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WATERSHED MONITORING AND REPORTING FOR SECTION 319 NATIONAL MONITORING PROGRAM PROJECTS

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Assessment and Watershed Protection Division

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Preface

The U.S. Environmental Protection Agency (EPA) has prepared this final document to replace the most recent draft version of the monitoring and reporting requirements for section 319 watershed projects (U.S. EPA, 1990). The earlier draft document limited water quality monitoring protocols to chemical and physical parameters only. This final document maintains those chemical and physical protocols (with some increased flexibility in sampling frequency), but also adds protocols for biological and habitat parameters.

Increased flexibility in sampling frequency for chemical and physical parameters is provided to address western concerns that ephemeral streams are generally not supportive of weekly sampling over 20 consecutive weeks. Instead of prescribing weekly samples, EPA now allows for the collection of 20 samples that are evenly spaced over time within the sampling season.

Implementation monitoring has not been changed from the earlier draft version, and the same basic watershed implementation plan information is still called for in the Management File. Minor changes have been made in the way the Management File information is entered, and some additional data elements are included.

EPA has updated and expanded its supporting software package, the ***Nonpoint Source Management System***, or ***NPSMS***. This software (Version 3.0) makes data entry and reporting simpler, and will be distributed to all States participating in the national nonpoint source monitoring program. The discussion in this document is keyed to ***NPSMS*** as appropriate, and the user's guide and HELP screens for ***NPSMS*** are keyed to this document as well. For those who wish to use hard copy forms instead of ***NPSMS***, EPA provides a set of forms that can be used (see Appendix B).

The reporting in this guidance is governed by the provisions of the Paperwork Reduction Act (*OMB Control No. 2030-0020*, expires 12/31/92), and is covered by the Information Collection Request (*ICR No. 0938.04*) approved for EPA's General Grant Regulations (*40 Code of Federal Regulations, Part 31*).

Table of Contents

Introduction 1

Selection Criteria for National Monitoring Program Projects 2
Identification of water quality threats or problems 2
Nonpoint source control objectives 3
Project area size 3
Institutional roles and responsibilities 3
Critical areas 3
Watershed plan 3
Monitoring Plan and Evaluation 4

NonPoint Source Management System (NPSMS) Software 5

Management File 6
Purpose and Application 6
Data Elements for Management File 7
Management File Access 7
Management Area Description 7
Waterbodies 7
Designated Use Support 7
Pollutants and Relative Source Contributions 8
Best Management Practices and NPS Control Measures 8
BMPs 9
Sources 14
Pollutants 14
Impaired Uses 14
Funding Information 15

Monitoring Plan File 16
Purpose and Application 16
Data Elements for Monitoring Plan 16
Monitoring Plan File Access 16
Choice of Monitoring Approach 17
Chemical and Physical Monitoring 17
Biological Monitoring 17
Habitat Monitoring 18
Monitoring Design 18
Chemical and Physical Monitoring Design 18
Biological and Habitat Monitoring Design 18
Paired-Watershed Study Design 19
Upstream-Downstream Study Design 21
Single-Downstream Study Design 21
Monitoring Station Location 21
Biological and Habitat Monitoring 21
Reference Sites for Biological Monitoring 21
Chemical and Physical Monitoring 22
Monitoring Station Identification 22
Drainage Area and Land Use 23
Principal Water Quality Monitoring Parameters 23

Chemical and Physical Parameters 24
Biological and Habitat Parameters 25
Explanatory Variables (Covariates) 26
Monitoring Frequency 27
Chemical and Physical Monitoring 27
Biological and Habitat Monitoring 28
Explanatory Variables 28
Monitoring Year and Seasons 29
Monitoring Program Lifetime 29
Quality Assurance/Quality Control 30

Annual Report File 31
Purpose and Application 31
Data Elements for Annual Reports 32
Annual Report File Access 32
Water Quality Monitoring Data 32
Notes Field 32
Chemical and Physical Parameters 32
Biological and Habitat Parameters 33
Explanatory Variables 34
Implementation 34
Paired Studies 35
Upstream-Downstream Studies 35
Reporting Implementation 36

References 39

Appendix A. Input Screens for NonPoint Source Management Software

Appendix B. Hard Copy Data Entry Forms

List of Illustrations

Figure 1. Examples Illustrating Use of Entire Management Area for Setting Implementation Goals and Reporting Annual Implementation 11
Figure 2. Examples Illustrating Use of Station Drainage Areas for Setting Implementation Goals and Reporting Annual Implementation 12
Figure 3. Examples Illustrating Two Ways for Setting Implementation Goals and Reporting Annual Implementation 13
Figure 4. Monitoring Designs for National Monitoring Program 20

Introduction

As described in the guidance for section 319 grants (U.S. EPA, 1991), the U.S. Environmental Protection Agency (EPA), in cooperation with the states, is establishing a national program to intensively monitor and evaluate a subset of watershed projects funded under section 319 of the Clean Water Act as amended in 1987. Monitoring within this program will be carried out by projects following a nationally consistent protocol, and will be supported by Regional set-aside of section 319 funds.

The section 319 guidance stated that EPA would develop both a national framework and monitoring guidelines for the National Monitoring Program (U.S. EPA, 1991). EPA has developed the national framework, or plan, for the National Monitoring Program (U.S.EPA, 1991c), and that document was distributed in March, 1991. Key aspects of the plan are summarized under "Selection Criteria for National Monitoring Program Projects" on page 2. This document provides the monitoring and reporting guidelines.

The watershed project reporting formats prescribed in this document are organized around the development of four[1] information files:

1. Section 305(b) Waterbody System - includes the location of surface waters impacted by nonpoint source (NPS) pollution and identified in the state's section 319 Assessment Report, the designated beneficial uses associated with these waters, the categories and subcategories of pollutants impacting these waters and their pollutant sources (U.S. EPA, 1989a). The Waterbody System (WBS) is referred to in this document, and its use by states is assumed. The information to be contained in the three files described below is linked to the WBS information by waterbody identification number.

2. Management File - includes information regarding watershed project work plans and the water quality problems within those watersheds.

3. Monitoring Plan File - includes information regarding the watershed monitoring plan, including stations, parameters, and monitoring periods.

4. Annual Report File - includes annual water quality and implementation data necessary for tracking and interpreting progress made in watershed projects.

States will benefit from using the prescribed formats since these formats provide a convenient, logical means for tracking watershed nonpoint source activities in such a way that all surface water information can be linked to the 305(b) Waterbody System and all other data files keyed to river reaches.

States should supplement the watershed project information required under the Management File, Monitoring Plan File, and Annual Report File with appropriate narrative discussions in their work plans, progress reports, and section 319 annual reports. For example, a discussion of soils, land use changes, climate, slopes, and other physical attributes of the watershed project area should be included in the narrative. An interpretation of annual implementation and water quality data is another necessary component of annual watershed project reporting.

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[1] Earlier version included only three files. The addition of a separate file for the monitoring plan has been made to improve data organization and management in the supporting software package, ***NPSMS***.

Selection Criteria for National Monitoring Program Projects

The minimum requirements for all watershed projects are specified in the section 319 guidance (U.S. EPA, 1991). These requirements plus the specific monitoring considerations contained herein form the basis for development of projects for the National Monitoring Program.

Because monitoring of lotic environments has provided the greatest success to date in documenting water quality improvements resulting from nonpoint source implementation, the National Monitoring Program has been developed primarily for stream and estuarine monitoring. This National Monitoring Program does not, however, preclude any additional monitoring of lakes, coastal waters, wetland, and ground-water projects that states may wish to perform in conjunction with other watershed projects. In fact, in many cases it will be appropriate for a state to supplement the stream monitoring performed for national purposes with other monitoring to document use support or trends in the primary water resource of interest. States have the option of proposing a wide range of monitoring programs within their overall section 319 grant work programs.

Specific concerns related to the minimum requirements for watershed projects in the National Monitoring Program are summarized in the following sections (U.S. EPA, 1991c).

Identification of water quality threats or problems

Those programs that include field verification of the existence of an impact on ambient stream conditions should receive a higher priority. Information that should be provided to document problems includes, but is not limited to:

- A description of water resources in the area, including gradients, flows, geomorphology, watershed sizes, waterbody sizes, ground water/surface water interactions, hydrology etc.
- Project location (political, geological, ecoregional)
- Water quality standards violations data (where applicable) or other indications of the severity of the problem.
- A description of the key factors (chemical, physical, biological, fisheries, existing management programs etc.) affecting use support.
- A seasonal assessment of use impacts, with critical pollutant-producing periods identified (monitoring should be tied to critical periods).
- A list of pollutants causing the identified problem, the levels at which they are found, and pollutant transport modes, including lag times.
- A description of major pollutant sources and a map showing their relationship to the impacted water resource.
- Pollutant budgets for key pollutants, including point sources and nonpoint sources.
- Estimates of pollutant control needed to achieve water quality objectives.
- A land use map.

[illegible] the relationship of land use/management to the use impacts in-

- A short narrative describing the relationship of land use/management to the use impacts, including an historical accounting. Discuss current land management patterns (e.g. irrigation), existing NPS control practices, etc.
- Climate date and important meteorologic factors.
- Soil types, geology, slopes.

Clearly, not all of the above information will be available for all projects. Those projects, however, which do a better job of providing these types of information will be more likely to provide reliable results.

Nonpoint source control objectives

Each program should include a clear and concise project objective that addresses the documentation of trends based on monitoring of water quality parameter(s) directly related to the nonpoint source impacts on the water resource.

Project area size

The ability to successfully document control of a NPS problem is in part a function of the size of the project area. It is recommended that projects included in the National Monitoring Program cover watersheds no greater than 30,000 acres and preferably be much smaller (see "Paired-Watershed Study Design" on page 19).

Institutional roles and responsibilities

Proposals should identify an individual who will serve as overall project coordinator. A description of the project coordinator's duties and time on the job is essential.

Relevant standards, rules, regulations, and laws that pertain to the project (including zoning laws) should be addressed along with the relationship of the section 319 project to other federal, state, or local projects. Incentives that will encourage participation of affected land owners should be described. The extent of land owner participation expected within the critical areas and the basis for those expectations should be provided. Past and present institutional arrangements and their successes should be considered in developing this category.

Critical areas

A concise definition of all critical areas should be provided. There is a higher probability of documenting water quality improvements if critical areas are clearly defined and a large percentage of the critical area is scheduled for treatment. A critical area definition should identify the pollutant or pollutants involved, the source or sources of the pollutant, and the pollutant transport system.

The critical area definition should reflect the relative magnitude of source, pollutant delivery to the waterbody, relationship of the pollutant to use impacts, treatability, and relative treatment costs. Such an approach will help project planners select treatment areas that will provide necessary pollution control and a greater likelihood of water quality improvements.

Watershed plan

The project implementation plan should include systems of management practices that address the defined water quality problems. Critical area treatment goals should be specified in quantitative

terms. Management practice systems should be specifically tailored to the sources and pollutants they will be used to control.

It is important that the watershed plan takes into account the combined effects of the management measures that will be installed. For example, a project with suspended solids problems should assess the importance of all major sediment sources and anticipate potential shifts in the importance and/or magnitude of those sources as implementation of management practice systems proceeds. A project focused on cropland erosion control, but having inadequate streambank stabilization, may fail to improve water quality because suspended sediment delivered in runoff from highly eroding lands may, after application of erosion control practices, be replaced by suspended sediment from scoured stream bottoms and banks.

Monitoring Plan and Evaluation

The overall monitoring design in the proposal should be clearly documented. The preferred design is the paired-watershed design which has been demonstrated to be the most effective methodology for detecting and understanding trends in water quality data (Spooner, et al., 1985). In some proposals, the paired-watershed design will not be feasible, in which case an optional study design such as upstream/downstream sites should be considered.

Land treatment, precipitation, and irrigation monitoring are also key aspects of the monitoring to be performed under the National Monitoring Program.

Quality assurance and quality control (QA/QC) procedures must follow those described by EPA (U.S. EPA, 1979; U.S. EPA, 1980; U.S. EPA, 1984a; U.S. EPA, 1984b; U.S. EPA, 1984c). EPA grant regulations require that QA/QC plans must be approved prior to expenditure of federal funds.

NonPoint Source Management System (NPSMS) Software

To facilitate information tracking and reporting under the National Monitoring Program, EPA has developed data input and reporting software (***NPSMS***, version 3.0) which states can use to enter their Management File and Annual Reports information. The software is a PC-based application written in Clipper, MS-C, and assembly language. The file formats are compatible with dBase III and the WBS software.

The discussion in this document is keyed to data entry screens of ***NPSMS***, and all key screens are provided in Appendix A of this document. The software also has a user's guide (U.S. EPA, 1991d) and on-line HELP screens.

For those who wish to report their project information on hard copy forms, EPA provides such forms in Appendix B.

Management File

Purpose and Application

The Management File includes information regarding the implementation plans and water quality problems within watershed project areas, or Management Areas. Its central purpose is to provide a basis for tracking NPS control measure implementation with respect to the pollutants causing the surface water quality problems. Implementation milestones are to be provided as supporting information in the narrative portion of the watershed project plan, but implementation goals are included in the Management File.

Information entered into the Management File is partly dependent upon the monitoring protocol chosen for the project. There are three types of surface water monitoring program designs that are offered as options for each watershed project. These three designs, which will be described in greater detail under "Monitoring Design" on page 18, are:

1. Paired watersheds (one station for each of two watersheds)
2. Upstream-downstream paired stations (one station at each of two locations in same watershed)
3. Single downstream station

For all of the study designs, the Management Area is the entire watershed project area, including the drainage area above all sites. For example, the Management Area for an upstream-downstream study includes the drainage area above the upstream and downstream monitoring stations, even though implementation of control measures is likely to take place only in the drainage area between the monitoring stations. The actual drainage areas above each monitoring station are reported under "Drainage Area and Land Use" on page 23.

The water quality problem description reported in the Management File applies to the entire Management Area. There are several options, however, for reporting **Implementation Goals** and annual implementation against those goals. These options are described in detail under "BMPs" on page 9. The default assumed by ***NPSMS*** is that users will report BMP **Implementation Goals** that apply to the entire Management Area (i.e., overall **Implementation Goals**). For this reason, users must go to the Annual Report File to input **Implementation Goals** on a monitoring station (more specific) basis (see "Reporting Implementation" on page 36). This cannot be done until a monitoring plan has been reported under the Monitoring Plan File (see "Monitoring Plan File" on page 16), and is achieved by editing BMP information already reported in the Management File under Screen 1.21 (see "BMPs" on page 9). Thus, users must enter overall **Implementation Goals** for the Management Area (Screen 1.21) for use as input to edit and report as monitoring station-specific goals under Screen 3.09 (chemical/physical) or Screen 3.29 (biological/habitat).

There is also assumed to be no plan for implementation in control watersheds of paired studies or in upstream areas of upstream-downstream studies. Implementation of control practices in these areas, however, can be tracked using ***NPSMS*** (see "Implementation" on page 34). Other activities in these areas that may affect water quality data interpretation can also be reported as notes in ***NPSMS***.

Data Elements for Management File

The following discussion of data elements is keyed to the data entry screens for *NPSMS* (see Appendix A), but is not a complete accounting of the options available under *NPSMS*. The user's guide and HELP screens for *NPSMS* provide more detailed information regarding data fields and data entry options. In each subsection to follow, a discussion of the data entry process and considerations will be presented, followed by additional specifics for selected data elements as necessary.

Management File Access

The Management File is accessed through Screen 0.00 of *NPSMS*, by selecting **Management** from the top bar. Screen 1.01 appears next, from which states can select a **State**. To add a **State** from Screen 1.01, select Add, and then enter the two-character, alpha-numeric FIPS code (**State**) and the **EPA Region** by selecting the appropriate state from the standard list that is displayed when **F1** is pressed (**State** must be highlighted when **F1** is pressed). Users must also enter the name of the **NPS Lead Agency**. The **NPS Lead Agency** is the name of the agency designated by the Governor as the lead agency with respect to implementation of the state Management Program developed under section 319 (up to 23 characters).

Screen 1.02 is displayed once the user selects the **State** and **NPS Lead Agency**. To add a Management Area, users must select **Mgmt Area Info** from the top bar of Screen 1.02. The **Mgmt Area Info** is then entered from Screen 1.03. This information includes a description of the Management Area (**Mgmt Area Desc**), the **Waterbody** that is to benefit from the project, the designated beneficial uses (**Uses for WB**) of the waterbody, and the significant **Pollutants** and their sources.

Management Area Description

Selecting **Mgmt Area Desc** from Screen 1.03 displays Screen 1.04, from which the user can enter the Management Area **Name** and identification number (**ID**). The **Name** (or watershed project name) is to be determined by the state or territory, and consists of 45 characters and/or numbers. The Management Area **ID** consists of up to 23 characters and/or numbers; the first two characters are the two-letter state code. Each watershed project in a state/territory must have a unique Management Area **Name** and **ID**.

Participating Agencies and a **Project Description** are also reported from Screen 1.04. **Participating Agencies** are those who have significant roles in the planning or implementation of the watershed project, and may include federal, state, and local agencies.

To enter a narrative **Project Description**, users must first select **Notes** from the top bar of Screen 1.04. The **Project Description** is a short, narrative statement of the major problems and pollutant sources, implementation goals, and evaluation goals of the project. Aspects of the project that make it special or unique can also be highlighted in this field.

Waterbodies

Selecting **Waterbody** from Screen 1.03 displays Screen 1.05, from which the user can enter the waterbody **Name** and identification number (**ID**) as specified in the WBS user's guide (U.S. EPA, 1989a). The WBS provides for a 45-character field for the **Name** and an alpha-numeric field of 23 (2-character (state code) plus 21-alpha-numeric) for the **ID**. The waterbody to report for each watershed project is that impaired or threatened waterbody which is intended to benefit from the pollution control activities in the watershed project. This applies even if the waterbody is downstream from all monitoring stations, and is, therefore, not being monitored as part of the National Monitoring Program.

Designated Use Support

Select **Uses for WB** from the top bar of Screen 1.03 to enter on Screen 1.06 the designated **Use**(s) and use support status (**Use Support Code**) for the waterbody identified above (see

"Waterbodies"). Designated **Uses** are to be consistent with those that the state reports under the WBS (U.S. EPA, 1989a) and in their section 305(b) reports (U.S. EPA, 1991e). Uses may be selected from the standard list that is displayed by pressing **F1** when **Use** is highlighted. **Use Support Codes** are also derived from the WBS and section 305(b) guidance (U.S. EPA, 1991e), with the options being fully supported (F), partially supported (P), threatened (T), and not supported (N). "Threatened waters" refers to those waters that fully support their designated uses but that may not fully support uses in the future (unless pollution control action is taken) because of anticipated sources or adverse pollution trends (U.S. EPA, 1991e).

Pollutants and Relative Source Contributions

Select **Pollutants** from the top bar of Screen 1.03 to enter on Screen 1.07 the pollutants or pollutant categories (**Pollutant Name**) which are the principal factors creating the water quality problems in the waterbody identified above (see "Waterbodies" on page 7). A simple list of pollutants that is based upon the Waterbody System's Nonattainment Causes (U.S. EPA, 1989a) is displayed for use by pressing **F1** when **Pollutant Name** is highlighted. Users can add pollutants to the list provided (through **Options** which is accessed from Screen 0.00), but EPA strongly encourages states to select from the existing list.[2] This information is provided to give a general sense of the kinds of pollutants that impair or threaten designated uses in the project area.

In addition to reporting on the major pollutants causing the water quality problems in the waterbody identified, states are to report their best professional judgment regarding the *overall* contribution of nonpoint sources (**NPS**), point sources (**POINT**), and background sources (**BACKGROUND**) to the water quality problem. These contributions are to be expressed as a decimal fraction, where the sum = 1.0. For example, in a watershed where nonpoint sources contribute 75 percent of the problem, the nonpoint source contribution would be reported as 0.75.

Along with this overall estimate of the relative contributions of sources, states are to report the primary type of information (**Information Type**) used to make the estimate. The options are (1) chemical load data (**Information Type** = L), (2) chemical concentration data (Information **Type** = C), (3) biological or habitat data (**Information Type** = I), (4) modeling data (**Information Type** = M), or (5) a user-defined alternative information type. A pop-up screen is available for selecting or adding the appropriate **Information Type** by pressing **F1** when **Information Type** is highlighted.[3]

Best Management Practices and NPS Control Measures

By selecting **BMPs & Proj Funding** from Screen 1.02, Screen 1.20 is displayed, from which users can enter information regarding the best management practices (**BMPs**) to be applied, the sources controlled (**Sources Cntld**) by the BMPs, the **Pollutants** controlled by the BMPs, the **Impaired Uses** expected to benefit from the BMP implementation, and the **Funding** for the project.

The selection of BMPs and control measures is an essential part of a watershed project implementation plan. Linkage of these control practices to the identified use impairment(s), the pollutant(s) causing the use impairment(s), and the source(s) of the pollutant(s) is key to the development of an efficient and effective implementation program. *NPSMS* emphasizes this linkage through its hierarchical structure, where:

1. Each control practice is linked directly to (or "owns") one or more sources controlled.
2. Each source controlled owns one or more pollutants controlled.
3. Each pollutant controlled owns one or more impaired uses.

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[2] States that add pollutants should make sure that they are adding ***pollutants***, not indicators of impacted uses. For example, fish kills are considered impacts, not pollutants.

[3] All pop-up lists or tables (i.e., system tables) can be edited only through **Options**, which is accessed from Screen 0.00 by selecting **Options**. Users then select **System Tables** from the displayed menu. This displays all lists or tables that can be edited by the user.

In short, any combination of BMP or system, source to be controlled by the BMP or system, pollutant to be controlled by the BMP or system, and impaired use addressed by the BMP or system, can be reported.

BMPs

Select **BMPs** from Screen 1.20 to report on Screen 1.21 the best management practices (BMPs) and control measures which will be undertaken to reduce pollutant loads and/or impacts from each source identified in the WBS for the waterbody reported under Screen 1.05. The Management Area ID (**Mgmt Area**) will be displayed as BMP information is entered.

By selecting **Add** from Screen 1.21, users can enter BMP information. The **BMP Name** can be reported in the 45-character field as BMPs, BMP systems, Resource Management Systems, or other functional units that ***best*** represent the control actions undertaken. States are encouraged to adapt information from existing reporting systems (e.g., U.S.D.A. - A.S.C.S. Form AD-862, Conservation Reporting and Evaluation System) to the extent possible to minimize duplication in reporting. A pop-up list is provided by pressing **F1** when **BMP Name** is highlighted.

The **BMP Type** is to be reported as either "A" (annual) or "C" (cumulative). For example, management practices such as conservation tillage are annual practices, whereas structures (e.g., animal waste storage structures) are cumulative practices. Similarly, in urban settings, grass filter strips are annual practices, while wet ponds are cumulative practices.

Implementation **Reporting Units** are also reported, and should be reliable indicators of the extent to which the pollutant source will be controlled (e.g., tons of animal waste managed instead of number of dairy farms treated). These units are not to be changed over the lifetime of the project.

The **Implementation Goal** for each BMP or control measure is to be reported as well. This goal is expressed as the number of BMP units that are needed for the watershed project to be successful in improving or protecting water quality. The annual implementation of BMPs will be tracked in annual reports (see "Implementation" on page 34).

There are several options for reporting BMP **Implementation Goal**s and annual implementation against those goals. For example, projects may wish to simply establish overall BMP **Implementation Goal**s for the Management Area, and report annually the implementation in the entire project area. This option is depicted in Figure 1 on page 11. Tracking is simpler under this scenario, but (unless the relatively weak single-station monitoring design is utilized in the project) the implementation cannot be related to the water quality data collected in the monitoring program. Alternatively, projects could establish **Implementation Goal**s for each of the monitoring station drainage areas (see Figure 2 on page 12). Under this scenario, tracking is more complicated, but the implementation can be related directly to the water quality data collected in the monitoring program.[4]

In the above two scenarios it was assumed that only one monitoring program exists within the Management Area. In cases where two[5] monitoring programs exist (i.e., a biological/habitat and a chemical/physical monitoring program), then **Implementation Goal**s can either be established for each monitoring station drainage area under each of the two monitoring programs, or overall **Implementation Goal**s could be established for the entire Management Area (see Figure 3 on page 13).

It is important to note that under ***NPSMS***, for Management Areas with only one monitoring program, implementation toward achieving overall Management Area goals (see Figure 1 on page 11) will be reported under the study station in paired-watershed studies, under the downstream station in upstream-downstream studies, or under the single station for single-station studies. If both a chemical/physical and biological/habitat monitoring program is used in a Management Area,

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[4] This does not guarantee, however, that statistical relationships can be established between the implementation and water quality data.

[5] This is the maximum number of monitoring programs currently allowed by ***NPSMS*** for any given watershed project (Management Area).

then implementation toward achieving overall Management Area goals may be reported for either the chemical/physical or the biological/habitat monitoring program (see Figure 3 on page 13).

The default assumed by *NPSMS* is that users will report single, overall **Implementation Goals** for the Management Area. For this reason, users must go to the Annual Report File to input **Implementation Goals** on a monitoring station basis (see "Reporting Implementation" on page 36).

The BMP information reported here, in conjunction with the project implementation schedule, serves as the basis for tracking annual implementation progress. The implementation schedule is to be reported as part of each watershed project plan and in each section 319(h)(11) annual report, and is to address as separate items each control included in the implementation plan.

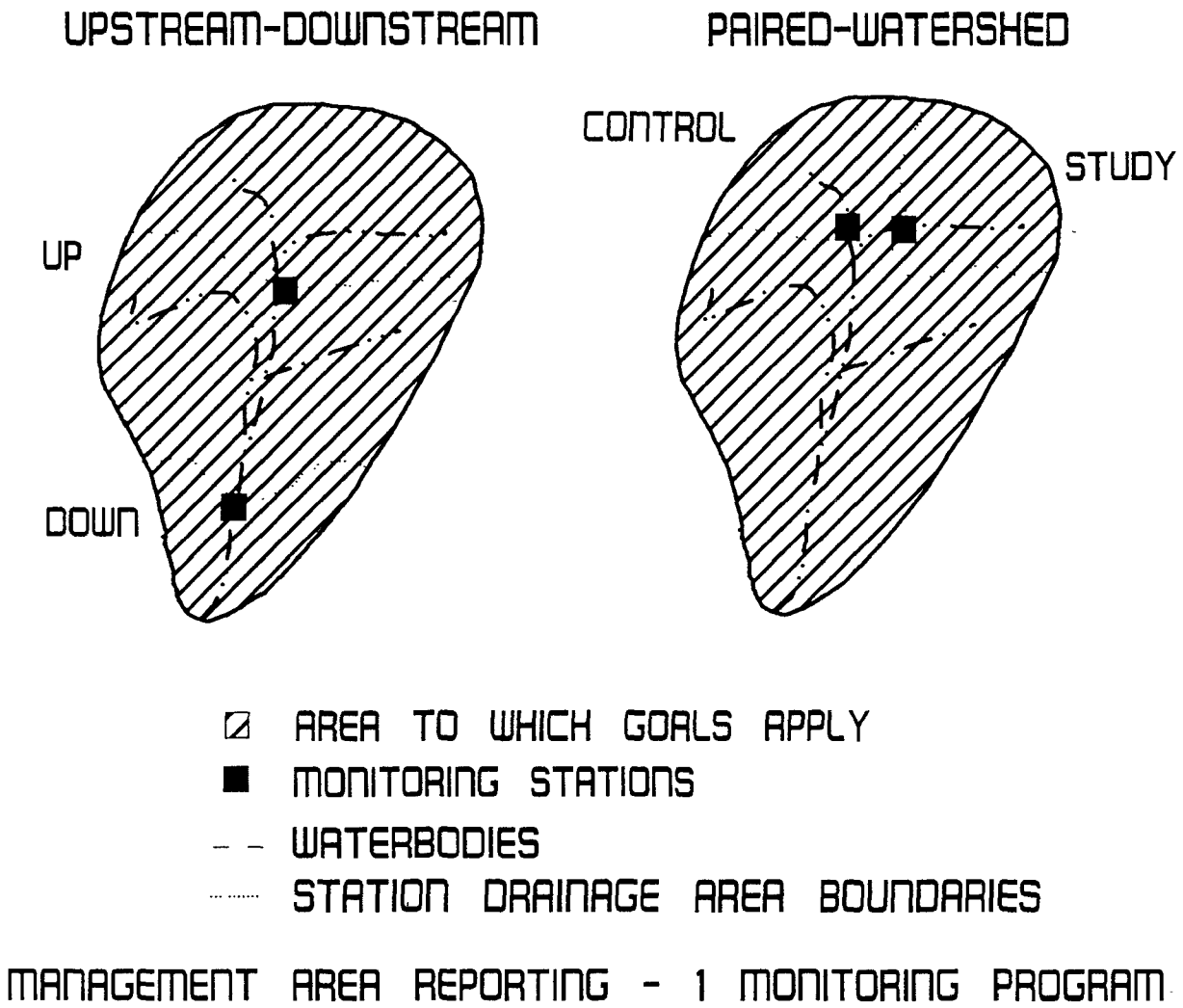

Figure 1. Examples Illustrating Use of Entire Management Area for Setting Implementation Goals and Reporting Annual Implementation

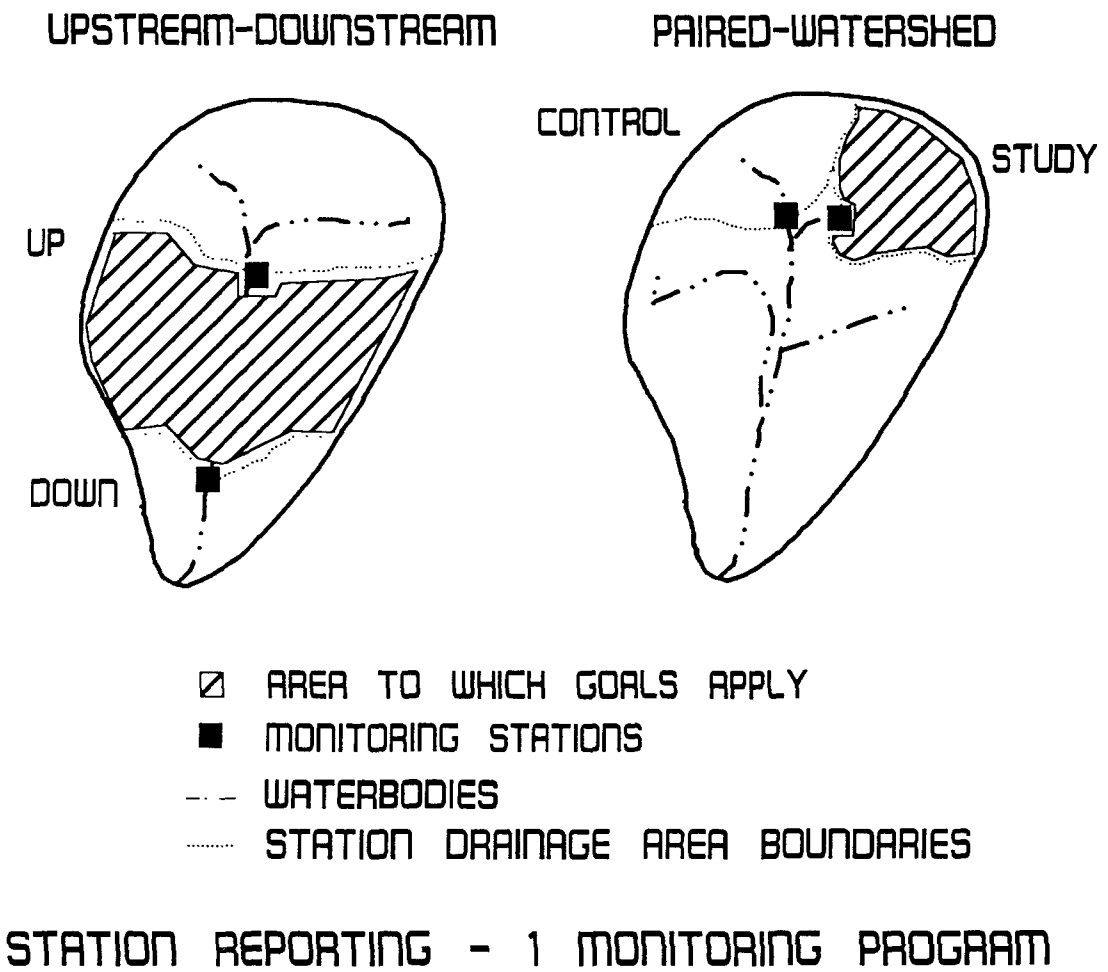

Figure 2. Examples Illustrating Use of Station Drainage Areas for Setting Implementation Goals and Reporting Annual Implementation

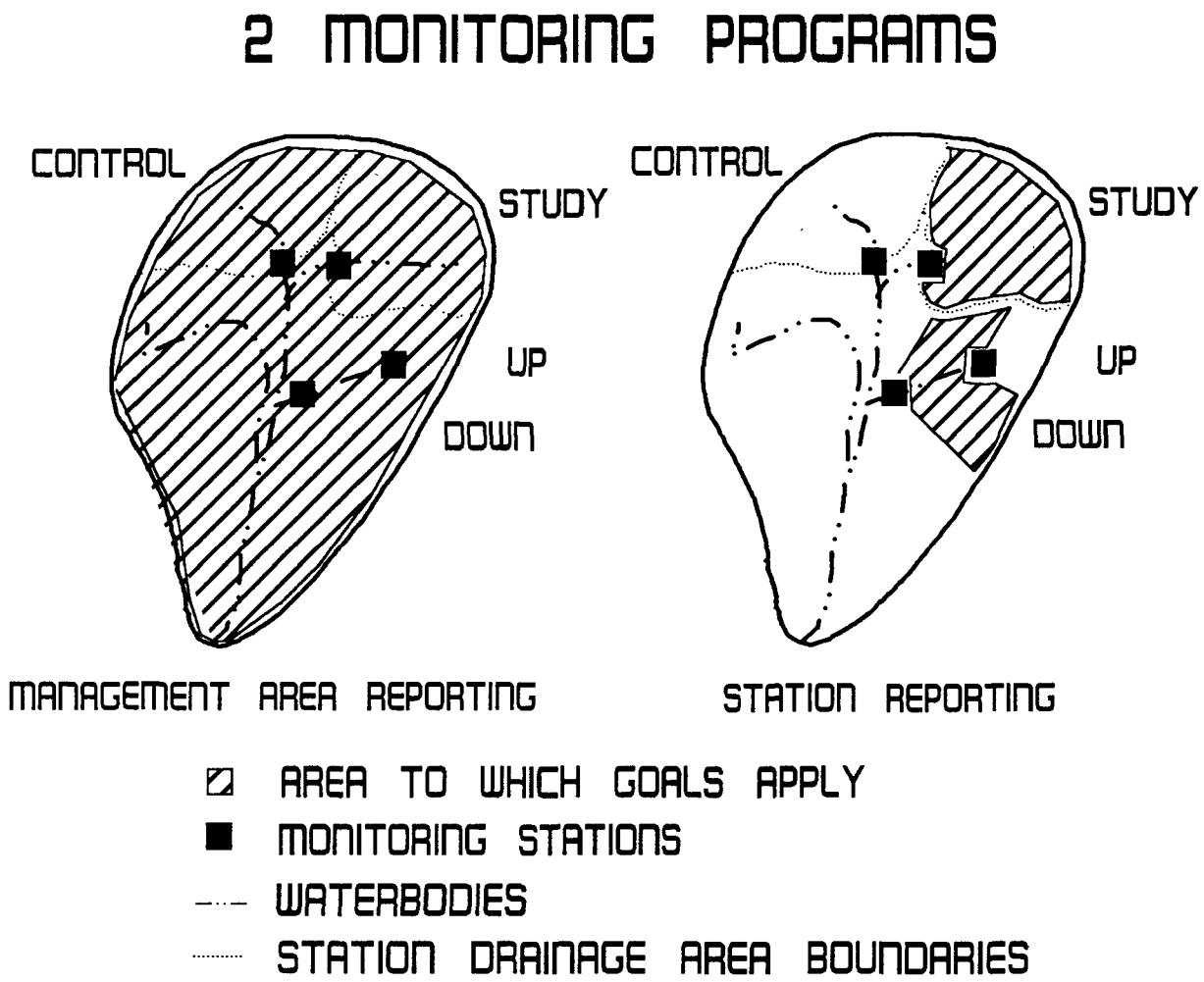

Figure 3. Examples Illustrating Two Ways for Setting Implementation Goals and Reporting Annual Implementation

Sources

Select **Sources Cntld** from Screen 1.20 to display Screen 1.22, from which the user can report the sources controlled by each of the BMPs and control measures listed above (see "Best Management Practices and NPS Control Measures" on page 8). More than one source can be reported for each BMP or control measure. Likewise, if a given source requires more than one BMP or system, the source can be reported for each BMP or system included in the implementation plan. As users **Add** sources (**Source Name**), they apply to the control practice (**BMP Name**) currently displayed in the **BMPs, System or Control Measures for Mgmt Area** window of Screen 1.22.

Sources (Nonattainment Sources) are to be named in accordance with the list provided for the WBS (U.S. EPA, 1989a). The source codes, however, are not required, and states may use source names which include up to 49 characters. A pop-up list of sources is made available by pressing **F1** when **Source Name** is highlighted.

EXAMPLE: The **BMP Name** displayed is animal waste management. The user enters dairies and swine operations as the **Source Names**. This means that animal waste management will be used to control both dairies and swine operations in the project area.

Pollutants

Select **Pollutants** from Screen 1.20 to display Screen 1.23, from which users can report the pollutants (**Pollutant Name**) from the sources controlled by each of the BMPs and control measures listed above (see "Best Management Practices and NPS Control Measures" on page 8). More than one **Pollutant Name** can be reported for each source. Likewise, if a given pollutant is derived from more than one source, the pollutant can be reported for each source controlled by BMPs or systems that are included in the implementation plan. As users **Add** pollutants, the **BMP Name** and **Source Name** to which the pollutant applies will be displayed.

The pollutant names must be taken from those listed above for entry to Screen 1.07 (see "Pollutants and Relative Source Contributions" on page 8), and may use up to 50 characters. This list of pollutants for the Management Area can be accessed and used when adding pollutants by pressing **F1**.

