



Intergovernmental Oceanographic Commission of UNESCO

# Harmful Algal Bloom Programme

## **Cooperación regional en Sudamérica a través del programa HAB, el grupo regional COI-FANSA y el COI-IEO Centro Científico y de Comunicación sobre Algas Nocivas**

**Beatriz Reguera. IEO-Vigo, España**



Intergovernmental Oceanographic Commission of UNESCO

# Harmful Algal Bloom Programme

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### The overall goal of the IOC HAB Programme:

To foster the effective management of, and scientific research on, harmful algal blooms in order to understand their causes, predict their occurrences, and mitigate their effects

[Eleventh Session of the IOC Intergovernmental Panel on Harmful Algal Blooms \(IPHAB-XI\) was held 28-30 April 2013, UNESCO Headquarters Paris, France. Direct link to Executive Summary, Decisions and Recommendations.](#)

[The Twenty-seventh Session of the IOC Assembly, Paris, 26 June - 5 July decided to include the IPHAB-XI Recommendations in the IOC Workplan for 2014-2015. See Decisions here.](#)

### Quick Links

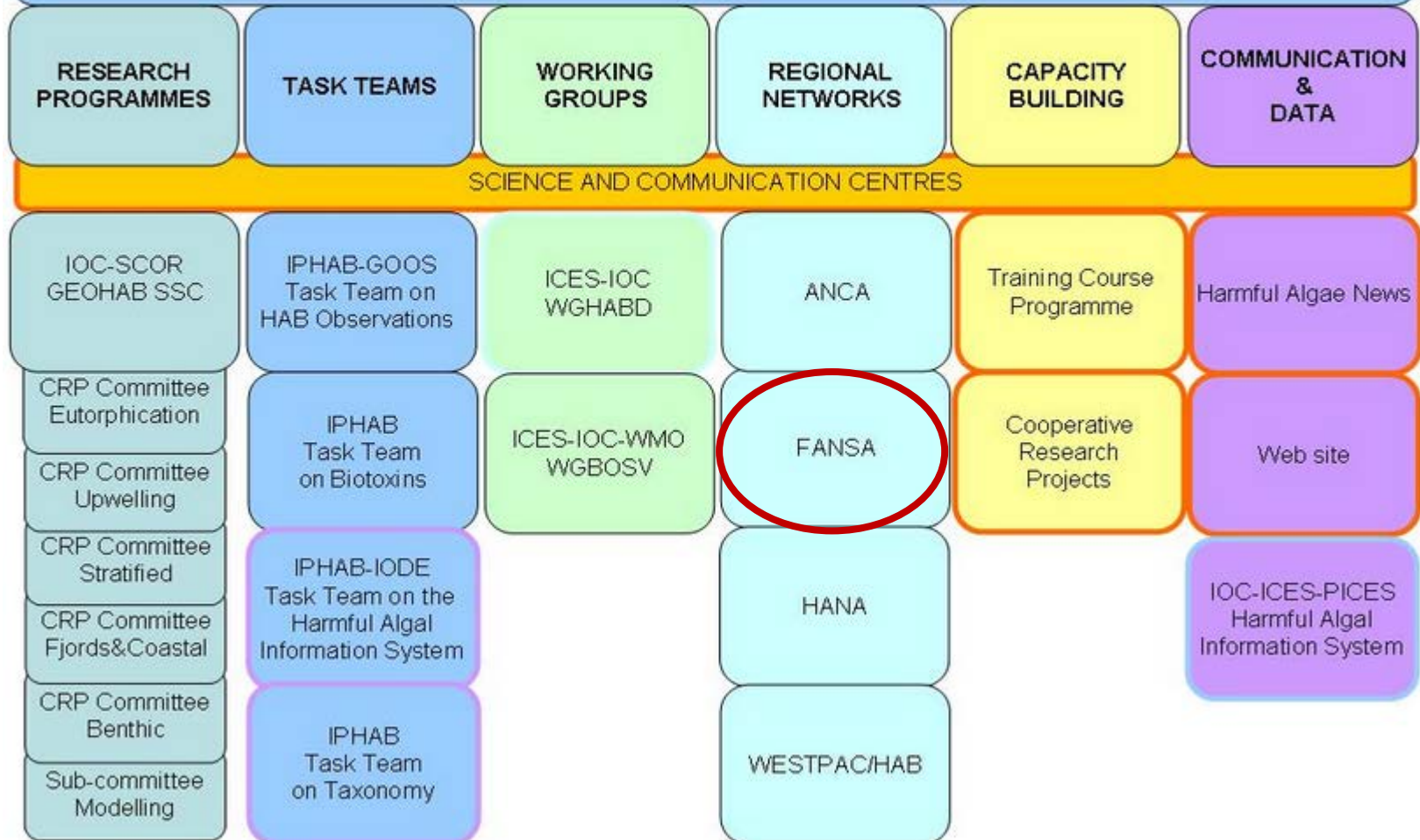
[Databases](#)

[Harmful Algae News](#)

[GEOHAB](#)

A special issue of the journal 'Oceanography' includes a paper on the history and role of the IOC HAB Program in the development of international HAB science. The paper can be downloaded [here](#). The entire volume can be downloaded [here](#).

