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WETLANDS AS A NAVAL ENVIRONMENTAL CONCERN

Associate Professor Charles L. Cochran
Political Science Department
U.S. Naval Academy
Annapolis, Maryland 21402

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Information critical to an accurate appraisal of Naval Shore facilities environmental impact is fragmentary. There are many gaps in the computerized information available. Many existing computer files and data basis are not well focused. There is a need to develop a model and programs that will efficiently provide the sort of data needed to assess the environmental impact of various types of Naval functions.		

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BACKGROUND AND EVOLUTION

This study evolved from a concern that there was no central storage of information concerning the broad range of data related to environmental problems encountered by the Navy. The result is inefficiencies due to a lack of coordination, and lack of knowledge as to how other installations have handled certain situations.

Originally the study proposed gathering information from Naval bases along the Atlantic Seaboard to be stored in a computer. The information was to include at least the following:

1. Total acreage of the base.
2. General function (airbase, testing range, R&D Center, etc.)
3. General status (active or inactive)
4. Amount of waterfrontage (either a. saltwater or b. freshwater)
5. Total wetland acreage.
6. Total coastal water acreage.
7. Total military and civilian workforce on the base.
8. Total residents on the base.
9. Unusual pollution problems identified by the base.
10. Interaction between base and local environmental groups.
11. Problem encountered with environmental groups (i.e. noise pollution, sewage, other waste disposal, etc.)
12. Solutions attempted.

By storing this information in a data base and accessing it with programs we have available at the Naval Academy we could answer many questions that heretofore there was no basis for reasoned judgment. Included would be at least the following:

1. To what extent do local environmental groups interact with Navy jurisdiction? What are the most frequent problems encountered. What attempt to resolve the problem is most likely to meet with success?

2. What kind of environmental groups are making what kinds of demands on the Navy that will have what kind of impact on the Navy? To what extent are the groups and their demands regional or national?

3. Is there a correlation between the status (active or inactive) of an installation and the demands by local groups? How do they differ?

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These and other problems it was hoped would be better identified if there was a data bank which would provide suggested guidelines for solutions when certain problems arose.

It was intended that a data bank would be developed with this information, that could be used for storing and retrieving the data, which would be Navy oriented.

Currently the Navy lacks basic numbers in terms of wetland acreage, miles of shore line, much less a complete study of what it owns. The most complete set of data on Naval property is to be found in the Detailed Inventory of Naval Shore Facilities (NAVFAC P-164) and the annual publication of Inventory of Military Real Property, Navy (NAVFAC P-77) which is an effort to implement Title 10, United States Code 2701 by DOD Instruction 4165.14 of December 1966.

NAVFAC P-77 has basic shortcomings however, in that its original purpose was to be an inventory of real property, and therefore it includes relevant environmental data only in an ancillary way. Existing reporting systems should be utilized wherever possible however, and new ones set up only where those in existence are inadequate or cannot be adapted.

Any collection of Naval environmental data by necessity would duplicate much that is already available in the Inventory of Military Real Property, Navy. Since the inventory brings together so much information and data on a recurring basis, it could serve as an environmental data base with some modifications in its reporting system. Reports from this inventory may be computer generated concerning such environmentally relevant subjects as the capacity of potable water production on shore facilities in gallons per hour, or the capacity of sewage treatment facilities.

A refinement and clarification of the reporting of land acreage in particular would result in much more detailed environmental information such as wetlands. Currently the Naval Facility Assets (NFA) Data Base Manual (NAVFAC P-78) which provides the definitions and procedures for maintaining the NFA Data Base for the property inventory for the Department of the Navy, provides several categories for reporting land acreage. The categories are so broad, however, as to preclude an inclusion of wetlands per se. The categories are: [Source: NAVFAC P-78 January, 1974, Naval Facilities Engineering Command pp.351A-354A].

Improved acres, which is a category defined as "The area, to the nearest hundredth of an acre, of improved grounds within the recorded boundary of the Class 1. Facility being reported." Improved grounds are further described as those areas which receive intensive horticultural development and maintenance care. Examples given are lawns, drill fields, athletic fields, cemeteries, and golf course greens.

