



Natural Resources
Canada

Ressources naturelles
Canada



Surveyor General Branch

Beyond Boundaries

sgb.nrcan.gc.ca



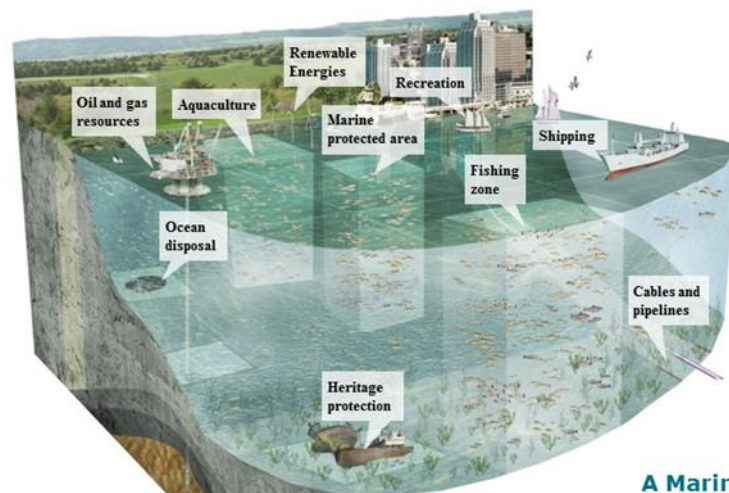
Marine Spatial Data Infrastructure (MSDI) & The Marine Cadastre Application



April 10, 2018



Canada

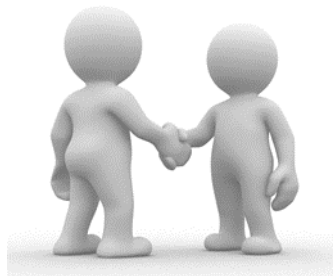


A Marine Cadastre





A Collaborative Pilot Project



Vision of CHS:

A framework of geographic data, metadata, users and tools

Intent of SGB:

A system of registries to provide a legal foundation for the management of Canada's oceans and more certainty for industry and capital investment





What is the MSDI Context ?

Federal

- Marine component of the CGDI
- Compliant with the FGP
- Integrated within the FCGEO
- Inline with the Open Government, Open Data and Open Maps directives





What is the MSDI Context ?

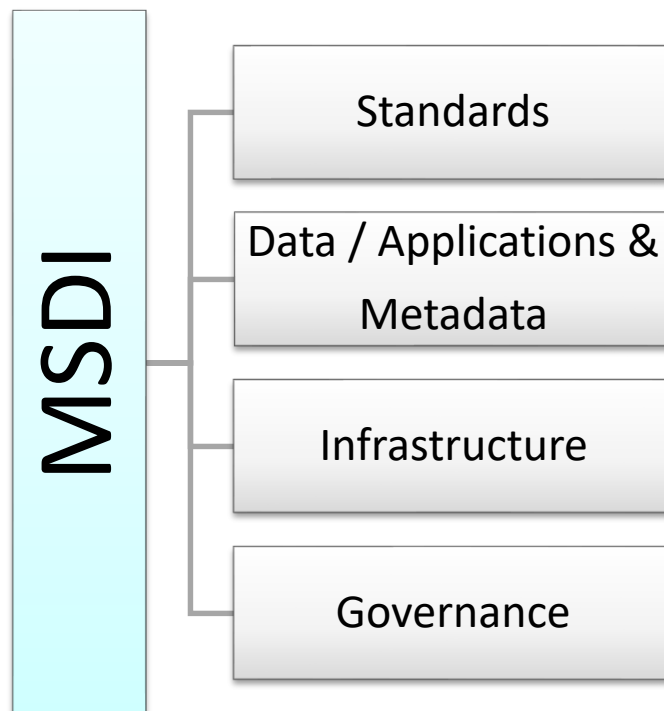
International

- UN-GGIM:
 - ISO:
 - OGC:
 - IHO:
- **Best practices:** Interoperable & Common Structure





What is it about ?





