

CCMP Part Three - The Technical Supplement: Barataria-Terrebonne Action Plans

EM-18 Centralized Data Sets

OBJECTIVES

1. The objective of this action plan is to provide a centralized data directory of information related to measuring success of implemented action plans. In addition, this action plan will require access through the Internet of the BTNEP=s Data Information Management System.

DESCRIPTION

This plan calls for the continued development of a Data Information Management System for the Barataria-Terrebonne basins that would ensure data preservation and accessibility. In addition, the Data Information and Management System will be designed to integrate any new information/data that becomes available and any data collected as part of any monitoring plan implemented as part of any CCMP action plan.

BACKGROUND/MAJOR ISSUES

Data Information and Management System

As part of a comprehensive estuarine characterization program for the Barataria-Terrebonne basin in south Louisiana, the Barataria-Terrebonne National Estuary Program (BTNEP) has been assigned the task of developing a Data and Information Management System (DIMS) to organize and maintain information generated and used by program-sponsored research and to ensure data usability. This Data Information and Management System is being developed jointly between the National Biological Service's Southern Science Center, the Louisiana Department of Environmental Quality (LDEQ) and the Louisiana Department of Natural Resources (LDNR). This Data Information and Management System is being developed within LDEQ. The DIMS accommodates a wide range of data types and serves a broad user community. The goal of data management is to develop and implement a system which will become a central data directory for the Barataria-Terrebonne estuarine complex. In addition, one feature of the BTNEP DIMS will include an interface with other existing automated natural resource data bases such as EMAP, GAP, LDEQ, and CWPPRA. Therefore it does not constitute a duplication of effort. The BTNEP DIMS is being developed using OracleTM software and Arc InfoTM software.

This data management system should be designed to meet two primary objectives. First, it enhances research efforts by providing extensive data storage and analytical capabilities. It is designed to make information available to the greatest number of people (industry, public, government agencies, researchers, and related programs). Second, it serves as a long-term archive that can be continuously updated. The data management system will be expanded with information from sampling and monitoring efforts to determine whether the abatement and control programs implemented by the BTNEP improve habitat, water quality, and living resources. Much time and money have been spent in building this system. It is important to continue its development and utility into the future. As the Barataria-Terrebonne Management Conference (BTMC) periodically meets to review progress of implemented action plans, the data management system will play an important role in providing critical information to assess the effectiveness of CCMP action plans.

Data and Information Access

As mentioned earlier, the Data Information Management System should be designed to make information available to the greatest number of people. The most appropriate avenue to presently share information is exchange through

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the Internet. The BTNEP currently has an existing home page that was developed through an effort initiated by the Gulf of Mexico Program. The Gulf of Mexico Program, the National Biological Service, and the BTNEP Program Office have worked together to make this a reality. The BTNEP home page exists as an hyper-text transfer protocol (HTTP) site. The existing home page only provides information about the BTNEP. However, the BTNEP will develop a file transfer protocol (FTP) site so that access to the Data Information Management System will be available through the Internet.

In addition to on-line access, the BTNEP will periodically develop and distribute reports regarding the various BTNEP action plans. These documents shall include clear and concise information about action plan intents or objectives, geographic coverage if applicable, progress made to date, and information about future plans. Also, in conjunction with State and Federal agencies, the BTNEP will convene annual symposiums similar in format to the Data Inventory Workshop sponsored by the BTNEP in 1991. Currently, annual symposiums are sponsored for the Pontchartrain Basin. These symposiums provide an excellent and sometimes the only opportunity to listen and discuss current or recent research or programmatic efforts.

Standards

Currently as well as in the past, many efforts to obtain data to further our knowledge regarding environmental issues have been accomplished in isolation. While for all practical purposes this may not change, it is becoming more imperative that all research and monitoring projects adhere to stringent Quality Assurance/Quality Control requirements. An important initiative at the federal level is the development of metadata standards. The Federal Geographic Data Committee recently adopted standards for metadata and on April 11, 1994, all federal agencies were responsible for initiating the use of metadata standards. Metadata is simply "data about data" or can be described as descriptive information about a data set (National Biological Service, 1994). These standards provide a consistent approach and format for the cataloging of data. Two years were spent by many professionals at all levels of government in the development of these standards. These standards provide valuable information including: those data that are available; where to find the data; and how to access the data. After reviewing the information about a particular data set, one would know whether the data meets their specific needs.

