

ENVIRONMENT AND CLIMATE CHANGE CANADA

NATIONAL ENVIRONMENTAL EMERGENCIES CENTRE

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Preparedness and Response
Central, Prairies and North
February 15th , 2024



Environnement et
Changement climatique Canada

Environment and
Climate Change Canada

Canada

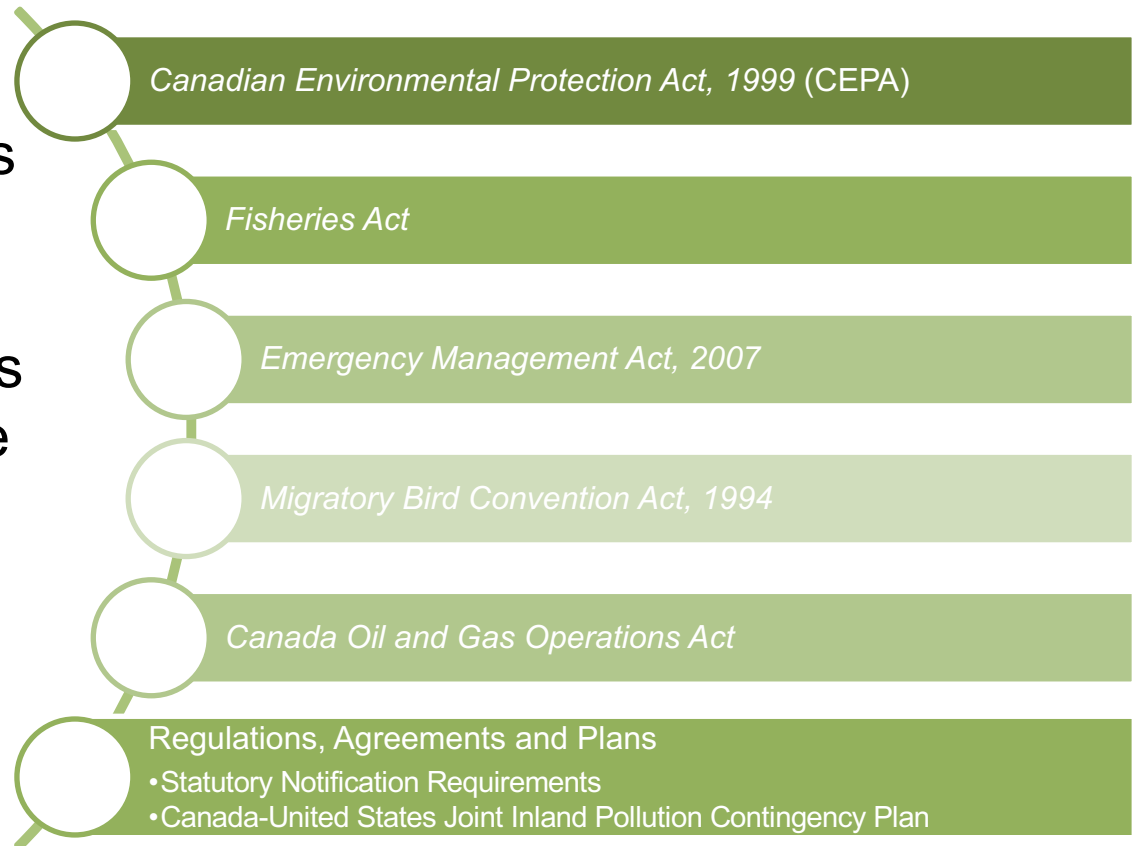
AGENDA

- ECCC's legislative authorities
- NEEC's operational mandate
- NEEC's roles and responsibilities
- NEEC Operations Centre
- ECCC and NEEC services to support emergency response



ECCC'S LEGISLATIVE AUTHORITIES

ECCC has authorities that can require all reasonable and appropriate measures are taken to minimize the potential or real impacts to the environment and human life or health.



CEPA AND FISHERIES ACT SPECIFY EMERGENCY MANAGEMENT


CEPA and Fisheries Act specify that:

- Responsible parties must notify;
- Responsible party must implement reasonable measures to protect the environment and human health; and
- An Officer “may take actions or direct reasonable measures be taken” should the responsible party fail to do so.


Consequently, ECCC must be able to:



Receive notification;



Evaluate that reasonable measures are taken to protect the environment and the human health; and

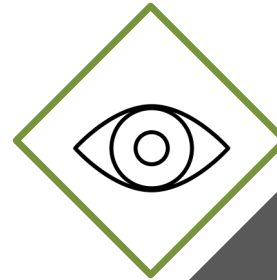


Be able to take or direct reasonable measures, if needed.