# Intergovernmental Panel on HAB (IPHAB)





Intergovernmental Oceanographic Commission of UNESCO

# Harmful Algal Bloom Programme

## 1994

**II IPHAB, abril de 1994. Uruguay propone el establecimiento de un Grupo Regional de Planificación Científica de FAN en el Cono Sur Americano. Recomendación adoptada por el IPHAB. Aprobado por la Asamblea Gral. el mismo año .**

**Asamblea General de COI, junio 1994. España ofrece establecer un Centro Científico y de Comunicación sobre Algas Nocivas en el IEO de Vigo. El Centro comenzó a funcionar en octubre de 1996.**

## I Reunión del Grupo FANSA. Montevideo 1994



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## Second IOC regional scientific planning workshop on harmful algae blooms in South America

This workshop was held in Mar del Plata (Argentina) from 30 October to 1 November 1995, at the National Institute for Fisheries Research and Development (INIDEP). The workshop was organized by IOC, with the logistic support of UNESCO's Regional Office for Science and Technology in Latin America and the Caribbean (ROSTLAC) in Montevideo (Uruguay).

The meeting was convened to:

- (a) present and discuss national reports on Harmful Algal Blooms in South America (FANSA, *Florecimientos de Algas Nocivas en Sudamérica*);
- (b) update progress in understanding the dynamics of FANSA, including thematic and methodological aspects;
- (c) evaluate the most promising strategies to study FANSA and reduce their effects on marine ecosystems;
- (d) develop proposals for a regional training programme, and regional research objectives, integrated within the existing IOC international pro-



*Participants in front of the National Institute for Fisheries Research, Mar del Plata, Argentina.*

gramme for cooperation with third countries (INCO), and the beginning of

and the international programme between France, Germany, Chile, and



## **Curso AECI-IEO sobre Floraciones Algales Nocivas IEO, Vigo, 1996**

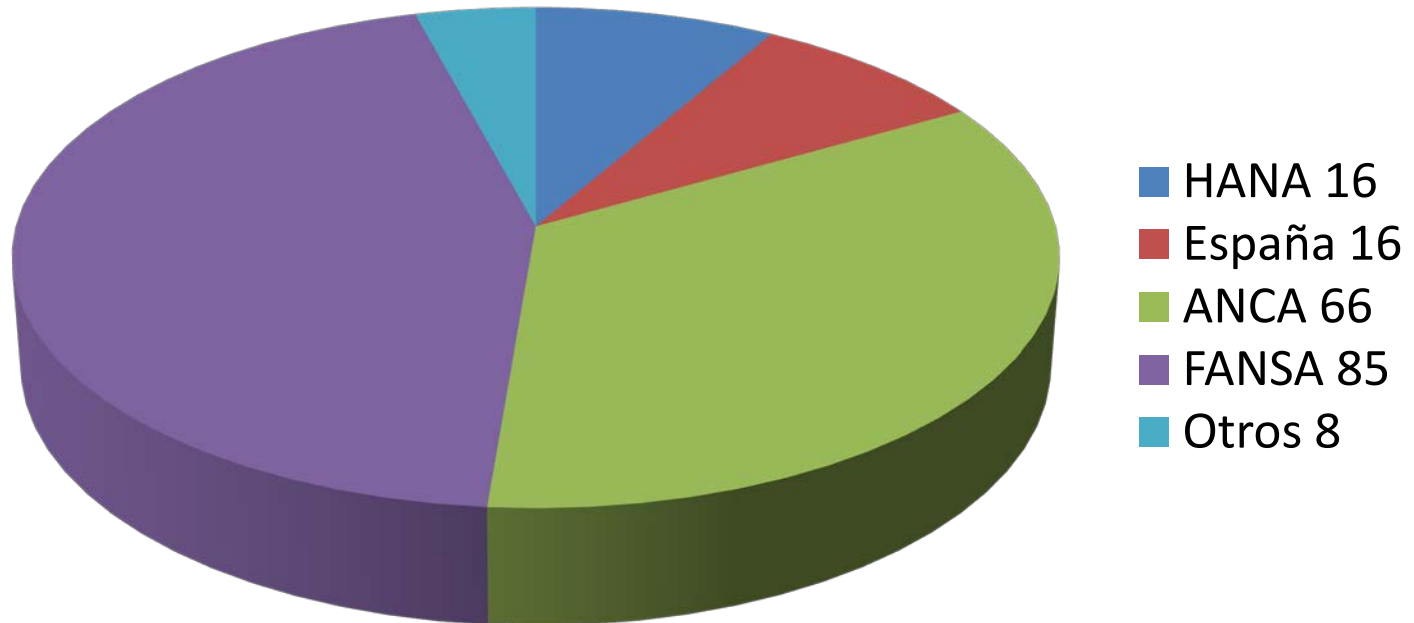
**Frente: Lourdes Morquecho  
(Mex), Norma Santinelli (Arg),  
Elcira Loyaza (Pe).**

