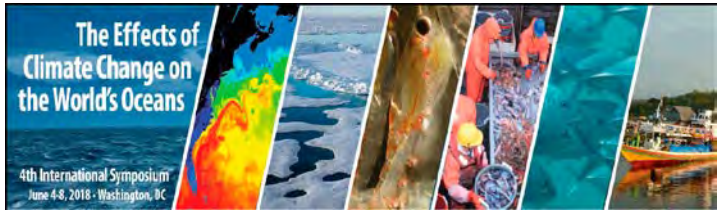
CoCliME

ERA4CS – FORMAS
Sweden



OSTREORISK

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Desarrollo Regional

CTM2014
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Solving HAB problems through organising "bricks"
Ostreopsis blooms as an example

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Institut Català de la Salut, Generalitat de Catalunya

Elisa Berdalet and Magda Vila
Institute of Marine Sciences (ICM-CSIC)

Barcelona

HABs: result from **noxious** and/or **toxic algae** that cause direct and indirect negative impacts to **aquatic ecosystems, coastal resources**, and **human health**

HABs are a **worldwide phenomenon** requiring an **international understanding** leading ultimately to **local** and **regional solutions**

Harmful Algal Blooms

A scientif c summary for policy makers

SCOR

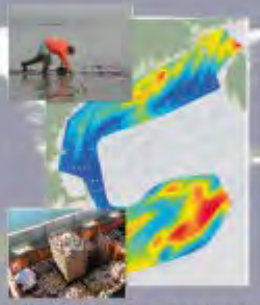
United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

GEOHAB

Global Ecology and Oceanography of Harmful Algal Blooms

Akashiwo sanguinea outbreaks produced foam, involved in bird mortality. Images: R. Kudela.



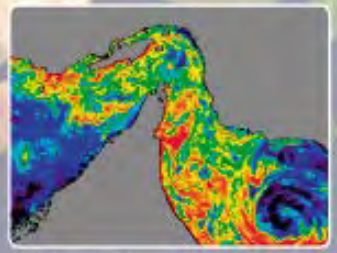
In the Gulf of Maine, Canada and USA, blooms of *Alexandrium fundyense* cause PSP in shellfish consumers. Images: D.M. Anderson.

In the Baltic cyanobacteria blooms prevent recreational use of the coast in summer. Photo: B. Karlson, SMHI.

In Asian waters eutrophication associated with high-biomass blooms cause severe fish kills in aquaculture sites.

In the Mediterranean, high-biomass blooms of the epiphyte *Ostreopsis* are associated with respiratory irritations in beach users. Images: J.M. Fortuño, M. Vila, ICM-CSIC.

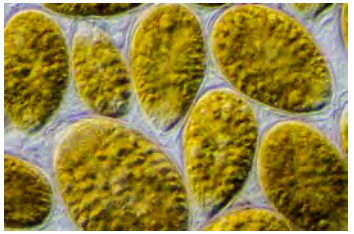
Macroalgal (*Chaetomorpha linum*) blooms are linked to eutrophication in touristic area of Colombia. Photo: M. Wainwright.



High-biomass blooms shut down desalination plants, and the toxic species constitute an additional risk to the freshwater supply. Image: R. Kudela.

Ciguatera Fish Poisoning (CFP), caused by *Gambierdiscus*, is an endemic sea-food borne intoxication in the Pacific Islands and the Caribbean. Images: M. Chinain, M. Faust.

Objective: To develop a HABs Mandala, the elements are part of the solution

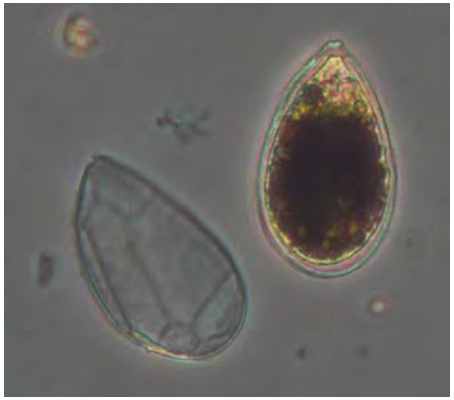


A case study:
***Ostreopsis* blooms**
*** apparently increasing in temperate waters?**
*** biogeographic expansion with climate change?**

A case study: *Ostreopsis* blooms

Impacts on human health:

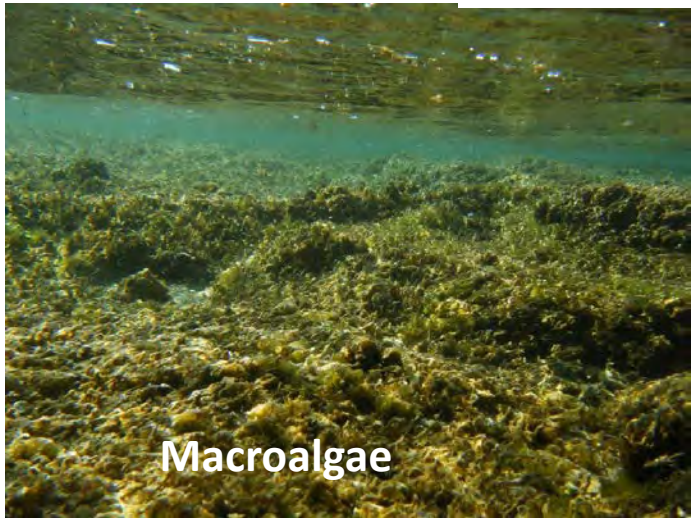
* Food-borne poisonings in the tropics (palytoxin)
* Mild respiratory irritations in temperate beaches



