

# Presentation to CARA IOCARIBE and ICG Caribe EWS

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# UNESCO Bodies

- Intergovernmental Oceanographic Commission
  - Sub commission for the Caribbean and Adjacent Regions
  - Intergovernmental Coordinating Group for Tsunamis and other Coastal Hazards for the Caribbean and Adjacent Regions
- Participation of Puerto Rico
  - Thru US
  - As Invited Experts

# IOCARIBE

- IOCARIBE is the subsidiary body for the Caribbean for UNESCO IOC
- The secretariat, headed by Dr. Cesar Toro, is currently in Cartagena Colombia
- The Xth session of IOCARIBE was held in Puerto La Cruz, Venezuela October 22-25
- Current officers are:
  - Mr. Guillermo Garcia, Cuba
  - Mr Clement D. Lewsey (United States of America)
  - Mr Anthony McKenzie (Jamaica)
  - Dr Gustavo Malavé Buccé (Venezuela)
- Next meeting: November 2010, Dominican Republic

# Caribbean Large Marine Ecosystem (CLME)

- Contacts: Ms Ydalia Acevedo (Dominican Republic), Dr Robin Mahon (Barbados)
- The Caribbean Large Marine Ecosystem (CLME) Project encompasses 25 GEF-eligible countries and 19 associated territories. The CLME is a USD 56.1 million project, including USD 7.1 million GEF support and co-financing by governments and other multilateral donor agencies of USD 48.3 million.
- The overall objective of the project is the sustainable management of the shared living marine resources of the Caribbean and involves a multitude of regional and national-level stakeholders.

# Gulf of Mexico Large Marine Ecosystem Project

- Contact: Dr Bonnie Ponwith (USA)
- The Project PDF-B phase of the Gulf of Mexico LME has already been achieved and referred to the main objectives. Three pilot projects are proposed: (i) enhancing natural habitat conservation in the coastal and marine areas; (ii) enhancing shrimp protection through ecosystem-based management; (iii) joint assessment and monitoring of coastal condition.

# Harmful Algal Blooms (HAB-ANCA)

- Contact: Mr Ernesto Mancera, Regional Project Coordinator (RPC) of the Working Group on Harmful Algae Blooms in the Caribbean and Adjacent Regions (HAB-ANCA).
- 3rd Session held at the Instituto Nacional de Investigaciones Agrícolas (INIA) (Cumaná, Venezuela, 16–18 July 2003).
- The 4th Session of HAB-ANCA (San Andres Islas, Colombia, 22–24 May 2007) was held in conjunction with the development of a Regional HAB Portal Workshop (San Andres Islas, Colombia, 25–27 May 2007).
- An Advanced Tropical Phycology workshop for graduate students and post-docs (Smithsonian Tropical Research Institute, Panama, 14 August–4 September 2009)

# Integrated Coastal Area Management (ICAM): MIC-LAC Project

- Contact: Dr Clement Lewsey, IOCARIBE Vice-Chairman
- Draft Project Proposal to Demonstrate Approaches for Nutrient and Sediment Reduction at Selected Pilot Study Areas in the Wider Caribbean. The main objective of the project proposal is to demonstrate best management practices at the watershed level to control and reduce nitrogen, phosphorous and sediment loadings from non-point sources in the Caribbean region. The project proposes that paired watersheds would be selected for each pilot site. Based on a preliminary assessment, the report recommends that Dominica, the Dominican Republic, Grenada, and Trinidad & Tobago be included in the project.

## **Oceanographic Data and Information Exchange (IODE)/Ocean Data and Information Network for the Caribbean and South America (ODINCARSA)**

- Contact: Ms Angelique Brathwaite (Barbados)
- Established in 2001, ODINCARSA is one of the major programmes IOCARIBE created to develop network for the management and exchange of oceanographic data and information for IOCARIBE and South America.
- Caribbean Marine Atlas Pilot Project ([www.caribbeanmarineatlas.net/](http://www.caribbeanmarineatlas.net/)).
- This project is a joint initiative of nine countries in the Caribbean region (Barbados, Cuba, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, Trinidad and Tobago, Turks and Caicos Islands)

