



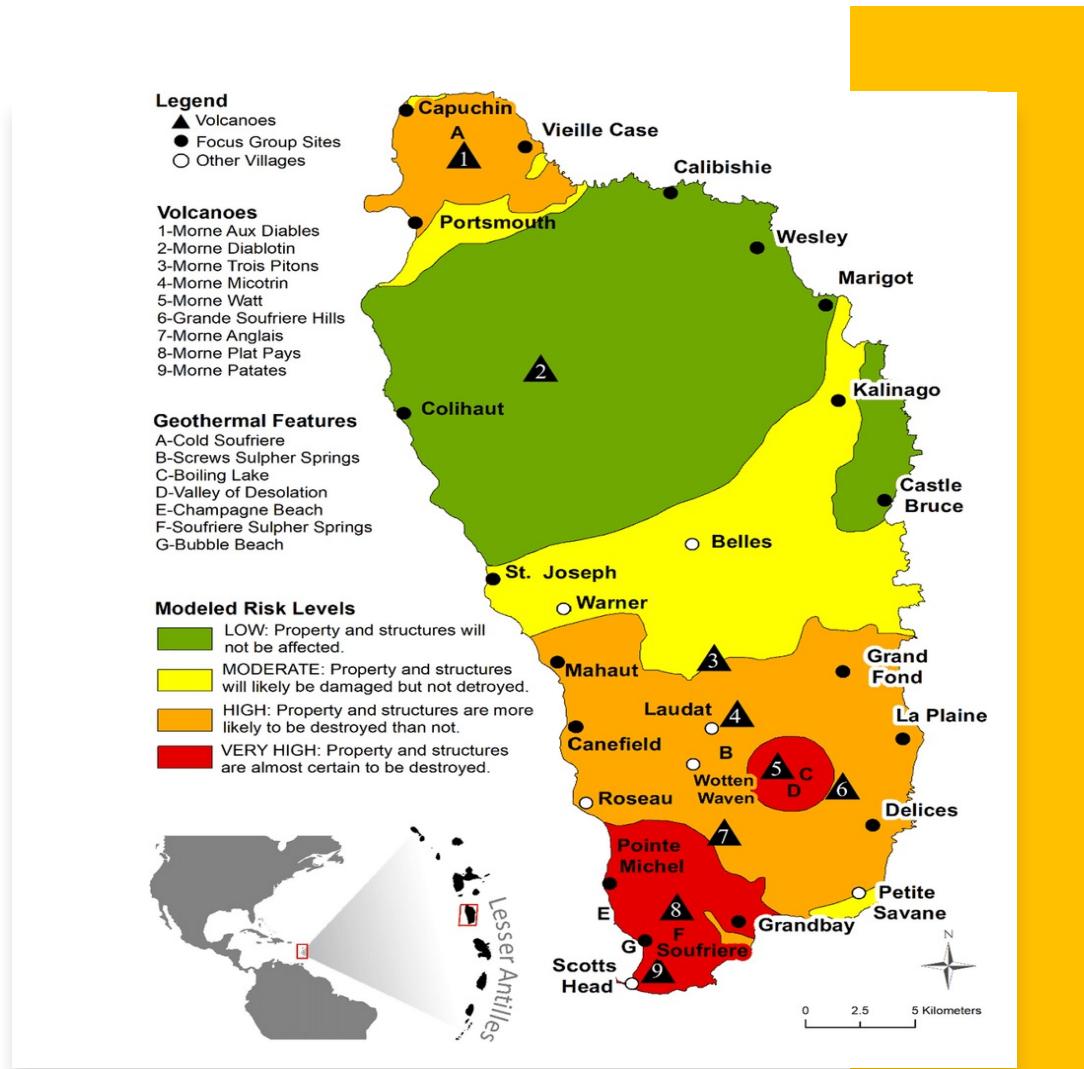
# Tsunami Readiness in The Commonwealth of Dominica

