

Management/Monitoring Plan

Coquille River, Oregon

Ocean Dredged Material Disposal Site

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INTRODUCTION

Purpose and Authorization

The purpose of this plan is to establish a coordinated program for the management and monitoring of the Coquille River Ocean Dredged Material Disposal Site (ODMDS) that is publicly acceptable, environmentally sound, and economically and technically feasible from an engineering standpoint. This management/monitoring plan fully meets all criteria and factors set forth in Part 228-Criteria for the Management of Disposal Sites for Ocean Dumping (Title 40 CFR). These regulations were promulgated in accordance with criteria set forth in Sections 102 and 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 U.S.C. § 1412 and § 1413). Further, Section 506, Site Designation, of the Water Resources Development Act (WRDA) of 1992, further defined the roles, authorities, and responsibilities of the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (USEPA) by amending Section 102(c) of the Marine Protection, Research, and Sanctuaries Act (33 U.S.C. § 1412(c)).

Introduction to the Management/Monitoring Plan

The Coquille River ODMDS fully meets all criteria and factors set forth in Parts 228.5-General Criteria for the Selection of Sites and 228.6-Specific Criteria for Site Selection of Title 40 CFR, as described in the Final Environmental Impact Statement (March 1990). The 5 general and 11 specific criteria are designed to ensure selection of an acceptable disposal site with regard to minimizing interference with the marine environment. Avoidance of adverse impacts to existing fisheries and shellfisheries, or commercial and recreational navigation is to be assured through management of the ODMDS by regulating times, rates, methods of disposal, and quantities and types of materials placed at the site as well as developing and maintaining an effective monitoring program.

The primary purpose of this plan is to manage the disposal of dredged sediments and to evaluate whether the predicted impacts of that disposal on the marine environment are exceeded. This can be accomplished through trend assessment surveys and special studies. The results of the monitoring program can then be used to make decisions concerning the impact of the disposal.

This Management/Monitoring Plan will periodically be jointly reviewed by USEPA and the USACE and will be revised as necessary. The timetable for plan review shall not be greater than 10 years after adoption of the plan, and every 10 years thereafter. Meetings and agency coordination will be conducted on an ongoing basis. Data collected under the monitoring program will be compiled and maintained at USEPA, Region 10 and at the USACE, Portland District.

Section 1

Management Plan

Site Description

The Coquille River ODMDS is located approximately one mile northwest from the Coquille River entrance (Figure 1-1). A detailed description of the site and its historical use is presented in the Coquille, Oregon Dredged Material Disposal Site Designation Final Environmental Impact Statement, prepared by the U.S. Environmental Protection Agency (USEPA), Region 10 in March 1990.

The Corps recommended designation of a new ODMDS and began using it for maintenance dredging in 1989 under its Section 103 authority. It is approximately 1,500 feet north-northeast of the interim site. The Corps' analysis of the site is covered in an evaluation report drafted in October 1987. The EPA issued a final EIS in March 1990, the final rule was published in the 21 May 1990 Federal Register and final site designation was effective 20 June 1990.

Dredged material from the Coquille River was formerly placed in the EPA designated interim ODMDS. The interim site is approximately one mile from the entrance in an area of moderate traffic. Concerns arose, however, over the site's rock substrate and pinnacles as well as its biological value as a site of diverse habitat and cover.

The dredged material which is placed at the disposal site is classified as primarily sand which meets exclusionary criteria for grain size and proximity to sources of contamination, and is evaluated periodically to assure that it is suitable for unconfined in-water disposal. Rock removed during the proposed future entrance channel deepening may be placed at the interim ocean disposal site, because the material would be more compatible with the environmental conditions there than at the new site.