Current Status ?

Prototype Development

- Define 3 pilot areas
- Gather, harmonize data/metadata
- Create test applications
- Create single point of entry
- Enhance the prototype infrastructure
- Refine application to meet client vision and needs

Collaboration

- DFO-Science
 - CHS
 - Fisheries Management
 - Ecosystems Oceans Sciences
 - Aquaculture
- **Natural Resources Canada**
 - **Surveyor General Branch (SGB)**
- Transport Canada
- Environment Canada
- Department of National Defense





MSDI Benefits?

- Simple, efficient, expandable and transparent governance solution
- Provision of targeted marine applications, tools and services
- Promote access, visibility, and delivery of value added products
- Leverages existing federal and international initiatives





MSDI - Thematic Data Listing

Welcome to the Marine Spatial Data Infrastructure Home Page
Bienvenue à la page d'accueil de l'infrastructure de données spatiales marines

Thematic data listing - Liste de données par thème

 Maritime Limits and Boundaries - Limites et frontières maritimes	 Marine Protected Areas - Zones de protection marines	 Marine Transportation - Transport maritime
 Offshore Oil and Gas - Hydrocarbures offshore	 Submarine Cables - Câbles sous-marins	 Marine Military Areas - Zones militaires marines
 Aquaculture	 Heritage - Patrimoine historique	 Coastal Infrastructure - Infrastructures côtières

MSDI - Terms and Supporting Tools

 Terms and Conditions - Termes et conditions	 Ask a question - Poser une question	 Add authoritative content to a map - Ajouter du contenu officiel à une carte
 Enrich your Excel Data - Enrichir vos données Excel	 Analyze your data - Analyser vos données	 Create a map - Créer une carte
 Create a group for sharing maps - Créer un groupe de partage de cartes	 Share your story in a web application	 Embed a map in a website or Powerpoint - Intégrer une carte dans un site web ou présentation Powerpoint

esri Canada

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MSDI - Applications

Government of Canada / Gouvernement du Canada

Canada

MSDI IDSM
Marine Spatial Infrastructure de
Data Infrastructure données spatiales marines

 Story Map Marine Spatial Data Infrastructure (MSDI)	 Application Maritime Limits and Boundaries - Limites et	 Application Marine Protected Areas - Zones de protection marines	 Application Marine Cadastre - Cadastre marin
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<https://msdi-idsm.maps.arcgis.com/home/index.html>





Let's now focus on

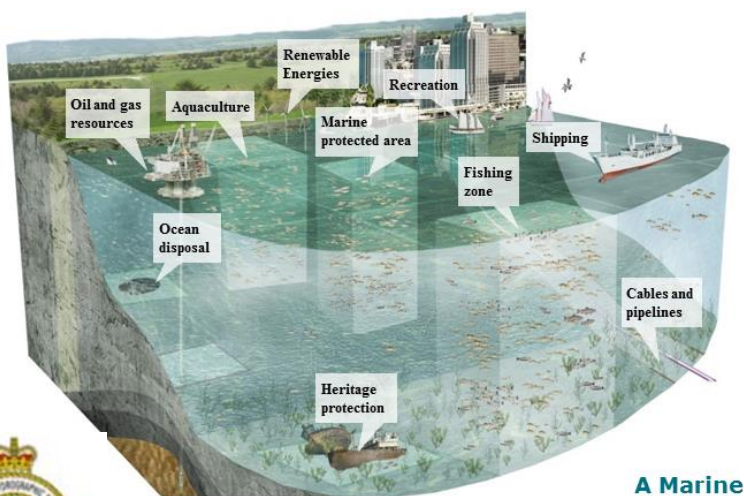
**The
Marine Cadastre
Application**





WHAT IS A MARINE CADASTRE ?

A marine cadastre is an integrated system of registries that is fundamental to enable the systematic public recording of all recognized legal rights, restrictions, and responsibilities related to ocean space (Joint Task Team, March 2010).