By: Primrose David

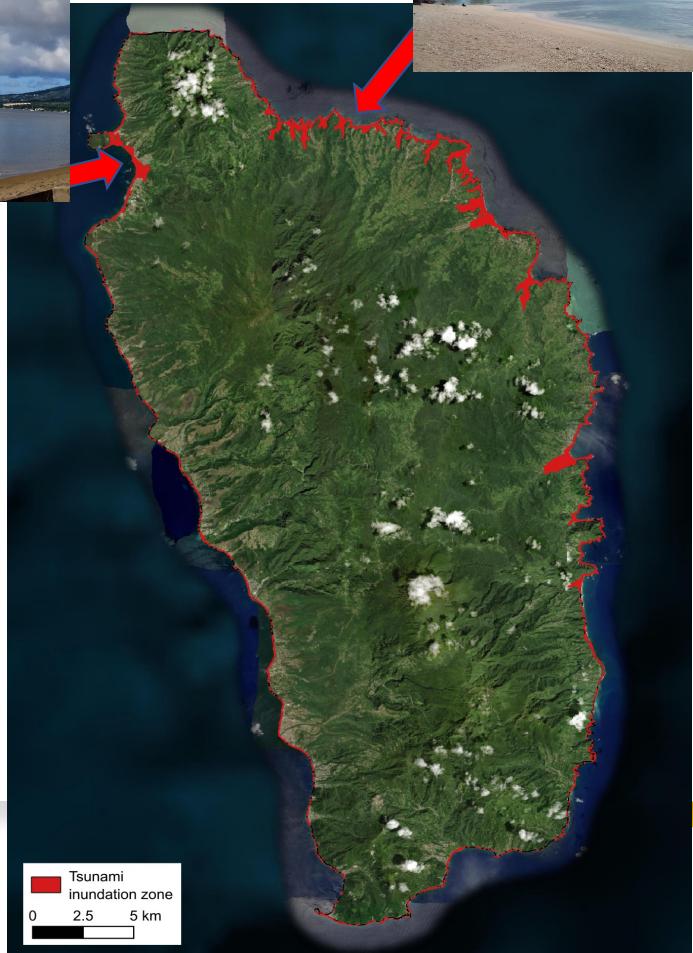
The Commonwealth of Dominica is centered in the Eastern Caribbean island chain between Guadeloupe and Martinique

The country is highly vulnerable to natural hazards:

- meteorological hazards (e.g., hurricanes and extreme storms)
- the wettest islands in the Eastern Caribbean;
- geophysical hazards (e.g., earthquakes, volcanoes)
- tsunamis (due to its steep topography, population centers are located near the coastlines)
- It is nestled approximately 50 miles from the crumbling fault line of the Caribbean and Atlantic plates
- It has one of the highest concentrations of active volcanoes (9) in the world
- Has the second-largest boiling lake in the world
- There are many areas with Sulphur deposits and hot springs
- The capital, Roseau, sits on a pyroclastic flow fan