**Detrás: Pepe Franco, Leonardo  
Rorig (Br), Máximo Frangópulos  
(Ch), Gabriela Ferrari (Ur) y  
Beatriz Reguera**



Intergovernmental Oceanographic Commission of UNESCO

# Harmful Algal Bloom Programme



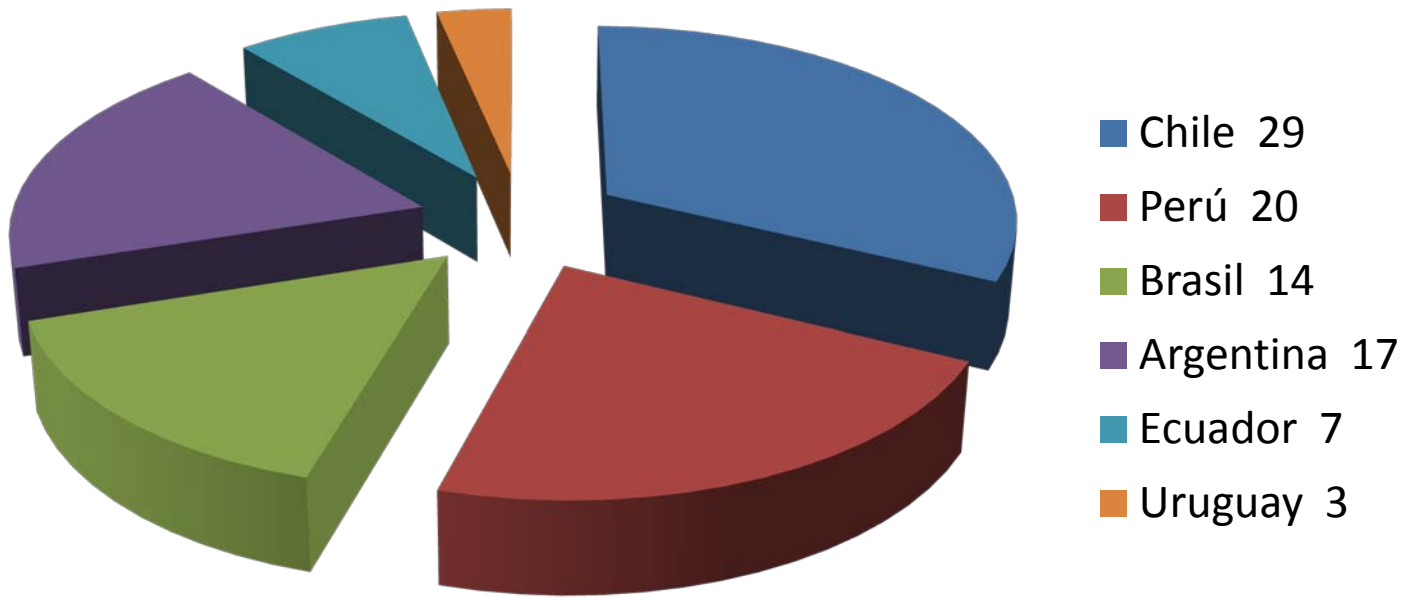
**Un total de 191 alumnos (casi el 50% de la región FANSA) han participado en los cursos COI-AECID IEO de Vigo entre 1997 y 2012.**





Intergovernmental Oceanographic Commission of UNESCO

# Harmful Algal Bloom Programme



**Distribución por países de participantes de la región FANSA en los cursos COI-AECID-IEO**

**1997**



**VIII ICHA y 1er Curso COI-AECID-IEO sobre Fitoplancton Tóxico/Biotoxinas Marinas**

**1999**



**III Curso COI-AECI-IEO sobre taxonomía de fitoplancton tóxico/ Métodos de detección de toxinas según normativa de la UE.**



