

# **Ecosystem approach in marine spatial planning (MSP)**

*Kirsi Kostamo*

*Finnish Environment Institute Marine Research  
Centre, (Unit for Marine Spatial Planning),  
Helsinki, Finland.*

# Eastern Scotian Shelf Integrated Management Initiative (ESSIM)

- Collaborative ocean management process led and facilitated by Fisheries and Oceans Canada (DFO) under Canada's Ocean Act.
- Primary aim was to develop and implement an Integrated Ocean Management Plan for the region
  - long-term direction and a common basis for integrated, ecosystem-based and adaptive ocean management
- Involvement of government, aboriginal groups, ocean industry and resource users, environmental conservation groups, coastal communities and scientists

# Plans

- Basic units:
  - Large Ocean Management Areas (LOMA) for regional planning
  - Coastal Management Areas (CMO)
- Vision
  - Healthy and sustainable ecosystems, economies and communities

# Natural values

- 325 000 km<sup>2</sup>, a mix of administrative and ecological considerations in the shelf area
  - Diversity of marine life, underwater communities and habitats
- human impacts already affecting nature
- Big amount of scientific information exists
  - Major threats - living and non-living resource extraction, marine and land-based pollution and contaminants, noise

# Human use

- Fisheries
- Petroleum exploration, development and production
- Transportation
- Government marine operations
- Submarine telecommunication cables
- Marine conservation
- Tourism

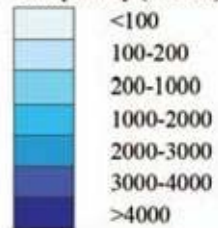
# Ecosystem approach in the ESSIM Initiative

- Benthic demersal and pelagic communities
  - Species and populations, genetic integrity
  - Primary and secondary production
  - Trophic structure
- 
- Fisheries management
  - Invasive alien species

# Political/Jurisdictional Divisions

- Exclusive economic zone (EEZ) boundary
- International boundary
- Eastern Scotian Shelf Integrated Management area boundary (eastern boundary only)

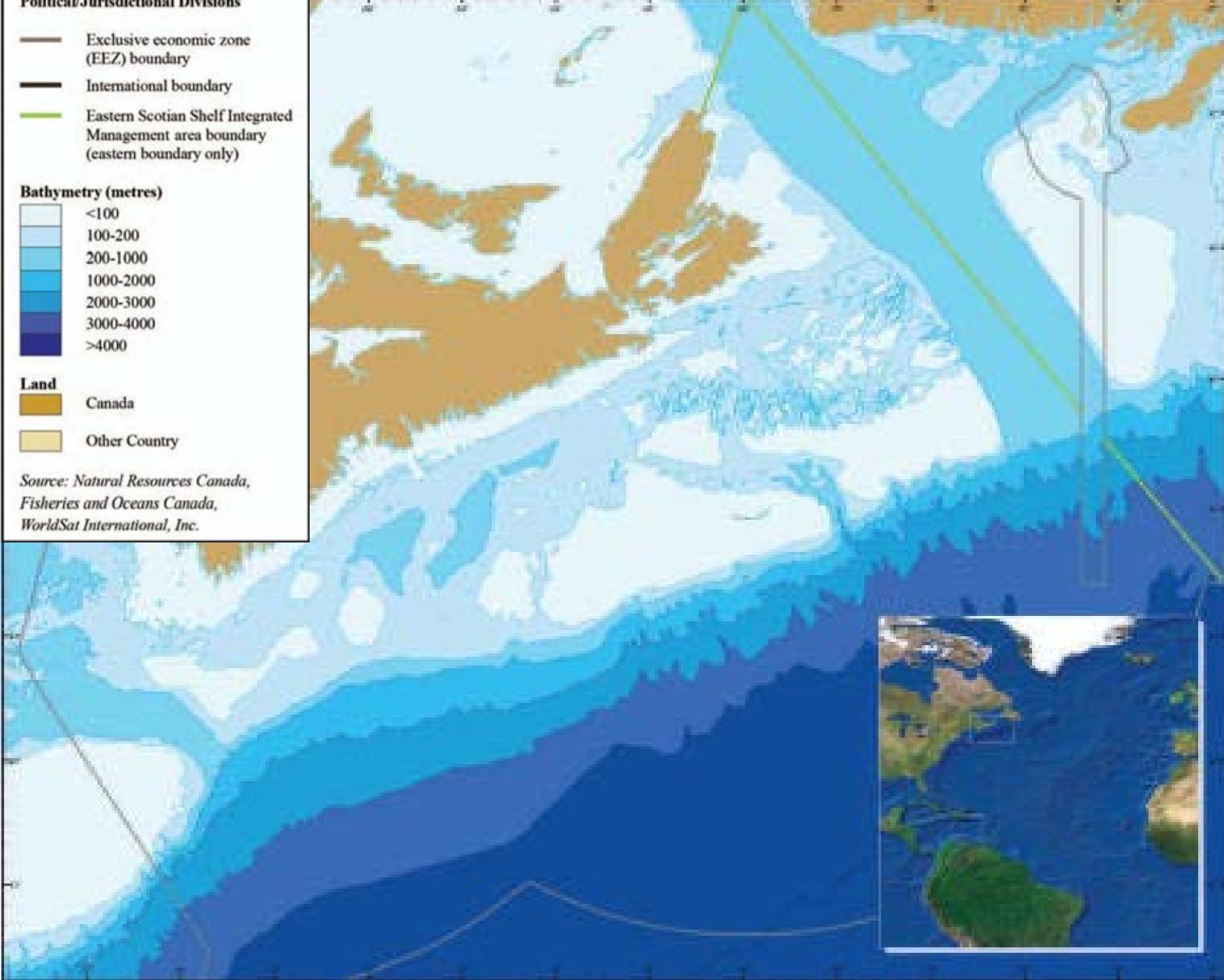
## Bathymetry (metres)