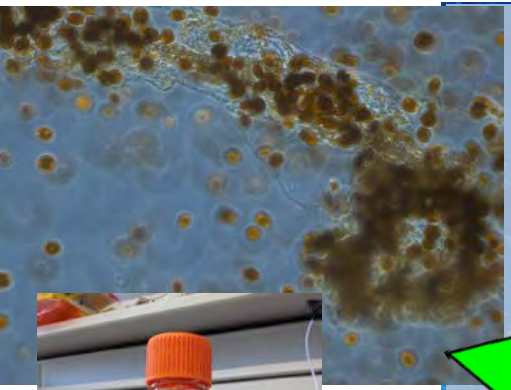
www.bentoxnet.it +Ciminiello et al. 2014

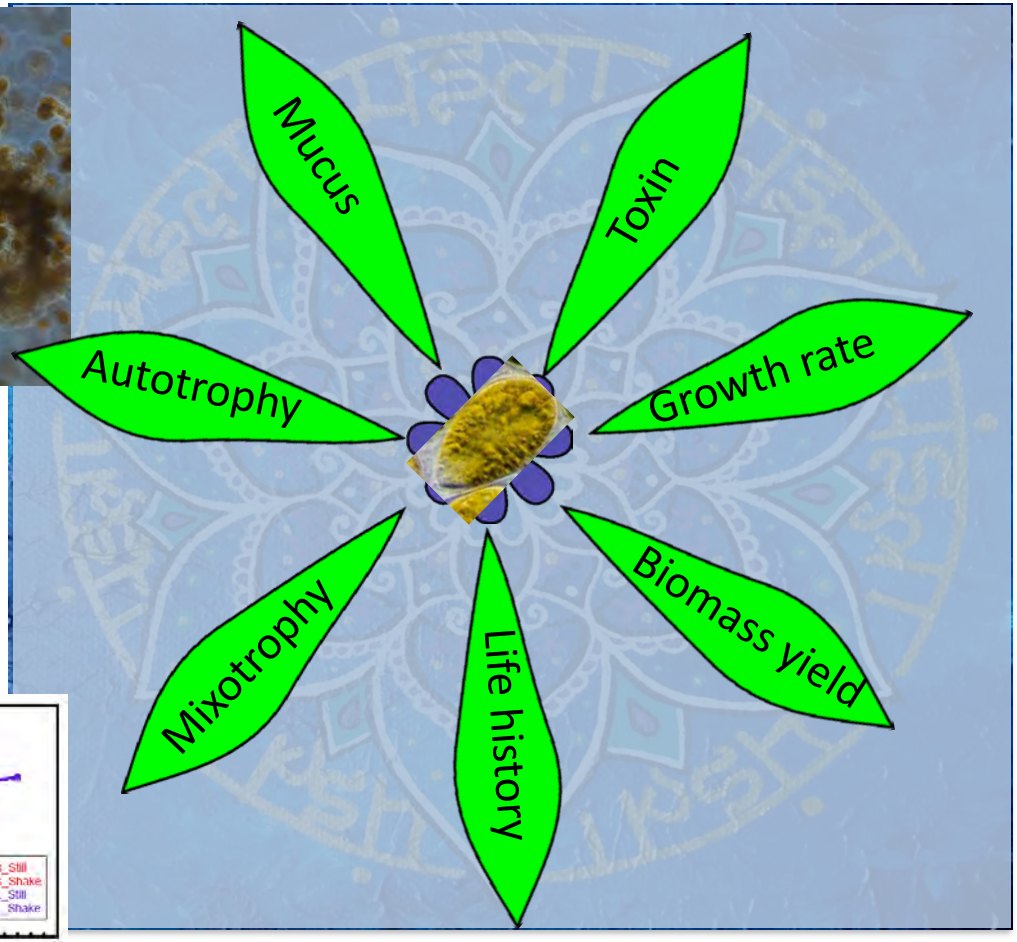
Environmental impacts:

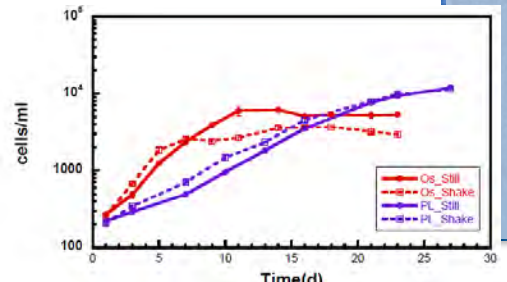
* Massive benthic fauna mortalities
* Water quality deterioration

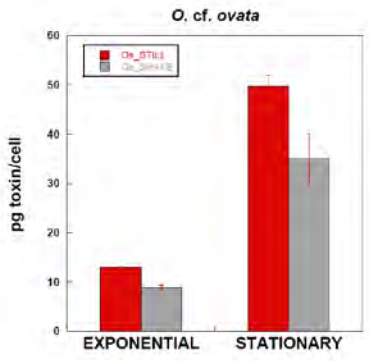


Understanding cell physiology processes ...

