

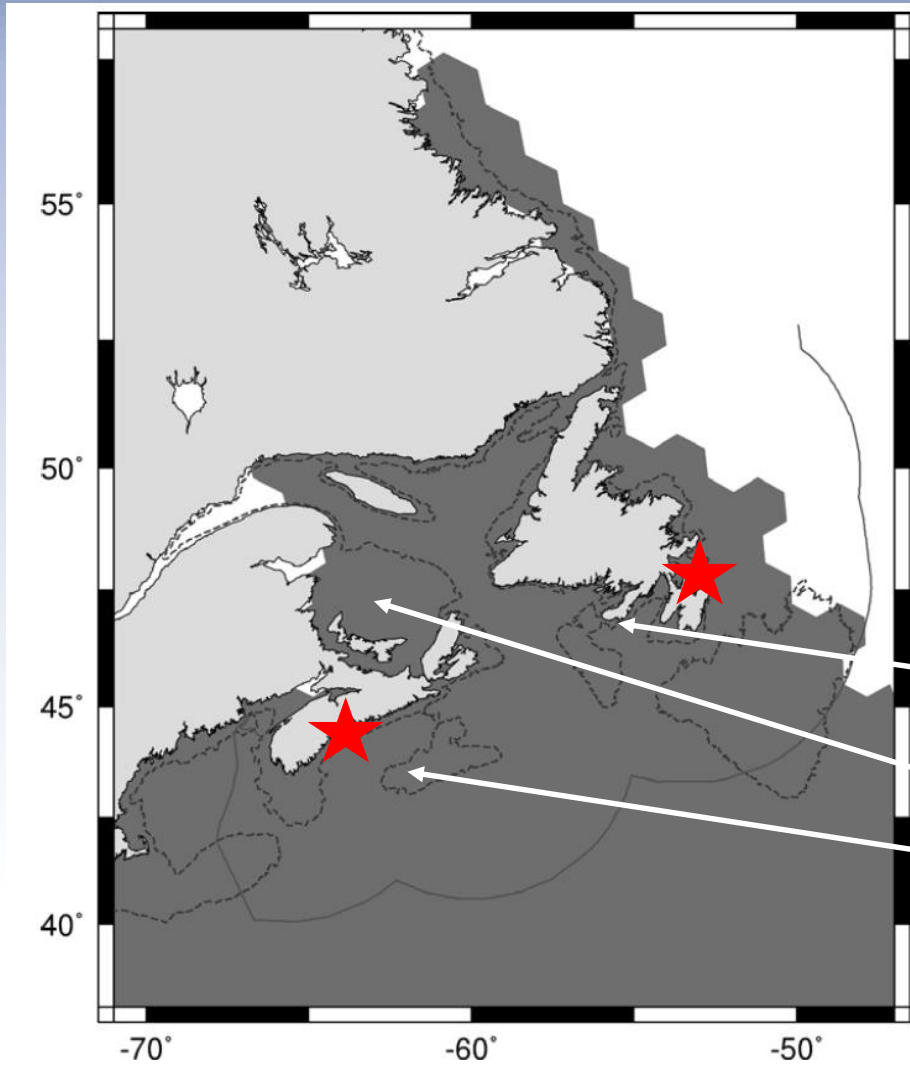


2019 REGIONAL LEATHERBACK BY-CATCH  
PRIORITIZATION WORKSHOP  
PARAMARIBO, 17 – 18<sup>TH</sup> OF MARCH 2019

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COUNTRY PRESENTATION:  
CANADA  
Organizations: WWF-Canada