Coquille River ODMDS Corner Coordinates:

43 degrees 08' 26" N, 124 degrees 26' 44" W

43 degrees 08' 03" N, 124 degrees 26' 08" W

43 degrees 08' 13" N, 124 degrees 27' 00" W

43 degrees 07' 50" N, 124 degrees 26' 23" W

Dimensions: 3,500' x 1,750'; Azimuth (long axis): 312 degrees T; Average Depth: 60'

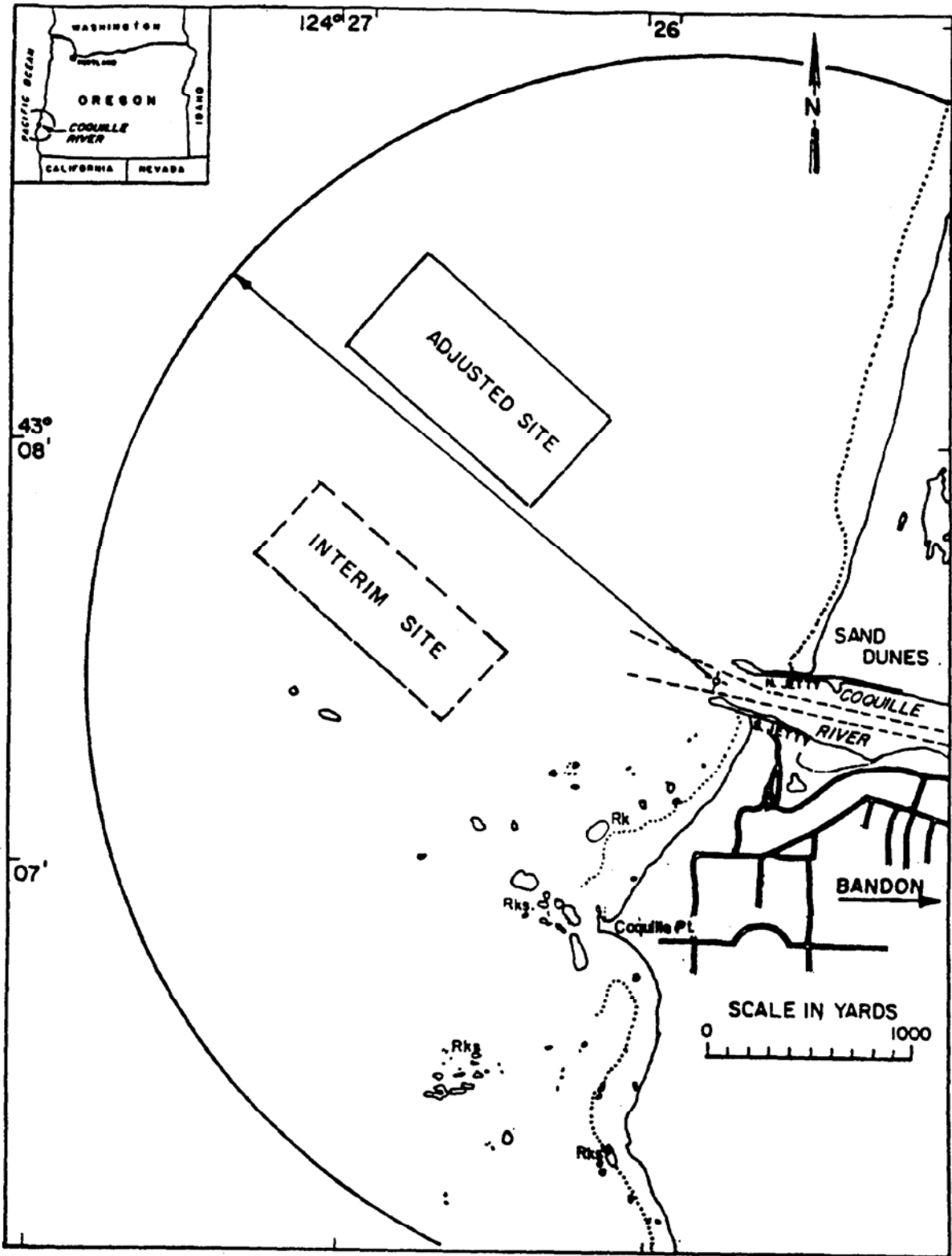


Figure 1-1: Coquille ODMDS and vicinity.

Coquille Interim ODMDS Corner Coordinates:

43 degrees 07' 54" N, 124 degrees 27' 04" W
43 degrees 07' 30" N, 124 degrees 26' 27" W
43 degrees 07' 20" N, 124 degrees 26' 40" W
43 degrees 07' 44" N, 124 degrees 27' 17" W

Dimensions: 3600' x 1400'; Azimuth (long axis): 12 degrees T; Average Depth: 60'

Site Use

The ODMDS is used to dispose of sediments dredged by the Corps to maintain the federally authorized navigation project at Coquille River. It may also be used for disposal of material dredged during other actions authorized in accordance with Section 103 of the MPRSA.