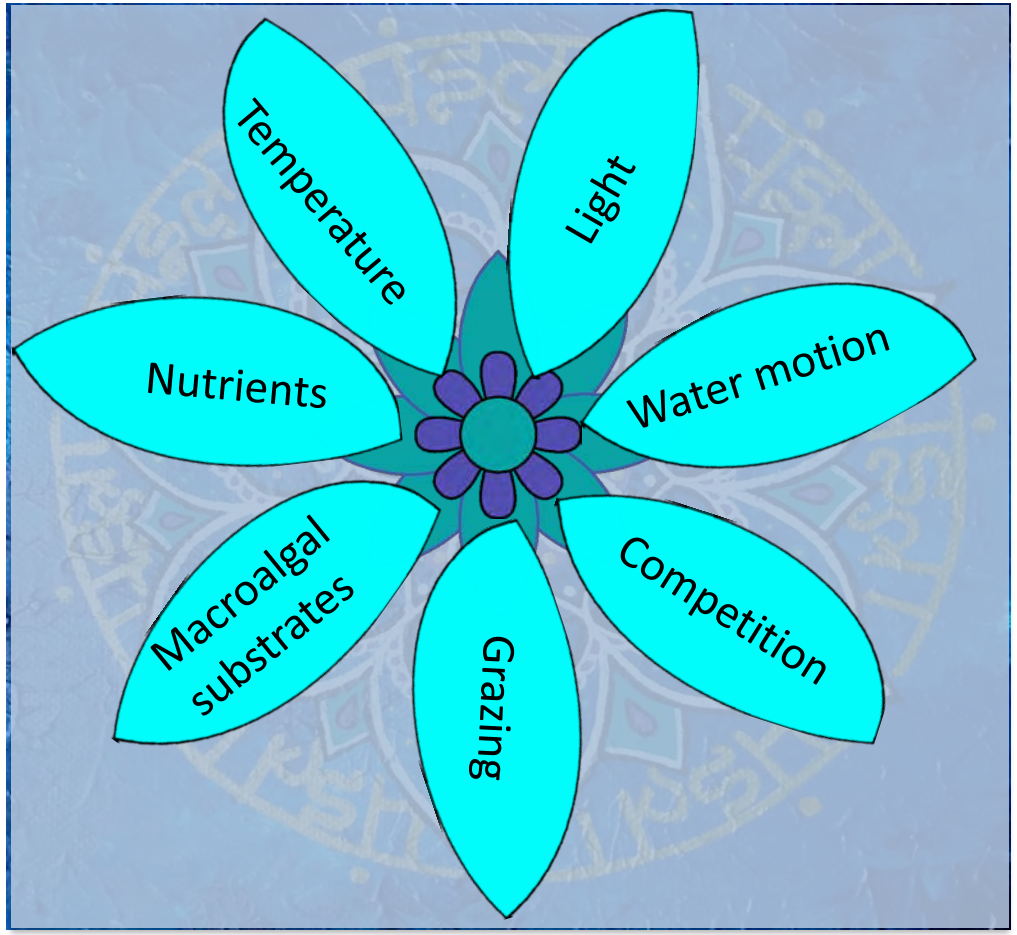






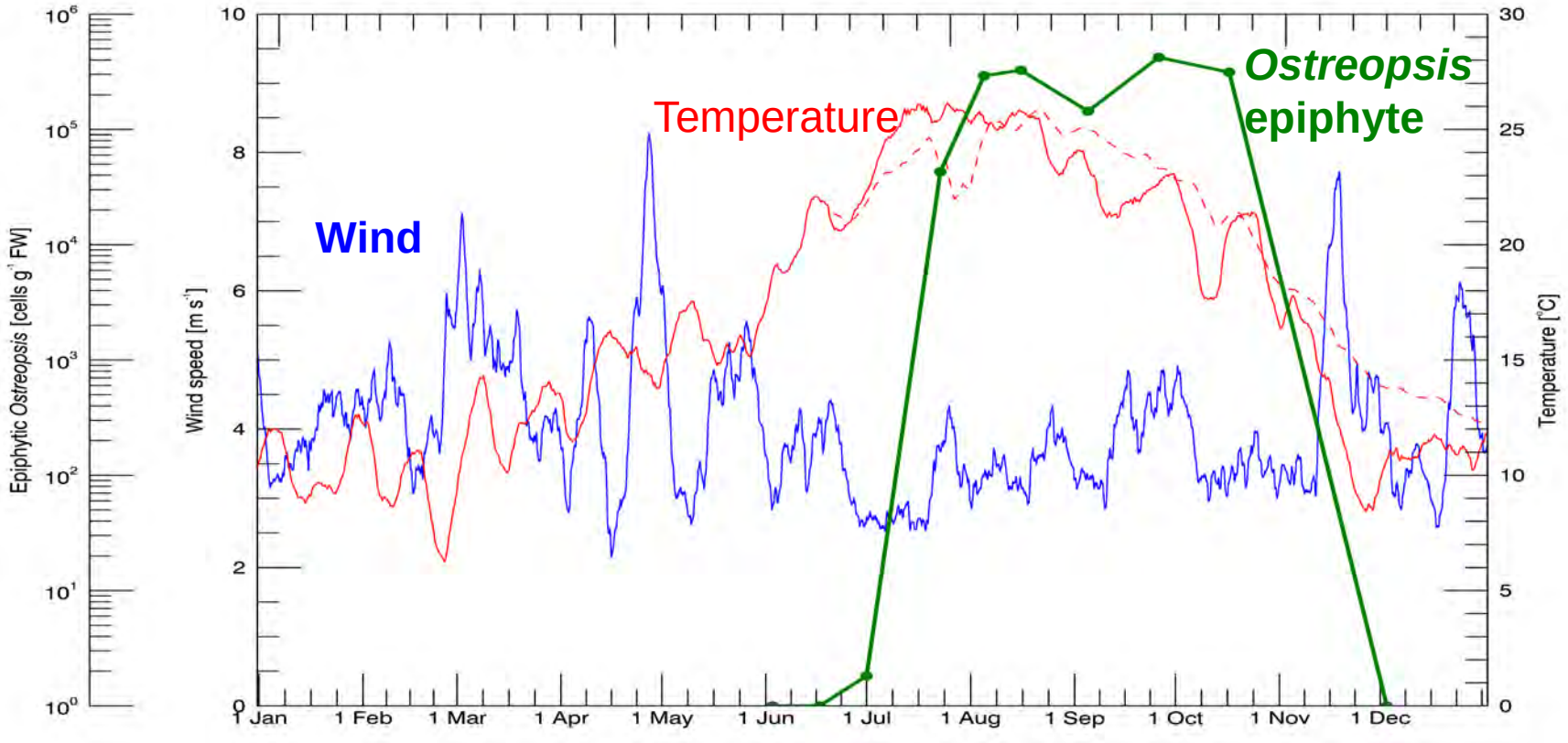


... to understand