



# “Scientific Opportunities for a Global Algal Revolution”

## Program and Book of Abstracts

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ecosystems - the natural habitats for the algae we work on - are existentially threatened, as are the societal structures required for us to continue our scientific research. Faced with these realities we can feel powerless, but scientists are in a prime position to drive positive change amidst these deepening crises. This poster highlights the factors that give scientists particular importance, influence and investment and also identifies six broad types of action we can take. It aims to stimulate discussions about the role of science and academia in a rapidly changing world and how we can use our skills most effectively to facilitate and accelerate essential global, systemic and societal transitions.

## **Twenty-Year Study of Algal Taxonomic Diversity in the Intertidal Zone of Hœdic Island: A Pedagogical Program for Life Sciences Students**

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For the past 20 years, a pedagogical program has been conducted to study the taxonomic diversity of algae in the intertidal zone of Hœdic Island, Morbihan, France. The program, part of the Life Sciences Bachelor's degree at the University of Toulouse 3, is designed to provide students with practical experience of biodiversity and algae ecology in a natural environment. Students are introduced to the collection, classification, and identification of algae, as well as the evaluation of their ecological role in the marine ecosystem. As a result, each year, students identify nearly 80 species of algae collected in calm or rough environments. The data collected over the years have allowed for the tracking of annual variations in algae diversity. The program also aims to raise student awareness about the importance of marine biodiversity conservation and sustainable natural resource management. The results of this pedagogical program contribute to the understanding of marine biodiversity and algae ecology on Hœdic Island (a Natura 2000 site).

## **When society meets science - results of the survey on cyanobacterial blooms**

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Citizen science could be a helpful tool that combines ecological research with environmental education. In community-based monitoring, data collection methods need to be improved to obtain more

representative results. The questionnaire proposed by the project "AlgaeService for LIFE" will facilitate understanding the knowledge gaps in society about cyanobacterial blooms, the threats posed by cyanotoxins, people's attitudes toward the problem, and the best sources for information dissemination in different communities. Most of the 1028 responses came from citizens in Poland and Lithuania, but the questionnaire also reached people in 14 other countries in Europe and Asia. Cyanobacterial blooms and toxic compounds of cyanobacteria were known to more than half of the respondents. They recognised negative effects on livestock, pets, domestic birds, poultry and fish. People get their knowledge mainly from TV, the radio, newspapers or professional seminars, but the other dissemination channels (social networks, news portals, etc.) also contribute to the rising awareness of certain groups of society. Understanding what information society needs and what channels can be used to reach them will help increase society's engagement and ensure data quality for another tool created as part of the project - the ArcGIS application interactive map.

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## SYMPOSIUM 20 "Coastal and freshwater systems under human pressure: status assessment, management and conservation"

### The Moroccan Mediterranean Sea modelled by Ecopath model

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An Ecopath mass balance model was applied in the Moroccan Mediterranean Sea ecosystem to describe the structure, functioning and state of the system. In this work to explore the trophic interaction we consider 31 functional groups, containing 21 fish, 7 invertebrates, 2 primary producers and one dead group (detritus). The average trophic transfer efficiency for the entire system was 23%. Major standard indicators (PPT/TR=1.39, PPT/TB=14.83, TB/TST=0.02) suggest that the Moroccan Mediterranean Sea is a developing ecosystem. The structure of our system is based on high flows of respiration and consumption. The low values of FCI (6.91), SOI (0.19) and FML (2.80) indicate that our system is disturbed and have a more linear than web-like trophic structure. The Keystone Index and Mixed Trophic Impact analysis indicated that other invertebrate demersals, zooplankton and cephalopods showed a huge impact on other groups and they are recognized as a keystone species.

### Development of disinfection protocols for fishing gear to minimize the impact of invasive seaweed *Rugulopteryx okamurae* (Dictyotales, Ochrophyta)

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