The great advantage about metadata is that it helps people find data that they need and provides important information on how the data was collected, how it was used, how best to use it, and many other data related issues. In addition, it helps the organization which collected the data. Changes in personnel may limit the knowledge and understanding of the organization when dealing with particular projects. Metadata will benefit the creator or user of that data by maintaining its value and continued use over many years (National Biological Service, 1994). Louisiana's Environmental and Natural Resource Agencies should adopt the federal metadata standards and require their completion as part of any project, contract, etc. that is undertaken.

BENEFITS

This catalytic action is directly related to the BTNEP goal, *Create an Accessible, Comprehensive Data Base with Interpreted Information for the Public*. This goal requires that a data directory be assembled on system ecology and hydrology, to organize that data, and make that information readily accessible to policy-makers and the public to support ecologically sound decision-making and to identify data gaps. This catalytic action is also indirectly related to other BTNEP goals including but not limited to *Realistically Support Diverse Biological Communities* and *Preserve and Restore Wetlands and Barrier Islands*. Each of these goals should promote some action. All actions taken in support of CCMP action plans should be monitored to assess effectiveness in reaching the desired outcome. Monitoring information related to CCMP action plans should be gathered and quality controlled in a centralized location and made accessible to policy-makers for the purpose of evaluating effectiveness and to the public to build continued support of a particular action and/or promote the use of that action elsewhere. Development of a Data

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Information and Management System will provide for increased coordination between federal, state, and local agencies/programs. In addition, implementation of this action plan will increase the accessibility of data and ensure that ongoing and future research and monitoring activities produce compatible data that are useful for management decision making.

IMPLEMENTATION SCHEDULE

As mentioned earlier, the BTNEP is currently contracting with the National Biological Service's Southern Science Center to develop the BTNEP DIMS. Their responsibilities include archiving data collected and/or used as part of any BTNEP sponsored project. The contract will extend until September 1996.

Short-term plans (0-1 years) are as follows:

- S 1.00 Consider agencies that would be responsible for managing this centralized data information management system.
- S 2.00 Consider continuing the existence of the current data management structure employed by the BTNEP (BTNEP).
- S 3.00 If continuing the current data management structure is not appropriate, a determination must be made concerning centralizing data sets and which agency(ies) will be responsible (BTNEP).
- S 4.00 Identify funding sources to provide for the development of a centralized data information and management system.
- S 5.00 Utilize the funding source inventory to locate possible funding sources (BTNEP).
- S 6.00 Management Conference support agency(ies) attempts to acquire funding for the continued development of the BTNEP DIMS.
- S 7.00 Develop cost sharing agreements and memorandums of agreement between agencies responsible for the management of the BTNEP DIMS.
- S 8.00 Consider information that is not generated by and or used currently by the BTNEP that should be included within the DIMS.
- S 9.00 Identify what information is pertinent to or provides baseline conditions regarding a BTNEP action plan.
- S 10.00 Convene a Workshop to discuss metadata standards and their potential acceptance by State Environmental and Natural Resource Agencies.
- S 11.00 Convene meetings of a subcommittee identified by the Management Conference to review various monitoring strategies by action plan, develop and implement monitoring plans and begin preparation of the DIMS for these types of data.
- S 12.00 Review the BTNEP Needs Assessment and modify if necessary.

Medium-term plans (2-5 years) include the following:

- M 1.00 Provide access to the DIMS over the Internet.
- M 2.00 Begin archiving information identified earlier that was necessary to support some implemented action plan.
- M 3.00 Begin archiving CCMP action plan monitoring data, provide analysis, and report back to the Management Conference on the results.

Long-term plans (5-10 years) include the following two components: continuing to archive data, provide analysis, and report back to the BTMC; and, continuing to build the DIMS and provide the greatest possible access of information to the Internet.

LEAD AND SUPPORT IMPLEMENTORS

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The lead implementor of this action plan will be LDEQ. Support Implementors include the BTMC.

COSTS AND ECONOMIC CONSIDERATIONS

Table EM18-1. Estimated Costs.