# FORAGING AREA – NW ATLANTIC



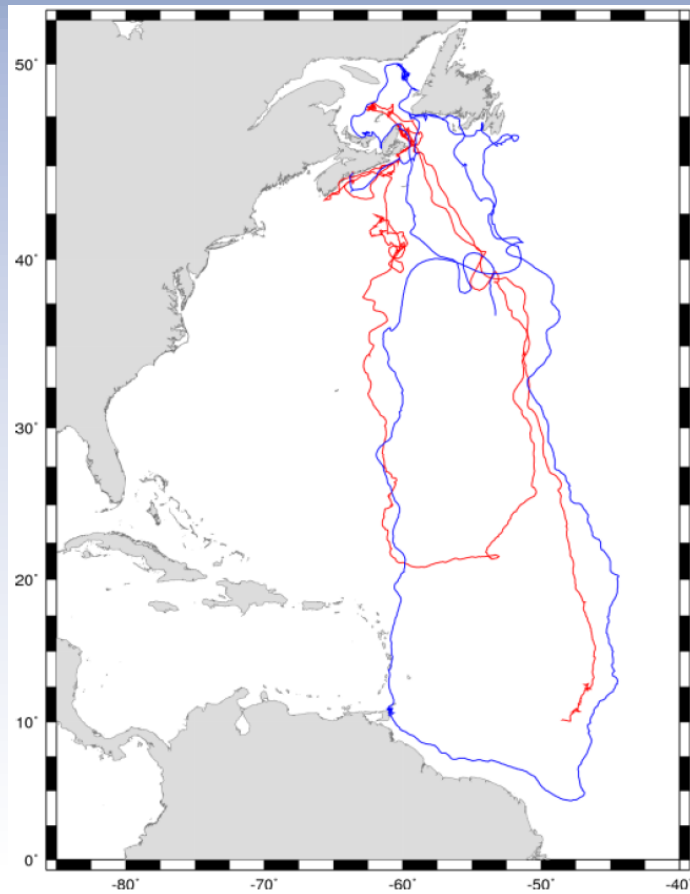
- Leatherbacks frequent a very large area within Canadian waters
- Managed by four different regions within Fisheries and Oceans Canada (Maritimes, Gulf, Newfoundland, Quebec)

Newfoundland Shelf  
Gulf of St. Lawrence  
Scotian Shelf

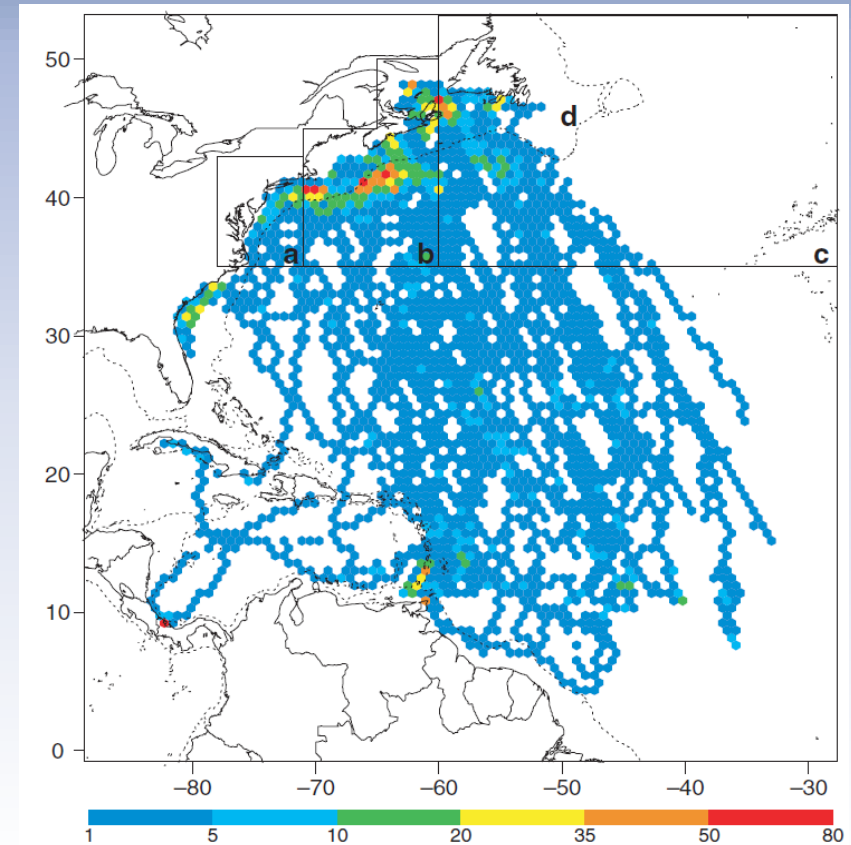
(COSEWIC, 2012; adapted from James et al (2005) *Ecology Letters*)