natural dynamics ...



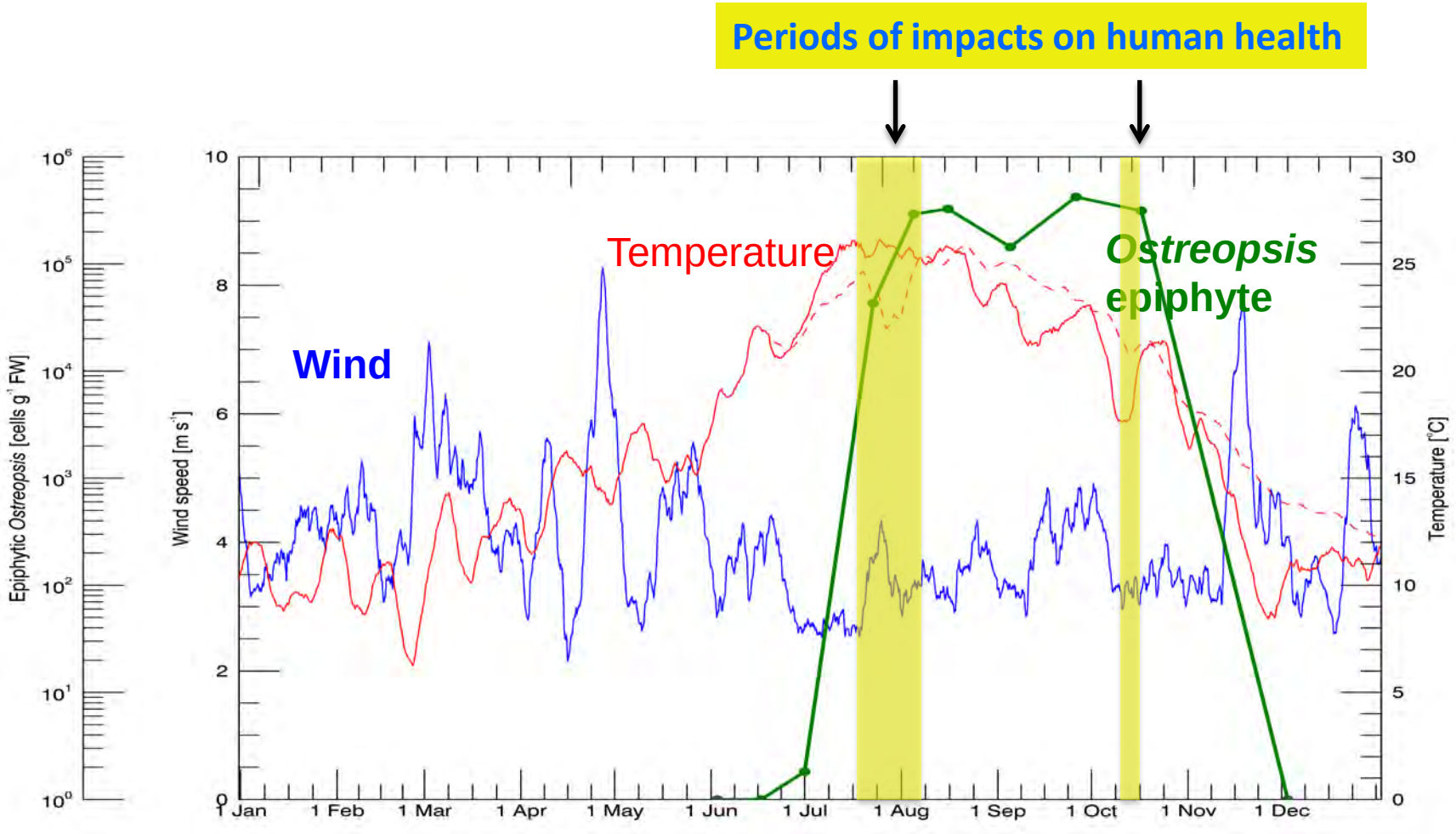
... to understand natural dynamics ...

