

An aerial photograph of a tropical coastline with lush green islands and clear blue water. Two large cargo ships are visible in the water. The ship on the left is a container ship with a deck covered in colorful containers. The ship on the right is a larger, red-hulled vessel, possibly a bulk carrier or tanker. The text is overlaid on the image in white, bold font.

# Need for a Marine Spatial Data Infrastructure

**Across the Meso America and Caribbean Sea**

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# Data about the marine space is difficult to access within the Meso America and Caribbean Sea



# Need for a Marine Spatial Data Infrastructure (MSDI)

- Marine resources are important to the Greater Caribbean Region for economic expansion and therefore improved livelihood and jobs.
- Currently, data and information about the marine space are difficult to access
- There is therefore a limited understanding of the waters, coastal ecosystems and changing environment within the region.

**Development of a web based MSDI would result in the efficient use of resources, to the support sustainable use of our marine space**

# Structure of the Presentation

1. What is a Marine Spatial Data Infrastructure (MSDI)?
2. Importance of a MSDI
3. Example of the application of a MSDI based on ongoing research at The UWI
4. Datasets required from nautical charts to support the ongoing research at The UWI






# What is a Marine Spatial Data Infrastructure (MSDI)?

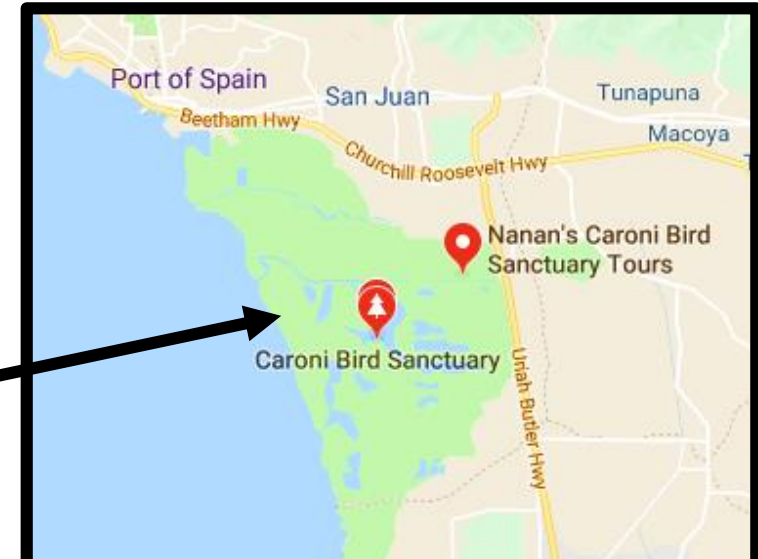
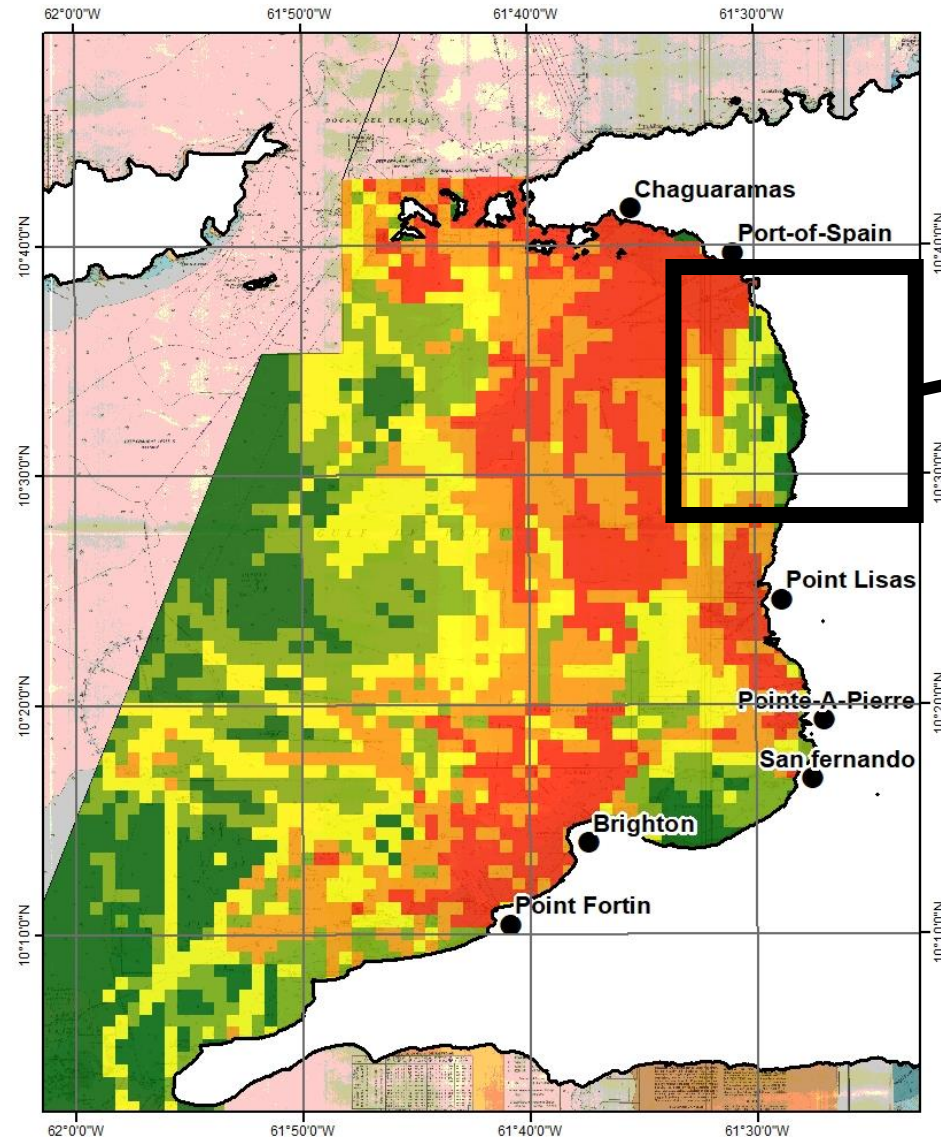
Pillars of a MSDI:

1. **Data and Metadata** - data to be made accessible and information about the data
2. **Standards** – guidelines used to establish the MSDI
3. **Policy and Governance** - structural relationships of all those involved
4. **Information System/Technology** - hardware, software and system component



# Economic Assessment of the Risks in Maritime Navigation across the **Greater Caribbean Region**

Levels of Risk in Maritime Navigation	
	Catastrophic
	High
	Moderate
	Low
	Insignificant

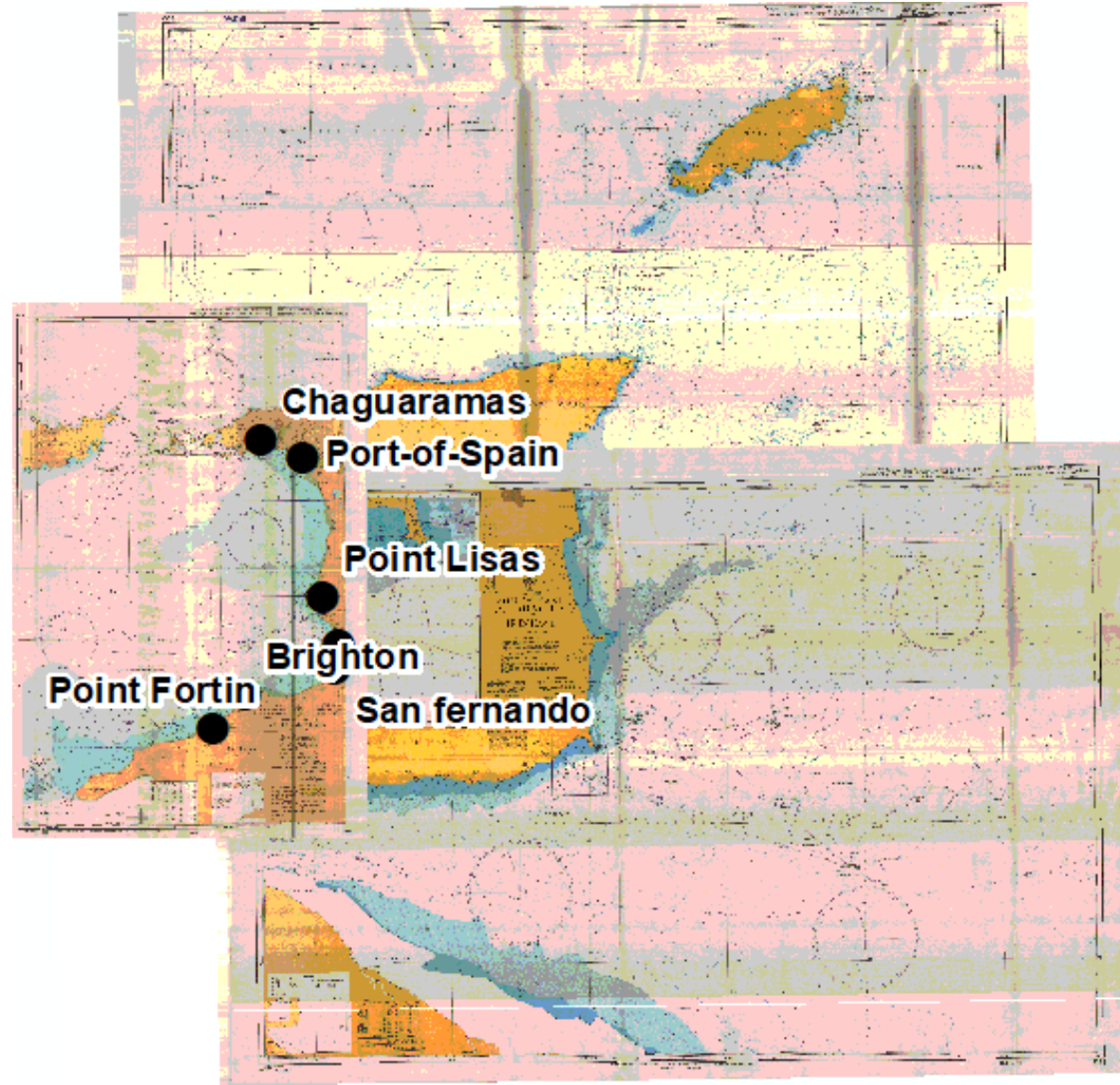


Based on non-market valuation techniques, locals are **willing to pay** US\$ 1,200/ ha / year to protect the Caroni Swamp.  
**= 10mn USD per year**

