Marine Protected Area Network Development in the Scotian Shelf/Bay of Fundy Bioregion

Gulf of Maine Council

Gloucester, Massachusetts

June 2018

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Oceans and Coastal Management Division
Fisheries and Oceans Canada (Maritimes Region)

Canada

Outline

1) Background on MPA network development

2) Process for MPA network analysis/design

3) Current and planned contributions

4) Timelines and next steps

Nick Hawkins

Canada

What has Canada committed to doing?

"By 2020, at least… 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures…".

- Aichi Target 11, Convention on Biological Diversity (CBD), 2010

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Minister of Fisheries, Oceans and Canadian Coast Guard's Mandate Letter (2015)

"…increase the proportion of Canada's marine and coastal areas that are protected – to five percent by 2017, and ten percent by 2020..."

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MCT Five Point Strategy

- Finish what has been started

- Protect large areas

- Implement bioregional MPA networks

- Advance "other effective measures"

- Improve MPA establishment process

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Federal MPA Programs

Fisheries and Oceans Canada

- Marine Protected Areas (*Oceans Act*)
- Conservation Areas/Fisheries Closures/Marine Refuge(ia) (*Fisheries Act*)

Environment & Climate Change Canada

- National Wildlife Areas (*Canada Wildlife Act*)
- Migratory Bird Sanctuaries (*Migratory Birds Convention Act*)
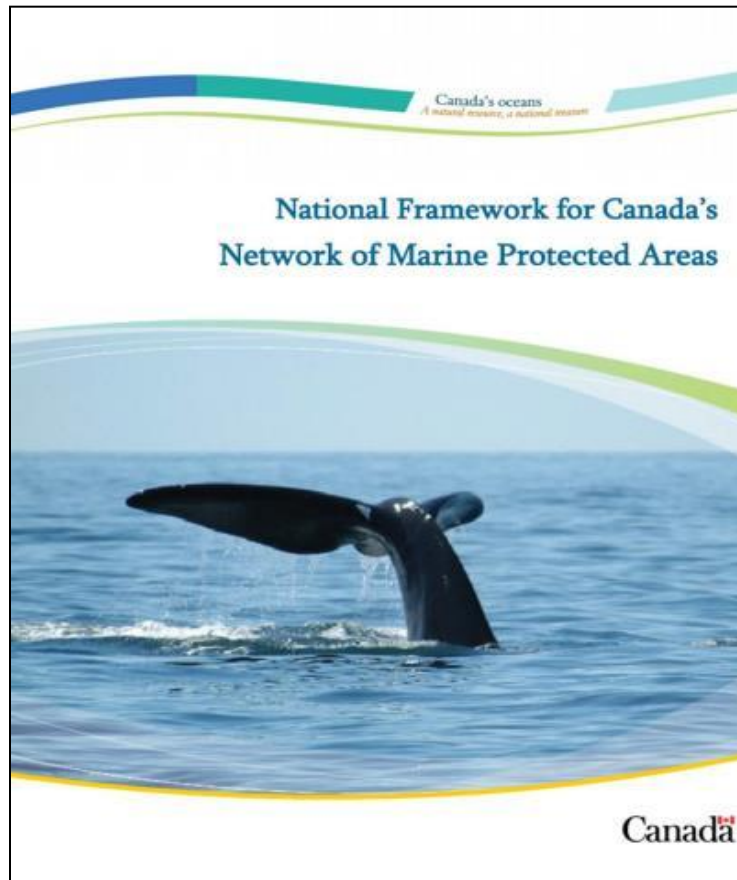- Critical Habitat (*Species at Risk Act*)

Parks Canada

- National Marine Conservation Areas (*NMCA Act*)
- National Parks (*National Parks Act*)

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The National MPA Network

National Framework for Canada's
Network of Marine Protected Areas

Main goal:

To provide long-term protection of marine biodiversity, ecosystem function and special natural features.
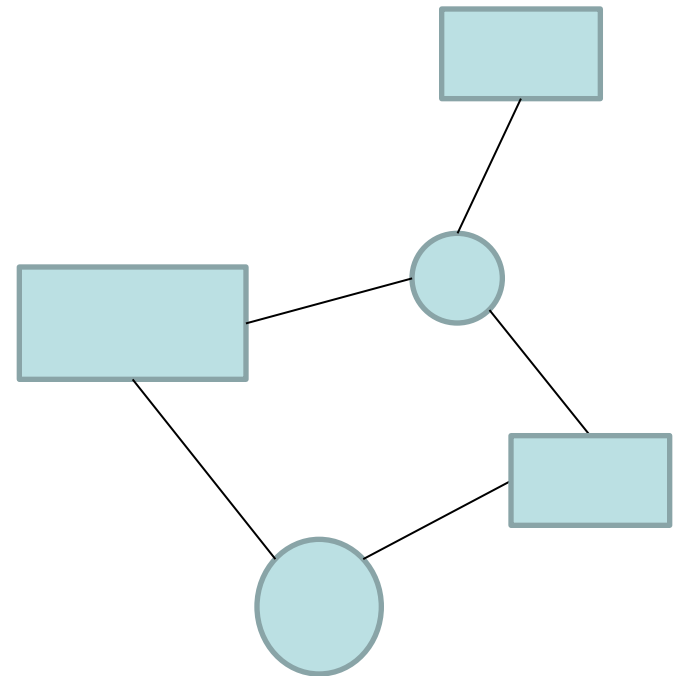
What is an MPA network?

A collection of individual marine protected areas

- different shapes and sizes
- a range of protection levels
- connected through biological or ecological processes

Overall result: More effective and comprehensive protection than can be achieved by any single site.
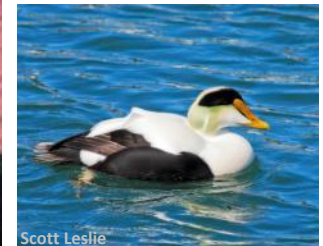
Why an MPA network?