Semi-Improved Acres - is a category defined as receiving less intensive horticultural development and maintenance care than improved grounds to include airfields, small arms ranges, golf course roughs and similar areas.

Unimproved Acres - includes those areas which are operated as agricultural areas, grazing areas or forests or wooded areas, and those areas considered as swamps, marshes, deserts, rocky or otherwise barren land. This category specifically excludes submerged areas, which are included as other acres.

Other Acres - is defined as all of the land for which the responsible reporting activity controls and which is not included in the first three categories. This catch-all category includes land areas occupied by buildings as well as submerged land including wetlands. However, there are two other categories that could, but do not necessarily, include wetland acreage.

Usable Unused acreage is another category described as a measure of an area of land on which construction is economically and physically feasible (p 356-A) but of which no use is being made. Various descriptions are mentioned which include "fish and game refuge" and forest land.

Or finally, some wetlands could be found in the category of Unusable Unused Acres which is defined as land unsuited for use as a construction site because construction would be prohibitively expensive or otherwise not feasible. This category is described as land not capable of supporting a building without the assistance of pilings or "Land on the downhill side of a geological fault from which it is known that the downhill side is receding and will eventually slough off." [NAVFAC P-78, p.357-A]. This is but one example of many categories that are too broad or exclusive of other categories.

The point of recounting these categories is to show that further refinements of several categories of the inventory would provide a great deal more information

relevant to environmental protection at the lowest possible cost to the Navy since the inventory is updated on an annual basis.

Other Sources of Information

Other studies have been done on the environmental problems of particular shore facilities. There are also other computer files including environmental status reports available. Each activity now computes an annual "pollution control report." There is not at the present time any mechanism for pulling together these various files of information. In fact a brief review of some computer files, undertaken by this writer during the summer of 1975, suggests that the process of pulling this information together into one file would be such a horrendous and costly project as to be unfeasible. Even if these studies were to be put together in a uniform retrieval system there would still be many gaps between the studies requiring an additional effort to flesh out these lacunae.

The result of the foregoing was to lead to the conclusion that a model should be developed that would be sent to each Navy activity to allow it to measure itself. This method is intended to provide a concise environmental report as well as to identify pollution problems of activities so that the deficiencies may be acted upon.

The Naval Environmental Protection Support Service (NEPSS) is a technical support service of the Navy designed to acquire, collect, process and store various types of environmental data required for implementing the Navy Environmental Protection Program. The Navy Environmental Support Office (NESO) in Port Hueneme, California maintains an environmental data center and has the capability of assisting in special investigations on pollution problems.

THE MATRIX MODEL

Although the Secretary of the Navy has the authority to implement and require the organization under his authority to comply with pollution abatement plans that go beyond federal legislation, it is the latter that determines the environmental protection plans that will apply to the Navy on a long-term basis. The Secretary of the Navy's directives will generally be limited to directives for implementing the legislation.

The purpose of a model on environmental protection is to provide a standard for the measurement of environmental concerns of all naval activities that can be kept current through a periodic reporting system. The model, which could employ a matrix format, to be useful must itself be kept up to date by constantly updating the matrix to keep it current with new legislation.

Federal legislation regarding the environment has been increasing geometrically. Between 1899 and 1967 there were only nine legislative acts which were concerned with the protection of the environment. They included the Rivers and Harbors Act, the Federal Oil Pollution Act (1924), the International Convention for Prevention of Pollution of the Sea by Oil (1954), the Water Pollution Control Act (1956), the Clean Air Act (1963), the Water Quality Act (1965), the Federal Water Pollution Control Act (1966), the Clean Water Restoration Act (1966), and the Air Quality Act (1967). Since that time however, Congress has enacted as least one act per year and as many as nine in a given year. With several pieces of legislation enacted per year, keeping the model current is a much greater task than during the earlier period averaging one new law every eight years.

A matrix format is best suited to the increasing legislation that naval shore facilities must comply with. It is more concise than any other reporting system. It also provides for a quick method of identifying what sorts of pollution abatement projects shore facilities must develop to deal with any failure to meet federal requirements. Another advantage is that shore facilities could adapt the matrix for state and local regulations that apply.