A Marine Cadastre



WHY A MARINE CADASTRE ?

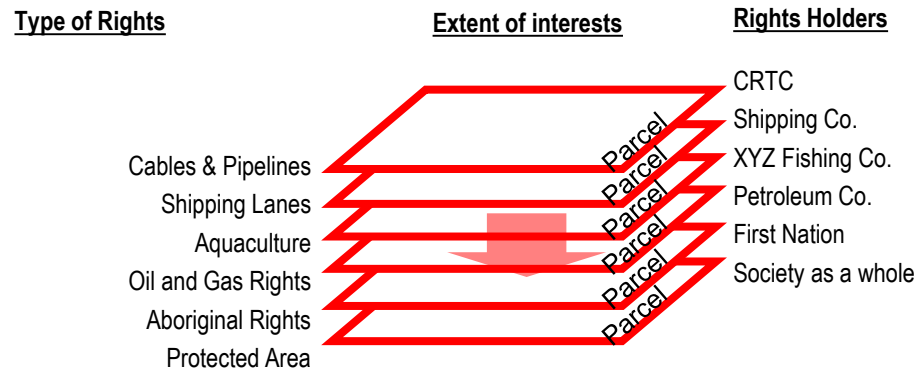
- Growing competition for the usage of the ocean space
- Lack of cohesive and consistent land development process and tools
- Increased recognition around the world

The Solutions:

- Develop a Geospatial Infrastructure (Geospatial Platform)
- Promote the implementation of a Cadastral System in the offshore
- Encourage a formal recording of rights for an integrated view



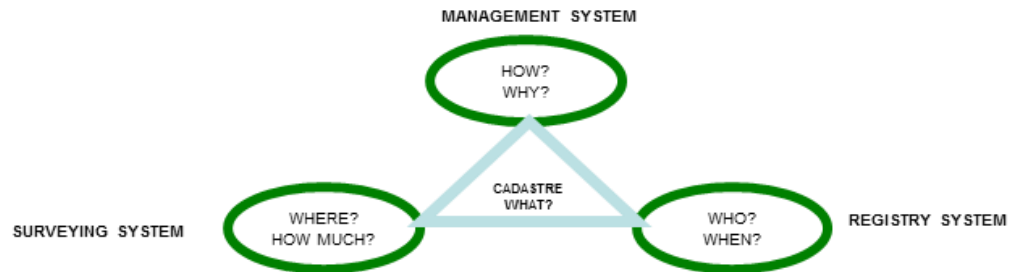
How is Information Structured and Integrated?



Rights Infrastructure (Cadastre)

