outages and potential incursions detected



DARK VESSEL DETECTION BACKGROUND

- It is widely understood that vessels engaged in illegal fishing and other illicit activities extinguish their **AIS** and **VMS** transponders, thereby going **“dark”** and untrackable to maritime monitoring centres.
- DVD addresses this high-risk “dark” activity by providing **unclassified** layered space-based surveillance data, permitting international maritime and fisheries compliance partners to identify and respond to such threats.
- Provides a crucial surveillance tool for Canada’s partners in the fight against IUU fishing, providing **near real-time** data on potential IUU fishing activity.
- Current recipient countries supported by DVD include 5 Pacific Latin American, South Pacific Island States belonging to the Forum Fisheries Agency, Philippines and Taiwan.

Canada launching \$7M project to track international 'dark vessels' at sea



The Department of Fisheries and Oceans will use satellites to identify ships that may be fishing illegally

[Rafferty Baker](#) · CBC News · Posted: Feb 24, 2021 9:27 PM PT | Last Updated: February 24, 2021

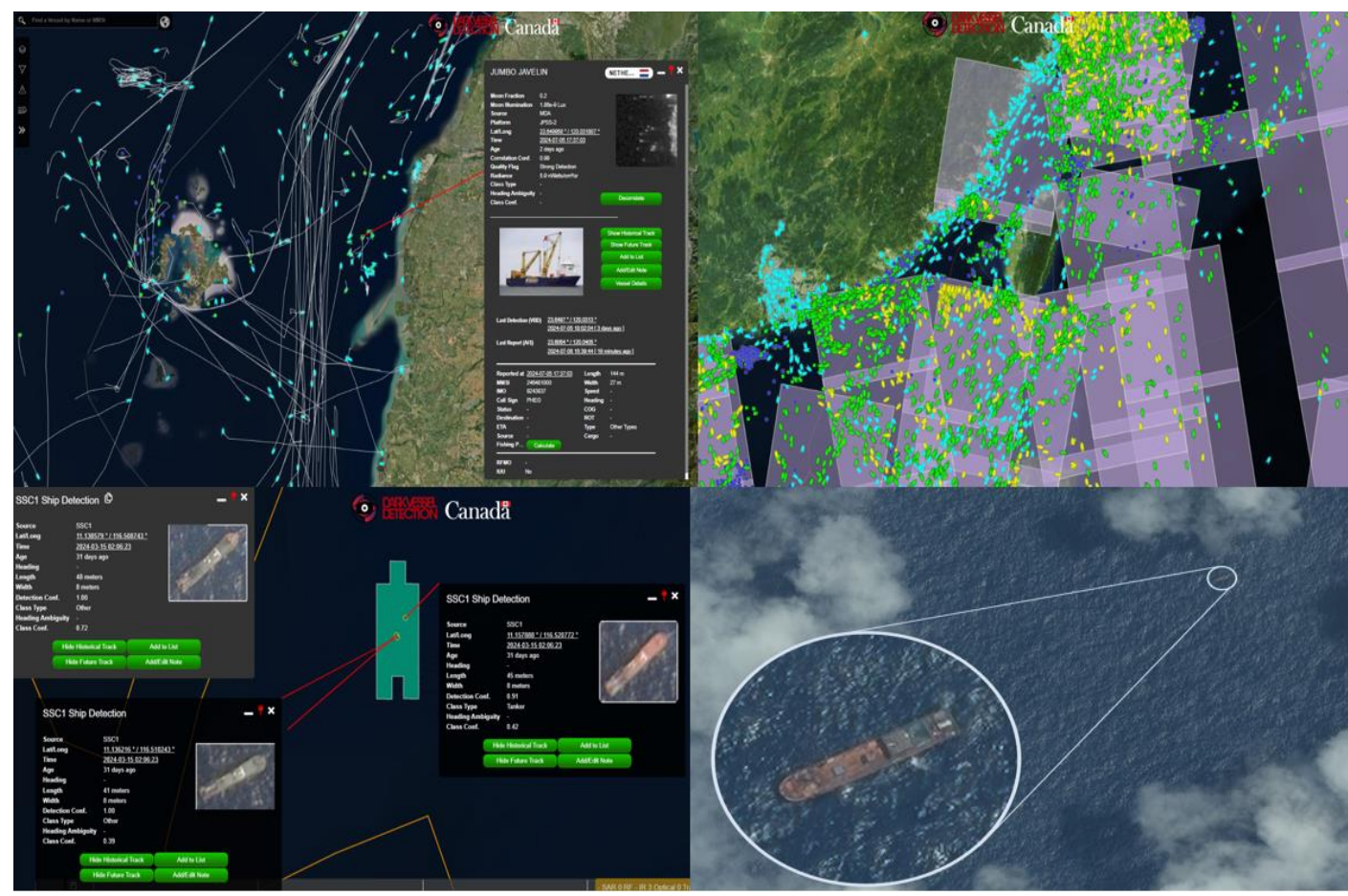


The Department of Fisheries and Oceans is partnering with officials from other countries to help locate so called 'dark vessels,' ships that have turned off location transmitters to evade authorities while they fish illegally. (DFO)



DARK VESSEL DETECTION

- **Multi-source satellite data** (SAR, RF, VIIRs, optical) for ship detection
- Frequent SAR from **Canada's Radarsat Constellation Mission** SAR satellites
- **Auto-correlation** of satellite detections with AIS/VMS; flags dark vessels
- **Analytical tools** including geo-fences, filters, behavior detection, tripwires, alerts
- **Web-based access** (laptop + internet only)
- **Unclassified data** enables easier sharing (with license conditions)
- **Near real-time** (2-4 hours post-collection)