VISION

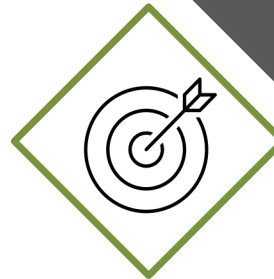
Canada's trusted source for science and services to protect Canadians and the environment from environmental emergencies.



**NATIONAL
ENVIRONMENTAL
EMERGENCIES
CENTRE**

MISSION

To ensure all reasonable measures are taken to mitigate impacts from environmental emergencies, through planning, preparing and responding with the coordination and delivery of Government of Canada science, expert advice and situational awareness 24/7.



NEEC'S ROLES RESPONSIBILITIES



Maintain 24/7 emergency notifications services to inform partners and stakeholders on environmental emergencies



Available 24/7 to provide assistance to the Lead Agency



Coordinate 24/7 technical and scientific support for federal agencies during environmental emergency response



Assess that all appropriate and reasonable mitigation actions to protect the environment are taken



WHO ARE WE AT NEEC?

6
teams

- Management and Coordination Office
- National Programs and Operations
- Geomatics and Technology
- Central, Prairie and North
- Atlantic Satellite Office
- Pacific Satellite Office

NEEC is made up of three positions: Environmental Notification Operations Officers (ENOO), Environmental Emergencies Officers (EEO), and Geomatics Specialists (GS)



Environmental Scientists

Notification Experts

Toxicologists

Engineers



Ecologists

Physical Geographers

GIS professionals

Biologists

COAST – TO – COAST – TO – COAST

The NEEC response model involves all NEEC officers across Canada. Close collaboration, information sharing and coordination with Environmental Emergencies Officers in our four offices is paramount and a key pillar of the NEEC's response model.



FULFILLING NEEC'S OPERATIONAL MANDATE

NOTIFICATION



NEEC Notification Desk



Delivered by Environmental Notifications Operations Officers

- Receive incident notifications
- Distribute incident notifications
- Triage notifications for escalation by a NEEC response

RESPONSE



NEEC's Emergency Operations Centre



Provided by Environmental Emergency Officers and Geomatics Specialists

- Coordinate the federal government's provision of technical advice and scientific expertise
- Ensure the environment is protected from pollution events from **all economic sectors** and impacting **various receiving environments**
- Provide scientific support and expert services to the lead agency