**Protect
biodiversity…**

**…provide greater certainty
to resource users…**

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Bioregions

Marine Bioregions

1. Strait of Georgia / Détroit de Georgia
2. Southern Shelf / Plate-forme Sud
3. Offshore Pacific / Haute mer du Pacifique
4. Northern Shelf / Plate-forme Nord
5. Arctic Basin / Bassin Arctique
6. Western Arctic / Arctique de l'Ouest
7. Arctic Archipelago / Archipel Arctique
8. Eastern Arctic / Arctique de l'Est
9. Hudson Bay Complex / Complexe de la baie d'Hudson
10. Newfoundland-Labrador Shelves / Plates-formes de Terre-Neuve et du Labrador
11. Scotian Shelf / Plate-forme Scotian
12. Gulf of Saint Lawrence / Golfe du Saint-Laurent
13. Great Lakes / Grands Lacs
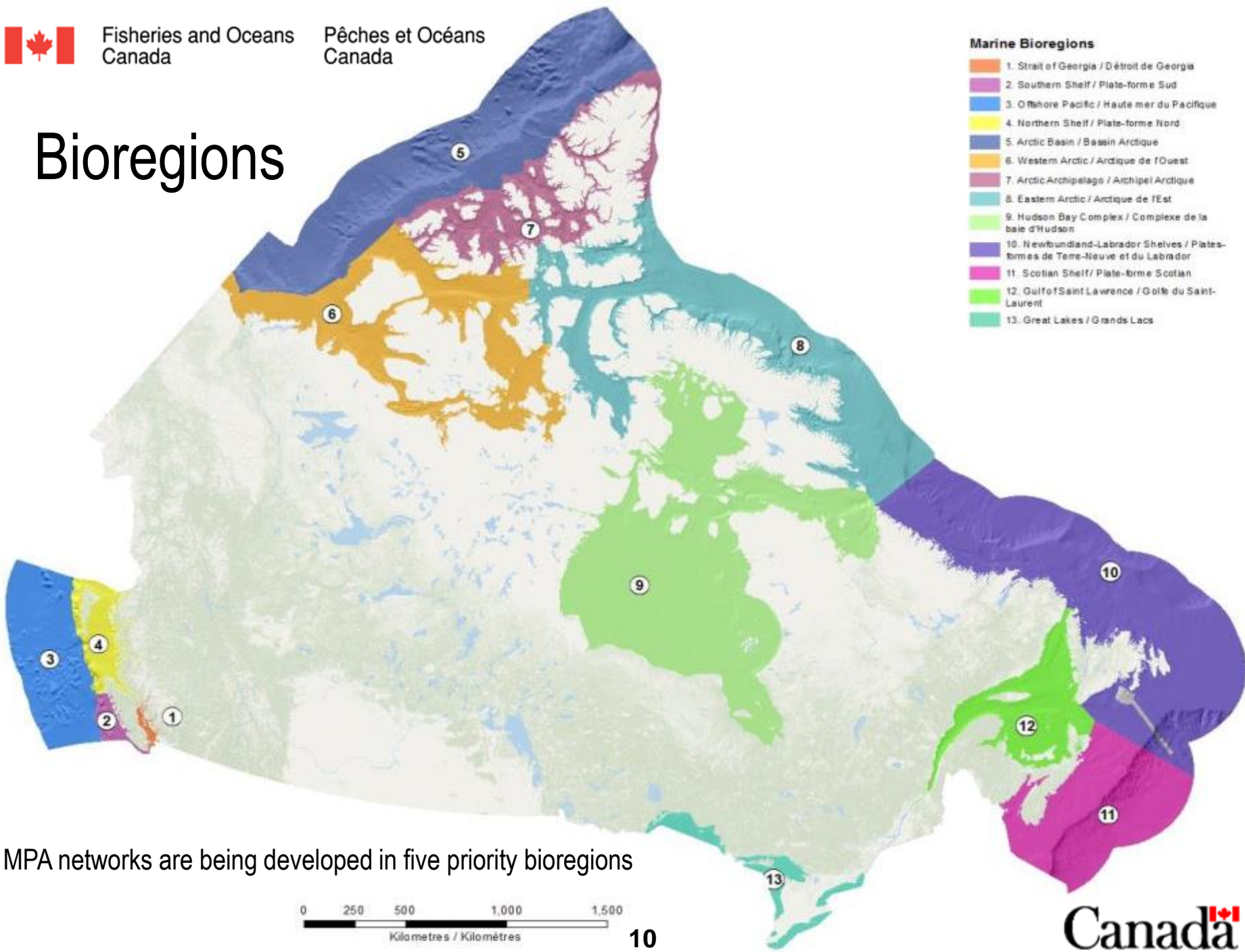
MPA networks are being developed in five priority bioregions