Seasonal bloom dynamics in Llavaneres, 2013

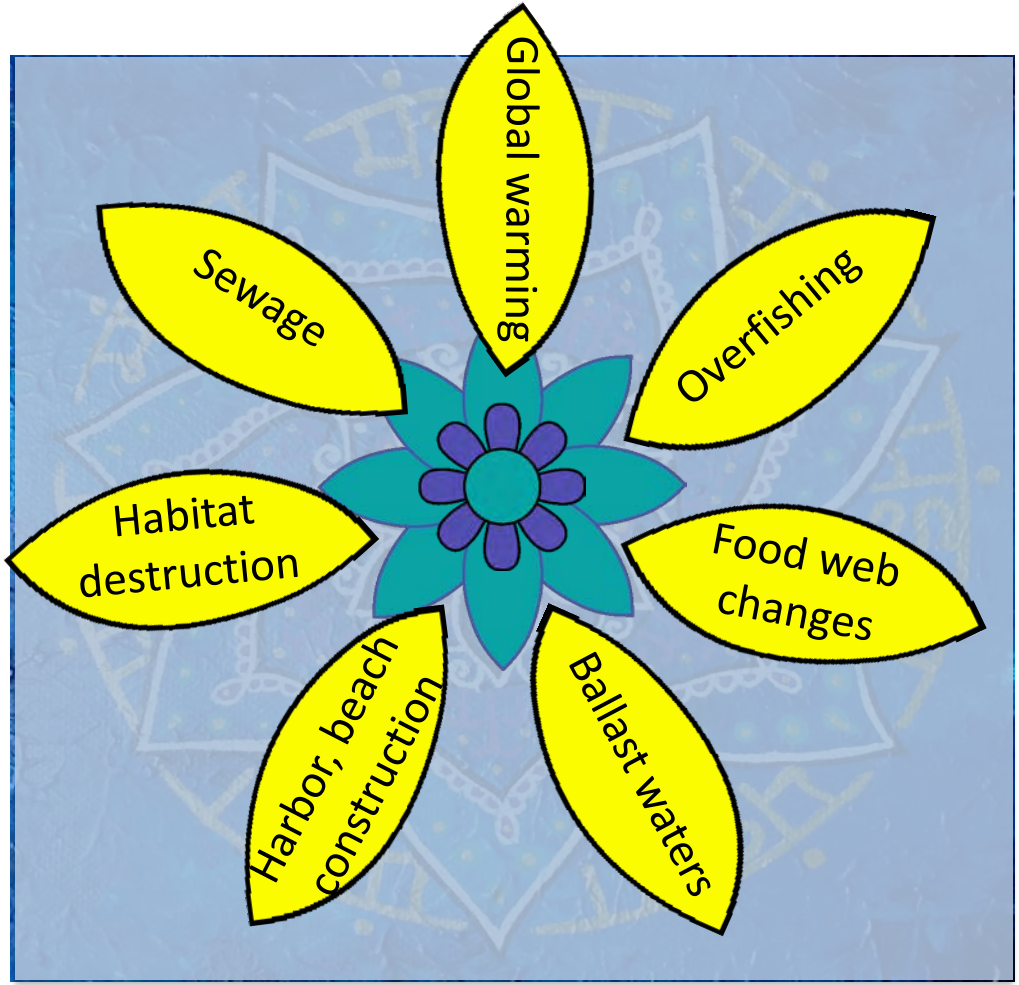


... and impacts on human health

2013



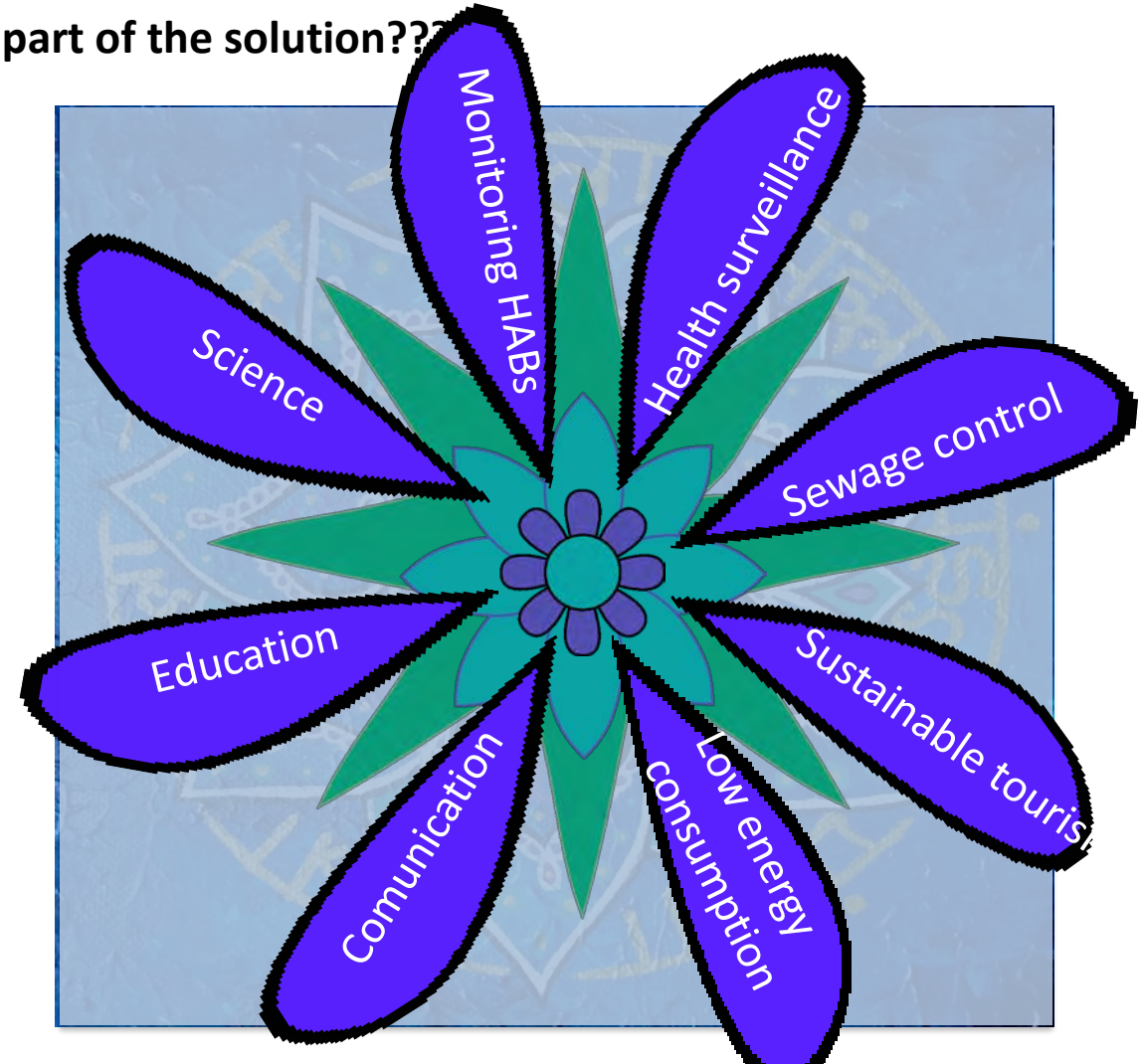
Human health and wellbeing are impacted by *Ostreopsis* blooms