ENVIRONMENTAL EMERGENCIES NOTIFICATION SYSTEM

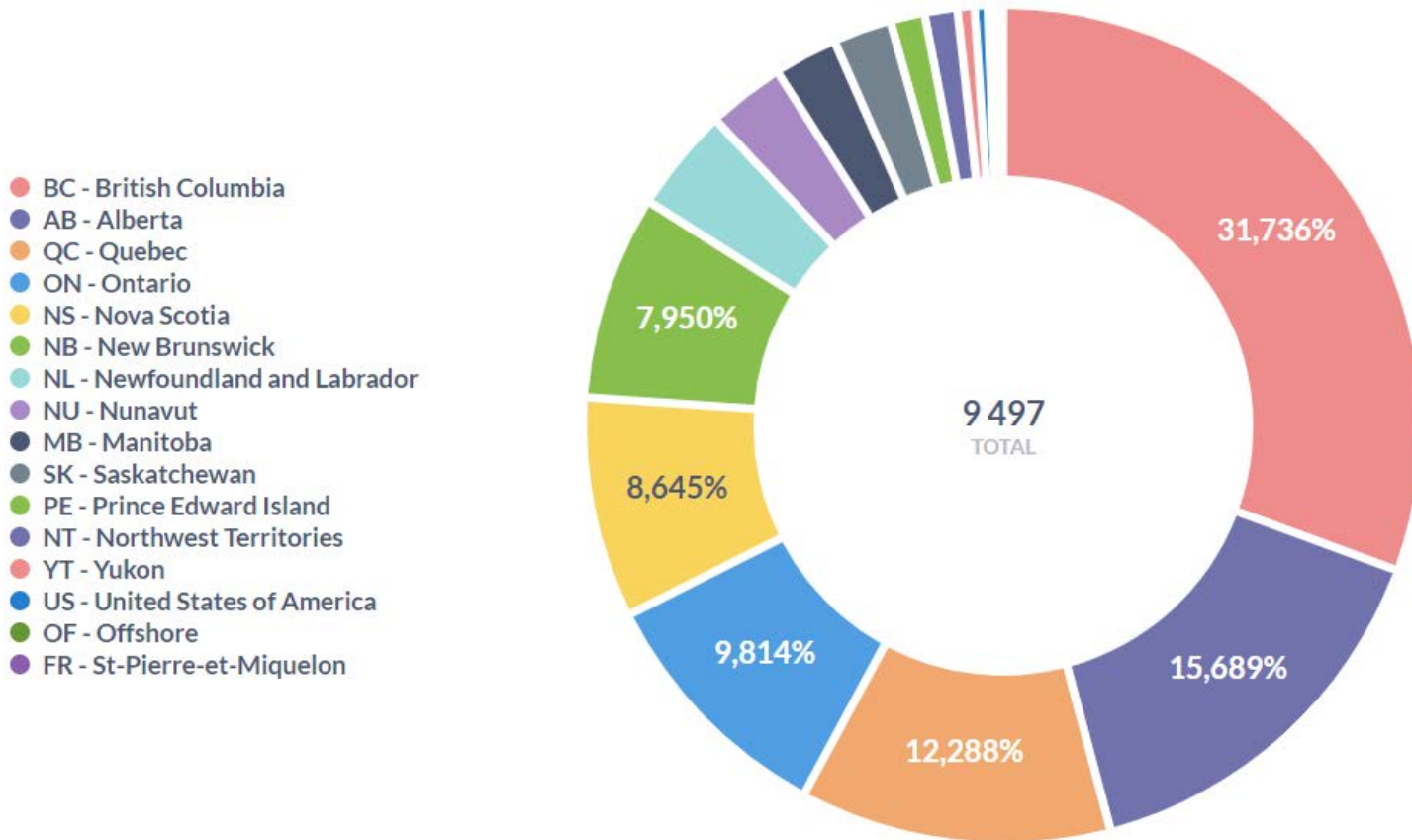


To reach the National Environmental Emergencies Centre (NEEC) directly 24/7

1-866-283-2333

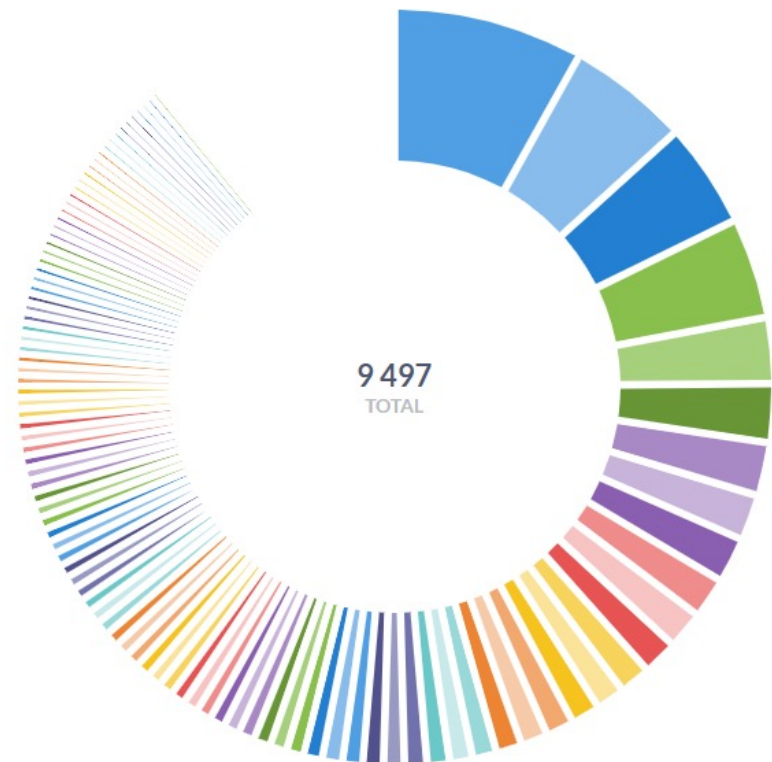


2022 NOTIFICATIONS PER PROVINCE/TERRITORY

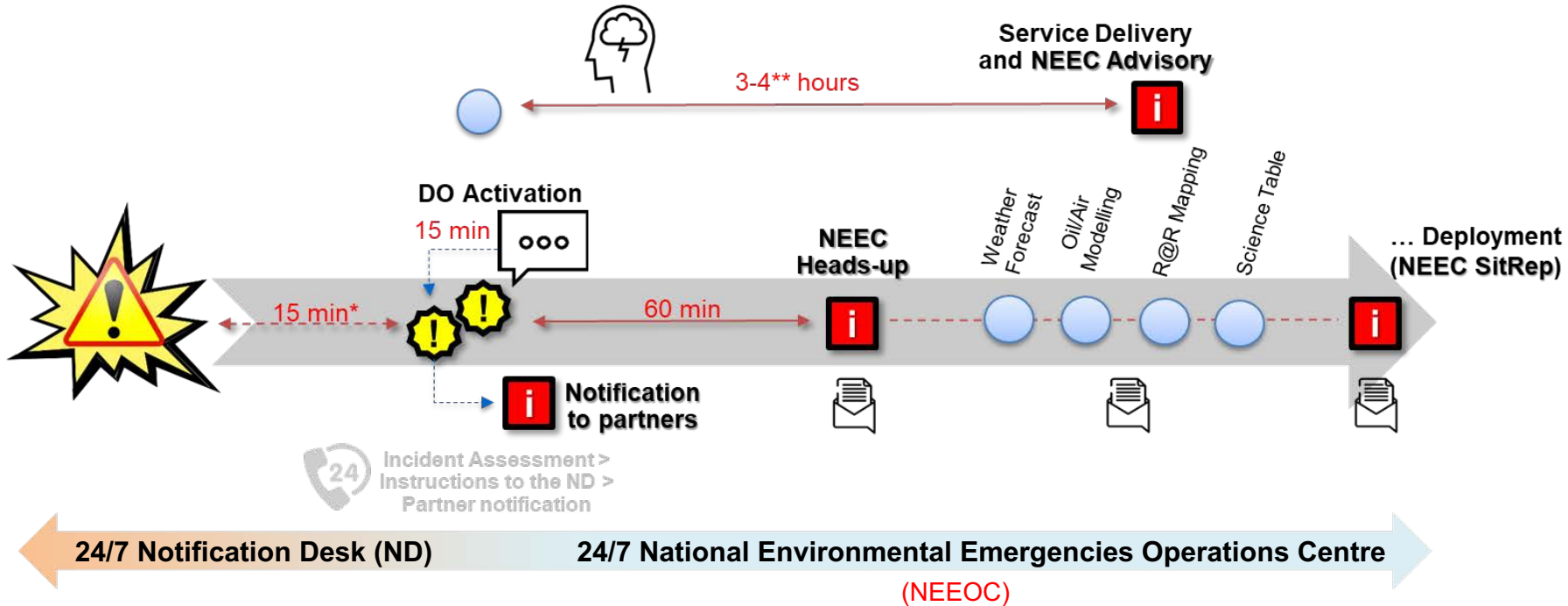


2022 NOTIFICATIONS PER INCIDENT CATEGORY

● Sewage treatment facilities	12,5829%
● Pleasure Craft	7,8762%
● Unknown source - Freshwater/Marine Environment	6,7600%
● Unknown source - Inland/Land-based	6,4547%
● Residential/Private	4,0644%
● Water supply and irrigation systems	3,5590%
● Motor Vehicle	3,2115%
● Marine Vessel (NOS)	2,7061%
● Construction	2,6640%
● Electric power transmission, control and distribution	2,3481%
● Fish-habitat disturbance/destruction	2,1586%
● Fishing Vessel	1,9796%
● Truck transportation	1,6953%
● Specialized freight trucking (including tanker)	1,5584%
● Water, sewage and other systems	1,5268%
● Unknown source	1,4847%
● General freight trucking	1,4004%
● Petroleum refineries	1,3267%
● Pulp, paper and paperboard mills	1,2004%
● Highway, street and bridge construction	1,1267%
● Supermarkets and other grocery (except convenienc...	1,0951%
● Gold and silver ore mining	1,0951%
● Air transportation	0,9687%
● Water transportation	0,9687%
● Iron ore mining	0,9371%
● Oil and gas extraction	0,9266%
● Telecommunications	0,8424%
● Other facilities/services	0,7476%
● Barge	0,7160%
● Hydro-electric power generation	0,7055%
● Manufacturing	0,6844%
● 105 more	



