Intergovernmental Oceanographic Commission of UNESCO

Harmful Algal Bloom Programme

Intergovernmental Panel on Harmful Algal Blooms

31st Session of IOC Assembly
Agenda item 3.4.3

Harmful Algal Blooms
15th Session of IPHAB, 23–25 March 2021

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Harmful algal events…

Natural marine hazards affecting almost all IOC Member States:

- Poison seafood and threatens public health and seafood industries
- Cause marine faunal mortalities and extensive ecosystem disruption
- Kill wild and farmed fish; aquaculture impacts are increasing with expansion of industry
- Threaten water supplies from desalination of seawater
- Cause globally increasing socio-economic impacts

IOC Intergovernmental Panel on HAB IPHAB

Mission is to assess progress, decide on priorities, and identify funding sources and opportunities for implementation of the IOC HAB Programme

The IOC HAB Programme is the only global intergovernmental effort to understand, manage and mitigate the harmful effects of algal blooms

IOC Intergovernmental Panel on Harmful Algal Blooms (IPHAB)

16 different groups:

- **7 IPHAB Task Teams**
- **5 Regional HAB networks and groups**
- **2 Expert Working Groups**
- **1 Steering Committee**
- **1 Project group**

- **IOC Science and Communication Centre on HAB, University of Copenhagen Denmark**

Intergovernmental Oceanographic Commission of UNESCO

Harmful Algal Bloom Programme

IPHAB activites are implemented in partnership / linked with:

IODE Intergovernmental Oceanographic Commission of UNESCO International Oceanographic Data and Information Exchange

GOOS Biology and Ecosystems Panel

IAEA International Atomic Energy Agency

World Health Organization

Food and Agriculture Organization of the United Nations

International Science Council SCOR Scientific Committee on Oceanic Research

IMO INTERNATIONAL MARITIME ORGANIZATION

ICES International Council for the Exploration of the Sea
CIEM Conseil International pour l'Exploration de la Mer

International Society for the Study of Harmful Algae ISSHA

PICES

The Global HAB Status Report

- 109 scientists from 35 countries mined :
  - The global Harmful Algae Event Database (IOC/IODE/HAEDAT), consisting of 9,500 events with one or more impacts on human society
  - OBIS (Ocean Biodiversity Information System) containing 7 million microalgal observation records, including 289,668 toxic algal species occurrences.
  - The taxonomic reference list of Harmful Micro Algae



The Global HAB Status Report

Components:

- “Perceived global increase in algal blooms is attributable to intensified monitoring and emerging bloom impacts,” published in the Nature journal Communications Earth & Environment
- Special issue of the Elsevier Journal 'Harmful Algae'
- IOC UNESCO GHSR Synthesis and Scientific Summary for Policy Makers,
- The IODE / HAIS Data Portal

The Global HAB Status Report

- We need **global data bases** before we can talk about global trends [in fact what IPCC states on "HABs increasing with climate " is falling into the same trap of reading a few papers; that's how you end up with "perceived increase"]
- **Aquaculture** is a key driver of increased reports of HABs. An algal bloom commonly is not harmful to human society until you put a fish or shellfish farm in the middle of it. **Nutrients** are also contributed by aquaculture; this is an important data gap to fill next.
- Different regions have different HABs, we don't fully understand why.
- HAB species **doesn't always accurately predict cases of human shellfish poisonings**, which the study credits to the food safety risk management strategies in many affected countries.
- The **next step** is to overlay Climate Change models + Nutrient pollution to better predict the future

The Global HAB Status Report

"A quantitative global assessment is long overdue"

"While some of the HAB literature over the past 30 years has handpicked selected examples to claim a global increase and expansion in HABs, this new big data approach shows a much more nuanced trend,"

"This status report is very timely, at the start of the UN Decade of the Ocean that a thorough understanding of natural and ecological processes in the ocean is crucial"

"Overexploitation lead to an increase in impacts independent of an actual trend in HABs."

"40 years monitoring efforts have increased, thus increasing the reporting of harmful events across the world's seas,"

Intergovernmental Oceanographic Commission of UNESCO
Harmful Algal Bloom Programme

IPHAB XV

Held on-line 23–25 March 2021

Eight Decisions and two Recommendations

7 continuing Task Teams with revised Terms of Reference

Re-elected Chair (2022-2023): Joe Silke (Ireland)

Re-elected Vice-chair (2022-2023): Alexandra Silva (Portugal)

Decision: IPHAB-XV-1

Regional HAB Programme Development

- **Regional HAB Groups under an IOC regional subsidiary body thrive.**

INTERSESSIONAL ACHIEVEMENTS

Major regional contribution to GHSR

- and see reports of Regional subsidiary bodies

Decision IPHAB-XV.2

Task Team on early detection, warning and forecasting of harmful algal events

- **Review the current state of early warning systems for HABs**
- **Address UN Ocean Decade objectives at conferences and HABs symposia on early warning systems**
- **Promote HAB observations in the Global Ocean Observing System and at regional level**

Decision IPHAB-XV.3

Flanders
State of the Art

Task Team on the Harmful Algal Information System (HAIS) and the Global HAB Status Report (GHSR).