DARKVESSEL DETECTION

- Additional Anomalies
- Conditions
- DR
- Error Ellipses
- Historical
- Reporting
- MS



CAMILA ECUADOR

Lat/Long: -1.221501° / -90.429238°
 Time: 2023-02-02 16:14:03
 Age: 3 days ago
 Heading: -
 Length: -
 Width: -
 Detection Conf.: 0.96
 Correlation Conf.: 1.00
 Class Type: Bulk Carrier
 Class Conf.: -



- Show Historical Track
- Show Future Track
- Add to List
- Add/Edit Note



WV02 Ship Detection

Lat/Long: -1.220000° / -90.428333°
 Time: 2023-02-02 16:11:54
 Age: 3 days ago
 Speed: -
 Heading: -
 COG: 118°
 ROT: -
 Status: At anchor
 Cargo: -
 Action: -
 Destination: PTA CORMORANT
 ETA: 2024-02-02 15:00:00
 Source: S-AIS

RFMO: WFFC WCPFC SPSRMO

IJU: No
 Fishing Prob.: 0.00

Vessel Details



- Add/Edit Note
- Show Historical Track
- Show Future Track

Unregistered Vessel ECUADOR

MARYMAR

Lat/Long: -1.317362° / -90.372376°
 Time: 2023-02-02 16:14:03
 Age: 3 days ago
 Heading: -
 Length: -
 Width: -
 Detection Conf.: 0.96
 Correlation Conf.: 1.00
 Class Type: Other
 Class Conf.: -



- Show Historical Track
- Show Future Track
- Add to List
- Add/Edit Note

WV02 Ship Detection

MMSI: 735059554
 IMO: -
 Call Sign: HC6001
 Type: Fishing
 Length: 9 meters
 Width: 3 meters

Lat/Long: -1.314263° / -90.374185°
 Time: 2023-02-02 16:14:45
 Age: 3 days ago
 Speed: 15.7 kn
 Heading: -
 COG: 218.1°
 ROT: -
 Status: -
 Cargo: -
 Action: -
 Destination: -
 ETA: -
 Source: S-AIS

RFMO: WFFC WCPFC SPSRMO

IJU: No
 Fishing Prob.: 0.00

Vessel Details



WV02 Ship Detection

Lat/Long: -1.330491° / -90.289353°
 Time: 2023-02-02 16:14:03
 Age: 3 days ago
 Heading: -
 Length: -
 Width: -
 Detection Conf.: 0.90
 Class Type: Tugboat
 Class Conf.: -

- Add/Edit Note
- Show Historical Track
- Show Future Track

WV02 Ship Detection

Lat/Long: -1.232886° / -90.360338°
 Time: 2023-02-02 16:14:03
 Age: 3 days ago
 Heading: -
 Length: -
 Width: -
 Detection Conf.: 0.88
 Class Type: Tugboat
 Class Conf.: -



- Add/Edit Note
- Show Historical Track
- Show Future Track



TECHNICAL ASSISTANCE COOPERATION

- DFO possesses a **range of expertise** on specialized fisheries inspection and investigation techniques, MCS tools, and experience in both domestic and international fisheries operations.
- Department is seeking to expand training course development and opportunities for technical cooperation.
- I.e. Port Inspector Training, HSBI, MDA analysis.





STRATEGIC PARTNERSHIPS WITH EXPERT FISHERIES COMPLIANCE NGO_s

- Recognizing the **value that specialized international NGOs provide** to international efforts to strengthen fisheries MCS capabilities, intelligence and transparency in the fight against illegal fishing, DFO and the Government of Canada have prioritized financial support to facilitate increased support for Indo-Pacific partners and the regional community of MCS practitioners.
- Through Canada's IPS, we have committed to supporting the Joint Analytical Cell (JAC), WildAid, and OceanMind, amongst other partners, in support of fisheries MCS and effective MPA enforcement in the region.



JOINT ANALYTICAL CELL















OPPORTUNITIES FOR FURTHER COLLABORATION THROUGH CANADA'S INDO-PACIFIC STRATEGY

- Recognizing the growing global influence of the Indo-Pacific region, Canada released its Indo-Pacific Strategy in 2022 in support of deepening engagement with Pacific partners.
- Canada's **Indo-Pacific Strategy** prioritizes stronger partnerships with regional states to support sustainable fisheries, maritime security, and rules-based ocean governance.
- The **Shared Ocean Fund (SOF)** initiative was funded under Canada's **Indo-Pacific Strategy** and led by DFO.
- It is a **5-year initiative** focused on combatting illegal, unreported, and unregulated (IUU) fishing and supporting a healthy marine environment through:
 - (1) **governance**; (2) **enforcement**; and (3) **partnerships**



CANADA'S INDO-PACIFIC STRATEGY

Through the Shared Ocean Fund, Canada is combatting IUU fishing by implementing a three-pronged approach:

1. Governance

Strengthen the rules-based international order by **increasing Canadian-engagement, including in regional fisheries management organizations (RFMOs)**

2. Enforcement

Augment international IUU fishing **surveillance and detection technologies** to enforce domestic and international legal frameworks in the Indo-Pacific region

3. Partnerships

Drawing on Canadian expertise, **leverage bilateral and multilateral cooperation** to combat IUU fishing and to support sustainable use of marine resources



Questions?

Thank for your attention!



Fisheries and Oceans
Canada

Pêches et Océans
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