NEEC ENVIRONMENTAL EMERGENCIES MANAGEMENT – PROCESS OVERVIEW



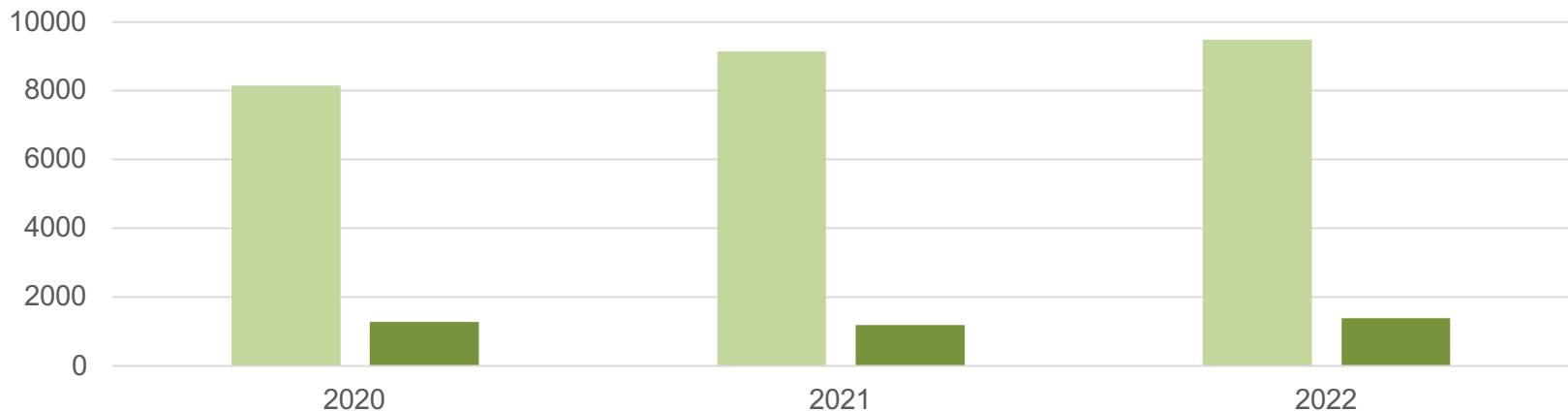
*From the moment NEEC is notified (written/verbal) to the moment the information is processed and NEEC DO is activated. Time can be variable depending on the amount of incoming notifications.

**Depends on service (weather can take less time – approx. 1-2 h, Science Table could >4 hrs).

- ND/NEEOC triaging and alerting
- Services
- Communication products

NEEC BY THE NUMBERS

● Notifications processed per year ● Activations per year



~1300
NEEC duty officer
activations per year

There are criteria in place which the Notification Desk agents apply as a triaging to all incoming notifications. If a criteria is met, then the incident report is sent to the NEEC Duty Officer, who works within the NEEOC, to monitor and action as needed.

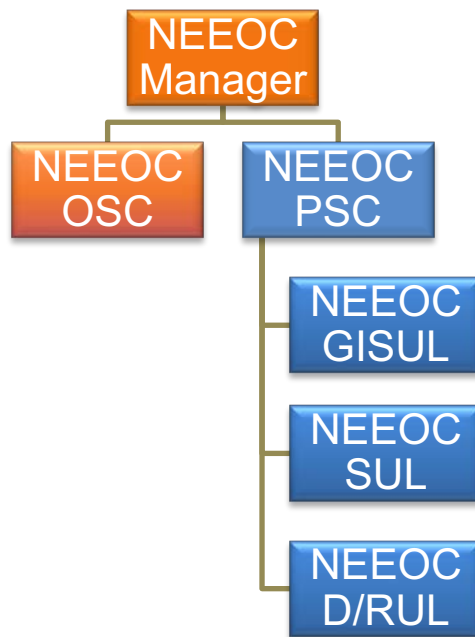


NEEOC RESPONSE ROSTER

- The NEEOC PSC / OSC is the Duty Officer who gets activated by NEEC Notification Desk agents to respond to incidents nationwide 24/7.
- Weekdays (business hours) and weekends there are two additional EEOs on the roster in standby mode ready to support the PSC/OSC as needed.
- Together, these three EEOs represent our three regions (West, East, Central), which support response from coast to coast to coast. This encourages and facilitates the leveraging of regional specific knowledge and experience.



NEEOC STANDARD STRUCTURE



When the NEEOC is stood up in its standard structure, 6 positions are filled. One NEEC staff member may fill two positions simultaneously.

- NEEOC Planning Section Chief (PSC)
- NEEOC Operations Section Chief (OSC)
- NEEOC Geographic Information System Unit Leader (GISUL)
- NEEOC Situation Unit Leader (SUL)
- NEEOC Documentation/Resources Unit Leader (D/RUL)





Modeling

Spill trajectory, drift, and atmospheric dispersion modeling



Sensitivity Mapping

Identification of environmental, archaeo-cultural and socio-economic resources at risk



Site Specific Weather Forecast

SUPPORTING ENVIRONMENTAL EMERGENCY RESPONSE ACROSS CANADA



Fate and behavior of hydrocarbons and chemicals in the environment



Coordination of expertise and consensus building



Expertise and Leadership in NEBA* and SCAT**

**Net Environmental Benefit Analysis*

*** Shoreline Cleanup Assessment Technique*



BRINGING TOGETHER THE BEST EXPERTS IN CANADA...