## Land




- Canada
- Other Country

Source: Natural Resources Canada,  
Fisheries and Oceans Canada,  
WorldSat International, Inc.

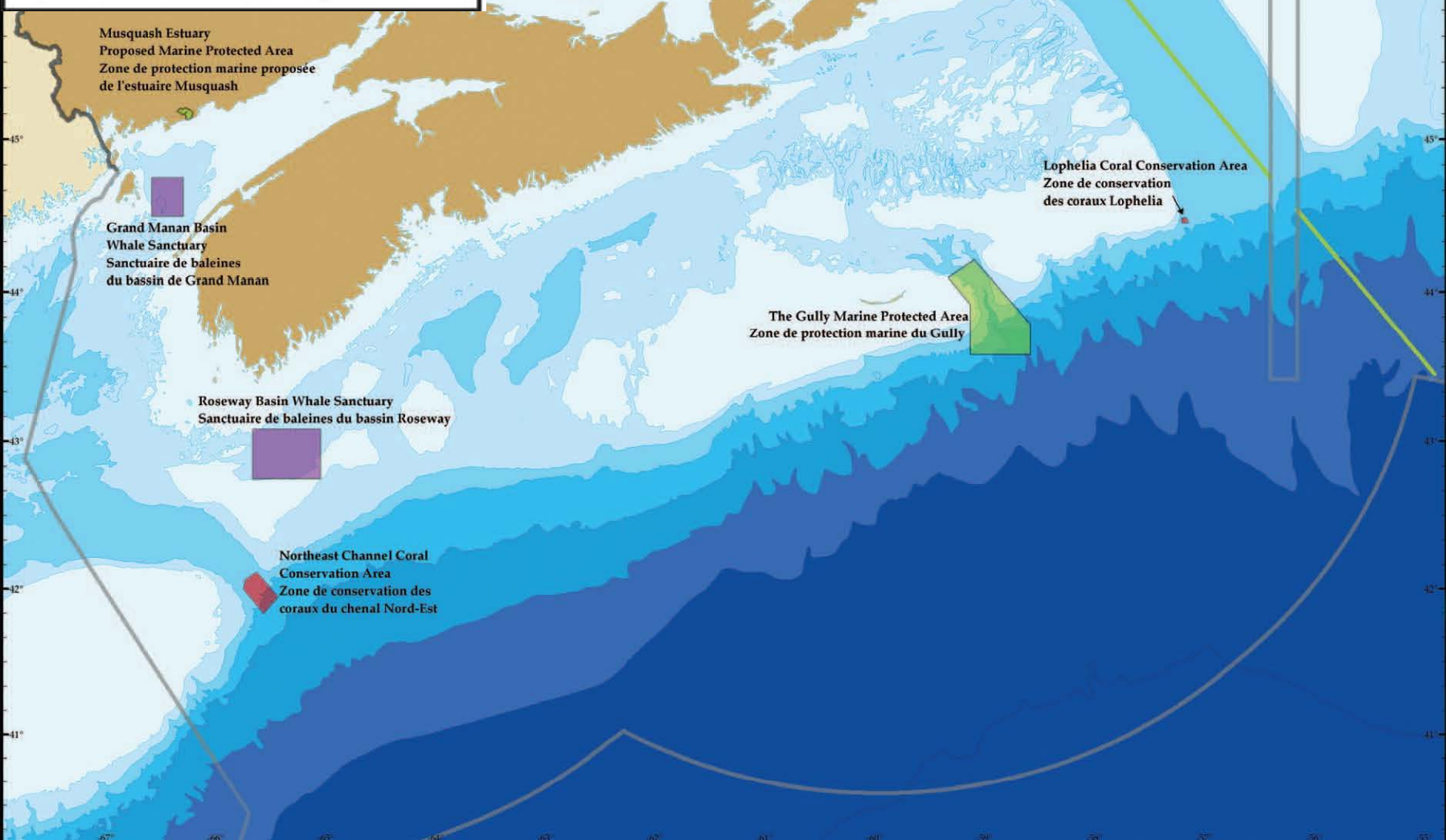


Geographic Extent of Information  
Portée de l'information géographique

## Special Management Areas

-  Marine protected area
