

# Intergovernmental Oceanographic Commission IOC/IOCARIBE-ANCA

## Progress Report 2023-2025 to IPHAB XVII

Gustavo Arencibia Carballo-Chair  
Ernesto Mancera Pineda-Vice Chair

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## ANCA, a network of the IOCARIBE HAB program



### Specific objectives

- Collect and analyze information that allows making decisions related to HABs in the Caribbean region.
- Train HAB researchers for the region, taking advantage of the existing knowledge in the Caribbean and the international cooperation.
- Identify and characterize the microalgae responsible for the intoxications (PSP, DSP, ASP, NSP, Ciguatera), as well as the toxins vector species in the Caribbean and adjacent areas.
- Increased visibility among the different social stakeholders in the Caribbean region.
- Progress in initiatives on HAB early warning systems.



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For the current IOCARIBE-ANCA period, 2023-2025, similar interests were maintained to the previous period.

A clear interest that was worked on permanently was to add new countries to the ANCA network, **achieving the presence of a focal point for Trinidad & Tobago and Puerto Rico**, which is considered a success, especially when more participating countries from the Caribbean region are required.



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## **I.-Identify and characterize the microalgae responsible for the intoxications (PSP, DSP, ASP, NSP, Ciguatera, Cyanotoxins)**

**To achieve this objective, different projects, thesis, and monitoring programs, are being carried out both nationally and regionally, among others:**

Projects financed by the International Atomic Energy Agency (IAEA):

RLA 7014 Latin American regional proficiency test on the determination of trace elements and radionuclides in algae, soil and spiked water.

RLA 7020 Establishing the Caribbean Observing Network for Ocean Acidification and its impact on Harmful Algal Blooms, using nuclear and isotopic techniques.

RLA7022 Strengthening Regional Monitoring and Response for Sustainable Marine and Coastal Environments.

Proyecto ELS/7011-OIEA “Strengthening National Capacities for Sustainable Environmental Management in the Context of Climate Change”.

Regional Project IAEA RLA 7025:Strengthening Capacities in Marine and Coastal Management through the Application of Nuclear and Isotopic Techniques (2020-2023).

Regional project IAEA RLA 7028: Strengthening Regional Capacities for the Application of Nuclear and Isotopic Techniques to Increase Knowledge of Stressors Affecting Sustainable Marine and Coastal Management” (2024-2027)

Regional project IAEA RLA7026. “Assessment of Organic and Inorganic Environmental Pollution in Aquatic Ecosystems in Latin America and the Caribbean, and Its Impact on the Risk of Cyanotoxin-Producing Cyanobacteria”(2022-2025).



## Marine Stressors Research Network in Latin America and the Caribbean



ARGENTINA



BELICE



BRASIL – (Português)



CHILE



COLOMBIA



COSTA RICA



CUBA



ECUADOR



EL SALVADOR



GUATEMALA



HONDURAS



MÉXICO



NICARAGUA



PANAMÁ



PERÚ



REP. DOMINICANA



URUGUAY



VENEZUELA

**IOC Training Course and Identification Qualification in Harmful Marine Microalgae**  
**2023: 4 Countries- Cuba, El Salvador, Mexico, Venezuela- RLA7025**  
**2025: 8 Countries- Argentina, Colombia, Jamaica, Costa Rica, Uruguay, Brasil, Guatemala, El Salvador (RLA7028).**



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### **II.- Progress in initiatives on HAB early warning systems**

The countries that make up the ANCA-IOCARIBE group continue to work through projects and partial and contracted period financing opportunities on risk management of HABs, all through different monitoring programs, which have led to the emergence of multi-parameter biotic and environmental databases.

***- IRMA: An index to predict mass fish mortality during harmful algal blooms in tropical estuaries -Colombia (published in HAN 78).***

**- IRCIGUA: Ciguatera Risk Index-Cuba.**

**-SiAT -Mexico**





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### **III. Needs identified in the ANCA group**

- Add more countries from the Caribbean and adjacent areas to the group, and establish monitoring plans for HABs and investigations of unforeseen cases.
- Provide inputs for early warning systems on harmful algal blooms.
- Increase mechanisms that favor the strengthening of scientific training on toxic algae and blooms with an ecosystem approach.
- Generate mechanisms that facilitate the acquisition of certified patterns for toxin analysis.
- Expand the strategies for dissemination, outreach and education on harmful algal blooms to all social sectors, with special emphasis on the tourism sector.
- Access more calls for international projects that provide funding for infrastructure for research and monitoring.
- Create mechanisms such as a website and more links to international groups to maintain constant and effective communication between the different projects in development.
- Hold the face-to-face meeting to conclude the previous period.
- Improve communication at the national level between researchers and HAEDAT editors and between researcher and Health institutions.



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## Activities to increase visibility among stakeholders

### Type of Product

Research papers --- 12 papers

New edition of: LA CIGUATERA UN RIESGO POTENCIAL PARA LA SALUD HUMANA: Preguntas frecuentes. Arencibia Carballo, G., Mancera Pineda, J.E., Delgado Miranda, G., Díaz Asencio, L. 2024.

Title: Catalogue of cyanobacteria from the Cerrón Grande Reservoir. Authors: Rebeca Quintanilla, Jennifer Guerra, Oscar Amaya. Gender: Didactic. Edition: 1st Edition Type of edition: Simple version ISBN. 978-99983-998-0-8 Number of pages: 104 pages Year: 2024.

Catálogo de dinoflagelados plantónicos. Pacífico de Guatemala. Autores Karla E. Paz Córdón, Yuri Okolodkov y Fernando Cobo Gradin.

Seminars, Congress, Courses --- 9 activities

Free virtual reality course of HAB --- 6 courses

Thesis --- Doctoral Thesis: Influence of Resources and Regulators on the Population Abundance of Benthic Dinoflagellates in the Southwestern Caribbean on Daily Scales. National University of Colombia, Caribbean Campus. Edgar Arteaga. PhD in Sciences, Marine Biology line. Supported October 27, 2023. Laureate mention.

Tesis --- Master's Thesis: Tool for predicting the risk of mass fish mortality associated with harmful algal blooms in





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# General Considerations

However, given the difficulties faced by the countries that currently make up the IOCARIBE-UNESCO Caribbean Harmful Algae Group, it is considered that in general terms there are **significant achievements** and urgent **needs such as achieving a higher level of participation of the numerous countries in the region**, as well as implementing more comprehensive training and dissemination systems, with strong impacts on economic and tourism sectors throughout the region.

Regional integration projects of groups of countries must be achieved that demonstrate with regional results the innate strength of this group despite the setbacks and difficulties in its development and communication.

Improved communication between all members is required, in a systematic manner, in order to achieve compliance with the proposals of the work plan for 2025.



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Meeting to discuss and Review of the HAIS-HAEDAT system  
and management of HAB Events (17/03/2024)

(Regional Observatory of HABs)



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***Thank you very much for your  
attention!***