# FORAGING AREA – NW ATLANTIC



COSEWIC (2012); adapted from James et al (2005) *Ecology Letters*



James et al (2005) *Ecology Letters*

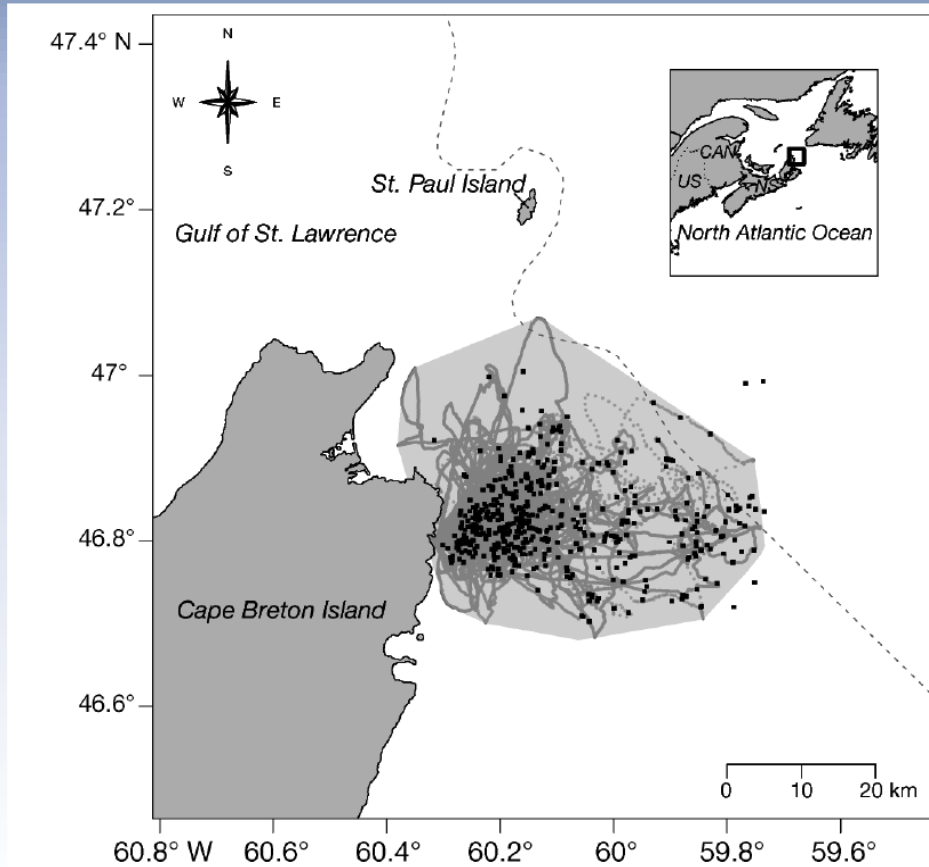
# LEATHERBACK BYCATCH – OBSTACLES TO REDUCTION

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- Lack of data
  - Low observer coverage
  - Disincentives for fishers to report interactions
  - Lack of enforcement for reporting
- Very large fishing fleets spread across large area and 4 different reporting areas



# NW ATLANTIC FORAGING DENSITY ESTIMATES



Year	Abundance estimate [95% CI]	Density estimate (individuals for 100 km <sup>2</sup> )
2006	125 [119-130]	8.3
2007	570 [530-609]	37.9
2008	80 [76-84]	5.3
2009	137 [128-146]	9.1
2010	52 [50-55]	3.5
2011	-	-
2012	135 [127-142]	9.0
2013	56 [53-58]	3.7
2014	149 [142-155]	9.9
2015	18 [17-19]	1.2

Archibald and James (2016) *MEPS*

- No evidence of a decreasing trend in abundance (2002 – 2015)

# LOCAL FISHERIES – BYCATCH IMPACTS

From Hamelin et al. (2016) *Aquat. Conserv. Mar. Freshw. Ecosyst.*:  
Fisheries implicated in leatherback entanglement, 1998 – 2014. Data from citizen reporting networks

Fishery	Frequency	% of entanglements
Pot trap	91	44.4
Trap net	53	25.8
Gill net	24	11.7
Groundfish longline	7	3.4
Rod and reel	4	2.0
Bait net	3	1.5
Aquaculture	3	1.5
Offshore lobster	2	0.98
Other/unknown	18	8.8

- Data are from citizen reporting networks:
  - Canadian Sea Turtle Network (Nova Scotia based) and
  - Whale Release and Strandings (Newfoundland based)
- Data does not include impacts from pelagic longline





# LOCAL FISHERY CHARACTERISTICS

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## Pot trap

**Lobster:** Newfoundland Shelf, Gulf of St. Lawrence, Scotian Shelf

landings of 97,452 mt; 8,802 licenses

**Crab:** Newfoundland Shelf, Gulf of St. Lawrence, Scotian Shelf

landings of 5,947 mt; 3,703 licenses

**Whelk:** Newfoundland Shelf

landings of 899 mt

\*Source: landings and license data from the Government of Canada website for the year 2017



# LOCAL FISHERY CHARACTERISTICS

## **Atlantic mackerel:**

- Newfoundland Shelf, Gulf of St. Lawrence, Scotian Shelf
- Gillnet, trap and purse seine
- Landings of 9,459; 7965 licenses