Digital photography, imagery, GPS, international standards

Marine Spatial Data Infrastructure

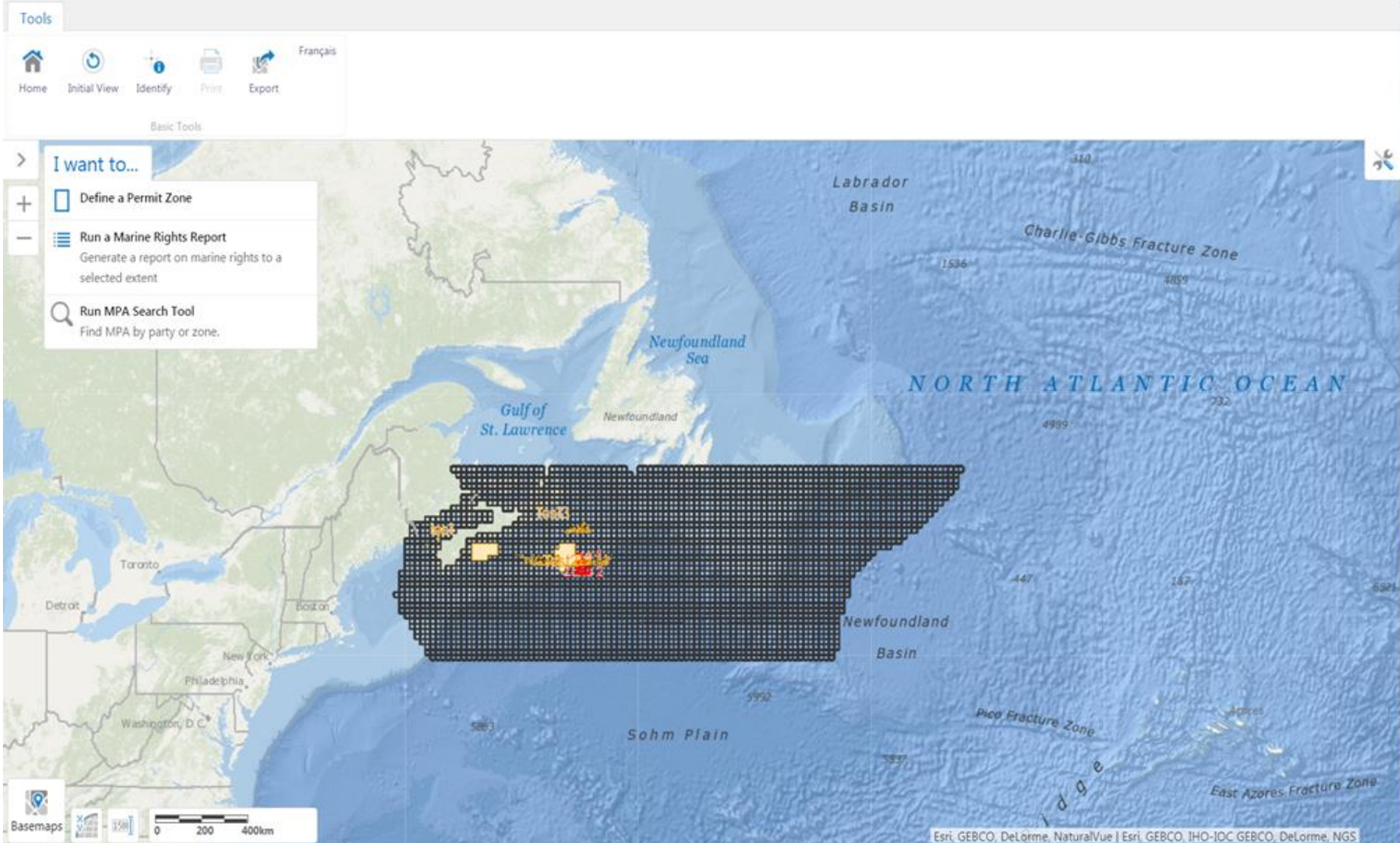


Source: SGB, ESS, Natural Resources Canada



In the Pilot Project, 2 tools created (Marine Cadastre Application):

Oil and Gas Permitting Application



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Two tools created (Marine Cadastre Application): 1) Defining a permit zone