The basic problem is to determine what sort of regulations apply to each source of pollution in terms of federal, state, and local legislation. Federal facilities

are not exempt from complying with federal legislation and all non-federal substantive requirements. This is indicated by Executive Order 11752 which required compliance with the most stringent requirement.

At the present time (as of July 1975) the Naval Facilities Engineering Command conducts surveys to insure "effective management, operation, and maintenance of sanitary/environmental facilities and to identify pollution deficiencies." [1042A/NAS 23 July 1975] The goal of the survey is to review the adequacy of the sanitary facilities' environmental control measures in relation to all applicable legislation. The Naval Environmental Protection Support Service (NEPSS) is a technical support service whose function is to acquire, assemble, process and store various forms of environmental data that is required for implementing the environmental protection program for the Navy. The program manager for NEPSS is the Naval Facilities Engineering Command (NAVFAC). Operating under NAVFAC is the Navy Environmental Support Office (NESO) which provides the overall planning and budgeting for the NEPSS.

It is suggested that the overall planning and coordination for NAVFAC and NESO would be assisted by means of a matrix for each facility that could be merged with a master file for all naval installations. Significant changes in the environmental impact of an installation's activities could be fed into the computer to keep the file up to date. In this system a comprehensive environmental engineering survey would not be required annually.

The first requirement would be to review all the laws that apply and separate their requirements according to the categories of the source of pollution. There are at least nine identifiable significantly distinct forms of pollution. They include solid and hazardous waste sources, pesticides, oil, noise, air, water, radiation, land, and administrative. These sources are identified in the federal environmental laws which have different levels of regulation. Table 1. indicates some of the applicable laws, their object of control and an indication of which level of government is responsible for the enforcement of the act.

TABLE 1.

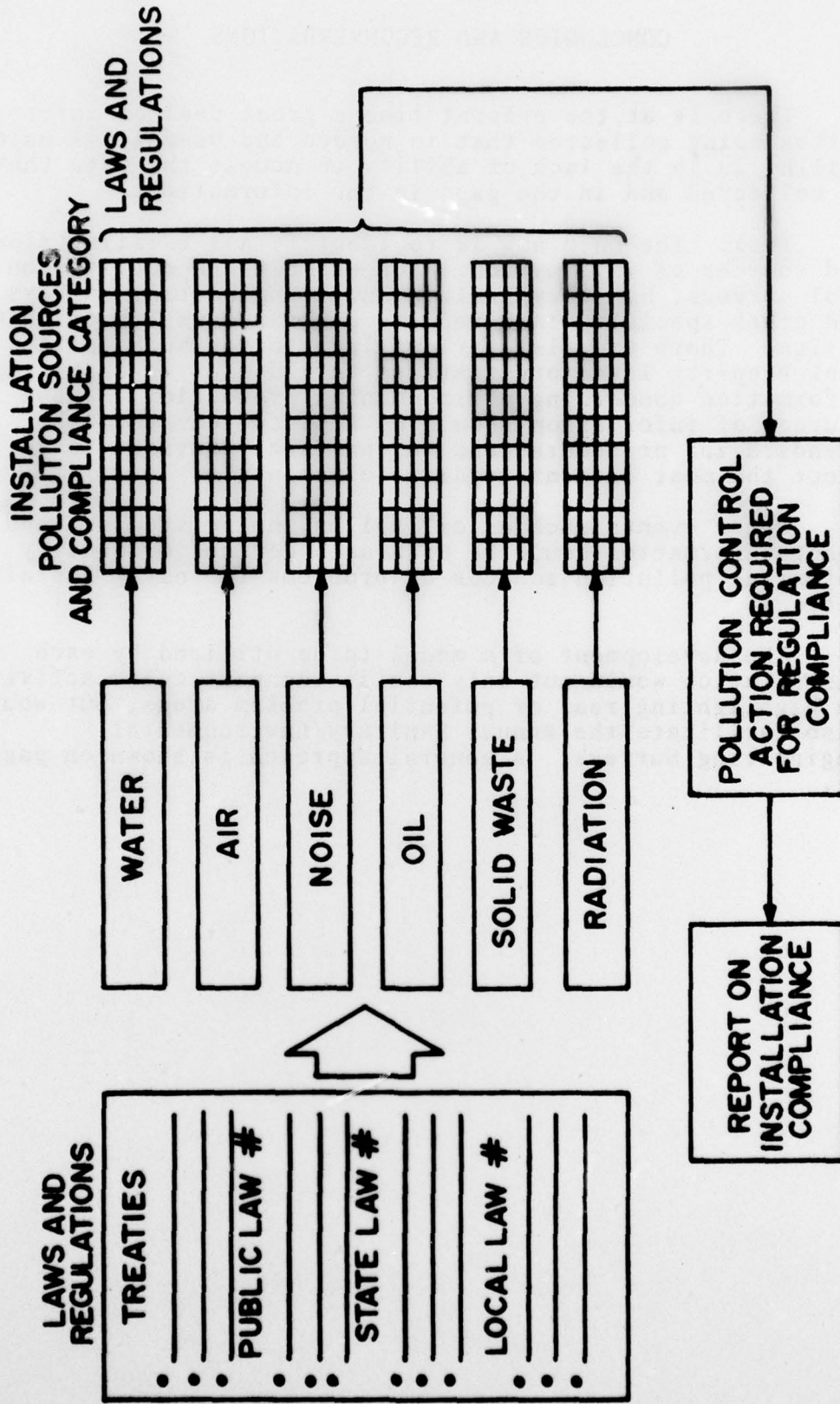
Laws and Their Category of Pollution Regulation