Intergovernmental Oceanographic Commission of UNESCO

# Harmful Algal Bloom Programme

**2006**





Intergovernmental Oceanographic Commission of UNESCO

## Harmful Algal Bloom Programme

### Curso COI - Universidad de Jena sobre análisis químico de biotoxinas marinas, Alemania , 1994

## IOC Training Course on Algal Toxins

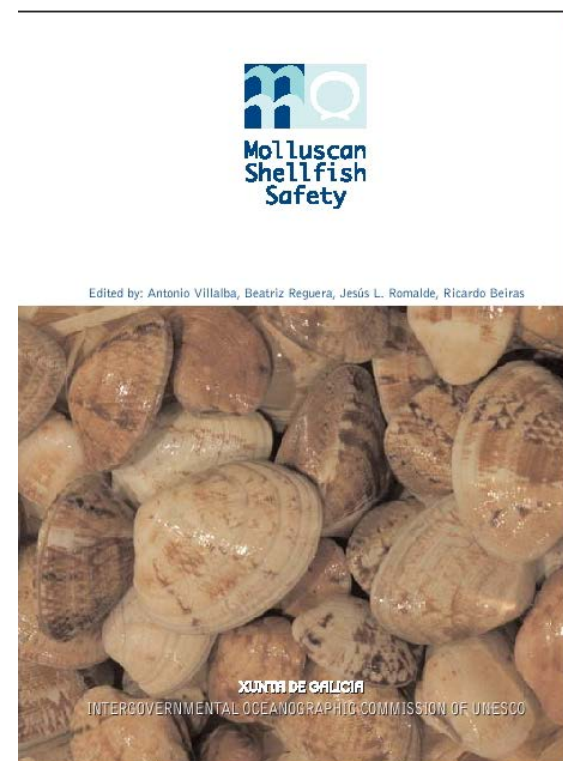
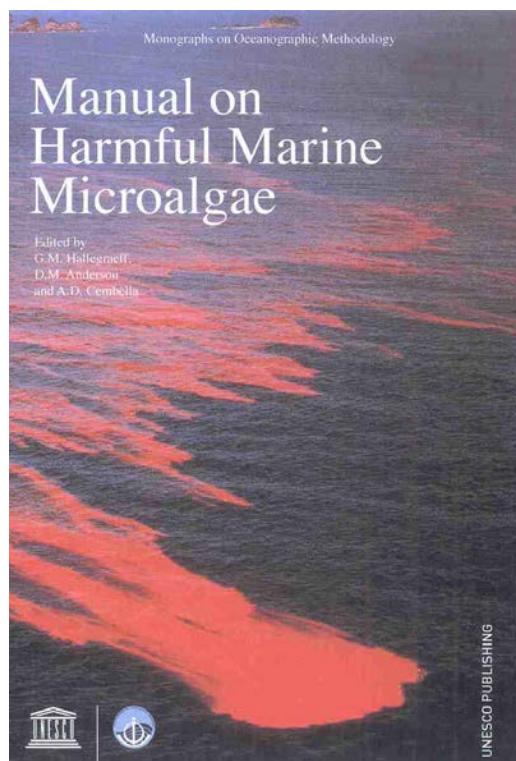
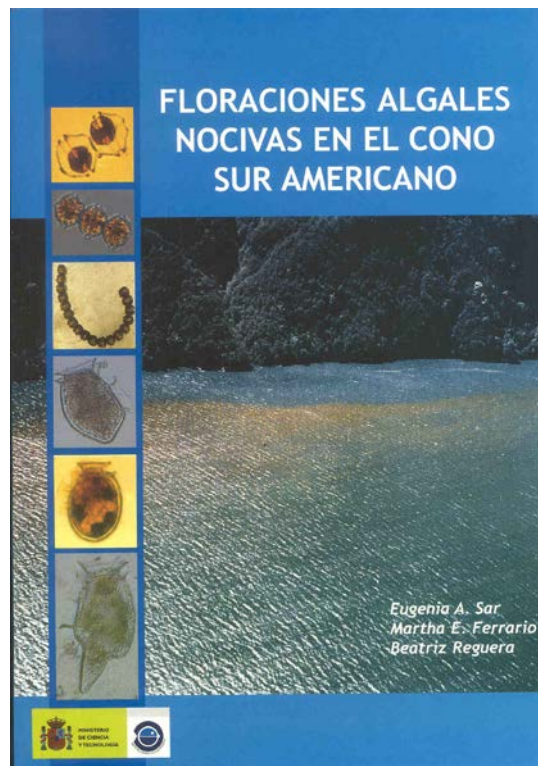
The first IOC-WHO-FAO Training Course on Qualitative and Quantitative Determination on Algal Toxins was held from 18 to 28 October 1994, at the Friedrich-Schiller University of Jena. Twelve scientists from eleven countries participated in the course, organized by Prof. Bernd Luckas, Dr. Malte Elbächter (Biologische Anstalt Helgoland) and Dr. Helle Ravn (IOC). Invited lecturers were Prof. T. Yasumoto (Tohoku University) and Dr. A. Boenke (Commission of the European Communities). Dr. M.L. Fernandez (Vigo, Spain), a visiting researcher at the Friedrich-Schiller University of Jena, introduced the work of the European Community Reference Laboratories.



*Nora Montoya (Argentina), a participant in the training course, injecting a sample in HPLC equipment for analysis of algal toxins.*

## DIVULGACIÓN y COMUNICACIÓN

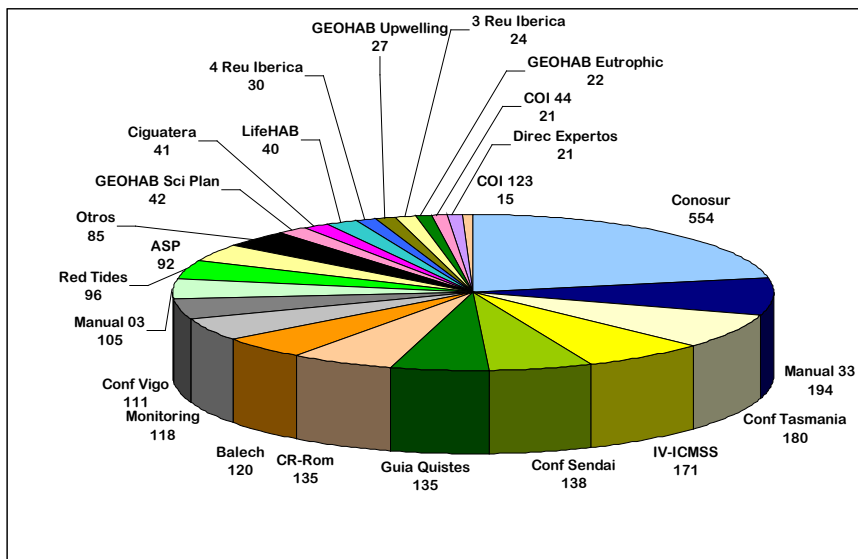
Distribución gratuita de informes, manuales y libros de actas de congresos a bibliotecas latinoamericanas y del norte de África.