Federal Navigation Project Description

The authorized project includes a jetty 3,450 feet long north of the entrance, and a jetty 2,700 feet long south of the entrance (Figure 1-2). A channel of suitable width and 13 feet deep runs from deep water to RM 1.3. Snagging operations to clear the channel are authorized to RM 24.0. However, the Corps hasn't performed snag removal for the past several years.

The Portland District's plan to deepen the entrance channel to 18 feet for 1,200 feet has been approved. Work is scheduled to begin once the local sponsor obtains funding for their share of construction costs. Initial construction would dredge an estimated 74,000 CY. Approximately 1,500 CY of the total is estimated to be rock. Average maintenance dredging would increase by an estimated 20,000 CY each year. The sediment at Bandon is sand, with an average in-place density of 2,025 grams/liter. The material is suitable for unconfined in-water disposal. The grain size of the dredge sediments is similar to that at the ODMDS.

Project Use

Bandon serves mainly as a summer harbor due to the hazardous entrance bar. Private sport fishing and other pleasure craft have drafts of under four feet. A number of commercial fishing boats are currently based in Bandon. Marina improvements near Bandon have increased the size of the fishing fleet. The drafts of commercial fishing boats range from four to nine feet.

Normal Project Maintenance

A shoal typically forms between the ends of the jetties at the river's entrance. The shoal builds from the north jetty outward to midchannel. In some years this shoal reaches clear across the channel. A second shoal forms across the channel between RM 0.2 and 0.5. The entrance of the Coquille River is dredged by hopper dredge working intermittently from May through September.