Human pressures are involved in the harmful events

... Can humans be part of the solution???

At local level



... Can humans be part of the solution???

At local level

Institut de Ciències del Mar

ICM

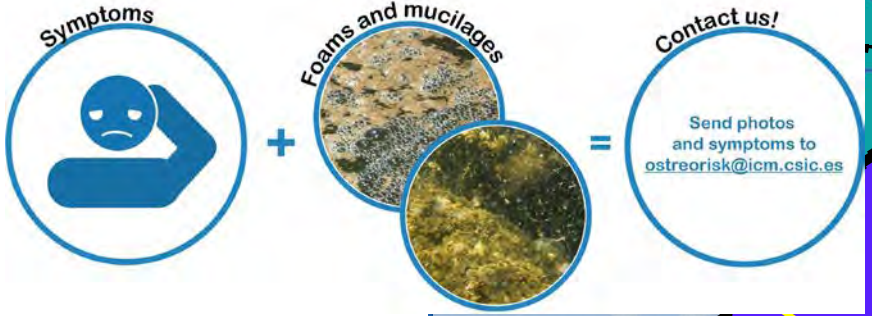
Universitat de Barcelona

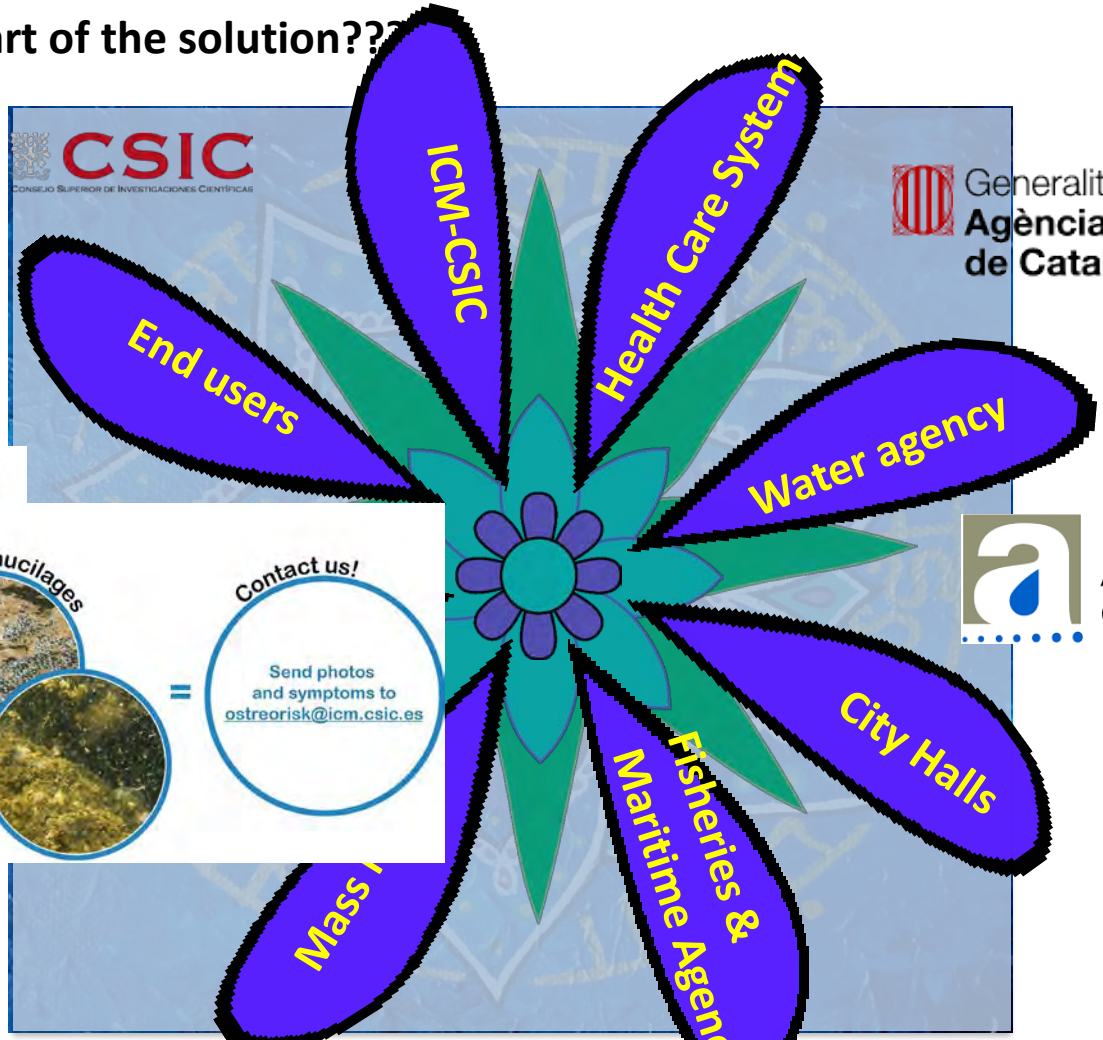
CSIC

Consejo Superior de Investigaciones Científicas

Generalitat de Catalunya
Agència de Salut Pública de Catalunya

ICM Divulga





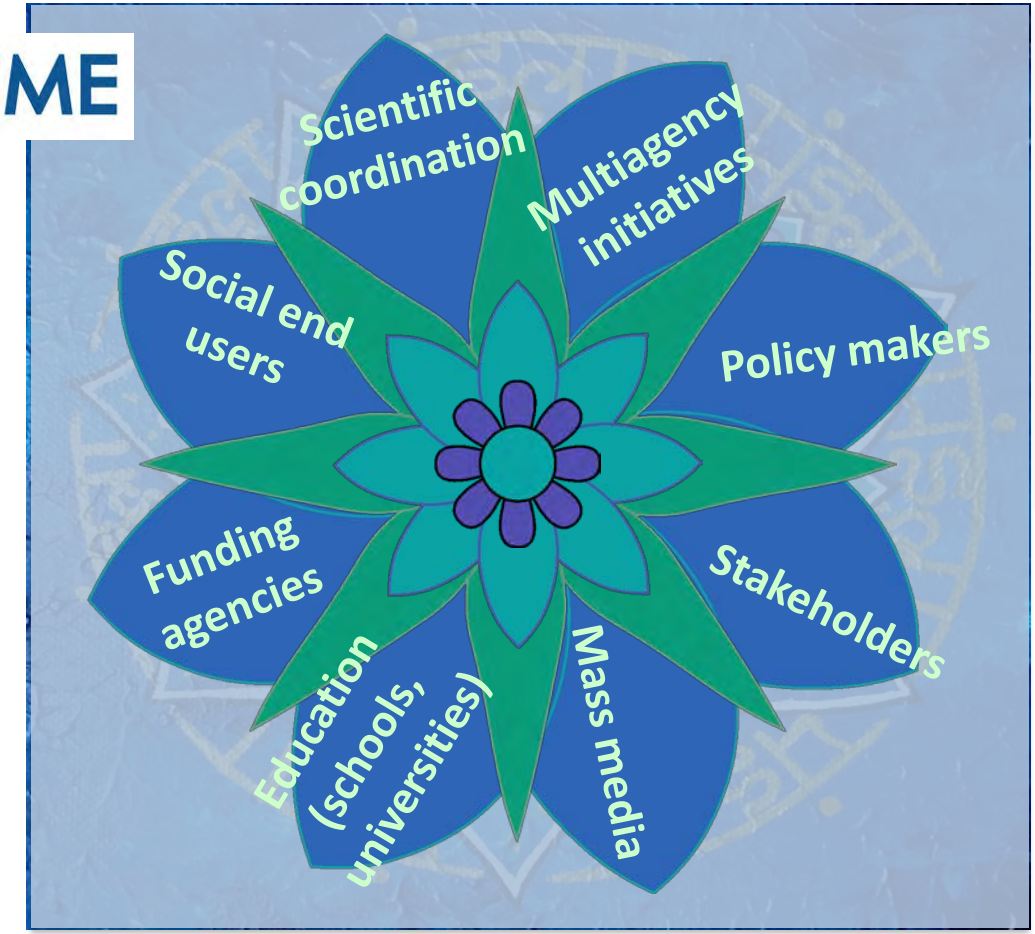
Agència Catalana de l'Aigua

AJUNTAMENT DE SANT ANDREU DE LLAVANERES

... Can humans be part of the solution???

At global level: coordination ...

CoCliME



RAMOGE

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

GlobalHAB

IOC-SCOR

International Council for Science SCOR Scientific Committee on Oceanic Research

IAEA

WHO

FAO

Ostreopsis blooms

Ostreopsis blooms

Accord RAMOGE

Prévention & Lutte contre la Pollution du Milieu Marin

Accueil | Accord RAMOGE | Gestion intégrée de la zone côtière | Plan RAMOGEPOL | Education et Communication | Documents RAMOGE | Partenaires & Liens | Urgence | Contact

Suivi de la problématique Ostreopsis

Ostreopsis ovata est une algue microscopique unicellulaire qui vit habituellement dans les eaux chaudes des mers tropicales. Le transport par les eaux de ballast des navires et des conditions climatiques très favorables ont permis à cette microalgue de se développer sous nos latitudes.

Ainsi, depuis quelques années, des phénomènes d'efflorescence impliquant cette algue ont été observés dans toute la partie nord-ouest de la Méditerranée et dans certains cas une toxicité sur l'homme a été observée.

Les effets toxiques se limitent habituellement à des **symptômes de type grippal** tels que fièvre, toux, nausées, rhume, conjonctivite, troubles respiratoires. **Les personnes atteintes n'ont pas forcément été en contact direct avec l'eau ; il suffit d'inhaler les gouttelettes transportées par le vent pour que les symptômes se manifestent.**

Avec le soutien de l'Accord RAMOGE, des recherches sont actuellement en cours sur les causes et effets de la toxicité de cette algue.