Oil and Gas Permitting Application

Tools

Home Initial View Identify Print Export Français

Basic Tools

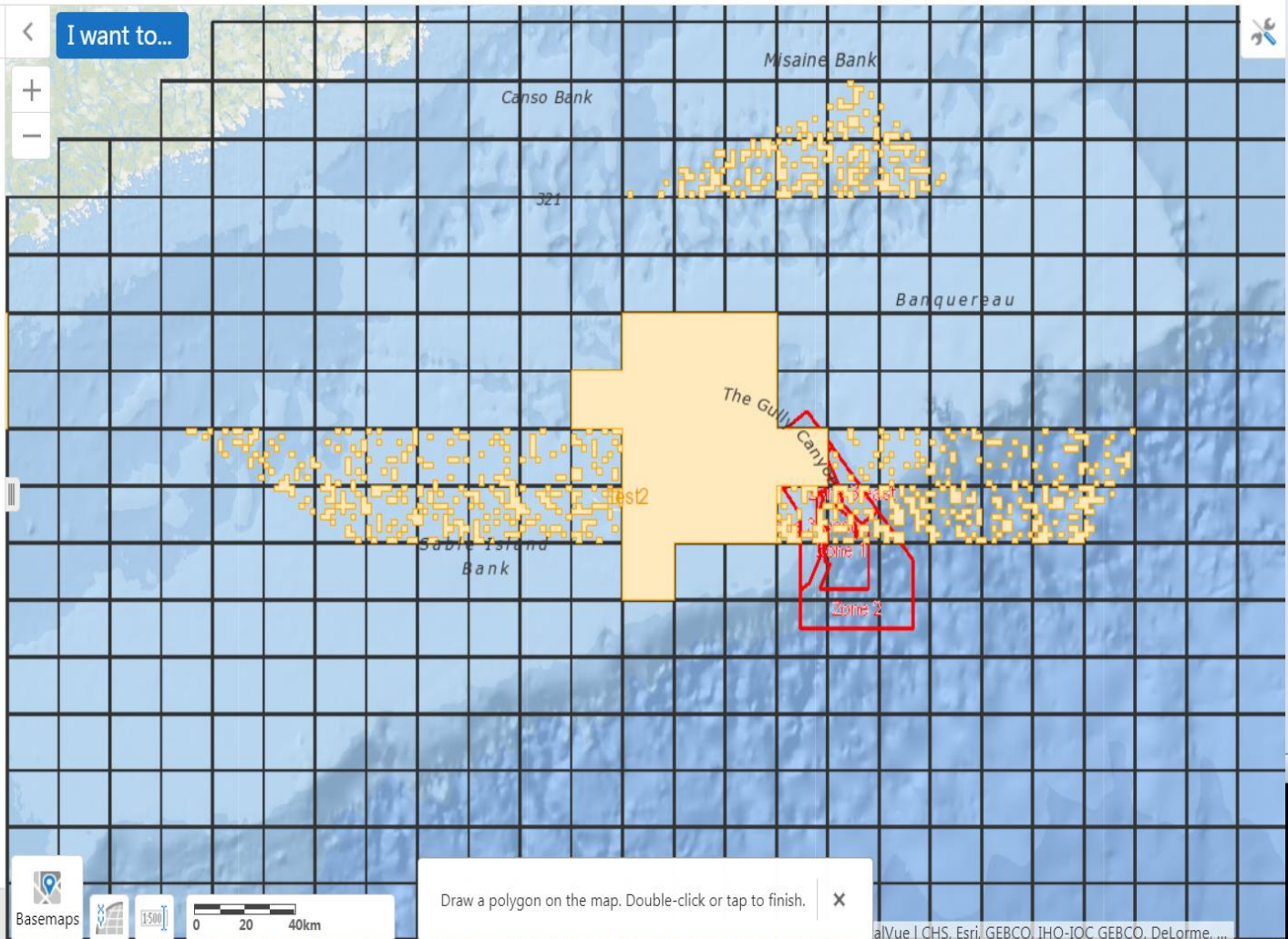
"Oil & Gas Permitting"

"The application is processing your request... Please wait."

Define your custom geometry by choosing one of the tools below, and selecting an area on the map.