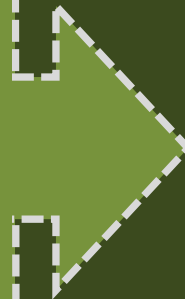
During an environmental emergency, NEEC works closely with experts from Environment and Climate Change Canada and other federal departments across the country, including

- wildlife biologists with the Canadian Wildlife Service,
- meteorologists with our weather service,
- oil-spill chemists and modelers with the Emergencies Science and Technology Section
- experts at the Shellfish Water Classification Program
- enforcement officers
- Fisheries and Oceans Canada

... TO SUPPORT OUR PARTNERS

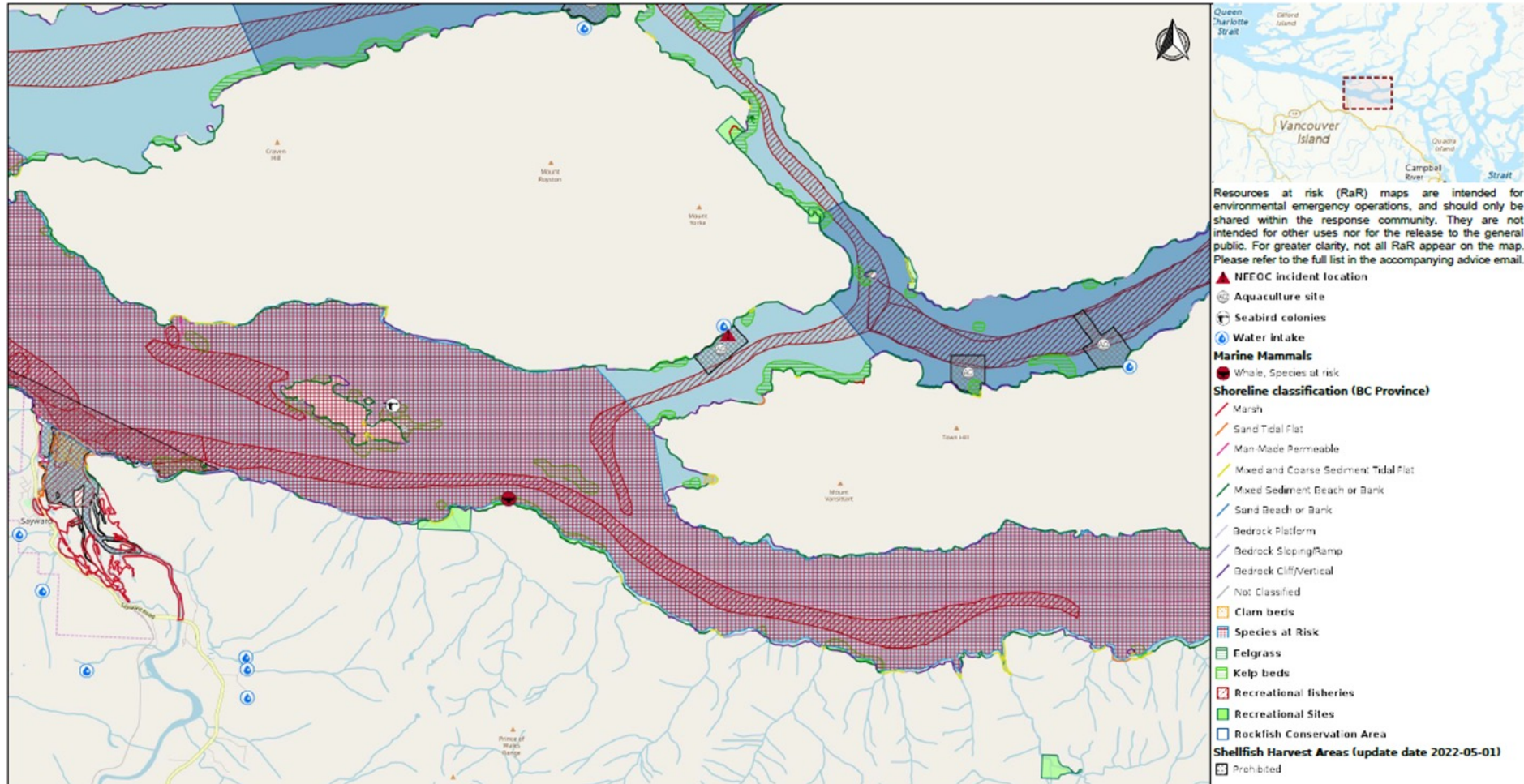
We support more than 50 external partners, including