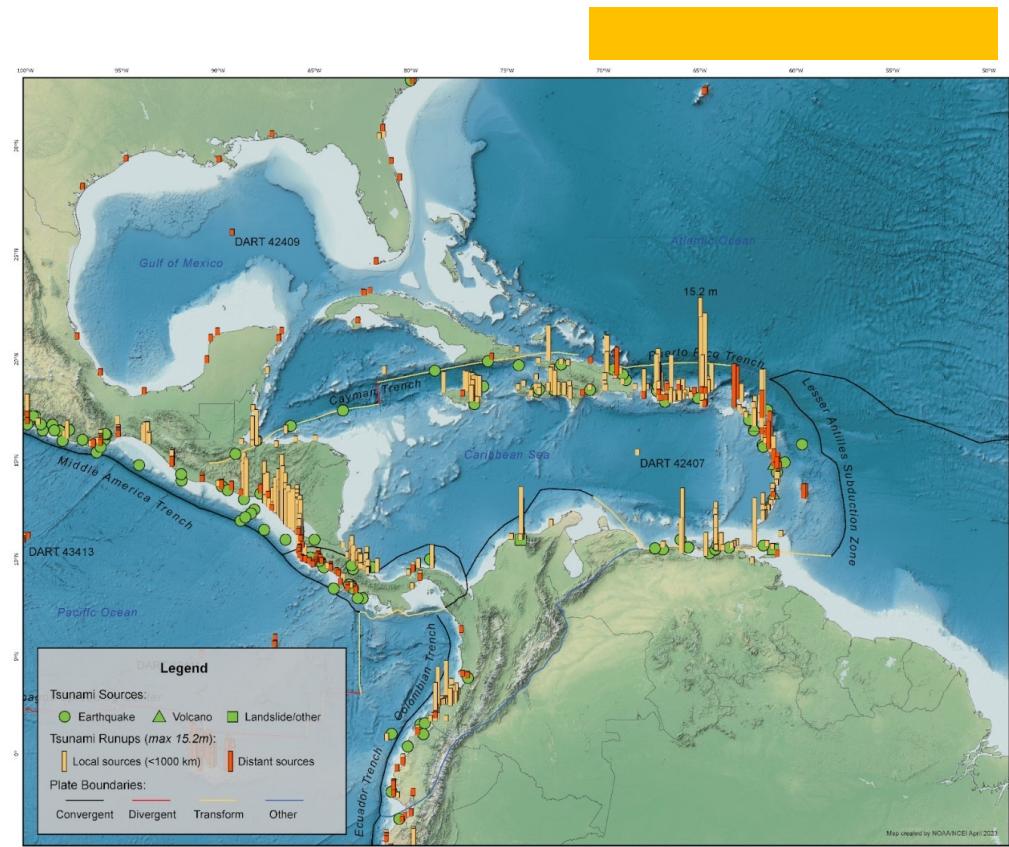
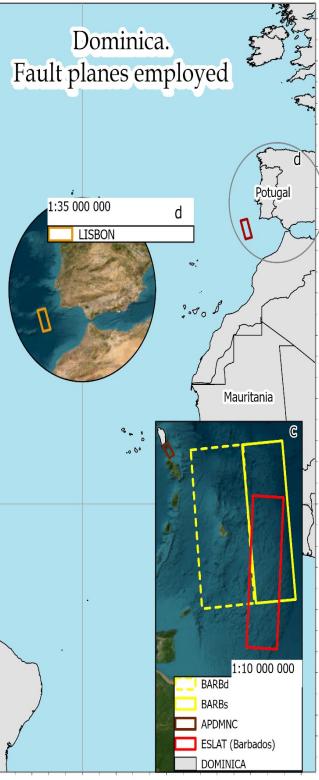
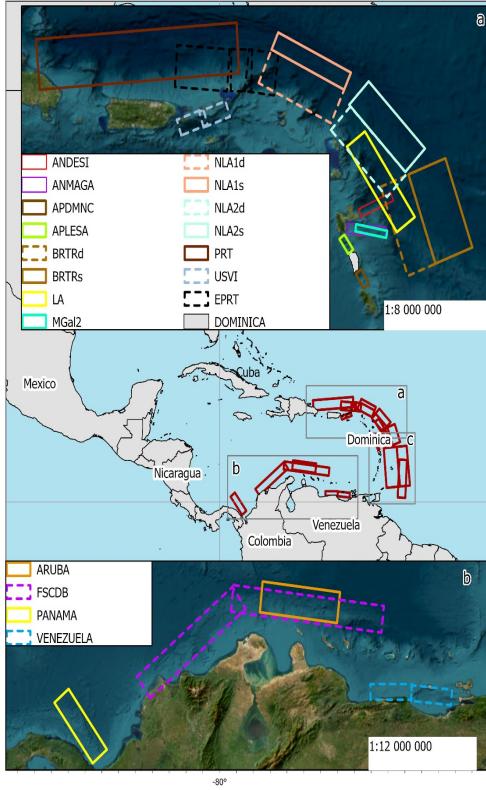
## Context



The SINAMOT Universidad Nacional (Costa Rica) conducted a scientific study and developed a “Technical Report: Tsunami Inundation Map for Dominica” in early 2003:

### Findings include:

- Dominica tsunami history in the past 4 centuries; (6) six tsunamis arrived in Dominica since 1755 (NOAA/NCEI, 2022)
  - ❖ (5) five originated by earthquakes
  - ❖ (1) one originated by the volcanic eruption of the Hunga Tonga – Hunga Ha’apai in January 2022 (Sostre-Cortes et al., 2022).
- Dominica’s most vulnerable areas
  - North-western coastline, specifically the town of Portsmouth
  - North-eastern to eastern coastline



“The Caribbean Sea and the Atlantic Ocean have many potential sources for tsunami generation including earthquakes, sub-aerial, submarine landslides and underwater volcanic explosions.”