## **Turbot / Greenland Halibut:**

- Gulf of St. Lawrence and Newfoundland Shelf
- Gillnet
- Landings of 11,336

\*Source: landings and license data from the Government of Canada website for the year 2017





# LOCAL FISHERY CHARACTERISTICS

## **Large pelagics (tunas and swordfish):**

- Scotian Shelf
- Longline
- Landings of 2080 mt; 849 tuna licenses, 1216 swordfish licenses

## **Groundfish (cod, haddock, Pollock, white hake)**

- Newfoundland Shelf, northern Gulf of St. Lawrence
- Longline and trawl
- Landings of over 30,000 mt; 8460 licenses

\*Source: landings and license data from the Government of Canada website for the year 2017

# LOCAL FISHERY CHARACTERISTICS

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## Shrimp:

- Newfoundland Shelf, Scotian Shelf
- Trawl
- Landings of 81,466 mt; 446 licenses

\*Source: landings and license data from the Government of Canada website for the year 2017



# FISHERY BYCATCH

## Lobster:

- Interactions: 2, one live release
- Mortality Rate: unknown
- Observer coverage: (0.3-6%)

## Crab:

- Interactions: 5.5 per year on the Scotian Shelf; no recorded interactions in the Gulf; 7 with 3 mortalities in the Newfoundland Shelf
- Mortality Rate: estimated at 1-4 deaths per year if mortality rate is 20-70%
- Observer coverage: 8-10% on Scotian Shelf, 12% in Gulf, 2-18% in Newfoundland

\*Source: DFO 2012; data up to 2010; data from observer coverage, SARA logbooks, stranding networks



# FISHERY BYCATCH

## Whelk:

- Interactions: 2 in Newfoundland, 10 in Quebec, and 5 entanglements
- Mortality Rate: 3 of the 5 entanglements resulted in mortality
- Observer coverage: (<1%)

## Atlantic mackerel:

- Interactions: purse seine: 9 recorded interactions, 3 live releases on Newfoundland Shelf; trap: 1 live release in the Gulf; gillnet: 4 interactions with 2 mortalities on Newfoundland Shelf, 1 interaction from a hand line in the Gulf
- Mortality Rate: 3 live releases, 2 mortalities recorded
- Observer coverage: none

\*Source: DFO 2012; data up to 2010; data from observer coverage, SARA logbooks, stranding networks



# FISHERY BYCATCH

## **Turbot (Greenland Halibut):**

- Interactions: 2 live releases
- Mortality Rate: Unknown
- Observer coverage: 29.5% in Newfoundland, 4.8% in the Gulf of St. Lawrence

\*Source: DFO 2012; data up to 2010; data from observer coverage, SARA logbooks, stranding networks



# FISHERY BYCATCH

## Groundfish (gillnet, Longline and trawl):

- Interactions: gillnet: 33 interactions with 27 live releases; longline: 2 interactions in the Gulf, 10 interactions in Newfoundland with 4 mortalities; trawl: 1 interaction in the Gulf, 1 in Quebec, 1 mortality in Newfoundland
- Mortality Rate: Unknown
- Observer coverage: less than 2% for gillnet; 2-30% for longline

\*Source: DFO 2012; data up to 2010; data from observer coverage, SARA logbooks, stranding networks



# FISHERY BYCATCH

## Large pelagic longline:

- Interactions: 102 from 2001-2005; 36 from 2006-2010
- Mortality Rate: mortality estimate of 49%; 13-44 deaths per year
- Observer coverage: 5-30%

## Shrimp trawl:

- Interactions: 1 live release in Newfoundland Shelf; \*decrease of interactions with introduction of the Nordmore grate in 1991 on the Scotian Shelf
- Mortality Rate: Unknown
- Observer coverage: up to 5%

\*Source: DFO 2012; data up to 2010; data from observer coverage, SARA logbooks, stranding networks



# FISHERY BYCATCH

Data gaps (general):

- Low observer coverage
- Limited data on survival after release
- Reporting rate in Species At Risk Act logbooks unknown

Interactions and mortalities likely grossly underestimated







# REGULATIONS, POLICIES AND ENFORCEMENT - SARA

Species At Risk Act: *“to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity.”*

- prohibits harming, harassing, or killing listed species
- Leatherbacks listed in 2003
- a Recovery Strategy must be developed within 2 years of listing
  - Published 2006
- A Report on the Recovery strategy must be released 5 years later
  - Published in 2013
- An Action Plan should be developed to guide implementation of the Recovery Strategy
  - Draft completed 2018 and opened for public comment