	ACTION DESCRIPTOR	LEAD	EXISTING / NEW	SUBSUME	Y1 COSTS (Short Term)	Y2-5AVG COSTS/YR (Medium Term)
EM-18					\$66,285	\$21,000
EM-18S1.00	<i>Consider DIMS Management</i>	BTMC	E	PI-2		\$0
EM-18S2.00	<i>Consider DIMS Management</i>	BTMC	E	PI-2		\$0
EM-18S3.00	<i>Consider DIMS Management</i>	BTMC	E	PI-2		\$0
EM-18S4.00	<i>Identify funding sources</i>	CONSULT	E	COMPLETE	\$0	
EM-18S5.00	<i>Identify funding sources</i>	CONSULT	E	COMPLETE	\$0	
EM-18S6.00	<i>Identify funding sources</i>	BTMC	E	PI-2		\$0
EM-18S7.00	<i>cost sharing & MOAs</i>				\$12,115	\$0
EM-18S7.01	<i>cost sharing & MOAs</i>	BTPO-PD	E		\$808	\$0
EM-18S7.02	<i>cost sharing & MOAs</i>	LDEQ	E		\$808	\$0
EM-18S7.03	<i>cost sharing & MOAs</i>	LDOTD	E		\$808	\$0
EM-18S7.04	<i>cost sharing & MOAs</i>	LDWF	E		\$808	\$0
EM-18S7.05	<i>cost sharing & MOAs</i>	LDED	E		\$808	\$0
EM-18S7.06	<i>cost sharing & MOAs</i>	LDCRT	E		\$808	\$0
EM-18S7.07	<i>cost sharing & MOAs</i>	LDNR	E		\$808	\$0
EM-18S7.08	<i>cost sharing & MOAs</i>	USEPA-R6	E		\$808	\$0
EM-18S7.09	<i>cost sharing & MOAs</i>	USACOE	E		\$808	\$0
EM-18S7.10	<i>cost sharing & MOAs</i>	USFWS	E		\$808	\$0
EM-18S7.11	<i>cost sharing & MOAs</i>	USNMFS	E		\$808	\$0
EM-18S7.12	<i>cost sharing & MOAs</i>	USNRCS	E		\$808	\$0
EM-18S7.13	<i>cost sharing & MOAs</i>	LCES	E		\$808	\$0
EM-18S7.14	<i>cost sharing & MOAs</i>	LDHH	E		\$808	\$0
EM-18S7.15	<i>cost sharing & MOAs</i>	USNOAA	E		\$808	\$0
EM-18S8.00	<i>Inclusion of add'l data</i>		E	EM-18S10.00\$0		
EM-18S9.00	<i>Identify pertinent data</i>		E	EM-18S10.00\$0		
EM-18S10.00	<i>Workshop: metadata stds</i>				\$2,423	\$0
EM-18S10.01	<i>committee participation</i>	BTPO-EQS	E		\$162	\$0
EM-18S10.02	<i>committee participation</i>	LDEQ	E		\$162	\$0
EM-18S10.03	<i>committee participation</i>	LDOTD	E		\$162	\$0

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EM-18S10.04	<i>committee participation</i>	LDWF	E		\$162	\$0
	ACTION DESCRIPTOR	LEAD	EXISTING / NEW	SUBSUME	Y1 COSTS (Short Term)	Y2-5AVG COSTS/YR (Medium Term)
EM-18S10.06	<i>committee participation</i>	LDCRT	E		\$162	\$0
EM-18S10.07	<i>committee participation</i>	LDNR	E		\$162	\$0
EM-18S10.08	<i>committee participation</i>	USEPA-R6	E		\$162	\$0
EM-18S10.09	<i>committee participation</i>	USACOE	E		\$162	\$0
EM-18S10.10	<i>committee participation</i>	USFWS	E		\$162	\$0
EM-18S10.11	<i>committee participation</i>	USNMFS	E		\$162	\$0
EM-18S10.12	<i>committee participation</i>	USNRCS	E		\$162	\$0
EM-18S10.13	<i>committee participation</i>	LCES	E		\$162	\$0
EM-18S10.14	<i>committee participation</i>	LDHH	E		\$162	\$0
EM-18S10.15	<i>committee participation</i>	USNOAA	E		\$162	\$0
EM-18S11.00	<i>Subcommittee review</i>			EM-18S10.00	\$0	\$0
EM-18S12.00	<i>BTNEP needs assess Review</i>				\$2,423	\$0
EM-18S12.01	<i>committee participation</i>	BTPO- EQS	E		\$162	\$0
EM-18S12.02	<i>committee participation</i>	LDEQ	E		\$162	\$0
EM-18S12.03	<i>committee participation</i>	LDOTD	E		\$162	\$0
EM-18S12.04	<i>committee participation</i>	LDWF	E		\$162	\$0
EM-18S12.05	<i>committee participation</i>	LDED	E		\$162	\$0
EM-18S12.06	<i>committee participation</i>	LDCRT	E		\$162	\$0
EM-18S12.07	<i>committee participation</i>	LDNR	E		\$162	\$0
EM-18S12.08	<i>committee participation</i>	USEPA-R6	E		\$162	\$0
EM-18S12.09	<i>committee participation</i>	USACOE	E		\$162	\$0
EM-18S12.10	<i>committee participation</i>	USFWS	E		\$162	\$0
EM-18S12.11	<i>committee participation</i>	USNMFS	E		\$162	\$0
EM-18S12.12	<i>committee participation</i>	USNRCS	E		\$162	\$0
EM-18S12.13	<i>committee participation</i>	LCES	E		\$162	\$0
EM-18S12.14	<i>committee participation</i>	LDHH	E		\$162	\$0
EM-18S12.15	<i>committee participation</i>	USNOAA	E		\$162	\$0
EM-18M1.00	<i>Access to DIMS over internet</i>		E		\$7,323	\$0
EM-18M1.01	<i>internet access</i>	USNBS	N		\$7,000	\$0
EM-18M1.02	<i>internet access</i>	BTPO- EQS	E		\$323	\$0
EM-18M2.00	<i>Archive "Action Plan Implementation" data</i>	BTMC designee	E		\$21,000	\$10,500