# The Tsunami Warning Focal Point - ODM

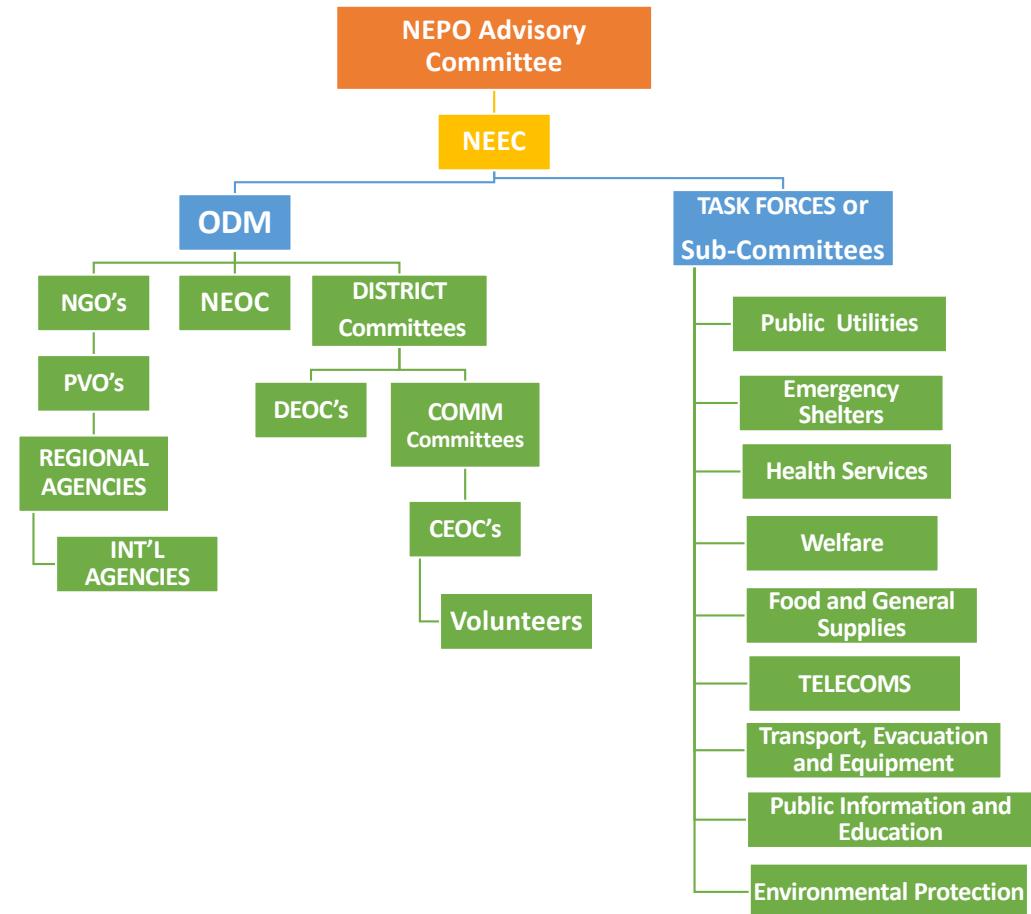
The **National Disaster Coordinator (NDC)** is the **Tsunami National Contact (TNC)**.

- The TNC is on the special country Tsunami Focal Points list, receives initial products and Tsunami messages from the **Pacific Tsunami Warning Center (PTWC)**

The **Office of Disaster Management (ODM)** is the **Tsunami Warning Focal Point (TWFP)** responsible for;

- accurately deciphering Tsunami messages,
- disseminating Warnings, Advisories, and other notifications to the public and other key stakeholders
- Coordination of response activities from the command at the National Emergency Operations Center (NEOC) during a Tsunami event.