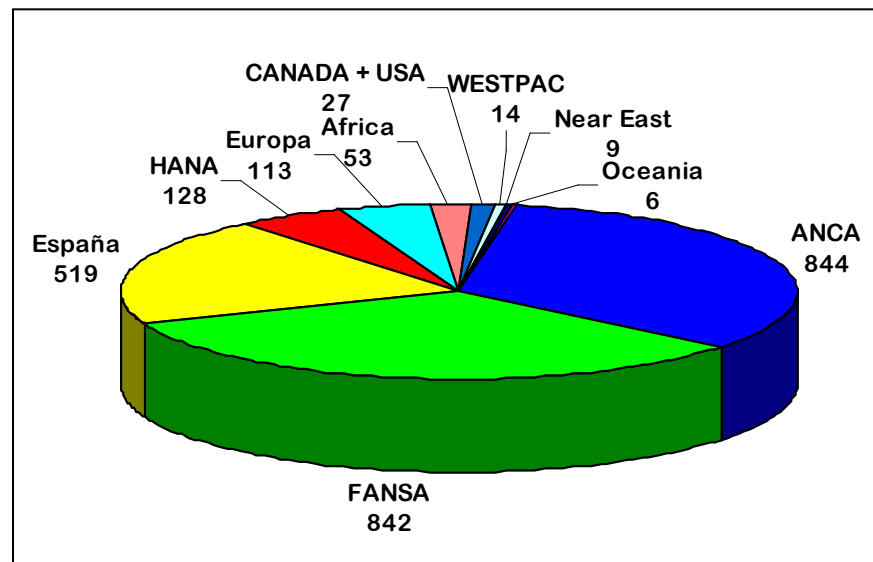
## DISTRIBUCIÓN de LIBROS:

Aprox. unos 2600 envíos gratuitos de libros a instituciones de investigación y control y a universidades.