# **International Bathymetric Chart for the Caribbean and the Gulf of Mexico (IBCCA)**

- Contact: Dr Cesar Toro, the IOC (UNESCO) Secretary for IOCARIBE
- The 9th Session of the Editorial Board of the International Bathymetric Chart for the Caribbean and Adjacent Regions (IBCCA-IX) took place at the IOCARIBE Secretariat in Cartagena, Colombia, 24–26 May 2006. The Tenth Session of the Editorial Board was postponed and will be held in the first quarter of 2009.
- The IBCCA Project has been successfully accomplishing its editorial work and 14 of 16 sheets have been completed thanks to the joint action of hydrographic services in various Member States. At IBCCA-IX, Colombia, USA, and Mexico volunteered to finish the remaining work by end of 2008.

# Global Ocean Observing System (GOOS): IOCARIBE-GOOS

- Contact: Mr Guillermo Garcia, IOCARIBE-GOOS Co-Chairman, M. Doug Wilson, NOAA
- IOCARIBE-GOOS is a basic source of information, services and products to support sustainable social and economic development, welfare, and safety, through systematic observations and associated research on coasts and seas in the IOCARIBE Region.
- New plans of the IOCARIBE-GOOS Steering Committee (SC), are focussed on the implementation plan in four areas: (i) Initial Observing System and Pilot Projects; (ii) Assessment; (iii) Capacity Building; (iv) Programme Development and Coordination.
- An IOCARIBE-GOOS Steering Committee Meeting is planned for February 2009 in Mexico

# Global Sea Level Observing System (GLOSS)

- Contacts: Mr Guillermo Garcia Montero, IOCARIBE Chair, Douglas Wilson, NOAA
- Need to update the inventory of the regional network.

# **CAPACITY BUILDING IN MARINE SCIENCES, SERVICES AND OBSERVATIONS: DEVELOPMENT OF A MAJOR ASSISTANCE PROGRAMME**

- Contact: Mr Ehrlich Desa, Head of IOC Capacity-Building Section
- Several training courses have been scheduled in the Caribbean region. The need was stressed for an evaluation and upgrading of the scientific research and training component in the regional projects
- Low uptake on IOC Capacity-building initiatives in the Region and low self-financing of travel to attend workshops, the Secretary invited Member States to send experts for a 6 months/1 year period to the IOCARIBE Secretariat in Cartagena to help develop capacity-building programmes and projects within IOCARIBE.

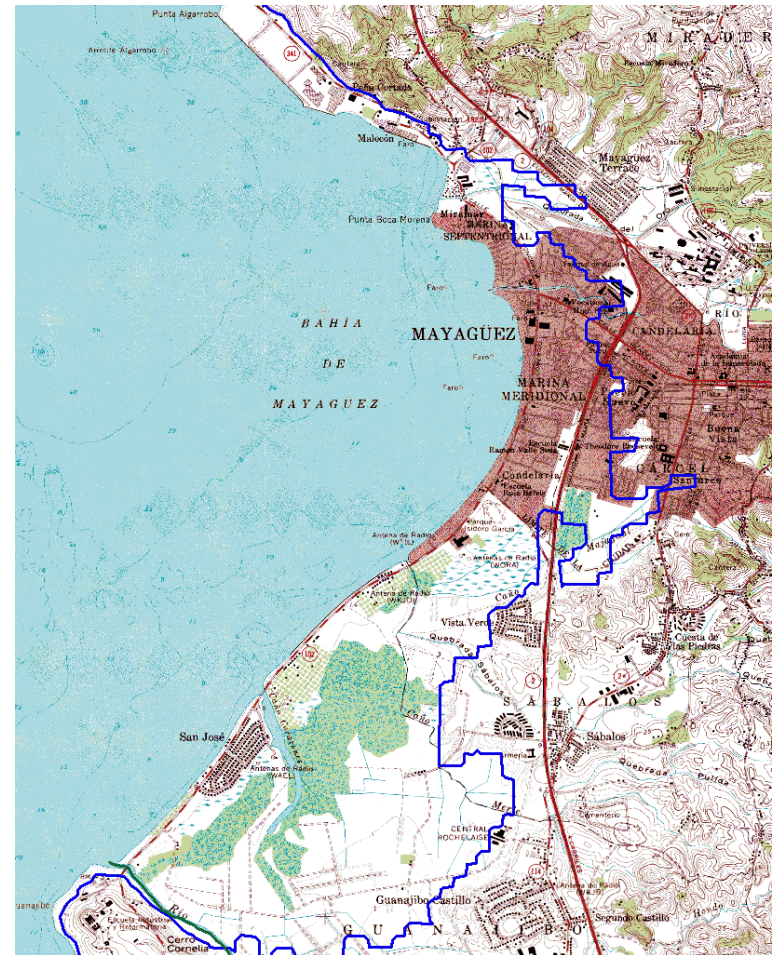
# Intergovernmental Coordinating Group for the Tsunami and **other Coastal Hazards** Warning System for the Caribbean and Adjacent Regions (Caribe EWS)