# Accessing Data about the Marine Space from Nautical Charts

## Step 1: Request access to nautical charts

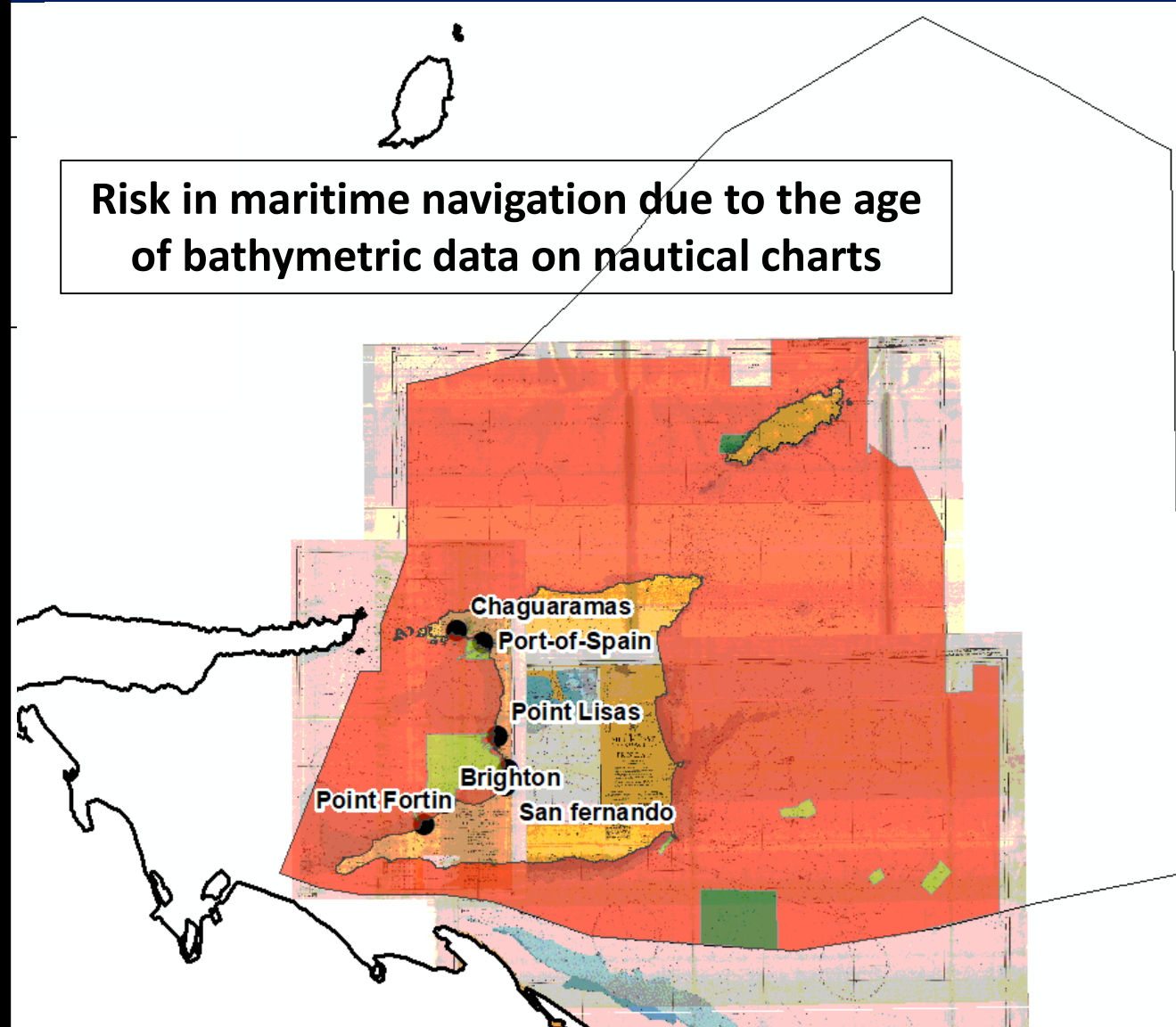
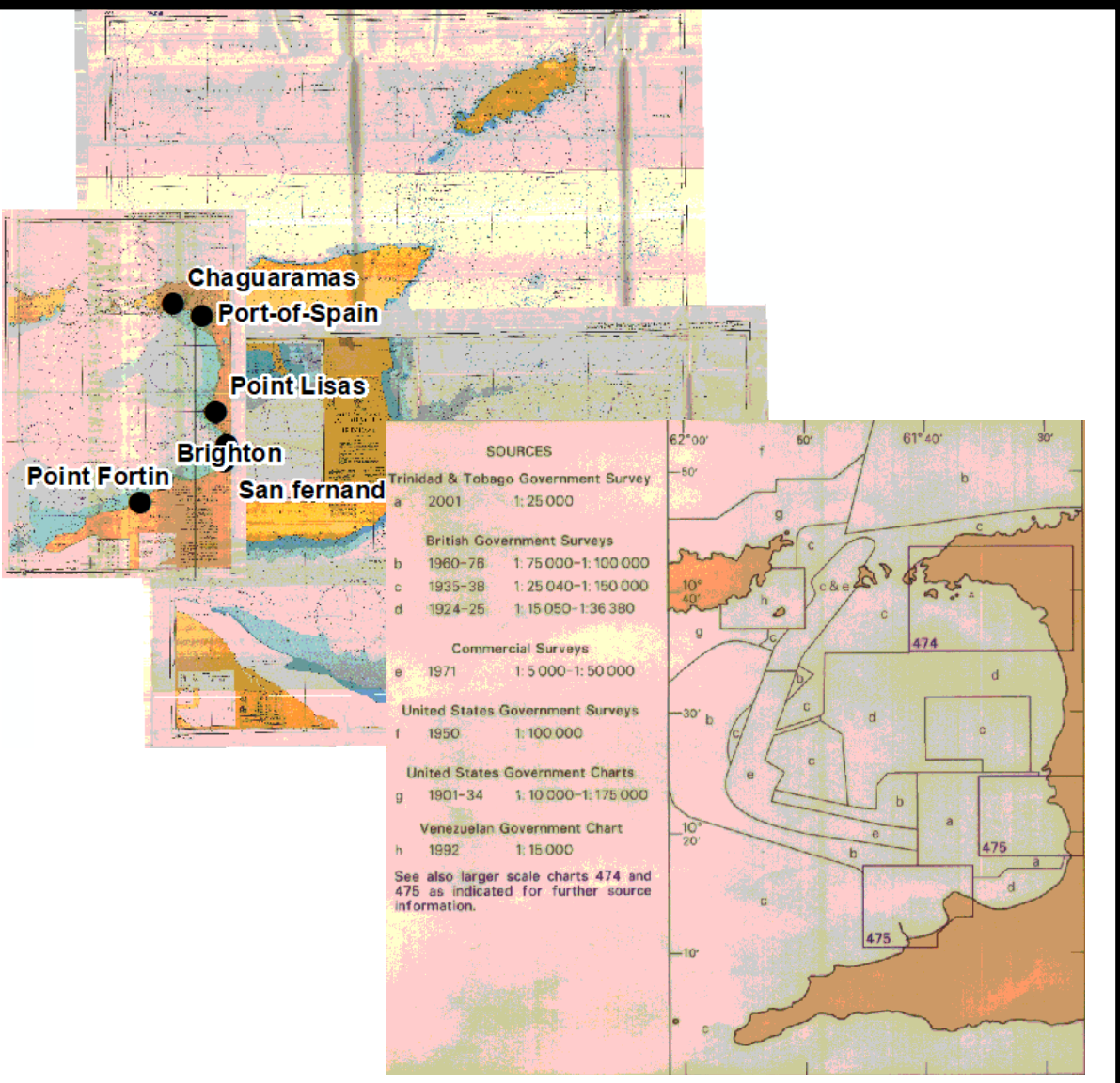
### Area of Study – Greater Caribbean Region





