

# Chapter 9

## Shoreline Management

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### **Priority Problem**

Galveston Bay shares many problems with other estuaries of a similar stature chiefly in the rapidly escalating demands placed upon its resources because of an expanding population and associated development. Human use and development activities can produce unintended results, such as habitat alteration and destruction, eutrophication, pollution, loss of biodiversity, and extinction of species.

Galveston Bay system is also shaped by human processes as the bay is a resource utilized by many people. People are drawn to the bay area to enjoy the benefits of waterfront living, and access to exploitable natural resources such as fish and wildlife; oil gas and other minerals; industrial activities and agriculture. Human activities can upset the natural balance of the shoreline ecosystem and often inhibit or prohibit natural recuperative abilities of the shoreline.

Continued development of the shoreline contributes to shore erosion, loss of wetlands, increased point and non-point source pollution, and reduced public access to the shore. Shoreline management practices frequently fail to balance the need for public access to bay resources with environmentally compatible development. Specific negative environmental consequences resulting from use of the bay shoreline include: 1) human-induced erosion; 2) water usage, point source, and non-point source impacts; 3) increased water-borne debris; 4) increased heavy metals, fecal coliforms, nutrients, toxic organics, and decreased dissolved oxygen concentrations; and 5) loss of wetlands.

## Management Goals and Objectives

Major goals proposed by *The Plan* for shoreline management include the following:

- Reduce negative environmental consequences to the bay, and
- Increase environmentally compatible public access to bay resources.

To accomplish these goals the Shoreline management Task Force developed the following action plan objectives.

Objective 1	Adopt a coordinated ecosystem approach to plan and permit shoreline development by 1996.
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Action SM-1	Establish a planning program for shoreline development.
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Action SM-2	Identify appropriate residential shoreline development guidelines.
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Action SM-3	Identify appropriate commercial and industrial shoreline development guidelines.
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Action SM-4	Minimize negative effects of structures and dredging on publicly owned lands.
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Objective 2	Increase recreational opportunities and access to the bay by providing facilities such as parks, boat ramps, piers, trails, etc., that do not damage the bay.
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Action SM-5	Improve access to publicly owned shorelines.
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## Data Information Needs

Many impacts to the environment related to shoreline issues are non-point in nature. As such these outcomes are better measured in terms of implementation rather than measurable environmental outcomes. We do recognize that maintenance or improvement in environmental water quality in terms of wetland area and quality, water and sediment quality, and to a lesser extent species populations, can be considered to be an indirect monitoring of the effectiveness of all plan actions.

Three actions, SM-1, 2, and 3, are recommended to establish plans and guidelines that address the environmental impacts of shoreline development activities. Specific negative environmental consequences resulting from bay shoreline use are: 1) human-induced erosion; 2) water usage, point source, and non-point source impacts; 3) increased water-borne debris; 4) increased heavy metals, fecal coliforms, nutrients, toxic organics, and decreased dissolved oxygen concentrations and 5) loss of wetlands. Monitoring for accomplishment of these actions will be both programmatic and environmental in nature. The water quality element of the regional monitoring program can provide some information on trends for parameters listed above. The regional monitoring program is not however, designed to provide information of the type needed to assess site-specific problems.

Action SM-4 is directed at reducing environmental effects of manmade structures that may alter bay circulation, impair existing habitat, threaten water quality and

degrade aesthetics. Bulkheads, docks, pipelines, barges, abandoned petroleum structures and other manmade shoreline fabrications are included among such structures. Monitoring for this action will be primarily programmatic in nature.

### **Programmatic Monitoring**

Accomplishments for action items SM-1 through 3 can be monitored through assessments of local authorities for development and implementation of local development regulations consistent with the CMP and *The Plan*. Surveys would include information on residential (SM-1) and commercial and industrial guidelines (SM-3) for shoreline development.

An inventory and removal priority will be assigned to all derelict structures on state-owned lands. Priority will be based on aesthetics, submerged habitat value, threat to shorelines, habitats, water quality, or safety. Many of the actions address reducing the potential for impact. It will be difficult to environmentally assess the effects of such actions. Documentation of actions taken will serve as a level of success of this action. Future periodic surveys for derelict structures can be conducted to assess the effectiveness of this objective.

Shoreline Management Action SM-5 is directed at improving access to bay shoreline for ecologically protective recreational activities. Accounting for increased access will be a programmatic function. The Galveston Bay Program will inventory and map existing access points and will monitor improvements in capacity and increases in access to bay recreational facilities over time.

### **Environmental Monitoring**

The core environmental monitoring programs habitat, species, and water quality will provide information concerning areas with environmental concerns. These areas can be compared to the GLO inventory of derelict structures (SM-4) for potential links to environmental impacts. Continued monitoring will record any improvements, if any as a result of structure removals. Fecal coliform is an example of a key indicator which may be used to evaluate reductions in raw sewage discharges from cabins & houseboats. Monitoring for such localized effects will not be possible through the proposed ambient monitoring program. A monitoring program to document environmental impacts at such local levels can be developed. Additional monitoring stations can be implemented to achieve this but additional information such as location of enforcement activities must be established before this can be done.

The habitat identification element of the monitoring program will also provide important information for documenting and tracking shoreline land use trends (SM-1). Information on land use change will be assessed on a 3-year basis. This information can provide valuable information on shoreline modifications on a large scale. Additional information concerning this program element can be found in Chapter 4 - Habitat Protection.