Libros enviados



Envío de libros por región

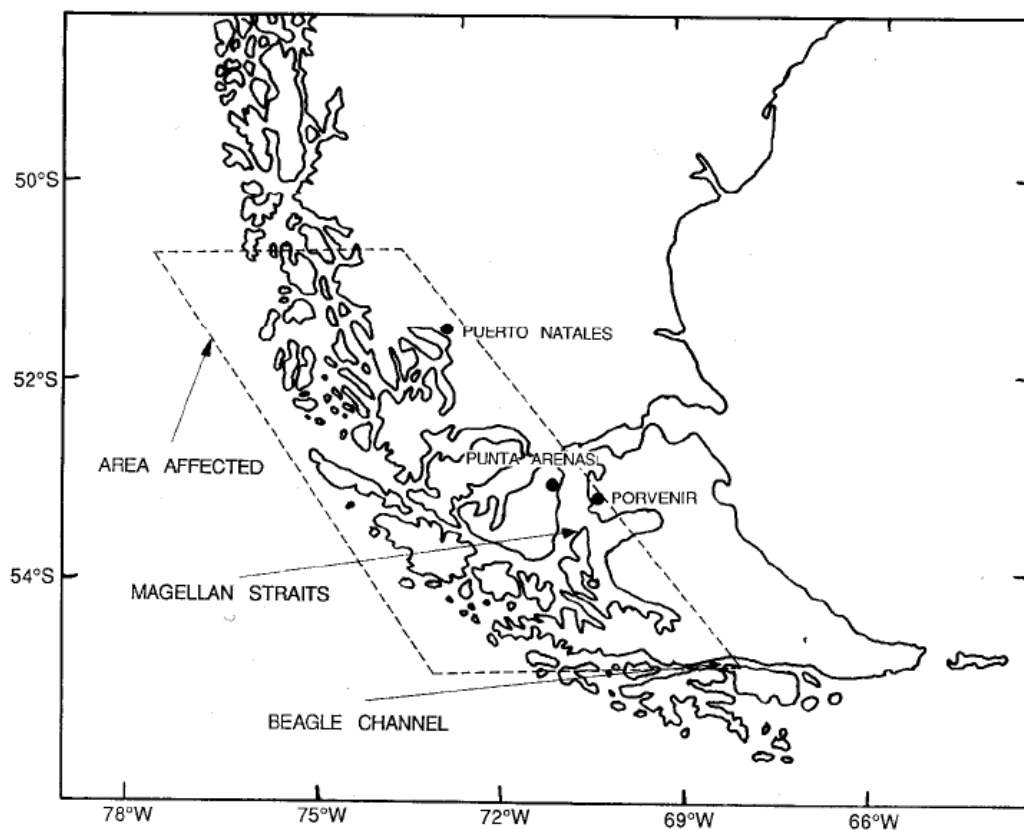


# HARMFUL ALGAE NEWS

An IOC Newsletter on toxic algae and algal blooms

No. 2

## Major PSP Outbreak in Chile, 1991-1992



probably to the unusual duration and extension to new areas, numerous cases of intoxication have occurred (about 300) and eleven people have died. The first cases were reported in November 1991. High levels of toxicity have been detected, of the order of 10,000 microgr/100 g and more (J.C. Uribe), higher than any values previously detected in Chile. Species like the carnivorous gastropod known as 'loco' (*Concholepas concholepas*) gave values of 400 to 500 microgr/100 g in the foot muscle. The muscle of the 'ostión' (*Chlamys patagonicus*) also gave high values.

The Chilean Undersecretary of Fisheries, Andrés Couve, has initiated an educational campaign amongst the local communities, and also relaxed some restrictions on other fisheries to encourage the fishermen to diversify.

We hope to be able to provide further information on this outbreak in *Harmful Algae News* no. 3.

*Georgina Lembeye, Laboratório de Microalgas, Freire 385, Casilla 221, Castro, Chile.*



# HARMFUL ALGAE NEWS

2



An IOC Newsletter on toxic algae and algal blooms

No. 5

## World record of PSP in Southern Argentina

An unusual PSP toxicity outbreak was recorded in southern Chile and southern Argentina during spring and summer of 1991 and 1992 (G. Lembeye, *HAN* N° 2). Its intensity, duration and extension resulted in a high number of human intoxications (some people died), and in a high mortality of fish, penguins and other marine bird species in the region. All evidence showed that the *Alexandrium catenella* bloom began during November 1991 in the western end of the Magellan Strait, and then spread southwards and eastwards. In the southern Argentine region, the highest toxicity values (127,200 µg STX eq/100 g *Mytilus edulis*) were detected in February, near Ushuaia city (Benavides *et al.*, *CTMFM*, p. 19, 1992). To my knowledge, this is the highest toxicity value recorded for a PSP outbreak, and it is also higher than the saturation value

*pouchetii*, which produces surface blooms in the marginal ice-edge zone around Antarctica during spring/summer. As mentioned elsewhere for several dinoflagellates, including *Alexandrium catenella*, *P. pouchetii* produces mycosporine-like amino acids that diminish the damage produced by UVR (Marchand *et al.*, *Mar. Biol.*, 109, 391-395, 1991). On the other hand, small UVR doses produce a significant decrease in the survival of most of the zooplankton species examined and could reduce the fecundity of marine copepods (Karanas *et al.*, *Mar. Biol.*, 65, 125-133, 1981).

Li'l Abner might call the UVR increase a 'Whammy' (T. Wyatt, *HAN* N° 1). However, this is not sufficient to explain this massive outbreak detected in the southern region. The UVR doses

received by a planktonic population depend on the incident UVR with depth in the water column and on the 'residence time' of a population within the UVR photic zone. Therefore, overall effects, integrated through the water column and over large geographic areas, are difficult to estimate.

We are ignorant of the ultimate cause which triggered this unusual bloom, although it seems that we are dealing with an event resulting from the hazardous combination of several environmental factors. Is the increase of UVR one of them?

*Jose I. Carreto and Hugo R. Benavides, Instituto Nacional de Investigación y Desarrollo Pesquero, P.O. Box 175, Mar del Plata, Argentina.*

# Brasil 2007

• Brazil

## Diarrhoetic shellfish poisoning (DSP) outbreak in Subtropical Southwest Atlantic

*Dinophysis cf. acuminata* is currently found in samples from the southern coast of Brazil and has been identified as a possible threat to the flourishing mussel culture in this part of the country [1]. The production of okadaic acid, a cause of DSP, by *D. cf. acuminata* in the region was earlier characterized, and cultured mussel

These results were communicated to the recently formed National Committee for Mussel Sanitation Control - CNCMB. The committee closed the North and South Bays of Florianópolis for mussel collecting and commercialization. The closure was then followed by a more extensive sampling programme to cover a larger mussel culture

On January 30<sup>th</sup>, a few days after the first positive in the South Bay of Florianópolis, 130 people were attended at the health clinic in Bombinhas city, about 70 km to the north with gastrointestinal distress. Due to media exposition, these cases were quickly related to DSP by local health authorities and later confirmed by mouse bioassay. A second ban was set throughout Tijucas Bay. In this area, counting of *D. cf. acuminata* reached the highest value,  $5.2 \times 10^4$  cell L<sup>-1</sup>, recorded for Brazilian waters.

The bloom at Tijucas Bay persisted for a longer time, but in contrast to Florianópolis, oysters were also positive by mouse bioassays. The area was free from DSP only after 23 days, when the ban was suspended and mussels again collected and commercialized.