# National Emergency Planning Organisation (NEPO) Structure



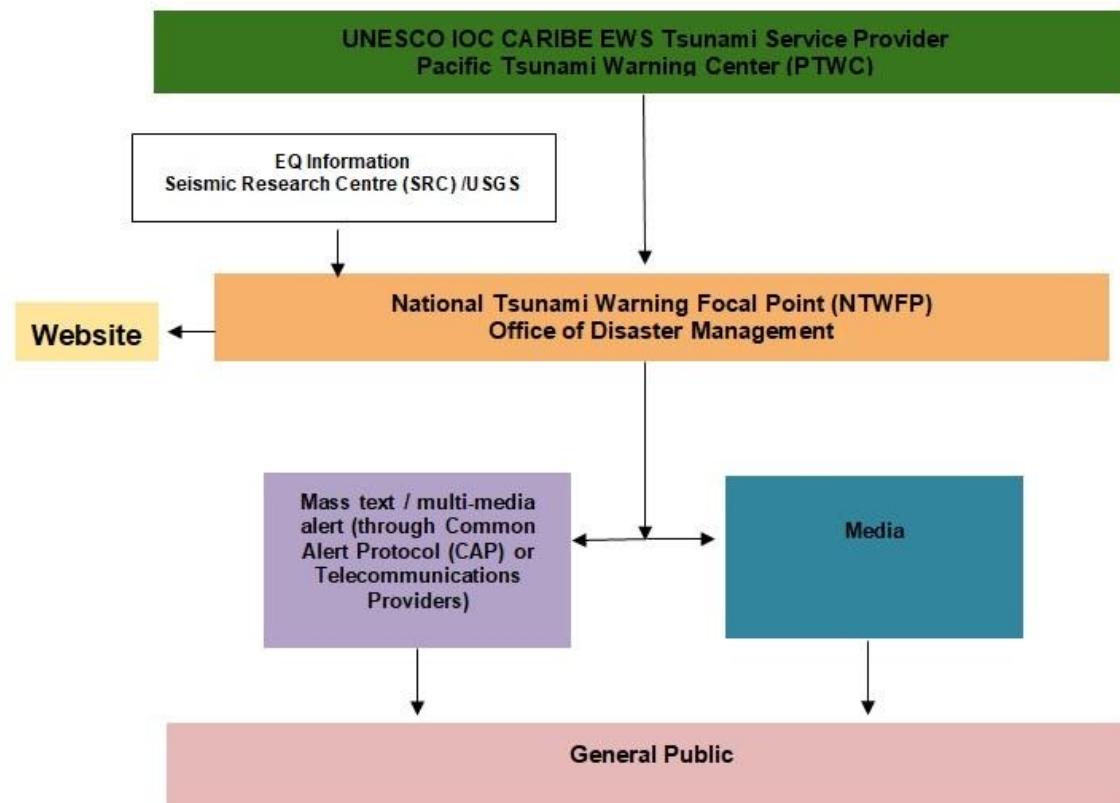
The ODM embraces a culture of shared and individual responsibility within the country's national disaster management programming. Comprehensive tsunami preparation in Dominica requires the collaboration and input of national and community stakeholders to ensure the following:

- Undertaking risk assessments to gain an appreciation of tsunami risk;
- Engaging with communities regarding tsunami risk;
- Working with communities to plan how to prepare for and respond to the tsunami risk
- “Providing emergency information and tsunami warnings, including identification of tsunami inundation zones, evacuation routes and assembly areas;
- Installing Tsunami signage;
- Ensuring an effective, well-coordinated response during a tsunami event;
- Helping communities to recover from and embrace learning following a tsunami event as a means of building their resilience to future events.

For a successful End-to-End system, Identification of; and close collaboration with all stakeholders is essential to ensure the public receives timely warning alerts and messages to individuals in threatened communities.

Existing institutions within communities such as Village Councils, Disaster Committees, Police and Fire Stations, schools and health centers, will be guided by their integrated protocols to respond effectively and efficiently after receiving Tsunami alerts from the ODM.” – (National SOPs)

**FIGURE 1. DOMINICA ADAPTED TSUNAMI MASS WARNING PROTOCOL**



- The National Disaster Coordinator (NDC) as the Tsunami National Contact (TNC) will receive the initial products from the PTWC.
- The Office of Disaster Management (ODM) acting as the Tsunami Warning Focal Point (TWFP) accurately decipher the Threat Message and disseminate Warnings, Advisories and other notifications to the public and other key stakeholders through all available media, radio, SMS (cell phone, texts), social media and through the CAP system to the general public.
- TWFP will authorize the activation of alerts and warning systems and will be at central command at the National Emergency Operations Center (NEOC) during a Tsunami event.