# REGULATIONS, POLICIES AND ENFORCEMENT - SARA

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Recovery Strategy:

6 objectives:

1. Understanding Threats
2. Understanding Leatherback turtle life history characteristics
3. Habitat Identification and Protection
4. Risk Reduction
5. Education
6. International Initiatives



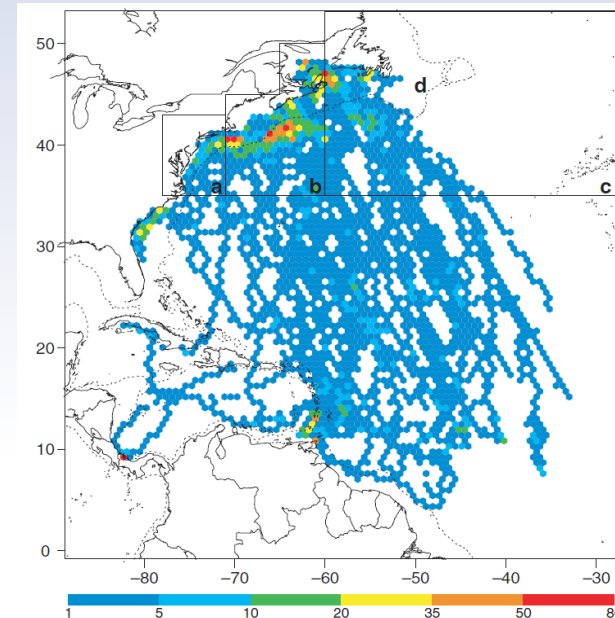
# EFFORTS AND PROGRESS - SARA

## Report on the Progress of Recovery Strategy Implementation (2013)

3 important foraging areas identified in Canadian waters:

1. Southwestern Scotian Shelf
2. Southeastern Gulf of St. Lawrence and around Cape Breton
3. South of Newfoundland

Progress made toward addressing data gaps



James et al (2005) *Ecology Letters*



# EFFORTS AND PROGRESS - SARA

However:

- Critical habitat not yet defined
  - Under SARA it is illegal to destroy critical habitat

And:

- Fishers were given an exemption under the Act in cases of leatherback mortalities:

“Assuming current levels of fishing effort within Canadian jurisdiction, the review committee concluded that there was scope for human-induced mortality without jeopardizing survival or recovery of this species.”

Also: strong language in SARA may increase reluctance to share information on interactions (Hamelin et al. (2016) *Aquat. Conserv. Mar. Freshw. Ecosyst.*)



# REGULATIONS, POLICIES AND ENFORCEMENT: MONITORING POLICY

## Fisheries and Oceans Canada Draft Bycatch Monitoring Policy (2018)

Strategies included in the policy:

- Develop **data collection and monitoring systems** that will support timely, reliable, and aggregated reporting on retained and non-retained bycatch species.
- **Evaluate the impact** of fishing on bycatch species, whether they are retained or returned to the water.
- **Minimize the capture** of bycatch species and specimens that will not be retained, to the extent practicable.
- Where capture of bycatch species and specimens that will not be retained is unavoidable, **maximize the potential for live release and post-release survival.**
- Develop appropriate measures to manage bycatch and regularly **evaluate their effectiveness.**



# REGULATIONS, POLICIES AND ENFORCEMENT: MONITORING POLICY

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WWF-Canada recommendations:

- Establish standards to improve dependability, timeliness and accessibility of data.
- Outline acceptable timelines
- Create an open access database
- Include a mechanism for independent oversight of monitoring programs



# LEATHERBACK BYCATCH REDUCTION GOALS

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Fisheries and Oceans Canada:

The goal for the Recovery Strategy is to:

*‘increase the population such that the long-term viability of the leatherback turtles frequenting Atlantic Canadian waters is achieved’.*





# BYCATCH REDUCTION PRIORITIES - CANADA

- Improve Reporting
  - Fill data gaps
  - Enforce proper reporting
- Identify Critical Habitat
- Support capacity building initiatives involving marine animal first responders, ENGOs, and industry throughout Atlantic Canada
  - Ensure fishers have appropriate knowledge and tools
  - Emphasize importance of accurate reporting
  - adjust gear designs and develop new tools to reduce bycatch
- Build a strong network of Marine Protected Areas
- Follow through on the Global Ghost Gear Initiative



# CLOSING REMARKS

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- Large foraging range of leatherbacks in Canadian waters, different management regions and numerous fisheries present challenges
- Major data and reporting gaps need to be filled
- Mortality is almost surely much higher than currently recorded
- Continued engagement with fishers will be key