During this episode, the health authorities recorded more than 150 cases of DSP. But the number of cases not notified was also high, indicating that this was a large scale event. This human intoxication scenario might have been even worse if prompt action had not



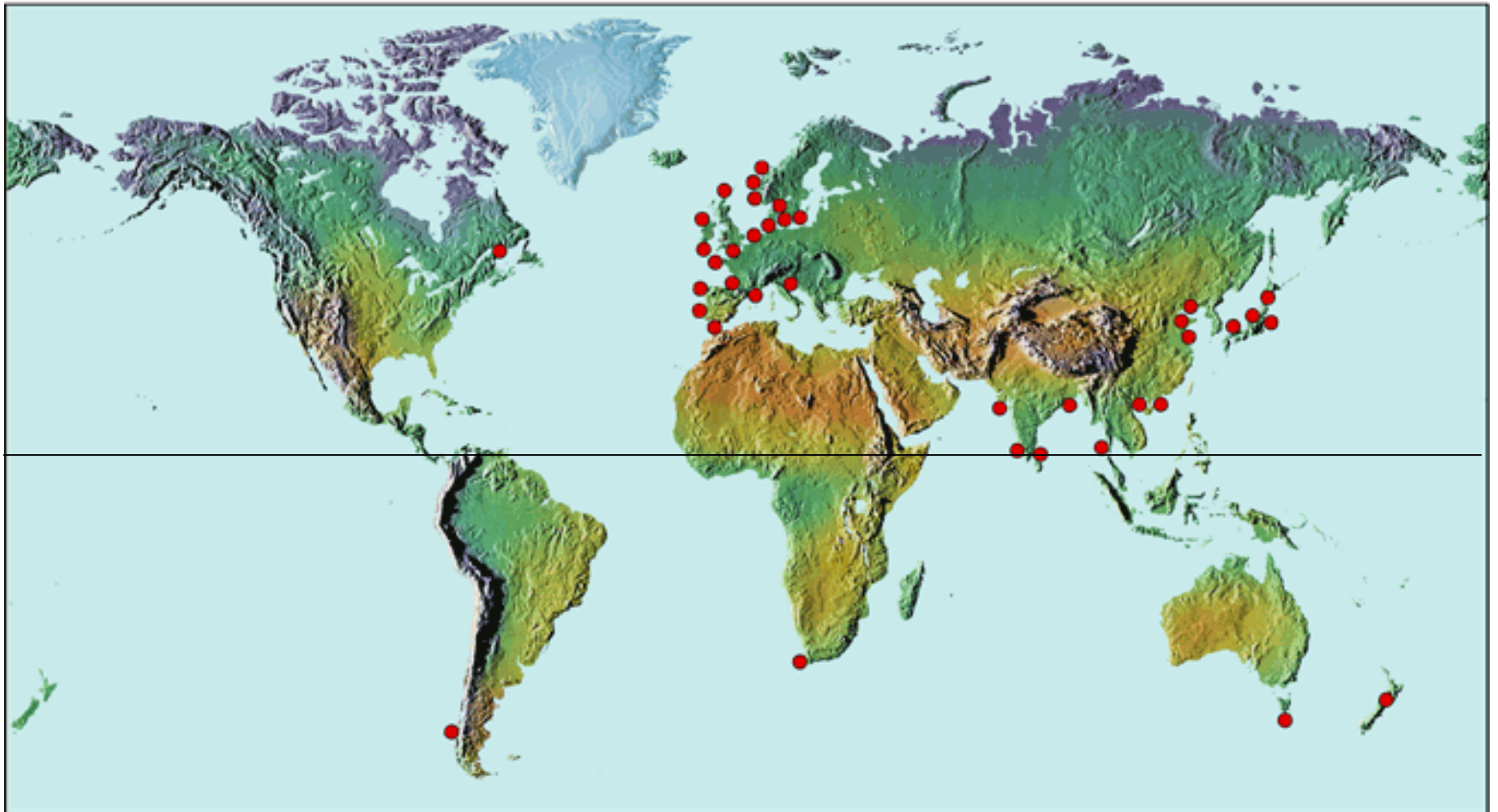
Fig. 2. Santa Catarina Coast, Brazil, showing the sites affected by the DSP outbreak.