Public Law	Title	Poll. Category	Regulatory Level
PL 92-574	Noise Control Act	Product Emission Standards	Federal
		Control of Environmental Noise	State, Local
PL 92-532	Marine Protection	Ocean Dumping	Federal
PL 91-604	Clean Air Act	Emission Limits, Air Quality Standards	Federal, State, & Local
PL 90-250	National Environmental Policy Act	Planning	Federal
PL 91-512	Resource Recovery Act	Recovery, Collection, Storage, Separation, Disposal	Federal
PL 92-500	Federal Water Pollution Control Act	Effluent Limits, Water Quality Standards	Federal, State, & Local
PL 92-516	Federal Environmental Pesticides Control Act	Manufacture, Use, Transportation, Purchase, Storage & Disposal	Federal
PL 92-583	Coastal Zone Management	Planning	Federal, State
PL 89-272	Solid Waste Disposal Act	Recovery, Collection, Storage, Disposal	Federal
PL 93-523	Safe Drinking Water Act	Water Supplies	Federal, State
PL 93-119	Oil Pollution Act	Ships Underway	Federal

Each category of pollution should be dealt with as a part of the larger matrix. For example all laws dealing with air pollution should be set aside and analyzed so a matrix could be devised dealing with just this category. An instruction sheet would then be prepared describing how that entry should be made in the matrix by means of an explanation of the law's requirements. Naval installations are required to comply with the standards set by different levels of regulatory authority. Therefore compliance with the most stringent regulation would satisfy the needs of the other concerned authorities.

The general approach suggested in Figure #1 (page 9) then would be to establish a legal file on pollution regulations including Treaties, The Federal Register, The Environment Reporter, state laws, and local ordinances as the source for setting up a computerized model. The matrix would be broken down into subcategories by the source of pollution for each installation. Other categories relevant for environmental protection, such as wetlands, could also be included. A program could be developed to inform the installation of any failure to conform to existing legislation.

