THE CARIPOL PETROLEUM POLLUTION MONITORING PROJECT AND THE CARIPOL PETROLEUM POLLUTION DATABASE

DONALD K. ATWOOD, HELEN H. CUMMINGS, WILLIAM J. NODAL
AND ROXANNE CABALLERO CULBERTSON

National Oceanic and Atmospheric Administration
Atlantic Oceanographic and Meteorological Laboratory
4301 Rickenbacker Causeway
Miami, Florida 33149 USA

ABSTRACT

In 1976 an IOC/FAO/UNEP workshop on Marine Pollution Monitoring in the Caribbean and Adjacent Regions established petroleum to be the priority pollutant of concern to the Region. In 1979 IOCARIBE established the CARIPOL Marina Pollution Research and Monitoring Program and defined as its first project, the monitoring of petroleum pollution in terms of three parameters, i.e., tar on beaches, floating tar, and dissolved/dispersed petroleum hydrocarbons. In 1980 IOCARIBE conducted workshops in English and Spanish to train participants from Regional Governments, in the methodology necessary to measure these parameters and published a manual for use by these participants in both languages. Since that time, participants from various Governments in the Region have made close to 8,000 observations and have reported them to a central data center. This data is stored in a computer and can be accessed by a data management system. It is available to regional scientists for use in assessing the state of petroleum pollution in the Region. This Symposium is designed to report progress on this effort, both on an individual Government and Regional basis.

INTRODUCTION

In July 1976 at its first meeting in Caracas, Venezuela, the Intergovernmental Oceanographic Commission's (IOC) Regional Program for the Caribbean and Adjacent Regions (IOCARIBE) established that one of its highest priority needs was to establish a region-wide marine pollution research and monitoring program. The decision as to how this program was to be implemented, was deferred until after a workshop on Marine Pollution Monitoring in the Caribbean and Adjacent Regions was convened by IOC in December of that same year, in Port-of-Spain, Trinidad under joint sponsorship by IOC, the United Nations Food and Agricultural Organization (FAO) and the United Nations Environment Program (UNEP) Regional Seas Program (GEMS). The UNEP interest in this workshop extended to its cooperative efforts with the Economic Commission for Latin America (ECLA) to establish a Caribbean Action Plan (CAP) for environmental monitoring in the Region. This workshop established petroleum to be the pollutant of highest priority concern to the Region (IOC, 1976). The report of this workshop was reviewed by the IOC Working Committee for Global Investigation of Pollution in the Marine Environment (GIPME) Group of Experts on Methods, Standards and Intercalibration (GEMSI) in its meeting in Bergen, Norway in May 1978, which recommended that the Region implement a petroleum pollution monitoring project model led after the success-

Carib. J. Sci. 23(1): 1-3 (1987)

ful IOC/WMO (World Meteorological Organization) Marine Pollution Monitoring Project (Petroleum) (MAPMOPP). In its second meeting in San Jose, Costa Rica in 1979, IOCARIBE accepted the GEMSI recommendation and established a marine pollution research and monitoring program called CARl-POL and defined its first project as monitoring of petroleum pollution in the Region in terms of three parameters, i.e., tar on beaches, floating tar and dissolved/dispersed petroleum hydrocarbons as measured by UV fluorescence.

Program Implementation

As the first activity in this project, a pilot study was initiated in 1979 and 1980 by the U.S. National Oceanic and Atmospheric Administration's (NOAA) Atlantic Oceanographic and Meteorological Laboratory (AOML) on the beaches of the State of Florida and in the Gulf of Mexico. Based on the success of this pilot study, IOCARIBE, through the offices of its Regional Secretariat in Costa Rica, successfully secured funding for the conduct of workshops in English and in Spanish to train participants in the program. These workshops were conducted in San Jose, Costa Rica in September 1980 with field practicums conducted on the beaches adjacent to Puntarenas, Costa Rica and in the Gulf of Nicoya. Based on the results of these workshops, manuals were published in both English and Spanish describing the procedures necessary for successfully conducting the measurements prescribed for the project (IOCARIBE, 1980).

Since completion of the training, CARIPOL has received reports of almost 8,000 observations from twelve different Governments in the Region and three more Governments (Barbados, Grenada and St. Lucia) are expected to report in the very near future. The success of the project is summarized in Table 1. Forty scientists from twenty different Governments in the Region have received direct training in CARIPOL Petroleum Pollution Monitoring methods. By "direct" is meant that this training was received either at the above described CARIPOL training workshops in 1980, or from CARIPOL funded training at various laboratories, notably NOAA /AOML in Miami, Florida, the Department of Marine Sciences Laboratories of the University of Puerto Rico in La Parguera, P.R. and the Environmental Chemistry Laboratory of the University of Costa Rica in San Jose, Costa Rica. The actual number of scientists trained in CARIPOL methods is significantly higher than forty since most Governments have used the experts trained by CARIPOL to train other scientists in their countries. Thus, the actual number of trainees is probably well in excess of sixty and the project can be considered quite successful based on the training realized even before consideration of the data received,

The database accumulated has been stored in the U.S. National Oceanographic Data Center (NODC) Format 144 on the Digital Equipment Corporation (DEC) VAX 780 at NOAA/AOML in Miami. The database is accessible through DEC'S Datatrieve database management software which includes simple statistical operators and a graphics package. Inquiries regarding this database should be directed to Dr. Donald K. Atwood, NOAA/AOML, 4301 Rickenbacker Cswy., Miami. FL 33149

Literature Cited

Intergovernmental Oceanographic Commission (IOC), 1976, Workshop Report 11, Report of the IOC/FAO /UNEP International Workshop on Marine Pollution in the Caribbean and Adjacent Regions, Port-of-Spain, Trinidad, 13-17 December 1976, available in English and/or Spanish from IOC, UNESCO, 7 Place de Fontenoy, 75700 Paris, FRANCE,

IOCARIBE, 1980, CARIPOL Manual for Petroleum Pollution Monitoring, available in English and/or Spanish from IOC, UNESCO, 7 Place de Fontenoy, 75700 Paris, FRANCE.

TABLE 1.–Summary of CARIPOL Training and Data Submissions (May, 1985)[1]

Government	Scientists Trained	Data Submissions			
		Beach Tar	Floating Tar	DDPH	Total
Barbados	1	—	—	—	—
Belize	1	—	—	—	—
Bonaire	1	13	—	—	13
Cayman Islands	1	169	27	27	223
Colombia	2	14	—	12	26
Costa Rica	4	62	—	123	185
Cuba	1	—	—	24	24
Curacao	1	35	—	—	35
Dominican Republic	2	—	—	—	—
Grenada	1	—	—	—	—
Guatemala	2	—	—	—	—
Guayana	2	—	—	—	—
Jamaica	2	148	39	108	295
Mexico	4	91	54	398	523
Panama	3	—	—	—	—
Puerto Rico	1	66	121	98	285
St. Lucia	2	—	—	—	—
Trinidad-Tobago	2	5262	16	84	5262
U.S.A.	6	200	393	114	707
Venezuela	2	150	—	—	150
	40	6210	650	968	7828

[1]*Dashes indicate no data submitted*