0   250   500   1,000   1,500
Kilometres / Kilomètres

10

Conservation Objectives for the Scotian Shelf Bioregional MPA Network

1. Protect unique, rare, or sensitive ecological features in the region

2. Protect representative examples of identified ecosystem and habitat types in the region

3. Help maintain ecosystem structure, functioning and resilience within the region

4. Contribute to the recovery and conservation of depleted species in the region

5. Help maintain healthy populations of species of Aboriginal, commercial, and/or recreational importance in the region
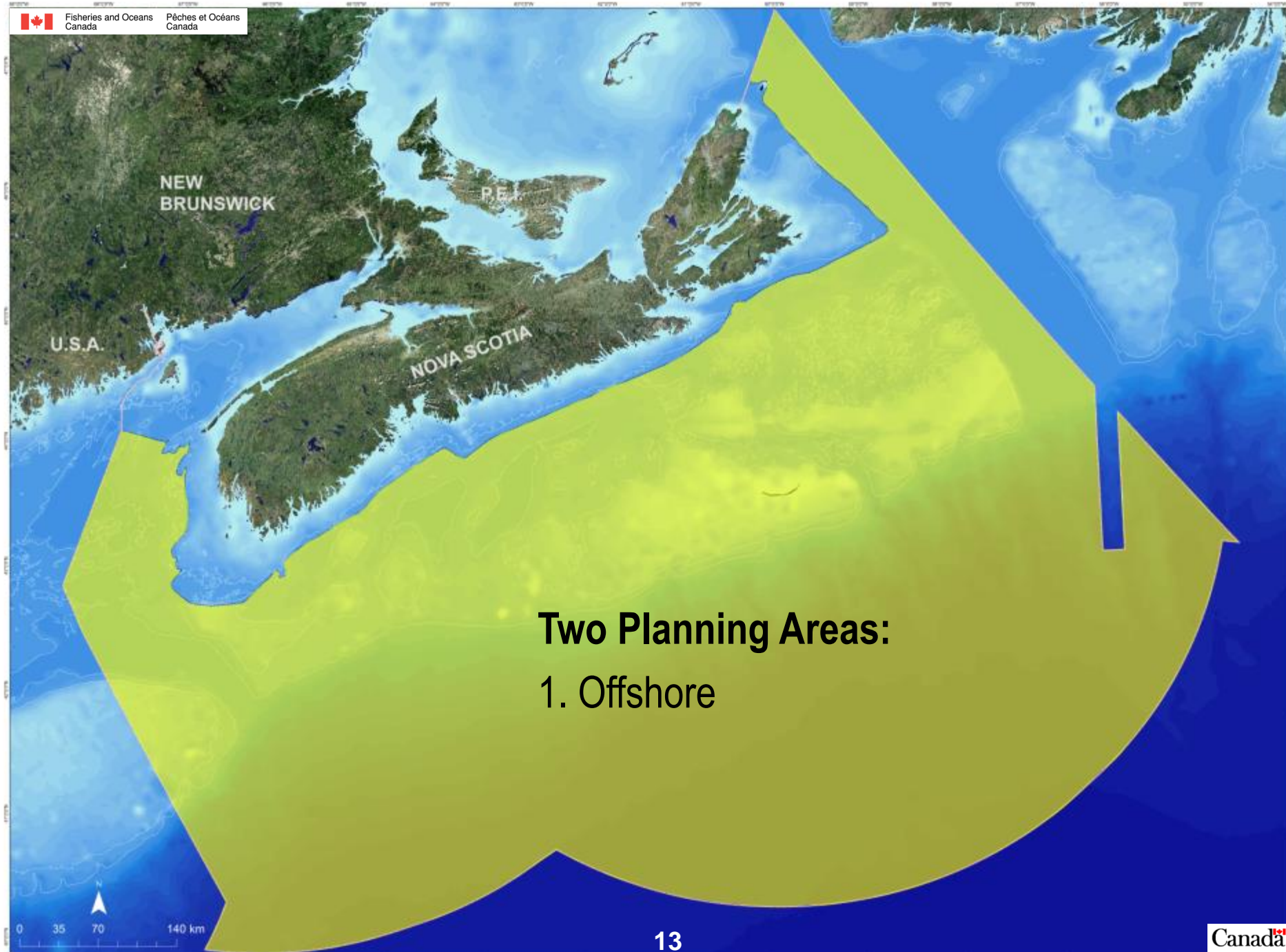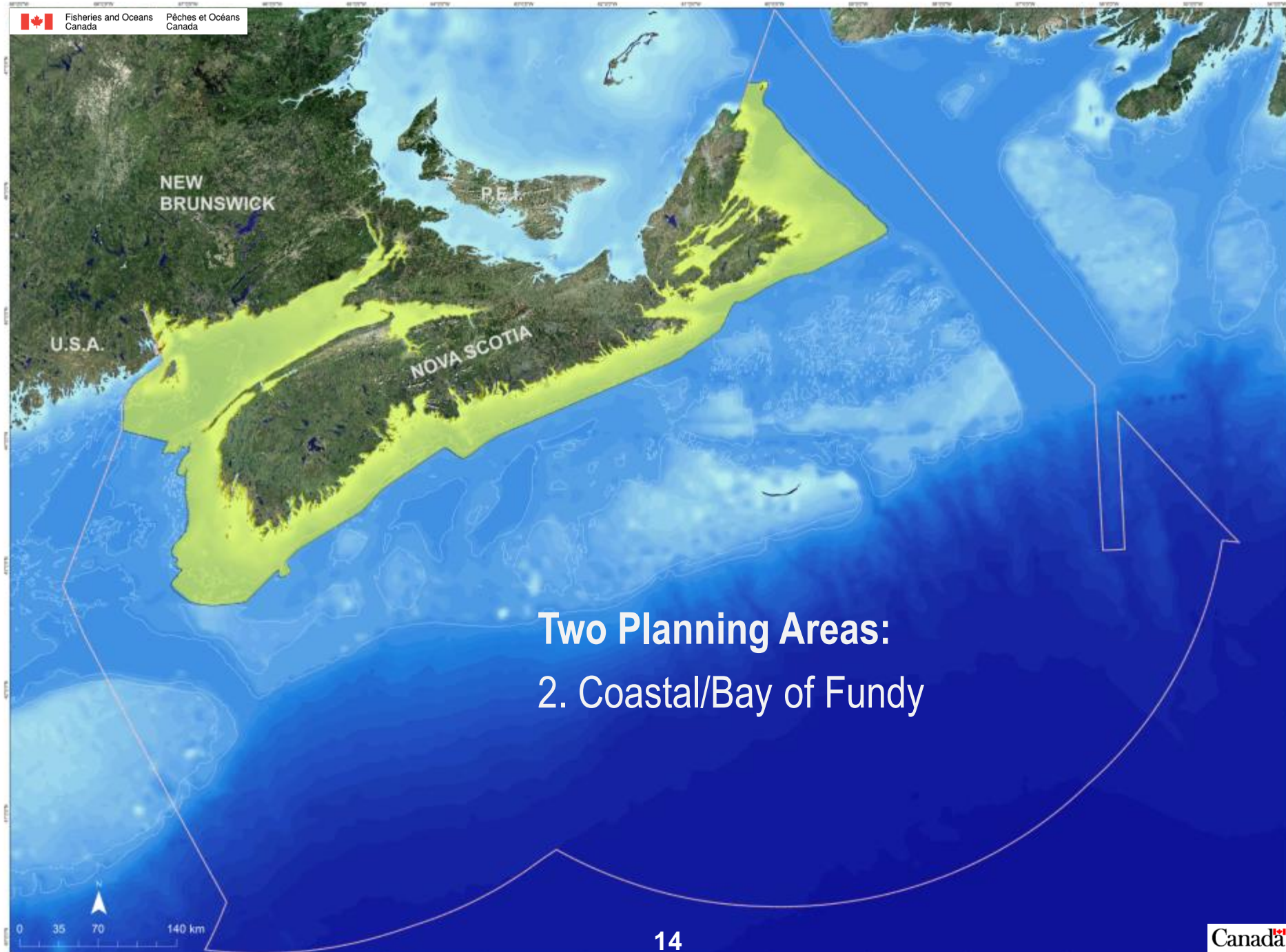
Conservation Priorities

- Conservation Priorities are the species, groups of species, habitats, communities, ecological processes or other ecological features that an MPA network aims to protect

- 2 Categories:

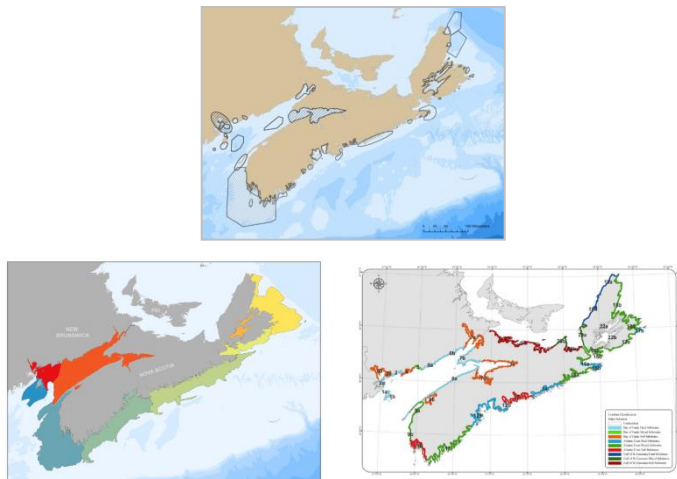| Coarse-filter	Fine-filter
- Broad-scale features - Seek to capture a representative example(s) from the full distribution of a feature (e.g., seabed feature types, coastal eco-units) - Typically assigned lower targets	- Discrete, smaller-scale features that are important for a species or the broader ecosystem (e.g., biogenic habitats, important habitat for species at risk) - Typically assigned higher targets

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Two Planning Areas:

1. Offshore

Two Planning Areas:
2. Coastal/Bay of Fundy

Coastal/Bay of Fundy

Offshore

Ecological

Human Use

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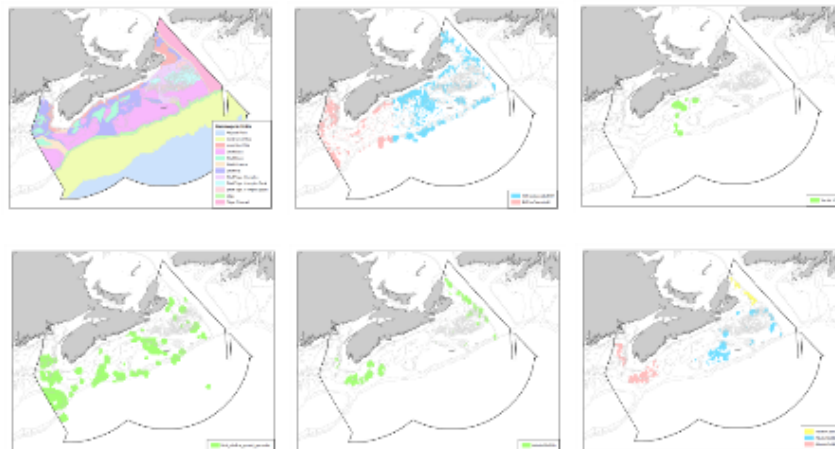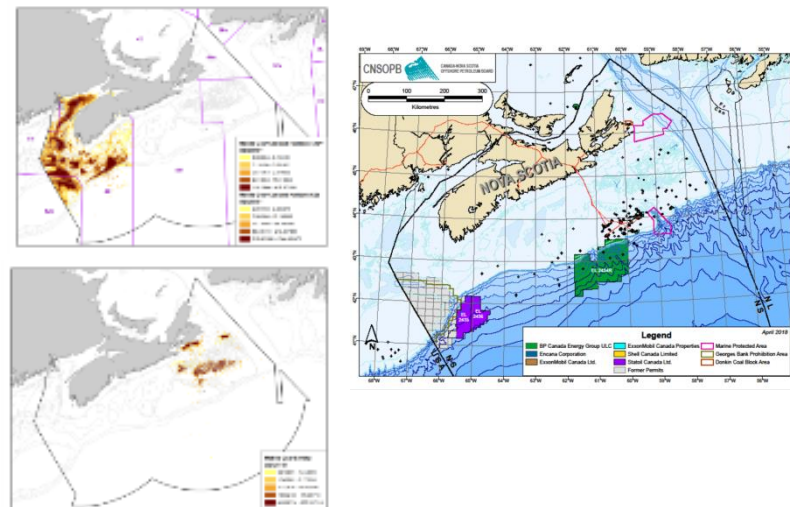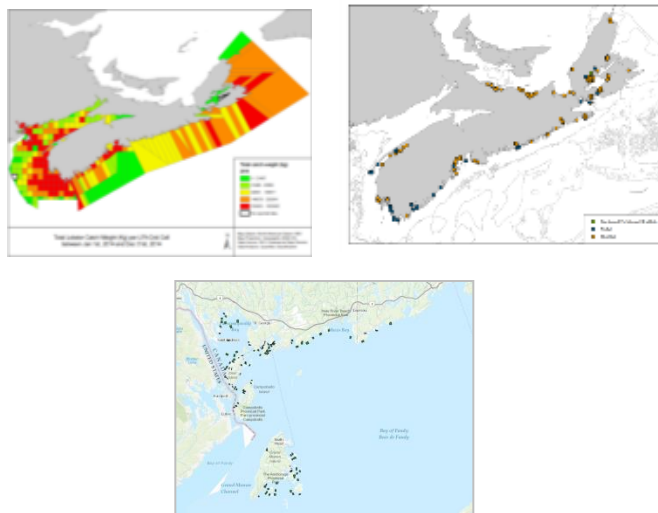
Offshore Design Process

Identify **Offshore Conservation Priorities** and set **Targets**

↓

Initial **Ecological Analysis** *(Marxan)*

↓

Incorporate Fisheries Data to minimize overlap *(Marxan)*

↓

Consider **other ecological and human use information** (e.g., offshore EBSAs, oil and gas)

↓

Identify and roughly delineate areas for inclusion in the draft MPA network design
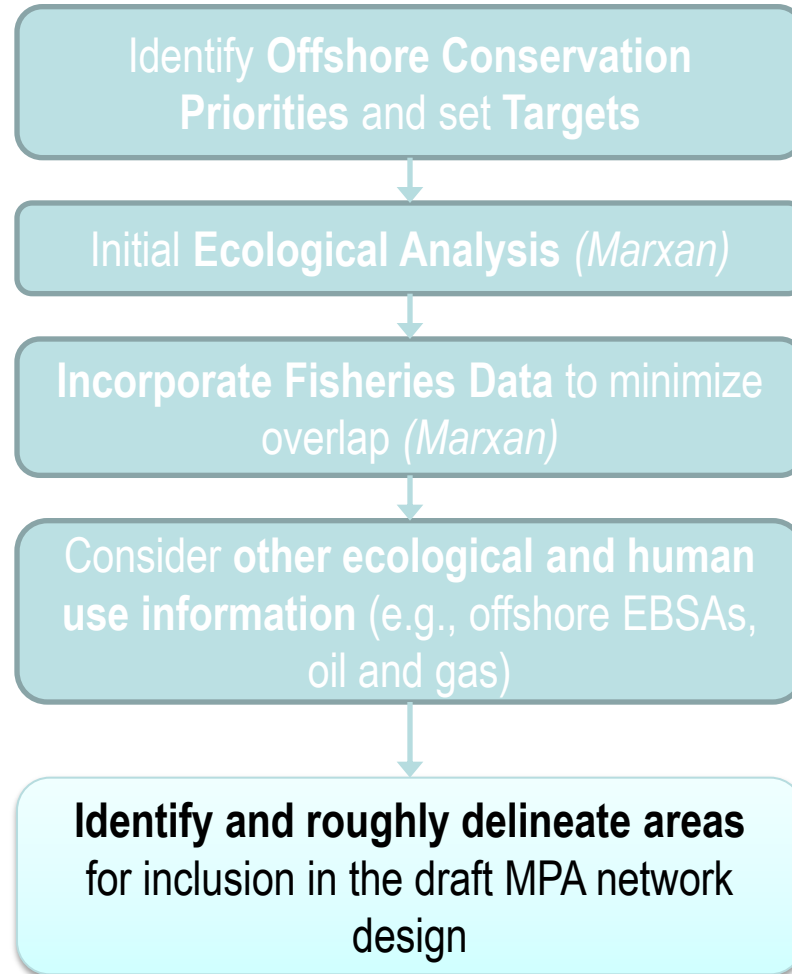
Offshore Conservation Priorities and Targets

Offshore Conservation Priorities	Target (%)
Coarse-filter Feature Examples	
Oceanographic units (e.g., Eastern Scotian Shelf oceanographic unit)	16%
Geomorphic units (e.g., Shelf Bank geomorphic unit)	10%
Scope for Growth and Natural Disturbance classes (e.g., High Scope for Growth)	
Functional Groups (inverts, fishes, seabirds) (e.g., seabirds: plunge-diving piscivores)	10%
Fine-filter Feature Examples	
Biogenic Habitats: Significant concentrations of large gorgonian corals	100%
Biogenic Habitats: Significant concentrations of *Vazella pourtalesi* sponges	100%
Depleted species (cetaceans): Critical Habitat for Northern Bottlenose Whale	100%
Depleted species (cetaceans): Critical Habitat for North Atlantic Right Whale	100%
Depleted species (fishes): Important habitat for Atlantic cod	70%
Depleted species (fishes): Important habitat for white hake	50%
Depleted species (fishes): Important habitat for cusk	30%
Areas of High Biodiversity: Areas of high larval fish species richness	40%
Areas of High Biodiversity: Areas of high invertebrate species richness	40%