- Canadian Coast Guard
- Transport Canada
- provincial and territorial departments
- Indigenous Peoples
- United States Environmental Protection Agency
- National Oceanic and Atmospheric Administration



ENVIRONMENTAL SENSITIVITIES MAPPING & COMMON OPERATING PICTURE

Incident | 234009 | Truck in waterway | Chancellor Channel | Hardwicke Island, BC



National Environmental Emergencies Centre (NEEC)

RESOURCES AT RISK IDENTIFICATION

- A specific meeting can be convened **ad hoc** in case of an emergency by ECCC (in collaboration with the lead agency).
- Bring to bear the best available expertise and abilities to identify environmental sensitivities for a given pollution incident such as local knowledge.
- Participants provide input based on their expertise for consideration in identifying environmental sensitivities and in developing optimal response advice for the situation.
- Building consensus among all the participants
- Priorities and advice are presented to the lead agency



CANADIAN WILDLIFE SERVICE

- Expertise on the migratory bird resources and species at risk, including on-site assessment and determination of wildlife impact
- Monitoring and review of response strategies affecting migratory birds and species at risk
- Advice and permitting of hazing techniques
- Permitting of capture and rehabilitation operations



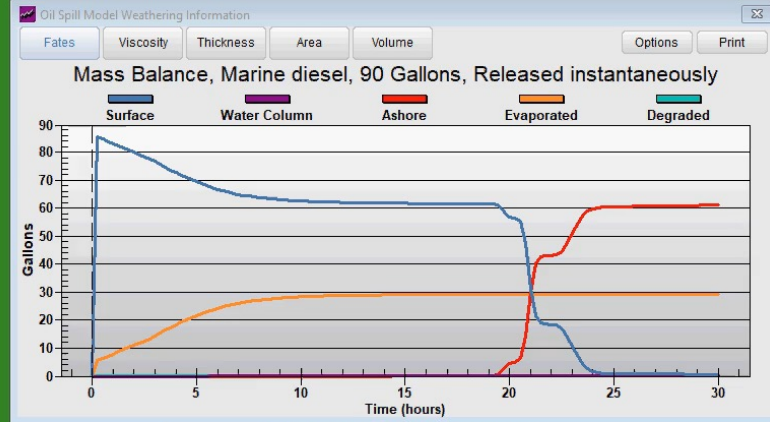
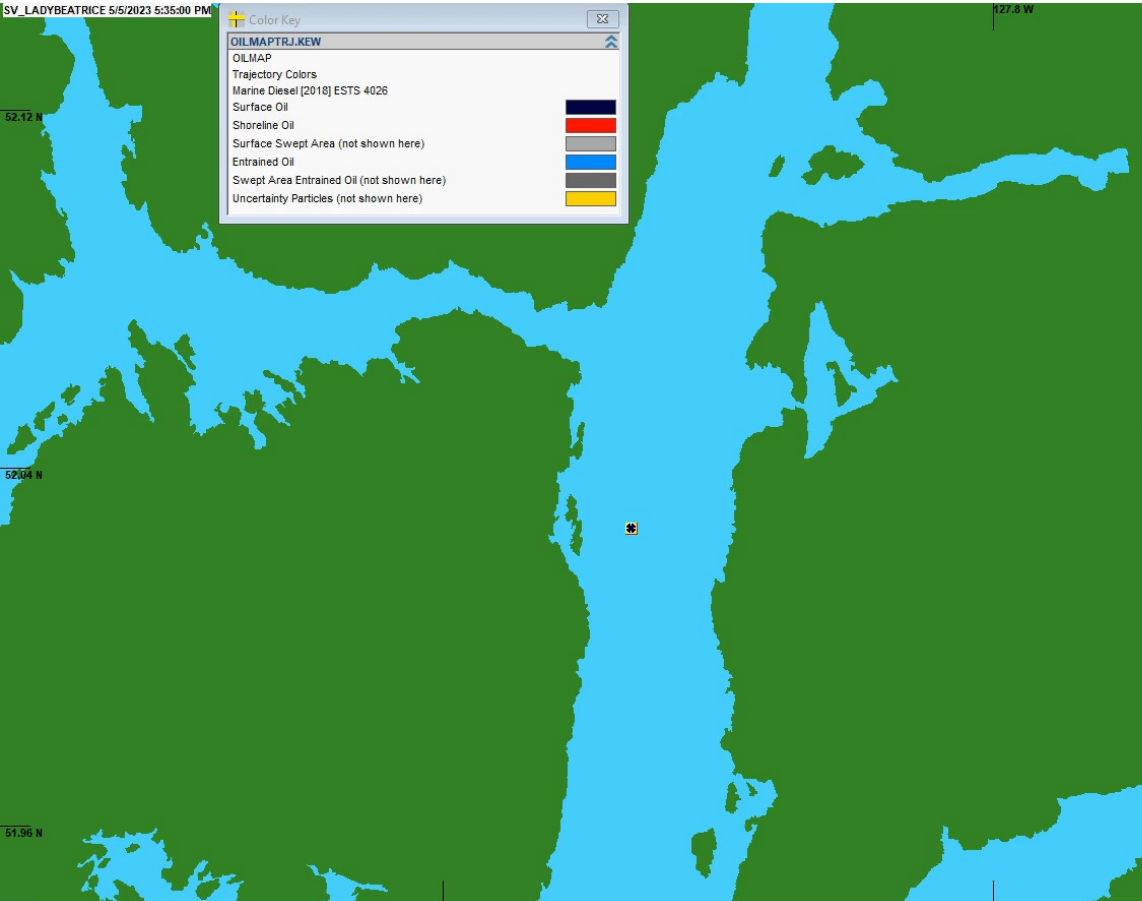
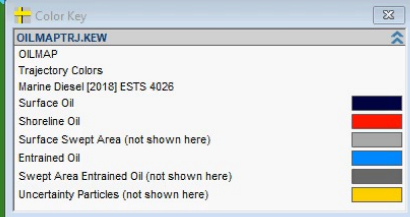
EMERGENCIES SCIENCE AND TECHNOLOGY SECTION

