

Chapter 8

Spills/Dumping

Priority Problem

Bay habitats and living resources are impacted by spills of toxic and hazardous materials during storage, handling and transport. The cause of spills are generally evident. Spills may be caused by: tanker collisions, rammings, groundings, and sinkings; human error during transfer operations; and natural catastrophes such as hurricanes, tornadoes or flooding. Several factors must be considered to evaluate the effects of oil spills on the bay. The volume of material released is an important factor in evaluation of potential effect. However, even small amounts of highly toxic materials can have significant impacts. Oil spill response records maintained by the U.S. Coast Guard indicate that, on average, there are two small spills daily of toxic contaminants. Oil alone accounted for over a quarter of a million gallons in 1989. There is usually no cleanup action involved.

Waterborne trash such as cans, bottles, ropes, packing materials, plastic materials (including pellets and post-consumer) or medical wastes are pollutants classified as bay debris. Sources of these types of pollution are 1) materials dumped into rivers or offshore that becomes trapped in the bay, 2) debris from stormwater discharges, and 3) spillage from loading docks. Debris in and around the bay degrades the aesthetics, may cause harm to wildlife, and can cause damage to boats or water intakes. (Morgan and Lee, 1993)

Management Goals and Objectives

Three priority management goals were set forward in The Plan to address the problems identified as part of the characterization phase of the program. These goals are:

- To obtain compensation for environmental injuries,
- To reduce the impact from spills on the natural environment, and
- To eliminate water-borne debris.

To reach these goals the following objectives and action items were identified as steps to help achieve the stated goals. These objectives are:

Objective 1	Support trustee actions to obtain compensation for environmental injuries and ensure that restoration funds are used effectively to benefit the Galveston Bay ecosystem to the maximum extent possible under existing statues and regulations.
Action SD-1	Promote planning to facilitate natural resource damage assessments.
Action SD-2	Identify simplified damage assessment procedures for small oil spills.
Action SD-3	Facilitate effective restoration of Galveston Bay's natural resources injured by spills.
Objective 2	Improve advance planning measures and on-the-ground readiness.
Action SD-4	Facilitate spill cleanup by advance shoreline characterization.
Objective 3	Reduce the amount of shoreline and water-borne debris by half within 5 years.
Action SD-5	Improve trash management near the shoreline.
Action SD-6	Remove trash from stormwater discharges.
Objective 4	Decrease illegal dumping by half within 5 years.
Action SD-7	Publicize environmental harm caused by illegal dumping.

Data Information Needs

The goal of Objective 1 is to improve the mechanisms for obtaining compensation for environmental injury and mitigation of the environmental impacts to habitat and living resources caused by spills in the Bay. Three actions are favored to obtain the maximum benefits available for environmental restoration from the environmental damage assessment process. These actions support pre-spill planning for facilitating initiation of damage assessments, the streamlining of the damage assessment process, and the identification of bay-wide restoration needs.

Objective 2 supports the improvement of advance planning for spill incidents. This is achieved through support for major ongoing developments in spill contingency planning and response preparedness.

Information to assess the achievement of these plan action objectives will be largely programmatic in nature. The primary monitoring programs for habitat, living resources, bay circulation, and water chemistry will provide baseline information on conditions within the bay and will provide information on critical habitats and resources endangered by spills. Supportive environmental monitoring information related to this plan action are:

- Status and trends in areal extent, distribution and quality of existing habitats of concern,
- Status and trends in abundance and distribution of living resources in the Bay,
- Fish and shellfish tissue monitoring for toxics,
- Status and trends, in terms of areal distribution, of water and sediment quality indicators,
- Information on bay circulation and currents.

Each of the monitoring elements which can provide the stated information have detailed descriptions elsewhere in this document. This information can provide baseline information on conditions prior to spill events. These monitoring elements do not however, directly measure the effectiveness of the plan objectives. These objectives are directed at implementation of damage assessment procedures and procedures for implementation of cleanup activities. Development of such procedures will be tracked through programmatic monitoring actions.

Objectives 3 and 4 are directed at achieving reductions in water-borne debris and illegal dumping activities. Informational needs to assess these objectives include:

- Data on the occurrence, magnitude, and distribution, of water-borne debris,
- Information on the occurrence of illegal dumping of trash into the Bay.

Collection of monitoring data to address these data needs is discussed in the environmental monitoring section of this chapter.

Programmatic Monitoring

For this action plan, programmatic monitoring more directly monitors plan objectives than does environmental monitoring. Measures for assessing the effect of Objectives 1 through 4 include:

- Monitoring for adoption of pre-spill planning including, administrative and procedural methods to facilitate timely damage assessments,
- Monitoring for development of simplified damage assessment compensation tables to effect efficient and effective recoveries of damages,
- Bay-wide baseline information on pre-release environmental conditions,
- Monitor to evaluate the presence of adequate waste receptacles at bay marinas, boat ramps, parks, and other public areas, and
- Survey local governments for implementation of measures to remove floating trash and debris from stormwater discharges.

Environmental Monitoring

Data sets made available through the GBRMP monitoring elements for habitat, species and water quality will be integrated geographically. This will be accomplished through GIS technology to provide baseline environmental assessment information, this will be used in advance shoreline characterization,

and habitat restoration needs. Each of these programs is discussed in detail in their respective chapters.

Environmental information on debris reduction will be obtained through sponsorship of new debris studies similar to the Galveston Bay debris characterization study (Morgan and Lee, 1993). The objective of this study was to characterize the occurrence, magnitude, distribution and identity of possible sources of debris in the Galveston Bay Estuary. The Galveston Bay Program will be responsible for implementing the survey every three years and will report its findings in the biennial State of the Bay Symposia.