- UNESCO/IOC body
- 30 member states, commonwealths, territories
- Established in 2005
- Sessions held in 2006, 2007 and 2008



# Tsunami Inundation Modeling

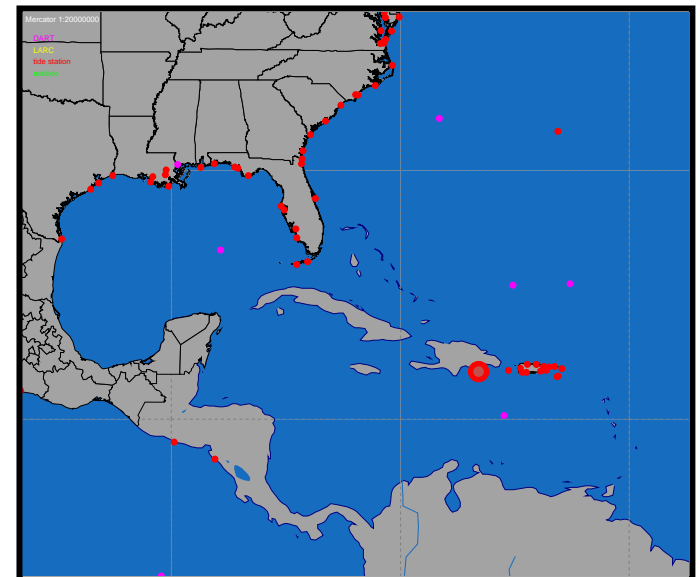
- UPRM
  - Puerto Rico
  - US
- Norway
  - Caribbean
    - Earthquake
    - Submarine landslides
    - Subaereal Eruptions
- NOAA PMEL
  - MOST/SIM
  - ComMit



