

Caribbean Marine Atlas

History

The development of the Caribbean Marine Atlas (CMA) project started with a stakeholder meeting in October 2007 in Bridgetown, Barbados. This was a regional information gathering workshop with 7 participating Caribbean countries (Barbados, Cuba, Grenada, Jamaica, St. Lucia, Trinidad and Tobago and Turk and Caicos). The workshop goals were:

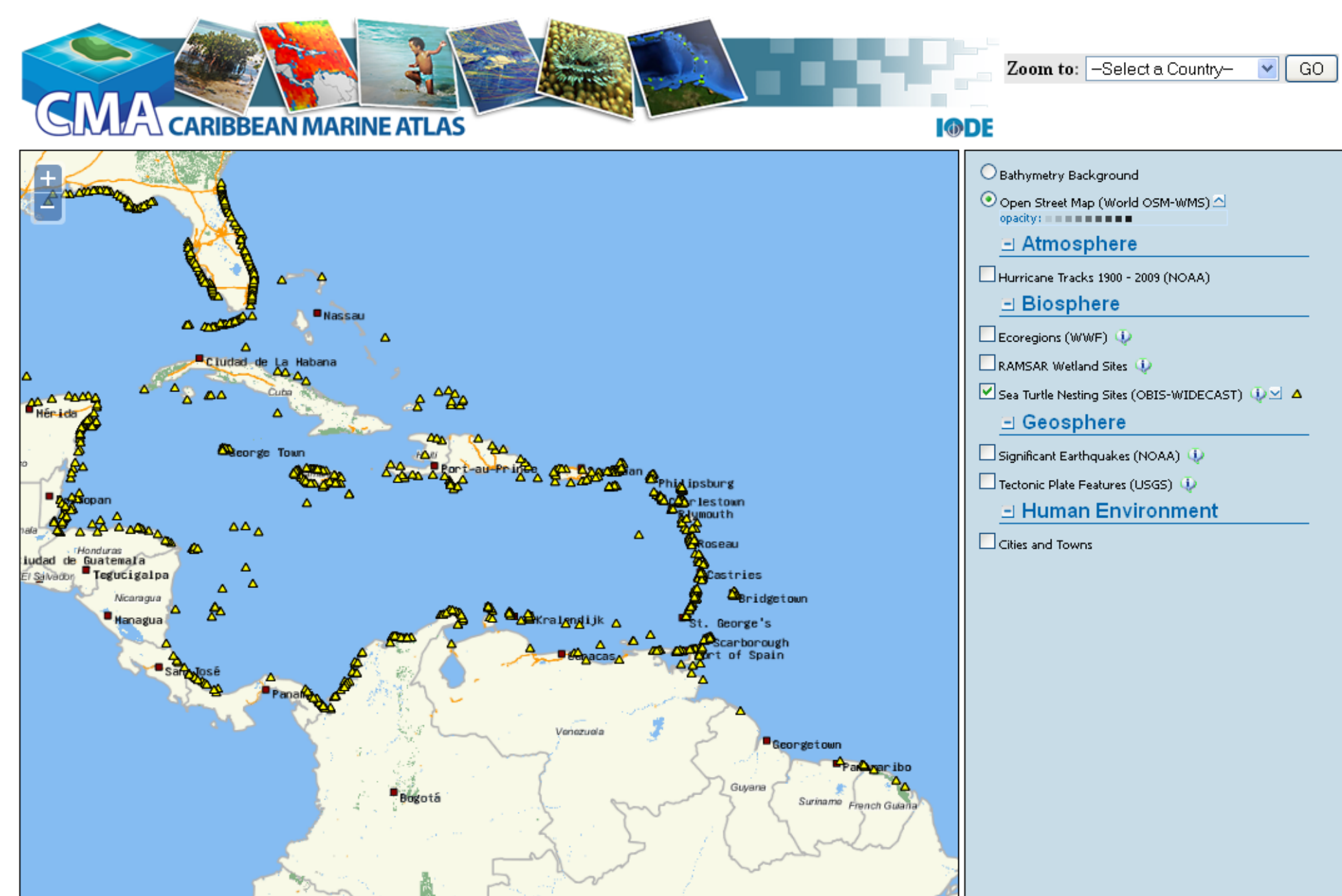
- ❖ To inform the participating countries of the potential benefits of a CMA;
- ❖ To identify current national coastal zone management arrangements;
- ❖ To identify national and regional coastal and marine issues that could be the focus of the CMA;
- ❖ To identify the national resource requirements of the participating countries to enable full participation in a CMA Pilot Project; and
- ❖ To prepare a draft work plan of a CMA Pilot Project, for submission to, and approval by the respective national governments.