## Tsunami Alert Levels for Dominica

Alert Level	Color Code	Description	Recommended Action
Warning	RED	Issued when there is imminent danger of coastal flooding from tsunamis within three hours.	<b>Evacuate; Move quickly/ run to higher ground.</b>
Advisory	ORANGE	Issued when there is imminent possibility of dangerous currents from tsunamis (no flooding).	<b>Move out of the water, off the beaches and out of harbors and marinas</b>
Watch	YELLOW	Is issued when there is a distant earthquake and if a tsunami were to be generated and impact Dominica, it would take at least 3 hours and the local threat is under evaluation.	People will be instructed to <b>stay tuned for further official information.</b>
Tsunami Bulletin	GREEN	Issued in the case of a small or distant event with no local threat. It is issued for information only.	NONE – issued for information only
Cancellation	WHITE	If a Tsunami Warning, Advisory or Watch is issued, once the threat has passed or the evaluation yields there is no threat to Dominica, a Cancellation will be issued.	This only indicates that there is no longer a tsunami threat, but if there has been tsunami impact people will have to wait for an <b>All Clear</b> to be issued by ODM indicating it is safe to return.

# History of Tsunami Preparedness in Dominica

**01**

Tsunami  
Preparedness Pre  
- 2019

**02**

National Tsunami  
SOPs 2019-2020

**03**

Tsunami Ready  
Recognition  
Program 2023-  
2024

## Tsunami Preparedness Pre - 2019

*Lessons learned  
were documented  
and have been  
applied to tsunami  
preparedness since  
then.*

In 2019 Tsunami readiness activities began in the village of Calibishie on the North-East Coast of Dominica.

Activities undertaken include: Tsunami SOP's drafted, an evacuation map was sketched, installation of some tsunami signage, a wall painting by a local artist and Tsunami Education and awareness sessions were held with persons from the community and teachers and students of the Calibishie Primary School.

This culminated in a tsunami simulation exercise which involved over 50 community participants along with stakeholders from various relevant agencies such as first responders, the Dominica Red Cross, the Village Council, Disaster Management Committee, UNDP Representatives, Government officials, etc.





- The Office of Disaster Management (ODM) sometimes partners with the Ministry of Education during the annual regional Caribe Wave to conduct tsunami drills in various districts on the island.



Community leaders and stakeholders from Calibishie Community were engaged in several days of learning, mapping and planning.



Primary School students and staff conducted tsunami drills with members of the Calibishie community on the north-east coast of Dominica

# Tsunami Ready Recognition Program 2023-2024



*Catholic Church building in Portsmouth destroyed by 2004 earthquake of 6.3 magnitude is now fully rebuilt and operational.*

The town of Portsmouth was selected to participate in the Tsunami Ready Recognition Program for various reasons:

Historical Tsunami risk to the Portsmouth area;

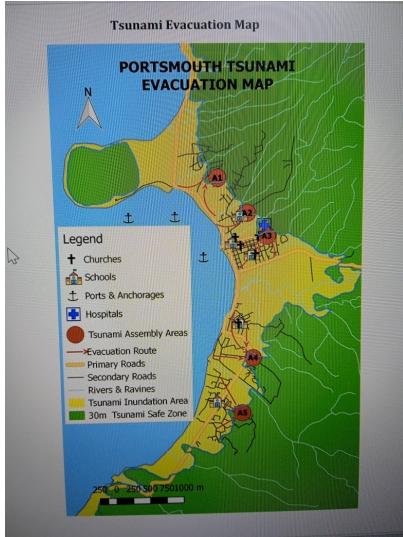
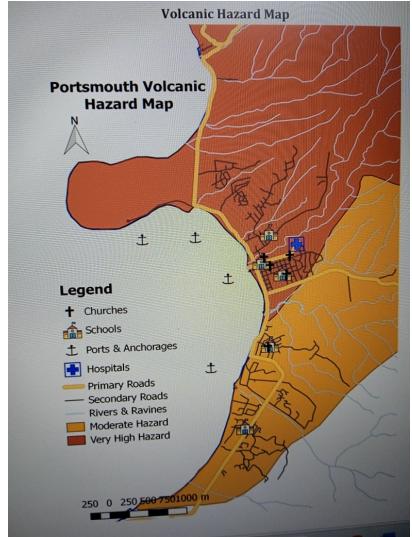
Portsmouth has experienced major earthquakes;

Portsmouth has conducted some activities related to Tsunamis,

Most important the town of Portsmouth has the essential structures such as a local government authority, disaster committee, Police, Health, and Fire services that are critical for preparedness and response.