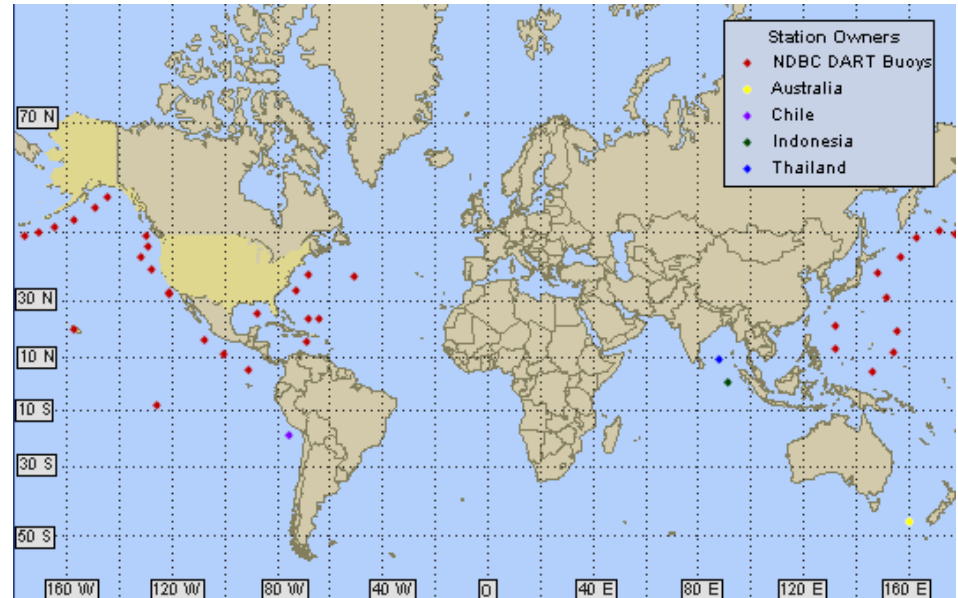
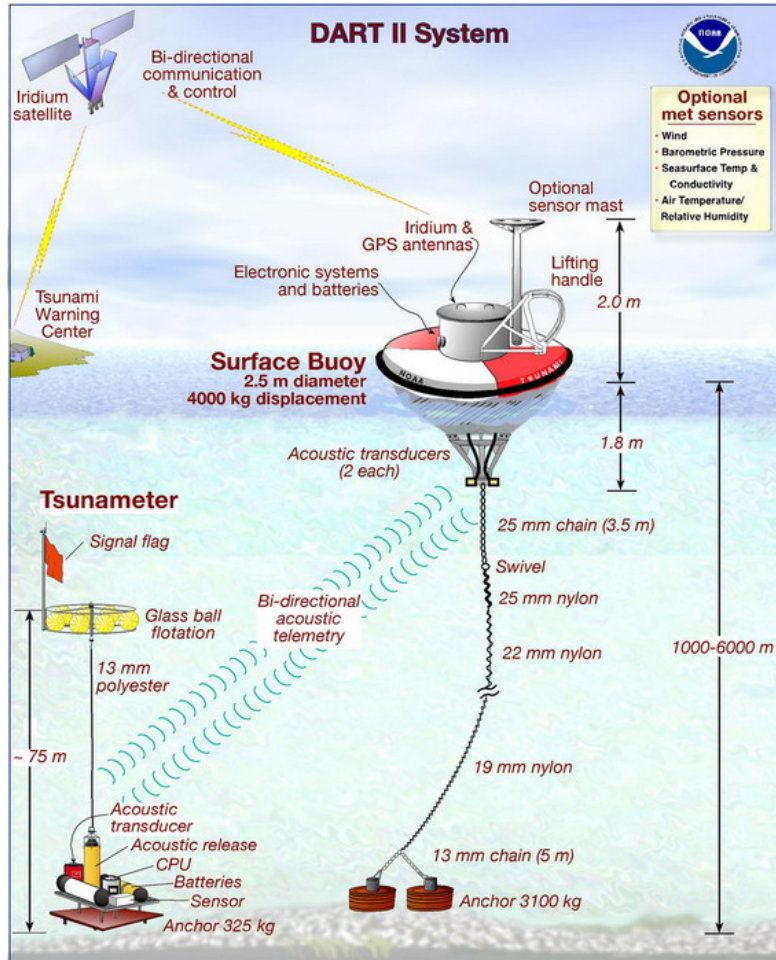
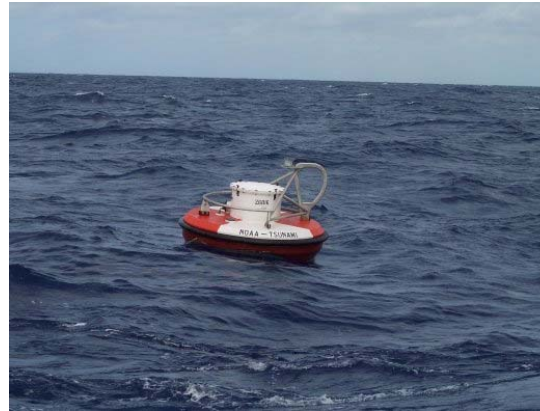
Tsunami Inland Flood Limit for  
Mayagüez, PR

