Some theoretical models from terrestrial ecology also provide important bases for the interpretation of host/pathogen dynamic in the context of HABs events. However, due to the specificity of marine/aquatic environments (fluid dynamic, sampling difficulties, etc ...), it seems important to see how such concepts and tools can be applied on HABs. This research area could thus be federating for marine and terrestrial ecologists and could constitute a strong axe for further international project like GEOHAB.

**DATA PUBLICATION: APPLICATIONS TO RESEARCH ON HARMFUL ALGAL BLOOMS**

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Harmful algal blooms (HABs) are a global phenomenon with significant economic, social, and environmental impacts. The Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB) program was designed to help scientists from around the world to cooperate in studies of HABs in comparable ecosystems. An important aspect of global cooperation is sharing of data.

GEOHAB provides a mechanism to coordinate among national research programs. We describe data resulting from regional studies of the toxic dinoflagellate *Alexandrium fundyense* in the Gulf of Maine and on Georges Bank, and how these data have been assigned a digital object identifier (DOI) to make them more accessible for re-use and to give the data originators credit for the data.

The Scientific Committee on Oceanic Research (SCOR), Marine Biological Laboratory/Woods Hole Oceanographic Institution (MBLWHOI) Library, and International Oceanographic Data and Information Exchange (IODE) of the Intergovernmental Oceanographic Commission have assembled a team of librarians, data managers, and scientists who are collaborating to identify best practices for tracking data provenance and clearly attributing credit to data collectors/providers.

A key element in the data publication process is the assignment of persistent identifiers (e.g., a DOI) to enable access to data sets and accurate data citation. The DOI is ideally assigned before submission of the article in which the data are used, so the DOI can be included in the published paper and readers can link directly to the dataset. However, DOIs can also be assigned to datasets that support papers that have already been published, as described in this poster.

**EMERGING BENTHIC HABs IN THE MEDITERRANEAN: EXPLORING THE CONNECTION BETWEEN Ostreopsis BLOOMS AND HUMAN RESPIRATORY DISORDERS**

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Ostreopsis blooms have intensively been studied in Sant Andreu de Llavaneres beach (NW Mediterranean Sea) since 2007. These dinoflagellates were present from late spring to autumn, with the highest abundances usually during the summer months. Molecular identification revealed that the bloom was clearly dominated by the Atlantic/Mediterranean *O. cf. ovata* genotype, although *O. cf. siamensis* was occasionally present. Epiphytic *O. cf. ovata* concentrations above $10^7$ cells/g FW were continuously recorded during the hot season, forming brown mucilage that coated the benthic macrophyte community. In the water column, numbers above $10^5$ cells/L were sporadically recorded.

Repeatedly, in the summer period, people spending long time (several hours) nearby the beach were affected by respiratory symptoms. In 2009 and 2010, the EBITOX project tested the eventual link between health problems and *Ostreopsis* outbreaks. High-volume air pump samplers were installed in the beach to characterize the marine aerosol. SEM observations revealed the presence of some marine microalgae (mainly diatoms), although *Ostreopsis* was not clearly visualized in the aerosol. However, a new validated qPCR assay revealed up to 102 cells of *O. cf. ovata* per filter during an outbreak in 2010. Palytoxin-like compounds (PLTX) concentrations in the aerosol filters were below the detection limit. In contrast, PLTX ranged between 0.1 and 1.2 pg/cell in the microepiphytic assemblages. The potential implication of bacterial assemblages on the observed toxic outbreaks is also under study. High bacterial abundances and activity coincided with *Ostreopsis* blooms. Several bacterial strains (e.g. *Vibrio*) detected by DGGE might contribute to the toxicity of the bloom.

**VARIATION IN CYLINDROSPERMOPSIS RACIBORSKII ECOTYPES IN RESPONSE TO NITROGEN AND PHOSPHORUS**

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*Cylindrospermopsis* sp. is a global cyanobacterium that negatively impacts drinking water quality by the production and release of toxin during blooms. *C. raciborskii* is a common species in Australian tropical and subtropical reservoirs. It produces the cytotoxin cylindrospermopsin (CYN), which is harmful to both humans and animals. Reservoirs in the region have an increased frequency of harmful algal blooms, such as *C. raciborskii*, caused by anthropogenic nutrients loads.

Management and prediction of blooms in water supply reservoirs is based upon the cell enumeration of *C. raciborskii*, however this is complicated by the co-existence of multiple morphologically similar ecotypes that can differ in their toxin content. Understanding the interplay between dominance of different ecotypes and available nitrogen and phosphorus is an important question that needs to be addressed to improve management strategies.

This study examined the growth response of four Australian ecotypes of *C. raciborskii*, two toxic and two non-toxic, to high and low concentrations and ratios of nitrogen (N) and phosphorus (P). Cell growth rate increased with increasing N addition while P alone affected the duration of growth, rather than the growth rate. Each ecotype had differences in response to available N and P. Importantly, this study showed that although there were growth differences with available N and P, toxin cell quota remained constant.

This study illustrates the importance of understanding the variations between multiple ecotypes of a single species and suggest that population dynamics within an ecosystems can greatly affect bloom toxicity.