Coastal/Bay of Fundy MPA Network Analysis

Identify Coastal Conservation Priorities and set **Targets**

Assess "Conservation Value" of each EBSA

Assess Feasibility (social, cultural, economic considerations)

Identify and roughly delineate areas for inclusion in the draft MPA network design
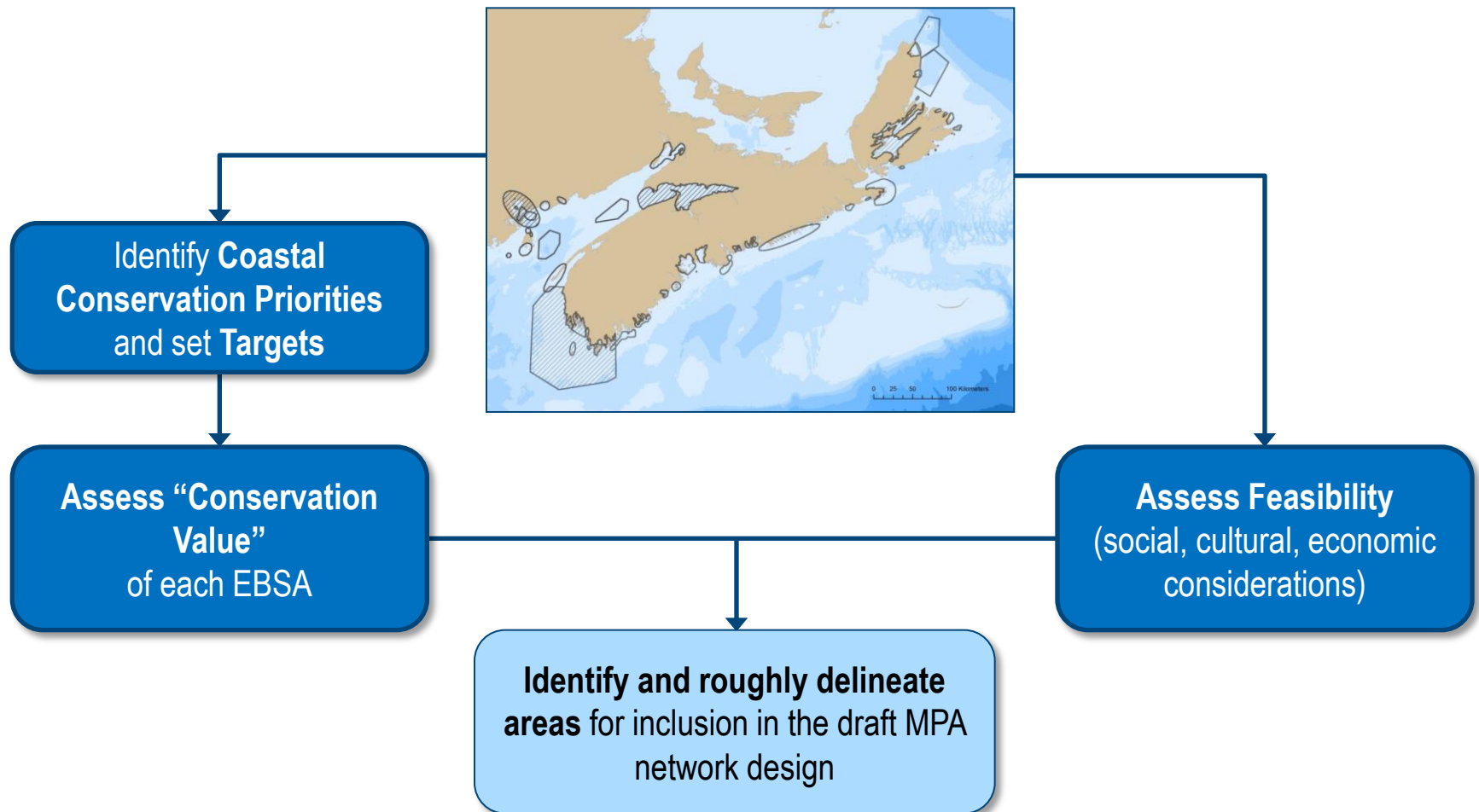
Coastal Priorities

| Special features	Biogenic Habitats	Important Areas for Species or Species Groups
Highly natural ecosystems	Marine plants and macro-algae: • Eelgrass • Saltmarsh • Kelp • Rockweed • etc.	Areas important for sensitive life history stages of: • Fish • Birds • Whales & dolphins • Invertebrates • Culturally important species
Areas of high productivity		
Areas of high biodiversity		
Complex or unique geomorphology	Invertebrates: • Horse mussel reefs • Stalked tunicate fields • Habitat-forming sponges • Oyster beds • Erect bryozoan turf	Important areas for depleted species
Persistent unique or rare oceanographic characteristics		**Representative features**
		Coastal eco-units
		Coastline classes

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Coastal Ecologically and Biologically Significant Areas
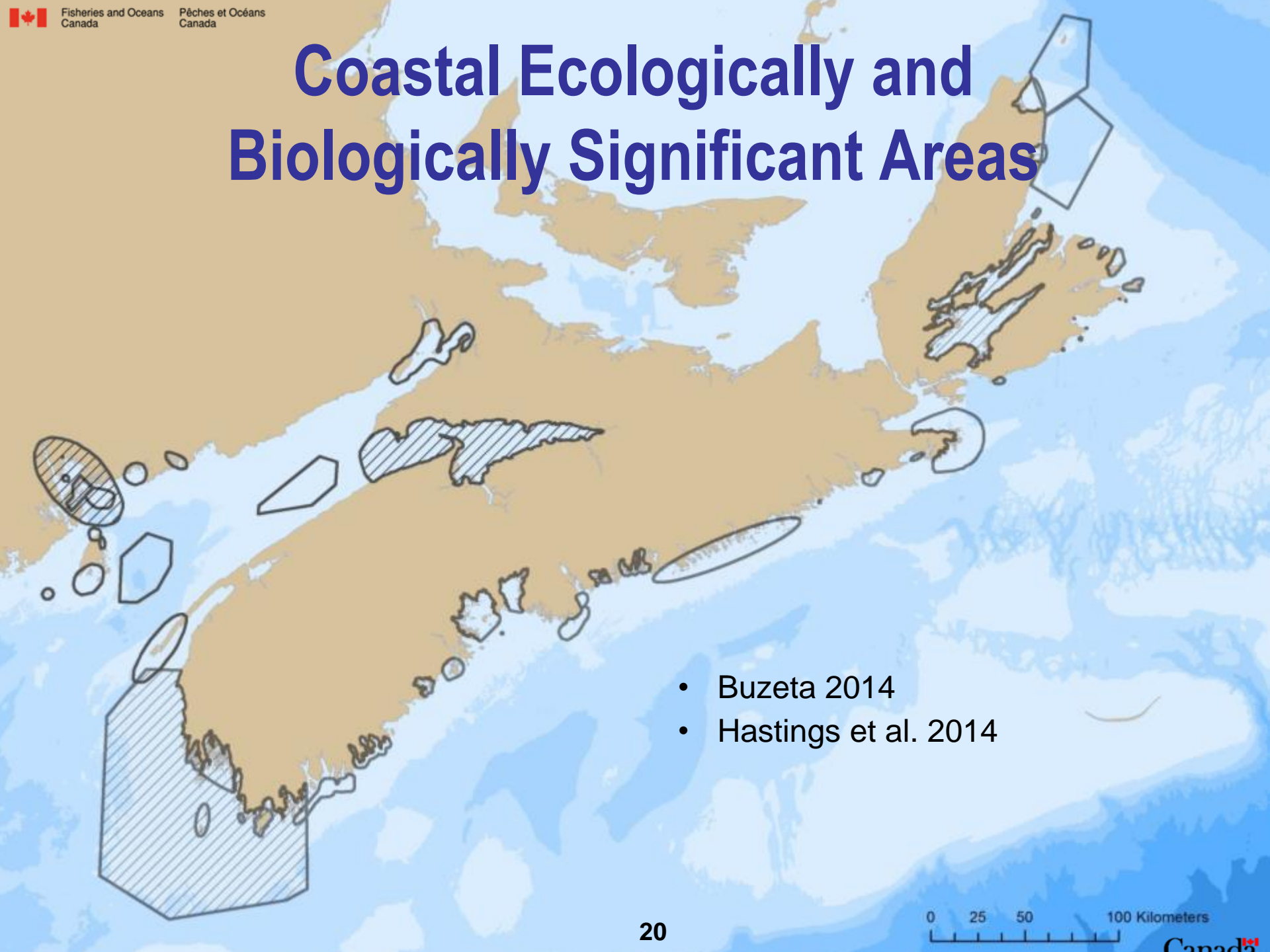
- Buzeta 2014
- Hastings et al. 2014