En 2010 une réunion regroupant des scientifiques et des autorités sanitaires des trois Etats a permis de faire le point sur **le mode de surveillance** de cette algue dans chaque Etat, sur leur **gestion de la crise liée à une efflorescence** ainsi que sur les **problèmes sanitaires induits** par cette algue et leur gestion.

En 2011, l'Accord RAMOGE a apporté son soutien à l'organisation du Congrès International sur l'algue Ostreopsis ICOD, organisé par l'Observatoire de Villefranche-sur-Mer, l'Université de Nice-Sophia Antipolis et l'Université de Gênes.

Ostreopsis ovata

Durant la dernière décennie une grande attention a été portée sur le développement des espèces du genre *Ostreopsis* (dinoflagellés benthiques), dont certaines ont proliféré dans les mers tempérées. Ce Congrès International sur le Développement d'*Ostreopsis* a permis de dresser un bilan des connaissances sur :"

- les aspects écologique, chimique et toxicologique en relation avec les espèces du genre *Ostreopsis*
- les méthodes écologique, économique et sanitaire liées à la gestion de ce problème.

Le congrès a été une grande réussite, avec 4 conférences plénières, plus de 25 communications orales et 20 communications affichées, concernant l'écologie, la biogéographie et les impacts d'*Ostreopsis* sur les écosystèmes côtiers, la toxicité des métabolites secondaires et la gestion environnementale, sanitaire et économique du problème.

tidesandcurrents.noaa.gov

Home | NOAA Harmful Algal Bloom Operational Forecast System: Operational C

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Photo credit: NOAA, TPWD, FWRI, WHOI

NOAA Harmful Algal Bloom Operational Forecast System (HAB-OFS)

Operational Conditions Reports

HAB-OFS Products:
Overview - FAQs - Contact Us

Public Conditions Reports by Region *(including Impact Forecasts)*:
Southwest Florida | Northwest Florida to Louisiana | East Florida | Texas

Operational Conditions Reports

Southwest Florida — Forecast Region Maps

Thursday, June 2, 2016

Karenia brevis (commonly known as Florida red tide) ranges from not present to background concentrations along the coast of southwest Florida, and is not present in the Florida Keys. No respiratory irritation is expected alongshore southwest Florida Thursday, June 2 through Monday, June 6.

Check http://tidesandcurrents.noaa.gov/hab/beach_conditions.html for recent, local observations.

Other Sources of Gulf of Mexico HAB Status Info:

Check our Local Beach Conditions page.

NOAA HABSOS:
View map of cell counts and environmental data.

habmap.info

Cal HAB Monitoring & Alert Program

Implementing a statewide HAB network and forecasting system for California

home | news | about | data | projects | resources

HAB Monitoring

Documents

Site Map

What is being done?

The prevalence and intensity of HABs is a growing concern in coastal regions worldwide. California experiences a variety of HAB events each year, which can have a significant impact on marine mammal health and local fisheries. Risks to human health are mitigated by current monitoring and management practices, including ongoing research and public education efforts to inform people of health risks associated with HABs.

For a list of current HAB research projects in California, visit the Projects page.

Monitoring

Preharvest Shellfish Protection and Marine Biotoxin Monitoring Program
Santa Cruz and Monterey Phytoplankton Monitoring
SCCOOS Harmful Algae and Red Tide Regional Map

Education

CeNCOOS Classroom
Northwest Fisheries Science Center HABs
Building a Bloom
NOAA Bad Algae! Lesson Plan

Harmful Algal Bloom (HAB)-Associated Illness

Harmful Algal Bloom-Associated Illnesses
General Information
Illness & Symptoms +
Sources of Exposure & Risk Factors
HABs & the Environment
Prevention & Control
Publications, Data, & Statistics
Health Promotion Materials +
One Health Harmful Algal Bloom System (OHHABS)

Healthy Water Sites

CDC > Harmful Algal Bloom-Associated Illnesses

One Health Harmful Algal Bloom System (OHHABS)

OHHABS
ONE HEALTH Harmful Algal Bloom System

Harmful algal blooms (HABs) can contaminate the environment, drinking water, recreational water, and food. They are an emerging public health issue. Exposure to HAB toxins through water, food, or air may cause a range of mild to severe symptoms in both humans and animals. HAB-associated exposures can re intestines, lungs, and nervous system. Animals, such as dogs, cattle, birds, and fish, are likely to be affecte more likely to drink from or swim in waters that contain HABs. People can be affected by HAB events fro or from ingestion of contaminated water or food.

About the One Health Harmful Algal Bloom System (OHHABS)

The One Health Harmful Algal Bloom System (OHHABS) is a voluntary reporting system available to sta

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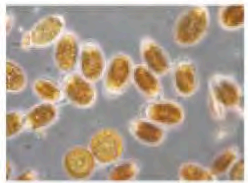

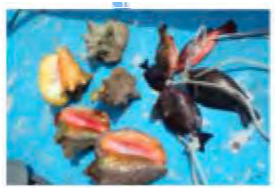

9th - 12 th April 2018

REGIONAL WORKSHOP ON MONITORING AND MANAGEMENT STRATEGIES FOR BENTHICS HABS

Training program

GLOBAL CIGUATERA STRATEGY

- Sampling cells and toxins
- Epidemiology
- Risk management

World Health Organization

FAO FIAT PANIS

HABs Mandala: the elements are part of the solution
We should start now, because climate change is already acting on oceans dynamics

Thanks for your attention!!!