EXAMPLE: The **BMP Name** displayed is animal waste management. The **Source Name** displayed is dairies. The user enters fecal coliform as the **Pollutant Name**. The user then adds phosphorus as the **Pollutant Name**. The user then returns to the **Sources Controlled By BMP** window and changes the **Source Name** to swine operations. Returning back to the **Pollutants For Source** window, the user adds fecal coliform as the **Pollutant Name**. This means that animal waste management will be used to control both fecal coliform and phosphorus from dairies, but just fecal coliform from swine operations in the project area.

Impaired Uses

Select **Impaired Uses** from Screen 1.20 to display Screen 1.24, from which the user can report the impaired uses associated with the pollutants from those sources controlled by each of the BMPs and control measures listed above (see "Best Management Practices and NPS Control Measures" on page 8). More than one impaired use can be reported for each pollutant. As users **Add** impaired uses, the **BMP Name**, **Source Name**, and **Pollutant Name** to which the impaired use applies will be displayed.

The **Impaired Uses** are to be selected from those reported under Screen 1.06 (see "Designated Use Support" on page 7). The list of standard uses can be accessed and used when adding impaired uses by pressing **F1** when **Impaired Uses** is highlighted.

EXAMPLE: The **BMP Name** displayed is animal waste management. The **Source Name** displayed is dairies. The **Pollutant Name** displayed is fecal coliform. The user enters shellfishing as the **Impaired Use Caused By** fecal coliform. The user then adds recreation as another **Impaired Use Caused By** fecal coliform. The user then returns to the **Pollutants For Source** window and changes the **Pollutant Name** to phosphorus. The user then returns to the **Impaired Uses Caused By** window and enters recreation as the impaired use. (The user could also go back to the **Sources Controlled**

By BMP and **BMPs, System or Control Measures for Mgmt Area** windows and change those, but this example will be kept simple for illustrative purposes.) This means that animal waste management will be used (1) to control fecal coliform from dairies because of its effects on shellfishing and recreation in the Management Area, and (2) to control phosphorus from dairies because of its effects on recreation in the project area.

Funding Information

Select **Funding** from Screen 1.20 to display Screen 1.25, from which users can report the funding sources (**Source of Funding**) for the project (e.g., EPA funds under sections 319(h) and (i), 104, 106, 205(j)(5), 201(g)(1)(B), 314, 320, and 603(c)(2); USDA ACP funds; state funds; local funds; etc.), the **Amount** of expenditure under each source, the **Year** (four-digit code) of expenditure, and the use (**Use of Funding**, 25 characters) for all funds expended within the watershed project. States are also to report state and local funds to provide a complete accounting of project expenditures for implementation.

Funding sources are to be identified using up to 20 characters and/or numbers. A selectable list of uses for funding is available by pressing **F1** when the **Use of Funding** field is highlighted. The selectable list can be modified by the user as needed (under **Options** which is accessed from Screen 0.00). Funding **Amounts** are to be reported using whole dollars, with a limit of $9.9 billion.

Monitoring Plan File

Purpose and Application

States are required to perform at least a minimum level of chemical/physical or biological/habitat monitoring for each watershed project included in the National Monitoring Program. To meet the minimum monitoring requirements, States can choose to conduct chemical/physical, biological/habitat, or a combination of chemical/physical and biological/habitat monitoring in each National Monitoring Program project. States are not required to perform combinations of these monitoring protocols, but may find that such combinations (e.g., chemical plus fisheries monitoring) are useful and essential for tracking project success. For example, a project that tracks suspended solids concentrations during the peak season for sediment loading may find that it is necessary to perform fisheries or benthic macroinvertebrate sampling to track the overall impact of sediment control measures on support of designated beneficial uses. Only one chemical/physical and one biological/habitat monitoring plan can be reported in *NPSMS* for each watershed project or Management Area for a maximum of four monitoring stations per study area, but each State can report multiple projects in *NPSMS*.

The Monitoring Plan File is to be used for the following:

1. To identify the monitoring design to be used.
2. To identify the monitoring station(s) and monitoring parameters.
3. To identify, for chemical/physical monitoring, the quartile values for the parameters.
4. To identify and characterize biological and habitat parameters to be monitored.
5. To identify the monitoring season(s).
6. To identify explanatory variables (covariates) to be monitored.

Data Elements for Monitoring Plan

Monitoring Plan File Access

The Monitoring Plan File is accessed through Screen 0.00 of *NPSMS* (see Appendix A), by selecting **Design** from the top bar. This leads to Screen 2.01, which allows the user to choose either **Chemical/Physical** monitoring or **Biological/Habitat** monitoring.

The information reported in this file is dependent upon the monitoring design and monitoring parameters selected. There are three monitoring design options (paired watersheds, upstream-downstream, single station) and three[6] basic types of parameters (chemical/physical, biological, and habitat). Details are provided in the following subsections.

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[6] In *NPSMS*, however, biological and habitat monitoring parameters are entered using the same screens.

Choice of Monitoring Approach

Select **Chemical/Physical** from the top bar of Screen 2.01 if chemical and physical monitoring information is to be entered. This choice will be displayed as "C" for **Data Type** on Screen 2.02. From this screen the user can add (**(A)dd**) the chemical and physical monitoring plan for the Management Area.

If biological and habitat monitoring is to be performed, select **Biological/Habitat** from the top bar of Screen 2.01. This choice will be displayed as "B" for **Data Type** on Screen 2.22. From this screen the user can add (**(A)dd**) the biological and habitat monitoring plan for the Management Area.

By pressing **F1** on the highlighted **State** field, the user is provided with a list of those Management Areas already entered into *NPSMS*. Monitoring plans cannot be entered unless a project has already been entered into the Management File (see "Management File" on page 6). After the **State**, **NPS Management Area ID**, and **305(b) Waterbody ID** are entered, the **QA/QC** description field (up to 64,000 characters) will be displayed. Users are required to enter descriptions of the sampling scheme, sample handling and storage methods, analytical techniques, as well as the quality control procedures followed during sample collection, analysis, and entry of data into *NPSMS* format. Full referencing of manuals used is also required.

Chemical and Physical Monitoring

Chemical and physical monitoring for nonpoint source watershed projects can be quite useful in trend analysis because of the direct linkage that can often be made between the pollutants identified in the water column and the control measures implemented to control those pollutants. In that respect, properly designed and executed chemical and physical monitoring can result in sound data bases for evaluating not only trends, but also the pollution control achieved through implementation efforts.

In some cases, however, chemical and physical monitoring may be adequate for detecting trends in the levels of selected pollutants, but inadequate for tracking support of designated beneficial uses. For example, a project tracking total suspended solids concentrations may show that control measures are working, but is unlikely to obtain sufficient information to determine the status of a cold-water fishery in the watershed. The latter information is usually gathered from biological and habitat monitoring programs.

From Screen 2.02, existing chemical/physical monitoring plans can be listed by pressing **L**, and new plans can be added by pressing **A**. This leads to Screen 2.03, where the chemical and physical monitoring plan details are input.

Biological Monitoring

The use of biological monitoring in section 319 programs should follow the basic precepts set out in the Rapid Bioassessment Protocols (RBP) developed by EPA (U.S. EPA, 1989). Protocol III for benthos monitoring and protocol V for fish would best form the basis of or a starting point for state monitoring programs in streams. From this base States should then modify, as needed, sampling procedures to tailor their individual programs to conditions in their specific area (ecoregion, subregion, or other unifying concept).

A number of states have developed documents detailing the development and implementation of the state macroinvertebrate and fish community assessment techniques that many states may find useful in beginning their programs. EPA's draft technical reference guide on biological criteria (U.S. EPA, 1991a) provides a detailed bibliography of papers and agency publications that deal with biological criteria development and biological/habitat monitoring techniques. This document should be available by October 1, 1991. EPA is also developing a case-study document that describes state development and implementation of biological criteria (U.S.EPA, 1991b). This document is expected to be completed by October 1, 1991, and should also prove beneficial to states. Since no RBPs exist for estuaries, States should use the aforementioned manuals to select methodologies appropriate to their area and use them as a basis to develop their own sampling program.

From Screen 2.22, existing biological/habitat monitoring plans can be listed by pressing **L**, and new plans can be added by pressing **A**. This leads to Screen 2.23, where the biological and habitat monitoring plan details are input.

Habitat Monitoring

Habitat may be assessed qualitatively or quantitatively. Use of a habitat assessment protocol similar to that presented in the RBP manual should be sufficient for qualitative assessments of streams. Modifications will be needed to tailor the assessment to local conditions that influence macroinvertebrate communities and adjust the metric composition to more accurately reflect those habitat parameters that influence local fish communities.

Several habitat assessment techniques are discussed in EPA's draft technical reference guide on biological criteria (U.S. EPA, 1991a), as well as in the other documents cited above (see "Biological Monitoring" on page 17). States may use these to develop habitat assessment techniques for their streams or estuaries. Some states may need to go beyond a qualitative assessment and use quantified techniques. Whether using qualitative or quantitative techniques, the assessment method needs to be broad enough to cover all limiting habitat factors and associated changes in the aquatic ecosystem.

From Screen 2.22, existing biological/habitat monitoring plans can be listed by pressing **L**, and new plans can be added by pressing **A**. This leads to Screen 2.23, where the biological and habitat monitoring plan details are input.

Monitoring Design

In this guidance EPA prescribes monitoring design options for use in watershed projects. States may choose to supplement these designs, but the prescribed monitoring and reporting must be adhered to. Despite this approach, states have much flexibility in determining both the water quality and implementation parameters to be monitored. EPA's analyses of single-project and combined-project data that are reported with *NPSMS* will provide some answers to questions regarding water quality improvement and implementation, but more detailed analyses of the raw data are likely to be needed to refine these preliminary findings. The requirement to enter raw data into STORET and BIOS[7] is made largely to support such detailed analyses (see "Purpose and Application" on page 31).

Chemical and Physical Monitoring Design

Selecting **Design** from Screen 2.03 displays Screen 2.04, from which users can enter the code for the chemical/physical monitoring design to be used. Enter "P" (paired-watershed), "U" (upstream-downstream), or "S" (single station) on Screen 2.04 for **Monitoring Design** to indicate the study design that will be implemented in the watershed project for the purpose of tracking water quality to determine trends which may be associated with NPS implementation efforts.

Biological and Habitat Monitoring Design

Selecting **Design** from Screen 2.23 displays Screen 2.24, from which users can enter the code for the biological/habitat monitoring design to be used. Enter "P" (paired-watershed), "U" (upstream-downstream), or "S" (single station) on Screen 2.24 for **Monitoring Design** to indicate the study design that will be implemented in the watershed project for the purpose of tracking water quality to determine trends which may be associated with NPS implementation efforts. The following subsections describe these three study designs in additional detail.

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[7] STORET is EPA's computerized data base for the STOrage and RETreival of data (primarily chemical and physical) relating to the quality of the waterways of United States. BIOS is EPA's national biological information management system

Paired-Watershed Study Design

In the paired-watershed design there is one watershed where the level of implementation (ideally) does not change (the control watershed) and a second watershed where implementation occurs (the study watershed) (see Figure 4 on page 20). States are ***strongly*** encouraged to utilize the paired-watershed design since it has been shown in agricultural NPS studies to be the most powerful study design for demonstrating the effectiveness of NPS control practice implementation (Spooner, et al., 1985). States are cautioned, however, that the paired-watershed design must be implemented properly to generate good data sets. Some of the considerations to be made in designing and implementing paired-watershed studies are described in this section.

In selecting watershed pairs, the watersheds should be as similar as possible in size, shape, aspect, slope, elevation, soil type, climate, and vegetative cover (Striffler, 1965). The general procedure for paired-watershed studies is to monitor the watersheds long enough to establish a statistical relationship between them (Striffler, 1965). A correlation should be found between the values of the monitored parameters for the two watersheds. For example, the total phosphorus values in the control watershed should be correlated with the total phosphorus values in the study watershed. A pair of watersheds may be considered sufficiently calibrated when a parameter for the control watershed can be used to predict the correponding value for the study watershed (or vice versa) within an acceptable margin of error.

It is important to note that the calibration period should cover all or the significant portion of the range of conditions for each of the major water quality determinants in the two watersheds. For example, the full range of hydrologic conditions should be covered (or nearly covered) during the calibration period. This may be problematic in areas where rainfall and snowmelt are highly variable from year-to-year and/or in areas subject to extended wet periods or drought. Calibration during a dry year is likely to not be adequate for establishing the relationship between the two watersheds, particularly if subsequent years include both wet and dry periods.

Similarly, some agricultural areas of the country utilize long-term, multiple-crop rotations. The calibration period should not only cover the range of hydrologic conditions, but also the range of cropping patterns that can reasonably be expected to have an influence on the measured water quality parameters. This is not to say that the calibration period should take five to ten years, but, rather that states must use careful judgment in determining when the calibration period can be safely ended. Much of this decision is based upon the quality of the statistical relationship established between the two watersheds, but much is also based upon best professional judgment regarding the coverage of significant conditions during the calibration period.

After calibration, the study watershed is treated through implementation of NPS control practices, and monitoring is continued in both watersheds.[8] The effects of the control measures are evaluated by testing for a change in the relationship between the monitored parameters (i.e., a change in the correlation). If treatment is working, then there should be a greater **difference** over time between the treated study watershed and the untreated (poorly managed) control watershed. Alternatively, the calibration period could be used to establish statistical relationships between a fully treated watershed (control watershed) and an untreated watershed (study watershed). After calibration under this approach, the study watershed would be treated and monitoring continued. The effects of the control measures would be evaluated, however, by testing for a change in the correlation that would indicate that the two watersheds are more **similar** than before treatment.

It is important to use small watersheds (in headwaters areas usually) when performing paired-watershed studies, since they are more easily managed and more likely to be uniform (Striffler, 1965). EPA recommends that such watersheds not be greater than 1,000 acres if possible, and certainly not greater than 5,000 acres. The National Monitoring Program plan calls for watershed projects that are no larger than 30,000 acres (see "Project area size" on page 3). Within the context of a paired-watershed study, the monitored pairs should be small sub-watersheds within the 30,000-acre (or less) project area.

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[8] Monitoring protocol must remain the same before, during, and after implementation of control practices.

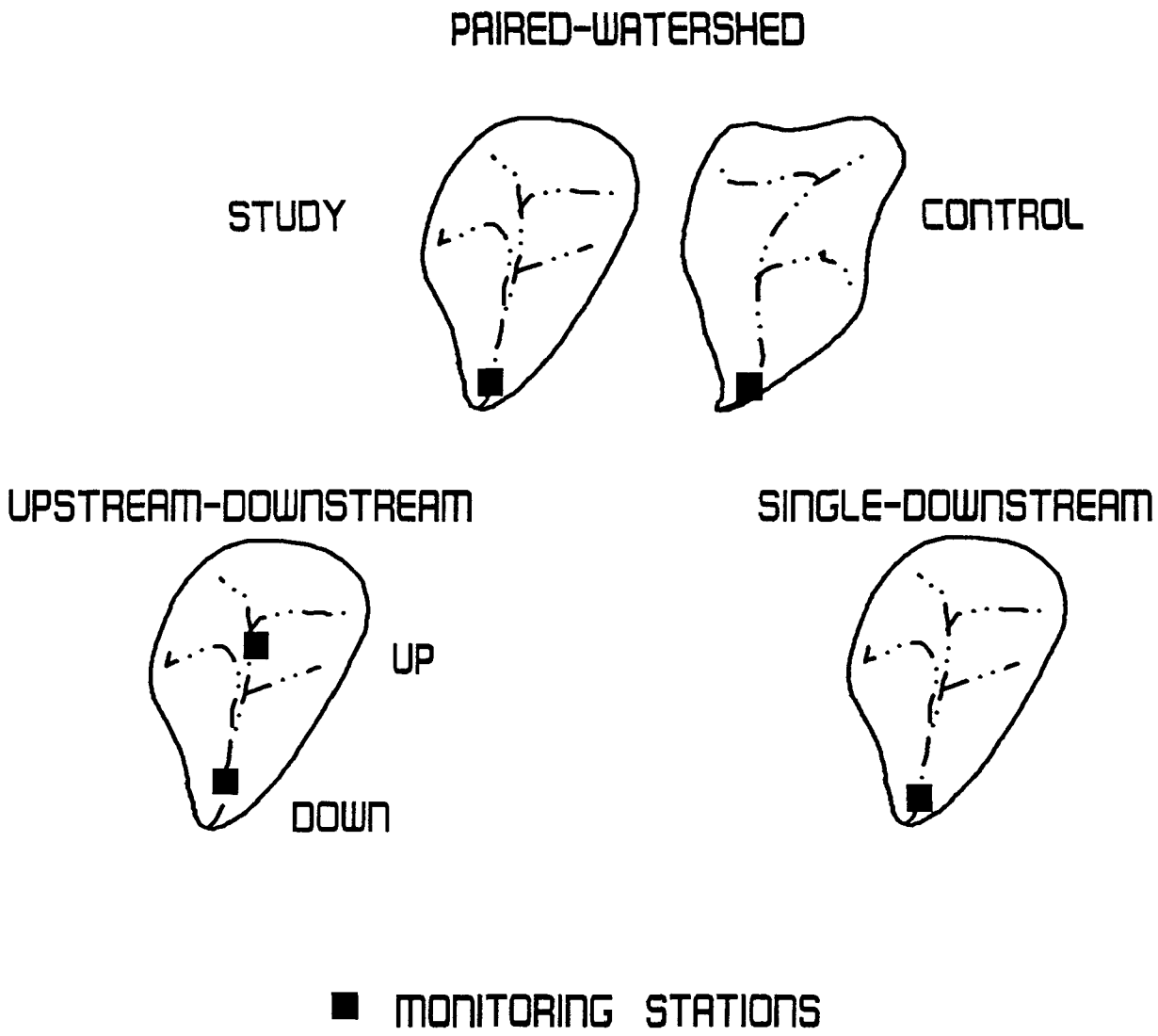

Figure 4. Monitoring Designs for National Monitoring Program

Upstream-Downstream Study Design

In the upstream-downstream design, there is one station at a point directly upstream from the area where implementation will occur and a second station directly downstream from that area. Upstream-downstream designs are generally more useful for documenting the severity of a nonpoint source than for documenting BMP effectiveness (Spooner, et al., 1985), but have been used successfully for the latter. This design provides for the opportunity to account for covariates (e.g., upstream pollutant concentration that is correlated with downstream concentration of same pollutant) in statistical analyses, and is, therefore, the design which EPA recommends in cases where paired watersheds cannot be established.

Upstream-downstream designs are needed in cases where project areas are not located in headwaters and/or where upstream activities occur which are expected to confound the analysis of downstream data (e.g., upstream point source dischargers, uncontrolled upstream NPS discharges, upstream flow regulation, etc.).

Single-Downstream Study Design

In the single-downstream station design, there is just one station at a point downstream from the area where implementation will occur. The single-downstream study design is the least powerful of the three designs, and, if used, should be carefully structured to account for all significant covariates such that the sensitivity of statistical analyses is increased. This design is not recommended.

Monitoring Station Location

Biological and Habitat Monitoring

When locating sites for biological or habitat assessment, the type of impact and the project objectives will determine the positioning of the sites. To assess the biological and habitat impacts of habitat alterations caused by channelizing or dredging, sampling sites should be located in the immediate areas of the habitat alteration. This provides for a better opportunity to track improvements as habitat alterations are mitigated through the application of BMPS. If habitat alterations are caused by bed-load sediment, then monitoring sites should be placed just downstream from the origin of the bed load sediment. If the objective is to track the impacts of water column chemistry, then biological sites should be located at a distance downstream that is appropriate for the stream or estuary (e.g., size and flow considerations need to be considered), the pollutant source(s) and magnitude, and the NPS control practices to be implemented. Frequently, a distance of approximately one to two miles downstream from the pollutant source is appropriate.

If an upstream-downstream study design is used in biological monitoring, the upstream site should be located far enough upstream to avoid any residual effects from downstream impacts. This is especially important when monitoring fish community status. Upstream-downstream interaction among fish communities may extend over a half-mile area during summer months. Sampling sites should be far enough apart to avoid the effects of upstream-downstream community mixing.

Reference Sites for Biological Monitoring

States may wish to enhance their understanding of biological expectations and calibrate their biological indices by establishing a set of reference sites. Reference sites should

1. Be of a number sufficient to characterize the natural variability (outside of environmental impacts) and the community potential that would be encountered in the respective ecoregion for the specific stream or estuary size and type.

2. Be situated in the same ecoregion, having similar land use, land surface form, natural vegetation potential, and soils as each other (Omernik, 1987) and the study area.

3. Be from least impacted areas that reflect realistically attainable conditions in the study area through proper application of pollution prevention measures.

4. Be sampled at the appropriate time(s) of year (refer to seasonality) at least a total of three times during the life of the study (preferably at the beginning of the study).

5. Be sampled during the same season of the year and at the period of greatest likelihood of impact.

The data from these collections would then be used to calculate an "achievable value" for the project area. This value would represent what could be expected to be achieved in the area or ecoregion in the absence of undue environmental disturbance or impact.

Chemical and Physical Monitoring

Site location and establishment are discussed in several existing monitoring guides and texts (U.S. EPA, 1978; U.S. EPA, 1981; U.S.G.S., 1977; Ponce, S.L., 1980; Wetzel and Likens, 1979; Brakensiek, Osborn, and Rawls, 1979). Within any given budget, site location is generally a function of water resource type, monitoring and evaluation objectives, and data analysis plans. It is strongly recommended that nonpoint source monitoring stations be located near established (e.g., U.S.G.S.) gaging stations when possible due to the importance of obtaining accurate flow records. Additional considerations in site selection are site accessibility and landowner cooperation in data collection efforts.

For all study designs, stations should be located such that confounding activities are minimized. For example, if an upstream-downstream study for agriculture can be located either above or below an urban area, it is recommended that, all else being equal, the study be performed above the urban area to avoid the influence of urban activities. Similarly, stations should be located as near as possible to the pollution sources being controlled to minimize the likelihood that unmanaged activities or unexpected events influence the water quality.

Site location alone is not adequate to define sampling location for chemical/physical monitoring. Additional considerations include the vertical (depth) and horizontal position at which samples are taken. This guidance recommends simple grab sampling, but time-integrated, flow-integrated, and depth-integrated sampling may also be used to obtain samples that are more representative of the "target population"[9] for the study. In taking samples, it is important to keep in mind the target population being sampled. If the population that is sampled is changed over time because of imprecise sampling, then the inferences made from analysis of the data may be inaccurate.

Monitoring Station Identification

Monitoring stations are identified in ***NPSMS*** after the monitoring design has been entered (see "Monitoring Design" on page 18). Monitoring station information is entered in the same manner for both chemical/physical and biological/habitat monitoring plans, but from different screens in ***NPSMS***. Monitoring station information for chemical/physical monitoring plans is entered from Screen 2.06, which is accessed by selecting **Stations** from Screen 2.03. For biological/habitat monitoring plans, users select **Stations** from Screen 2.23 to display Screen 2.26.

The following information applies to both Screen 2.06 (chemical/physical) and Screen 2.26 (biological/habitat). For paired-study designs (**Monitoring Design** = P), enter the STORET Agency Code (**Agency Cd**; 1-8 characters) and primary **Station Code** (1-15 alpha-numeric) for both the **Control** (C) and **Study** (S) stations. For upstream-downstream designs (**Monitoring Design** = U),

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[9] In a statistical sampling program, the "target population" is what we are sampling from to make inferences about. For example, we may intend to make inferences regarding changes in the seasonal grab-sample concentrations of key chemical/physical parameters that are expected to be controlled through NPS implementation efforts. We might define a sample to be the phosphorus concentration in 1-liter grab samples taken during spring, at mid-depth, in the middle of the tributary, 500 feet below the source. Our analysis of these sample data would allow us to make inferences regarding springtime, instantaneous phosphorus concentrations in the tributary below the source.

enter the **Agency Cd** and **Station Code** for both the **Upstream** and **Downstream** stations. For single-station designs (**Monitoring Design** = S), enter the two codes for that station only.

In some watersheds, a monitoring station may be shared between two adjacent monitoring projects. A "Y" in the **Share** field of the **Stations for:** window of Screen 2.06 or 2.26 indicates that the station is included in more than one monitoring project. For example, in a case where the downstream station in one project serves as the upstream station in a project downstream, the station would be shared. Similarly, a study station in a paired study may also serve as a downstream station in an upstream-downstream study. *NPSMS* will not allow a station to be used for more than one study design in a watershed unless it is designated as a shared station.

Drainage Area and Land Use

Drainage area and land use information are entered in the same manner for both chemical/physical and biological/habitat monitoring plans, but from different screens in *NPSMS*. Drainage area and land use information for chemical/physical monitoring plans is entered from Screen 2.06, which is accessed by selecting **Stations** from Screen 2.03. For biological/habitat monitoring plans, users select **Stations** from Screen 2.23 to display Screen 2.26.

The following information applies to both Screen 2.06 (chemical/physical) and Screen 2.26 (biological/habitat). Enter the drainage area (**Drainage-Mi** field in **Stations for:** window) in square miles (up to 8 positions, decimal point may be entered) for each monitoring station. The following identifies the drainage area to report for each study design:

- Paired-watershed study
  - Control watershed: total drainage area upstream of control monitoring station
  - Study watershed: total drainage area upstream of study monitoring station
- Upstream-downstream paired stations
  - Upstream station: total drainage area upstream of monitoring station
  - Downstream station: total drainage area upstream of monitoring station ***minus*** total drainage area above upstream station (i.e., the drainage area ***between*** the two stations)
- Single station
  - Total drainage area upstream of the single monitoring station.

Land Use in the drainage area for each monitoring station is entered from either Screen 2.06 for chemical/physical monitoring plans or Screen 2.26 for biological/habitat monitoring plans. Users add **Land Use** information on a pop-up screen displayed by pressing **Enter** while the **Drainage-Mi** field is highlighted. On the pop-up screen, the **Land Use**, **Year** for which the information applies, and **Percentage of Drainage Area** under the specified land use are entered. Land use changes can be tracked for each monitoring station drainage area by reporting the **Land Use** and **Percentage of Drainage Area** for each **Year** of the project.

Users can access a list of land uses by pressing **F1** while the **Land Use** field is highlighted. This list can be edited by users through the **Options** menu of *NPSMS*.

Principal Water Quality Monitoring Parameters

Monitoring parameters should be related directly to the identified problems caused by the nonpoint sources that will be controlled, and to those principal pollutants (see "Pollutants and Relative Source Contributions" on page 8) that will be controlled through the implementation of nonpoint source control measures and practices.

Within these logical constraints, the state should determine which parameters are the best indicators of water quality at the monitoring site. For example, in a watershed project where suspended sediment is the problem, the state might perform weekly monitoring of either turbidity or total

suspended solids. No other monitoring parameters would be required with the exception of explanatory variables (see "Explanatory Variables (Covariates)" on page 26). In this same situation, the state might instead choose to perform benthic macroinvertebrate monitoring because these organisms have been shown to be particularly sensitive to the sedimentation problems in the watershed. This would be an acceptable alternative, and might in fact be the best monitoring approach for the project.

The following subsections provide additional details regarding monitoring parameters.

Chemical and Physical Parameters

To meet the parameter requirements for chemical/physical monitoring in the National Monitoring Program, states must collect samples for at least one chemical or physical[10] parameter and its explanatory variables (see "Explanatory Variables (Covariates)" on page 26).

Enter monitoring parameters information by first selecting **Parameters** from Screen 2.03. This leads to Screen 2.07, from which the user can enter the parameters for the monitoring station shown in the **Parameters for:** window. For each station, enter the parameter codes (1-12 alpha-numeric) and common names (up to 50 alpha-numeric) (**Code/Name**) for each chemical or physical parameter monitored. A list of selected STORET parameters can be accessed for use by pressing **F1** while the **Code/Name** field is highlighted. Parameter names and codes can be added as needed through *NPSMS* **Options**, which is accessed from Screen 0.00.

The **Reporting Units** and **Parameter Type** for the parameter are automatically entered when the parameter is added. The units and type can be changed by editing the standard parameter list that can be accessed from the **System Tables** menu under **Options** (start with Screen 0.00). Users should note that EPA expects that states will report chemical parameter data in concentration units, not loading units. This is due to the expected higher cost associated with performing accurate monitoring of loads. **Parameter Type** options are STORET (S), 305(b) Waterbody System (W), BIOS (B), and user-defined (U). If the parameter is an **Explanatory Variable** (see "Explanatory Variables (Covariates)" on page 26), for chemical/physical monitoring, then "Y" is entered. If chemical/physical parameters are monitored as **Explanatory Variables** for biological/habitat monitoring, then the parameter is reported under Screen 2.27 as part of a biological/habitat monitoring plan.

For each chemical/physical parameter monitored (including **Explanatory Variables**), report also on Screen 2.07 the 25th, 50th, and 75th quartile values (**Parameter Quartiles**) for each monitoring station; these values are expressed in the **Reporting Units** for the parameter. Parameter quartile values are to be reported in an 8-character alpha-numeric field; exponential notation can be used (e.g., 1.0E5 represents 100,000).

States are to use existing data for the monitoring period(s) (see "Monitoring Year and Seasons" on page 29), or data from the first year of monitoring if suitable pre-project data are not available, to determine the 25th, 50th, and 75th percentile value for each of the chemical/physical parameters (including covariates) to be monitored. To determine these quartile values, first arrange all data points in order of magnitude. The median value is the 50th percentile; if there are an even number of data points, the median is calculated as the mean of the two middle data points. The 25th percentile is that value below which 25 percent of the data points fall. The 75th percentile is the value below which 75 percent of the data points fall (SAS Institute, Inc., 1985).[11]

These quartile values are to be determined independently for each monitoring station. For example, in a paired-watershed design where total phosphorus is the principal parameter, the state must determine the quartile values for total phosphorus at the control site and at the study site. These quartile values are likely to be different. In cases where the state is establishing new monitoring

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[10] A limited number of biological parameters (e.g., chlorophyll a, fecal coliform, etc.) could be used here as well.

[11] The preferred method for calculating these percentiles is the default method used by SAS in its Univariate Procedure.

stations in the project area, the quartile values must be determined using the first full year (for the period monitored) of monitoring data at each of the new stations.

The quartile values are used to establish cutoffs for the frequency table shown in Screen 3.06 under **Parameters for** (see "Chemical and Physical Parameters" on page 32). It is important to note that quartile values should be based solely on data for the monitoring season or seasons to be monitored. If, for example, the irrigation season is the only season to be monitored in a project, then historical or first-year data for that season should be used to establish the quartile values. If the irrigation season ***and*** one other season (e.g., winter) are monitored, then the quartile values may be based on historical or first-year data for those two seasons combined.[12]

Biological and Habitat Parameters

To meet the parameter requirements for biological/habitat monitoring in the National Monitoring Program, states must collect samples for at least one biological or habitat parameter and its explanatory variables (see "Explanatory Variables (Covariates)" on page 26).

Enter monitoring parameters information by first selecting **Parameters** from Screen 2.23. This leads to Screen 2.27, from which the user can enter the parameters for the monitoring station shown in the **Parameters for:** window. For each station, enter the parameter codes (1-12 alpha-numeric) and common names (up to 50 alpha-numeric) (**Code/Name**) for each biological or habitat parameter monitored. A list of selected BIOS parameters can be accessed for use by pressing **F1** while the **Code/Name** field is highlighted. EPA recognizes, however, that STORET and BIOS may not include codes for all valid monitoring parameters. If there is no STORET or BIOS code for the parameter, then the State should develop and enter its own code for the parameter, providing appropriate documentation to EPA. These new parameters can be added to the list provided under *NPSMS* by accessing the **System Tables** menu through **Options** (start with Screen 0.00).

The **Units** and **Parameter Type** for the parameter are automatically entered when the parameter is added. The units and type can be changed by editing the standard parameter list under the **System Tables** menu accessed under **Options**. For each biological and habitat measure, the seasonal mean score for each monitoring station will be reported. The value should be calculated from the mean of all index scores for all samples and/or replicates taken during the designated season. **Units**, then, should match those needed to report mean scores. **Parameter Type** options are STORET (S), 305(b) Waterbody System (W), BIOS (B), and user-defined (U). If the parameter is a biological/habitat **Explanatory Variable** for biological/habitat monitoring (see "Explanatory Variables (Covariates)" on page 26), then "Y" is entered. Biological and habitat parameters cannot be reported as **Explanatory Variables** for chemical/physical monitoring under *NPSMS*. This is not expected to be a problem since the sampling frequency for biological and habitat parameters is not likely to ever be a minimum of 20 times per season, as is required for chemical/physical monitoring plans.

Frequency tables will not be utilized for biological and habitat parameters, but benchmark scores are reported to provide for interpretation of score data. Report the **Maximum Potential** and **Reasonable Attainment** scores for each parameter. These values can be based on data from reference sites (see "Reference Sites for Biological Monitoring" on page 21) or taken from an historic data base, and provide a means for calculating percentages from score data for the purpose of combining data for many projects across the Nation. Ecoregion (or some other unifying concept) reference data, if collected, must be collected in a similar manner to the section 319 project design. For closed-end indices, such as the IBI, the maximum potential value is the highest value that can be scored (i.e. 60). For open-ended indices, such as the Iwb, state biologists should pick the index value that their data or professional judgement indicate is the highest possible score that could be achieved in their area of concern. Reasonable attainment values are best calculated from a reference data base (see "Reference Sites for Biological Monitoring" on page 21) by using the scores attained at the reference sites as an indication of the biological conditions that can be achieved under least

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[12] *NPSMS*, Version 3.0, does not currently support the reporting and use of unique quartile values for each season monitored. EPA recognizes the possibility that this capability may be needed by users who monitor in two separate seasons that have markedly different water quality. For this reason, EPA will attempt to add the capability for reporting and using unique seasonal quartile values (for each monitoring station).

impacted conditions (note that this score is not the same as the maximum potential score). If the **Maximum Potential** and **Reasonable Attainment** scores are based on reference site data, then enter "R" for **Basis**. Otherwise, enter "B" to indicate that best professional judgment was used to estimate these values.

Reference site data should also be used to provide the parameter index values (percentages, not scores) that are indicative of the level of use support in the monitored waterbody.[13] If reference site data are not available, then best professional judgment should be used in identifying the scores ***at which*** uses begin to be **Fully** Supported, **Threatened**, and **Partially** Supported. For example, entering 85% for **Fully** Supported, 50% for **Threatened**, and 25% for **Partially** Supported would be interpreted to mean that index values of 85% and above are fully supportive of uses, while values of 50% to 84% are fully supportive but threatened, and values of 25% to 49% show that uses are partially supported. Index values below 25% would be non-supportive of uses. Values for **Fully** Supported and **Partially** Supported are required, but values for **Threatened** are optional.

Two types of indices are acceptable under the National Monitoring Program: measures of overall community status (IBI, Iwb, BCC, ICI and like indices) or a measure of a critical faunal component most sensitive to the instream impact (i e., spawning success or population density of a species). In general, measures of overall community status are preferred as they incorporate a greater range of biological responses to environmental change, thus assuring a greater likelihood of detecting environmental reactions (both anticipated and unanticipated).

To enter chemical/physical parameters (e.g., temperature, turbidity, flow) that are **Explanatory Variables** for biological/habitat monitoring, first enter "C" for **Explanatory Variable** in the **Parameters for:** window of Screen 2.27. This indicates that the parameter is chemical/physical, and causes the window to change, displaying **Explanatory Variable**, **Parameter Type**, **Units**, **Code/Name**, and **Cutoff Values**. Enter the parameter code and name (**Code/Name**) as you would for a chemical/physical parameter in a chemical/physical monitoring plan (see "Chemical and Physical Parameters" on page 24).

Instead of reporting quartile values for chemical and physical parameters that are used as **Explanatory Variables** for biological and habitat monitoring plans, it is more appropriate to use best professional judgment (or, preferably, historic data if available) to identify parameter values that can be used as **Cutoff Values** for "abnormally high," "normal," and "abnormally low" conditions for the parameter during the monitoring season.[14] For example, a water temperature of less than 10 degrees (Celsius) may be considered abnormally low for spring conditions, whereas temperatures of 25 degrees or greater may be abnormally high. Water temperatures of 10 to 24 degrees would be considered normal for the monitoring season. To report this information, you would enter "25" in the **Abn.High/Normal** and enter "10" under **Normal/Abn.Low** in the **Parameters for:** window of Screen 2.27. In summary, for chemical and physical parameters that are used as covariates for biological and habitat monitoring plans, enter the following;

- **Abn. High/Normal**: The parameter value at which or above which the parameter value is abnormally high (on average) for the monitoring season.
- **Normal/Abn. Low**: The parameter value below which the parameter value is abnormally low (on average) for the monitoring season.

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[13] The monitored waterbody may not be the same as the waterbody that is targeted to ultimately benefit from the pollution control obtained in the watershed project (Screen 1.05). The scores reported on Screen 2.27 are for the **monitored** waterbody.

[14] Similar to the constraints noted for chemical/physical monitoring programs, ***NPSMS***, Version 3.0, does not currently support the reporting and use of unique cutoff values for each season monitored. EPA recognizes the possibility that this capability may be needed by users who monitor in two separate seasons that have markedly different water quality. For this reason, EPA will attempt to add the capability for reporting and using unique seasonal cutoff values for chemical/physical **Explanatory Variables** in biological/habitat monitoring programs (for each monitoring station).

Explanatory Variables (Covariates)

The state must monitor explanatory variables, or covariates, of its monitoring parameters (applies to chemical, physical, biological, and habitat parameters) to increase the sensitivity of statistical analyses. Covariates to be monitored fall into two major groupings:

- Those required by EPA for at least the first monitoring year.
- Those determined by the state to be important, based upon the first year of monitoring data (or any pre-project monitoring data).

The state must monitor the following covariates in the following situations:

- Complete set of parameters (including covariates) with exactly the same monitoring approach and frequency at both stations in projects where either the paired-watershed, or upstream-downstream monitoring designs are used.[15]
- Total precipitation (weekly) and/or a more meaningful precipitation parameter as documented by the state (e.g., rainfall intensity may be more relevant). If the state can document that total precipitation is not a useful covariate, then this parameter may be dropped.
- Streamflow (at time grab sample is taken) and hydrograph stage (rising or falling, at time grab sample is taken). If the state can document that these parameters are not useful covariates, then they may be dropped. These parameters, however, are required in projects which have precipitation-driven systems.
- Salinity is required (at time and depth grab sample is taken) for projects in tidal areas. If the state can document that salinity is not useful as a covariate, then it may be dropped.
- States must monitor pH (at time grab sample is taken) in cases where the monitored parameter is pH-dependent.