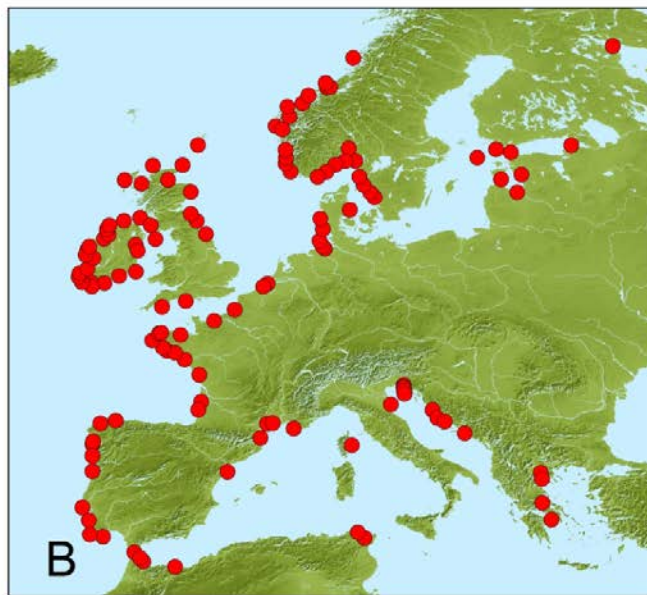
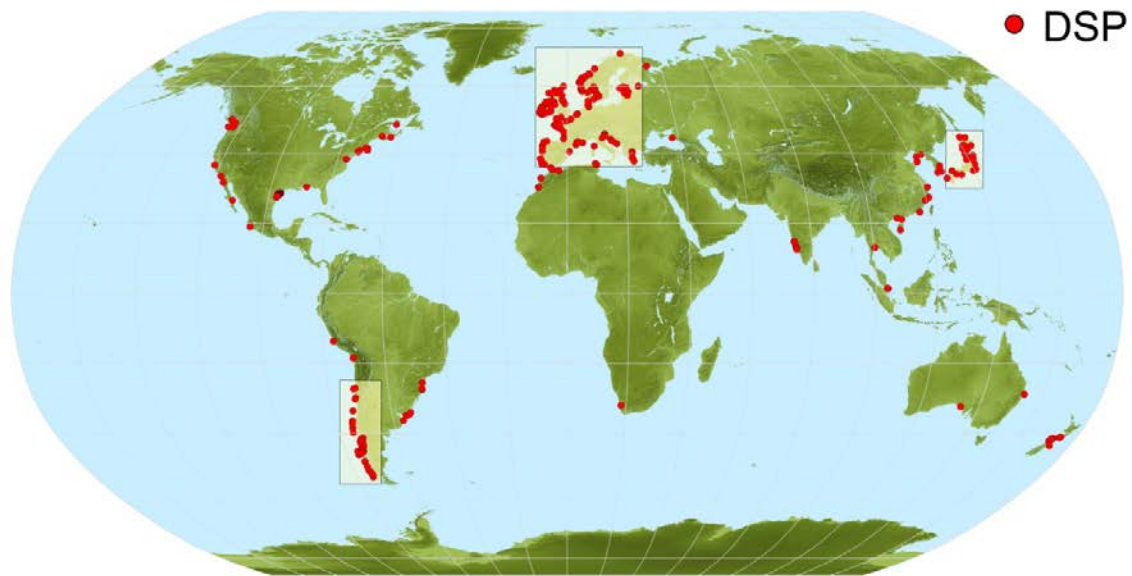
Fig. 1. *Dinophysis cf. acuminata*

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bioassays persisted for 10 days. The ban



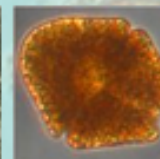
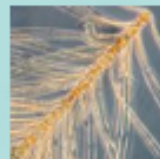
Distribución de eventos DSP en el mundo (mapa WHOI hasta principios de los 2000).





International Society for the  
Study of Harmful Algae

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Quick link to [ICHA16 in Wellington, New Zealand](#).

**New members who paid cash at ICHA15 must fill in contact details by filling out the [Membership application](#) on-line form. WHEN YOU RECEIVE A MESSAGE ASKING YOU TO PAY, RESEND IT TO THE ISSHA SECRETARY ([KARIN.RENGEFORS@BIOL.LU.SE](mailto:KARIN.RENGEFORS@BIOL.LU.SE)) AND YOUR ISSHA ACCOUNT WILL BE ACTIVATED. Please, note there is a time lag (about 1 day) between your payment of dues and the appearance of your name in the membership list.**

The ISSHA website is constructed with the idea of providing an interactive platform to promote research, dissemination and communication on Harmful Algae issues.

The website facilitates quick on-line membership applications and membership payments through PayPal. Membership renewal reminders will be handled automatically by the system and you will receive a message telling you when and how to renew.

It also has an [events calendar](#) for upcoming conferences, [job ads](#), and [links](#) to Harmful Algal Bloom (HAB) websites that will be of interest to the international community of HAB researchers, managers and to the news media. Members may access a [Membership List](#), a [Members' Discussion Forum](#), and a [Members' Upload Page](#) to upload articles, thesis abstracts, reports, documents, obituaries, and/or information on how to get them. After logging in, these are available via the SOCIETY navigation button.



## News

### Workshop on Genomics

2013-08-13

We are pleased to announce the 2014 [Workshop on Genomics](#) which will be held for the fourth year in a row in Český Krumlov, Czech Republic. The Workshop consists of a series of lectures, demonstrations and computer laboratories that cover various aspects of genomics focusing primarily on the analysis of next-generation sequencing data. Faculty are chosen exclusively for their effectiveness in teaching theory and practice. The workshop is open for advanced PhD students, postdocs, and senior scientists and professors. Apply by October 15th.

[Read more](#)

### Instructions for Proceedings

2012-11-22

New deadline for