

Environmental Data Service
National Oceanic and Atmospheric Administration

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WORKSHOP ON MARINE POLLUTION DATA EXCHANGE, *Washington, D.C., 1972*

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The workshop was chaired by Richard M. Morse who, after introductory remarks by Dr. Thomas S. Austin, Director of EDS and Mr. Robert V. Ochinerro, Director of NODC, reviewed the problems and considerations which led to the workshop. Other Federal program representatives briefly stated their interests (see attachment for attendees). The group was asked to consider and make recommendations concerning marine pollution (environmental quality) data such as is being generated by marine ecosystem analysis projects, EPA monitoring networks and IDOE-sponsored research programs. The international commitments and obligations of the United States and the role of EDS were also outlined for the participants. Specifically, they were asked whether these were the types of data that could or should be handled by NODC; whether these data should be centrally archived; what documentation and ancillary information are required to insure that the data can be utilized by secondary users; and how and to what extent might these data be meaningfully exchanged internationally.

Objections to the term "marine pollution" were broached and discussed. It was pointed out that except for certain chlorinated hydrocarbons virtually all "pollutants" occur naturally although the activities of man are changing their concentrations and distributions. It was decided that these data should more properly be referred to by

the more general term "marine environmental quality^{1/} variables."

Since most variables are not included in the more classical or standard oceanographic analyses, the term "nonstandard data" was frequently used to describe those types of data not routinely archived in national data centers.

The accuracy of presently measured marine environmental data, especially for trace elements, was severely questioned. It was concluded that most such data are frequently unreliable as absolute values, but may, in many cases, serve to define upper concentration limits for these variables or to show general trends. After an extended airing of philosophies, it was generally agreed that these "nonstandard marine environmental quality data" should be centrally stored for future exchange and that data of this type must be preserved, since it may well fit requirements and purposes of secondary users even though its absolute value may be questioned by the presently active research groups.

It was agreed that marine environmental quality data^{2/} could be grouped in the following three categories:

(1) types amenable to routine processing, centralized storage, and exchange,

(2) types that lend themselves to secondary usage, centralized storage and dissemination provided they are accompanied by adequate explanatory documentation, and

^{1/} In this context, the reference to "quality" is to those variables generally considered to be pollutants. It is, of course, recognized that in some circumstances pollutants are nutrients (and vice versa).

^{2/} It should be noted that radioactive variables and aerosols were not specifically addressed by this group; nor did the group consider, at this time, the important subject of achieving a certain level of standardization in the units of measurement for the exchange of these data.

(3) types that are exploratory or "special purpose" and therefore are not amenable to secondary use except in a fully interpreted form.

It was concluded that almost none of the marine environmental quality data presently being generated qualify for category 1. At the present time, the only data that can confidently be placed in category 1 are those for which there are internationally accepted standards and/or methods, such as for temperature and salinity. It is recognized that dissolved oxygen and nutrient data are currently processed and stored with historic values as if belonging to category 1, but they more properly fit into category 2 and should be more completely documented in the future. It is, however, anticipated that additional data will qualify for category 1 as standards and standard analytical methods for specific variables (particularly dissolved oxygen and nutrient nitrogen, phosphorous and silicon compounds) become generally accepted.

Most data on the concentrations of marine environmental quality variables were considered to fit into category 2. Data for trace elements, pesticides and other organic compounds, as well as a number of other variables that have not been commonly observed in the past are examples of material that should be placed in category 2.

The initial set of data submitted to NODC for any variable should be accompanied by (a) detailed description of the instrumentation and analytical techniques used, (b) the results of analyses of standard samples and (c) the minimal explanatory documentation, as applicable, listed in table I, attached. This documentation should be sufficiently

complete to enable a secondary user to evaluate the usability of the data for his needs. For certain variables or for certain applications, additional documentation may well be essential.

To avoid unnecessary duplication, when additional sets of the same kind of data, analyzed in the same fashion, are later submitted to a data repository, they need only be accompanied by the standard sample analysis, (b) and the minimum documentation (c) which should be routinely supplied. Whenever significant changes are made in the analytical methods used, a new description should be submitted.

It is, of course, understood that all data are to be accompanied by the general or "indicative" documentation normally required for any type of data, e.g., name of originator, vessel, location, time, etc.

The view was endorsed that category 2 data should be classified by NODC according to completeness of explanatory documentation received from the originator but no attempt should be made to classify the data as to "quality."

Data on biological effects, chemical transport or transfer processes or from experimental studies normally will fall into category 3, but the field data supporting these investigations may well fall into category 2 and should be submitted to archives.

Finally, it was recognized that each marine environmental quality variable will most likely possess certain unique properties that will require some additional documentation. It was recommended that NODC explore the feasibility of obtaining the services of expert consultants to recommend, as needed, specific supplementary documentation for each environmental variable for which permanent or baseline records are to be kept.

Table 1 (con't)

Sample Preparation

<u>Variable</u>	<u>Water</u>	<u>Biological</u>	<u>Sediment</u>
Sample Split	X	X	X
Concentration Procedure	X	X	X
Digestion Technique		X	X
Sample Purification	X	X	X
Lab Sample ID No.	X	X	X

Analysis

Date of Analysis	X	X	X
Make & Type of Instrument	X	X	X
Number & Concentration Range of Calibration Standards	X	X	X
Blank Value	X	X	X
Precision	X	X	X
Estimated Accuracy	X	X	X
Basis of Rept. Data (Wet, Dry, etc.)	X	X	X
Units of Measurement	X	X	X
No. of Replicate Analyses	X	X	X
Confirmation by Other Technique	P	P	P
Column Type & Packing	O,P	O,P	O,P
Oven Temperature	O,P	O,P	O,P
Type Detector	O,P	O,P	O,P
PCB Analysis - Yes/No? (in Conjunction with DDT)	P	P	P

Legend

O Organics and Gases

P Pesticides

T Trace Elements

X All Samples

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