The state must propose, in addition to those covariates listed above, a set of covariates which the state will monitor during the first monitoring year to determine whether such covariates must be monitored throughout the course of the watershed project for the purpose of increasing the sensitivity of statistical analyses. These proposed covariates should have physical meaning and/or be correlated statistically with the principal monitoring parameters.

Monitoring Frequency

Sampling frequency cannot change over the course of a project unless the state can prove that such a change will neither decrease the sensitivity of statistical analyses at the project level nor decrease the sensitivity of cross-project statistical analyses to be performed by EPA.

Chemical and Physical Monitoring

For projects performing chemical/physical monitoring, at least 20 evenly-spaced (over time) grab samples are required for all chemical and physical parameters and their covariates during the sampling season (see "Monitoring Year and Seasons" on page 29) each year. A maximum of one sample per day or storm event can be used to count against the required 20 samples. Storm-event sampling is not required.

Evenly spaced (over time) samples are specified since the goal of the tracking effort is to detect trends over time (see "Purpose and Application" on page 31). While storm-event sampling is essential to the determination of pollutant loads, it has been shown in agricultural NPS projects that trends can be detected with a monitoring program focused on pollutant concentration data derived from weekly grab samples. Monitoring covariates are needed, however, to increase the sensitivity

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[15] NOTE: These parameters are not reported as **Explanatory Variables** in Screens 2.07 or 2.27 ***unless*** they are covariates of other parameters at the same station.

of the statistical analyses accounting for as much of the natural variability as possible. Nonetheless, grab sampling programs will be adequate to meet EPA's tracking objectives while offering considerable cost savings as compared to storm-event or other automated sampling programs.

Biological and Habitat Monitoring

Biological and habitat sampling should be performed with at least the following frequency:

- Fishery surveys - at least one to three times per season.
- Benthic macroinvertebrates - at least once per season, with at least one to three replicates or composites per sample.
- Habitat - once or twice per season.
- Bioassays - once per season.

Fish: Sampling frequency for fish communities should be one to three times per season and analysis confined to within-season data. One season of fish community sampling per year should be sufficient for most studies. High flow conditions should be avoided as they negatively affect sampling efficiency. Spring spawning runs and fall migration periods should be avoided if not being specifically studied.

In most states, winter temperature regimes prevent effective sampling, leaving the summer season as the most likely sampling time. Some southern states may be able to conduct sampling during the winter months. Seasonal- variability QA/QC concerns have been detailed in the Ohio EPA biological criteria manuals (Ohio EPA, 1988). For the purposes of this study, the biological sampling season does not have to be correlated with the chemical sampling season.

Macroinvertebrates: Macroinvertebrate sampling can be conducted seasonally or during one specific season. Each season will need to be considered an individual data set for purposes of analysis. To minimize expenses, states should identify the single most critical time period of potential impacts and focus sampling efforts on that period. To better develop the data base, a minimum of three replicate samples or one composite of at least three samples could be taken. States wishing to conduct a more rigorous sampling protocol may wish to consider the use of artificial substrates such as Hester-Dendy plates in streams or artificial seagrass in estuaries (Barber et al., 1979; Virnstein et al., 1986). It should be kept in mind that artificial substrate samplers may not accurately reflect environmental disturbances due to habitat alteration or bed load sediment impacts.

A draft RBP seasonality issue paper has defined time periods during which benthic sampling would be most effective as May or August. States may wish to sample each month and/or all year. In such cases, states must remain consistent in their sampling times and protocols throughout the life of the study. Average reporting values should only be calculated from data within a discrete season.

Habitat: Habitat assessment needs to be conducted at least once per year at the most critical period of the sampling season. Two evaluations per year could be conducted at the beginning and end of the sampling season to better evaluate changes occurring in the system.

Explanatory Variables

Explanatory variables, or covariates, must be monitored at the following frequencies:

1. Chemical/Physical Monitoring Program
   - Chemical/physical covariates are monitored at the same frequency as principal chemical/physical parameters.
2. Biological/Habitat Monitoring Program
   - Chemical/physical covariates are monitored at the same frequency as principal biological/habitat parameters.

- Biological/habitat covariates are monitored at same frequency as the principal biological/habitat parameters.

Monitoring Year and Seasons

Nonpoint source impacts are very often seasonal due to the seasonality of the land activities causing the pollution, the seasonal variability of precipitation, the seasonal variability associated with waterbody attributes, or other seasonal variability. The effectiveness of NPS control efforts is often documented more easily in some seasons than in others. For example, if urban runoff problems in a watershed are more pronounced and have the greatest potential for being mitigated during the summer months, the state should identify summer as the primary monitoring season for the project. For this reason, the state is required to identify for each watershed project the monitoring seasons that should be used to stratify data for the purpose of increasing the sensitivity of statistical analyses. There are two requirements associated with the establishment of these seasons.

- The seasons and their cutoff dates will not change over the lifetime of the project. That is, the state will group its monitoring data (see "Chemical and Physical Parameters" on page 32) by these same seasons in each annual report. If, however, the state can prove to EPA that there is a need to change these seasons based upon sound statistical or other reasons, then such a change can be made provided that the state changes all project reporting to reflect the change.

- For each sampled season, the state must meet the sampling frequency requirements specified for biological/habitat monitoring (see "Biological and Habitat Monitoring" on page 28) or chemical/physical monitoring (see "Chemical and Physical Monitoring" on page 27) as appropriate. For example, if a state is performing chemical/physical monitoring, then a minimum of 20 evenly-spaced grab samples of the principal monitoring parameter must be taken per sampled season.

The state is not required to monitor water quality for more than one season per year, but ***should monitor during the season in which the potential for documenting improvements associated with NPS control implementation is the greatest.*** Implementation activities, however, must be tracked for all seasons, but reported annually (see "Implementation" on page 34). The ultimate goal of any watershed project should be the protection and/or restoration of designated beneficial uses within (or downstream from) the watershed. For this reason, the monitoring season(s) selected by the state should provide water quality data that are indicative of what's truly happening in the overall project area. For example, for a project where sedimentation is the problem, the monitoring season(s) should cover the period of greatest sediment delivery, and NPS control measures should be implemented to address the largest sediment sources.

The procedure for reporting monitoring seasons and years is the same for both chemical/physical monitoring and biological/habitat monitoring, but different screens are used. For chemical/physical monitoring select **Monitoring Year** from Screen 2.03 to display Screen 2.05, from which the monitoring year information is added. For biological/habitat monitoring select **Monitoring Year** from Screen 2.23 to display Screen 2.25, from which the monitoring year information is added.

Each monitoring season is numbered (1, 2, 3, or 4) and given a name (**Season Names**, up to 10 characters/numbers). Beginning and ending dates (**Begin Date** and **End Date**) are entered in MM/DD (month/day) format (inclusive). Seasons are to be described in more detail in the narrative portion of the state's annual project report.

The **Monitoring Year** is to be determined by agreement between EPA and the state. Report the beginning and ending dates (**Begins** and **Ends**) of the monitoring year in MM/DD format (inclusive), and provide an **Example** for **Monitoring Year** 1990 in MM/YY format..

Monitoring Program Lifetime

It has been demonstrated clearly in agricultural NPS watershed projects that at least three years of both pre-implementation and post-implementation monitoring are needed for the detection of water quality trends. Watershed project work plans, therefore, should include monitoring for a minimum of six to ten years to increase the probability of successful documentation of water quality

improvements resulting from NPS implementation efforts. These long-term monitoring efforts must be consistent over time (e.g., parameters, sampling protocol, sampling frequency and location, monitoring design, implementation tracking) such that an adequate data base is developed for statistical analyses.

Quality Assurance/Quality Control

All states are required to submit a quality assurance/quality control (QA/QC) plan for approval by EPA. Quality assurance and quality control (QA/QC) procedures must follow those described by EPA (U.S. EPA, 1979; U.S. EPA, 1980; U.S. EPA, 1984a; U.S. EPA, 1984b; U.S. EPA, 1984c). EPA grant regulations require that QA/QC plans must be approved prior to expenditure of federal funds.

Quality assurance/quality control (QA/QC) data should not be included as part of the trend measurement data, with the exception that averages of replicate sampling can be used. The state is to report QA/QC data separately from trend measurement data since its inclusion would create autocorrelation problems.

Annual Report File

Purpose and Application

Annual reports, under section 319(h)(11) and section 319(h)(10), are required to be submitted by those states that receive implementation grants under section 319 (U.S. EPA, 1991). These annual reports are to be submitted September 1 of each year, and are to include both an accounting of progress made in meeting program milestones, and an assessment of water quality improvements resulting from management program implementation. Both statewide and watershed information are to be contained in these annual section 319 reports, and it is expected that much of the information will be presented in narrative form.

Annual reports for watershed projects participating in the National Monitoring Program are to be submitted as part of the annual state section 319(h)(11) reports, and the Annual Report File of *NPSMS* is the primary vehicle for states to provide this standardized, quantitative watershed project information. The standardized information provided using the prescribed format of *NPSMS* is to be supplemented with a printed listing of all raw water quality data, and the entry of all such water quality data into EPA's STORET and/or BIOS data base. States are also required to analyze and interpret their monitoring and implementation data, providing this information in the narrative portion of their annual section 319(h)(11) reports.

The tracking goal of the National Monitoring Program is to detect changes in mean pollutant levels or biological/habitat parameters over time at the project level and nationally, and to relate these changes to NPS control practice implementation. It is, therefore, critical that water quality changes are tracked in all projects using consistent monitoring protocols. It is also necessary that implementation tracking is comprehensive and consistent, and is linked precisely to the relevant water quality data. The following information is entered to the Annual Report File:

1. Annual chemical/physical and explanatory variables data (Screen 3.05).
2. Annual biological/habitat and explanatory variables data (Screen 3.07).
3. Implementation tracking in the watersheds and/or sub-watersheds that constitute the drainage areas for each monitoring station in the watershed project (Screen 3.06 for physical/chemical or Screen 3.08 for biological/habitat).

The WBS waterbody identification number (**305(b) Waterbody ID** on Screens 3.02 and 3.22; **W/B** on other screens) provides linkage to the WBS information, and the STORET agency and station codes provide linkage to the raw data (which is to be entered into STORET or BIOS) and to the river reach.

Users can call the STORET user-assistance group at (800) 424-9067 or (703) 883-8328 for all information regarding STORET/BIOS access, data entry, and training, as well for answers to questions regarding the use of STORET/BIOS.

Data Elements for Annual Reports

Annual Report File Access

The Annual Report File is accessed through Screen 0.00 of ***NPSMS*** (see Appendix A) by selecting **Annual** from the top bar. This displays Screen 3.01, from which the user can select either **Chemical/Physical** or **Biological/Habitat** data. Selection of **Chemical/Physical** displays Screen 3.02, from which annual chemical and physical data are entered. Selection of **Biological/Habitat** displays Screen 3.22, from which annual biological and habitat data are entered.

Water Quality Monitoring Data

Notes Field

The **Notes** fields in Screens 3.02 (chemical/physical monitoring) and 3.22 (biological/habitat monitoring) allow for the reporting of additional information for each Management Area, by **Annual Report Year**.

Chemical and Physical Parameters

Chemical and physical parameter data are to be reported in two ways for the National Monitoring Program:

- Raw data are reported in STORET and listed as an appendix to each annual section 319(h)(11) report.
- Raw data are summarized and reported in count format using ***NPSMS***.

EPA has chosen the above reporting approach for chemical and physical data to:

- Streamline and standardize data reporting across projects.
- Provide for quick, national screening analyses for annual reporting of results.
- Provide raw data as backup for additional statistical analyses.

States are to report monitoring data (by monitored season) in terms of the number of parameter sample values (up to three digits) falling within each of four pollutant levels that are determined by using the quartile values (see "Chemical and Physical Parameters" on page 24) for each chemical/physical parameter monitored at each station (Lowest, Low, High, Highest).[16]

For example, if the spring quartile values for total phosphorus at the control station in a paired-watershed study were determined (using historical data for the monitoring season, or using data from the first year of monitoring) to be .010 mg/L (25%), .020 mg/L (50%), and .100 mg/L (75%), then (on Screen 3.04):

- The Highest level would be for sample values that are .100 mg/L or greater,
- The High level would be for sample values that are from .020 to .099 mg/L,
- The Low level would be for sample values that are from .010 to .019 mg/L, and
- The Lowest level would be for sample values that are below .010 mg/L.

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[16] These four levels are ordered by parameter value, not by water quality. For example, the highest total phosphorus level may be the worst water quality, whereas the highest Secchi Disk level may be the best water quality. Trend analyses will be structured to account for these differences.

Annual spring monitoring data, then, would be reported as the number of sample values (counts) that fall into each pollutant level. For example, data from the second year of monitoring at a control station (20 evenly-spaced samples) might be reported in *NPSMS* as "10" for Highest, "6" for High, "3" for Low, and "1" for Lowest level (10 + 6 + 3 + 1 = 20 samples, or counts). The actual phosphorus concentrations for these 20 samples would be reported in STORET and listed in an appendix to the state's annual section 319(h)(11) report.

All chemical/physical explanatory variables (covariates) used in chemical/physical monitoring plans are also to be reported using this count format, or frequency table approach. This includes precipitation and flow data. In the narrative portion of the annual report, states should interpret and describe how the covariates are related to the principal monitoring parameter(s).

Quartile values determined for each parameter and station must be applied to all monitoring years for that station. The purpose of using quartile values is to provide for an even distribution of counts across cells in the frequency table (**COUNTS/SEASON** on Screen 3.06). Trends will be detected over time as the distribution of counts changes. For statistical tests such as the Cochran-Mantel-Haenszel statistics (e.g., to test the null hypothesis that there is no linear association between year and total phosphorus level in at least one frequency table stratum), it is important that the counts for each cell are typically at least five (SAS Institute, Inc., 1985a).

To enter an annual report for chemical and physical monitoring programs, users must select **(A)dd Report** from Screen 3.02 of *NPSMS*. By pressing **F1** on the highlighted **State** field, the user is provided a list of Management Areas for which a chemical/physical monitoring plan has already been entered into *NPSMS*.[17] After selecting a Management Area from the list provided by pressing **F1**, Screen 3.03 is displayed. Users then select **Water Quality Data** from Screen 3.03 to display Screen 3.04, from which chemical/physical monitoring data can be entered. The monitoring station for which data are to be reported is determined by selecting **Station** from the top bar of Screen 3.04. The **Agency Code**, **Station Code**, and station type (Control Station, Study Station, Upstream Station, Downstream Station, Single Station) identify the station. Stations can be selected through the **Station** window of Screen 3.05 (or from Screen 3.04 if **Station** is highlighted) by using the PGUP and PGDN keys. **Agency Code**, **Station Code**, and station type are the same as entered through Screen 2.06 (see "Monitoring Station Identification" on page 22).

Water quality data for each **Station** are entered under Screen 3.06 by first selecting **Parameters** from the top bar of Screen 3.04. The **Station** for which data are to be entered is displayed in the **Parameters for:** window of Screen 3.06. The chemical/physical parameter for which counts are to be entered is selected from a pop-up list provided by selecting **Add** and then pressing **F1**. The parameters listed are those that were included in the monitoring plan (see "Chemical and Physical Parameters" on page 24). The **PARAMETER QUARTILES** are displayed for reference. The counts are then entered for the monitoring season(s) (numbered 1-4; see "Monitoring Year and Seasons" on page 29). A **NOTES** field is provided for explanatory comments (up to 68 characters).

Biological and Habitat Parameters

Biological and habitat parameter data are also to be reported in two ways for the National Monitoring Program:

- Raw data are reported in BIOS and listed as an appendix to each annual section 319(h)(11) report.
- Community or index values are reported as scores in *NPSMS*.

EPA has chosen the above reporting approach for biological and habitat data to:

- Streamline and standardize data reporting across projects.
- Provide for quick, national screening analyses for annual reporting of results.
- Provide raw data as backup for additional analyses.

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[17] Annual reports cannot be entered unless a monitoring plan has already been entered into *NPSMS*.

States are to report the scores for each monitored biological or habitat index parameter by station, year, and monitoring season. Scores may range from 0 to 999.99.

All biological/habitat explanatory variables (covariates) for biological and habitat monitoring plans are also to be reported as scores. In the narrative portion of the annual report, states should interpret and describe how the covariates are related to the principal monitoring parameter(s).

To enter an annual report for biological and habitat monitoring programs, users must select **(A)dd Report** from Screen 3.22 of *NPSMS*. By pressing **F1** on the highlighted **State** field, the user is provided a list of Management Areas for which a biological/habitat monitoring plan has already been entered into *NPSMS*.[18] After selecting a Management Area from the list provided by pressing **F1**, Screen 3.23 is displayed. Users then select **Water Quality Data** from Screen 3.23 to display Screen 3.24, from which biological/habitat monitoring data can be entered. The monitoring station for which data are to be reported is determined by selecting **Station** from the top bar of Screen 3.24. The **Agency Code**, **Station Code**, and station type (Control Station, Study Station, Upstream Station, Downstream Station, Single Station) identify the station. Stations can be selected through the **Station** window of Screen 3.25 (or from Screen 3.24 if **Station** is highlighted) by using the PGUP and PGDN keys. **Agency Code**, **Station Code**, and station type are the same as entered through Screen 2.26 (see "Monitoring Station Identification" on page 22).

Water quality data for each **Station** are entered under Screen 3.26 by first selecting **Parameters** from the top bar of Screen 3.24. The **Station** for which data are to be entered is displayed in the **Parameters for:** window of Screen 3.26. The biological/habitat parameter for which data are to be entered is selected from a pop-up list provided by selecting **Add** and then pressing **F1**. The parameters listed are those that were included in the monitoring plan (see "Biological and Habitat Parameters" on page 25). The **INDICES** scores that correspond to **Fully**, **Threatened**, and **Partially** use support (from Screen 2.27) are displayed for reference. The scores (**SCORES/VALUES FOR SEASON**) are then entered for the monitoring season(s) (numbered 1-4; see "Monitoring Year and Seasons" on page 29). A **NOTES** field is provided for explanatory comments (up to 68 characters).

To report (under Screen 3.26) chemical/physical **Explanatory Variable** data for a biological/habitat monitoring annual report, users must select **Add** and then press **F1** to display a pop-up list of parameters that have been included in the monitoring plan. Users then select the chemical/physical **Explanatory Variable** from the list, causing the display on the **Parameters for:** window of Screen 3.26 to change for input of the chemical/physical data. The **Cutoff Values** for abnormally high and abnormally low values of the parameter will be displayed under the **Abn. High/Normal and Normal/Abn. Low** fields (see "Biological and Habitat Parameters" on page 25). For each season (**SCORES/VALUES FOR SEASON**) report "H" for abnormally high values, "N" for normal values, and "L" for abnormally low values. Leave the field blank if data are not reported for any given season.

Explanatory Variables

Annual reporting of explanatory variable data are described above (see "Chemical and Physical Parameters" on page 32 and "Biological and Habitat Parameters" on page 33). Additional information regarding explanatory variables can be found under "Explanatory Variables (Covariates)" on page 26, "Chemical and Physical Parameters" on page 24, and "Biological and Habitat Parameters" on page 25. The reporting frequencies for explanatory variables are given under "Explanatory Variables" on page 28.

Implementation

As stated earlier in this document (see "Purpose and Application" on page 6), implementation goals can be reported in a number of different ways. Annual implementation is to be reported based upon the approach selected (see "BMPs" on page 9).

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[18] Annual reports cannot be entered unless a monitoring plan has already been entered into *NPSMS*.

For example, in cases where the state decides to report only overall **Implementation Goals** for the Management Area, the annual implementation is to be reported under: (1) the study watershed in paired studies, (2) the drainage area between stations in upstream-downstream studies, or (3) the drainage area above the single station in single-station studies. If **Implementation Goals** are established for each monitoring station drainage area, then implementation is reported under each station.

As stated earlier (see "Purpose and Application" on page 6), implementation of BMPs and control measures is not expected in the control watersheds of paired studies or in the upstream area of upstream-downstream studies. Often, however, things happen in the control watersheds in paired-watershed studies and in the areas upstream of upstream-downstream study areas that could affect the interpretation of water quality data that are collected. For this reason, it is important to track activities and control measure implementation in these control and upstream areas. The *NPSMS* software provides for the reporting of implementation and other activities above each monitoring station for paired-watershed, upstream-downstream, and single-station studies.

Paired Studies

The study watershed in paired studies is the watershed for which implementation is planned. It is expected that essentially no change in activities, land use, or land management will occur in the control watershed during the course of the study. The importance of land use and other factors as they relate to paired-watershed studies is discussed in more detail under "Paired-Watershed Study Design" on page 19.

If, however, implementation of control practices ***does*** occur in the control watershed of a paired study, it is important to report that information. States are to report practice information for control watersheds in the same manner as for study watersheds, with the exception that there will be no reporting of implementation goals.

In some cases, there may be land use or other significant changes in the control watershed that cannot be reported as practice implementation. Land use changes can be tracked for each monitoring station drainage area by reporting the **Year**, **Land Use**, and **Percentage of Drainage Area** under either Screen 2.06 for chemical/physical monitoring plans or Screen 2.26 for biological/habitat monitoring plans. The **NOTES** field under Screen 3.09 (chemical/physical) or Screen 3.29 (biological/habitat) can be used to describe in narrative form other significant changes or occurrences in the control watershed that may have an impact on the paired study results.

Upstream-Downstream Studies

The drainage area between the two monitoring stations in upstream-downstream studies is the area for which implementation is planned. It is expected that essentially no change in activities, land use, or land management will occur in the drainage area upstream from the upstream station during the course of the study.

If, however, implementation of control practices ***does*** occur in the area upstream from the upstream station, it is important to report that information. States are to report practice information for upstream areas in the same manner as for the study area between monitoring stations, with the exception that there will be no reporting of implementation goals.

In some cases, there may be land use or other significant changes in the upstream area that cannot be reported as practice implementation. Land use changes can be tracked for each monitoring station drainage area by reporting the **Year**, **Land Use**, and **Percentage of Drainage Area** under either Screen 2.06 for chemical/physical monitoring plans or Screen 2.26 for biological/habitat monitoring plans. The **NOTES** field under Screen 3.09 (chemical/physical) or Screen 3.29 (biological/habitat) can be used to describe in narrative form other significant changes or occurrences in the upstream watershed that may have an impact on the upstream-downstream study results.

Reporting Implementation

Annual implementation tracking is required for each control measure listed in the Management File (see "Best Management Practices and NPS Control Measures" on page 8). Implementation data are reported in the same manner for both chemical/physical and biological/habitat monitoring programs, but different Screens of *NPSMS* are used. The first step is to select **Implementation Data** from either Screen 3.03 (chemical/physical monitoring) or Screen 3.23 (biological/habitat monitoring). This selection displays Screen 3.07 for chemical/physical monitoring or Screen 3.27 for biological/habitat monitoring. The following steps and information apply to both Screen 3.07 and Screen 3.27, and are keyed to the various options for reporting BMP **Implementation Goals** and annual implementation (see "BMPs" on page 9).

BMPs and Control Measures

Overall Implementation Goals: It is important to note that implementation toward achieving the goals for projects under this scenario is to be reported under the study station in paired-watershed studies, under the downstream station in upstream-downstream studies, or under the single station for single-station studies. If there are two monitoring programs in the Management Area, then users may report implementation under the chemical/physical or the biological/habitat program.

Station-Specific Implementation Goals: Users may wish to set BMP **Implementation Goals** for each monitoring station drainage area in a project that has either one or two monitoring programs. If both a chemical/physical and biological/habitat monitoring program are used in a Management Area, then users may wish to identify implementation goals for each monitoring plan that are different from each other. For example, a Management Area may have a chemical/physical paired-study and a biological/habitat upstream-downstream study (seeFigure 3 on page 13). The drainage areas for the study watershed in the paired study and for the downstream station in the upstream-downstream study may be different, creating a likelihood that the implementation goals for the two different monitoring efforts may be different as well. *NPSMS* allows users to report separate implementation goals (for the study, downstream, or single stations, depending upon the monitoring design selected) for chemical/physical and biological/habitat monitoring programs in the same Management Area. Alternatively, if only one monitoring program exists in the Management Area, users may still wish to report station-specific implementation data to allow for better opportunities to link implementation to water quality.

Data Entry: The State (2-character FIPS code), NPS Management Area ID (**M/A**), Waterbody ID (**W/B**), monitoring approach (**CHEM/PHYS** or **BIO/HABI**), **Monitoring Design Plan**, and annual report year (**Year**) will be displayed below the top bar of Screen 3.07 and Screen 3.27 to identify the project and year for which implementation data are entered. The **Station** is then selected (PGUP and PGDN keys) to identify the drainage area within the project for which the implementation data will apply. Drainage areas are uniquely identified by a combination of **Monitoring Design Plan** and **Station**. For example, to report the implementation in the study watershed in a paired study, the **Station** should be "Study Station" and the **Monitoring Design Plan** should be "Paired." This information defines the drainage area as that drainage above the study watershed monitoring station.

Once the **Station** is selected, users can add implementation data by selecting **BMP/Cntrl Measures** from the top bar of Screen 3.07 or Screen 3.27. This action will display Screen 3.09 (chemical/physical) or Screen 3.29 (biological/habitat), from which the user can **Add** BMPs or control measures (**BMP Name**) that were implemented. A pop-up **List** of those BMPS and control measures included in the Management File (see "BMPs" on page 9) is displayed for use if **F1** is pressed when **BMP Name** is highlighted in the **BMP/Control Measures for:** window. Once selected from the list, the **BMP Name**, **Reporting Units**, **BMP Type**, **Goal For**, and **Implementation Goal** will be displayed. **Implementation Goal** and **Goal For** will not be displayed for upstream areas in upstream-downstream studies or for control watersheds in paired studies since such goals are not established.

In Management Areas where both a chemical/physical and a biological/habitat monitoring program exist, users may wish to specify a distinct **Implementation Goal** for each of the two monitoring programs. This is done by entering "S" (for **Station**-specific **Implementation Goal**) in the **Goal For** field, and then changing the **Implementation Goal**. The default value for **Implementation Goal** is

the value entered under Screen 1.21 (see "BMPs" on page 9), and the default value for **Goal For** is "M" (for Management Area **Implementation Goal**). The changed **Implementation Goal** will be specific to the monitoring **Station** (a study, downstream, or single station) displayed, and the user is then expected to report **Station**-specific **Implementation This Year** data. Please note that if the **Implementation Goal** is kept as the goal for the entire Management Area (i.e., **Goal For** is "M"), then the value for the goal cannot be changed.

The number of units implemented (i.e., ***on the ground***) during the monitoring year is reported under **Implementation This Year**. The **BMP Type** indicates whether the implementation is an annual value (e.g., conservation tillage acreage) or a cumulative value (e.g., number of wet ponds).

Sources: The **Sources** controlled through implementation of each BMP are reported from Screen 3.10 (chemical/physical) or Screen 3.30 (biological/habitat), which are displayed by selecting **Cntrl Sources** from Screen 3.07 or Screen 3.27, respectively. From Screen 3.10 or Screen 3.30, users can select **Add** and then press **F1** to access a pop-up list of those sources (from Screen 1.22 of the Management File) that can be selected from for entry as **Source Name**. For each **BMP Name** reported, multiple sources (**Source Name**) can be reported. Report as many sources (**Source Name**) controlled as necessary to document implementation activities for the year.

Pollutants: The **Pollutants** controlled for each **Source Name** controlled through implementation of each BMP are reported from Screen 3.11 (physical/chemical) or Screen 3.31 (biological/habitat), which are displayed by selecting **Pollutants** from Screen 3.07 or Screen 3.27, respectively. From Screen 3.11 or Screen 3.31, users can select **Add** and then press **F1** to access a pop-up list of those pollutants (from Screen 1.23 of the Management File) that can be selected from for entry as **Pollutant Name**. Report as many pollutants (**Pollutant Name**) controlled as necessary to document implementation activities for the year. For each **BMP Name** reported, multiple **Sources** can be reported, and multiple **Pollutants** can be reported for each **Source**. For example, animal waste management (**BMP Name**) implementation to control livestock operations (**Source Name**) could be reported as:

- 300 (**Implementation This Year**) "animal units controlled" (**Reporting Units**) were implemented
- bacteria and nutrients (**Pollutant Name**) were controlled

As another example, the implementation plan could have called for the installation of sediment basins to control sediment from construction sites, cropland, and surface mining. Annual reporting of the sediment basins (**BMP Name**) to control sediment (**Pollutant Name**) could be reported as:

- 25 (**Implementation This Year**) "sediment basins" (**Reporting Units**) were installed
- construction and cropland (**Sources**) were controlled[19]

The **NOTES** field under Screen 3.09 (chemical/physical) or Screen 3.29 (biological/habitat) can and should be used to further characterize the implementation and the water quality impacts (best professional judgment is suitable) that were anticipated as the result of such implementation. As described above, land use changes, significant incidents, and other important happenings should also be reported.

Failures in control measure maintenance can be addressed in either of two ways:

- For annual practices, report only the implementation that is adequately maintained. For example, if 1,000 acres of conservation tillage are implemented, but 200 acres are not managed properly, then report only 800 acres implemented.
- For cumulative practices, report only the units that are adequately maintained. For example, if 10 wet ponds were installed in 1990, 5 more were installed in 1991, but 3 ponds from 1990 were not adequately maintained, then:
    - Report 10 wet ponds for 1990.

---

[19] In this example, no sediment basins for surface mining were installed during this reporting year. In other words, not all pollutants or sources need to be reported every year; just report what was installed, the sources that were controlled, and the pollutants that were controlled.

- Report 2 wet ponds for 1991 (5 new minus 3 failed).

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Appendix A. Input Screens for NonPoint Source Management Software

```
                                                                                0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                    Nonpoint Source Control Branch
                           OFFICE OF WATER
                    U.S. ENVIRONMENTAL PROTECTION AGENCY

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 0.00 - NPSMS Main Menu

```
                                                                    1.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                          STATE AND LEAD AGENCY

                 State (FIPS Code):      NY
                 Lead Agency:            DEC
                 EPA Region:              2

  (L)ist States  (A)dd State  PGUP-Prev  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 1.01 - Management File States

```
                                                                                1.02
| Mgmt Area Info    BMPs & Proj Funding    Exit                  | MANAGEMENT FILE |

| CURRENT NPS STATE, LEAD AGENCY, AND MANAGEMENT AREA                                |
| State: NY    NPS Lead Agency: DEC                          EPA Region:  2          |
| NPS Management Area ID:        | Management Area Name:                           |
|  NYSENECA1                     |  SENECA RIVER DRAINAGE                          |
| PgUp - Previous NPS Mgmt Area     PgDn - Next NPS Mgmt Area                        |

| NONPOINT SOURCE MANAGEMENT SYSTEM - MANAGEMENT FILE                                |
|                          Version 3.0 - BETA                                        |
| Press <F1> for HELP -- Alt+<F1> for Alternate HELP                                 |
```

Screen 1.02 - Management Area Selection

```
                                                                    1.03
Mgmt Area Desc   Waterbody   Uses for WB   Pollutants   MGMT AREA INFO

Management Areas for: NY
ID:   NYSENECA1
Name: SENECA RIVER DRAINAGE
Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
Project Description:
This pretend, 64,000-acre watershed project in the northern end of Seneca
County drains into the north end of Cayuga Lake.  Problems in the watershed

Waterbodies 305(b) for: NYSENECA1
ID:                          Name:
NYCAYUGA1                    CAYUGA LAKE-NORTH END

Uses of Waterbody: NYCAYUGA1
Use: SWIM            Use Support Code (F, N, P, or T):  P

Pollutants/Relative Contributions for: NYCAYUGA1
Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

--------------- Contribution From Sources (Decimal Fraction) ---------------
NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

F1-Help   F5-View Complete Management Area   ESC-Return to the Previous Menu
```

Screen 1.03 - Management File Information

```
                                                                                1.04
 Add    Change    Delete    List    Notes                          MANAGEMENT AREA

 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed

 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END

 Uses of Waterbody: NYCAYUGA1
 Use: SWIM           Use Support Code (F, N, P, or T):  P

 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

    F1-Help   PgUp-Prev MF Area   PgDn-Next MF Area   ESC-Mgmt Area Info Menu
```

Screen 1.04 - Management Area

```
                                                                                  1.05
 Add   Change   Delete   List                                  WATERBODY

 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed

 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END

 Uses of Waterbody: NYCAYUGA1
 Use: SWIM           Use Support Code (F, N, P, or T):  P

 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

            F1-Help   PgUp-Prev WB   PgDn-Next WB   ESC-Mgmt Area Info Menu
```

Screen 1.05 - Waterbodies

```
                                                                                1.06
 Add   Change   Delete   List                                  WATERBODY USES

 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed

 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END

 Uses of Waterbody: NYCAYUGA1
 Use: SWIM           Use Support Code (F, N, P, or T):  P

 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

      F1-Help   PgUp-Prev WB Use   PgDn-Next WB Use   ESC-Mgmt Area Info Menu
```

Screen 1.06 - Uses of Waterbody

```
                                                                                  1.07
 Add   Change   Delete   List                                  | POLLUTANTS
 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed
 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END
 Uses of Waterbody: NYCAYUGA1
 Use: SWIM            Use Support Code (F, N, P, or T):  P
 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C
F1-Help    PgUp-Prev Pollutant    PgDn-Next Pollutant    ESC-Mgmt Area Info Menu
```

Screen 1.07 - Pollutants/Relative Contributions

```
                                                                                1.20
| BMPs  Sources Cntld  Pollutants  Impaired Uses  Funding | BMPs/FUNDING |

 CURRENT NPS STATE AND LEAD AGENCY
 State: NY    |  Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 RECREATION

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

          F1-Help                          ESC-Return to the Previous Menu
```

Screen 1.20 - BMP/Funding Information

```
                                                                                1.21
 Add   Change   Delete   List                                  | BMP NAME

 CURRENT NPS STATE AND LEAD AGENCY
  State: NY    |   Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                  BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 RECREATION

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

        F1-Help   PgUp-Prev BMP   PgDn-Next BMP   ESC-BMP/Proj Funding Menu
```

Screen 1.21 - BMP/Control Measure Name

```
                                                                                1.22
 Add   Delete   List                                          SOURCES CNTLD

 CURRENT NPS STATE AND LEAD AGENCY
  State: NY     Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                  BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 RECREATION

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE                Amount: $        25,000

     F1-Help   PgUp-Prev Source   PgDn-Next Source   ESC-BMP/Proj Funding Menu
```

Screen 1.22 - Sources Controlled by BMP

```
                                                                                1.23
 Add   Delete   List                                          POLLUTANTS

 CURRENT NPS STATE AND LEAD AGENCY
  State: NY    |   Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                  BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 RECREATION

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

        F1-Help     PgUp-Prev Param     PgDn-Next Param     ESC-BMP/Proj Menu
```

Screen 1.23 - Pollutants for Source

```
                                                                                1.24
 Add   Change   Delete   List                                  IMPAIRED USES

 CURRENT NPS STATE AND LEAD AGENCY
  State: NY     Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                  BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 RECREATION

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

        F1-Help   PgUp-Prev Use   PgDn-Next Use   ESC-BMP/Proj Funding Menu
```

Screen 1.24 - Impaired Uses

```
                                                                                1.25
 Add   Change   Delete   List                                  FUNDING

 CURRENT NPS STATE AND LEAD AGENCY
  State: NY    Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                  BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 RECREATION

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE                Amount: $        25,000

        F1-Help   PgUp-Prev Fund   PgDn-Next Fund   ESC-BMP/Proj Funding Menu
```

Screen 1.25 - Funding Information

```
                                                                                2.01
| Chemical/Physical      Biological/Habitat      Exit      | MONITORING PLAN |

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
          Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 2.01 - Monitoring Design Data Type Menu

```
                                                                    2.02
 Chemical/Physical      Biological/Habitat      Exit        MONITORING PLAN

                  MONITORING PLANS FOR MANAGEMENT AREAS

              State (FIPS Code):       NY
              NPS Management Area ID: NYSENECA1
              305(b) Waterbody ID:     NYCAYUGA1
              Data Type (Chem/Bio):    C

   (L)ist  (A)dd  (Q)A/QC  PGUP-Previous  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
           Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 2.02 - Chemical/Physical Monitoring Plans

```
                                                                                2.02
 Chemical/Physical      Biological/Habitat      Exit          MONITORING PLAN

                    MONITORING PLANS FOR MANAGEMENT AREAS

                State (FIPS Code):      NY

                NPS Management Area ID: NYSENECA1

                305(b) Waterbody ID:    NYCAYUGA1
                              QA/QC DESCRIPTION

                              F10-Save     ESC-Cancel
```

Screen 2.02 - Chemical/Physical QA/QC Description

```
                                                                                2.03
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | CHEM/PHY | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SPRING          3/ 1       5/31       Begins: 10/ 1       Begins: 10/90
2.                  /          /         Ends:    9/30       Ends:    9/89
3.                  /          /       (Enter All Begin/End Dates as MM/DD)
4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGA101          10.000

 Parameters for: Upstream Station
Explanatory Variable: N
Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
Parameter Type (W/S/B/U): S                    Reporting Units: MG/L
Parameter Quartiles:  75% - 125          50% - 50          25% - 15

                    Press F1 for Help,  ESC to Return to Previous Screen
```

Screen 2.03 - Chemical/Physical Monitoring Plan Information

```
                                                                                  2.04
| Design    Monitoring Year    Stations    Parameters                  | MONITORING PLAN |

 Design
| NY | M/A: NYSENECA1                    | CHEM/PHY | Monitoring Design (P/U/S): U |

 Monitoring Year
  Season Names    Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
 1. SPRING           3/ 1       5/31       Begins: 10/ 1       Begins: 10/90
 2.                   /          /          Ends:    9/30       Ends:    9/89
 3.                   /          /       (Enter All Begin/End Dates as MM/DD)
 4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
 Upstream (U)     N     NYDEC      CAYUGA101          10.000

 Parameters for: Upstream Station
 Explanatory Variable: N
 Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
 Parameter Type (W/S/B/U): S                    Reporting Units: MG/L
 Parameter Quartiles:  75% - 125          50% - 50          25% - 15

                F1-Help            ENTER( ┘)-Accept            ESC-Cancel
```