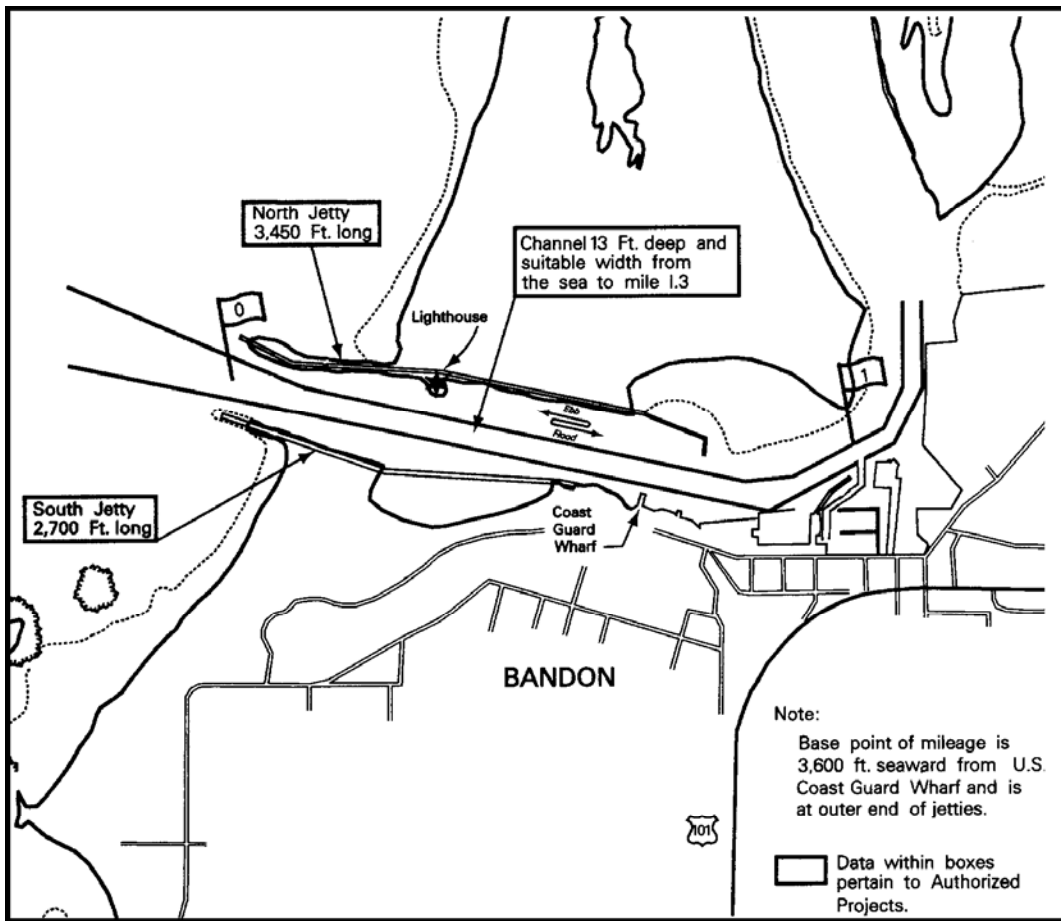


Figure 1-2: Coquille River Authorized Project

Debris Management

Debris is defined as material that could cause interference with particular uses. Floatable debris comprises material such as logs, that could cause navigation hazards or solids, such as plastic or wood chunks that could foul beaches. Non-floatable debris comprises material that could reasonably be expected to cause conflicts with bottom-net or trawl fishing. As a general rule, non-sediment material that would pass through a 24in x 24in mesh is not considered debris if it is dredged as part of the sediment matrix.

Discharge of debris at the ODMDS is prohibited unless specifically allowed. Typically the planning or permitting process assesses the potential risks of any debris that could be encountered during dredging. Dredging contractors are required to maintain a record of the handling of debris encountered during dredging and disposal. Compliance inspectors may review these records.

The USACE or USEPA may make dredging or disposal site inspections to ensure that the contractor is in compliance with the approved operating plans, and that debris is removed prior to

discharge at the ODMDS. Floatable debris must be either removed at the dredging site or picked out of the water at the disposal site. Sediments which contain debris that is not easily removed may require screening through a 24in x 24in mesh. The need for such a requirement will be assessed during the planning or permitting process. If required, the mesh must be periodically cleaned and the debris disposed of appropriately according to the dredging and disposal plan.

Disposal Site Management Goals

The Coquille River project is generally maintained by small hopper dredge. Hopper capacity of the vessels working the west coast ranges from 850 to 1,500 CY, but the dredges may not always carry a full load.

The site management goal is to disperse material in order to avoid mounding. The dredges typically release dredged material while moving slowly (one to two knots) through the disposal site. Successive loads are placed over different tracks. A precise placement (point dumping) of dredged material is possible, but it requires additional time to accurately maneuver and then hold the vessel over the target point. Point dumping is not performed at this project because the potential for concentrating the material and causing mounding would be counter to management goals. Hydrographic surveys periodically monitor bottom contours.

Management Practices

The following management practices will be followed to ensure that continued use of the Coquille River ODMDS does not result in unacceptable adverse impacts to the environment or human safety:

1. Dredged material will be spread within the disposal site in a manner to avoid mounding and minimize depth of coverage over any given area. This will continue to be accomplished by directing dredge crews to place material in a dispersive manner within the disposal site.
2. Nonfloatable debris must be removed from dredged material at the point of dredging. Floatable debris must be removed either at the point of dredging or from the water.
3. Monitoring will be performed as outlined in Section 2 of this plan, to verify that continued use of the site does not have unacceptable impacts.
4. If monitoring indicates that mounding is occurring at the site, sediment placement practices will be modified to ensure material is dispersed within the site. This may be accomplished by partitioning the site and providing specific placement instructions to enforce distribution throughout the site.
5. If monitoring indicates that disposal is potentially altering the substrate or bottom habitat, management practices will be considered to more effectively and selectively place dredged material.

6. Sediments from the Federal navigation channel will continue to be evaluated regularly, generally every 5 years, to ensure that they are still acceptable for ocean disposal following established testing protocols.

7. Any other dredged material (sediments) proposed for placement in the site will be permitted and/or evaluated for suitability as required under Section 103 of the Marine Protection, Research and Sanctuaries Act, including testing, if necessary.

8. As co-managers, the USACE, Portland District, and USEPA, Region 10, will continue to work together closely to monitor and manage use of the Coquille River ODMDS.

SECTION 2

MONITORING PLAN

Background and Objectives

The general objective of this plan is to monitor those aspects of the ODMDS where a potential exists for unacceptable adverse environmental or navigational safety impacts. Monitoring also can bring to light any unexpected impacts, whether beneficial or adverse. Monitoring activities gather information to determine if there is a need to revise dredged material management options and actions. Monitoring of dredged material disposal sites should not be viewed as an isolated activity but as one of several interacting components of an overall dredged material management framework, which includes, but is not limited to:

- site designation,
- project evaluation,
- regulatory permitting,
- compliance, and
- enforcement.

