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Harmful Algae Blooms Actual Situation and Perspectives

Veracruz, México

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**Secretaría
de Salud**



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Secretario de Salud

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Veracruz

Veracruz late con fuerza

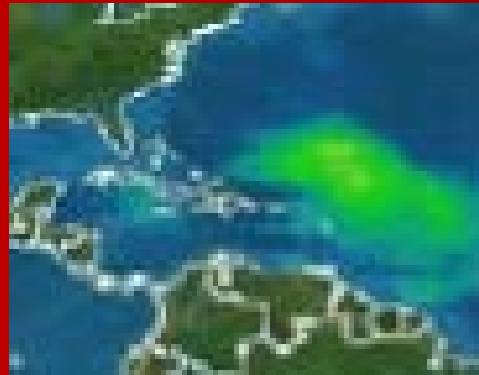


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Antecedents

HAB'S



In the Gulf of Mexico during 1853, 1861, 1868 and 1871 the first effects of HAB'S appeared.

In 1957 it was registered in the state of Veracruz, an event characterized by great loss of life of fish and human deaths.



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At the end of 2001 and the beginning of 2002, the worse episode of HAB'S in Veracruz state appeared.

The accounts of microorganisms arised until 23 520.000 cel/liter.

The same phenomenon appeared in the Pacific and Gulf states.

Its characteristics were matchless in extension and duration.



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HAB'S episode in Yucatán-2003

Accounts of microorganisms were up to 22 million of cel/liter.

Main species:

Pseudo-nitzchia, *Nitzchia longissima*,
Prorocentrum minimum, *Cylindrotheca closterium*, *Scropsiella trochoidea* and
Karenia Brevis.

It also appeared slightly in the State of Campeche.





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HAB'S episode in Tabasco-2007

Accounts of microorganisms were up to 213 thousands of cell/liter.

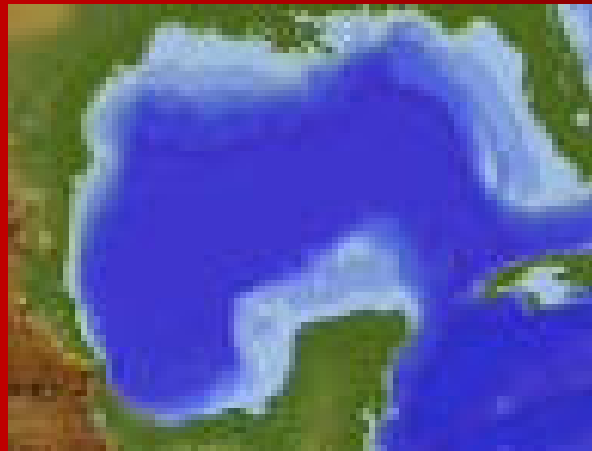
Main species:

Protocentrum sp, *Protocentrum gracile*
Pyrodinium bahamense

It affected municipalities Centla and Cardenas



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In summary

HAB'S is a phenomenon that affects ecology, economy and the health of the coastal population.

It is a phenomenon that affects the whole Gulf of Mexico in both countries.

In the last years, the HAB'S phenomenon has caused serious damage in Mexico.

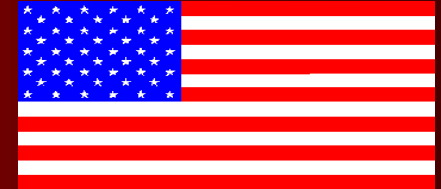


Binational Plan for the Attention of HAB'S

In 2002 it began within the
Agreement of the States of the
Gulf of Mexico



It was an initiative of the
Servicies of Health of Veracruz.



With National and State
Institutions of both countries
participation



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Objetive

To count information on the phenomenon behavior, in order to be able to detect it with opportunity and minimized its effects.



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Strategies

- Exchanged information through agreement at binational level.
- Standardization of methods to identify dinoflagellates and marine biotoxins.
- Binational Monitoring Network.
- Coordinated Risk Communication campaigns.



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To standardize the methods
of sampling and protocols.



Qualification in Florida Marine
Research Institute to 2 Chemistries
responsible for LESP-Ver.2003

HAB'S Laboratory workshop with 5
States from the Gulf of Mexico in
the Mexican Republic. 2003



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At the moment

The Health Services of each State are responsible of water and shellfish monitoring and HBA's .