0   25   50   100 Kilometers

Representation: Coastal Eco-Units
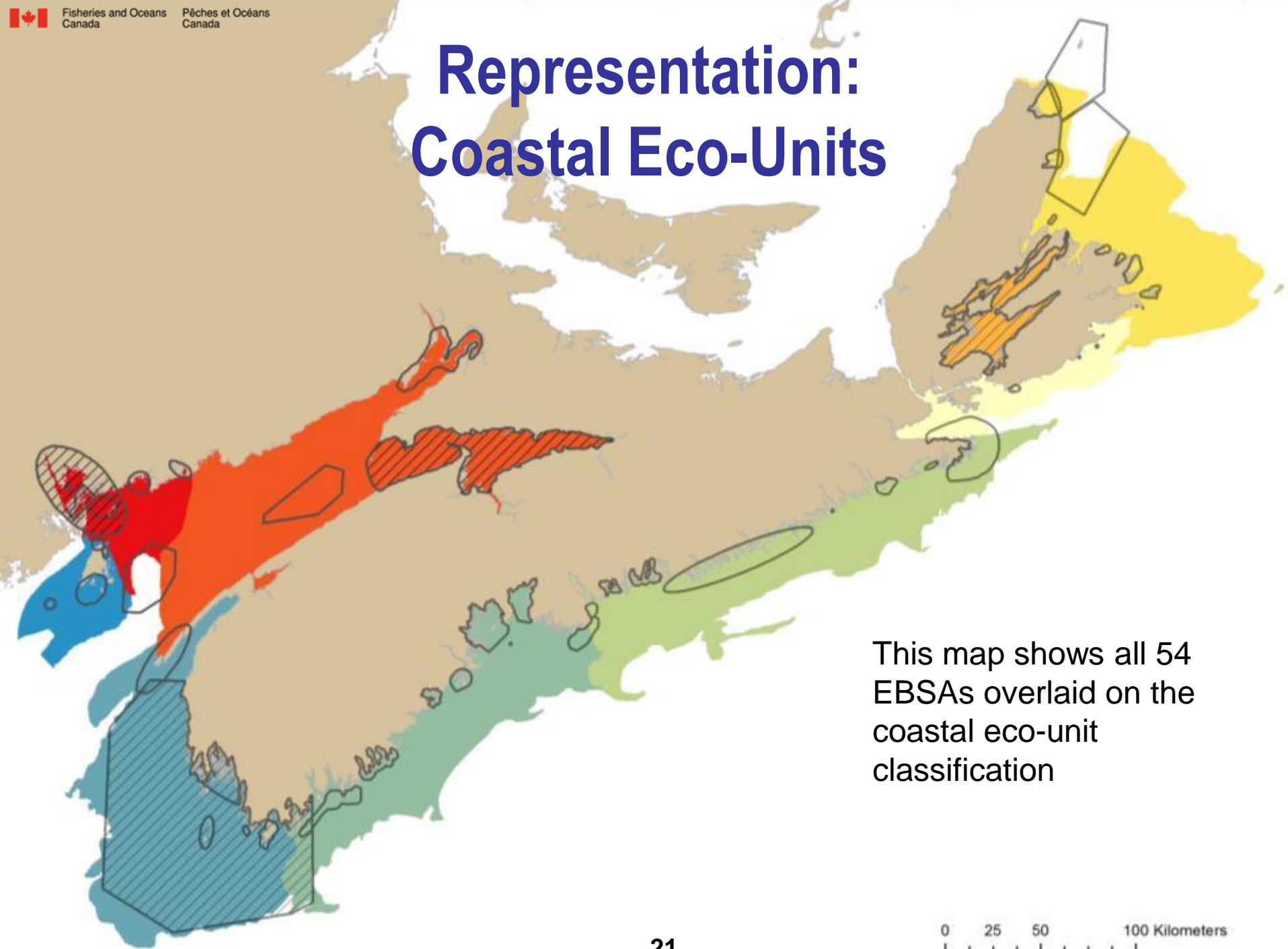
This map shows all 54 EBSAs overlaid on the coastal eco-unit classification