The goal of site designation, project evaluation, regulatory permitting, compliance, and enforcement is to minimize the least potential for adverse environmental effects, thus minimizing monitoring requirements.

Previously, monitoring of ocean disposal and other human activities has usually involved time-series measurements of various physical, chemical, and biological parameters. The goal is to discern whether the data gathered showed any change in the site characteristics, and, whether those changes could be attributed to the human disturbance at the site. Critiques of such studies (Boesch 1984, Fredette et al. 1986, Segar and Stamman 1986) list the following deficiencies:

- Weak or ineffective designs for sampling and statistical analysis
- Difficulties in relating observed changes to specific causes, particularly difficulties in separating anthropogenic impacts from natural variability
- Difficulties in determining whether the observed changes constitute unacceptable impacts on resources, resource use, or the ecosystem
- Failure to assess the spatial and temporal scale of any potential effects
- Difficulties encountered by regulators in relating study results to existing regulations and to courses of actions.

In response to such deficiencies, many investigators and agencies have called for a tiered approach (Fredette et al. 1986, Fredette et al. 1990, Segar and Stamman 1986, Zeller and Wastler 1986).

Tiered Monitoring Approach

In a tiered monitoring approach, simple techniques for monitoring of physical characteristics occupies the lowest tier while more complex chemical monitoring techniques occupy higher tiers (Zeller and Wastler 1986). Biological effects testing of oceanic processes occupies only the highest tier. Work at the higher tiers is undertaken only when the need is demonstrated by the results of monitoring techniques at the lower tier. Thus, only the level of monitoring needed to address specific management decisions is undertaken. Each monitoring plan addresses the specific or unique aspects of a particular site and contains triggers, unacceptable impacts and indications for additional testing depending on the management needs (Zeller and Wastler 1986).

In an ideal tiered approach (Fredette et al. 1986, Fredette et al. 1990, Segar and Stamman 1986), the following elements would govern the decision-making process:

- General objectives
- Specific monitoring objectives
- For each specific objective, a prespecified level of unacceptable impact
- For each specific objective, a null hypothesis to be tested by monitoring activities
- Decision rules or triggers for deciding whether to move to another tier or to employ corrective or remedial action.

Most authors examining the effectiveness of monitoring programs urge that clear, attainable goals be defined at the outset (Fredette et al. 1986, Fredette et al. 1990, Segar and Stamman 1986). According to Segar and Stamman (1986), the broad objectives of most monitoring plans are much the same:

- To ensure that there is no threat to human health
- To ensure that no unacceptable harm to the ecosystem or resources occurs
- To ensure conditions that will lead to an unacceptable impact are not developing
- To make informed management decisions.

The specific management objectives vary from site to site depending upon the materials for disposal, the site characteristics, and the resources of concern in the general area. Instead of directly monitoring the resource of concern, other parameters that indicate the likelihood of an impact on the resource and that can be measured more easily or in advance of a more developed impact, are often the more appropriate monitoring parameters (Fredette et al. 1990, Segar and Stamman 1986).

In the tiered approach, the decision rules indicating the need for further testing or remedial action are to be defined in advance (Fredette et al. 1986, Fredette et al. 1990, Segar and Stamman 1986). Specifying the decision rule alone is not enough. One should also specify potential actions to be taken for the specific outcomes of applying the decision rule to the monitoring results. In establishing tiers and triggers, concern for a resource is not sufficient, quantitative changes in the resource or other variable that indicate an unacceptable impact are to be predefined and must be testable.

Figure 2-1 shows a generalized, tiered monitoring plan for a disposal site.

- Tier 1

Focus is on determining the physical behavior of the disposed material; generally by bathymetric survey and periodic sediment characterization to determine whether the deposited material is behaving as expected

- Tier 2

Can include more intensive physical or sediment monitoring (limited chemistry and/or minimal biological monitoring) with the extent of each component determined by the outcome of the Tier I activities.

- Tiers 3 and 4

Include intensive studies directed at specific problems.

An evaluation of the monitoring data takes place between each tier to determine whether there is any need for change, or whether more data, the next tier, will be required before determining a need for change.