-  Coral conservation area
-  Whale sanctuary






Source: Fisheries and Oceans Canada



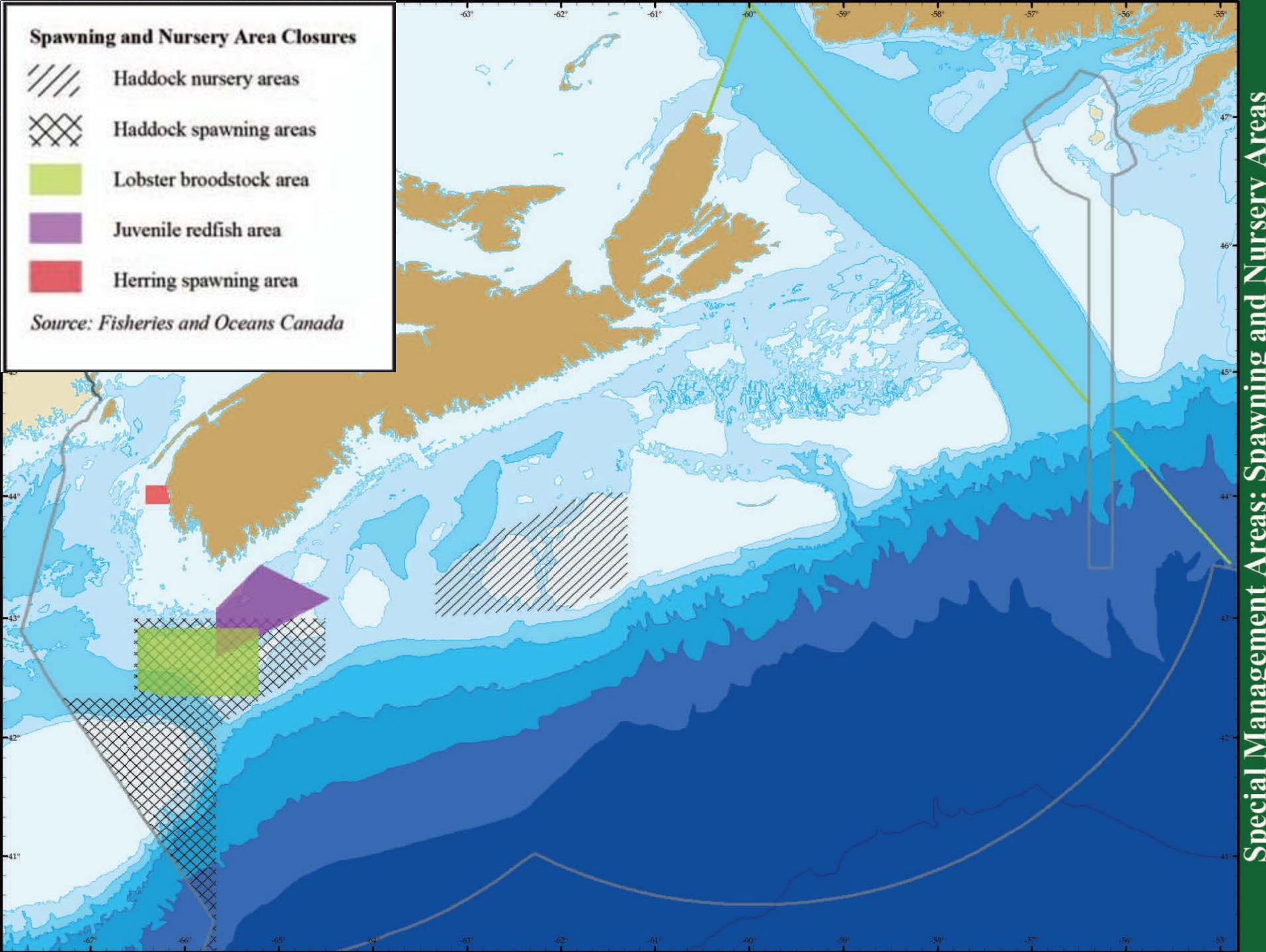
**Special Management Areas: Marine Biodiversity Protection**  
**Zones de gestion spéciales : protection de la biodiversité du milieu marin**