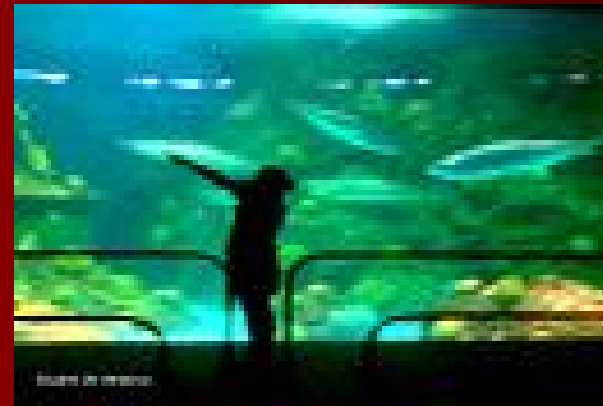
LESP-Ver, analyzes the 100% of positive samples to HBA'S and 10% of negative samples.

Buoys and remote sensors Project



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Through EPA- Gulf of Mexico will settle 3 remote Buoys and sensors in the State of Veracruz.



Acuario de Veracruz

To determine advantages of this system and later to implement it in all the Gulf of Mexico in the Mexican Republic.



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Parameters to obtain by the Buoys:



The interesting parameters for HAB'S that would be obtained: Temperature, pH, Chlorophylla, Silice and Salinity in fixed points throughout the Gulf of Mexico in real time

Present Data 2007

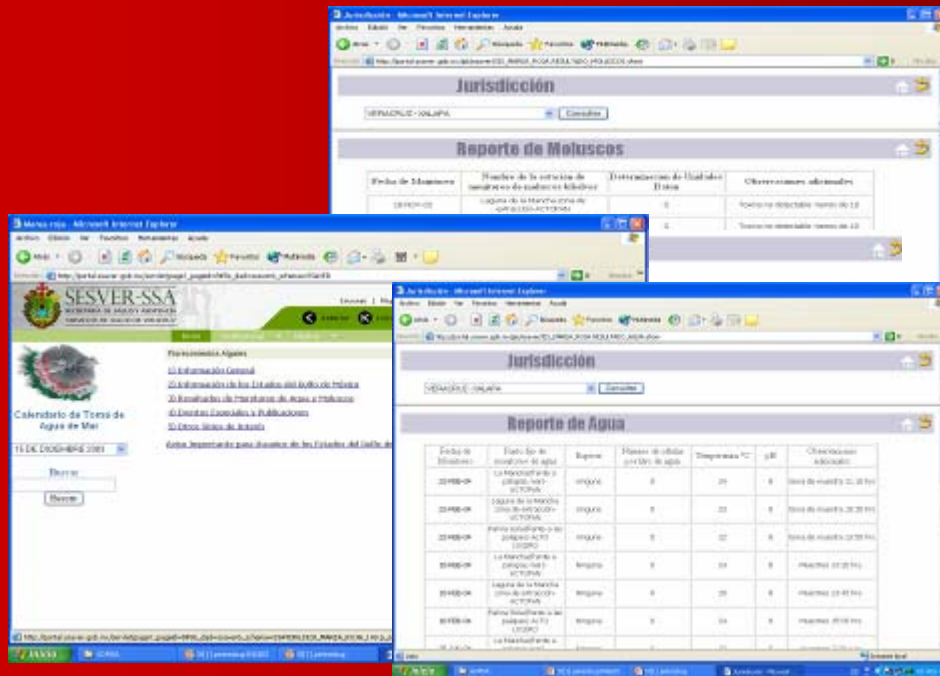


Present information

- **64** points to water monitoring and **15** for shellfish.
- **484** water determinations

WITHOUT PRESENCE OF THE PHENOMENON

Parameters like:
Temperature
pH
Species
Chlorophyll-a
Silice
Salinity





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At State level for the decision making we counted on :

- ✓ Monitoring and information of HBA'S system.
- ✓ HAB'S reference Laboratory.
- ✓ Work instruction of COFEPRIS.



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Perspectives

We required to establish an international alert system of HAB'S.

Analisis by experts about:

Parameters and data behavior of:

chlorophyll-a

Temperature

Winds

Movements of HAB'S

Salinity

To establish predictive models that allow an alerting point.

Communication of alert system between States and countries.



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Conclusions

Exists a lot of HAB'S works in both countries.

We required to establish an International alert system for HAB'S.

The information must flow between Mexico and EU.



We must share data, analyze them and propose bilateral solutions.



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Finally

- At the moment it is a necessity to share information, technologies and qualification because it makes us more efficient in the solution of common problems...



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Finally

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www.ssaver.gob.mx

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