Screen 2.04 - Chemical/Physical Design

```
                                                                                2.05
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | CHEM/PHY | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names    Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SPRING           3/ 1       5/31       Begins: 10/ 1       Begins: 10/90
2.                   /          /         Ends:    9/30       Ends:    9/89
3.                   /          /       (Enter All Begin/End Dates as MM/DD)
4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)     N     NYDEC      CAYUGA101          10.000

 Parameters for: Upstream Station
Explanatory Variable: N
Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
Parameter Type (W/S/B/U): S                    Reporting Units: MG/L
Parameter Quartiles:  75% - 125          50% - 50          25% - 15

                F1-Help            ENTER( ┘)-Accept            ESC-Cancel
```

Screen 2.05 - Chemical/Physical Monitoring Year

```
                                                                                  2.06
Add     Change     List                                                        STATIONS

 Design
NY | M/A: NYSENECA1                    | CHEM/PHY | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SPRING          3/ 1       5/31       Begins: 10/ 1       Begins: 10/90
2.                  /          /          Ends:    9/30       Ends:    9/89
3.                  /          /       (Enter All Begin/End Dates as MM/DD)
4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGA101          10.000

 Parameters for: Upstream Station
Explanatory Variable: N
Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
Parameter Type (W/S/B/U): S                    Reporting Units: MG/L
Parameter Quartiles:  75% - 125          50% - 50          25% - 15

          F1-Help    PGUP-Previous Station    PGDN-Next Station    ESC-Exit
```

Screen 2.06 - Chemical/Physical Stations

```
                                                                                2.06
Add     Change     List                                                      STATIONS

 Design

                          LAND USE INFORMATION

Year   Land Use                                   Percentage of Drainage Area

1991   PASTURELAND                                                      50.0
1991   CULTIVATED CROPLAND                                              40.0

              - Highlight Bar ¦ ESC-EXIT  A-ADD  C-CHANGE  D-DELETE
                                  Top of List
Parameter Type (W/S/B/U): S                  Reporting Units: MG/L
Parameter Quartiles:  75% - 125        50% - 50          25% - 15

                F1-Help          ENTER( ┘)-Accept          ESC-Cancel
```

Screen 2.06 - Chemical/Physical Land Use

```
                                                                                  2.07
| Add     Change    Delete    List                                          | PARAMETERS |

 Design
| NY | M/A: NYSENECA1                  | CHEM/PHY | Monitoring Design (P/U/S): U |

 Monitoring Year
  Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
 1. SPRING          3/ 1       5/31       Begins: 10/ 1      Begins: 10/90
 2.                  /          /          Ends:    9/30      Ends:    9/89
 3.                  /          /       (Enter All Begin/End Dates as MM/DD)
 4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
 Upstream (U)     N     NYDEC      CAYUGA101          10.000

 Parameters for: Upstream Station
 Explanatory Variable: N
 Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
 Parameter Type (W/S/B/U): S                    Reporting Units: MG/L
 Parameter Quartiles:  75% - 125          50% - 50          25% - 15

       F1-Help    PGUP-Previous Parameter    PGDN-Next Parameter    ESC-Exit
```

Screen 2.07 - Chemical/Physical Parameters

```
                                                                    2.22
Chemical/Physical      Biological/Habitat      Exit      | MONITORING PLAN

                    MONITORING PLANS FOR MANAGEMENT AREAS

                State (FIPS Code):       NY
                NPS Management Area ID: NYSENECA1
                305(b) Waterbody ID:     NYCAYUGA1
                Data Type (Chem/Bio):    B

  (L)ist  (A)dd  (Q)A/QC  PGUP-Previous  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 2.22 - Biological/Habitat Monitoring Plans

```
                                                                                2.22
Chemical/Physical      Biological/Habitat      Exit          MONITORING PLAN

                 MONITORING PLANS FOR MANAGEMENT AREAS

              State (FIPS Code):      NY

              NPS Management Area ID: NYSENECA1

              305(b) Waterbody ID:    NYCAYUGA1
                              QA/QC DESCRIPTION

                              F10-Save     ESC-Cancel
```

Screen 2.22 - Biological/Habitat QA/QC Description

```
                                                                                  2.23
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names    Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SUMMER           4/ 1       8/31       Begins: 10/ 1       Begins: 10/90
2. OTHER            9/ 1       3/31       Ends:    9/30       Ends:    9/91
3.                   /          /       (Enter All Begin/End Dates as MM/DD)
4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGAB01          8.000       COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
Code/Name: 00061        / FLOW, STREAM, INSTANTANEOUS, CFS

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

                    Press F1 for Help,  ESC to Return to Previous Screen
```

Screen 2.23 - Biological/Habitat Monitoring Plan Information

```
                                                                                  2.24
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names    Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SUMMER           4/ 1       8/31       Begins: 10/ 1       Begins: 10/90
2. OTHER            9/ 1       3/31       Ends:    9/30       Ends:    9/91
3.                   /          /       (Enter All Begin/End Dates as MM/DD)
4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGAB01           8.000      COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
Code/Name: 00061       / FLOW, STREAM, INSTANTANEOUS, CFS

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

                F1-Help          ENTER( ┘)-Accept          ESC-Cancel
```

Screen 2.24 - Biological/Habitat Design

```
                                                                                  2.25
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names    Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SUMMER           4/ 1       8/31       Begins: 10/ 1       Begins: 10/90
2. OTHER            9/ 1       3/31       Ends:    9/30       Ends:    9/91
3.                   /          /       (Enter All Begin/End Dates as MM/DD)
4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGAB01           8.000      COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
Code/Name: 00061       / FLOW, STREAM, INSTANTANEOUS, CFS

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

                F1-Help            ENTER( ┘)-Accept            ESC-Cancel
```

Screen 2.25 - Biological/Habitat Monitoring Year

```
                                                                                  2.26
Add      Change      List                                                      STATIONS

 Design
NY | M/A: NYSENECA1                    | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
  Season Names    Begin Date  End Date    Monitoring Year:     EXAMPLE: 1990
 1. SUMMER           4/ 1       8/31       Begins: 10/ 1        Begins: 10/90
 2. OTHER            9/ 1       3/31       Ends:    9/30        Ends:    9/91
 3.                   /          /       (Enter All Begin/End Dates as MM/DD)
 4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code      Drainage-Mi²  Land Use
 Upstream (U)     N     NYDEC      CAYUGAB01            8.000      COMMERCIAL/R

 Parameters for: Upstream Station
 Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
 Code/Name: 00061       / FLOW, STREAM, INSTANTANEOUS, CFS

 CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

          F1-Help    PGUP-Previous Station    PGDN-Next Station    ESC-Exit
```

Screen 2.26 - Biological/Habitat Stations

```
                                                                                2.26
Add     Change     List                                                      STATIONS
Design
                              LAND USE INFORMATION

Year   Land Use                                    Percentage of Drainage Area

90     COMMERCIAL/RESIDENTIAL                                            40.0
90     FOREST LAND-PRIVATE                                               45.0
90     INDUSTRIAL                                                         2.0
90     MUNICIPAL PARK                                                     2.0
90     RESIDENTIAL                                                       11.0

            - Highlight Bar ¦ ESC-EXIT  A-ADD  C-CHANGE  D-DELETE
                                  Top of List

CUTOFF VALUES:  Abn. High/Normal: 21          Normal/Abn. Low: 11

                F1-Help          ENTER( ┘)-Accept          ESC-Cancel
```

Screen 2.26 - Biological/Habitat Land Use

```
                                                                                  2.27
Add      Change     Delete     List                                          PARAMETERS

 Design
NY | M/A: NYSENECA1                    | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names    Begin Date  End Date    Monitoring Year:     EXAMPLE: 1990
1. SUMMER           4/ 1       8/31       Begins: 10/ 1        Begins: 10/90
2. OTHER            9/ 1       3/31       Ends:    9/30        Ends:    9/91
3.                   /          /       (Enter All Begin/End Dates as MM/DD)
4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGAB01          8.000       COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: N    Parameter Type (W/S/B/U):      Units:
Code/Name:              /
Maximum Potential:   0.00  Reasonable Attainment:   0.00  Basis (Ref/BPJ):
INDICES: Fully:              Threatened:              Partially:

                F1-Help            ENTER( ┘)-Accept            ESC-Cancel
```

Screen 2.27 - Biological/Habitat Parameters

```
                                                                    3.01
| Chemical/Physical      Biological/Habitat      Exit      | ANNUAL REPORTS |

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
          Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 3.01 - Annual Reports Data Type Menu

```
                                                                                  3.02
 Chemical/Physical      Biological/Habitat      Exit                  ANNUAL REPORTS

                    ANNUAL REPORTS FOR MANAGEMENT AREAS

                State (FIPS Code):      NY

                NPS Management Area ID: NYSENECA1

                305(b) Waterbody ID:    NYCAYUGA1

                Annual Report Year:     1990

ANNUAL REPORT NOTES:
This is the pre-implementation year in the project.  Water quality data are

  (L)ist  (A)dd Report  (N)otes  PGUP-Prev  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 3.02 - Chemical/Physical Annual Reports

```
                                                                                  3.03
 Water Quality Data    Implementation Data    Exit                  | ANNUAL REPORTS

                    ANNUAL REPORTS FOR MANAGEMENT AREAS

                State (FIPS Code):       NY

                NPS Management Area ID: NYSENECA1

                305(b) Waterbody ID:     NYCAYUGA1

                Annual Report Year:      1990

ANNUAL REPORT NOTES:
This is the pre-implementation year in the project.  Water quality data are
collected in the spring only since this is the season during which problems
are the greatest and during which the controls to be implemented will have

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                           Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 3.03 - Chemical/Physical Annual Reports Data

```
                                                                                  3.04
| Station      Parameters                                                  | WATER QUALITY |

| NY | M/A: NYSENECA1                | W/B: NYCAYUGA1                | CHEM/PHY |

| Monitoring Design Plan: Upstream/Downstream Study                    Year: 1990 |

 Station
| Upstream Station        Agency Code: NYDEC     Station Code: CAYUGA101 |

 Parameters for: Upstream Station

 Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
 Explanatory Variable: N   Parameter Type: S   Parameter Units: MG/L
 ------- PARAMETER QUARTILES -------    COUNTS/SEASON -  1     2     3     4
                                        Highest:         5     0     0     0
                 75% - 125              High:            5     0     0     0
                 50% - 50               Low:             5     0     0     0
                 25% - 15               Lowest:          5     0     0     0

 NOTES: First year.
```

Press F1 for Help, ESC to Return to Previous Screen

Screen 3.04 - Chemical/Physical Water Quality Data

```
                                                                                  3.05
Station     Parameters                                                          STATION

NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | CHEM/PHY

Monitoring Design Plan: Upstream/Downstream Study                        Year: 1990

 Station
Upstream Station        Agency Code: NYDEC     Station Code: CAYUGA101

 Parameters for: Upstream Station

Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
Explanatory Variable: N   Parameter Type: S   Parameter Units: MG/L
------- PARAMETER QUARTILES -------   COUNTS/SEASON -  1     2     3     4
                                      Highest:          5     0     0     0
                75% - 125             High:             5     0     0     0
                50% - 50              Low:              5     0     0     0
                25% - 15              Lowest:           5     0     0     0

NOTES: First year.

              F1-Help       PGUP-Previous       PGDN-Next       ESC-Exit
```

Screen 3.05 - Chemical/Physical Station

```
                                                                                  3.06
 Add   Change   Delete   List                                          PARAMETERS

 NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | CHEM/PHY

 Monitoring Design Plan: Upstream/Downstream Study                      Year: 1990

 Station
 Upstream Station        Agency Code: NYDEC     Station Code: CAYUGA101

 Parameters for: Upstream Station

 Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
 Explanatory Variable: N   Parameter Type: S   Parameter Units: MG/L
 ------- PARAMETER QUARTILES -------    COUNTS/SEASON -  1     2     3     4
                                        Highest:         5     0     0     0
                 75% - 125              High:            5     0     0     0
                 50% - 50               Low:             5     0     0     0
                 25% - 15               Lowest:          5     0     0     0

 NOTES: First year.

              F1-Help       PGUP-Previous       PGDN-Next       ESC-Exit
```

Screen 3.06 - Chemical/Physical Parameters

3.07

Station	BMP/Cntrl Measures	Cntrl Sources	Pollutants	IMPLEMENTATION

NY	M/A: NYSENECA1	W/B: NYCAYUGA1	CHEM/PHY

Monitoring Design Plan: Upstream/Downstream Study Year: 1990

Station
Downstream Station Agency Code: NYDEC Station Code: CAYUGA102

BMP/Control Measures for: Downstream Station
BMP Name: ANIMAL WASTE MANAGEMENT
Reporting Units: A.U. CONTROLLED BMP Type: C Goal For: M
Implementation Goal: 2000 Implementation This Year: 25

Sources Controlled by: ANIMAL WASTE MANAGEMENT
Source Name: DAIRIES

Pollutants for Source: DAIRIES
Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

Press F1 for Help, ESC to Return to Previous Screen

Screen 3.07 - Chemical/Physical Implementation Data

3.08

Station	BMP/Cntrl Measures	Cntrl Sources	Pollutants	STATION

NY	M/A: NYSENECA1	W/B: NYCAYUGA1	CHEM/PHY

Monitoring Design Plan: Upstream/Downstream Study Year: 1990

Station
Downstream Station Agency Code: NYDEC Station Code: CAYUGA102

BMP/Control Measures for: Downstream Station
BMP Name: ANIMAL WASTE MANAGEMENT
Reporting Units: A.U. CONTROLLED BMP Type: C Goal For: M
Implementation Goal: 2000 Implementation This Year: 25

Sources Controlled by: ANIMAL WASTE MANAGEMENT
Source Name: DAIRIES

Pollutants for Source: DAIRIES
Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

F1-Help PGUP-Previous PGDN-Next ESC-Exit

Screen 3.08 - Chemical/Physical Station

```
                                                                                  3.09
 Add   Change   Delete   List   Notes                          BMP/CONTROL MEASURES

 NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | CHEM/PHY

 Monitoring Design Plan: Upstream/Downstream Study                    Year: 1990

 Station
 Downstream Station      Agency Code: NYDEC     Station Code: CAYUGA102

 BMP/Control Measures for: Downstream Station
 BMP Name: ANIMAL WASTE MANAGEMENT
 Reporting Units: A.U. CONTROLLED              BMP Type: C        Goal For: M
 Implementation Goal: 2000              Implementation This Year: 25

 Sources Controlled by: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants for Source: DAIRIES
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Screen 3.09 - Chemical/Physical BMP/Control Measures

```
                                                                                  3.10
 Add   Delete   List                                                          SOURCES

 NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | CHEM/PHY

 Monitoring Design Plan: Upstream/Downstream Study                        Year: 1990

 Station
 Downstream Station      Agency Code: NYDEC     Station Code: CAYUGA102

 BMP/Control Measures for: Downstream Station
 BMP Name: ANIMAL WASTE MANAGEMENT
 Reporting Units: A.U. CONTROLLED              BMP Type: C        Goal For: M
 Implementation Goal: 2000              Implementation This Year: 25

 Sources Controlled by: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants for Source: DAIRIES
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Screen 3.10 - Chemical/Physical Sources Controlled

```
                                                                                  3.11
 Add   Change   Delete   List                                                  POLLUTANTS

 NY   M/A: NYSENECA1                W/B: NYCAYUGA1                            CHEM/PHY

 Monitoring Design Plan: Upstream/Downstream Study                          Year: 1990

 Station
 Downstream Station      Agency Code: NYDEC     Station Code: CAYUGA102

 BMP/Control Measures for: Downstream Station
 BMP Name: ANIMAL WASTE MANAGEMENT
 Reporting Units: A.U. CONTROLLED              BMP Type: C        Goal For: M
 Implementation Goal: 2000              Implementation This Year: 25

 Sources Controlled by: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants for Source: DAIRIES
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Screen 3.11 - Chemical/Physical Pollutants for Source

```
                                                                    3.22
| Chemical/Physical      Biological/Habitat      Exit      | ANNUAL REPORTS |

                    ANNUAL REPORTS FOR MANAGEMENT AREAS

              State (FIPS Code):       NY

              NPS Management Area ID: NYSENECA1

              305(b) Waterbody ID:     NYCAYUGA1

              Annual Report Year:      1990

ANNUAL REPORT NOTES:
This is the pre-implementation year.  It was a normal precipitation year.

  (L)ist  (A)dd Report  (N)otes  PGUP-Prev  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 3.22 - Biological/Habitat Annual Reports

```
                                                                    3.23
| Water Quality Data    Implementation Data    Exit          | ANNUAL REPORTS |

                    ANNUAL REPORTS FOR MANAGEMENT AREAS

              State (FIPS Code):       NY

              NPS Management Area ID: NYSENECA1

              305(b) Waterbody ID:     NYCAYUGA1

              Annual Report Year:      1990

ANNUAL REPORT NOTES:
This is the pre-implementation year.  It was a normal precipitation year.
Implementation data for this study are to be taken from the
chemical/physical monitoring reports.  The implementation applies to the

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
          Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Screen 3.23 - Biological/Habitat Annual Reports Data

```
                                                                                  3.24
| Station     Parameters                                                  | WATER QUALITY |

| NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | BIO/HABI |

| Monitoring Design Plan: Upstream/Downstream Study                    Year: 1990 |

 Station
| Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01 |

 Parameters for: Upstream Station

 Code/Name: 00061        / FLOW, STREAM, INSTANTANEOUS, CFS
 Explanatory Variable: C   Parameter Type: S   Parameter Units: CFS

 ---------- CUTOFF VALUES ---------      ------ SCORES/VALUES FOR SEASON ------
 Abn. High/Normal  Normal/Abn. Low    Season 1  Season 2  Season 3  Season 4
     21                11                  N

 NOTES: Normal precip.
```

Press F1 for Help, ESC to Return to Previous Screen

Screen 3.24 - Biological/Habitat Water Quality Data

```
                                                                                3.25
Station     Parameters                                                      STATION

NY   M/A: NYSENECA1                W/B: NYCAYUGA1                      BIO/HABI

Monitoring Design Plan: Upstream/Downstream Study                    Year: 1990

 Station
Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 Parameters for: Upstream Station

Code/Name: 00061        / FLOW, STREAM, INSTANTANEOUS, CFS
Explanatory Variable: C   Parameter Type: S   Parameter Units: CFS

 ---------- CUTOFF VALUES ---------      ------ SCORES/VALUES FOR SEASON ------
Abn. High/Normal  Normal/Abn. Low    Season 1  Season 2  Season 3  Season 4
    21                11                  N

NOTES: Normal precip.

                F1-Help       PGUP-Previous       PGDN-Next       ESC-Exit
```

Screen 3.25 - Biological/Habitat Station

```
                                                                                  3.26
 Add   Change   Delete   List                                          PARAMETERS

 NY   M/A: NYSENECA1                W/B: NYCAYUGA1                    BIO/HABI

 Monitoring Design Plan: Upstream/Downstream Study                    Year: 1990

 Station
 Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 Parameters for: Upstream Station

 Code/Name: 00061        / FLOW, STREAM, INSTANTANEOUS, CFS
 Explanatory Variable: C   Parameter Type: S   Parameter Units: CFS

 ---------- CUTOFF VALUES ---------      ------ SCORES/VALUES FOR SEASON ------
 Abn. High/Normal  Normal/Abn. Low     Season 1  Season 2  Season 3  Season 4
     21                11                   N

 NOTES: Normal precip.

                F1-Help       PGUP-Previous       PGDN-Next       ESC-Exit
```

Screen 3.26 - Biological/Habitat Parameters

3.27

Station	BMP/Cntrl Measures	Cntrl Sources	Pollutants	IMPLEMENTATION

NY	M/A: NYSENECA1	W/B: NYCAYUGA1	BIO/HABI

Monitoring Design Plan: Upstream/Downstream Study Year: 1990

Station
Upstream Station Agency Code: NYDEC Station Code: CAYUGAB01

BMP/Control Measures for: Upstream Station
BMP Name:
Reporting Units: BMP Type:
Implementation This Year:

Sources Controlled by:
Source Name:

Pollutants for Source:
Pollutant Name:

Press F1 for Help, ESC to Return to Previous Screen

Screen 3.27 - Biological/Habitat Implementation Data

```
                                                                                  3.28
| Station   BMP/Cntrl Measures   Cntrl Sources  Pollutants                    | STATION |

| NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | BIO/HABI |

| Monitoring Design Plan: Upstream/Downstream Study                  Year: 1990 |

 Station
| Downstream Station      Agency Code: NYDEC      Station Code: CAYUGAB02 |

 BMP/Control Measures for: Downstream Station
| BMP Name:
| Reporting Units:                          BMP Type:          Goal For:
| Implementation Goal:                  Implementation This Year:

 Sources Controlled by:
| Source Name:

 Pollutants for Source:
| Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Screen 3.28 - Biological/Habitat Station

3.29

Add	Change	Delete	List	Notes	BMP/CONTROL MEASURES

NY	M/A: NYSENECA1	W/B: NYCAYUGA1	BIO/HABI

Monitoring Design Plan: Upstream/Downstream Study Year: 1990

Station
Downstream Station Agency Code: NYDEC Station Code: CAYUGAB02

BMP/Control Measures for: Downstream Station
BMP Name:
Reporting Units: BMP Type: Goal For:
Implementation Goal: Implementation This Year:

Sources Controlled by:
Source Name:

Pollutants for Source:
Pollutant Name:

F1-Help PGUP-Previous PGDN-Next ESC-Exit

Screen 3.29 - Biological/Habitat BMP/Control Measures

```
                                                                                  3.30
 Add   Delete   List                                                          SOURCES

 NY   M/A: NYSENECA1                W/B: NYCAYUGA1                          BIO/HABI

 Monitoring Design Plan: Upstream/Downstream Study                        Year: 1990

 Station
 Downstream Station      Agency Code: NYDEC      Station Code: CAYUGAB02

 BMP/Control Measures for: Downstream Station
 BMP Name:
 Reporting Units:                                BMP Type:          Goal For:
 Implementation Goal:                      Implementation This Year:

 Sources Controlled by:
 Source Name:

 Pollutants for Source:
 Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Screen 3.30 - Biological/Habitat Sources Controlled

```
                                                                                  3.31
 Add   Change   Delete   List                                                  POLLUTANTS

 NY   M/A: NYSENECA1                W/B: NYCAYUGA1                            BIO/HABI

 Monitoring Design Plan: Upstream/Downstream Study                          Year: 1990

 Station
 Downstream Station      Agency Code: NYDEC      Station Code: CAYUGAB02

 BMP/Control Measures for: Downstream Station
 BMP Name:
 Reporting Units:                          BMP Type:          Goal For:
 Implementation Goal:                  Implementation This Year:

 Sources Controlled by:
 Source Name:

 Pollutants for Source:
 Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Screen 3.31 - Biological/Habitat Pollutants for Source

Appendix B. Hard Copy Data Entry Forms

NonPoint Source Management System
Version 3.0 - August 1991
Manual Data Entry Forms

INSTRUCTIONS FOR COMPLETING DATA ENTRY FORMS:

The manual data entry forms are provided to assist users that wish to use the NPSMS but do not have the necessary hardware.

When the data entry forms have been entered, they should be forwarded to the NPS Regiona Coordinator or to the EPA headquarters where they will be entered into the NPSMS software.

Each question on the data entry form has a number in the parenthesis. That number tells how long each answer can be which corresponds to the software. Additionally, there are several questions tha require a valid name or code. This information is printed inside brackets with messages such as "[Refer to List 1]." This message indicates that the value to be entered is a value from "List 1." There are several "Lists" to assist you which contain standard names, codes, and definitions. When an entry calls for a value from a "List" you should use the list or enter your own value. The "Lists" are located in the Appendices of the NPSMS User's Guide under "Standard Tables."

Use the forms to complete each entry and make as many copies of each form as necessary. Each Management Area should have one complete set of forms. Form 10 should be competed twice if you are performing BOTH Chemical/Physical AND Biological/Habitat parameters. Forms 13 through 17 should be completed for each Annual Report submitted. Use Form 14a to report Chemical/Physica water quality parameters and Form 14b to report Biological/Habitat parameters.

FORM 1 - STATE IDENTIFICATION

State (2): ____

Lead Agency (25): _____

EPA Region (2): ____

Contact (35): _____

Title (35): _____

Phone (15): _____

Phone (15): _____

Phone (15): _____

FORM 2 - MANAGEMENT AREA

Management Area ID (23): _____

Management Area Name (45): _____

Participating Agencies (50): _____

Project Description: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

FORM 3 - WATERBODY IDENTIFICATION

Management Area ID (23): _____

Waterbody ID (23): _____

Waterbody Name (45): _____

Use of Waterbody (10)	Use Support Code (1)
_____	____ [F=Fully, N=Nonsupported, P=Partially, T=Threatened]
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____

FORM 4 - PROBLEM POLLUTANTS

Management Area ID (23): _____

Waterbody ID (23): _____

Pollutant Name (50) [Refer to List 2]	NPS	--Contributions (Decimal)-- (Must Total 1.0) Point	Background	Info Type [List 3]

FORM 5 - IMPLEMENTATION PLAN (BMP's)

Management Area ID (23): _____

Waterbody ID (23): _____

(1)* BMP Name (45) [Refer to List 4]	Reporting Units (25)	Implementation Goal (10)	BMP Type

* A = Annual, C = Cumulative

FORM 6 - SOURCES CONTROLLED BY BMP

Management Area ID (23): _____

Waterbody ID (23): _____

BMP Name (45): _____

Sources Controlled by BMP Name (49) [Refer to List 5]

_____

_____

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FORM 7 - POLLUTANTS FOR SOURCE

Management Area ID (23): _____

Waterbody ID (23): _____

BMP Name (45): _____

Source Name (49): _____

Pollutant Names for Source (50) [From Pollutant Names on Form 4]

_____

_____

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FORM 8 - IMPAIRED USES

Management Area ID (23): _____

Waterbody ID (23): _____

BMP Name (45): _____

Source Name (49): _____

Pollutant Name (50): _____

Impaired Uses Caused by Pollutant (49) [From Designated Use List on Form 3]

_____

_____

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FORM 9 - MANAGEMENT AREA FUNDING INFORMATION

Management Area ID (23): _____

Waterbody ID (23): _____

Year (4)	Source of Funding (20)	Use of Funding (25) [Refer to List 6]	Amount of Funding (10)
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____
____	_____	_____	$_____

FORM 10 - MONITORING PLAN

PART I. Monitoring Type

Monitoring Type Code (1): ___ (C or B)

C = Chemical/Physical
B = Biological/Habitat

PART II. Monitoring Design

Monitoring Design Code (1): ___ (P, U, or S)

P = Paired Watershed Study
U = Upstream-Downstream Study
S = Single Station Study

PART III. Monitoring Year

	Season (10)	Begin Date	End Date	
1.	_____	___/___	___/___	(MM/DD)
2.	_____	___/___	___/___	(MM/DD)
3.	_____	___/___	___/___	(MM/DD)
4.	_____	___/___	___/___	(MM/DD)

	Begin Date	End Date	
Monitoring Year Begins:	___/___	___/___	(MM/DD)
Example Year 1990 Begins:	___/___	___/___	(MM/YY) [i.e. 10/90 - 9/91]

PART IV. Stations (Maximum of 2)

Station Code (1) *	Agency Code (8)	Station Code (15)	Drainage-Mi^2 (8.3)
___	_____	_____	_____
___	_____	_____	_____

* Paired Study	Upstream/Downstream	Single Study
C = Control Station	U = Upstream Station	O = One Station
S = Study Station	D = Downstream Station	

FORM 11 - LAND USE INFORMATION

Monitoring Type Code (1): ___ (C or B)

Station Code (1)	Year (4)	Land Use (40)[Refer to List 7]	Percentage of Drainage Area (4.1)

FORM 12a - MONITORING PARAMETERS (CHEMICAL/PHYSICAL)

Station Code (1): ___

[Refer to List 8 for Parameter Codes/Names]

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y or N]: ___ Parameter Type (1): * ___

Parm. Units (10): _____ Quartiles: 75% _____ 50% _____ 25% _____

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y or N]: ___ Parameter Type (1): * ___

Parm. Units (10): _____ Quartiles: 75% _____ 50% _____ 25% _____

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y or N]: ___ Parameter Type (1): * ___

Parm. Units (10): _____ Quartiles: 75% _____ 50% _____ 25% _____

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y or N]: ___ Parameter Type (1): * ___

Parm. Units (10): _____ Quartiles: 75% _____ 50% _____ 25% _____

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y or N]: ___ Parameter Type (1): * ___

Parm. Units (10): _____ Quartiles: 75% _____ 50% _____ 25% _____

* S = STORET, B = BIOS, H = HABITAT, U = USER DEFINED

FORM 12b - MONITORING PARAMETERS (BIOLOGICAL/HABITAT)

Station Code (1): ___

[Refer to List 8 for Parameter Codes/Names]

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y, N, or C]: ___ Parameter Type (1): * ___

Maximum Potential (6): _____ Reasonable Attainment (6): _____

Basis (1) [R=Ref, B=BPJ]: ___ Parameter Units (10): _____

INDICES Fully Supported: _____ Threatened: _____ Partially: _____

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y, N, or C]: ___ Parameter Type (1): * ___

Maximum Potential (6): _____ Reasonable Attainment (6): _____

Basis (1) [R=Ref, B=BPJ]: ___ Parameter Units (10): _____

INDICES Fully Supported: _____ Threatened: _____ Partially: _____

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y, N, or C]: ___ Parameter Type (1): * ___

Maximum Potential (6): _____ Reasonable Attainment (6): _____

Basis (1) [R=Ref, B=BPJ]: ___ Parameter Units (10): _____

INDICES Fully Supported: _____ Threatened: _____ Partially: _____

Parameter Code/Name (10/50): _____ / _____

Explanatory Variable (1) [Y, N, or C]: ___ Parameter Type (1): * ___

Maximum Potential (6): _____ Reasonable Attainment (6): _____

Basis (1) [R=Ref, B=BPJ]: ___ Parameter Units (10): _____

INDICES Fully Supported: _____ Threatened: _____ Partially: _____

* S = STORET, B = BIOS, H = HABITAT, U = USER DEFINED

FORM 13 - ANNUAL REPORT

Monitoring Type Code (1):___ (C or B)

Year (4): _____

C = Chemical/Physical
B = Biological/Habitat

Annual Report Notes:

FORM 14a - WATER QUALITY PARAMETERS (CHEMICAL/PHYSICAL)

Station Code (1): ___

[Parameter Codes/Names are from Parameter Names on Form 12a]

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

COUNTS/SEASON	1	2	3	4
Highest (3)	_____	_____	_____	_____
High (3)	_____	_____	_____	_____
Low (3)	_____	_____	_____	_____
Lowest (3)	_____	_____	_____	_____

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

COUNTS/SEASON	1	2	3	4
Highest (3)	_____	_____	_____	_____
High (3)	_____	_____	_____	_____
Low (3)	_____	_____	_____	_____
Lowest (3)	_____	_____	_____	_____

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

COUNTS/SEASON	1	2	3	4
Highest (3)	_____	_____	_____	_____
High (3)	_____	_____	_____	_____
Low (3)	_____	_____	_____	_____
Lowest (3)	_____	_____	_____	_____

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

COUNTS/SEASON	1	2	3	4
Highest (3)	_____	_____	_____	_____
High (3)	_____	_____	_____	_____
Low (3)	_____	_____	_____	_____
Lowest (3)	_____	_____	_____	_____

FORM 14b - WATER QUALITY PARAMETERS (BIOLOGICAL/HABITAT)

Station Code (1): ___

[Parameter Codes/Names are from Parameter Names on Form 12b]

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

SEASON:	1	2	3	4	Explanatory Variable
SCORE (6)	_____	_____	_____	_____	(1) [Y, N, or C]: ___

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

SEASON:	1	2	3	4	Explanatory Variable
SCORE (6)	_____	_____	_____	_____	(1) [Y, N, or C]: ___

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

SEASON:	1	2	3	4	Explanatory Variable
SCORE (6)	_____	_____	_____	_____	(1) [Y, N, or C]: ___

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

SEASON:	1	2	3	4	Explanatory Variable
SCORE (6)	_____	_____	_____	_____	(1) [Y, N, or C]: ___

Parameter Code/Name (10/50): _____ / _____

Notes (68): _____

SEASON:	1	2	3	4	Explanatory Variable
SCORE (6)	_____	_____	_____	_____	(1) [Y, N, or C]: ___

FORM 15 - IMPLEMENTATION PROGRESS

Station Code (1): ___

BMP Name (45) [From BMP Names on Form 5]: _____

BMP Type (1): ___ Units (25): _____ Goal For (1): * ___

Implementation Goal (10): _____ Implementation This Year (10): _____

BMP Name (45) [From BMP Names on Form 5]: _____

BMP Type (1): ___ Units (25): _____ Goal For (1): * ___

Implementation Goal (10): _____ Implementation This Year (10): _____

BMP Name (45) [From BMP Names on Form 5]: _____

BMP Type (1): ___ Units (25): _____ Goal For (1): * ___

Implementation Goal (10): _____ Implementation This Year (10): _____

BMP Name (45) [From BMP Names on Form 5]: _____

BMP Type (1): ___ Units (25): _____ Goal For (1): * ___

Implementation Goal (10): _____ Implementation This Year (10): _____

BMP Name (45) [From BMP Names on Form 5]: _____

BMP Type (1): ___ Units (25): _____ Goal For (1): * ___

Implementation Goal (10): _____ Implementation This Year (10): _____

* M = Management Area, S = Station Specific

FORM 16 - SOURCES CONTROLLED BY BMP

Station Code (1): ___

BMP Name: _____

Sources Controlled by BMP Name (49) [From Source Names on Form 6]

_____

_____

_____

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FORM 17 - POLLUTANTS FOR SOURCE

Station Code (1): ___

BMP Name (45): _____

Source Name (49): _____

Pollutant Names for Source (50) [From Pollutant Names on Form 7]

_____

_____

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NonPoint Source Management System

NPSMS Version 3

User's Guide

August 1991

Nonpoint Source Control Branch
Office of Wetlands, Oceans, and Watersheds
Office of Water
U.S. Environmental Protection Agency
Washington, D.C.

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TABLE OF CONTENTS

1. Introduction 1

2. Starting NPSMS 2
   2.1 Installation 2
   2.2 Logging On 2
   2.3 NPSMS MAIN Menu 3

3. Using NPSMS 5
   3.1 Key Commands 5
      3.1.1 Global Keys 5
      3.1.2 Key Commands for Menu Screens 5
      3.1.3 Key Commands for Data Entry Screens 6
      3.1.4 Key Commands for Note Fields 6
   3.2 Menus 7
   3.3 Data Entry Screens 7
   3.4 Selectable Lists 8
   3.5 Note Fields 8
   3.6 On-line Help 9
      3.6.1 Context Specific Help 9
      3.6.2 Alternate Help 9
   3.7 Quitting 10

4. Management File 11
   4.1 Management Area Information 12
      4.1.1 Management Area Description 13
      4.1.2 Waterbody 13
      4.1.3 Uses for Waterbody 14
      4.1.4 Pollutants 15
   4.2 Best Management Practices and Project Funding 15
      4.2.1 Best Management Practices 16
      4.2.2 Sources Controlled 17
      4.2.3 Pollutants 17
      4.2.4 Impaired Uses 18
      4.2.5 Funding 18

5. Monitoring Plan File 20
   5.1 Chemical/Physical 20
      5.1.1 Design 22
      5.1.2 Monitoring Year 22
      5.1.3 Stations 23
      5.1.4 Parameters 24
   5.2 Biological/Habitat 24
      5.2.1 Design 26

5.2.2 Monitoring Year 26
5.2.3 Stations 27
5.2.4 Parameters 28

6. Annual Report File 29
6.1 Chemical/Physical 29
6.1.1 Water Quality Data 30
6.1.1.1 Station 31
6.1.1.2 Parameters 31
6.1.2 Implementation Data 32
6.1.2.1 Station 32
6.1.2.2 Best Management Practices/Control Measures 33
6.1.2.3 Control Sources 34
6.1.2.4 Pollutants 34
6.2 Biological/Habitat 35
6.2.1 Water Quality Data 36
6.2.1.1 Station 36
6.2.1.2 Parameters 37
6.2.2 Implementation Data 38
6.2.2.1 Station 38
6.2.2.2 Best Management Practices/Control Measures 38
6.2.2.3 Control Sources 39
6.2.2.4 Pollutants 40

7. Reports 41
7.1 Problem Assessment 42
7.2 Implementation Plan 42
7.3 Monitoring Stations 42
7.4 Station Parameters 42
7.5 WQ Parameters Frequencies 42
7.6 Bio Station/Reference 42
7.7 Exceptions Report 43

8. Graphics 44
8.1 Graphics Setup 44
8.1.1 Laser Printer 45
8.1.2 Dot Matrix 46
8.1.3 HP Plotter 47
8.1.4 PaintJet 48
8.1.5 File Output 49
8.1 Problem Pollutants 50
8.2 Biological vs Habitat Plot 50
8.3 Habitat/Biological Trend 51
8.4 Chemical/Physical Trend 51
8.5 Management Area Funding 51

9. Options 52
9.1 Configuration 52
9.1.1 Printer 53
9.1.2 Color 54
9.1.3 System 55
9.1.4 Telecom 56
9.1.5 WP Name 58
9.2 Backup Data 58
9.3 Restore Data 59
9.4 Import/Export 60
9.4.1 Import 60
9.4.2 Export 61
9.5 Export to SAS 63
9.6 Maintenance 63
9.7 Delete State 64
9.8 System Tables 65
9.9 Word Processor 66

APPENDICES
A Report Output Samples
B Graphic Output Samples
C Standard System Tables

1. INTRODUCTION

The Nonpoint Source Management System (NPSMS) is a PC based software application developed to facilitate data input to the NPS Management File and provide reporting capabilities to support the NPS Annual Report File.

The software is used by states receiving grants under section 319 of the Clean Water Act. It is based upon requirements as described by the U.S. EPA's "Watershed Monitoring and Reporting for Section 319 National Monitoring Program Projects," August, 1991.

The NPSMS version 2.1 software is an integrated, menu-driven environment supporting both file management and annual reporting for chemical/physical data. It provided many advanced features including pop-up menus, look-up tables for data entry, configurable environment, on-screen reports, and on-line help.