# Access Data about the Marine Space from Nautical Charts

## Step 2: Convert Information on the Charts to a GIS Format





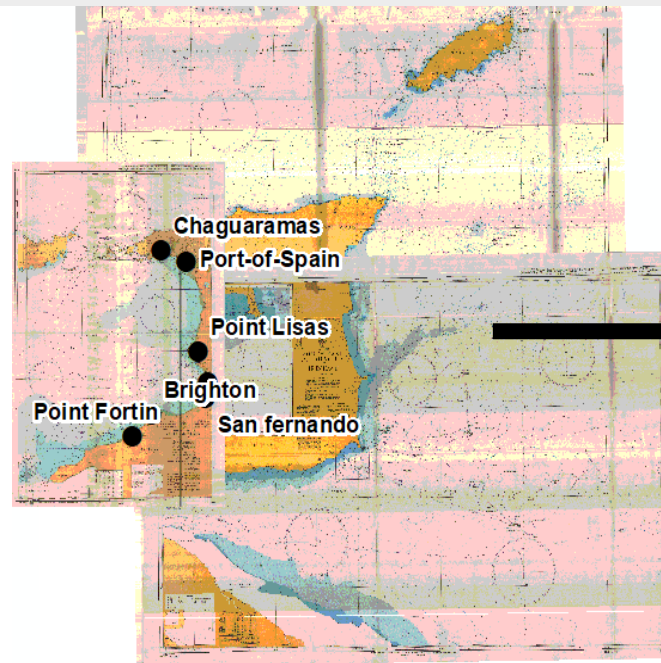
# Access Data about the Marine Space from Nautical Charts