The coastal zone management issues identified from this workshop such as resource overexploitation, natural hazards, land based sources of marine pollution (LBS), coral reef, seagrass, mangrove, and beach degradation were found to be priorities across the region. There were also training needs identified which included ocean data management, data mining and web atlas creation.

Following the meeting, the CMA project received additional funding from the Government of Flanders in 2008 to conduct identified training activities, and also featured the designation of a Regional Coordinator, Mr. Ramon Roach from Barbados. This phase of the project featured:

- ❖ The publishing of the CMA prototype online atlas.caribbeanmarineatlas.org (November 2009);
- ❖ The addition of querying and download capability;
- ❖ Expansion of member countries; and
- ❖ Improvements to the atlas interface.

Sea Turtles

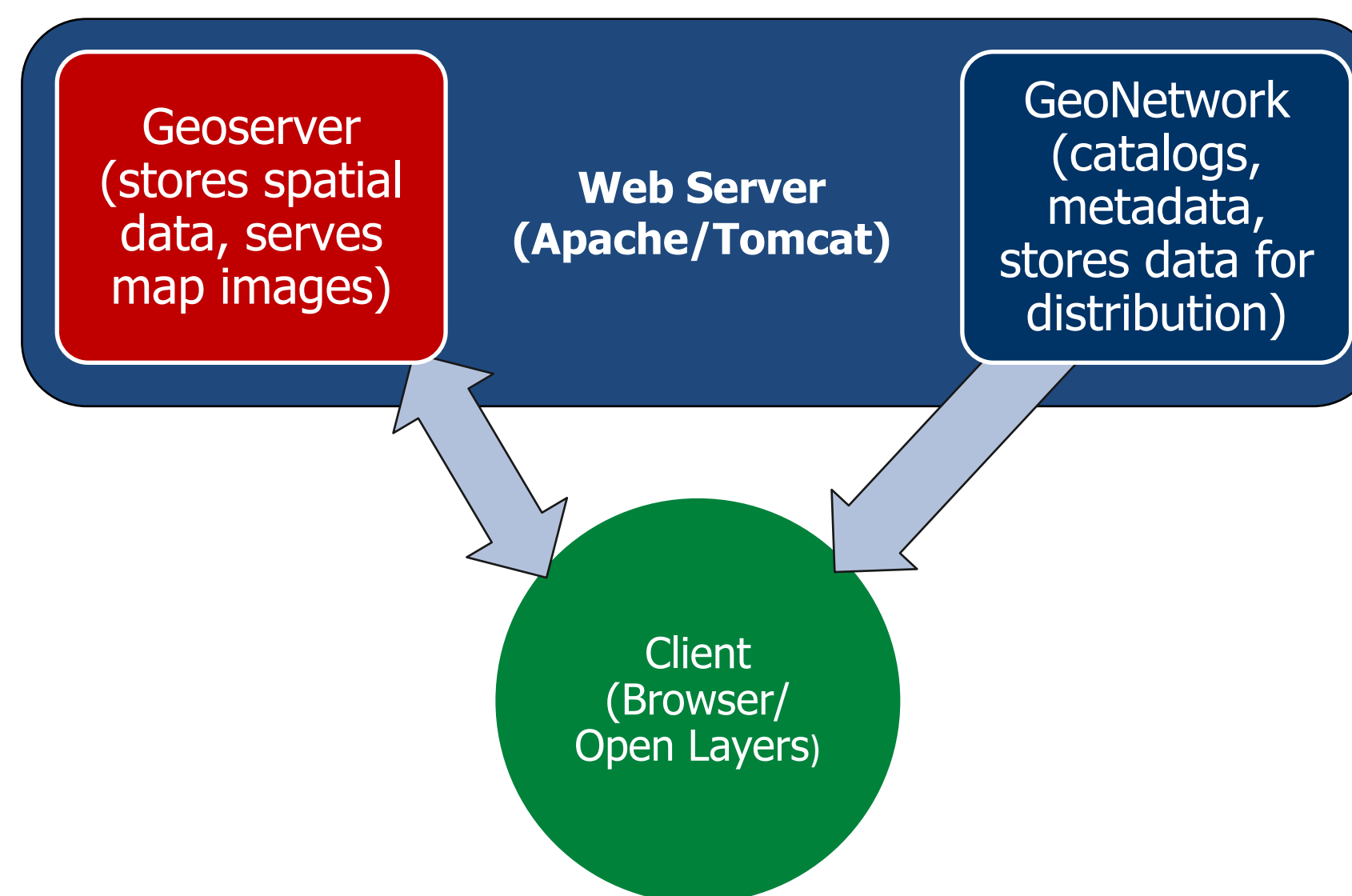


Current Status

The CMA is a multi-component platform (open-source and web-based) consisting of a web map server, a metadata catalogue and the online mapping application. The interactive mapping application consists of a collection of GIS data layers (both vector and raster) representing various data types. The system also features advanced data control such as layer lists, feature selection, results tables, metadata viewing and links to websites, documents and auxiliary data. Some of these data controls are still in the developmental stages.

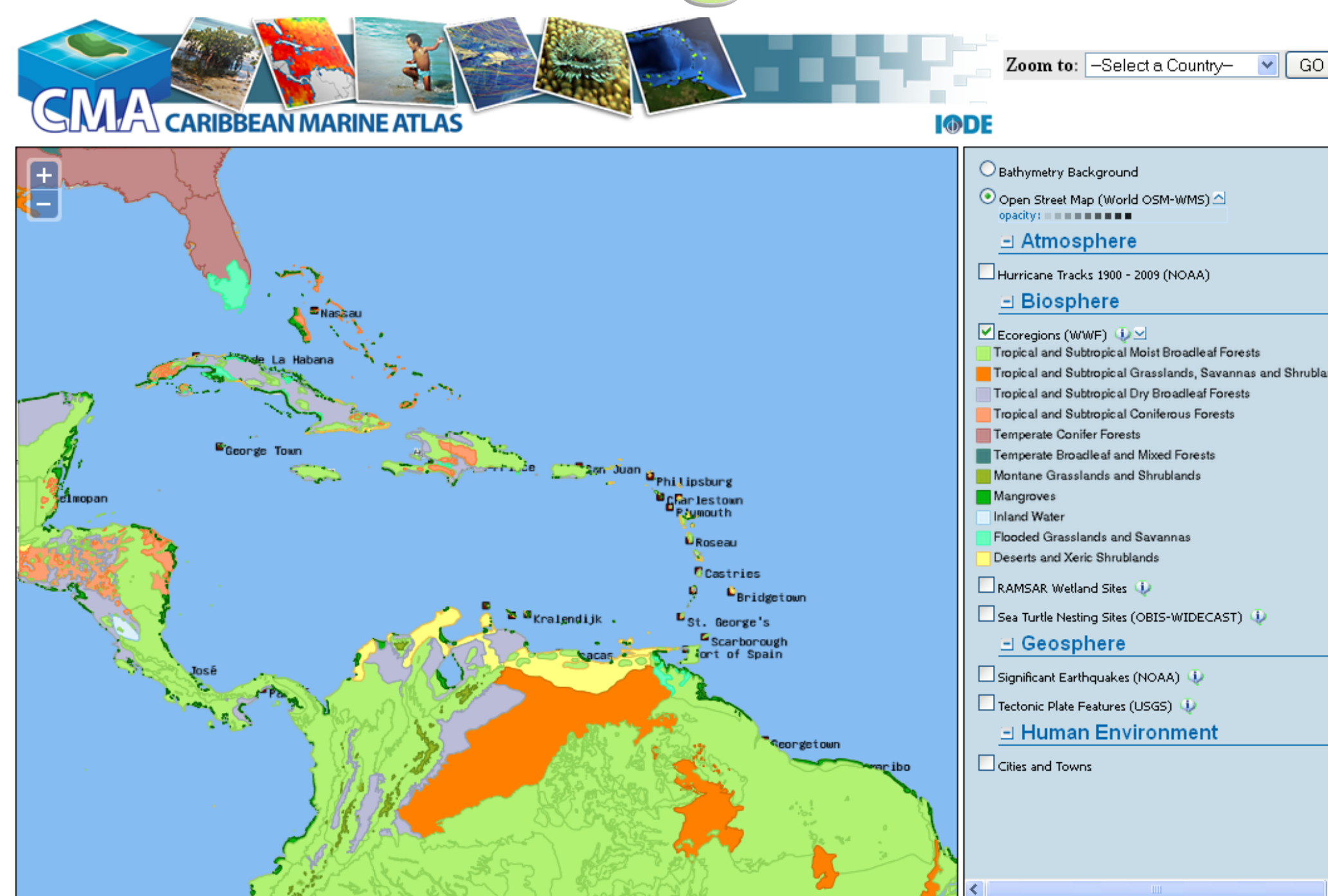
Some of the achievements of the project include:

- ❖ Eleven regional data managers received data management and web-based atlas development training;
- ❖ Improved communication among Caribbean marine/coastal management agencies due to the Regional CMA network;
- ❖ Regional coastal zone and marine management institutions sensitized to marine atlas concept; and
- ❖ CMA requested to participate in Caribbean Large Marine Ecosystem project activities and to give technical support to the Caribbean Sea Commission



Platform Component of the Caribbean Marine Atlas

Ecoregions



Participating Countries

- ❖ Barbados
- ❖ Cuba
- ❖ Dominica
- ❖ Jamaica
- ❖ Trinidad and Tobago
- ❖ Turk and Caicos

Each country at a national level have completed or is in the process of developing their own marine atlas. The information from these atlases will feed into the CMA. The countries that have prototype national atlases are:

- ❖ Barbados - <http://barbados.caribbeanmarineatlas.org/>
- ❖ Cuba - <http://cuba.caribbeanmarineatlas.org/>
- ❖ Dominica - <http://dominica.caribbeanmarineatlas.org/>
- ❖ Jamaica - <http://jamaica.caribbeanmarineatlas.org/>
- ❖ Trinidad and Tobago - <http://tnt.caribbeanmarineatlas.org/>
- ❖ Turk and Caicos – expected in late 2013

CMA is part of the International Coastal Atlas Network (ICAN)

The thematic areas of the CMA are as follows:

Geosphere	Hydrosphere	Biosphere	Atmosphere	Human Environment
Natural hazard	Bathymetry	Habitats	Climate	Settlements
Soil types	Physical oceanography	Marine flora and fauna	Weather	Infrastructure
Land use	Chemical oceanography	Protected areas		Tourism

Earthquake



Future Goals

The design and implementation of national atlases is also part of the mandate of the CMA project. The national atlases are built on the same framework as the CMA, and share its functionality. Other planned activities include:

Greater Collaboration with Regional/International Projects

- ❖ Review and plan the second stage of the CMA project in collaboration with the CLME
- ❖ CMA/OBIS meeting in early 2014 on Caribbean biological data management
- ❖ Continued interaction with other regional and international marine area management projects

Atlas Application Development

- ❖ Technical consultations with Flanders Marine Institute
- ❖ Behind the scenes data management tasks

Main CMA website

• <http://www.caribbeanmarineatlas.net>

Web map server (Geoserver)

• <http://geoserver.caribbeanmarineatlas.org>

Metadata catalog for CMA data (GeoNetwork)

• <http://geonetwork.caribbeanmarineatlas.org>

Mapping application for the regional atlas

• <http://atlas.caribbeanmarineatlas.org>

Challenges

Capacity Challenges

- ❖ Limited specialization at national level for coastal/marine data management
- ❖ Considerable training effort devoted to basic data management/GIS skill development
- ❖ Limited resources (primarily time and manpower) to implement national actions
- ❖ Limited resources to devote to atlas data preparation tasks
- ❖ Loss of participants due to staffing changes
- ❖ Limited ability to share in development burden within the CMA national representative group
- ❖ Accessing data held by sister institutions

Technology Challenges

- ❖ Changes in atlas backend technologies (Mapserver to Geoserver)
- ❖ Steep learning curve for development languages (Javascript, PHP, etc) and open-source software (Geoserver, Geonetwork, SLD creation, etc)
- ❖ Little or no data quality control (geographic, range analysis),
- ❖ No established metadata schemes