Potential options concerning the disposal operations include the following:

▪ No change

no change required

monitoring reveals no cause for concern; disposal and monitoring continue as planned

no change possible

e.g. one-time use, thereby eliminating the possibility for subsequent change in disposal operations.

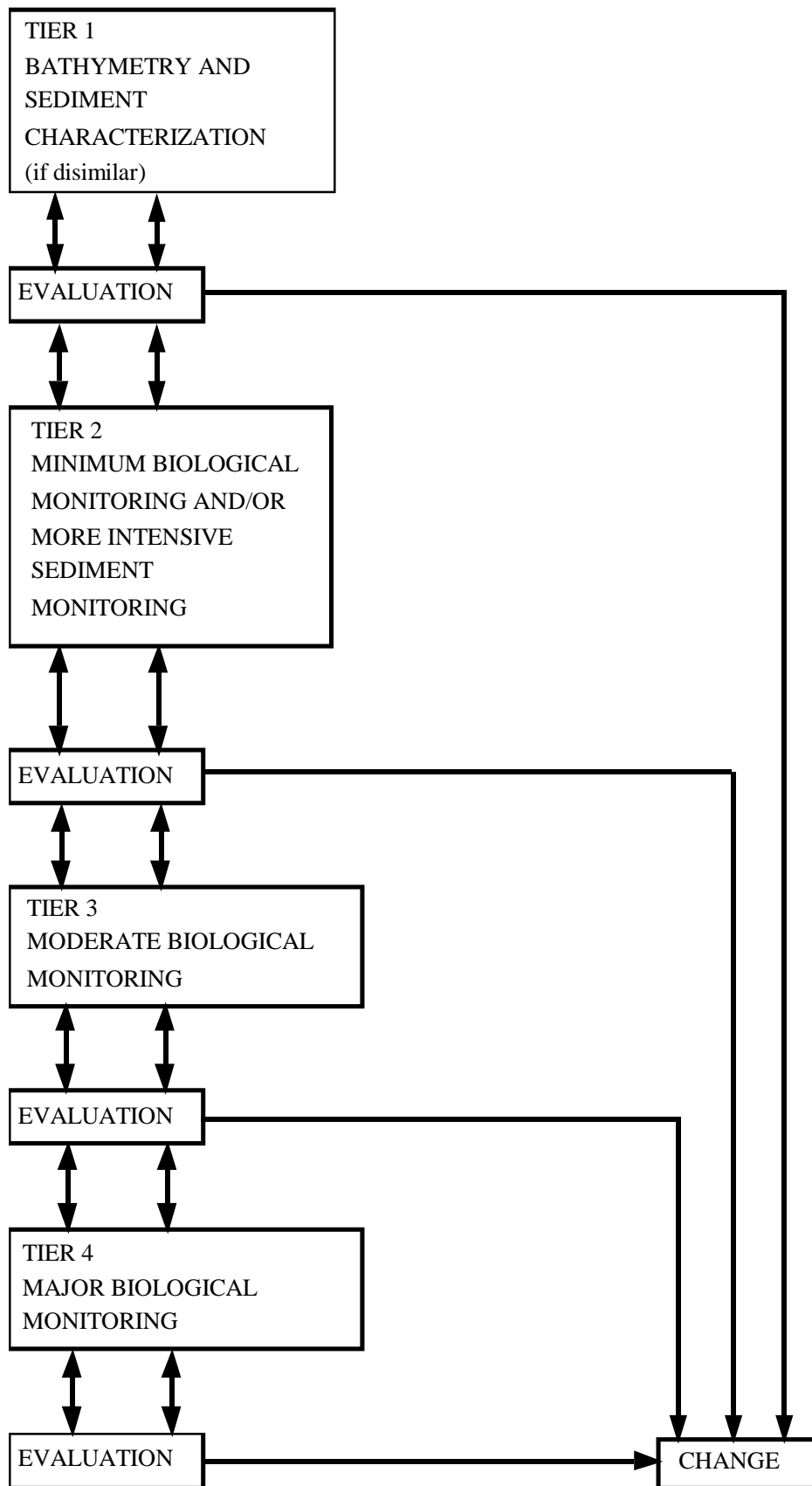


Figure 2-1: Generalized, Tiered Approach to Monitoring ODMDSs

- Operational change required
 - Scheduling
 - adjust the schedule (time periods or rates) of the disposal to avoid a temporary situation
 - Placement of material within the site
 - place the material in a different portion of the site than originally planned
 - Restrict type or quantity of material placed
- Change in site location
 - Where the impacts are found to be unavoidable and unacceptable over a large area or long time, a change in site location may be considered.
- Discontinue disposal at site
 - Cessation of disposal if unavoidable and unacceptable conditions occur or persist at a site.