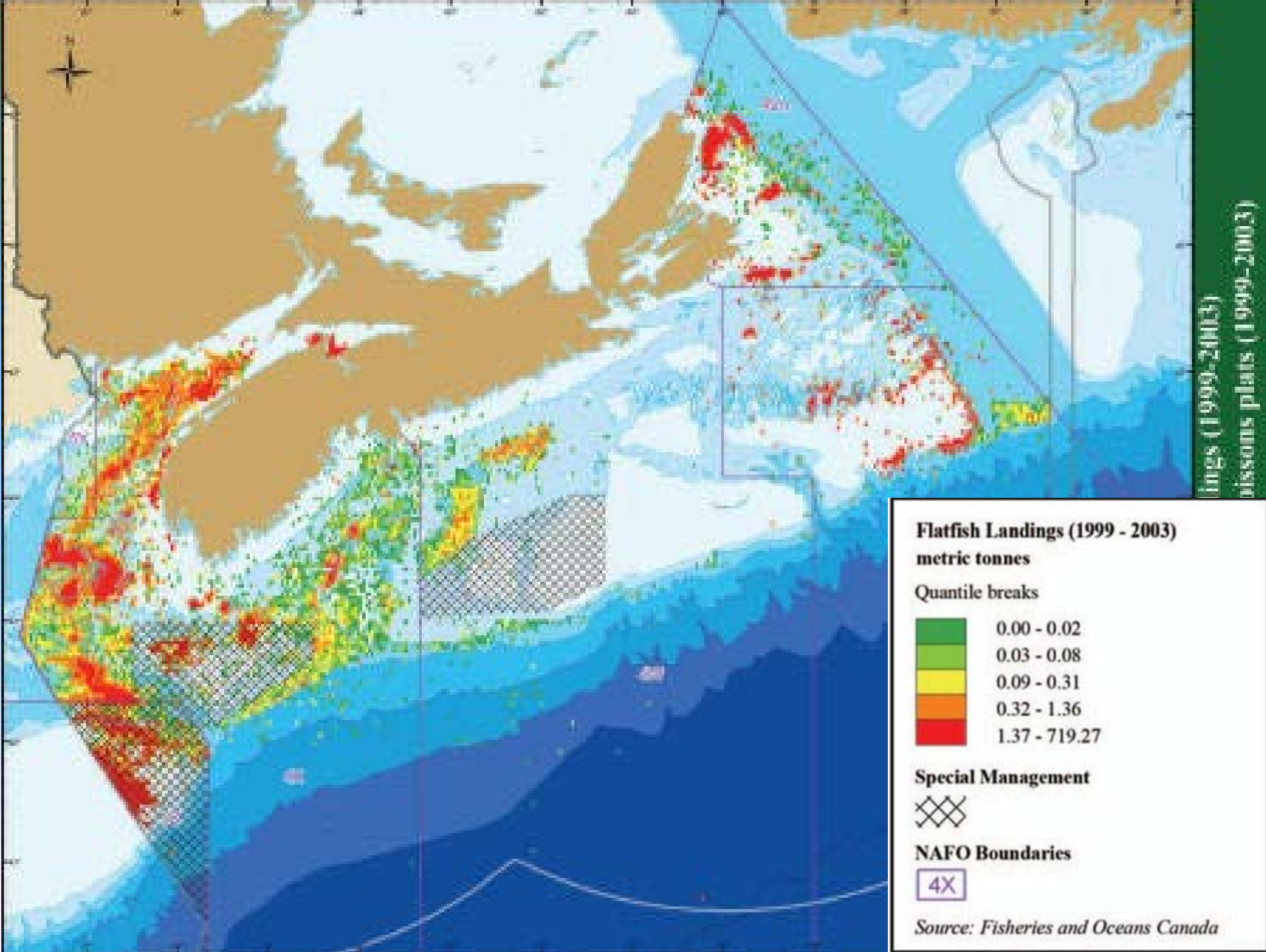


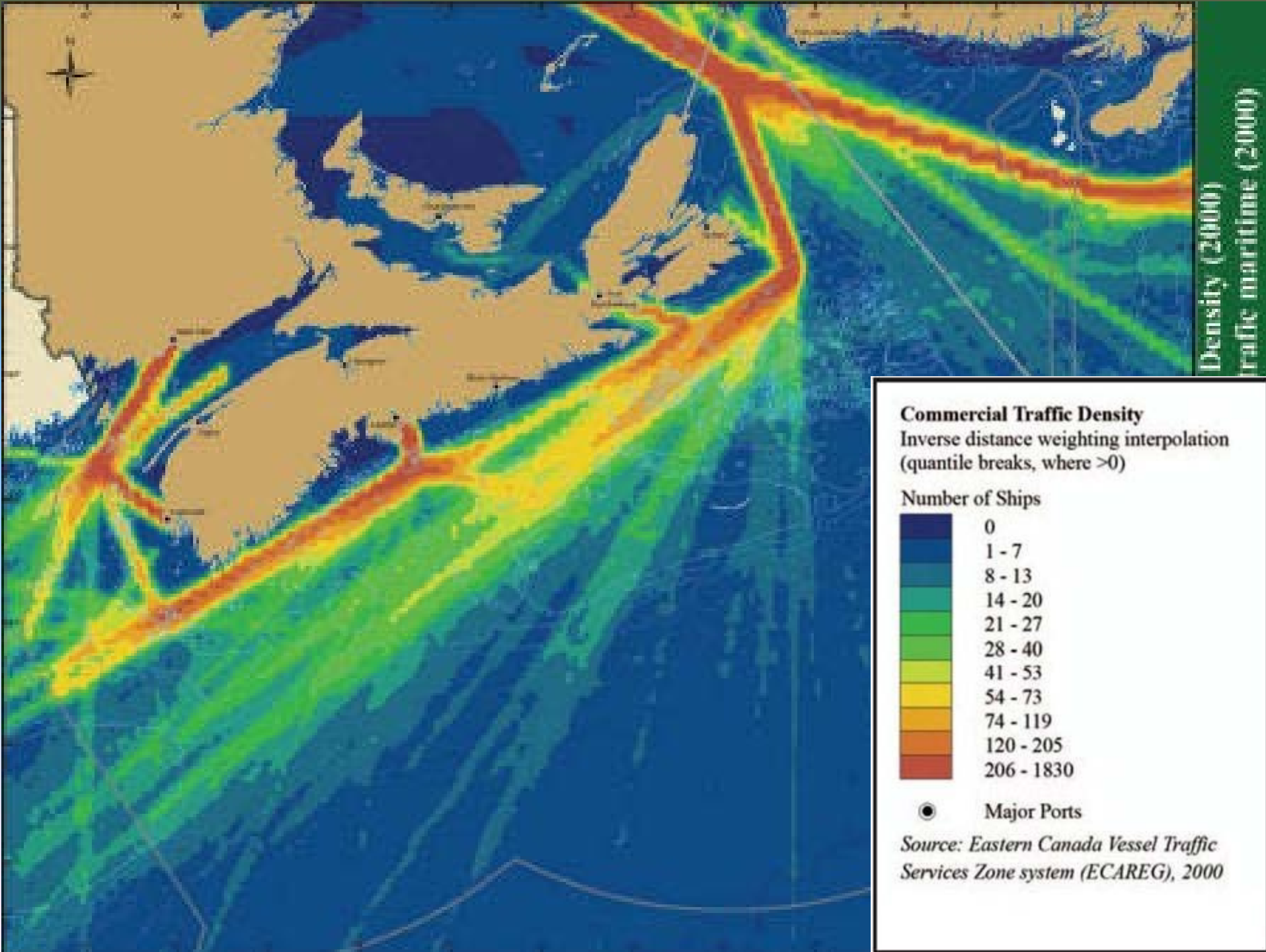
## Spawning and Nursery Area Closures

-  Haddock nursery areas
-  Haddock spawning areas
-  Lobster broodstock area
-  Juvenile redfish area
-  Herring spawning area