Output deliverables of program implementation in Portsmouth include:

1. A scientific tsunami hazard assessment for Dominica [includes a tsunami hazard map for Dominica – SINAMOT report]
2. A national tsunami ready board
3. An updated /revised national tsunami plan & SOPs
4. Tsunami Ready SOPs for the town of Portsmouth
5. An evacuation map for Portsmouth
6. A tsunami community exercise that tested warning & evacuation
7. Tsunami signage installed in Portsmouth
8. 15 megaphones distributed to key first responders & other institutions
9. Community awareness and education outreach
10. Official Tsunami Ready Recognition in November 2024



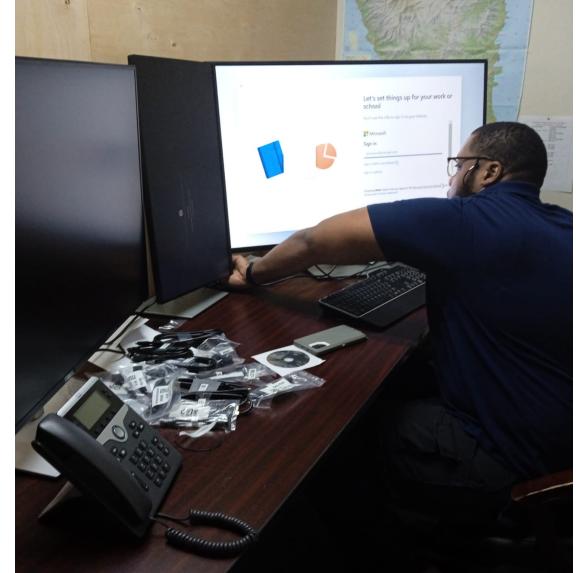
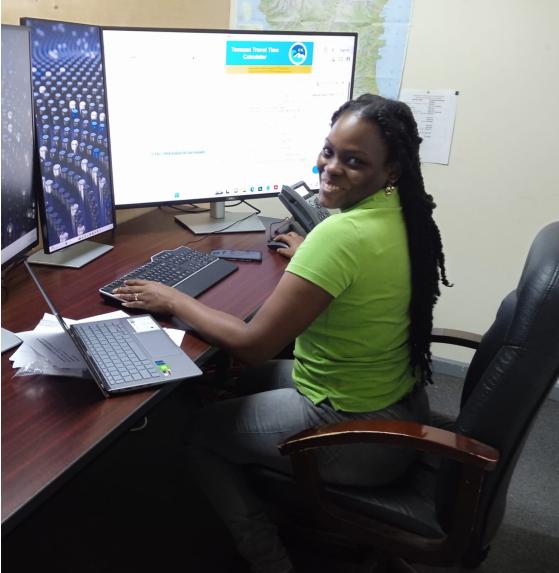
**Map of Portsmouth's Prince Rupert Bay developed prior to 2020.**