• ↶ ↷

Ok Cancel



Two tools created (Marine Cadastre Application): 1) Defining a permit zone

Oil and Gas Permitting Application

Search... Sign in

Tools

Home Initial View Identify Print Export Français

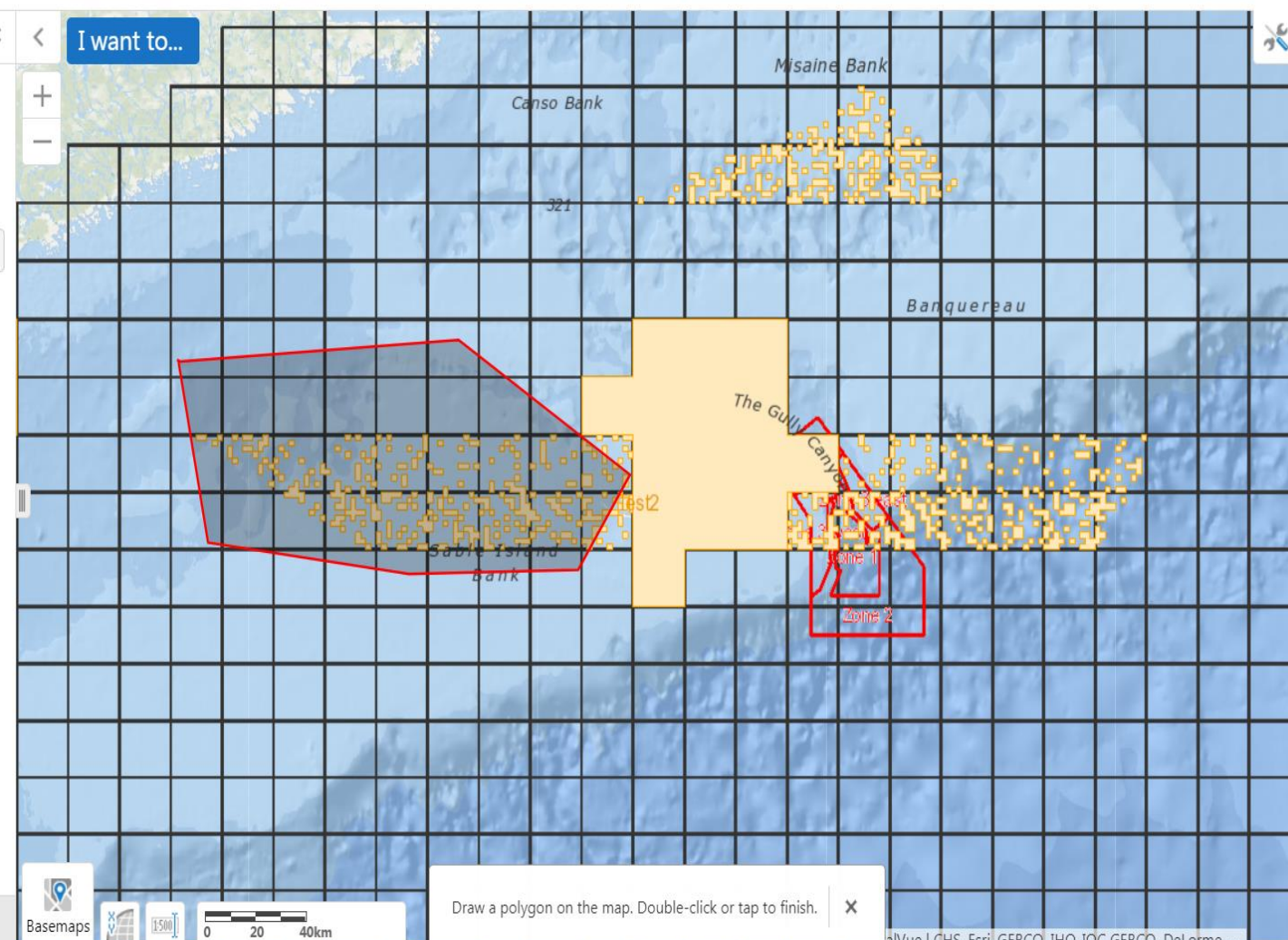
Basic Tools

"Oil & Gas Permitting"

"The application is processing your request... Please wait."

Define your custom geometry by choosing one of the tools below, and selecting an area on the map.

Ok Cancel



Draw a polygon on the map. Double-click or tap to finish.

Two tools created (Marine Cadastre Application): 1) Defining a permit zone

Oil and Gas Permitting Application

[Sign in](#)

Tools

[Home](#)[Initial View](#)[Identify](#)[Print](#)[Export](#)[Français](#)

Basic Tools

"Oil & Gas Permitting"



I want to...