Monitoring Plan for the Coquille River ODMDS

Overview

The general objectives of the monitoring plan for the Coquille ODMDS are first, to assure public safety, secondly, to verify that no harm occurs to resources, resource use, or the ecosystem beyond the site boundaries and, finally, to provide specific information to support informed decisions about managing the site and the disposal operations.

The material from the entrance to the Coquille River and boat basin are periodically tested and presently meet ocean disposal requirements; therefore, threats to human health are not expected as a result of disposal of dredged materials from Coquille River. The specific objectives of monitoring are discussed below in the context of the monitoring tiers and outlined in Table 2-1.

Specific Objectives

Ensure that the dredged material is behaving as predicted and that dredged material disperses quickly and does not form a mound.

Ensure that patterns of adjacent benthic infaunal populations remain as expected.

Assess the significance of potential impacts of disposal operations on the public safety and resources or resource use.

TABLE 2-1. Tiered Monitoring Plan for the Coquille River ODMDS

Monitoring Level	Monitoring Approach	Action Trigger	Management
Tier 1	Annual bathymetric survey in and adjacent to the disposal site	Depth contours appear to have increased by greater than 5 feet over 50% of the site within 2 years	USACE/USEPA joint decision on further course of action
Tier 1A	Sidescan sonar Precision bathymetry	(1) The physical changes are significant and permanent. (2) The deposited material has significantly altered the physical character of the site. (3) Mounding will exceed the -50 ft (MLLW) contour. (4) Mounding has affected the wave climate at the site.	USACE/USEPA joint decision on further course of action
Tier 2	Demersal trawls Benthic infaunal sampling Chemical characterization of disposal site every 5 years	Dredged material disposal has resulted in changes/stress to adjacent benthic community. Benthic infauna and fish/invertebrate populations have decreased beyond levels of natural variations or nuisance species have been introduced Presence of any chemical of concern in concentrations over accepted threshold level	USACE/USEPA joint decision on further course of action
Tier 2A	shorter interval/narrower spectrum characterization		USACE/USEPA joint decision on further course of action
Tier 3	Bioassay		USACE/USEPA joint decision on further course of action

Predictions

Site is anticipated to be dispersive. Dredged material will naturally disperse such that unacceptable mounding will not occur. Material will be placed in a dispersive manner as a part of standard operation procedures.

Unacceptable mounding can be avoided through proper dredge disposal management.

Dredged material is similar to existing substrate. No significant impact to the habitat anticipated.

Area outside the ODMDS will not be adversely affected by the disposal events.

Evaluation Questions

What is the distribution pattern of the dredged material? Is the material behaving as anticipated?

Can the dredged material be identified as different from the existing substrate?

Is mounding occurring? To what extent?

How have the depth contours been affected?

Do the depth contours change over time?

Is erosion occurring? At what rate?

Has the character of the site been significantly altered so as to cause alteration of adjoining habitat?

Coordinated Management of Site

The USACE and USEPA will coordinate decisions and exchange information regarding environmental impacts at the site, or changes in management strategy with the appropriate state and Federal agencies, as well as with other interested parties. Decisions to increase the spacing between the dumping positions, or to shift disposal operations to other portions of the site will be part of the coordinated management strategy.

If Tier 1 monitoring indicates a potential problem which cannot be readily corrected by management practices, Tier 2 monitoring will be employed. If Tier 2 indicates a problem, or a previously unidentified concern is established, a coordinated Tier 3 plan for specific studies will be developed which focuses on the identified concerns.

Monitoring Data

Bathymetric surveys (Tier 1) are scheduled annually. Subsequent bathymetric surveys will show cumulative changes using 1992 surveys as a baseline (Figure 2-2).

Data from the monitoring program will be compiled yearly and submitted to USEPA/Sediment Management Coordinator. These findings will be evaluated and coordinated recommendations will be made concerning the need for management changes.

SECTION 3

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