0   25   50   100 Kilometers
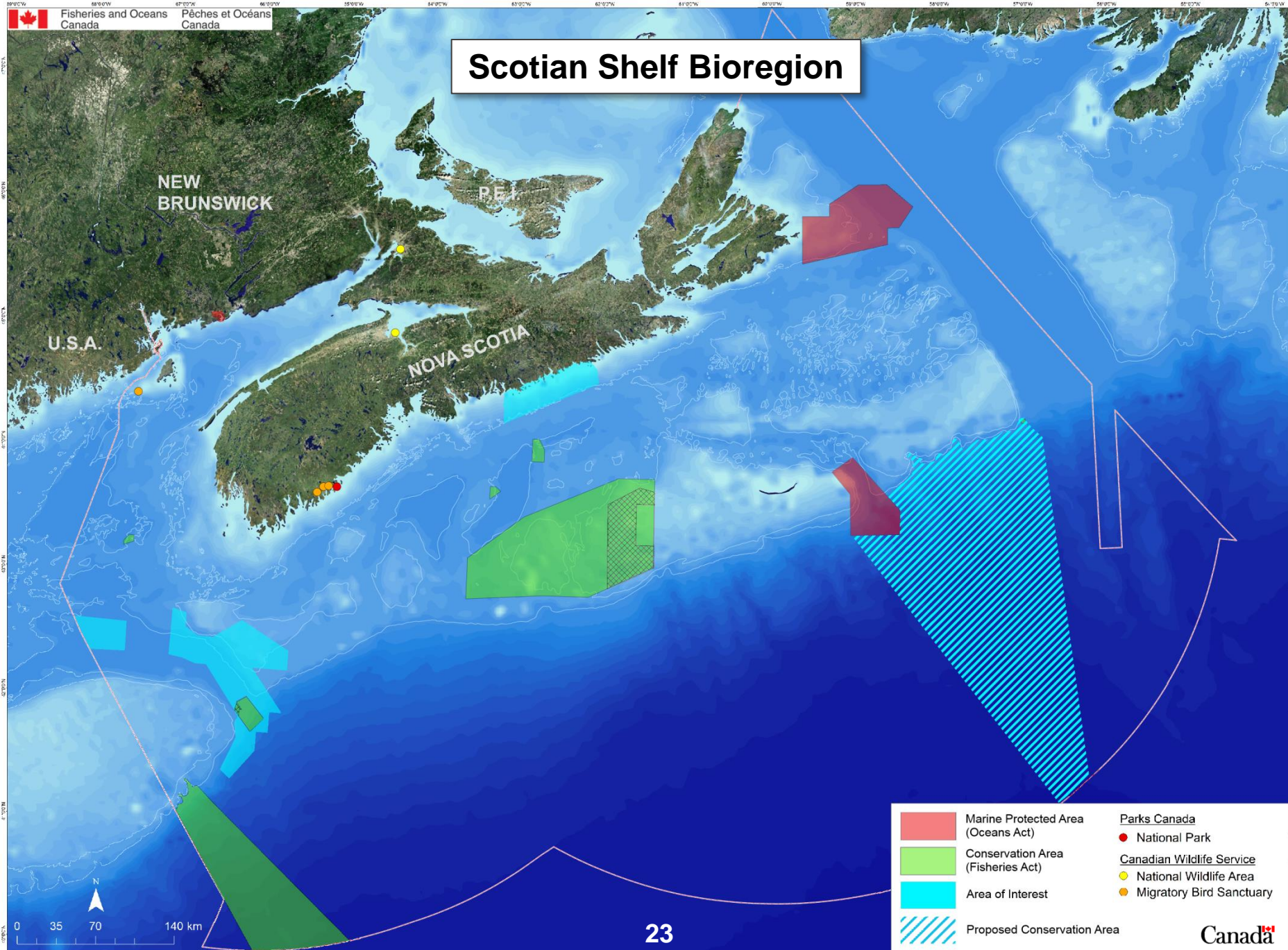
Coastal Conservation Priorities	Target (Amount)
Coarse-filter Features	
Coastline classes	Protect at least 2 representative examples of each
Coastal eco-units	Protect at least 2 representative examples of each
Fine-filter Features	
Highly natural ecosystems	Protect at least 1 example in each eco-unit
Areas of high productivity	Protect at least 1 example in each eco-unit
Areas of high biodiversity	Protect at least 1 example in each eco-unit
Complex or unique geomorphology	Protect at least 1 example in each eco-unit
Persistent unique or rare oceanographic characteristics	Protect at least 1 example in each eco-unit
Biogenic habitats: Invertebrates 1) Large sponges, stalked tunicates, horse mussel reefs 2) Other habitat-forming invertebrates (lemon weed, oyster beds)	1) Protect all known significant concentrations 2) Protect at least 1 example in each eco-unit
Biogenic habitats: marine plants, algae 1) Eelgrass 3) Kelp 2) Saltmarsh 4) Rockweed, etc.	Protect at least 1 example of each type in each eco-unit

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Scotian Shelf Bioregion

Legend:
- Marine Protected Area (Oceans Act)
- Conservation Area (Fisheries Act)
- Area of Interest
- Proposed Conservation Area

Parks Canada
- National Park

Canadian Wildlife Service
- National Wildlife Area
- Migratory Bird Sanctuary

Federal Contributions to 2017 Target in the Scotian Shelf Bioregion

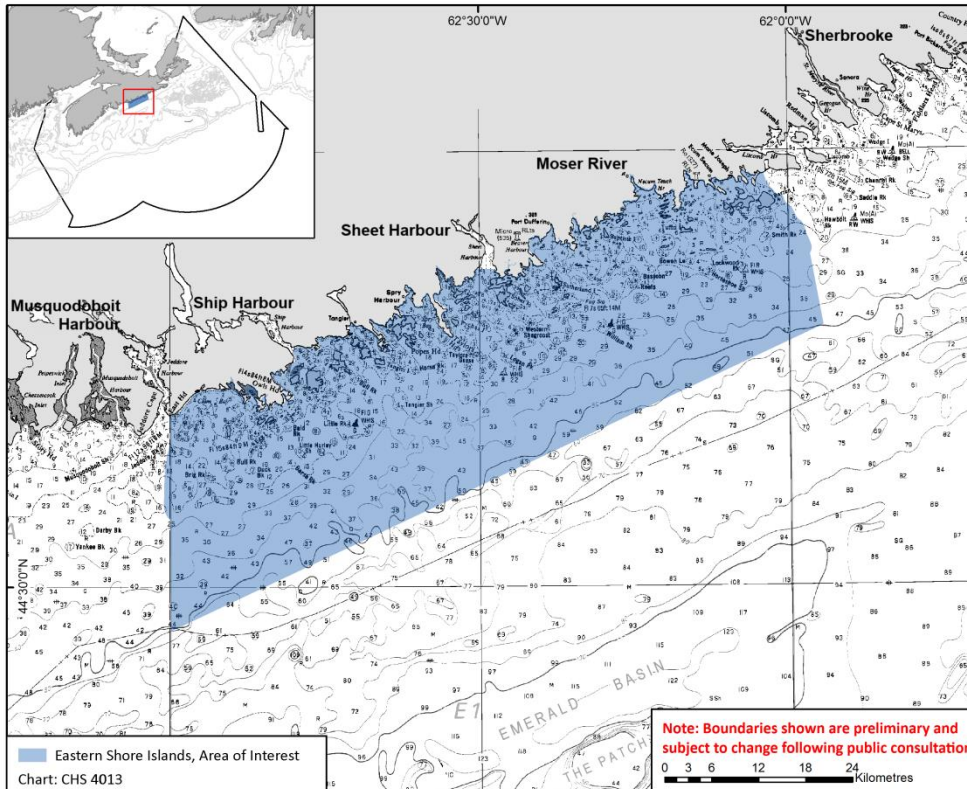| Site Name	Legislation	Year	Area (km²)	% of bioregion
NE Channel Coral Conservation Area (CCA)	*Fisheries Act*	2002	391	0.082
Stone Fence (CCA)	*Fisheries Act*	2003	15	0.003
The Gully MPA	*Oceans Act*	2004	2,364	0.498
Musquash Estuary MPA	*Oceans Act*	2006	11.4	0.002
Sambro Bank Sponge Conservation Area (SCA)	*Fisheries Act*	2010	62	0.013
Emerald Basin SCA	*Fisheries Act*	2010	197	0.041
Jordan Basin CCA	*Fisheries Act*	2017	49	0.010
Corsair/Georges Canyons CCA	*Fisheries Act*	2017	9,075	1.910
St. Anns Bank MPA	*Oceans Act*	2017	4,364	0.918
Western & Emerald Banks Conservation Area	*Fisheries Act*	2017	10,241	2.155
DFO total for the Scotian Shelf Bioregion			**26,769.4**	**5.63%**
Other Federal Contributions in the Bioregion			**28.6**	**0.006**
Total Bioregion contribution to National Target is 0.466%			**26,798**	