The most current version of the NPSMS, version 3.0 includes many enhanced features of version 2.1. The most significant enhancement is the ability to track biological and habitat data as well as the chemical/physical data that version 2.1 tracked. Other features include improved user interface, pop-up note fields, automated transfer of Annual Reports, and graphic capabilities.

This document is a general guide on how to use the NPSMS version 3.0. For information and guidance on the actual data requirements, consult the document, "Watershed Monitoring and Reporting for Section 319 National Monitoring Program Projects," August, 1991.

2. STARTING NPSMS

2.1 INSTALLATION

The NPSMS software requires the following hardware to run:

AT class computer (286 or better)
640 KB RAM
Hard Disk
Floppy Drive (high density)
Monochrome Monitor (an EGA or VGA color monitor is needed for graphics)

Note that the NPSMS software requires approximately 2.5 megabytes of available disk space.

To install the software on your computer, follow the instructions below:

1. Insert the NPSMS Diskette in Drive A:

2. At the DOS prompt, type **A:INSTALL** and press the <ENTER> key.

   The install program will copy the NPSMS files to a directory called \NPSV3 on your C: drive.

3. After the install has completed, change directories to your root directory. Type **CD** and press the <ENTER> key. To start the NPSMS, follow the Logging On instructions below.

2.2 LOGGING ON

Once the NPSMS has been installed, the user must type **NPSMS** at the DOS prompt to start the NPSMS. A LogOn screen will be displayed, as shown in Figure 2.2-1. This screen will show the current system date and time which should be checked for accuracy as well as the last user access information.

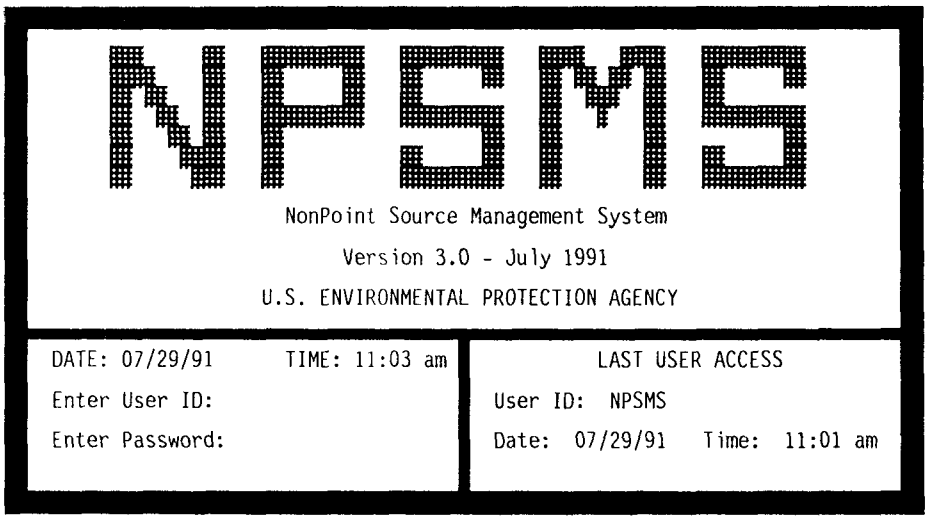


Figure 2.2-1 NPSMS LogOn Screen

The user must enter his user ID which can be up to eight characters and press the <ENTER> key. Then he must enter the password he established (up to eight characters) and press the <ENTER> key. Once the user enters his ID and password, the NPSMS Main Menu will be displayed.

If the user has not been assigned an ID, the generic ID is NPSMS and the password is also NPSMS. Individual user IDs can be assigned in the OPTIONS/SYSTEM TABLES/USER ID TABLE selection (see Section 9.8). Once the real ID has been assigned, the generic ID and password can be deleted.

2.3 NPSMS MAIN MENU

The Main Menu of the NPSMS is a pull-down menu structure that allows easy access to the integrated features of the software.

The figure below shows the Main Menu of the NPSMS.

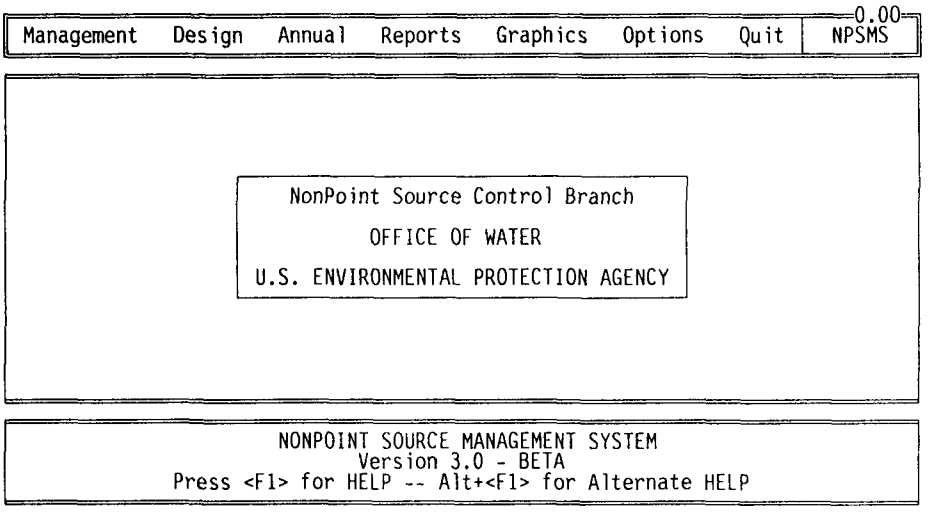


Figure 2.3-1 NPSMS Main Menu

There are seven options available from the Main Menu. These menu options will be discussed in following sections of this User's Guide, but below is a brief description of each of these options.

The MANAGEMENT menu option provides capabilities for adding, updating, deleting, and reporting on the management areas and waterbodies defined under the 319 NPS Management Program.

The DESIGN menu option contains information pertaining to the type of study that will be implemented to monitor the specified management area/waterbody.

The ANNUAL menu option provides the capabilities to maintain the annual reports that must be submitted to EPA as required under the Nonpoint Source Program.

The REPORTS menu option allows the user to generate reports. Once a report has been generated, the user may view it on the screen, print it, or save it to a text file.

The GRAPHICS menu option allows the user to generate sophisticated graphs and charts to better interpret and analyze the large volume of data entered into the NPSMS.

The OPTIONS menu option allows the user to customize the NPSMS, backup and restore data, import and export data, convert data to ASCII format, perform system maintenance, delete state information, maintain system tables, and utilize any word processor or text editor.

The QUIT menu option will close all of the NPSMS files and then return the user to the operating system (DOS).

3. USING NPSMS

3.1 KEY COMMANDS

3.1.1 GLOBAL KEYS

The following is a list of keys that are available from all screens within the NPSMS.

<ESC> - ESCAPE

The escape key is the universal way to exit the current operation. Pressing the <ESC> key will display the previous menu or screen.

<ENTER> - ACCEPT

Pressing the <ENTER> key (or the <RETURN> key) will accept highlighted data or it will execute a menu choice.

<F1> - HELP

Pressing the <F1> key will display Context Specific Help about the menu choice or data field that is currently highlighted. Note that if a selectable list is available for the highlighted data field, pressing <F1> will display this list.

<ALT> + <F1> - ALTERNATE HELP

Pressing the <ALT> key and the <F1> key will display the Alternate Help menu (See Section 3.6.2).

<HOME>

The <HOME> key moves the highlight bar to:
the first item, if the user is in a menu,
the first position, if the user is in a data field, or
the first page, if the user is in a selectable list.

<END>

The <END> key moves the highlight bar to:
the last item, if the user is in a menu,
the last position, if the user is in a data field, or
the last page, if the user is in a selectable list.

3.1.2 KEY COMMANDS FOR MENU SCREENS

The UP, DOWN, RIGHT, and LEFT ARROW keys of the numeric keypad may be used to move the highlight bar to the desired menu selection. Pressing the <ENTER> key will execute the command. Alternatively, the first letter of the user's menu choice may be pressed to instantly execute the command.

3.1.3 KEY COMMANDS FOR DATA ENTRY SCREENS

Below is a list of the navigational key commands for the data entry screens in the NPSMS.

The DOWN ARROW key moves the cursor to the next field.

The UP ARROW key moves the cursor to the previous field.

The <PAGE DOWN> key moves the cursor to the next record.

The <PAGE UP> key moves the cursor to the previous record.

Pressing the <CTRL> key and the <HOME> key will move the cursor to the first field on the screen.

Pressing the <CTRL> key and the <END> key will move the cursor to the last field on the screen.

Pressing <CTRL> and U will undo any change just made to the field.

Pressing <CTRL> and Y will delete all data from the cursor position to the end of the field.

Pressing <CTRL> and W will save the current data entry.

3.1.4 KEY COMMANDS FOR NOTE FIELDS

Below is a list of the navigational key commands for the note fields in the NPSMS.

The <INS> key toggles the insert mode on and off.

The <DEL> key deletes one character.

The <ENTER> key moves the cursor to the next line.

The <END> key moves the cursor to the end of the current line.

The <HOME> key moves the cursor to the beginning of the current line.

The DOWN ARROW key moves the cursor down one line.

The UP ARROW key moves the cursor up one line.

The RIGHT ARROW key moves the cursor right one character.

The LEFT ARROW key moves the cursor left one character.

Pressing the <CTRL> key and the RIGHT ARROW key will move the cursor one word to the right.

Pressing the <CTRL> key and the LEFT ARROW key will move the cursor one word to the left.

The <PAGE DOWN> key moves the cursor to the next page of the display.

The <PAGE UP> key moves the cursor to the previous page of the display.

Pressing the <CTRL> key and the <END> key will move the cursor to the end of the display.

Pressing the <CTRL> key and the <HOME> key will move the cursor to the start of the display.

Pressing <CTRL> and T will delete characters from the cursor to the end of the line.

Pressing <CTRL> and Y will delete the entire line.

Pressing <CTRL> and N will insert a new line.

The <F10> key will save the current entry.

3.2 MENUS

The NPSMS version 3.0 provides a complete menu-driven environment. This means that all functions performed by the user are done so by the simple selection of a menu option.

All of the menus within the NPSMS are operated the same way. The user can select any option by moving the highlight bar to the desired menu option and pressing the <ENTER> key, or by simply typing the first letter of the option.

3.3 DATA ENTRY SCREENS

The data entry screens (see Figure 3.3-1 for example) within the NPSMS allow the user to add, update, and delete information pertaining to the current data group selection. When the user selects a data group to add information to, to modify, or to delete, the box containing fields that belong to the data group selected will be highlighted.

```
                                                                    1.04
 Add    Change    Delete    List    Notes                 | MANAGEMENT AREA

 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed

 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END

 Uses of Waterbody: NYCAYUGA1
 Use: FISH            Use Support Code (F, N, P, or T):  P

 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

     F1-Help   PgUp-Prev MF Area   PgDn-Next MF Area   ESC-Mgmt Area Info Menu
```

Figure 3.3-1 Data Entry Screen

The options available for the particular data entry screen will be displayed at the top of the screen. The user can select any option by moving the highlight bar to the desired option and pressing the <ENTER> key or by simply typing the first letter of the option.

Once the user selects an option, the appropriate fields will be highlighted to assist the user. The user simply types in the information necessary for each field and then presses the ENTER key to advance to the next field. Note that selectable lists may be available to aid in data entry (see Section 3.4).

The user must press the <ENTER> key at the last field to save any additions or changes to the data group.

3.4 SELECTABLE LISTS

The NPSMS software utilizes selectable lists, whenever possible, to aid in data entry and data selection. A selectable list is a list inside a window (see Figure 3.4-1) that allows the user to scroll through available items and select an item instead of typing in the data. All of the data is scrollable in the selectable lists, allowing the user to scan through many items quickly.

```
                    CURRENT MANAGEMENT FILE STATE LIST

 State Code                 Lead Agency                        EPA Region

 DC                         DC EPA                             3
 MD                         EPA                                3
 TN                         TN WATER AUTHORITY                 4
 VA                         VA EPA                             3

   - Move highlight bar | ESC - Exit w/o selection | <CR> - Exit w/ selection
                                 Top of List
```

Figure 3.4-1 Selectable List

Note that the solid graphic characters on the first item in the list are there to illustrate a "highlight bar." On the actual screen display, the highlighted item appears in reverse display.

There are two types of selectable lists within the NPSMS. One type allows the user to select an item for data entry purposes. This saves time on data entry by allowing the user to simply highlight the item required and press the <ENTER> key. The appropriate data values for the highlighted item are automatically inserted into the data input fields. This type of selectable list, if available, is accessed from the <F1> key.

The other type of selectable list will appear as an option called "LIST." This selectable list provides the user with another method of viewing data in the system. The user selects an item for viewing by highlighting the item and pressing the <ENTER> key. The data for the highlighted item will automatically be displayed for the user to view.

3.5 NOTE FIELDS

The NPSMS provides note fields of no particular format that allow the user to enter text notes that may be retrieved later. A note field (see Figure 3.5-1) is a text field that is designed to contain miscellaneous comments that the user would like to save in the database.

```
                                                                    1.04
 Add    Change    Delete    List    Notes                  MANAGEMENT AREA

 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
                              Project Description
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed
 include accelerated eutrophication of the shallow waters in northern Cayuga
 Lake which drains into Montezuma National Wildlife Refuge.  Sources in this
 fictitious watershed project include small dairy farms, WWTPs from Seneca
 Falls and Waterloo, failed septic systems in residences on the shores of
 Cayuga Lake, and urban runoff.  Primary pollutants are phosphorus and
 B.O.D..  Project plans include nutrient management, animal waste
 management, and septic system upgrades.
                              F10-Save     ESC-Cancel
 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

     F1-Help   PgUp-Prev MF Area   PgDn-Next MF Area   ESC-Mgmt Area Info Menu
```

Figure 3.5-1 Notes Field

The note field, when available, will appear on a menu as an option called "NOTES." To access the notes field, the user must highlight the NOTES option and press the <ENTER> key or type **N**.

3.6 ON-LINE HELP

There are two types of on-line help available in the NPSMS to assist the user, Context Specific Help and Alternate Help. The following is a description of the two different types of on-line help and the keys necessary to access them.

3.6.1 CONTEXT SPECIFIC HELP

Context Specific Help explains what data is expected in a highlighted data field or what a specific menu option does. Context Help is available on every data entry field, menu option, and message to remind the user or to give a better understanding of what is expected or what is currently happening in the NPSMS.
Context Specific Help is available by pressing <F1> and can be exited by pressing the <ESC> key.

3.6.2 ALTERNATE HELP

Alternate Help gives the user a general summary of how to use the NPSMS. Alternate Help is divided into six options that are displayed in a menu (see Figure 3.6.2-1) to allow the user to select only those options desired.

```
                          ALTERNATE HELP
                          NPSMS
                          Help
                          Keys
                          Commands
                          Guidance
                          How to...
                          Exit Help
                 Overview of the NPSMS Software
```

Figure 3.6.2-1 Alternate Help Menu

The following is a description of the options available in Alternate Help.

The NPSMS selection provides an overview of the NPSMS software and explains the organization of the system.

The KEYS selection shows all of the available keys used in the NPSMS and explains how to navigate in the menus and data entry screens. It also lists special function keys which make using the NPSMS even easier.

The COMMANDS selection explains the main options (Main Menu choices) available in the NPSMS. Although each menu option is explained in detail by pressing <F1>, the COMMANDS selection briefly summarizes them.

The GUIDANCE selection displays the "Watershed Monitoring and Reporting for Section 319 National Monitoring Program Projects" guide. The user has the ability of scrolling through this document on-line.

The HOW TO selection explains how to do a specific task in the NPSMS when the user knows what the task is but is not sure how to do it. It will also refer the user to specific help screens for detailed information about the task.

The EXIT HELP selection exits alternate help. The user can also exit by pressing the <ESC> key or by typing E.

Alternate help is available from anywhere in the NPSMS by pressing the <ALT> and <F1> keys and can be exited by pressing <ESC> or (E)xit.

3.7 QUITTING

Quitting the NPSMS will close all of the NPSMS files and then return the user to the operating system (DOS).

To exit the NPSMS, the user must be on the main menu. If the user is not on the main menu, the user must press the <ESC> key until the main menu is displayed. At the main menu, the user can either select the QUIT option, by highlighting QUIT and pressing the <ENTER> key, or by typing Q.

4. MANAGEMENT FILE

The Management File provides capabilities to maintain the management area and waterbodies defined under the 319 NPS Management Program. Management areas and waterbodies may be added, changed, and deleted in the Management File.

The Management File section allows the user to enter information describing the "problem" with the management area/waterbody including the designated uses and contributing pollutants. Additionally, the best management practice (BM) information is also entered in the Management File. The BM describes the "Plan" that will be implemented to control the problem, the implementation goal, and the funding available for the project.

Selecting MANAGEMENT from the Main Menu (Screen 0.00) will display Screen 1.01 (see Figure 4-1). This screen allows the user to select or add the state and lead agency for viewing or reporting.

```
                                                                    1.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                        STATE AND LEAD AGENCY

              State (FIPS Code):      NY
              Lead Agency:            DEC
              EPA Region:              2

  (L)ist States  (A)dd State  PGUP-Prev  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 4-1 Screen 1.01

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next state, or select the LIST option to view all of the states in a selectable list. Only the states entered into the NPSMS Management File are displayed.

To add a state and lead agency to the Management File, the user must type **A**. A selectable list of "Standard State Codes" is available to assist the user when adding states. The user must press the <F1> key when the STATE field is highlighted to access this list.

Once the user selects the state and lead agency, Screen 1.02 (see Figure 4-2) will be displayed. This screen shows the management area ID and name for the state and lead agency selected.

```
                                                                    1.02
 Mgmt Area Info    BMPs & Proj Funding    Exit          | MANAGEMENT FILE

            CURRENT NPS STATE, LEAD AGENCY, AND MANAGEMENT AREA
State: NY    NPS Lead Agency: DEC                    EPA Region:  2
NPS Management Area ID:      | Management Area Name:
 NYSENECA1                   |  SENECA RIVER DRAINAGE

        PgUp - Previous NPS Mgmt Area     PgDn - Next NPS Mgmt Area

            NONPOINT SOURCE MANAGEMENT SYSTEM - MANAGEMENT FILE
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 4-2 Screen 1.02

To display the previous or next management area for the state and lead agency previously selected, the user must use the <PAGE UP> and <PAGE DOWN> keys. The user must also select either MGMT AREA INFO to view, add, change, or delete management area information or BMPs & FUNDING for the best management practices (BMPs) and funding information for the project.

4.1 MANAGEMENT AREA INFORMATION

Selecting MGMT AREA INFO from Screen 1.02 will generate a menu, Screen 1.03 (see Figure 4.1-1), for the management area information. The user may view, add, change, or delete information from this menu for the state previously selected.

```
                                                                    1.03
 Mgmt Area Desc   Waterbody    Uses for WB   Pollutants  | MGMT AREA INFO

 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed

 Waterbodies 305(b) for: NYSENECA1
 ID:                        Name:
 NYCAYUGA1                  CAYUGA LAKE-NORTH END

 Uses of Waterbody: NYCAYUGA1
 Use: FISH          Use Support Code (F, N, P, or T):  P

 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

  F1-Help   F5-View Complete Management Area   ESC-Return to the Previous Menu
```

Figure 4.1-1 Screen 1.03

The <F5> key may be used to generate a "view" of the entire management area. This includes an organized list of all waterbodies, uses, pollutants, BMP information, and project funding. The Management Area View is displayed on the screen and may also be printed using the REPORTS option on the Main Menu.

4.1.1 MANAGEMENT AREA DESCRIPTION

Selecting MGMT AREA DESC from the Management Area Information Menu (Screen 1.03) will display Screen 1.04 (see Figure 4.1.1-1). This screen allows the user to add, change, delete, or view the management area.

```
                                                                                  1.04
 Add    Change    Delete    List    Notes                  | MANAGEMENT AREA
 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed
 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END
 Uses of Waterbody: NYCAYUGA1
 Use: FISH            Use Support Code (F, N, P, or T):  P
 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

     F1-Help   PgUp-Prev MF Area   PgDn-Next MF Area   ESC-Mgmt Area Info Menu
```

Figure 4.1.1-1 Screen 1.04

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next management area, or select the LIST option from the Management Area Menu to view all of the management areas in a selectable list. Only the management areas associated with the current state are displayed.

To add, change, or view the PROJECT DESCRIPTION field, the user must select the NOTES option from the Management Area Menu.

Note that the MANAGEMENT AREA ID is a key field used throughout the entire NPSMS system. Therefore, it can not be modified using the CHANGE option.

4.1.2 WATERBODY

Selecting WATERBODY from the Management Area Information Menu (Screen 1.03) will display Screen 1.05 (see Figure 4.1.2-1). This screen allows the user to add, change, delete, or view the waterbody information.

```
                                                                                  1.05
 Add   Change   Delete   List                                  | WATERBODY
 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed
 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END
 Uses of Waterbody: NYCAYUGA1
 Use: FISH            Use Support Code (F, N, P, or T):  P
 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C
            F1-Help   PgUp-Prev WB   PgDn-Next WB   ESC-Mgmt Area Info Menu
```

Figure 4.1.2-1 Screen 1.05

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next waterbody, or select the LIST option from the Waterbody Menu to view all of the waterbodies in a selectable list. Only the waterbodies associated with the current state and management area are displayed.

Note that the WATERBODY ID is a key field used throughout the entire NPSMS system. Therefore, it can not be modified using the CHANGE option.

4.1.3 USES FOR WATERBODY

Selecting USES FOR WB from the Management Area Information Menu (Screen 1.03) will display Screen 1.06 (see Figure 4.1.3-1). This screen allows the user to add, change, delete, or view the designated uses and use support status for the waterbody shown.

```
                                                                                  1.06
 Add   Change   Delete   List                                  | WATERBODY USES
 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed
 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END
 Uses of Waterbody: NYCAYUGA1
 Use: FISH            Use Support Code (F, N, P, or T):  P
 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C
      F1-Help   PgUp-Prev WB Use   PgDn-Next WB Use   ESC-Mgmt Area Info Menu
```

Figure 4.1.3-1 Screen 1.06

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next use for the waterbody, or select the LIST option from the Waterbody Uses Menu to view all of the uses in a selectable list. Only the uses associated with the current waterbody are displayed.

Note that a selectable list of "Standard Waterbody Uses" is available to assist the user when adding or making changes. The user must press the <F1> key when the USE field is

Note that a selectable list of "Standard Waterbody Uses" is available to assist the user when adding or making changes. The user must press the <F1> key when the USE field is highlighted to access this list.

4.1.4 POLLUTANTS

Selecting POLLUTANTS from the Management Area Information Menu (Screen 1.03) will display Screen 1.07 (see Figure 4.1.4-1). This screen allows the user to add, change, delete, or view the principal factors causing the water quality problems in the waterbody shown.

```
                                                                                  1.07
 Add   Change   Delete   List                                  POLLUTANTS

 Management Areas for: NY
 ID:   NYSENECA1
 Name: SENECA RIVER DRAINAGE
 Participating Agencies: DEC, VILLAGES OF WATERLOO & SENECA FALLS,USDA,SWCD
 Project Description:
 This pretend, 64,000-acre watershed project in the northern end of Seneca
 County drains into the north end of Cayuga Lake.  Problems in the watershed

 Waterbodies 305(b) for: NYSENECA1
 ID:                          Name:
 NYCAYUGA1                    CAYUGA LAKE-NORTH END

 Uses of Waterbody: NYCAYUGA1
 Use: FISH           Use Support Code (F, N, P, or T):  P

 Pollutants/Relative Contributions for: NYCAYUGA1
 Pollutant Name: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 --------------- Contribution From Sources (Decimal Fraction) ---------------
 NPS: 0.40     POINT: 0.40     BACKGROUND: 0.20     Information Type: C

F1-Help    PgUp-Prev Pollutant    PgDn-Next Pollutant    ESC-Mgmt Area Info Menu
```

Figure 4.1.4-1 Screen 1.07

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next pollutant for the waterbody, or select the LIST option from the Pollutants Menu to view all of the pollutants in a selectable list. Only the pollutants associated with the current waterbody are displayed.

Note that selectable lists of "Standard Pollutants" and "Standard Information Types" are available to assist the user when adding or making changes. The user must press the <F1> key when the POLLUTANT NAME or INFORMATION TYPE field is highlighted to access these lists.

4.2 BEST MANAGEMENT PRACTICES and PROJECT FUNDING

Selecting BMPs & FUNDING from Screen 1.02 will generate a menu, Screen 1.20 (see Figure 4.2-1), for the best management practices (BMPs) and project funding information. The user may view, add, change, or delete information from this menu for the state previously selected.

```
                                                                                1.20
BMPs  Sources Cntld  Pollutants  Impaired Uses  Funding | BMPs/FUNDING

 CURRENT NPS STATE AND LEAD AGENCY
 State: NY    |  Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
BMP Name: ANIMAL WASTE MANAGEMENT                                BMP Type: C
Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
Source Name: DAIRIES

 Pollutants For Source: DAIRIES
Pollutant Name:
OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
FISH

 Funding Information for Mgmt Area: NYSENECA1
Year 1990                          Source of Funding: 319(H)
Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

          F1-Help                          ESC-Return to the Previous Menu
```

Figure 4.2-1 Screen 1.20

4.2.1 BEST MANAGEMENT PRACTICES

Selecting BMPs from the BMPs/Funding Menu (Screen 1.20) will display Screen 1.21 (see Figure 4.2.1-1). This screen allows the user to add, change, delete, or view the best management practices (BMPs) and control measures to be used and the implementation goals for the management area shown.

```
                                                                                1.21
 Add   Change   Delete   List                                  | BMP NAME

 CURRENT NPS STATE AND LEAD AGENCY
 State: NY    |  Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
BMP Name: ANIMAL WASTE MANAGEMENT                                BMP Type: C
Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
Source Name: DAIRIES

 Pollutants For Source: DAIRIES
Pollutant Name:
OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
FISH

 Funding Information for Mgmt Area: NYSENECA1
Year 1990                          Source of Funding: 319(H)
Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

          F1-Help   PgUp-Prev BMP   PgDn-Next BMP   ESC-BMP/Proj Funding Menu
```

Figure 4.2.1-1 Screen 1.21

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next BMP for the management area, or select the LIST option from the BMP Menu to view all of the BMPs in a selectable list. Only the BMPs associated with the current management area are displayed.

Note that a selectable list of "Standard BMP Names" is available to assist the user when adding or making changes. The user must press the <F1> key when the BMP NAME field is highlighted to access this list.

4.2.2 SOURCES CONTROLLED

Selecting SOURCES CNTLD from the BMPs/Funding Menu (Screen 1.20) will display Screen 1.22 (see Figure 4.2.2-1). This screen allows the user to add, delete, or view the sources to be controlled by the BMP shown.

```
                                                                                  1.22
 Add   Delete   List                                          SOURCES CNTLD

 CURRENT NPS STATE AND LEAD AGENCY
 State: NY      Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 FISH

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

     F1-Help   PgUp-Prev Source   PgDn-Next Source   ESC-BMP/Proj Funding Menu
```

Figure 4.2.2-1 Screen 1.22

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next source for the BMP, or select the LIST option from the Sources Controlled Menu to view all of the sources in a selectable list. Only the sources associated with the current BMP are displayed.

Note that a selectable list of "Standard Source Names" is available to assist the user when adding sources. The user must press the <F1> key when the SOURCE NAME field is highlighted to access this list.

4.2.3 POLLUTANTS

Selecting POLLUTANTS from the BMPs/Funding Menu (Screen 1.20) will display Screen 1.23 (see Figure 4.2.3-1). This screen allows the user to add, delete, or view the pollutants for the controlled source and the BMP shown.

```
                                                                                  1.23
 Add   Delete   List                                          POLLUTANTS

 CURRENT NPS STATE AND LEAD AGENCY
 State: NY      Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 FISH

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

F1-Help  F2-List MA Param  PgUp-Prev Param  PgDn-Next Param  ESC-BMP/Proj Menu
```

Figure 4.2.3-1 Screen 1.23

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next pollutant for the source and BMP, or select the LIST option from the Pollutants Menu to view all of the pollutants in a selectable list. Only the pollutants associated with the current controlled source and BMP are displayed.

Note that a selectable list of "Pollutants Defined for the NPS Management Area" is available to assist the user when adding pollutants. The user must press the <F1> key when the POLLUTANT NAME field is highlighted to access this list.

4.2.4 IMPAIRED USES

Selecting IMPAIRED USES from the BMPs/Funding Menu (Screen 1.20) will display Screen 1.24 (see Figure 4.2.4-1). This screen allows the user to add, change, delete, or view the impaired uses associated with the pollutant, controlled source, and the BMP shown.

```
                                                                                1.24
 Add   Change   Delete   List                                  IMPAIRED USES

  CURRENT NPS STATE AND LEAD AGENCY
 State: NY     Lead Agency: DEC

  BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                  BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

  Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

  Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

  Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 FISH

  Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE                Amount: $        25,000

        F1-Help   PgUp-Prev Use   PgDn-Next Use   ESC-BMP/Proj Funding Menu
```

Figure 4.2.4-1 Screen 1.24

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next impaired use, or select the LIST option from the Impaired Uses Menu to view all of the impaired uses in a selectable list. Only the impaired uses associated with the current pollutant, controlled source, and BMP are displayed.

Note that a selectable list of "Standard Waterbody Uses" is available to assist the user when adding or making changes. The user must press the <F1> key when the IMPAIRED USES field is highlighted to access this list.

4.2.5 FUNDING

Selecting FUNDING from the BMPs/Funding Menu (Screen 1.20) will display Screen 1.25 (see Figure 4.2.5-1). This screen allows the user to add, change, delete, or view the funding expenditures for the project by the monitoring year.

```
                                                                                  1.25
 Add   Change   Delete   List                                  | FUNDING

 CURRENT NPS STATE AND LEAD AGENCY
 State: NY    |   Lead Agency: DEC

 BMPs, System or Control Measures for Mgmt Area: NYSENECA1
 BMP Name: ANIMAL WASTE MANAGEMENT                                  BMP Type: C
 Reporting Units: A.U. CONTROLLED              Implementation Goal: 2000

 Sources Controlled By BMP: ANIMAL WASTE MANAGEMENT
 Source Name: DAIRIES

 Pollutants For Source: DAIRIES
 Pollutant Name:
 OXYGEN CONSUMING MATERIALS (DO PROBLEMS)

 Impaired Uses Caused By: OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
 FISH

 Funding Information for Mgmt Area: NYSENECA1
 Year 1990                          Source of Funding: 319(H)
 Use of Funding:  TECHNICAL ASSISTANCE              Amount: $        25,000

       F1-Help   PgUp-Prev Fund   PgDn-Next Fund   ESC-BMP/Proj Funding Menu
```

Figure 4.2.5-1 Screen 1.25

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next funding, or select the LIST option from the Funding Menu to view all of the funding expenditures in a selectable list. The total funding amount for the entire project is also displayed in the selectable list. Only the funding expenditures associated with the current management area are displayed.

Note that a selectable list of "Standard Uses of Funding" is available to assist the user when adding or making changes. The user must press the <F1> key when the USE OF FUNDING field is highlighted to access this list.

5. MONITORING PLAN FILE

The Monitoring Plan File contains information pertaining to the type of study that will be implemented to monitor the specified management area/waterbody. This includes the monitoring design, station identification, monitoring year and seasons, drainage area, land use, and the parameters that will be monitored at each station.

The Monitoring Plan File is organized by chemical/physical and biological/habitat data. The monitoring plan is entered only *one time* for a particular management area and should not be changed after the initial entry. Although only one monitoring plan may be entered for each management area, a separate plan may be setup for chemical/physical data AND biological/habitat data.

Selecting DESIGN from the Main Menu (Screen 0.00) will display Screen 2.01 (see Figure 5-1). This screen allows the user to choose either CHEMICAL/PHYSICAL monitoring or BIOLOGICAL/HABITAT monitoring.

```
                                                                    2.01
 Chemical/Physical      Biological/Habitat      Exit      MONITORING PLAN

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 5-1 Screen 2.01

5.1 CHEMICAL/PHYSICAL

Selecting CHEMICAL/PHYSICAL from Screen 2.01 will display Screen 2.02 (see Figure 5.1-1). This screen allows the user to select or add the chemical and physical monitoring plan for the management area.

```
                                                                    2.02
 Chemical/Physical      Biological/Habitat      Exit        | MONITORING PLAN

                    MONITORING PLANS FOR MANAGEMENT AREAS

                State (FIPS Code):       NY
                NPS Management Area ID:  NYSENECA1
                305(b) Waterbody ID:     NYCAYUGA1
                Data Type (Chem/Bio):    C

   (L)ist  (A)dd  (Q)A/QC  PGUP-Previous  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 5.1-1 Screen 2.02

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next plan, or select the LIST option to view all of the monitoring plans for chemical and physical data in a selectable list.

To add a new monitoring plan, the user must type **A**. A selectable list of "NPS Management Areas" is available to assist the user. The user must press the <F1> key when the STATE field is highlighted to access this list.

The QA/QC description field will automatically be displayed when a new monitoring plan is entered. The user must enter descriptions and quality control procedures in this note field. To make changes to the QA/QC field, the user must type **Q**.

Note that a state, management area, and waterbody must be entered in the Management File before the monitoring plan can be entered.

Once the user selects a chemical and physical monitoring plan for the management area, Screen 2.03 (see Figure 5.1-2), will be displayed. This screen is a menu for the chemical and physical monitoring plan previously selected.

```
                                                                    2.03
 Design    Monitoring Year    Stations    Parameters          | MONITORING PLAN

 Design
 NY | M/A: NYSENECA1                  | CHEM/PHY | Monitoring Design (P/U/S): U

 Monitoring Year
  Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
 1. SPRING          3/ 1       5/31       Begins: 10/ 1       Begins: 10/90
 2.                  /          /         Ends:    9/30       Ends:    9/89
 3.                  /          /       (Enter All Begin/End Dates as MM/DD)
 4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
 Upstream (U)     N     NYDEC      CAYUGA101          10.000      RESIDENTIAL

 Parameters for: Upstream Station
 Explanatory Variable: N
 Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
 Parameter Type (W/S/B/U): S                  Reporting Units:
 Parameter Quartiles:  75% - 9          50% - 6          25% - 4

                    Press F1 for Help,  ESC to Return to Previous Screen
```

Figure 5.1-2 Screen 2.03

5.1.1 DESIGN

Selecting DESIGN from the Chemical/Physical Monitoring Plan Menu (Screen 2.03) will display Screen 2.04 (see Figure 5.1.1-1). This screen allows the user to add, change, or view the monitoring design code which defines the monitoring approach to be used for the project.

```
                                                                                  2.04
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | CHEM/PHY | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names    Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SPRING           3/ 1       5/31       Begins: 10/ 1      Begins: 10/90
2.                   /          /          Ends:    9/30      Ends:    9/89
3.                   /          /       (Enter All Begin/End Dates as MM/DD)
4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGA101          10.000      RESIDENTIAL

 Parameters for: Upstream Station
Explanatory Variable: N
Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
Parameter Type (W/S/B/U): S                    Reporting Units:
Parameter Quartiles:  75% - 9            50% - 6            25% - 4

                F1-Help            ENTER( ┘)-Accept            ESC-Cancel
```

Figure 5.1.1-1 Screen 2.04

Note that the monitoring design code can not be changed once stations have been defined.

5.1.2 MONITORING YEAR

Selecting MONITORING YEAR from the Chemical/Physical Monitoring Plan Menu (Screen 2.03) will display Screen 2.05 (see Figure 5.1.2-1). This screen allows the user to add, change, or view the monitoring seasons and dates that identify the primary monitoring activity for the project.

```
                                                                                  2.05
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | CHEM/PHY | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names    Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SPRING           3/ 1       5/31       Begins: 10/ 1      Begins: 10/90
2.                   /          /          Ends:    9/30      Ends:    9/89
3.                   /          /       (Enter All Begin/End Dates as MM/DD)
4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGA101          10.000      RESIDENTIAL

 Parameters for: Upstream Station
Explanatory Variable: N
Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
Parameter Type (W/S/B/U): S                    Reporting Units:
Parameter Quartiles:  75% - 9            50% - 6            25% - 4

                F1-Help            ENTER( ┘)-Accept            ESC-Cancel
```

Figure 5.1.2-1 Screen 2.05

5.1.3 STATIONS

Selecting STATIONS from the Chemical/Physical Monitoring Plan Menu (Screen 2.03) will display Screen 2.06 (see Figure 5.1.3-1). This screen allows the user to add, change, or view the monitoring station data for the monitoring plan.

```
                                                                                  2.06
Add      Change      List                                                    STATIONS

 Design
NY | M/A: NYSENECA1                  | CHEM/PHY | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names    Begin Date  End Date    Monitoring Year:     EXAMPLE: 1990
1. SPRING           3/ 1       5/31       Begins: 10/ 1        Begins: 10/90
2.                   /          /          Ends:    9/30        Ends:    9/89
3.                   /          /       (Enter All Begin/End Dates as MM/DD)
4.                   /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGA101          10.000      RESIDENTIAL

 Parameters for: Upstream Station
Explanatory Variable: N
Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
Parameter Type (W/S/B/U): S                    Reporting Units:
Parameter Quartiles:  75% - 9          50% - 6          25% - 4

          F1-Help    PGUP-Previous Station    PGDN-Next Station    ESC-Exit
```

Figure 5.1.3-1 Screen 2.06

The user may use the <PAGE UP> and <PAGE DOWN> keys to toggle between the stations, or select LIST from the Station Menu to view both stations. Only the stations associated with the monitoring design selected are displayed.

Note that a selectable list of "Monitoring Stations" is available to assist the user when adding or making changes. The user must press the <F1> key when the AGENCY CD field is highlighted to access this list.

To add, change, delete, or view the LAND USE information, the user must press the <ENTER> key while the DRAINAGE field is highlighted. This will generate the following screen.

```
                                                                                  2.06
Add      Change      List                                                    STATIONS

 Design
                          LAND USE INFORMATION

Year   Land Use                                  Percentage of Drainage Area

91     RESIDENTIAL                                                      85.0
91     COMMERCIAL/RESIDENTIAL                                           15.0

            - Highlight Bar | ESC-EXIT  A-ADD  C-CHANGE  D-DELETE
                                  Top of List
Parameter Type (W/S/B/U): S                    Reporting Units:
Parameter Quartiles:  75% - 9          50% - 6          25% - 4

              F1-Help          ENTER( ↵ )-Accept          ESC-Cancel
```

Figure 5.1.3-2

Note that a selectable list of "Standard Land Uses" is available to assist the user when adding or changing LAND USES. The user must press the <F1> key when the LAND USE field is highlighted to access this list.

