INTERNATIONAL RED TIDE INFORMATION AND ASSISTANCE SERVICE (IRTIAS)

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ABSTRACT

Toxic algal blooms and red tides represent a global problem for fisheries, mariculture and public health. Developing countries in particular can be severely affected by red tide outbreaks because they lack the expertise, information and infrastructure to respond quickly and effectively to the resulting fisheries and public health issues. When confronted with sudden red tide emergencies, developing countries are in need of rapid, international assistance from experienced scientists and fisheries and public health managers. With this in mind, the Woods Hole Oceanographic Institution Sea Grant Program is developing an International Red Tide Information and Assistance Service (IRTIAS). The primary goals are to establish an international database on red tide activities and to disseminate red tide information worldwide, especially to developing countries. The first project is the preparation of an international directory of scientific and managerial expertise on red tides. The directory can be used for rapid access to information and international assistance when red tide catastrophes occur. A questionnaire will be distributed in 1989 to acquire material for the information base and the directory.

INTRODUCTION

It is clear that toxic algal blooms and red tides now constitute a problem of global dimensions for fisheries, mariculture and public health [1]. Over the past twenty years or so toxic algal blooms and red tides have increased around the world in their frequency, magnitude, and geographic extent, as well as in their resulting effects [2]. Fish kills, shellfish contamination and poisonings of humans and other animals associated with well-recognized, toxic algal phenomena, such as PSP, DSP, and ciguatera, now occur nearly worldwide. In addition, new (or at least previously unknown) kinds of toxic algal outbreaks have recently appeared, such as brown tide (Aureococcus anophagefferens) in the northeastern United States, domoic acid poisoning (probably caused by a species of Nitzschia) in eastern Canada in 1987, the Chrysochromulina polylepis bloom in Scandinavia in 1988, and others.

RED TIDE PREPAREDNESS

Developed countries that have a long history of experience with toxic red tides (e.g., United States, Canada, Norway and Japan) conduct surveillance, monitoring, and management programs for red tides and red tide toxins to protect public health and minimize the impact on commercial fisheries. Some of these countries are expanding their efforts to include sophisticated, computerized remote sensing of the environment for red tides. However, even with sound management practices in place, developed countries can still have difficulties handling sudden, new events in terms of protecting fisheries and public health, as for example in eastern Canada in 1987 when 3 people were killed and about 100 were poisoned from eating mussels containing domoic acid.

Developing countries are especially vulnerable to the effects of toxic bloom and red tide outbreaks because of lack of information on how to cope with red tides, insufficient scientific and managerial expertise in this field, and the absence of an effective and responsive fisheries and public health infrastructure. A case in point is the first reported instance of PSP in Guatemala, which occurred in 1987 during a Pyrodinium bahamense var. compressa red tide, and which caused 26 human deaths and more than 175 serious illnesses [3]. Similarly, the first reported instance of PSP in the Philippines in 1983, also caused by a Pyrodinium red tide, caused 21 deaths and nearly 300 serious illnesses, and resulted in the banning of all shellfish in

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the central region for 8 months [4]. In these cases, rapid international assistance may well have saved lives and could have minimized the impact on fisheries by defining the seafood safety risks and indicating which fisheries would be affected and which would not.

INTERNATIONAL COOPERATION

The need for international cooperation and assistance with toxic algal bloom and red tide problems has been recognized and discussed at a number of international red tide conferences since 1974 [5-10]. Yet, in general, over this period no group or agency has been willing to "push" this concept through to implementation. International agencies, such as FAO and WHO, have been presented with the problem but have not taken up the challenge. There are two notable exceptions. One is an effort of the International Council for the Exploration of the Sea (ICES) to form a group of National Coordinating Centers for Exchange of Information on Exceptional Plankton Blooms. A summary report of the major toxic algal events in the 18 countries (most in Europe) that are members of ICES has been prepared annually since 1985. The second is an effort initiated by the Intergovernmental Oceanographic Commission (IOC) through its Western Pacific Group (WESTPAC) to hold red tide training sessions in Southeast Asia. The first training session was held in Australia in 1984, the second in Thailand in 1985, and the third in Brunei in 1989 under the cooperative sponsorship of a number of organizations with interests in Southeast Asia. Further, IOC sponsored a research-oriented Workshop on International Cooperation in the Study of Ocean Blooms and Red Tides in 1987 [9].

INTERNATIONAL RED TIDE INFORMATION AND ASSISTANCE SERVICE

In response to the need for addressing the global, red tide problem on an international level, the Woods Hole Oceanographic Institution Sea Grant Program has initiated an International Red Tide Information and Assistance Service (IRTIAS). The primary goals of this service, which is part of the International Marine Science Cooperation Program, are to develop and maintain an international information base on red tide activities and sources of expertise and to prepare this and related information on red tides for dissemination to institutions and agencies worldwide, especially to countries with little or no experience in dealing with red tide situations. The service is intended to improve and accelerate international information exchange and cooperation in this field and to help expedite rapid international assistance during toxic bloom and red tide emergencies. In connection with the ICES effort mentioned above and in cooperation with Dr. D.M. Anderson at the Woods Hole Oceanographic Institution, the service has been designated as the U.S. national coordinating center for red tide information.

International Red Tide Directory

The first project of IRTIAS is the preparation of an international directory of scientific and managerial expertise on toxic algal blooms and red tides. The compilation of such a red tide directory was recommended at the IOC workshop in 1987 [9] and at an international, red tide/aquaculture workshop in Ireland in 1987 [10]. The directory will list scientists, fisheries managers and public health officials with experience in dealing with red tide outbreaks. The directory will be especially useful to developing countries in providing sources of expertise for rapid assistance during red tide emergencies, and will thereby help to minimize the effects on fisheries and public health. Material for the red tide information base and red tide directory will be obtained in 1989 by questionnaire. Publication of the directory is expected in 1990.

The International Red Tide Information and Assistance Service is aimed at taking the first steps toward providing information exchange and outreach on toxic algal blooms and red tides on a much-needed international level. Subsequent projects of the service will include preparation and distribution of information sheets on various red tide topics, such as identification of causative organisms, fisheries risks, preventative measures for aquaculturists, and assessment of public health risks.

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