Droits

Identificateur

Type

Type de la source

Identificateur de la source

Endroit de la source

Date en vigueur

03/19/2018



Date d'expiration

03/19/2018



Partie

Type de la source

Type

Nom

Etendue spatial

Nom unique



Layers



"Oil & Gas Permitting"



Basemaps



1500




0 10 20km


Two tools created (Marine Cadastre Application): 2) Running a marine cadastre report


Oil and Gas Permitting Application


Search...  [Sign in](#) 


Tools


 Home

 Initial View

 Identify


 Print


 Export


 Français

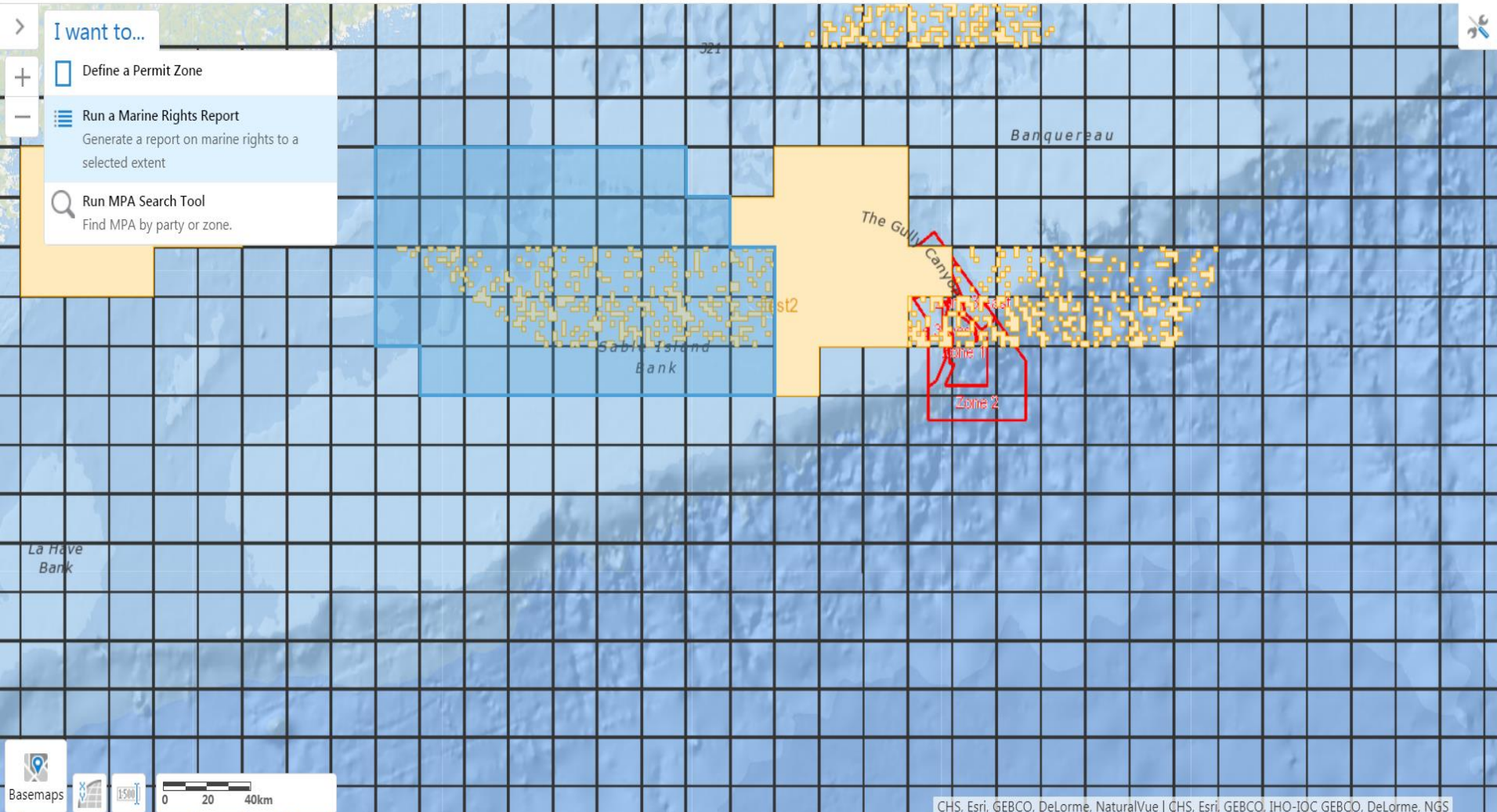
Basic Tools

I want to...

 Define a Permit Zone

 Run a Marine Rights Report
Generate a report on marine rights to a selected extent

 Run MPA Search Tool
Find MPA by party or zone.



Basemaps   0 20 40km

Two tools created (Marine Cadastre Application): 2) Running a marine cadastre report

Oil and Gas Permitting Application

Search...

Sign in

Tools

Home

Initial View

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Export

Basic Tools

Marine Rights Report

"Please wait..."

Define your custom geometry by choosing one of the tools below, and selecting an area on the map.

Ok

Cancel

I want to...

Results

No results

Frederickton

St. Pierre Bank

Bay of Fundy

Sable Island Bank