5.1.4 PARAMETERS

Selecting PARAMETERS from the Chemical/Physical Monitoring Plan Menu (Screen 2.03) will display Screen 2.07 (see Figure 5.1.4-1). This screen allows the user to add, change, delete, or view the parameters for the monitoring station shown.

```
                                                                                  2.07
Add     Change    Delete    List                                          PARAMETERS

 Design
NY | M/A: NYSENECA1                  | CHEM/PHY | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SPRING          3/ 1       5/31       Begins: 10/ 1       Begins: 10/90
2.                  /          /         Ends:    9/30       Ends:    9/89
3.                  /          /       (Enter All Begin/End Dates as MM/DD)
4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)     N     NYDEC      CAYUGA101          10.000      RESIDENTIAL

 Parameters for: Upstream Station
Explanatory Variable: N
Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
Parameter Type (W/S/B/U): S                  Reporting Units:
Parameter Quartiles:  75% - 9          50% - 6          25% - 4

      F1-Help    PGUP-Previous Parameter    PGDN-Next Parameter    ESC-Exit
```

Figure 5.1.4-1 Screen 2.07

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next parameter, or select the LIST option from the Parameters Menu to view all of the parameters in a selectable list. Only the parameters associated with the current station are displayed.

Note that a selectable list of "Standard Parameters" is available to assist the user when adding or making changes. The user must press the <F1> key when the CODE/NAME field is highlighted to access this list.

5.2 BIOLOGICAL/HABITAT

Selecting BIOLOGICAL/HABITAT from Screen 2.01 will display Screen 2.22 (see Figure 5.2-1). This screen allows the user to select or add the biological and habitat monitoring plan for the management area.

```
                                                                    2.22
Chemical/Physical      Biological/Habitat      Exit        MONITORING PLAN

                    MONITORING PLANS FOR MANAGEMENT AREAS

                State (FIPS Code):       NY
                NPS Management Area ID:  NYSENECA1
                305(b) Waterbody ID:     NYCAYUGA1
                Data Type (Chem/Bio):    B

  (L)ist  (A)dd  (Q)A/QC  PGUP-Previous  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 5.2-1 Screen 2.22

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next plan, or select the LIST option to view all of the monitoring plans for biological and habitat data in a selectable list.

To add a new monitoring plan, the user must type **A**. A selectable list of "NPS Management Areas" is available to assist the user. The user must press the <F1> key when the STATE field is highlighted to access this list.

The QA/QC description field will automatically be displayed when a new monitoring plan is entered. The user must enter descriptions and quality control procedures in this note field. To make changes to the QA/QC field, the user must type **Q**.

Note that a state, management area, and waterbody must be entered in the Management File before the monitoring plan can be entered.

Once the user selects a biological and habitat monitoring plan for the management area, Screen 2.23 (see Figure 5.2-2), will be displayed. This screen is a menu for the biological and habitat monitoring plan previously selected.

```
                                                                    2.23
Design    Monitoring Year    Stations    Parameters          MONITORING PLAN

 Design
NY | M/A: NYSENECA1                  | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SUMMER          4/ 1       8/31       Begins: 10/ 1       Begins: 10/90
2. OTHER           9/ 1       3/31       Ends:    9/30       Ends:    9/91
3.                  /          /       (Enter All Begin/End Dates as MM/DD)
4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGAB01          8.000       COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
Code/Name: 00061       / FLOW, STREAM, INSTANTANEOUS, CFS

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

                    Press F1 for Help,  ESC to Return to Previous Screen
```

Figure 5.2-2 Screen 2.23

5.2.1 DESIGN

Selecting DESIGN from the Biological/Habitat Monitoring Plan Menu (Screen 2.23) will display Screen 2.24 (see Figure 5.2.1-1). This screen allows the user to add, change, or view the monitoring design code which defines the monitoring approach to be used for the project.

```
                                                                                  2.24
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SUMMER          4/ 1       8/31       Begins: 10/ 1       Begins: 10/90
2. OTHER           9/ 1       3/31       Ends:    9/30       Ends:    9/91
3.                  /          /       (Enter All Begin/End Dates as MM/DD)
4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)     N     NYDEC      CAYUGAB01           8.000      COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
Code/Name: 00061       / FLOW, STREAM, INSTANTANEOUS, CFS

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

                F1-Help            ENTER( ┘)-Accept            ESC-Cancel
```

Figure 5.2.1-1 Screen 2.24

Note that the monitoring design code can not be changed once stations have been defined.

5.2.2 MONITORING YEAR

Selecting MONITORING YEAR from the Biological/Habitat Monitoring Plan Menu (Screen 2.23) will display Screen 2.25 (see Figure 5.2.2-1). This screen allows the user to add, change, or view the monitoring seasons and dates that identify the primary monitoring activity for the project.

```
                                                                                  2.25
Design    Monitoring Year    Stations    Parameters                  MONITORING PLAN

 Design
NY | M/A: NYSENECA1                    | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SUMMER          4/ 1       8/31       Begins: 10/ 1       Begins: 10/90
2. OTHER           9/ 1       3/31       Ends:    9/30       Ends:    9/91
3.                  /          /       (Enter All Begin/End Dates as MM/DD)
4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)     N     NYDEC      CAYUGAB01           8.000      COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
Code/Name: 00061       / FLOW, STREAM, INSTANTANEOUS, CFS

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

                F1-Help            ENTER( ┘)-Accept            ESC-Cancel
```

Figure 5.2.2-1 Screen 2.25

5.2.3 STATIONS

Selecting STATIONS from the Biological/Habitat Monitoring Plan Menu (Screen 2.23) will display Screen 2.26 (see Figure 5.2.3-1). This screen allows the user to add, change, or view the monitoring station data for the monitoring plan.

```
                                                                                  2.26
Add     Change     List                                                      STATIONS

 Design
NY | M/A: NYSENECA1                  | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names   Begin Date  End Date    Monitoring Year:     EXAMPLE: 1990
1. SUMMER          4/ 1       8/31       Begins: 10/ 1        Begins: 10/90
2. OTHER           9/ 1       3/31       Ends:    9/30        Ends:    9/91
3.                  /          /       (Enter All Begin/End Dates as MM/DD)
4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)      N    NYDEC      CAYUGAB01           8.000      COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
Code/Name: 00061        / FLOW, STREAM, INSTANTANEOUS, CFS

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

          F1-Help    PGUP-Previous Station    PGDN-Next Station    ESC-Exit
```

Figure 5.2.3-1 Screen 2.26

The user may use the <PAGE UP> and <PAGE DOWN> keys to toggle between the stations, or select LIST from the Station Menu to view both stations. Only the stations associated with the monitoring design selected are displayed.

Note that a selectable list of "Monitoring Stations" is available to assist the user when adding or making changes. The user must press the <F1> key when the AGENCY CD field is highlighted to access this list.

To add, change, delete, or view the LAND USE information, the user must press the <ENTER> key while the DRAINAGE field is highlighted. This will generate the following screen.

```
                                                                                  2.26
Add     Change     List                                                      STATIONS

 Design
                          LAND USE INFORMATION

Year   Land Use                                  Percentage of Drainage Area

90     COMMERCIAL/RESIDENTIAL                                            40.0
90     FOREST LAND-PRIVATE                                               45.0
90     INDUSTRIAL                                                         2.0
90     MUNICIPAL PARK                                                     2.0
90     RESIDENTIAL                                                       11.0

            - Highlight Bar | ESC-EXIT  A-ADD  C-CHANGE  D-DELETE
                                 Top of List

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

              F1-Help          ENTER( ┘)-Accept          ESC-Cancel
```

Figure 5.2.3-2

Note that a selectable list of "Standard Land Uses" is available to assist the user when adding or changing LAND USES. The user must press the <F1> key when the LAND USE field is highlighted to access this list.

5.2.4 PARAMETERS

Selecting PARAMETERS from the Biological/Habitat Monitoring Plan Menu (Screen 2.23) will display Screen 2.27 (see Figure 5.2.4-1). This screen allows the user to add, change, delete, or view the parameters for the monitoring station shown.

Note that the monitoring parameters for biological and habitat data are different than chemical and physical parameters. Additional information must be supplied to describe these parameters.

```
                                                                                  2.27
Add     Change    Delete    List                                          PARAMETERS

 Design
NY | M/A: NYSENECA1                  | BIO/HABI | Monitoring Design (P/U/S): U

 Monitoring Year
 Season Names   Begin Date  End Date    Monitoring Year:    EXAMPLE: 1990
1. SUMMER          4/ 1       8/31       Begins: 10/ 1      Begins: 10/90
2. OTHER           9/ 1       3/31       Ends:    9/30      Ends:    9/91
3.                  /          /       (Enter All Begin/End Dates as MM/DD)
4.                  /          /       (Except EXAMPLE Date, Enter as MM/YY)

 Stations for: Upstream/Downstream Study
                Share  Agency Cd  Station Code     Drainage-Mi²  Land Use
Upstream (U)     N     NYDEC      CAYUGAB01          8.000       COMMERCIAL/R

 Parameters for: Upstream Station
Explanatory Variable: C    Parameter Type (W/S/B/U): S    Units: CFS
Code/Name: 00061        / FLOW, STREAM, INSTANTANEOUS, CFS

CUTOFF VALUES:  Abn. High/Normal: 21            Normal/Abn. Low: 11

       F1-Help    PGUP-Previous Parameter    PGDN-Next Parameter    ESC-Exit
```

Figure 5.2.4-1 Screen 2.27

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next parameter, or select the LIST option from the Parameters Menu to view all of the parameters in a selectable list. Only the parameters associated with the current station are displayed.

Note that a selectable list of "Standard Parameters" is available to assist the user when adding or making changes. The user must press the <F1> key when the CODE/NAME field is highlighted to access this list.

6. ANNUAL REPORT FILE

The Annual Report File provides the capabilities to maintain the annual reports that must be submitted to EPA as required under the Nonpoint Source Program. Annual reports may be entered for each management area/waterbody for every year. Both chemical/physical and biological/habitat data can be added for a particular management area/waterbody.

When monitoring is complete for the year, the results for each parameter are entered in the annual report. Additionally, the progress of the best management practice (BMP) implementation is also reported. When the annual report is completed for a specific year, the NPSMS software provides the ability to export the annual report and other information to diskette so it may be sent to EPA.

Selecting ANNUAL from the Main Menu (Screen 0.00) will display Screen 3.01 (see Figure 6-1). This screen allows the user to choose either CHEMICAL/PHYSICAL data or BIOLOGICAL/HABITAT data.

```
                                                                    3.01
 Chemical/Physical      Biological/Habitat      Exit        | ANNUAL REPORTS

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 6-1 Screen 3.01

6.1 CHEMICAL/PHYSICAL

Selecting CHEMICAL/PHYSICAL from Screen 3.01 will display Screen 3.02 (see Figure 6.1-1). This screen allows the user to select or add the annual reports for chemical and physical data for the management area.

```
                                                                                3.02
 Chemical/Physical      Biological/Habitat      Exit          | ANNUAL REPORTS

                    ANNUAL REPORTS FOR MANAGEMENT AREAS

                State (FIPS Code):       NY

                NPS Management Area ID: NYSENECA1

                305(b) Waterbody ID:     NYCAYUGA1

                Annual Report Year:      1990

ANNUAL REPORT NOTES:
This is the pre-implementation year in the project.  Water quality data are

  (L)ist  (A)dd Report  (N)otes  PGUP-Prev  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 6.1-1 Screen 3.02

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next report, or select the LIST option to view all of the annual reports for chemical and physical data in a selectable list.

To add a new annual report, the user must type **A**. A selectable list of "Monitoring Designs" is available to assist the user. The user must press the <F1> key to access this list. The user may add additional reporting information to the screen by selecting the NOTES option.

Once the user selects a chemical and physical annual report, Screen 3.03 (see Figure 6.1-2) will be displayed. This screen allows the user to select either WATER QUALITY DATA or IMPLEMENTATION DATA.

```
                                                                                3.03
 Water Quality Data     Implementation Data     Exit          | ANNUAL REPORTS

                    ANNUAL REPORTS FOR MANAGEMENT AREAS

                State (FIPS Code):       NY

                NPS Management Area ID: NYSENECA1

                305(b) Waterbody ID:     NYCAYUGA1

                Annual Report Year:      1990

ANNUAL REPORT NOTES:
This is the pre-implementation year in the project.  Water quality data are
collected in the spring only since this is the season during which problems
are the greatest and during which the controls to be implemented will have

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 6.1-2 Screen 3.03

6.1.1 WATER QUALITY DATA

Selecting WATER QUALITY DATA from Screen 3.03 will display Screen 3.04 (see Figure 6.1.1-1). This screen is a menu allowing the user to add, change, delete, or view water quality parameters for each station in the annual report.

```
                                                                                 3.04
Station     Parameters                                                   WATER QUALITY

NY   M/A: NYSENECA1                  W/B: NYCAYUGA1                          CHEM/PHY

Monitoring Design Plan: Upstream/Downstream Study                          Year: 1990

 Station
Upstream Station          Agency Code: NYDEC     Station Code: CAYUGA101

 Parameters for: Upstream Station

Code/Name: 00310          / BOD, 5 DAY, 20 DEG C
Explanatory Variable: N   Parameter Type: S   Parameter Units:
------- PARAMETER QUARTILES -------    COUNTS/SEASON -  1     2     3     4
                                       Highest:         5     0     0     0
                75% - 9                High:            5     0     0     0
                50% - 6                Low:             5     0     0     0
                25% - 4                Lowest:          5     0     0     0

NOTES: First year.

                Press F1 for Help,   ESC to Return to Previous Screen
```

Figure 6.1.1-1 Screen 3.04

6.1.1.1 STATION

Selecting STATION from the Chemical/Physical Water Quality Menu (Screen 3.04) will display Screen 3.05 (see Figure 6.1.1.1-1). This screen allows the user to view the stations associated with the monitoring plan. After choosing a particular station, WQ parameters may be added to that station for annual reporting.

```
                                                                                 3.05
Station     Parameters                                                      STATION

NY   M/A: NYSENECA1                  W/B: NYCAYUGA1                          CHEM/PHY

Monitoring Design Plan: Upstream/Downstream Study                          Year: 1990

 Station
Upstream Station          Agency Code: NYDEC     Station Code: CAYUGA101

 Parameters for: Upstream Station

Code/Name: 00310          / BOD, 5 DAY, 20 DEG C
Explanatory Variable: N   Parameter Type: S   Parameter Units:
------- PARAMETER QUARTILES -------    COUNTS/SEASON -  1     2     3     4
                                       Highest:         5     0     0     0
                75% - 9                High:            5     0     0     0
                50% - 6                Low:             5     0     0     0
                25% - 4                Lowest:          5     0     0     0

NOTES: First year.

            F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.1.1.1-1 Screen 3.05

The user may use the <PAGE UP> and <PAGE DOWN> keys to toggle between the stations.

6.1.1.2 PARAMETERS

Selecting PARAMETERS from the Chemical/Physical Water Quality Menu (Screen 3.04) will display Screen 3.06 (see Figure 6.1.1.2-1). This screen allows the user to add, change, delete, or view the parameters for the station shown.

```
                                                                                  3.06
 Add   Change   Delete   List                                          PARAMETERS

 NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | CHEM/PHY

 Monitoring Design Plan: Upstream/Downstream Study                      Year: 1990

 Station
 Upstream Station        Agency Code: NYDEC     Station Code: CAYUGA101

 Parameters for: Upstream Station

 Code/Name: 00310        / BOD, 5 DAY, 20 DEG C
 Explanatory Variable: N   Parameter Type: S   Parameter Units:
 ------- PARAMETER QUARTILES -------   COUNTS/SEASON -  1     2     3     4
                                       Highest:          5     0     0     0
                 75% - 9               High:             5     0     0     0
                 50% - 6               Low:              5     0     0     0
                 25% - 4               Lowest:           5     0     0     0

 NOTES: First year.

                F1-Help       PGUP-Previous       PGDN-Next       ESC-Exit
```

Figure 6.1.1.2-1 Screen 3.06

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next parameter, or select the LIST option from the Parameters Menu to view all of the parameters in a selectable list. Only the parameters associated with the current station are displayed.

Note that a selectable list of "Monitoring Design Pollutants" is available to assist the user when adding or making changes. The user must press the <F1> key when the CODE/NAME field is highlighted to access this list.

6.1.2 IMPLEMENTATION DATA

Selecting IMPLEMENTATION DATA from Screen 3.03 will display Screen 3.07 (see Figure 6.1.2-1). This screen is a menu allowing the user to add, change, delete, or view the best management practices (BMPs) for each station in the annual report.

```
                                                                                  3.07
 Station   BMP/Cntrl Measures   Cntrl Sources   Pollutants          IMPLEMENTATION

 NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | CHEM/PHY

 Monitoring Design Plan: Upstream/Downstream Study                      Year: 1990

 Station
 Upstream Station        Agency Code: NYDEC     Station Code: CAYUGA101

 BMP/Control Measures for: Upstream Station
 BMP Name:
 Reporting Units:                                BMP Type:          Goal For:
 Implementation Goal:                      Implementation This Year:

 Sources Controlled by:
 Source Name:

 Pollutants for Source:
 Pollutant Name:

                    Press F1 for Help,   ESC to Return to Previous Screen
```

Figure 6.1.2-1 Screen 3.07

6.1.2.1 STATION

Selecting STATION from the Chemical/Physical Implementation Menu (Screen 3.07) will display Screen 3.08 (see Figure 6.1.2.1-1). This screen allows the user to view the stations and associated parameters defined in the monitoring plan.

```
                                                                                  3.08
Station   BMP/Cntrl Measures   Cntrl Sources   Pollutants                    STATION

DC   M/A: DCEPA-01                  W/B: DC-01-01                          CHEM/PHY

Monitoring Design Plan: Paired Study                                       Year: 1991

 Station
Control Station          Agency Code: 44-3       Station Code: 1

 BMP/Control Measures for: Control Station
BMP Name:
Reporting Units:                                                    BMP Type:
Implementation Goal:                    Implementation This Year:

 Sources Controlled by:
Source Name:

 Pollutants for Source:
Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.1.2.1-1 Screen 3.08

The user may use the <PAGE UP> and <PAGE DOWN> keys to toggle between the stations.

6.1.2.2 BEST MANAGEMENT PRACTICES/CONTROL MEASURES

Selecting BMP/CNTRL MEASURES from the Chemical/Physical Implementation Menu (Screen 3.07) will display Screen 3.09 (see Figure 6.1.2.2-1). This screen allows the user to add, change, delete, or view the best management practices and control measures for the station shown.

```
                                                                                  3.09
Add   Change   Delete   List   Notes                          BMP/CONTROL MEASURES

DC   M/A: DCEPA-01                  W/B: DC-01-01                          CHEM/PHY

Monitoring Design Plan: Paired Study                                       Year: 1991

 Station
Control Station          Agency Code: 44-3       Station Code: 1

 BMP/Control Measures for: Control Station
BMP Name:
Reporting Units:                                                    BMP Type:
Implementation Goal:                    Implementation This Year:

 Sources Controlled by:
Source Name:

 Pollutants for Source:
Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.1.2.2-1 Screen 3.09

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next BMP, or select LIST from the BMP/Control Measures Menu to view all of the BMPs in a selectable list. Only the BMPs associated with the current station are displayed.

Note that a selectable list of "BMP/Control Measures" is available to assist the user when adding or making changes. The user must press the <F1> key when the BMP NAME field is highlighted to access this list.

6.1.2.3 CONTROL SOURCES

Selecting CNTRL SOURCES from the Chemical/Physical Implementation Menu (Screen 3.07) will display Screen 3.10 (see Figure 6.1.2.3-1). This screen allows the user to add, delete, or view the sources controlled by the BMP shown.

```
                                                                    3.10
 Add   Delete   List                                              SOURCES

 DC | M/A: DCEPA-01                 | W/B: DC-01-01                 | CHEM/PHY

 Monitoring Design Plan: Paired Study                              Year: 1991

 Station
 Control Station          Agency Code: 44-3      Station Code: 1

 BMP/Control Measures for: Control Station
 BMP Name:
 Reporting Units:                                                  BMP Type:
 Implementation Goal:                    Implementation This Year:

 Sources Controlled by:
 Source Name:

 Pollutants for Source:
 Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.1.2.3-1 Screen 3.10

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next source, or select LIST from the Sources Menu to view all of the controlled sources in a selectable list. Only the controlled sources associated with the current BMP are displayed.

Note that a selectable list of "BMP Sources Controlled" is available to assist the user when adding controlled sources. The user must press the <F1> key when the SOURCE NAME field is highlighted to access this list.

6.1.2.4 POLLUTANTS

Selecting POLLUTANTS from the Chemical/Physical Implementation Menu (Screen 3.07) will display Screen 3.11 (see Figure 6.1.2.4-1). This screen allows the user to add, change, delete, or view the pollutants to be reported for the controlled source and BMP shown.

```
                                                                    3.11
 Add   Change   Delete   List                                     POLLUTANTS

 DC | M/A: DCEPA-01                 | W/B: DC-01-01                 | CHEM/PHY

 Monitoring Design Plan: Paired Study                              Year: 1991

 Station
 Control Station          Agency Code: 44-3      Station Code: 1

 BMP/Control Measures for: Control Station
 BMP Name:
 Reporting Units:                                                  BMP Type:
 Implementation Goal:                    Implementation This Year:

 Sources Controlled by:
 Source Name:

 Pollutants for Source:
 Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.1.2.4-1 Screen 3.11

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next pollutant, or select LIST from the Pollutants Menu to view all of the pollutants in a selectable list. Only the pollutants associated with the current source and BMP are displayed.

Note that a selectable list of "BMP Controlled Source Parameters" is available to assist the user when adding or making changes. The user must press the <F1> key when the POLLUTANT NAME field is highlighted to access this list.

6.2 BIOLOGICAL/HABITAT

Selecting BIOLOGICAL/HABITAT from Screen 3.01 will display Screen 3.22 (see Figure 6.2-1). This screen allows the user to select or add the annual reports for biological and habitat data for the management area.

```
                                                                    3.22
 Chemical/Physical      Biological/Habitat      Exit        ANNUAL REPORTS

                    ANNUAL REPORTS FOR MANAGEMENT AREAS

                State (FIPS Code):       NY

                NPS Management Area ID: NYSENECA1

                305(b) Waterbody ID:     NYCAYUGA1

                Annual Report Year:      1990

ANNUAL REPORT NOTES:
This is the pre-implementation year.  It was a normal precipitation year.

  (L)ist  (A)dd Report  (N)otes  PGUP-Prev  PGDN-Next  ┘-Accept  ESC-Exit

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 6.2-1 Screen 3.22

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next report, or select the LIST option to view all of the annual reports for biological and habitat data in a selectable list.

To add a new annual report, the user must type **A**. A selectable list of "Monitoring Designs" is available to assist the user. The user must press the <F1> key to access this list. The user may add additional reporting information to the screen by selecting the NOTES option.

Once the user selects a biological and habitat annual report, Screen 3.23 (see Figure 6.2-2) will be displayed. This screen allows the user to select either WATER QUALITY DATA or IMPLEMENTATION DATA.

```
                                                                                  3.23
 Water Quality Data    Implementation Data    Exit                  | ANNUAL REPORTS

                    ANNUAL REPORTS FOR MANAGEMENT AREAS

                State (FIPS Code):       NY

                NPS Management Area ID: NYSENECA1

                305(b) Waterbody ID:     NYCAYUGA1

                Annual Report Year:      1990

ANNUAL REPORT NOTES:
This is the pre-implementation year.  It was a normal precipitation year.
Implementation data for this study are to be taken from the
chemical/physical monitoring reports.  The implementation applies to the

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                           Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 6.2-2 Screen 3.23

6.2.1 WATER QUALITY DATA

Selecting WATER QUALITY DATA from Screen 3.23 will display Screen 3.24 (see Figure 6.2.1-1). This screen is a menu allowing the user to add, change, delete, or view water quality parameters for each station in the annual report.

```
                                                                                  3.24
 Station     Parameters                                                  | WATER QUALITY

 NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | BIO/HABI

 Monitoring Design Plan: Upstream/Downstream Study                    Year: 1990

 Station
 Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 Parameters for: Upstream Station

 Code/Name: 00061        / FLOW, STREAM, INSTANTANEOUS, CFS
 Explanatory Variable: C   Parameter Type: S   Parameter Units: CFS

 ---------- CUTOFF VALUES ---------      ------ SCORES/VALUES FOR SEASON ------
 Abn. High/Normal  Normal/Abn. Low     Season 1  Season 2  Season 3  Season 4
     21                11                   N

 NOTES: Normal precip.

                    Press F1 for Help,   ESC to Return to Previous Screen
```

Figure 6.2.1-1 Screen 3.24

6.2.1.1 STATION

Selecting STATION from the Biological/Habitat Water Quality Menu (Screen 3.24) will display Screen 3.25 (see Figure 6.2.1.1-1). This screen allows the user to view the stations associated with the monitoring plan. After choosing a particular station, WQ parameters may be added to that station for annual reporting.

```
                                                                                  3.25
Station     Parameters                                                          STATION

NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | BIO/HABI

Monitoring Design Plan: Upstream/Downstream Study                        Year: 1990

 Station
Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 Parameters for: Upstream Station

Code/Name: 00061          / FLOW, STREAM, INSTANTANEOUS, CFS
Explanatory Variable: C   Parameter Type: S   Parameter Units: CFS

 ---------- CUTOFF VALUES ---------      ------ SCORES/VALUES FOR SEASON ------
Abn. High/Normal  Normal/Abn. Low     Season 1  Season 2  Season 3  Season 4
    21                11                   N

NOTES: Normal precip.

              F1-Help       PGUP-Previous       PGDN-Next       ESC-Exit
```

Figure 6.2.1.1-1 Screen 3.25

The user may use the <PAGE UP> and <PAGE DOWN> keys to toggle between the stations.

6.2.1.2 PARAMETERS

Selecting PARAMETERS from the Biological/Habitat Water Quality Menu (Screen 3.24) will display Screen 3.26 (see Figure 6.2.1.2-1). This screen allows the user to add, change, delete, or view the parameters for the station shown.

```
                                                                                  3.26
Add   Change   Delete   List                                                 PARAMETERS

NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | BIO/HABI

Monitoring Design Plan: Upstream/Downstream Study                        Year: 1990

 Station
Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 Parameters for: Upstream Station

Code/Name: 00061          / FLOW, STREAM, INSTANTANEOUS, CFS
Explanatory Variable: C   Parameter Type: S   Parameter Units: CFS

 ---------- CUTOFF VALUES ---------      ------ SCORES/VALUES FOR SEASON ------
Abn. High/Normal  Normal/Abn. Low     Season 1  Season 2  Season 3  Season 4
    21                11                   N

NOTES: Normal precip.

              F1-Help       PGUP-Previous       PGDN-Next       ESC-Exit
```

Figure 6.2.1.2-1 Screen 3.26

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next parameter, or select the LIST option from the Parameters Menu to view all of the parameters in a selectable list. Only the parameters associated with the current station are displayed.

Note that a selectable list of "Monitoring Design Pollutants" is available to assist the user when adding or making changes. The user must press the <F1> key when the CODE/NAME field is highlighted to access this list.

6.2.2 IMPLEMENTATION DATA

Selecting IMPLEMENTATION DATA from Screen 3.23 will display Screen 3.27 (see Figure 6.2.2-1). This screen is a menu allowing the user to add, change, delete, or view the best management practices (BMPs) for each station in the annual report.

```
                                                                          3.27
Station   BMP/Cntrl Measures   Cntrl Sources   Pollutants        IMPLEMENTATION

NY   M/A: NYSENECA1                W/B: NYCAYUGA1                    BIO/HABI

Monitoring Design Plan: Upstream/Downstream Study                  Year: 1990

 Station
Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 BMP/Control Measures for: Upstream Station
BMP Name:
Reporting Units:                          BMP Type:
                                   Implementation This Year:

 Sources Controlled by:
Source Name:

 Pollutants for Source:
Pollutant Name:

                 Press F1 for Help,   ESC to Return to Previous Screen
```

Figure 6.2.2-1 Screen 3.27

6.2.2.1 STATION

Selecting STATION from the Biological/Habitat Implementation Menu (Screen 3.27) will display Screen 3.28 (see Figure 6.2.2.1-1). This screen allows the user to view the stations and associated parameters defined in the monitoring plan.

```
                                                                          3.28
Station   BMP/Cntrl Measures   Cntrl Sources   Pollutants              STATION

NY   M/A: NYSENECA1                W/B: NYCAYUGA1                    BIO/HABI

Monitoring Design Plan: Upstream/Downstream Study                  Year: 1990

 Station
Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 BMP/Control Measures for: Upstream Station
BMP Name:
Reporting Units:                          BMP Type:
                                   Implementation This Year:

 Sources Controlled by:
Source Name:

 Pollutants for Source:
Pollutant Name:

          F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.2.2.1-1 Screen 3.28

The user may use the <PAGE UP> and <PAGE DOWN> keys to toggle between the stations.

6.2.2.2 BEST MANAGEMENT PRACTICES/CONTROL MEASURES

Selecting BMP/CNTRL MEASURES from the Biological/Habitat Implementation Menu (Screen 3.27) will display Screen 3.29 (see Figure 6.2.2.2-1). This screen allows the user to add, change, delete, or view the best management practices and control measures for the station shown.

```
                                                                                  3.29
 Add   Change   Delete   List   Notes                          BMP/CONTROL MEASURES

 NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | BIO/HABI

 Monitoring Design Plan: Upstream/Downstream Study                    Year: 1990

 - Station -------------------------------------------------------------------
 Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 - BMP/Control Measures for: Upstream Station -------------------------------
 BMP Name:
 Reporting Units:                                  BMP Type:
                                             Implementation This Year:

 - Sources Controlled by: ----------------------------------------------------
 Source Name:

 - Pollutants for Source: ----------------------------------------------------
 Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.2.2.2-1 Screen 3.29

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next BMP, or select LIST from the BMP/Control Measures Menu to view all of the BMPs in a selectable list. Only the BMPs associated with the current station are displayed.

Note that a selectable list of "BMP/Control Measures" is available to assist the user when adding or making changes. The user must press the <F1> key when the BMP NAME field is highlighted to access this list.

6.2.2.3 CONTROL SOURCES

Selecting CNTRL SOURCES from the Biological/Habitat Implementation Menu (Screen 3.27) will display Screen 3.30 (see Figure 6.2.2.3-1). This screen allows the user to add, delete, or view the sources controlled by the BMP shown.

```
                                                                                  3.30
 Add   Delete   List                                                      SOURCES

 NY | M/A: NYSENECA1                  | W/B: NYCAYUGA1                  | BIO/HABI

 Monitoring Design Plan: Upstream/Downstream Study                    Year: 1990

 - Station -------------------------------------------------------------------
 Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 - BMP/Control Measures for: Upstream Station -------------------------------
 BMP Name:
 Reporting Units:                                  BMP Type:
                                             Implementation This Year:

 - Sources Controlled by: ----------------------------------------------------
 Source Name:

 - Pollutants for Source: ----------------------------------------------------
 Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.2.2.3-1 Screen 3.30

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next source, or select LIST from the Sources Menu to view all of the controlled sources in a selectable list. Only the controlled sources associated with the current BMP are displayed.

Note that a selectable list of "BMP Sources Controlled" is available to assist the user when adding controlled sources. The user must press the <F1> key when the SOURCE NAME field is highlighted to access this list.

6.2.2.4 POLLUTANTS

Selecting POLLUTANTS from the Biological/Habitat Implementation Menu (Screen 3.27) will display Screen 3.31 (see Figure 6.2.2.4-1). This screen allows the user to add, change, delete, or view the pollutants to be reported for the controlled source and BMP shown.

```
                                                                    3.31
 Add   Change   Delete   List                                   POLLUTANTS

 NY | M/A: NYSENECA1                 | W/B: NYCAYUGA1                | BIO/HABI

 Monitoring Design Plan: Upstream/Downstream Study                 Year: 1990

 Station
 Upstream Station        Agency Code: NYDEC     Station Code: CAYUGAB01

 BMP/Control Measures for: Upstream Station
 BMP Name:
 Reporting Units:                              BMP Type:
                                          Implementation This Year:

 Sources Controlled by:
 Source Name:

 Pollutants for Source:
 Pollutant Name:

                F1-Help      PGUP-Previous      PGDN-Next      ESC-Exit
```

Figure 6.2.2.4-1 Screen 3.31

The user may use the <PAGE UP> and <PAGE DOWN> keys to display the previous or next pollutant, or select LIST from the Pollutants Menu to view all of the pollutants in a selectable list. Only the pollutants associated with the current source and BMP are displayed.

Note that a selectable list of "BMP Controlled Source Parameters" is available to assist the user when adding or making changes. The user must press the <F1> key when the POLLUTANT NAME field is highlighted to access this list.

7. REPORTS

The REPORTS selection allows the user to generate standard NPSMS reports. A single, several, or all management areas may be selected to be included in the report. Once a report is generated, the user may view it on screen, print it, or save it to a text file.

Selecting REPORTS from the Main Menu (Screen 0.00) will display the Reports Menu as shown in Figure 7-1.

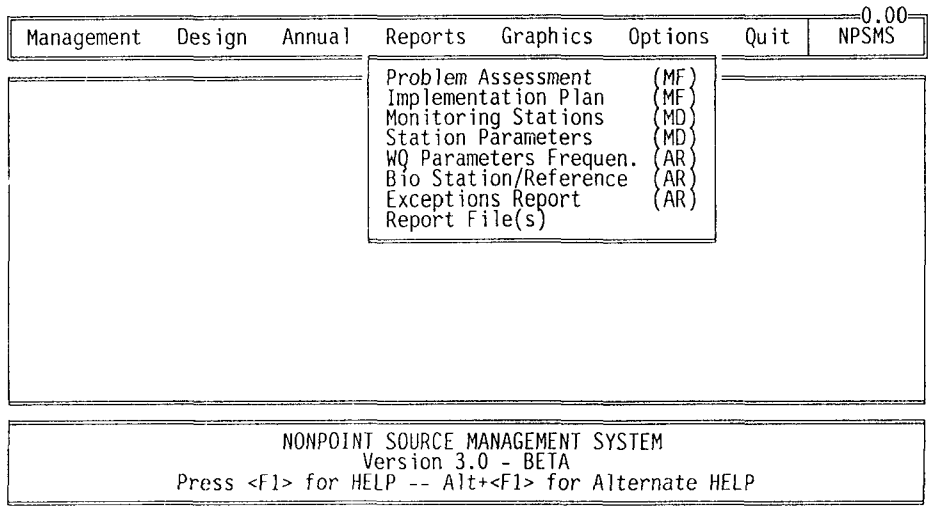


Figure 7-1

Once the user selects a report, a selectable list will be displayed allowing the user to choose the management areas to be included in the report. The user must "tag" his selection by using the space bar or pressing the <F5> key to "tag" all of the selections.

Once the selections have been made, the user must press the <ENTER> key. A "processing" message will be displayed while the report is being prepared. After each report is generated, the following menu (see Figure 7-2) appears allowing the user to view, print, or save the completed report.

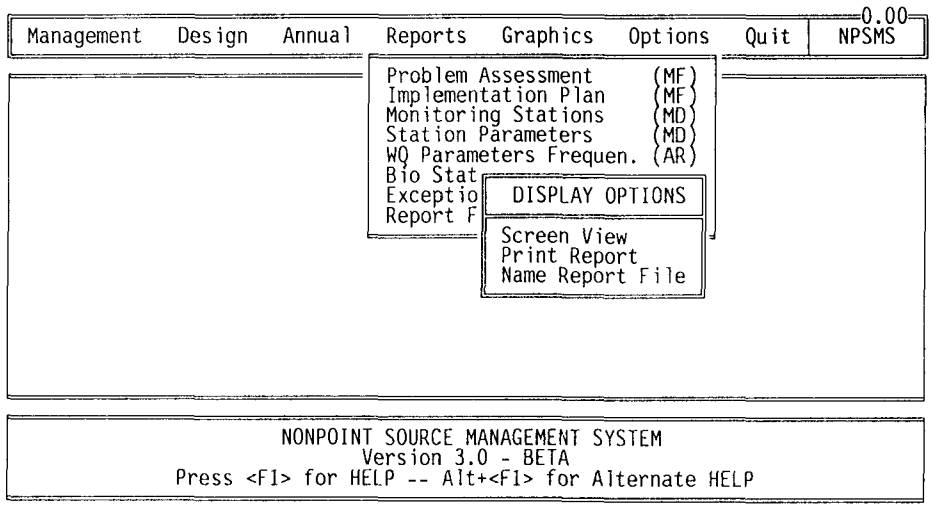


Figure 7-2

There are seven reports available to the user. Each of these reports is described in the following sections.

7.1 PROBLEM ASSESSMENT

The Problem Assessment Report lists the problem pollutants for the selected management areas. Additionally, the contribution sources which include the NPS, point, and background are also listed. The report is sorted by state, management area, and waterbody.

7.2 IMPLEMENTATION PLAN

The Implementation Plan Summary lists information about the best management practices (BMP) for the selected management areas. Each BMP, controlled source, pollutant, and impaired use is listed. The report is sorted by state, management area, waterbody, and BMP ID.

7.3 MONITORING STATIONS

The Monitoring Stations Summary lists information about the study stations for the selected management areas. The information includes the monitoring design, the station identification code, station type, and drainage area. The report lists information for chemical/physical and biological/habitat data. The Monitoring Stations Summary is sorted by state, management area, and waterbody.

7.4 STATION PARAMETERS

The Monitoring Station Parameters Report lists the parameters assigned to each station for the selected management areas. Both chemical/physical and biological/habitat parameters are included in the report for each station. Additional information includes parameter type, reporting units, explanatory variable, and quartile values (for chemical/physical data) or cutoff values (for biological/habitat data). The report is sorted by state, management area, waterbody, and station.

7.5 WQ PARAMETERS FREQUENCIES

The Annual Report WQ Parameters Frequencies Summary lists water quality parameters entered in the annual reports for the selected management areas. Both chemical/physical and biological/habitat data is included in the report. For chemical/physical parameters, the report shows the counts per season and the quartile values entered in the monitoring plan. For biological/habitat parameters, the report shows the scores/values per season and the cutoff values or indices as entered in the monitoring plan. The report is sorted by state, management area, waterbody, and station.