MATRIX APPROACH



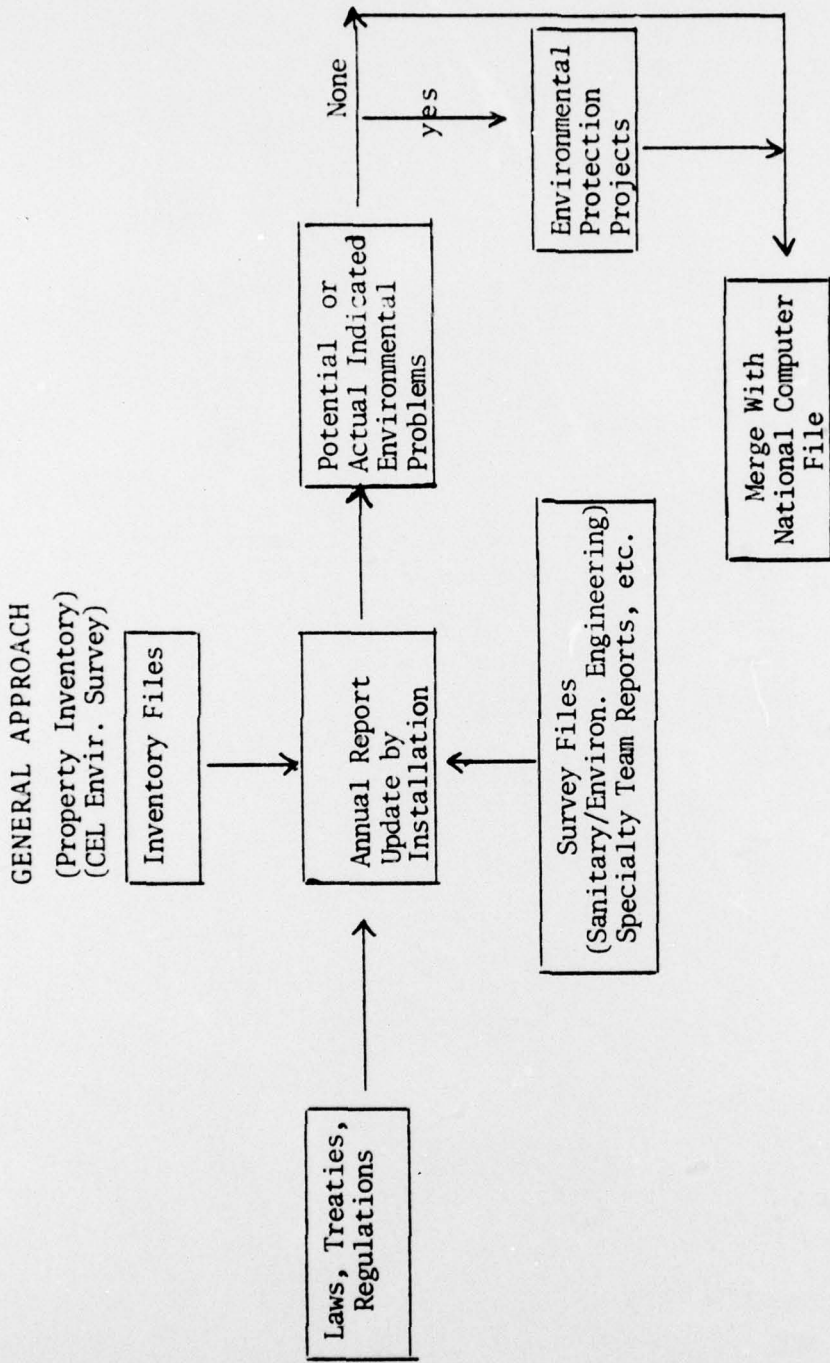
CONCLUSION AND RECOMMENDATIONS

There is at the present time a great deal of information being collected that is needed and useful. A major failing is in the lack of ability to access the data that is collected and in the gaps in the information.

Task: The need now is to identify all existing files and sources of information. For example the quality control surveys, Sanitary/Environmental Engineering surveys and other specialty team reports contain a wealth of information. There are also various inventories such as the Real Property Inventory that are very useful in obtaining information concerning environmental protection. These sources of information should be kept current through standardized procedures and be constantly revised to reflect the most current legal requirements.

Other events such as oil spills, noise studies, and other information could be used as a device to identify potential pollution sources or problems for naval installations.

The development of a model to be utilized by each installation would not only assist the particular activity in highlighting real or potential problem areas, but would also facilitate the annual Sanitary/Environmental Engineering Surveys. A general approach is shown on page 11.



Merging of existing files and inventories with Program including Laws to pinpoint problems and requirements for compliance. Information joins a larger data bank to be utilized in assessing navy-wide problems.

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