Brown's Bank

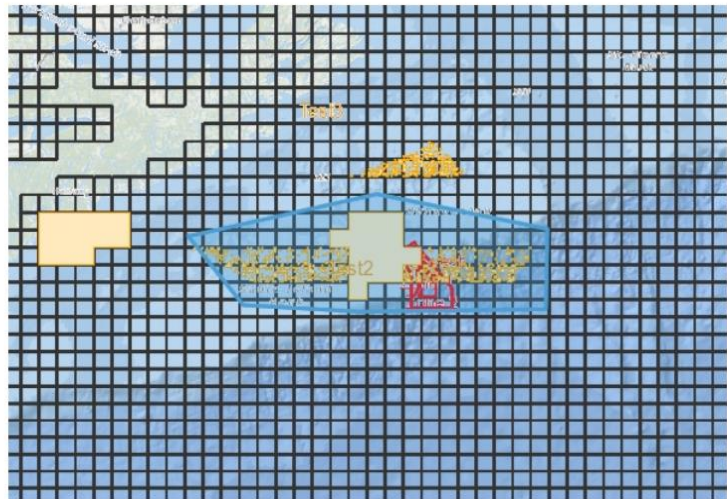
Basemaps

0 50 100km

Draw a polygon on the map. Double-click or tap to finish.



Report on Marine Rights



Pipelines Licenses - Production Licences 2016

Parcel	Keywords	Pipe Type	License Number
26	ExxonMobil Canada Ltd.	PL	2903
47	ExxonMobil Canada Ltd.	PL	2904
48	ExxonMobil Canada Ltd.	PL	2905
55	Encana Corporation	PL	2901
57	ExxonMobil Canada Ltd.	PL	2904
62	Encana Corporation	PL	2902
69	ExxonMobil Canada Ltd.	PL	2906
115	ExxonMobil Canada Ltd.	PL	2907
116	ExxonMobil Canada Ltd.	PL	2908
0	Encana Corporation	PL	2910
0	Encana Corporation	PL	2909
0	Encana Corporation	PL	2911

Pipelines Licenses - Significant Discovery Licences 2016



Next Steps?

- A project to implement a standard data format, based on S-121 and ISO 19152:
- A development of oil & gas grid web service solution with some functionality to select specific elements of the grid (grid areas, sections and units) to generate extent of rights.

Output?

- Advance a data structure to store marine rights in a common format furthering the S-121 and ISO 19152 standards development
- Provide SGB with the starting point of developing a collaborative marine rights tool
- Support DFO as they consolidate data for use in an MSDI.