- First edition of a Global Harmful Algal Bloom Status Report (GHSR) launched on 8 June
- Advise and assist in the development of a webinar on the GHSR and HAIS (15 June)
- Advise on a second edition of the GHSR

With IAEA, ICES and PICES

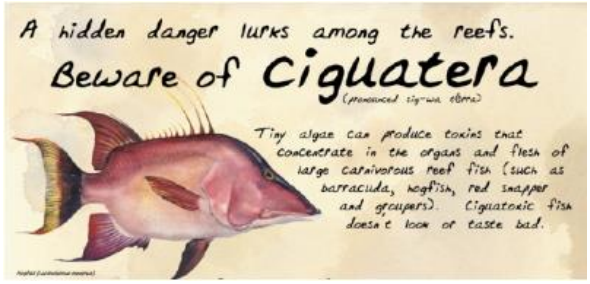
The delivery of 'Global HAB Status Reports' was and will onwards be 100% dependent on a funded and staffed OBIS!

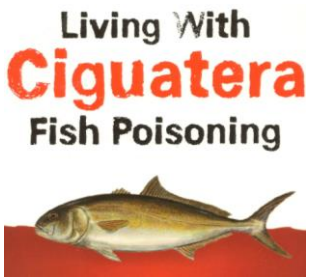
Decision IPHAB-XV.4

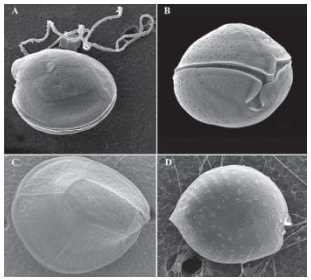
Task Team on a Global Inter-Agency Ciguatera Strategy for Improved Research and Management

- Interacts with FAO, IAEA and WHO for the implementation of the MoU on the inter-agency Global Ciguatera Strategy,

- Specific elements of Ciguatera Strategy:
  - Enhanced capabilities for Ciguatera toxin detection
  - Improve epidemiological data collection, reporting and assessments







Decision IPHAB-XV.5

Task Team on Harmful Algae and Desalination of Seawater

- Explore the feasibility of a joint FAO-IOC food safety risk assessment (or what available data allow) for toxins in drinking water coming from desalination plants
- Working with the IPHAB Task Team on Early Warning Systems for HABs, explore opportunities to work with the desalination industry



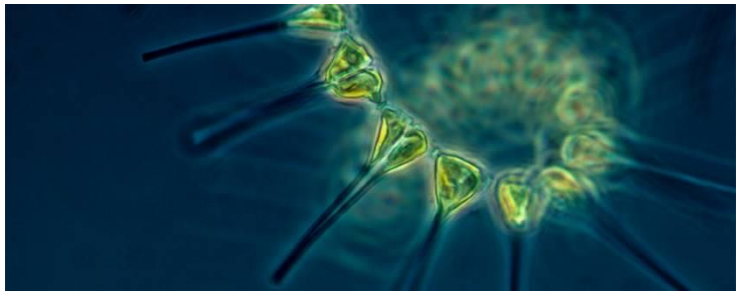
Decision IPHAB-XV.6

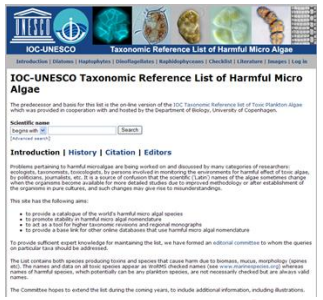
Decision IPHAB-XV.7

IPHAB longer term (continuing) Task Teams providing services linked with IODE/HAEDAT and OBIS:

Task Team on Biotoxin Monitoring, Management and Regulations

Task Team on Algal Taxonomy





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Decision IPHAB-XV.8

Task Team on Task team on fish killing microalgae and ecosystem effects

- A state-of-knowledge review and future strategy publication
- develop strategy for implementation by resource managers and the aquaculture and fisheries industries for development and application of mitigation strategies;
- Identify objectives and actions with respect to the Task Team topic that will address the UN Decade challenges with a view to develop Decade initiatives;

IOC/HAB Training and Capacity Building

- continue longstanding training activities (qualifying courses with proficiency certificates)
- priority on HAB prevention, regulatory control and mitigation & activities responding to GlobalHAB foci
- further develop the use of Ocean Teacher incl. provision of training reference material

IPHAB-XV Recommendation on the Work Plan for 2022-2023

Expected requested funding (2022–2023)	**USD 27,000 from IOC Regular Programme (41 C/5)**
IPHAB identified funding (2022–2023)	**USD 119,000 from expected extra-budgetary resources and in-kind.**
To be identified from extra-budgetary resources and/or in-kind for full implementation	**USD ~285,000**

!

The Assembly is invited to:

- **Endorse the IPHAB-XV Recommendations including the Work Plan for 2022-2023**
- **Ensure the necessary Regular Programme funding to allow operation of the HAB Programme core activities**
- **Assist in identifying extra-budgetary resources for implementation of the Programme 2022-2023**

Thank you for your attention

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