# TsunamiReady Tide Gauges

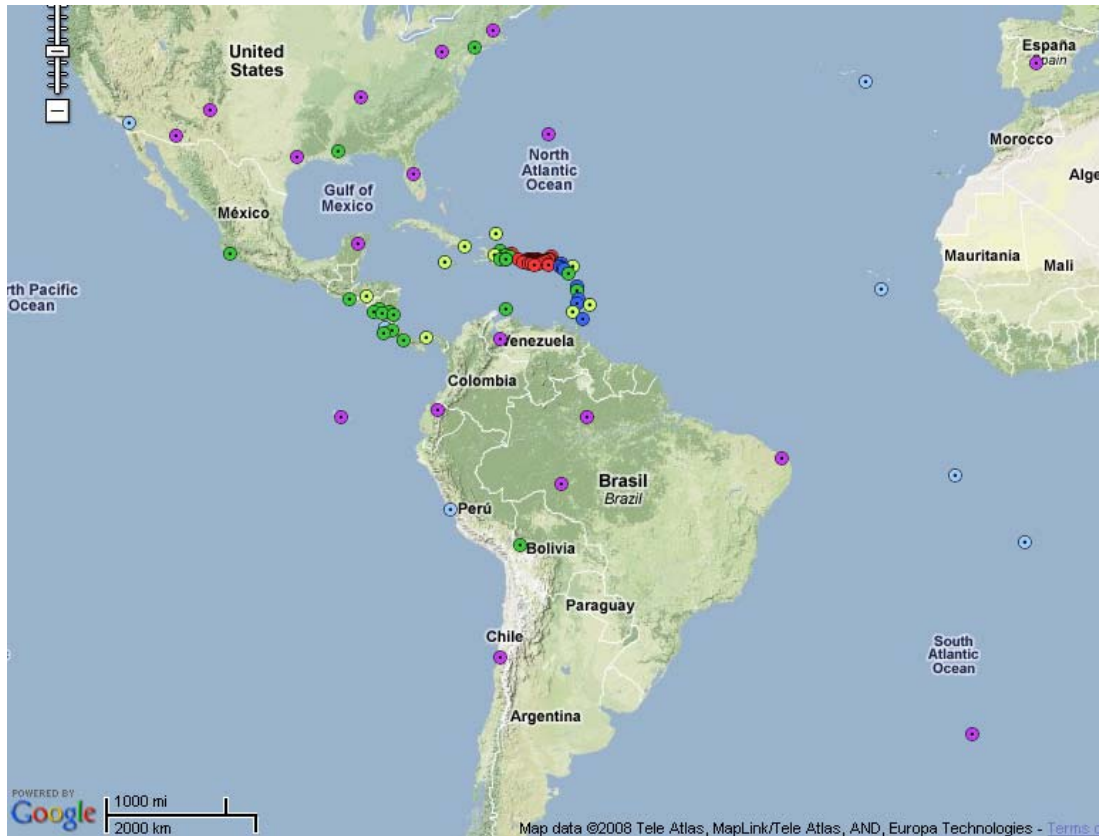
- Efforts are underway to increase the number of sea level stations available in real time. PRSN hosted a workshop in June, 2008.
- GOES channel was assigned to Caribe EWS
  - 30 slots with for 10 second transmissions every 5 minutes



# DART Buoys



# Seismic Stations Available in Real Time for the CEWS



## Contributing Networks

- USGS Caribbean Seismic Network
- ANSS-USGS
- Global Seismographic Network
- U. Colima, Mexico
- RS El Salvador
- INETER, Nicaragua
- OVSICORI, Costa Rica
- Baru Network, Panama
- Seismic Research Center, Trinidad and Tobago
- Montserrat Volcano Observatory
- Martinique Volcano Observatory
- KNMI, Dutch Antilles
- Puerto Rico Seismic Network, UPRM
- Seismological Institute, DR

# Tsunamis Warning Centers

- National
  - Nicaragua
- Regional
  - US NOAA West Coast and Alaska Tsunami Warning Center
  - Puerto Rico and Virgin Islands
- International
  - US NOAA Pacific Tsunami Warning Center
- Planned
  - Caribbean Tsunami Warning Center



– CARA Participation

- Thru US
- As Invited Experts