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EM-18M3.00	<i>Archive monitoring data, analyze & report</i>	BTMC designee	E		\$21,000	\$10,500
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Table EM18-1 provides estimated costs for short- and medium term activities specified in this plan. It includes lead agencies and costs for short- and medium-term activities. Costs are broken down into those considered Anew≡ (a direct product of CCMP recommendations) and Aexisting≡ (where plans coincide with existing responsibilities/activities). Acceptance of this plan by the agencies or entities listed as lead or support implementors does not commit that agency or entity to implement the plan. At a later date, parties identified as potential plan implementors will work with the Program Office, the BTMC and other plan implementors to formalize all commitments concerning implementation.

FUNDING STRATEGY

Total Funding Necessary (Years 1-5): \$178,300
 Total Funding Existing (Years 1-5): \$143,300
 Total New Funding Necessary (Years 1-5): \$35,000

Table EM18-2. Summary of New Funding Sources.

Lead Agency	Year 1	Year 2	Year 3	Year 4	Year 5
USNBS	\$7,000 DEQ Operational Funds	\$7,000 DEQ Operational Funds	\$7,000 DEQ Operational Funds	\$7,000 DEQ Operational Funds	\$7,000 DEQ Operational Funds

Summary of new funding strategy: The annual \$7,000 costs are incurred while providing users Internet access to the DIMS. The primary source of funding should be DEQ operational funds. Reliance on these funds could be offset by negotiating reduced costs for access and/or support services from an Internet access provider. Finally, funds could be solicited from the foundations listed in the *Funding Source Inventory for the Implementation of the CCMP* or taken from environmental license plate revenue to make up for any shortfall.

EVALUATION METHODS

The following monitoring strategies are intended to serve as a statement of the most comprehensive and effective mechanisms to assess the effectiveness of projects implemented under the action plans. These strategies should only be used as a guide, not as a requirement. It must be recognized that the monitoring strategies outlined here will be expensive to implement and that, because all levels of government and much of the private sector currently have severe funding restraints, they may not be affordable without significant modification. It must also be recognized that these strategies are not intended to suggest that regulatory agencies require a higher level of monitoring by permit applicants than is currently required. The monitoring strategies outlined here do not override or replace project monitoring that would be done by an agency related to specific agency-sponsored projects.

Components of Plan

1. Continued development of a DIMS as a central data source for the BTES to ensure data preservation and

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accessibility.

- a. Will be designed to integrate new data collected as part of any monitoring plan implemented as part of any CCMP Action Plan.
- b. Development of FTP site so that access to DIMS is available through the Internet.
- c. Dissemination of information via reports and annual symposia.
- d. Resource agencies should adopt federal metadata standards.

Interrelationships Among Components

DIMS currently being developed by NBS, LDEQ and LDNR. Interface with other existing automated natural resource data bases such as EMAP, GAP, LDEQ, and CWPPRA means that effort is not duplicative of existing efforts.

Documentation of Plan Implementation and Success

Plan implementation

The following criteria will be used to determine if plan implementation steps were accomplished:

1. Agencies that would be responsible for managing this DIMS have been selected.
2. Continuation of the existence of the current data management structure employed by the BTNEP has been considered by BTMC.
 - a. If continuing the current data management structure has been deemed inappropriate, a determination has been made concerning centralizing data sets and which agency(ies) are responsible.
3. Funding for the development of the DIMS have been actively pursued by BTMC.
 - a. Funding sources to provide for the development of a DIMS have been identified.
 - b. The funding source inventory has been utilized to locate possible funding sources.
 - c. BTMC has supported agency(ies) attempts to acquire funding for the continued development of the DIMS.
4. Cost sharing agreements and MOA between agencies responsible for the management of the DIMS have been developed.
5. Data that is not generated by and/or used currently by the BTNEP has been considered for inclusion within the DIMS.
6. Data that is pertinent to or provides baseline conditions regarding a CCMP Action Plan has been identified.
7. A Workshop to discuss metadata standards and their potential acceptance by State Environmental and Natural Resource Agencies has been convened by BTMC.
8. Meetings of a subcommittee identified by the BTMC to review various monitoring strategies by Action Plan has been convened.
 - a. Monitoring plans have been developed and implemented, and preparation of the DIMS for these types of data have begun.
9. Access to the DIMS over the Internet has been provided.
10. Training packages that can be distributed, particularly to libraries in the basin, have been developed.
11. Training packages have been distributed.
12. Data collection/compatibility has been standardized.
13. Metadata requirements that must be followed by all federal agencies have been reviewed and modified where necessary.
14. BTNEP Needs Assessment has been reviewed and modified as necessary.
15. Archiving of data identified earlier, deemed necessary to support some implemented Action Plan, has begun.
16. Archiving of CCMP action plan monitoring data has begun, analysis has been provided, and reports on the results have been made to the BTMC.

Project success

The main measure of project success for this Action Plan is the development of a functioning DIMS which is user-

friendly and through which data is readily accessible. The following criteria will be used to judge project success:

1. Data are accessible via the Internet.
2. Data can be accessed by users with no additional training other than that provided in informational materials.
3. The DIMS is regularly updated with data generated within BTES which forms part of Action Plan monitoring or ecological indicators assessment.

Methods

Measurable parameters

CCMP Action Plan Implementation - The activities of the BTMC and agencies responsible for continued DIMS development and maintenance, as outlined in the above criteria, will be monitored by an independent Third Party.

CCMP Project Success - The independent Third Party, who shall not represent any of the agencies responsible for DIMS development or maintenance, will attempt to access data in the DIMS on a semi-annual basis and check for the following measures of success:

1. The DIMS is operational.
2. The DIMS is accessible via the Internet.
3. New data have been added to the DIMS and are accessible.
4. Metadata provides necessary information concerning the databases included in the DIMS.

Data collection methods

CCMP Action Plan Implementation - The activities of the BTMC and the various agencies outlined above in implementing the plan in accordance with the above criteria will be monitored by an independent Third Party. The monitor will review informational and educational products, contact agency personnel for updates on DIMS development, review training packages, attend meetings of BTMC and organized symposia to review actions/decisions and the nature of the discussion.

CCMP Project Success - The monitor will collect the following types of data:

1. Attempt access to DIMS on at least 6 occasions, including 3 outside normal business hours, and document:
 - a. is the DIMS operational;
 - b. time to access three example databases;
 - c. time to download data from three example databases.

Semi-annually the independent Third Party monitor will access the DIMS and record:

1. The number of new databases included since the last recorded review.
2. The number of databases which have been updated.

Sampling design and statistical methods

CCMP Action Plan Implementation - There are no relevant sampling design or statistical analyses for the evaluation of plan implementation.

CCMP Project Success - There are no relevant sampling design or statistical analyses for the evaluation of project success.

Cost estimates

CCMP Action Plan Implementation - The cost estimate is based upon attendance at approximately 4 BTMC meetings per year, review of materials, contacting implementing agencies and appropriate reporting. The level of effort is estimated at 100 person-hours and costs including salary, fringe benefits, overhead and associated expenses are approximately \$5,000.

CCMP Project Success - The cost estimate is based upon 1-2 days accessing DIMS every six months and reporting. The level of effort is estimated at 40 person-hours and costs including salary, fringe benefits, overhead and associated expenses are approximately \$2,000.

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Recommendations and Feedback to Program/Implementor

Monitoring of plan implementation will be undertaken by an independent Third Party who will prepare semi-annual reports describing actions of the BTMC and implementing agencies in relation to the establishment of a DIMS. Semi-annual reports will be prepared. The monitoring reports will be submitted not less than 15 days prior to a regularly scheduled meeting of the BTMC and the independent Third Party will appear at the meeting to discuss the report. Monitoring reports concerning project success will also be provided to the agencies or institutions implementing the DIMS.

Quality Assurance/Quality Control

The Quality Assurance Plan for both Plan Implementation and Project Success involves the following components:

1. Clear identification of success criteria (as outlined above).
2. Use of qualified and experienced personnel to collect and report data (to be determined and assessed annually by BTMC).
3. Review of monitoring data and reports by BTMC (as outlined above).
4. Reporting of significant problems identified during the monitoring period to the BTMC before the next report is due.
5. Maintaining a semi-annual schedule for reporting on BTMC and implementing agency activities (as outlined above).