**Picture of Prince Rupert Bay**

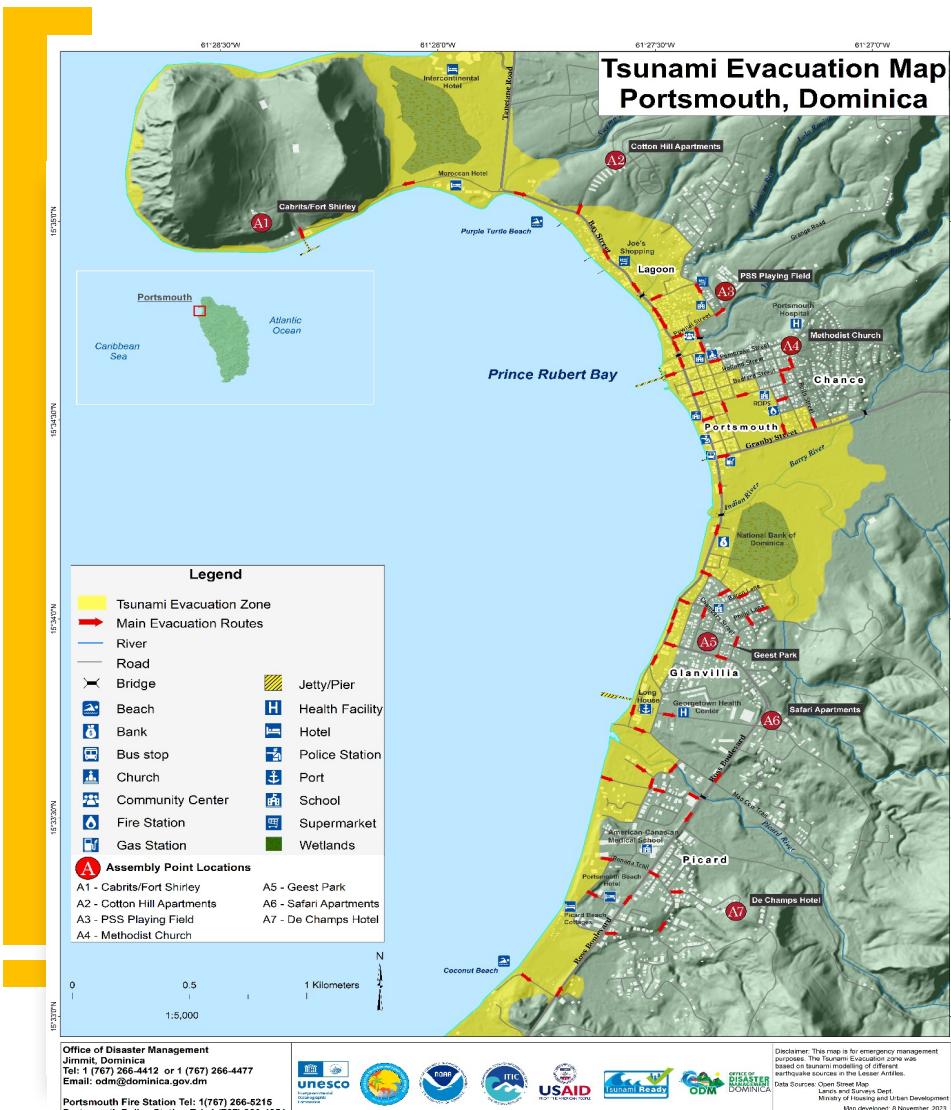


The Tsunami Ready Recognition Program is initiated internationally by UNESCO's Intergovernmental Oceanographic Commission - UNESCO/IOC and regionally, by the International Tsunami Information Centre, Caribbean Office UNESCO/IOC.

Activities and products such as signage, computers, and megaphones have been funded by the USAID through the University Corporation for Atmospheric Research (UCAR).



• The ODM is now equipped with tsunami monitoring hardware and software due to the Tsunami Ready Recognition Program.



Key leaders and stakeholders from the town of Portsmouth contributed to the development of the tsunami evacuation map for Portsmouth. Publication of the map was done by the staff of the Physical Planning Division with support from the Lands and Surveys Division and ITIC staff in Puerto Rico. Portsmouth's map was developed using Bathymetry survey and digital elevation model (DEM) that shows the topography of the land. DEM was generated from a Lidar survey done between 2017 & 2018. This has resulted in a more accurate map rendering.

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Portsmouth Fire Station Tel: 1(767) 266-8215  
Portsmouth Police Station Tel: 1 (767) 266-4654



Disclaimer: This map is for emergency management purposes. The tsunami evacuation zone was based on tsunami modelling of different earthquake scenarios and wave run-up.

Data Sources: Open Street Map, Lands and Surveys Dept, Ministry of Environment and Urban Development  
Map developed: 8 November, 2013



The National Disaster Coordinator, Mayor of the Town of Portsmouth, Police Officers, Fire Officers, staff of the ODM, first responders, volunteers of the Disaster Management Committee, and others at the Cotton Hill Emergency Operations Centre building in Portsmouth following a Tsunami evacuation exercise and After-Action Review in December 2023.

## Tsunami Ready Recognition - Portsmouth Dominica



“Ultimately, the aim is to empower as many communities in Dominica as possible with the knowledge and resources to be tsunami-ready.”

# THANK YOU!

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