7.6 BIO STATION/REFERENCE

The Biological/Habitat Station vs Reference Report lists the biological/habitat annual report parameters for each management area selected. Only biological and habitat data is included in the report. Each parameter for the first station (control or upstream) is printed and compared against the matching parameter in the second station (study or downstream). Additionally, the parameter is also compared against the matching monitoring design parameter's reasonable attainment value. Note that for single station designs, only the

second percentage is performed. The report is sorted by state, management area, and waterbody.

7.7 EXCEPTIONS REPORT

The Exceptions Report is a three part summary report showing exceptions for pollutants and parameters. Part One lists the management area pollutants that have not been entered in the best management practice (BMP). Part Two lists monitoring design parameters that have not been entered in the annual report for WQ parameters. Part Three lists BMP/pollutants that have not been entered in the annual report for implementation data. Both chemical/physical and biological/habitat data is included in the report. The Exceptions Report is sorted by state and management area.

Note that selecting REPORT FILE(S) from the Reports Menu will generate a listing of all available report files. The user may choose any report and then select any of the display options from the menu shown in Figure 7-2.

8. GRAPHICS

The NPSMS software provides the capabilities to generate sophisticated graphs and charts to better interpret and analyze the large volume of data entered into the system. All of the graphic functions are available under the GRAPHICS option on the main menu.

The NPSMS graphics generate high-resolution EGA and VGA graphs and take full advantage of the video equipment installed on a particular computer. The only requirement for running graphics is that an EGA or VGA video adaptor/monitor must be installed on the computer.

In addition to displaying graphics on the monitor, the NPSMS Graphics Module is also capable of printing the graph to several different printer devices including laser printers, dot-matrix printers, plotters, and HP PaintJets. The printer drivers can take full advantage of features on the printer such as printer density, portrait/landscape orientation, and plotter pen colors. Graphic images may also be stored in a file on the hard disk for later use.

Selecting GRAPHICS from the Main Menu (Screen 0.00) will display a "processing" message while the Graphics Module is being loaded. After the module is loaded, Screen 5.01 (see Figure 8-1) will be displayed.

```
                                                                    5.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                    GRAPHICS SELECTION MENU
                    Problem Pollutants - (MF)
                    Biological vs Habitat Plot
                    Habitat/Biological Trend
                    Chemical/Physical Trend
                    Management Area Funding
                    Graphics Setup
                    Quit - Return to Main Menu

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
                Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 8-1 Screen 5.01

8.1 GRAPHICS SETUP

The GRAPHICS SETUP option allows the user to define information needed to print and plot the graphs. The definitions include the output type: laser printer, dot-matrix printer, plotter, or HP Paintjet, the printer port, the print density, and the page orientation. Once the user selects GRAPHICS SETUP from the Graphics Menu, the Graphics Setup Menu as shown in Figure 8.1-2 will be displayed.

```
                                                                    5.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                 Select Output Device for Graphics

                          Laser Printer
                          Dot Matrix
                          HP Plotter
                          PaintJet
                          File Output

          Print Image to an HP or Compatible Laser Printer

                 NONPOINT SOURCE MANAGEMENT SYSTEM
                         Version 3.0 - BETA
          Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 8.1-2

The Graphics Setup Menu contains five menu options as described below.

8.1.1 LASER PRINTER

The LASER PRINTER option allows the user to print the graph to an HP or compatible laser printer. Once the user selects LASER PRINTER, Figure 8.1.1-1 will be displayed.

```
                                                                    5.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                      Printer Port Selection

                              LPT1
                              LPT2
                              COM1
                              COM2

          Select the Port for the Printing Device Selected

                 NONPOINT SOURCE MANAGEMENT SYSTEM
                         Version 3.0 - BETA
          Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 8.1.1-1

The user must highlight the printer port to be used and press the <ENTER> key. A Laser Printer Setup Screen as shown in Figure 8.1.1-2 will be displayed.

```
                                                                                  5.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                    Laser Printer Setup
                 Orientation (L=Landscape, P=Portrait): P
                 Dot Density (75, 100, 150, 300 dpi):   150
                 Reverse Printing (white on black)?:    N
                 Page Eject After Printing Graph?:      Y
                 Left Margin (in dots at 300 dpi):      100
                 Top Margin (in dots at 300 dpi):       200
                 F1-Help      ( ┘)-Accept      ESC-Cancel

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 8.1.1-2

The following list describes each of the sections on the Laser Printer Setup Screen that the user may change.

ORIENTATION	This allows the user to select either landscape or portrait printing mode.
DOT DENSITY	This allows the user to select the dot density in dots-per-inch. When a larger number is used the image on the screen is printed smaller.
REVERSE PRINTING	This allows the user to reverse the printing (white text on a black background).
PAGE EJECT	This allows the user to eject the page after printing. By selecting **N**, a graph may be overlaid on another graph or printed on the same page.
LEFT MARGIN	This allows the user to specify the beginning margin from the left of the page.
TOP MARGIN	This allows the user to specify the beginning margin from the top of the page.

8.1.2 DOT MATRIX

The DOT MATRIX option allows the user to print the graph to a selected dot matrix printer. Once the user selects DOT MATRIX, Figure 8.1.1-1 will be displayed.

The user must highlight the printer port to be used and press the <ENTER> key. A Dot Matrix Printer Setup Screen as shown in Figure 8.1.2-1 will be displayed.

```
                                                                    5.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                 Dot Matrix Printer Setup
                 Printer Type: EPSON FX
                 Orientation (L=Landscape, P=Portrait): L
                 Page Eject After Printing Graph?:      N
                 F1-Help       ( ┘)-Accept       ESC-Cancel

                 NONPOINT SOURCE MANAGEMENT SYSTEM
                         Version 3.0 - BETA
           Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 8.1.2-1

The following list describes each of the sections on the Dot Matrix Printer Setup Screen that the user may change.

PRINTER TYPE — This allows the user to select the printer driver for the make and model of the printer selected. Note that a selectable list is available to assist the user. The user must press the <F1> key when the PRINTER TYPE field is highlighted to access this list.

ORIENTATION — This allows the user to select either landscape or portrait printing mode (provided the printer supports this option).

PAGE EJECT — This allows the user to eject the page after printing. By selecting **N**, a graph may be overlaid on another graph or printed on the same page.

8.1.3 HP PLOTTER

The HP PLOTTER option allows the user to plot the graph to an HP 7475A or compatible plotter. Once the user selects HP PLOTTER, Figure 8.1.1-1 will be displayed.

The user must highlight the port to be used for the plotter and press the <ENTER> key. An HP Plotter Setup Screen Setup Screen as shown in Figure 8.1.3-1 will be displayed.

```
                                                                    5.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                 HP Plotter Setup
                 Orientation (L=Landscape, P=Portrait): L
                 Page Eject After Plotting Graph?:      Y
                 Width of Plot in X Direction (mms):    325

                Color Pen Wid   Color Pen Wid   Color Pen Wid
                 ---------------  ---------------  ---------------
                   1   1   3       6   5   3      11   5   3
                   2   2   3       7   6   3      12   4   3
                   3   6   3       8   1   3      13   3   7
                   4   3   7       9   2   3      14   2   3
                   5   4   3      10   3   7      15   1   3
                 F1-Help       ( ┘)-Accept       ESC-Cancel

                 NONPOINT SOURCE MANAGEMENT SYSTEM
                         Version 3.0 - BETA
           Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 8.1.3-1

The following list describes each of the sections on the HP Plotter Setup Screen that the user may change.

ORIENTATION — This allows the user to select either landscape or portrait printing mode.

PAGE EJECT — This allows the user to eject the page after plotting (provided the plotter supports this option). By selecting **N**, a graph may be overlaid on another graph or plotted on the same page.

WIDTH OF PLOT — This allows the user to define the width of the plotted output in either landscape or portrait mode. The plotting begins at the bottom, left position of the page on the plotter bed. The width is determined from the left to the right of the page in portrait mode and from the bottom to the top of the page in landscape mode.

PEN (Number) — This allows the user to select the plotter pen number (1-n) which will correspond to the screen color (0-15). See the chart below for the screen colors:

0 - BLACK	8 - GREY
1 - BLUE	9 - LIGHT BLUE
2 - GREEN	10 - LIGHT GREEN
3 - CYAN	11 - LIGHT CYAN
4 - RED	12 - LIGHT RED
5 - MAGENTA	13 - LIGHT MAGENTA
6 - BROWN	14 - YELLOW
7 - WHITE	15 - LIGHT WHITE

WID (Pen Width) — This allows the user to select the width of the plotter pen in millimeters (mm) which is usually printed on the top of each pen (P3 = 3mm).

8.1.4 PAINTJET

The PAINTJET option allows the user to print the graph to an HP PaintJet printer. Once the user selects PAINTJET, Figure 8.1.1-1 will be displayed.

The user must highlight the printer port to be used and press the <ENTER> key. An HP PaintJet Setup Screen as shown in Figure 8.1.4-1 will be displayed.

```
                                                                                  5.01
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                          HP PaintJet Setup
                 Orientation (L=Landscape, P=Portrait): P
                 Dot Density (90 dpi or 180 dpi):       180
                 Reverse Printing (white on black)?:    N
                 Page Eject After Printing Graph?:      Y
                 Left Margin (in dots at 180 dpi):       60
                 Top Margin (in dots at 180 dpi):       120
                 F1-Help       ( ┘)-Accept       ESC-Cancel

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 8.1.4-1

The following list describes each of the sections on the HP PaintJet Setup Screen that the user may change.

ORIENTATION	This allows the user to select either landscape or portrait printing mode.
DOT DENSITY	This allows the user to select the dot density in dots-per-inch. When a larger number is used the image on the screen is printed smaller.
REVERSE PRINTING	This allows the user to reverse the printing (white text on a black background).
PAGE EJECT	This allows the user to eject the page after printing. By selecting **N**, a graph may be overlaid on another graph or printed on the same page.
LEFT MARGIN	This allows the user to specify the beginning margin from the left of the page in dots-per-inch at 180 dpi.
TOP MARGIN	This allows the user to specify the beginning margin from the top of the page in dots-per-inch at 180 dpi.

8.1.5 FILE OUTPUT

The FILE OUTPUT option allows the user to output the graph to a PCX or HPGL format disk file. Once the user selects FILE OUTPUT, a Disk File Output Setup Screen as shown in Figure 8.1.5-1 will be displayed.

```
                                                                                  5.01
 Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                    Disk File Output Setup
                 Output Type (P=PCX, H=HPGL): H
                 Append to File if File Already Exists?: N
                 Output File Name:
                 (Leave Blank for Default File Names)
                 F1-Help      ( ┘)-Accept      ESC-Cancel

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 8.1.5-1

The following list describes each of the sections on the Disk File Output Setup Screen that the user may change.

OUTPUT TYPE This allows the user to select either PCX or HPGL files to be created. The software that will be used to import must support one of these file types.

APPEND TO USE This allows the user to capture multiple screen images to the same file.

OUTPUT FILE This allows the user to enter the name of the output file. The default output file name is different for each graph and depending on the OUTPUT TYPE (P or H) will have a different extension (.PCX or .HPG). If an output file name is entered, it will be used for each graph and will overwrite the previous file, if any. The output file name should be a complete DOS file name including extension (XXXXXXXX.XXX).

There are currently five graphs available in the NPSMS. Each of these graphs is described in the following sections.

8.2 PROBLEM POLLUTANTS

The Problem Pollutants Graph displays the relative contributions for each problem pollutant defined for the management area. The graph is plotted using horizontal cluster bars with pollutant names and the total contributions. Each cluster in the graph for a given pollutant shows the percentage contribution for the nonpoint, source, and background.

8.3 BIOLOGICAL VS HABITAT PLOT

The Biological vs Habitat Graph plots the SCORE/VALUES of each season for two specified annual report parameters against each other to compare them. Typically, a biological parameter would be plotted against a habitat parameter for comparison, but any two parameters may be selected as appropriate. Each season is displayed using a different symbol and all years for each parameter are plotted using a different color.

8.4 HABITAT/BIOLOGICAL TREND

The Habitat/Biological Trend Graph displays a trend analysis for a specified biological/habitat annual report parameter showing the changes in the SCORE/VALUES over the monitoring period. The scores for both stations are plotted using a different color. A statistic option is also available which shows the mean and standard deviation for the graph.

8.5 CHEMICAL/PHYSICAL TREND

The Chemical/Physical Trend Graph displays a trend analysis for a specified chemical/physical annual report parameter showing the changes in the COUNTS over the monitoring period. The counts for all seasons are displayed in a vertically stacked graph for both monitoring stations.

8.6 MANAGEMENT AREA FUNDING

The Management Area Funding Graph displays the funding amounts categorized by the use of the funding. Each category is displayed using a horizontal stacked bar with the use of funding as a label. The funding total for each category is displayed with the funding name. Additionally, a grand total for the entire management area is also displayed.

Once the user selects a graph from the Graphics Selection Menu, a selectable list(s) will be displayed allowing the user to choose the desired information to be plotted on the graph.

After the graph is displayed, the following keys are made available to the user.

C(ONNECT)

Pressing a C will toggle the connection lines between the plotted points on and off.

G(RID)

Pressing a G will toggle the grid lines on and off.

L(IST)

Pressing a L will display the first selectable list for the current graph.

<ESC>

Pressing the <ESC> key will display the Graphics Selection Menu.

<ALT> + <F10> - PRINT

Pressing the <ALT> key and the <F10> key will print the current graphics screen to a laser printer via the LPT1 port.

Note that the <F1> and <ALT> + <F1> keys are not available while a graph is displayed.

9. OPTIONS

The OPTIONS menu selection allows the user to configure the NPSMS to suit his particular needs, backup and restore the NPSMS databases, import and export data by floppy diskettes to and from EPA headquarters and the NPSMS users, convert data to ASCII format for export to SAS, reorganize the databases to keep the NPSMS at peak performance level, delete state information, maintain system tables, and utilize any word processor or text editor.

Selecting OPTIONS from the Main Menu (Screen 0.00), will display the following menu.

```
                                                                    0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                                   Import/Export
                                                   Export to SAS
                                                   Maintenance
                                                   Delete State
                                                   System Tables
                                                   Word Processor

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9-1

There are nine selections available to the user within OPTIONS. Each of these selections is described in the following sections.

9.1 CONFIGURATION

The CONFIGURATION selection enables the user to customize the NPSMS operation by specifying the colors to be used on the NPSMS screens, the type of printer being used, and the hardware capabilities. Once the user selects CONFIGURATION from the Options Menu, the Configuration Menu as shown in Figure 9.1-1 will be displayed.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                                   Import/Export
                                                   Export to SAS
                                                   Maintenance
                                   Printer         Delete State
                                   Colors          System Tables
                                   System          Word Processor
                                   Telecomm
                                   WP Name

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.1-1

The Configuration Menu contains five menu options as described below.

9.1.1 PRINTER

The PRINTER option allows the user to specify the type of printer connected to the PC. Once the user selects the PRINTER selection, the menu shown below will appear.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                                                   Configuration
                                                   Backup Data
                    P R I N T E R   S E T U P

                    Current Printer:  HP LASERJET
                         Printer Port:  COM1

                       AVAILABLE PRINTERS
                       EPSON - Wide 132
                       EPSON COMPAT. - 80
                       EPSON COMPAT. - 132
                       HP LASERJET
                       IBM PROPRINTER - 80
                       IBM PROPRINTER - 132
                       OKIDATA - Narrow 80
                       OKIDATA - Wide 133
                       OTHER PRINTER

                RETURN-Select Printer   F10-Save   ESC-Cancel
```

Figure 9.1.1-1

The user must highlight the type of printer and press <ENTER>, a selectable list will be displayed with various port selections as shown in Figure 9.1.1-2.

Note that if OTHER PRINTER is selected, the user will be prompted for the name of the printer and the escape codes that the printer needs to designate compressed and normal print.

```
                                                                    0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                    P R I N T E R   S E T U P
                 Current Printer:  HP LASERJET
                      Printer Port:  COM1

                      Printer Port to Use

                          LPT1
                          LPT2
                          COM1
                          COM2

          RETURN-Select Printer Port          ESC-Cancel
```

Figure 9.1.1-2

The user must highlight the correct printer port and press the <ENTER> key. Generally, if the printer is a dot matrix printer, LPT1 is used. If the printer is a laser or daisy wheel printer, COM1 is used. The printer manual should be consulted if the user is unsure of the printer port to select.

Note that if COM1 or COM2 is selected, the user should be sure that the correct baud rate, etc. is set for the printer. The DOS Mode Command should be used to initialize the port.

Once the user has selected the type of printer and printer port, the <F10> key must be pressed to save the selection.

9.1.2 COLORS

The COLORS option allows the user to specify the colors used on the NPSMS screens to meet his individual tastes. Once the user selects the COLORS menu option, the screen shown in Figure 9.1.2-1 will be displayed.

Note that for monochrome video displays, the colors are fixed and can *NOT* be changed.

```
                    SCREEN COLORS CONFIGURATION

          M A I N   B A C K G R O U N D   /   D A T A   L A B E L S

                  D A T A   D I S P L A Y   T E X T

                  D A T A   I N P U T   F I E L D S

                    C O M M A N D   M E N U S

                      P O P U P   M E N U S

                     L I S T   W I N D O W S

               M E S S A G E   /   H E L P   W I N D O W S

-Change Windows  F5-Foreground  F6-Background  F10-Save  ESC-Cancel
```

Figure 9.1.2-1

The user must use the arrow keys to select the screen section to be changed. The following list describes each of the screen sections that may be changed.

MAIN BACKGROUND/DATA LABELS	The main screen and display of data labels.
DATA DISPLAY TEXT	Information contained in the various NPSMS databases when viewed in display only mode.
DATA INPUT FIELDS	Information contained in the various NPSMS databases while performing data entry.
COMMAND MENUS	The menus at the top and bottom of the screens.
POP-UP MENUS	Special purpose, pop-up or secondary menus.
LIST WINDOWS	Display of data in list format.
MESSAGE/HELP WINDOWS	Help windows and various user messages.

The <F5> key will change the foreground color and the <F6> key will change the background color. Once the color selections have been made, the user must press the <F10> key to save the changes or the <ESC> key to cancel all changes.

Note that because of the many possible color combinations it is usually easiest for the user to change one screen at a time and then check to see how the new color looks with other screen colors.

9.1.3 SYSTEM

The SYSTEM option allows the user to setup several environment options for the NPSMS. Once the user selects SYSTEM, the Computer Configuration Screen displays choices for floppy drive, video display, and port configurations as shown in Figure 9.1.3-1.

```
COMPUTER'S CONFIGURATION
DOS Version: 4.0    Base RAM: 640K    Display: COLOR    Current Mode: CGA
Total Drive C: 42,366,976    Available on C: 29,609,984    Floppy Drives: 2
Number of Parallel Ports: 1    Number of Serial Ports: 1    Games Ports: 1

DRIVE CONFIGURATION
Drive to Use          Drive Capacity          Format to Use
A: Floppy             360 KB                  360 KB
B: Floppy             720 KB                  720 KB
Other                 1.2 MB                  1.2 MB
                      1.4 MB                  1.4 MB

DISPLAY CONFIGURATION          CURRENT PORT CONFIGURATION
Video Display          Current Printer Port    Current Comm Port
Color                  COM1                    COM1
Monochrome
                       (Change Ports in Printer or Comm. Setup)

RETURN-Make Selection    F10-Save/Exit    ESC-Previous Window/Cancel
Use Drive A: for 5¼" 360 KB, 1.2 MB, or 3½" 720 KB, 1.44 MB Diskettes
```

Figure 9.1.3-1

At the top of the Computer Configuration Screen, current information about the computer is displayed: the DOS version number, the computer's base memory, the total hard disk size of drive C:, the available space on drive C:, the number of ports, etc.

The following list describes each of the sections on the Computer Configuration Screen that the user may change.

DRIVE TO USE	Allows the user to select the floppy drive that the NPSMS should use to backup/restore and import/export data.
DRIVE CAPACITY	Determines the type of drive selected with DRIVE TO USE.
FORMAT TO USE	Allows the user to select the format of the DRIVE TO USE. If drive is high-density, either high-density (1.2, 1.44) or low-density (360, 720) may be used.
VIDEO DISPLAY	Allows the user to select whether the display should be in color or monochrome. (Note that screen color can *NOT* be changed in monochrome display.)
CURRENT PRINTER PORT	Displays the printer port the user selected in PRINTER setup.
CURRENT COMM PORT	Displays the communication port the user selected in TELECOM setup to use for communications with the mainframe.

The user must press the <ENTER> key at each window to accept the selection made or to move to the next window. Once the selections have been made, the user must press the <F10> key to save the changes or the <ESC> key at the DRIVE TO USE window to cancel any changes.

9.1.4 TELECOM

The TELECOM option enables the user to establish the parameters with which the user's PC can communicate with the EPA Mainframe. Once the TELECOM menu option is selected, the screen shown in Figure 9.1.4-1 will be displayed.

```
TELECOMMUNICATIONS SETUP

Type Connect        Com Port to Use        Telephone Number
 COLAN               COM1
 DIAL-UP             COM2
 DISKETTE            COM3
 DIRECT              COM4

                                           4381 VM/CMS User ID

Baud Rate           Parity                 Data Bits          Stop Bits
 1200                NONE                   8                  0
 2400                EVEN                   7                  1
 9600                ODD

RETURN-Make Selection     F10-Save/Exit     ESC-Previous Window/Cancel
```

Connection to Mainframe is via Modem

Figure 9.1.4-1

The following list describes each of the sections on the Telecommunications Setup Screen that the user may change.

TYPE CONNECT	This controls the method in which the NPSMS establishes the communications link between the user's PC and the EPA Mainframe.
COMM PORT TO USE	This tells the NPSMS which communications port to use on the PC in communicating with the EPA Mainframe.
TELEPHONE NUMBER	This is the telephone number to use if the user is using a modem (DIAL-UP) to communicate with the EPA Mainframe.
USER ID	This is the way in which the user identifies himself when communicating with the EPA Mainframe. If the user is unsure of his ID, he should contact the system manager.
BAUD RATE PARITY DATA BITS STOP BITS	These parameters describe the speed and transfer method with which the PC communicates with the EPA Mainframe. These are usually governed by the type of modem the user is using and by the parameters already established on the mainframe. If the user is unsure of the settings, he should contact his system manager.

The user must press the <ENTER> key at each window to accept the selection made or to move to the next window. Once the selections have been made, the user must press the <F10> key to save the changes or the <ESC> key at the TYPE CONNECT window to cancel any changes.

9.1.5 WP NAME

The WP NAME option allows the user to enter the name of the word processor or editor (WORD for Microsoft Word, WP for Word Perfect, etc.) to be used from within the NPSMS without exiting the program. Once the user selects the WP NAME option, the screen shown in Figure 9.1.6-1 will be displayed.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                                   Import/Export
                          Word Processor Setup
   Enter Name of Word Processor:      Microsoft Word
   Drive Ltr to Find WP (Optional):   C
   Path Name to Find WP (Optional):   \WORD
   Command to Start Word Processor:   WORD
          F1-Help          ┘-Accept          ESC-Cancel

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.1.6-1

The user must enter the command to start the word processor or text editor. If the drive and path name where the word processor is located is different then the current drive, the user must also enter the letter of the drive and the path name. The name of the word processor is a descriptive field only and can be left blank if desired.

9.2 BACKUP DATA

The BACKUP DATA selection allows the user to backup the NPSMS data on the hard disk to floppy diskettes for recovery or archive purposes. The user must specify the backup drive and format type in OPTIONS/CONFIGURATION/SYSTEM. Once the BACKUP DATA option is selected, the screen shown in Figure 9.2-1 will be displayed.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                              B A C K U P

      Last Backup:  Date = 02/21/91   Time = 17:30:56    Disks Used = 1

                        Backup Will Use Drive - A:
                         Format of Drive is - 1.2

                       Total 1.2 Diskettes Needed - 1

                     Continue Backup?  (Y)es/(N)o/<ESC>
```

Figure 9.2-1

The number of diskettes needed for the backup will be displayed on the Backup Screen. These diskettes *MUST* be formatted and empty *BEFORE* using BACKUP DATA.

The user is given the opportunity to continue the backup or return to the Options Menu. If the user elects to continue, the NPSMS copies the databases to diskette, prompting the user to insert diskettes.

When the backup is complete, the NPSMS provides the user with information that should be placed on the external label on the backup diskettes. An example of this information is shown in Figure 9.2-2.

```
                                                                    0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                              B A C K U P

                 Please Label Your Backup Diskettes
                   With the Following Information:
                            NPSMS BACKUP
          Date: 06/21/91     Time: 15:53:35     NPSMS: 1

                     Press any key to continue
```

Figure 9.2-2

The user must use the RESTORE DATA function to restore the backup files.

9.3 RESTORE DATA

The RESTORE DATA selection allows the user to restore data from floppy diskettes to the hard disk. Note that the RESTORE DATA function will only copy files previously created by the BACKUP DATA function. Selecting the RESTORE DATA menu option will generate the screen shown in Figure 9.3-1.

```
                                                                    0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                              R E S T O R E

     Last Backup:  Date = 02/21/91   Time = 17:30:56    Disks Used = 1
                      Restore Will Use Drive - A:
                        Format of Drive is - 1.2
                     Target Directory is - C:\NPSV3

       WARNING - Restore Will Overwrite Existing NPSMS Data Files!
       Please Make a Backup of Your Current Data Before Restoring
                 Continue Restore?  (Y)es/(N)o/<ESC>
```

Figure 9.3-1

The RESTORE DATA option will warn the user that the function will overwrite all existing NPSMS data. The user should make a backup of the current data before restoring data. If the user continues the restore, the NPSMS copies the databases to the hard disk from the diskettes created during a previous backup.

9.4 IMPORT/EXPORT

The IMPORT/EXPORT selection allows for NPSMS data to be transferred by floppy diskettes to and from EPA headquarters and NPSMS users. Once the user selects IMPORT/EXPORT from the Options Menu, the Import/Export Menu as shown in Figure 9.4-1 will be displayed.

```
                                                                    0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                                   Import/Export
                                                   Export to SAS
                                                   Maintenance
                                                   Delete State
                                                   System Tables
                                                   Word Processor
                                              Import
                                              Export

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                          Version 3.0 - BETA
          Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.4-1

The Import/Export Menu contains an option for IMPORT and an option for EXPORT as described below.

9.4.1 IMPORT

The IMPORT selection allows the user to import data such as system table updates from floppy diskettes to the hard disk. Note that the IMPORT function will only copy files previously created by the NPSMS EXPORT function. Selecting the IMPORT option will generate the following screen.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                    Configuration
                                                    Backup Data
                                                    Restore Data
                              I M P O R T

      Last Export:  Date = 05/14/91   Time = 16:47:47    Disks Used = 1

                        Import Will Use Drive - A:

                         Format of Drive is - 1.2

                   Target Directory is - C:\NPSV3\IMPORT\

         WARNING - Import Will Overwrite Existing NPSMS Data Files!

         Please Make a Backup of Your Current Data Before Importing

                    Continue Import?  (Y)es/(N)o/<ESC>
```

Figure 9.4.1-1

The IMPORT option will warn the user that the function will overwrite existing NPSMS data. The user should make a backup of the current data before importing data. If the user continues the import, the NPSMS copies the files to the hard disk from the diskettes created during a previous export.

9.4.2 EXPORT

The EXPORT selection allows the user to export data from the hard disk to floppy diskettes for transferring to EPA Headquarters. The user must specify the backup drive and format type in OPTIONS/CONFIGURATION/SYSTEM. Selecting the EXPORT option will generate the following state table.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                    Configuration
                                                    Backup Data
                                                    Restore Data
                                                    Import/Export
                    SELECT THE STATE YOU WISH TO EXPORT

  State Code                 Lead Agency                        EPA Region

  AK                         AK EPA                             10
  DC                         DC EPA                              3
  MD                         EPA                                 3
  TN                         TN WATER AUTHORITY                  4
  VA                         VA EPA                              3

   - Move highlight bar | ESC - Exit w/o selection | <CR> - Exit w/ selection
                                  Top of List
```

Figure 9.4.2-1

The user must select a single state to send to EPA Headquarters for reporting. Note that if more than one state is to be sent, each must be exported separately. Once the user selects a state to be exported, a screen as shown in Figure 9.4.2-2 will be displayed.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                  E X P O R T

                    Export Will Use Drive - A:
                     Format of Drive is - 1.2

                  Total 1.2 Diskettes Needed - 1

                Continue Export?  (Y)es/(N)o/<ESC>
```

Figure 9.4.2-2

The number of diskettes needed for the export will be displayed on the screen. These diskettes *MUST* be formatted and empty *BEFORE* using EXPORT.

The user is given the opportunity to continue the export or return to the Import/Export Menu. If the user elects to continue, the NPSMS copies the files to diskette, prompting the user to insert diskettes.

When the export is complete, the NPSMS provides the user with information that should be placed on the external label on the export diskettes. An example of this information is shown in Figure 9.4.2-3.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                  E X P O R T

                  Please Label Your Export Diskettes
                    With the Following Information:
                             NPSMS EXPORT
            Date: 06/25/91     Time: 10:55:50     NPSMS: 1

                     Press any key to continue
```

Figure 9.4.2-3

9.5 EXPORT TO SAS

The EXPORT TO SAS selection allows all of the data in the system to be converted to ASCII files so the data may be transferred to the EPA mainframe by telecommunications for use with mainframe SAS.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                                   Import/Export
                                                   Export to SAS
                                                   Maintenance

 NPSMS data will be converted to ASCII files and placed in directory UPLOAD
                        Would you like to continue?
                           Enter (Y)es/(N)o/ESC

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.5-1

Once the user selects the EXPORT TO SAS option from the Options Menu, a message will appear giving the user the option of continuing as shown in Figure 9.5-1. If the user elects to continue, the NPSMS data will be converted to ASCII files and placed in a directory called \UPLOAD.

9.6 MAINTENANCE

The MAINTENANCE selection reorganizes the NPSMS database indexes in order to improve system performance. NPSMS MAINTENANCE should be performed periodically. The MAINTENANCE selection also removes any deleted records from the files. Once the user selects MAINTENANCE, a message will be displayed as shown in Figure 9.6-1. The user has no active role during this operation.

```
                                                                                  0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                                   Import/Export
                                                   Export to SAS
                                                   Maintenance
                                                                te
          Performing Database Maintenance, Please Wait         les
               (Packing Data and Reindexing Files)             ssor

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.6-1

9.7 DELETE STATE

The DELETE STATE selection enables the user to delete a state and all the associated records from the NPSMS files including management area information, BMP information, monitoring design information, and all annual reports entered for the state. Once the user selects DELETE STATE from the Options Menu, the screen in Figure 9.7-1 will be displayed.

```
                                                                    0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                                   Import/Export
                    Enter the State You Wish to Delete

                    State:
                    Lead Agency:
                    EPA Region:

 Press F1-List Current States      ENTER( ┘)-Accept      ESC-Cancel Delete

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.7-1

The user must enter the state to be deleted or press the <F1> key for a selectable list of the current states in the database. Once the user has selected the state to be deleted, a screen will be displayed showing the number of records associated with the state. See the example in Figure 9.7-2.

```
                                                                    0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                          STATE DELETE FUNCTION

  STATE: NY            AGENCY: DEC                          REGION:  2

                  RECORDS ASSOCIATED WITH THIS STATE

 Management Area:    1      Monitoring Data:    1      Annual Reports:    2

  F10-Delete State and Associated Records      ESC-Cancel/Return to Menu

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.7-2

The user must press the <F10> key to delete all the records associated with the state or the <ESC> key to cancel the deletion.

Note that the DELETE STATE function will perform database maintenance to permanently remove the deleted records from the NPSMS databases.

9.8 SYSTEM TABLES

The SYSTEM TABLES selection allows for maintenance of the NPSMS system tables (reference tables that provide lookup values for certain fields in the system). This function enables the user to make changes to the system tables which are used as selectable lists within the NPSMS.

```
                                                                          0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration
                                                   Backup Data
                                                   Restore Data
                                                   xport
                                SYSTEM TABLES      o SAS
                                                   nce
                                Parameter Names    tate
                                Waterbody Uses     ables
                                M. Area Pollutants cessor
                                Funding Uses
                                State Codes (FIPS)
                                Information Types
                                Land Use Names
                                BMP Names
                                NA Source Names
                                User ID Table
                                View Log Table

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.8-1

Once the user selects the SYSTEM TABLES option from the Options Menu, a list of all the system tables within the NPSMS will be displayed. See the example in Figure 9.8-1. The user may choose any table in the list to be modified. After the user selects a system table, the table will be displayed as shown in the example, Figure 9.8-2.

```
                                                                          0.00
Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS
                                                   Configuration

                              PARAMETER NAMES

Parame. Code Parameter Name                                   Type Units

B100-01      FISH - BIOLOGICAL                                B    Count
H100-01      FISH - HABITAT                                   B    Count
B200-01      FISH-KILLS                                       B    Count
B200-02      RUN-OFF                                          B
00425        ALKALINITY, BICARBONATE                          S    MG/L
00430        ALKALINITY, CARONATE                             S    MG/L
00415        ALKALINITY, PHENOLPHTHALEIN                      S    MG/L
00410        ALKALINITY, TOTAL                                S    MG/L
31851        BACTERIA, DENITRIFIERS, MPN PER GRAM WET WGT.    S
47006        BACTERIA, TOTAL PER ML PLATE CT. AGS AGAR 23C    S
00303        BOD, 1 DAY, 20 DEG C                             S    MG/L
00304        BOD, 2 DAY, 20 DEG C                             S    MG/L
00324        BOD, 20 DAY, 20 DEG C                            S    MG/L

          - Move Highlight Bar ¦ ESC-EXIT  A-ADD  C-CHANGE  D-DELETE
                                Top of List
```

Figure 9.8-2

The user may add, change, or delete any entry in the table. Once the modifications have been made, the user must press the <ENTER> key for each field or <CNTL> and W to save the changes.

9.9 WORD PROCESSOR

The WORD PROCESSOR option allows the user to start the word processor or editor that is defined by the OPTIONS/CONFIGURATION/WP NAME menu selection. The WORD PROCESSOR function provides the capability of using any word processing program such as Microsoft Word or Word Perfect without exiting NPSMS. Once the WORD PROCESSOR option is selected, the screen shown in Figure 9.9-1 will be displayed.

```
                                                                                  0.00
 Management   Design   Annual   Reports   Graphics   Options   Quit   NPSMS

                                                      Configuration
                                                      Backup Data
                                                      Restore Data
                                                      Import/Export
                                                      Export to SAS
                                                      Maintenance

    Enter File to Edit:

          [ F1-List Files          ┘-Accept          ESC-Cancel ]

                    NONPOINT SOURCE MANAGEMENT SYSTEM
                            Version 3.0 - BETA
            Press <F1> for HELP -- Alt+<F1> for Alternate HELP
```

Figure 9.9-1

The user must enter the file name to be edited or press the <F1> key for a selectable list of all the files in the current directory.