*Source: Fisheries and Oceans Canada*







## CNSOPB Exploration Licenses

### Status

- inactive
- active

## C-NLOPB Exploration Licenses

- active

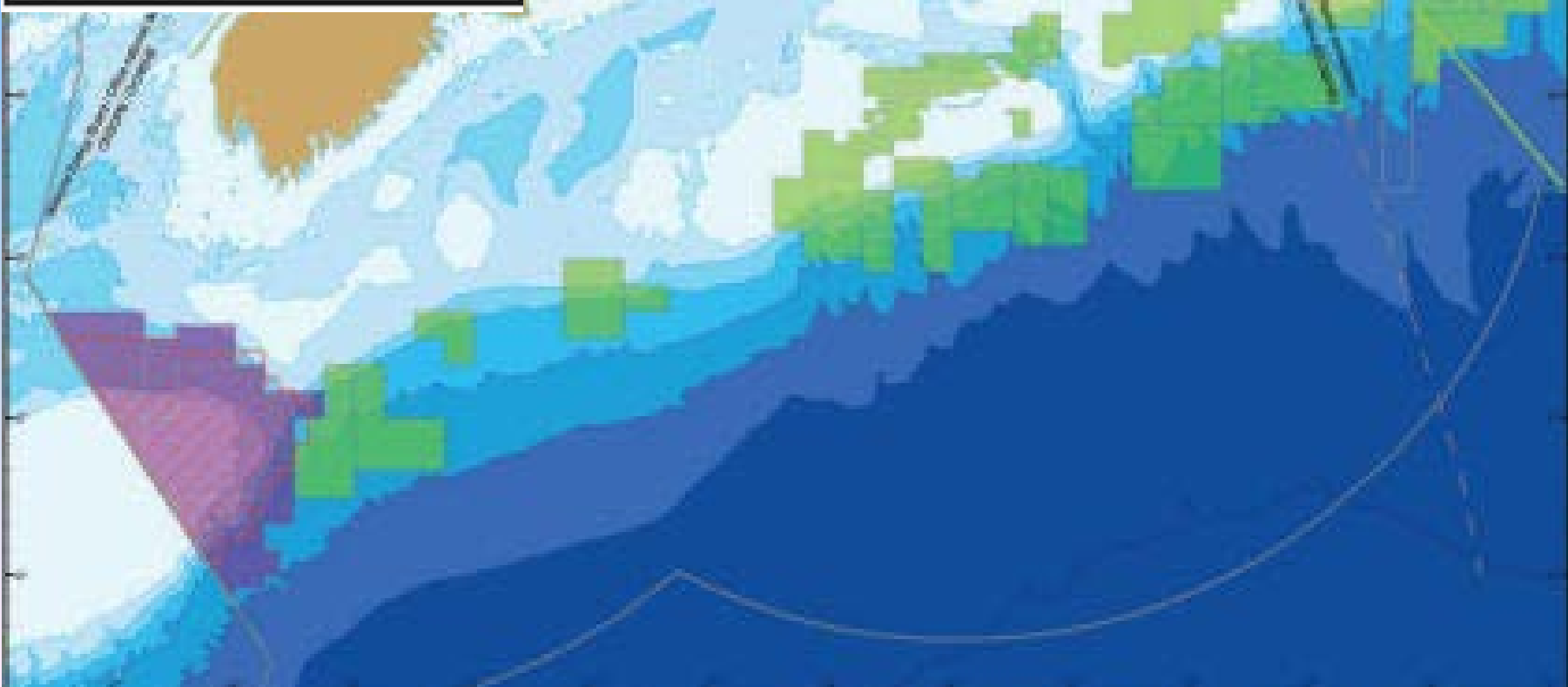
## Management Divisions

- Oil and gas regulatory agency boundaries

## Special Management

- Georges Bank exclusion zone

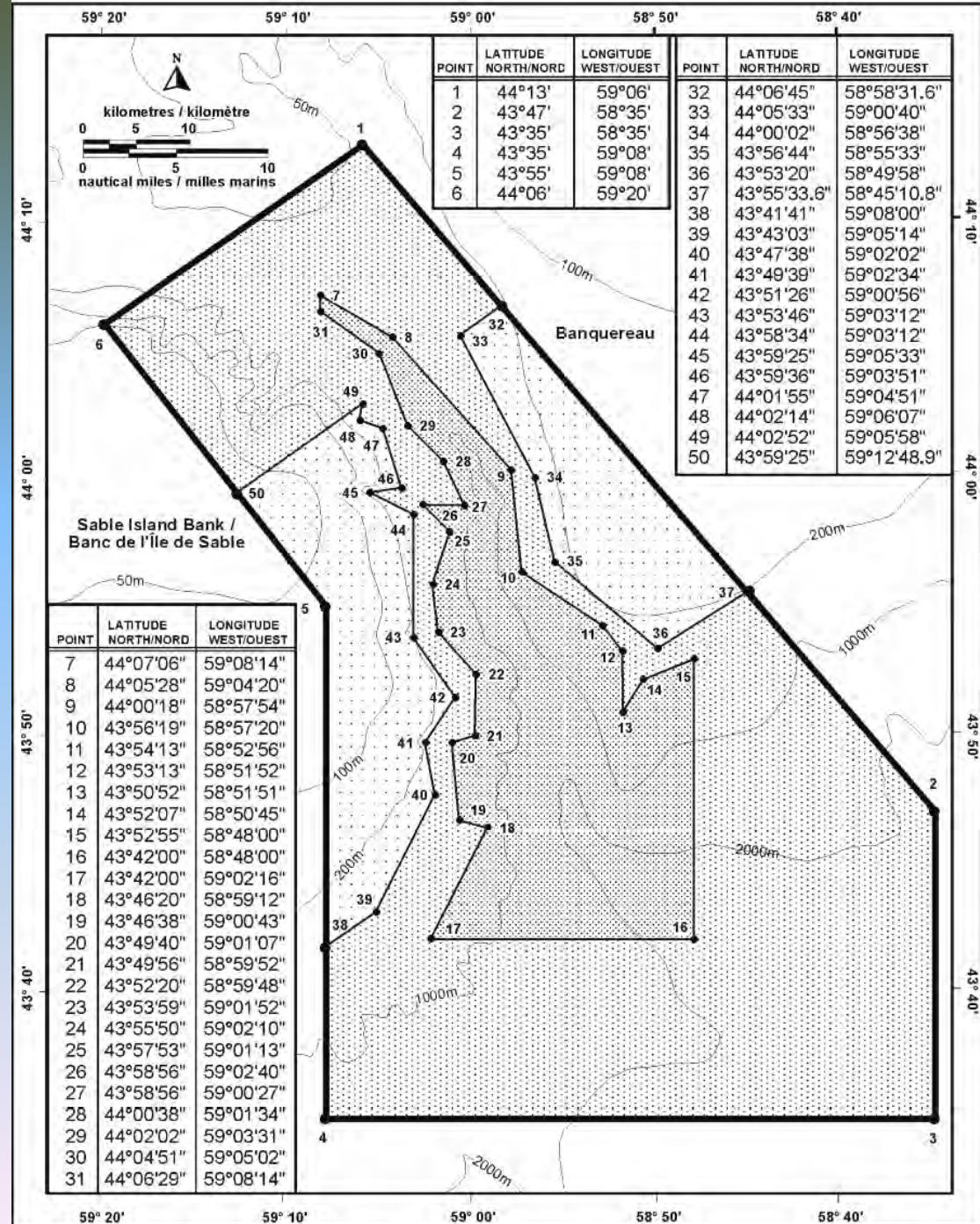
Source: CNSOPB



Management Areas and Exploration Licenses in 2005  
Zones de gestion et permis d'exploration en 2005



# Zoning Gully coastal management areas



# APPENDIX 2. LIST OF ACTIONS FOR THE PLAN

## Priority Conservation Issues and Related Actions

Issue and Strategy	Actions	Link to Regulations and Specific Actions by Sector	
<p><b>Issue: Protecting cetaceans from impacts caused by human activities.</b></p> <p><b>Strategy: Minimize and manage harmful impacts and stresses from human activities on cetacean populations and their habitats.</b></p>	<p><b>Actions:</b></p> <p>Eliminate activities that are known or likely to harm, disturb or kill whales, or damage or destroy their habitats within the Gully MPA.