- Oil forensic identification
- Pollutant fate, behaviour and effects
- Spill treating agent evaluation and guidelines
- Evaluation of spill countermeasures, containment, recovery, treatment and disposal techniques
- Modelling - drift, spill trajectory, dispersion



TRAJECTORY MODELLING & MASS BALANCE

SV_LADYBEATRICE 5/5/2023 5:35:00 PM



Emergencies Science and Technology Section
Water Science & Technology Directorate
Science & Technology Branch
Environment and Climate Change Canada

Trajectory and Fate and Behaviour Modelling
Spill Incident: Vessel on fire | SV LADY BEATRICE | Fitz Hugh Sound | Hunter Island, BC
Requested by: NEEC/CCG
Release Location: 52.02648 N / 127.93123 W
Date & Time: 5 May 2023 at 17h35 UTC
Spilled Product: Marine diesel
Spill Volume: 90 Gallons
Spill Duration: Instantaneous
Wind Data: CMC HRDPS-W
Current Data: CMC CIOPS-W
Simulation Duration: 30 Hours

This model is intended for environmental emergency operations, and should only be shared within the response community. It is not intended for other uses nor for the release to the general public.



METEOROLOGICAL SERVICE OF CANADA

- Site specific weather information
- Surface winds and tidal currents to run oil spill models
- Integrated Satellite Tracking of Pollution (ISTOP)
- Ocean numerical modelling
- Canadian Ice Service provides ice charts and forecasts
- Atmospheric dispersion modelling for contaminants



ATMOSPHERIC DISPERSION MODELLING



SHORELINE CLEANUP AND ASSESSMENT TECHNIQUE (SCAT)

- SCAT is a systematic evaluation of the shoreline contamination performed by a multidisciplinary team
- The role of ECCC is to manage the coordination with the Responsible Party and Lead Agency
- SCAT usually involves indigenous communities that have an interest in the clean-up and the end of the clean-up.
- A SCAT awareness session (for calibration) is usually provided before to be a part of the SCAT team.



OTHER ECCC SCIENCE EXPERTISE

- Regionally-based expertise relevant to environmental protection ranging from various topics like:
 - marine – disposal at sea
 - water quality
 - nuclear
 - environmental risk assessment
 - contaminated sites
 - environmental effect monitoring
 - oil sands monitoring



QUESTIONS?

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National Environmental Emergencies Centre (NEEC)**

Environmental Protection Operations Directorate

Environment and Climate Change Canada / Government of Canada

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Emergencies 24/7 : 1-866-283-2333