APPENDIX A - REPORT OUTPUT SAMPLES

N P S M S

U.S. EPA NonPoint Source Management System

Date: 08/29/91 Problem Assessment Report Page: 1

St	NPS Management ID	Waterbody ID	Pollutant	Contribution Source NPS	Point	Bckgrnd	Cont Type
NY	NYSENECA1	NYCAYUGA1	OXYGEN CONSUMING MATERIALS (DO PROBLEMS)	0.40	0.40	0.20	C
			PHOSPHORUS FORMS	0.50	0.40	0.10	C

STATE: NY MANAGEMENT AREA ID: NYSENECA1

BMP: ANIMAL WASTE MANAGEMENT UNITS: A.U. CONTROLLED GOAL: 2000 GOAL TYPE: C

Controlled Source	Pollutant	Impaired Use
DAIRIES	OXYGEN CONSUMING MATERIALS (DO PROBLEMS)	RECREATION
		WARM FISH
	PHOSPHORUS FORMS	FISH
		SWIM

BMP: NUTRIENT MANAGEMENT UNITS: ACRES SERVED GOAL: 45,000 GOAL TYPE: A

Controlled Source	Pollutant	Impaired Use
CROPLAND	PHOSPHORUS FORMS	FISH
		SWIM
GOLF COURSES	PHOSPHORUS FORMS	FISH
		SWIM
RESIDENTIAL LAWNS	PHOSPHORUS FORMS	FISH
		SWIM
STATE & CITY PARKS	PHOSPHORUS FORMS	FISH
		SWIM

BMP: SEPTIC SYSTEM UPGRADES UNITS: # PERFORMING WELL GOAL: 110 GOAL TYPE: C

Controlled Source	Pollutant	Impaired Use
UNSEWERED LAKESHORE RESIDENCES	OXYGEN CONSUMING MATERIALS (DO PROBLEMS)	FISH
		SWIM
	PHOSPHORUS FORMS	FISH
		SWIM

N P S M S

U.S. EPA NonPoint Source Management System

ate: 08/29/91 Monitoring Stations Summary Page: 1

St	Management Area ID	Waterbody ID	C/B	Design	Station	Primary Code	Station Type	Drainage	Shared
NY	NYSENECA1	NYCAYUGA1	BIO	Up/Down	NYDEC	CAYUGAB01	Upstream Station	8.000	N
					NYDEC	CAYUGAB02	Downstream Station	15.000	N
NY	NYSENECA1	NYCAYUGA1	CHEM	Up/Down	NYDEC	CAYUGA101	Upstream Station	10.000	N
					NYDEC	CAYUGA102	Downstream Station	15.000	N

N P S M S

U.S. EPA NonPoint Source Management System

Date: 08/29/91 Monitoring Station Parameters Report Page: 1

STATE: NY MANAGEMENT AREA ID: NYSENECA1 WATERBODY ID: NYCAYUGA1

STATION TYPE: Upstream Station STATION NO: NYDEC PRIMARY CODE: CAYUGAB01

BIOLOGICAL PARAMETERS (Chemical):

Parameter Name	Parm Type	Reporting Units	Expl. Var.	CUTOFF VALUES Abn. High/Norm	Norm/Abn. Low
FLOW, STREAM, INSTANTANEOUS, CFS	S	CFS	C	21	11

BIOLOGICAL PARAMETERS (Non-Chemical):

Parameter Name	Parm Type	Reporting Units	Expl. Var.	INDICES Fully	Threatened	Partially	Max. Pot.	Reason. Att.	Ref/ BPJ
FISH HABITAT CONDITION INDEX	B	SCORE	N	50	40	30	75.00	60.00	B
INDEX OF BIOLOGICAL INTEGRITY	B	SCORE	N	40	35	30	60.00	45.00	B

STATION TYPE: Downstream Station STATION NO: NYDEC PRIMARY CODE: CAYUGAB02

BIOLOGICAL PARAMETERS (Chemical):

Parameter Name	Parm Type	Reporting Units	Expl. Var.	CUTOFF VALUES Abn. High/Norm	Norm/Abn. Low
FLOW, STREAM, INSTANTANEOUS, CFS	S	CFS	C	23	14

BIOLOGICAL PARAMETERS (Non-Chemical):

Parameter Name	Parm Type	Reporting Units	Expl. Var.	INDICES Fully	Threatened	Partially	Max. Pot.	Reason. Att.	Ref/ BPJ
FISH HABITAT CONDITION INDEX	B	SCORE	N	50	40	30	75.00	60.00	B
INDEX OF BIOLOGICAL INTEGRITY	B	SCORE	N	40	35	30	60.00	45.00	B

STATE: NY MANAGEMENT AREA ID: NYSENECA1 WATERBODY ID: NYCAYUGA1

STATION TYPE: Upstream Station STATION NO: NYDEC PRIMARY CODE: CAYUGA101

N P S M S

U.S. EPA NonPoint Source Management System

Date: 08/29/91 Annual Report WQ Parameter Frequencies Page: 1

STATE: NY MANAGEMENT AREA ID: NYSENECA1 WATERBODY ID: NYCAYUGA1 YEAR: 1990

STATION TYPE: Upstream Station STATION NO: NYDEC PRIMARY CODE: CAYUGAB01

CHEMICAL PARAMETERS:

Parameter Name	-75-	-50-	-25-	COUNTS/SEASON:	1	2	3	4
	--------QUARTILE VALUES-------							
BOD, 5 DAY, 20 DEG C	125	50	15	Highest	5	0	0	0
				High	5	0	0	0
				Low	5	0	0	0
				Lowest	5	0	0	0
FLOW, STREAM, INSTANTANEOUS, CFS	25	15	12	Highest	5	0	0	0
				High	5	0	0	0
				Low	5	0	0	0
				Lowest	5	0	0	0
PHOSPHORUS, TOTAL (MG/L AS P)	.100	.025	.005	Highest	5	0	0	0
				High	5	0	0	0
				Low	5	0	0	0
				Lowest	5	0	0	0

BIOLOGICAL PARAMETERS (Chemical):

Parameter Name	Abn. High/Norm	Norm/Abn. Low	SCORES/VALUES:	1	2	3	4
	---------CUTOFF VALUES--------						
FLOW, STREAM, INSTANTANEOUS, CFS	21	11		N			

BIOLOGICAL PARAMETERS (Non-Chemical):

Parameter Name	Fully	Threatened	Partially	SCORES/VALUES	1	2	3	4
	----------INDICES----------							
FISH HABITAT CONDITION INDEX	50	40	30		40			
INDEX OF BIOLOGICAL INTEGRITY	40	35	30		35			

STATION TYPE: Downstream Station STATION NO: NYDEC PRIMARY CODE: CAYUGA102

CHEMICAL PARAMETERS:

Parameter Name	-75-	-50-	-25-	COUNTS/SEASON:	1	2	3	4
	--------QUARTILE VALUES-------							
BOD, 5 DAY, 20 DEG C	250	150	50	Highest	5	0	0	0
				High	5	0	0	0
				Low	5	0	0	0
				Lowest	5	0	0	0
FLOW, STREAM, INSTANTANEOUS, CFS	29	17	14	Highest	5	0	0	0
				High	5	0	0	0
				Low	5	0	0	0
				Lowest	5	0	0	0

CHEMICAL PARAMETERS:
==========

Parameter Name ----------	Parm Type	Reporting Units ----	--------QUARTILE VALUES------- -75-	-50-	-25-
BOD, 5 DAY, 20 DEG C	S	MG/L	125	50	15
FLOW, STREAM, INSTANTANEOUS, CFS	S	CFS	25	15	12
PHOSPHORUS, TOTAL (MG/L AS P)	S		.100	.025	.005

STATION TYPE: Downstream Station STATION NO: NYDEC PRIMARY CODE: CAYUGA102

CHEMICAL PARAMETERS:
==========

Parameter Name ----------	Parm Type	Reporting Units ----	--------QUARTILE VALUES------- -75-	-50-	-25-
BOD, 5 DAY, 20 DEG C	S	MG/L	250	150	50
FLOW, STREAM, INSTANTANEOUS, CFS	S	CFS	29	17	14
PHOSPHORUS, TOTAL (MG/L AS P)	S		.125	.055	.035

N P S M S

U.S. EPA NonPoint Source Management System

Date: 08/29/91 Biological/Habitat Station vs Reference Report Page: 1

Monitoring Design: Upstream/Downstream Study

Station 1: Upstream Station Station Code: NYDEC Primary code: CAYUGAB01
Station 2: Downstream Station Station Code: NYDEC Primary code: CAYUGAB02

		Station 1 vs Station 2				Station 1 vs Reasonable Attainment			
Parameter Name	Year	1	2	3	4	1	2	3	4
FISH HABITAT CONDITION INDEX	1990	200.00				66.67	0.00	0.00	0.00
	1991	160.00				66.67	0.00	0.00	0.00
	1992	150.00				75.00	0.00	0.00	0.00
INDEX OF BIOLOGICAL INTEGRITY	1990	140.00				77.78	0.00	0.00	0.00
	1991	140.00				93.33	0.00	0.00	0.00
	1992	125.00				88.89	0.00	0.00	0.00

PHOSPHORUS, TOTAL (MG/L AS P)	.125	.055	.035	Highest	5	0	0	0
				High	5	0	0	0
				Low	5	0	0	0
				Lowest	5	0	0	0

BIOLOGICAL PARAMETERS (Chemical):

Parameter Name	---------CUTOFF VALUES-------- Abn. High/Norm	Norm/Abn. Low	SCORES/VALUES:	1	2	3	4
FLOW, STREAM, INSTANTANEOUS, CFS	23	14		N			

BIOLOGICAL PARAMETERS (Non-Chemical):

Parameter Name	----------INDICES---------- Fully	Threatened	Partially	SCORES/VALUES	1	2	3	4
FISH HABITAT CONDITION INDEX	50	40	30		20			
INDEX OF BIOLOGICAL INTEGRITY	40	35	30		25			

STATE: NY MANAGEMENT AREA ID: NYSENECA1

PART 1: MANAGEMENT AREA POLLUTANTS VS. BMP POLLUTANTS

Waterbody Id	Management Area Pollutants NOT FOUND in BMP

No Exceptions

PART 2: MONITORING DESIGN PARAMETERS VS. ANNUAL REPORT PARAMETERS

Biological/Habitat

Expl. Var.	Waterbody Id	Station	Agency	Monitoring Design Parameters NOT FOUND in Annual Report

No Biological/Habitat Exceptions

Chemical/Physical

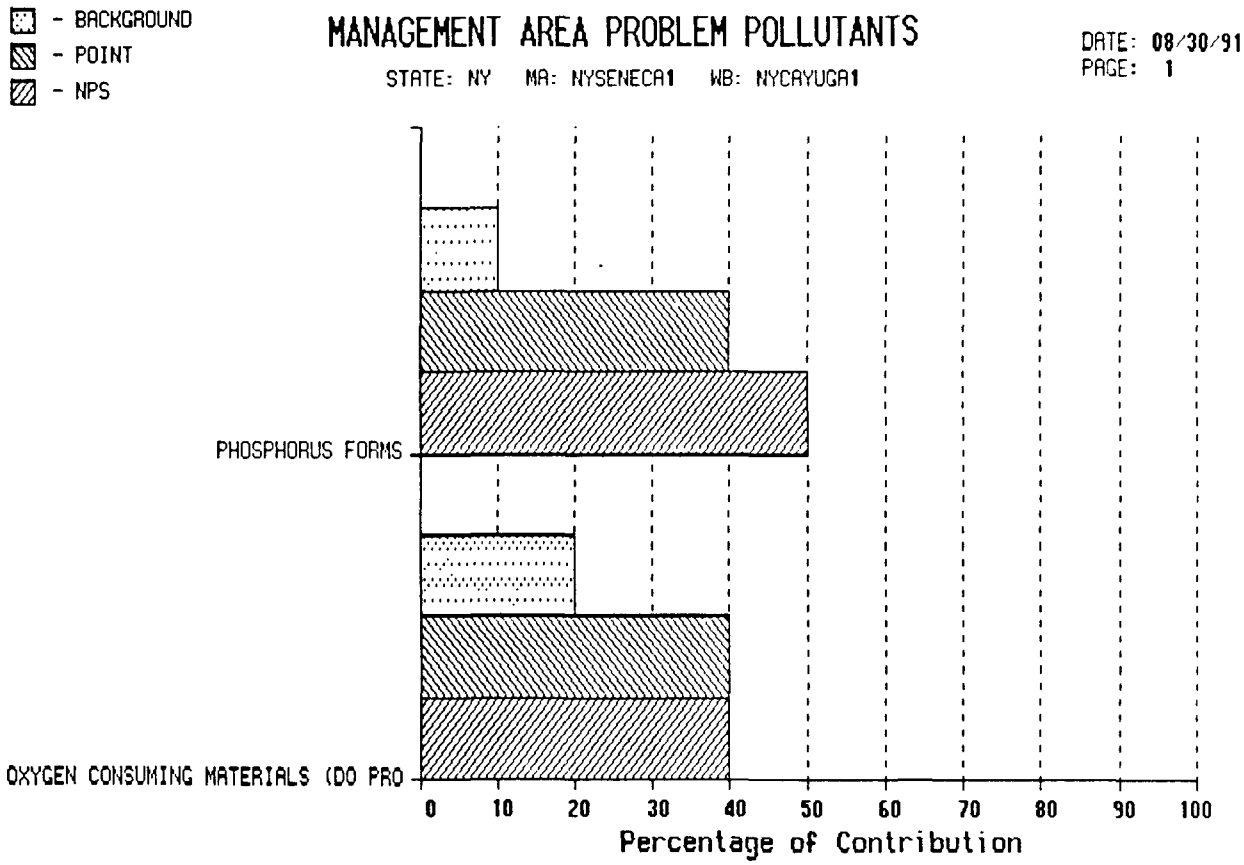
Expl. Var.	Waterbody Id	Station	Agency	Monitoring Design Parameters NOT FOUND in Annual Report

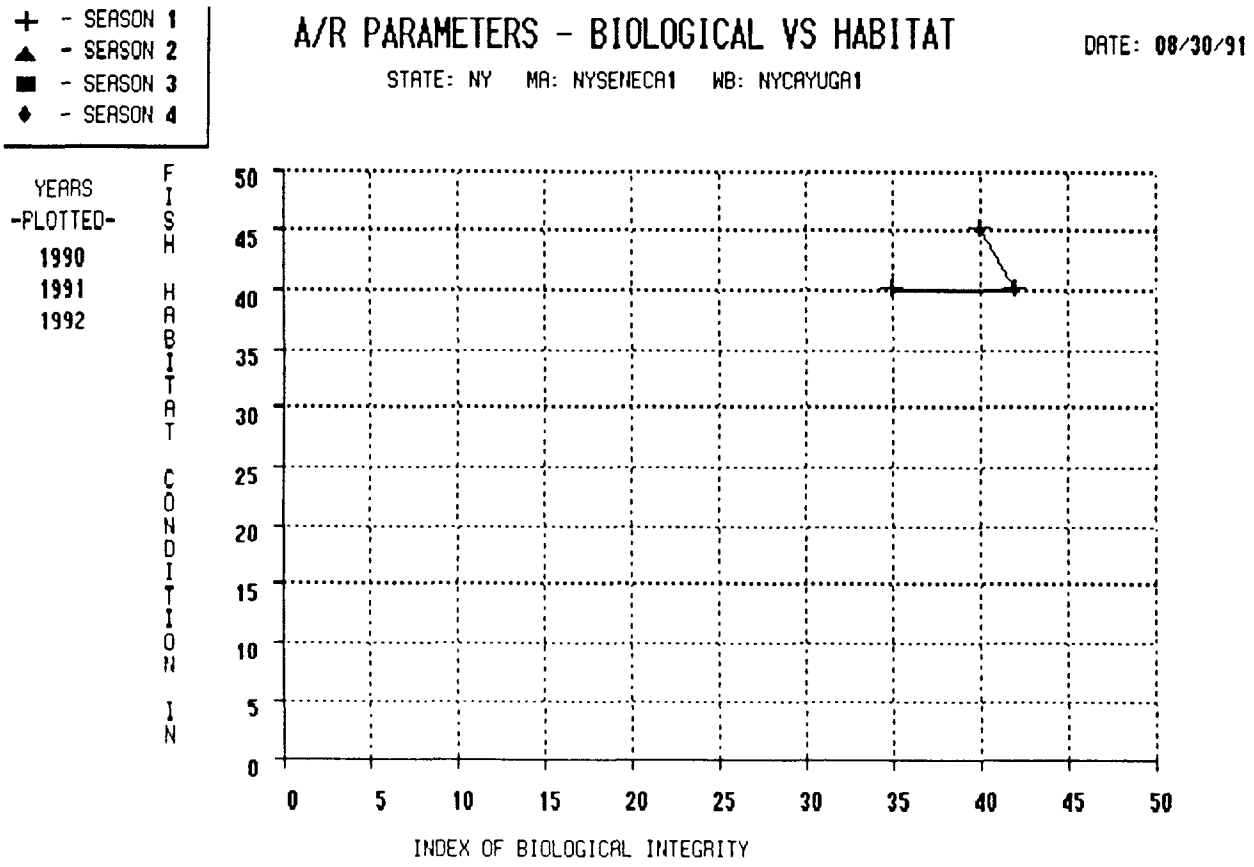
No Chemical/Physical Exceptions

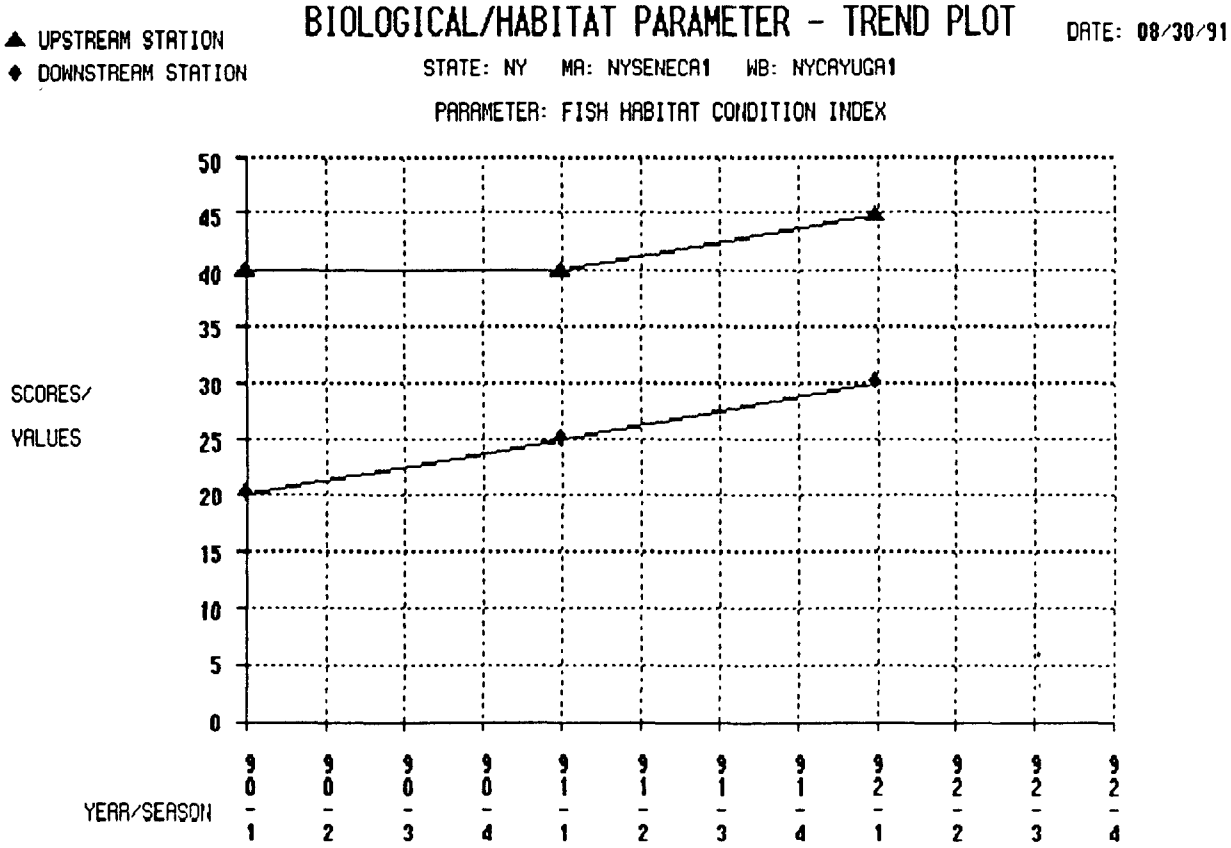
PART 3: BMP POLLUTANTS VS. ANNUAL REPORT IMPLEMENTATION POLLUTANTS

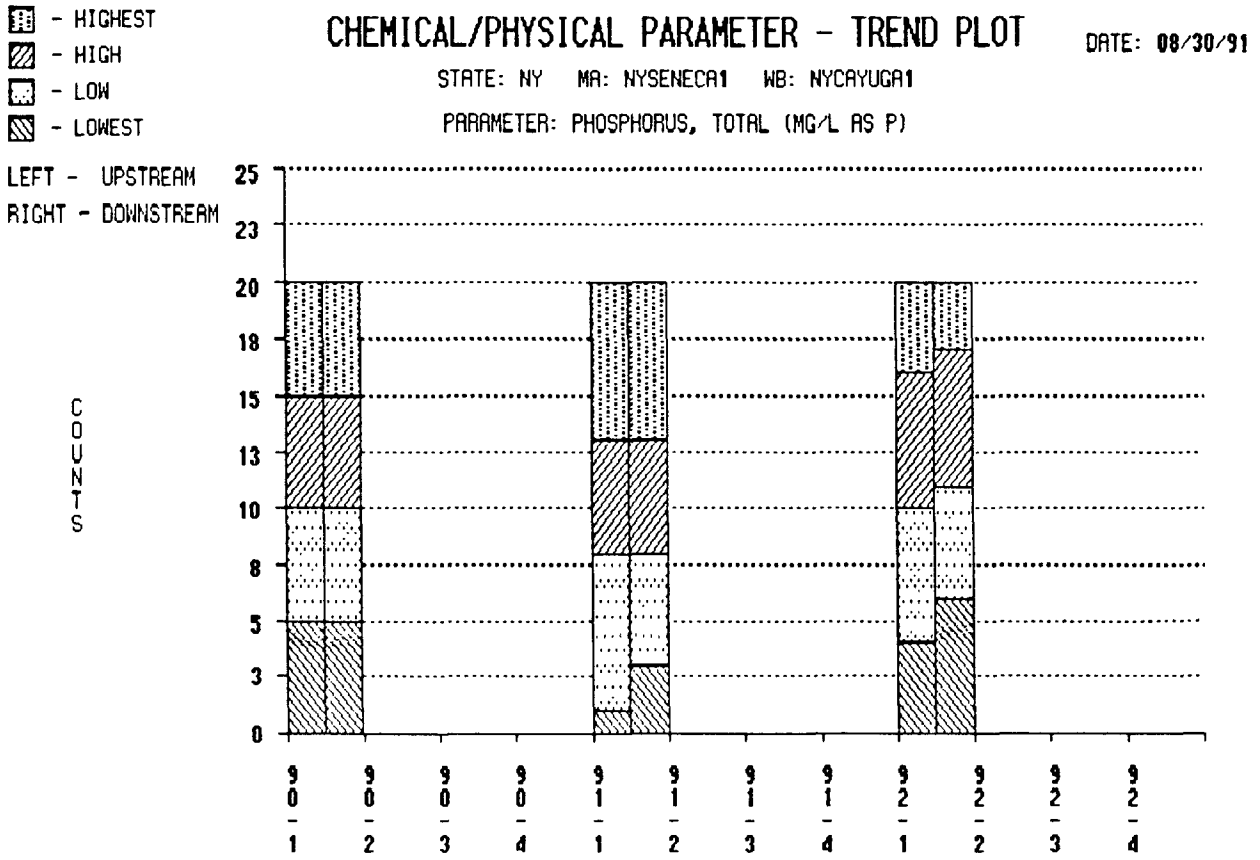
BMP Name	Source Name	BMP Pollutants NOT FOUND in Annual Report
NUTRIENT MANAGEMENT	RESIDENTIAL LAWNS	PHOSPHORUS FORMS

APPENDIX B - GRAPHIC OUTPUT SAMPLES


- BACKGROUND
- POINT
- NPS
MANAGEMENT AREA PROBLEM POLLUTANTS
STATE: NY MA: NYSENECA1 WB: NYCAYUGA1
DATE: 08/30/91
PAGE: 1
PHOSPHORUS FORMS
OXYGEN CONSUMING MATERIALS (DO PRO
0
10
20
30
40
50
60
70
80
90
100
Percentage of Contribution


+ - SEASON 1
▲ - SEASON 2
■ - SEASON 3
♦ - SEASON 4
A/R PARAMETERS - BIOLOGICAL VS HABITAT
DATE: 08/30/91
STATE: NY MA: NYSENECA1 WB: NYCAYUGA1
YEARS
-PLOTTED-
1990
1991
1992
FISH HABITAT CONDITION IN
50
45
40
35
30
25
20
15
10
5
0
0 5 10 15 20 25 30 35 40 45 50
INDEX OF BIOLOGICAL INTEGRITY


BIOLOGICAL/HABITAT PARAMETER - TREND PLOT
DATE: 08/30/91
▲ UPSTREAM STATION
♦ DOWNSTREAM STATION
STATE: NY MA: NYSENECA1 WB: NYCAYUGA1
PARAMETER: FISH HABITAT CONDITION INDEX
SCORES/
VALUES
50
45
40
35
30
25
20
15
10
5
0
YEAR/SEASON
90-1
90-2
90-3
90-4
91-1
91-2
91-3
91-4
92-1
92-2
92-3
92-4

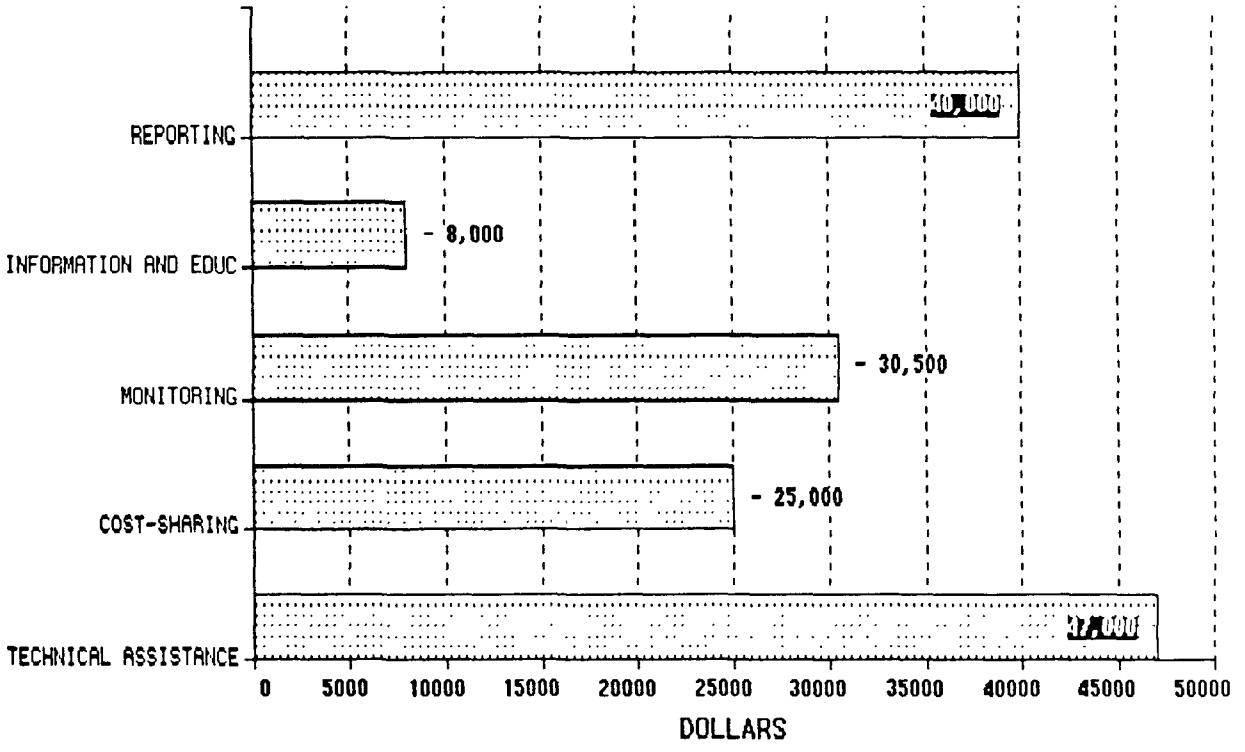

- HIGHEST
- HIGH
- LOW
- LOWEST
CHEMICAL/PHYSICAL PARAMETER - TREND PLOT
DATE: 08/30/91
STATE: NY MA: NYSENECA1 WB: NYCAYUGA1
PARAMETER: PHOSPHORUS, TOTAL (MG/L AS P)
LEFT - UPSTREAM
RIGHT - DOWNSTREAM
COUNTS
25
23
20
18
15
13
10
8
5
3
0
90-1
90-2
90-3
90-4
91-1
91-2
91-3
91-4
92-1
92-2
92-3
92-4

- TOTAL FUNDING -
$150,500

USES OF FUNDING FOR MANAGEMENT AREA

STATE: NY MA: NYSENECA1

DATE: 08/30/91
PAGE: 1



APPENDIX C - STANDARD SYSTEM TABLES

DESIGNATED USES [List 1]

USE CODE	USE NAME
WILDLIFE	Fish and Wildlife
WARM FISH	Warm Water Fishery
COLD FISH	Cold Water Fishery
SHELLFISH	Shellfish Protection
DRINKING	Domestic Water Supply
AGRICULTUR	Agriculture
IRRIGATION	Irrigation (Agriculture)
LIVESTOCK	Livestock Watering (Agriculture)
INDUSTRIAL	Industrial
RECREATION	Recreation
REC-PRIMRY	Primary Contact Recreation
REC-SECOND	Secondary Contact Recreation
REC-NONCON	Noncontact Recreation
NAVIGATION	Navigation
HIGH QUAL.	High Quality/Nondegradation
FISH CONSU	Fish Consumption
AQUA LIFE	Aquatic Life Support
SWIMMING	Swimming

PROBLEM POLLUTANTS [List 2]

POLLUTANT NAME

PESTICIDES
PRIORITY ORGANICS
METALS
AMMONIA
NITROGEN FORMS
PHOSPHORUS FORMS
ACIDITY
SEDIMENT/SILTATION
SUSPENDED SOLIDS
OXYGEN CONSUMING MATERIALS (DO PROBLEMS)
CHLORIDES
OTHER SALINITY
PATHOGENS
RADIATION
OIL AND GREASE
TASTE AND ODOR
FLOW ALTERATION
THERMAL MODIFICATION
OTHER HABITAT ALTERATIONS
OTHER
CHLORINE
NUTRIENTS
PH
SILTATION
ORGANIC ENRICHMENT/DO
SALINITY/TDS
NOXIOUS AQUATIC PLANTS
FILLING AND DRAINING
NONPRIORITY ORGANICS

RELATIVE CONTRIBUTION INFORMATION TYPES [List 3]

INFORMATION TYPE	CODE
Chemical Load Data	L
Chemical Concentration	C
Biological or Habitat	I
Modeling Data	M

BEST MANAGEMENT PRACTICES [List 4]

CLASS	CODE	BMP NAME
20	21	CONSERVATION TILLAGE
20	22	INTEGRATED PEST MANAGEMENT
20	23	ANIMAL WASTE MANAGEMENT
20	24	POROUS PAVEMENTS
20	25	ROAD/SKID TRAIL MANAGEMENT
20	26	LAND SURFACE ROUGHENING
20	27	STORMWATER MANAGEMENT
20	28	BANK STABILIZATION
20	29	RIPRAPPING
20	30	DETENTION/SEDIMENTATION BASINS/TRAPS
20	31	RUNOFF DIVERSIONS
20	32	REDESIGNED STREETS/PARKING LOTS
40		NPS CONTROLS - LAND USE ORDINANCE/REGULATION
50		STATE NPS CONTROL PROGRAM
60		STATE LAKE MANAGEMENT PROGRAM
70		EMISSION CONTROL PROGRAM

CONTROLLED SOURCES [List 5]

CLASS	SOURCE NAME
1000	AGRICULTURE
1100	NONIRRIGATED CROP PRODUCTION
1200	IRRIGATED CROP PRODUCTION
1300	SPECIALTY CROP PRODUCTION
1400	PASTURE LAND
1500	RANGE LAND
1600	FEEDLOTS - ALL TYPES
1700	AQUACULTURE
1800	ANIMAL HOLDING/MANAGMENT AREAS
1900	MANURE LAGOONS
2000	SILVICULTURE
2100	HARVESTING, RESTORATION, RESIDUE MANAGEMENT
2200	FOREST MANAGEMENT
2300	ROAD CONSTRUCTION/MAINTENANCE
3000	CONSTRUCTION
3100	HIGHWAY/ROAD/BRIDGE
3200	LAND DEVELOPMENT
4000	URBAN RUNOFF
5000	RESOURCE EXTRACTION
5100	SURFACE MINING
5200	SUBSURFACE MINING
5300	PLACER MINING
5400	DREDGE MINING
5500	PETROLEUM ACTIVITIES
5600	MILL TAILINGS
5700	MINE TAILINGS
6000	LAND DISPOSAL
6100	SLUDGE
6200	WASTEWATER
6300	LANDFILLS
6400	INDUSTRIAL LAND TREATMENT
6500	ONSITE WASTEWATER SYSTEMS
6600	HAZARDOUS WASTE
6700	SEPTAGE DISPOSAL
7000	HYDRO/HABITAT MODIFICATION
7100	CHANNELIZATION
7200	DREDGING
7300	DAM CONTRUCTION
7400	FLOW REGULATION/MODIFICATION
7500	BRIDGE CONSTRUCTION
7600	REMOVAL OF RIPARIAN VEGETATION
7700	STREAMBANK MODIFICTION/DESTABILIZATION
7800	DRAINING/FILLING OF WETLANDS
8000	OTHER
8100	ATMOSPHERIC DEPOSITION
8200	WASTE STORAGE/STORAGE TANK LEAKS
8300	HIGHWAY MAINTENANCE AND RUNOFF
8400	SPILLS

USES OF FUNDING [List 6]

FUNDING USE NAME

COST-SHARING
WATER QUALITY MONITORING
TECHNICAL ASSISTANCE
INFORMATION AND EDUCATION
ENFORCEMENT
ANALYSIS & REPORTING
RESEARCH
PLANNING
LAND TREATMENT MONITORING
MONITORING
EQUIPMENT
STAFFING

LAND USES [List 7]

LAND USE NAME

COMMERCIAL
INDUSTRIAL
RESIDENTIAL
COMMERCIAL/RESIDENTIAL
CULTIVATED CROPLAND
NON-CULTIVATED CROPLAND
PASTURELAND
RANGELAND-FEDERAL
FOREST LAND-FEDERAL
SURFACE WATER
FEDERAL LAND
STATE LAND
PAVED ROADS/HIGHWAYS
SURFACE MINES
SUBSURFACE MINES
WETLANDS
LAKES
STREAMS/RIVERS
ESTUARY
MILITARY BASES
UNPAVED ROADS/HIGHWAYS
GRASSLAND
RIPARIAN ZONE-FOREST
FOREST LAND-STATE
FOREST LAND-PRIVATE
RANGELAND-PRIVATE
RIPARIAN ZONE-WETLANDS
STATE PARK
FEDERAL PARK
MUNICIPAL PARK
SMALL LIVESTOCK OPERATIONS-DAIRY
SMALL CONFINED LIVESTOCK OPERATIONS
LARGE CONFINED LIVESTOCK OPERATIONS
DESERT
NATIVE PRAIRIE
UNMANAGED FOREST
UNMANAGED GRASSLAND

MONITORING PARAMETERS [List 8]

CODE	PARAMETER NAME	TYPE	UNITS
00425	ALKALINITY, BICARBONATE	S	MG/L
00430	ALKALINITY, CARONATE	S	MG/L
00415	ALKALINITY, PHENOLPHTHALEIN	S	MG/L
00410	ALKALINITY, TOTAL	S	MG/L
47006	BACTERIA, TOTAL PER ML PLATE CT. AGS AGAR 23C	S	
31851	BACTERIA, DENITRIFIERS, MPN PER GRAM WET WGT	S	
80087	BOD, CARBONACEOUS, 20 DAY, 20 DEG C	S	MG/L
50084	BOD, PLANT EFFLUENT, 5 DAY, 20 DEG C	S	MG/L
00303	BOD, 1 DAY, 20 DEG C	S	MG/L
00304	BOD, 2 DAY, 20 DEG C	S	MG/L
00324	BOD, 20 DAY, 20 DEG C	S	MG/L
00305	BOD, 3 DAY, 20 DEG C	S	MG/L
85001	BOD, 5 DAY	S	MG/L
00310	BOD, 5 DAY, 20 DEG C	S	MG/L
00315	BOD, 7 DAY, 20 DEG C	S	MG/L
34318	CHLOROFORM, DRY	S	
34319	CHLOROFORM, WET	S	
32106	CHLOROFORM, WHOLE WATER, UG/L	S	UG/L
71501	CONDITION INDEX, BIOLOGICAL, OYSTERS AIR WGT. TEC	S	
78501	CONDITION INDEX, ORGANIC, OYSTERS AIR WGT. TECH.	S	
31625	FECAL COLIFORM, MF, M-FC, 0.7 UM	S	
31616	FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, 44.5 C	S	
31615	FECAL COLIFORM, MPN, EC MED, 44.5 C (TUBE 31614)	S	
31614	FECAL COLOFORM, MPN, TUBE CONFIGURATION	S	
50050	FLOW, IN CONDUIT OR THRU A TREATMENT PLANT, MG	S	MGD
00057	FLOW, INDICATES IT HAS BEEN CHECKED	S	
50047	FLOW, MAXIMUM DURING 24 HOUR PERIOD, MGD	S	MGD
50048	FLOW, MINIMUM DURING 24 HOUR PERIOD, MGD	S	MGD
00061	FLOW, STREAM, INSTANTANEOUS, CFS	S	CFS
00060	FLOW, STREAM, MEAN DAILY, CFS	S	CFS
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	S	MG/L N
00610	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	S	
00625	NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	S	
00605	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	S	
00600	NITROGEN, TOTAL (MG/L AS N)	S	
71887	NITROGEN, TOTAL, AS NO3 - MG/L	S	
00400	PH (STANDARD UNITS)	S	
00403	PH, LAB, STANDARD UNITS	S	
00666	PHOSPHORUS, DISSOLVED (MG/L AS P)	S	
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)	S	
00665	PHOSPHORUS, TOTAL (MG/L AS P)	S	
70507	PHOSPHORUS, IN TOTAL ORTHOPHOSPHATE (MG/L AS P)	S	
00045	PRECIPITATION, TOTAL (INCHES PER DAY)	S	
85599	PRECIPITATION, TOTAL/PERIOD-RAIN EQUIV. CM/SAMPLE	S	
00480	SALINITY, PARTS PER THOUSAND	S	
70305	SALINITY, BASED ON CONDUCTIVITY	S	
80250	SEDIMENT, PARTICLE SIZE FRACT. < .0625MM % DRY WGT	S	
00020	TEMPERATURE, AIR (DEGREES CENTIGRADE)	S	
00021	TEMPERATURE, AIR (DEGREES FAHRENHEIT)	S	
00010	TEMPERATURE, WATER (DEGREES CENTIGRADE)	S	
00011	TEMPERATURE, WATER (DEGREES FAHRENHEIT)	S	

MONITORING PARAMETERS [List 8 (continued)]

CODE	PARAMETER NAME	TYPE	UNITS
01350	TURBIDITY (SEVERITY)	S	
00070	TURBIDITY (JACKSON CANDLE UNITS)	S	
00076	TURBIDITY, HACH TURBIDIMETER (FORMAZIN TURB UNIT)	S	
FHCI	FISH HABITAT CONDITION INDEX	B	SCORE
NYB001	INDEX OF BIOLOGICAL INTEGRITY	B	SCORE
NYH001	OTHER HABITAT ALTERATION	B	SCORE

STATE NAMES/FIPS CODES

CODE	EPA REGION	STATE
AL	4	Alabama
AK	10	Alaska
AZ	9	Arizona
AR	6	Arkansas
CA	9	California
CO	8	Colorado
CT	1	Connecticut
DE	3	Delaware
DC	3	District of Columbia
FL	4	Florida
GA	4	Georgia
HI	9	Hawaii
ID	10	Idaho
IL	5	Illinois
IN	5	Indiana
IA	7	Iowa
KS	7	Kansas
KY	4	Kentucky
LA	6	Louisiana
ME	1	Maine
MD	3	Maryland
MA	1	Massachusetts
MI	5	Michigan
MN	5	Minnesota
MS	4	Mississippi
MO	7	Missouri
MT	8	Montana
NE	7	Nebraska
NV	9	Nevada
NH	1	New Hampshire
NJ	2	New Jersey
NM	6	New Mexico
NY	2	New York
NC	4	North Carolina
ND	8	North Dakota
OH	5	Ohio
OK	6	Oklahoma
OR	10	Oregon
PA	3	Pennsylvania
RI	1	Rhode Island
SC	4	South Carolina
SD	8	South Dakota
TN	4	Tennessee
TX	6	Texas
UT	8	Utah
VT	1	Vermont
VA	3	Virginia
WA	10	Washington
WV	3	West Virginia
WI	5	Wisconsin
WY	8	Wyoming
PR	2	Puerto Rico

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