Looking ahead to 2020

- Anticipated Scotian Shelf Bioregion contributions to 2020:

  - 2 new *Oceans Act* MPAs (1 offshore, 1 coastal)

  - New Conservation Area(s) under the *Fisheries Act*

- Proposed new sites to be announced with the release of the Draft MPA Network Design in 2018

 - Final bioregional MPA Network Plan expected by 2019/2020

Eastern Shore Islands AOI

Eastern Shore Islands, Area of Interest
Chart: CHS 4013

Note: Boundaries shown are preliminary and subject to change following public consultation

- Study area size: 2089 km^2
- Extent: Clam Bay to Barren Island (near Liscomb point)
- Key features:
  - Highly natural
  - unique archipelago system
  - Eelgrass, kelp and saltmarsh
  - Juvenile areas for haddock, cod and hake
  - Herring spawning area
  - Important Atlantic Salmon habitat
  - Foraging area for many birds (incl. Harlequin Duck and Roseate Tern)

Fundian Channel-Browns Bank AOI
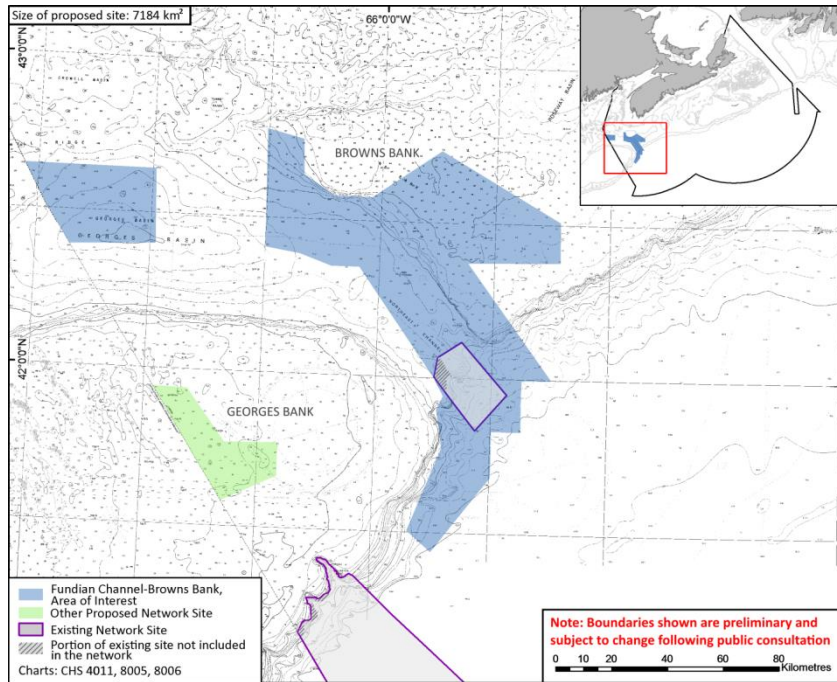
Size: 7,100 sq km

Human uses
- Groundfish (fixed and mobile gear)
- Offshore Lobster
- Large Pelagics
- Scallop
- Oil and gas exploration (Statoil license, activity pending)

Ecological features
- Multiple major offshore habitat features (bank, channel, basin)
- Deep sea corals
- Important migratory route (sharks, turtles, whales)
- High productivity
- Important for groundfish (cusk, cod and skates)

Existing conservation
- Northeast Channel Coral Conservation Area
- LFA 40
- Browns Bank Groundfish Spawning Closure
- Hell Hole large pelagics closure
- Georges Bank Oil & Gas Moratorium

Timelines for MPA Network Development
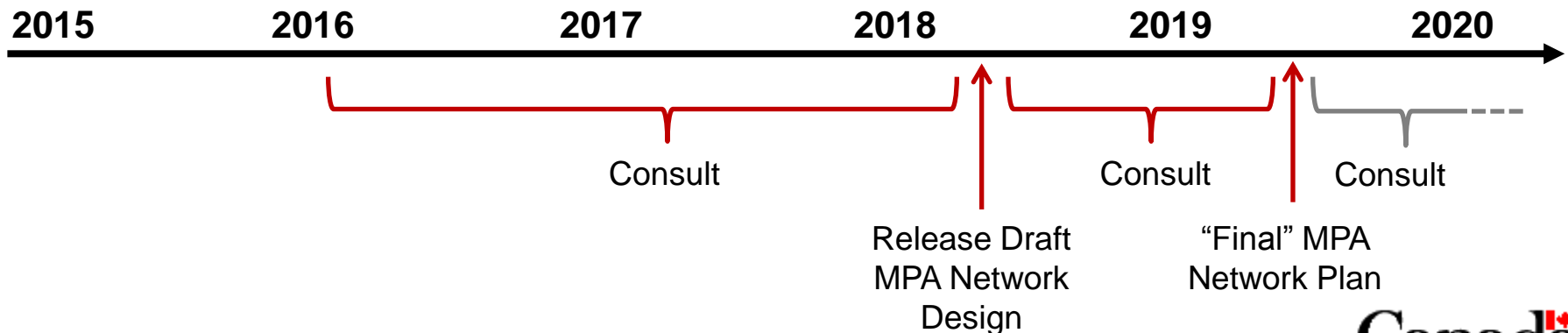
Phase 1:
Compile Data & Information

Phase 2:
Design MPA Network

Advance opportunities (MCT)

Phase 3:
Implement Plan

Phase 4: Monitor & Manage

2015　　2016　　2017　　2018　　2019　　2020

Consult

Consult

Consult

Release Draft MPA Network Design

"Final" MPA Network Plan

Timelines for 2020 Sites

AOI = Area of Interest for MPA designation under the *Oceans Act*

Phase 1:
Compile Data & Information

Phase 2:
Design MPA Network

Advance opportunities (MCT)

Phase 3:
Implement Plan

Phase 4: Monitor & Manage

2015   2016   2017   2018   2019   2020

Announce AOIs &
Fisheries Act site

Consult

Designate AOIs &
Fisheries Act site

Consultation on the Draft MPA Network Design

Consultation to follow 3 general phases

- **Phase 1:** Prior to public release
  - Meet with the Provinces of NS & NB, First Nations (already occurred/ ongoing)
  - Meet with other Indigenous groups, CNSOPB and key stakeholder groups

- **Phase 2**: Public comment period (following public release)
  - Information made available online
  - Requesting written submissions (online feedback option)

- **Phase 3:** Targeted consultation
  - Follow up meetings with provinces, First Nations and other Indigenous groups, CNSOPB and key stakeholder groups

Feedback received will be used to refine and finalize the MPA network design

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Photo: Scott Leslie