</p>	All sectors	MPA Regulations prohibit disturbance, damage or destruction in the Gully MPA. Some activities are excepted, but few activities can occur in Zone 1 (core habitat for northern bottlenose whales). Marine Mammal Regulations apply in the MPA, and Species at Risk prohibitions apply to listed cetacean species.
			Incidents involving marine mammals, such as vessel-cetacean collisions, must be reported to the Canadian Coast Guard.
	<p>Carry out research on human activities where impacts on whales are uncertain, such as the impacts of different types of noise.</p>	Oil and gas	DFO and the CNSOPB will develop Gully Protocols for oil and gas activities in the vicinity of the MPA.
			Companies operating near the Gully will be encouraged to adopt codes of practice (several are already in place)
			Studies will be conducted to better understand the sounds caused by the industry, acoustic pathways, and potential effects on animal behaviour (some research has been initiated).
	<p>Set strict guidelines for activities that could potentially impact whales or their habitats.</p>	Fisheries	Reporting of whales caught or entangled with gear will be promoted.
			Interactions with cetaceans will be reduced by:

# Ecosystem approach - parameters

- Benthic demersal and pelagic communities (HD, MSFD, HELCOM BSAP)
- Species and populations, genetic integrity (MSFD, HELCOM BSAP)
- Primary and secondary production (MSFD, HELCOM BSAP)
- Trophic structure (MSFD, HELCOM BSAP)
- Fisheries management (EU's Common Fisheries Policy, HELCOM BSAP)
- Invasive alien species (MSFD, HELCOM BSAP)

# Ecosystem approach in MSP

- Collation of existing data/production of new data
  - Nature
  - Human use
  - Trans-sectoral effects on the environment and human uses
- Development of coarse-scale sensitivity and pressure indices for regional planning
- Development of finer-scale indices for small-scale planning
- Species & habitats
- ?