## Step 2: Convert Information on the Charts to a GIS Format

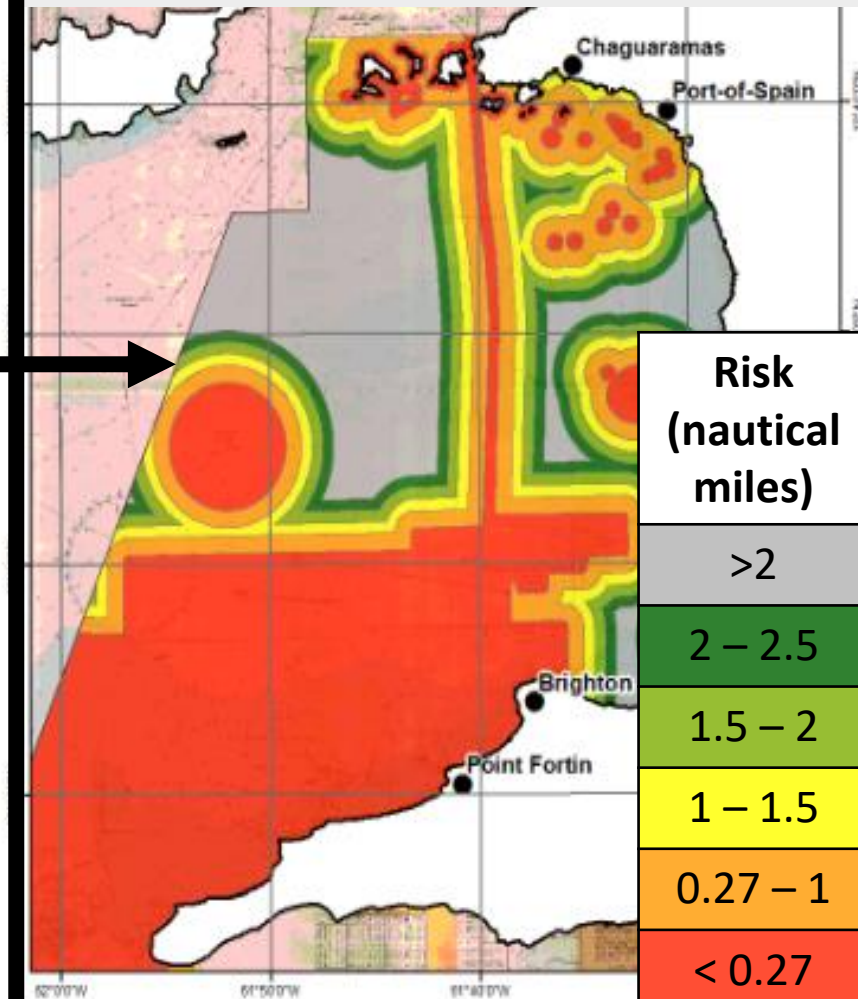
Location of wrecks, rocks, pipelines, cables, reefs, restricted areas and oil rigs were digitized & modelled in ArcMap using nautical charts of T&T

Without a MSDI another researcher of the marine space would also follow Steps 1 & 2

### Nautical Charts of Trinidad and Tobago



### Risk in Maritime Navigation due to Isolated Dangers



# Data Required from Nautical Charts across the Greater Caribbean Region

- i. Age & Quality of nautical charts
- ii. Bathymetry
- iii. Coastline
- iv. Maritime boundaries
- v. Obstructions on the seafloor
- vi. Ports
- vii. Aids to navigation
- viii. Protected areas
- ix. Tide and current
- x. Fisheries
- xi. Offshore and coastal installations
- xii. Designated areas (Spoil grounds, recreational areas etc.)
- xiii. Underwater pipelines or cables
- xiv. Recreational areas