
III. IDENTIFICATION AND RANKING OF PRIORITY PROBLEMS

Recognition of critical problems in Galveston Bay is the basis for formulating both general and specific management goals. The recognition of and ranking of these problems is an on-going process that is only complete when results of the scientific/technical work are available. However, a working list of ranked problems is necessary from the program's inception, in order to effectively guide the work.

The GBNEP has already completed a draft Priority Problems List (Table 2). Development of this list was greatly helped by two related conferences that brought together numerous scientists and others to discuss Galveston Bay and its problems. The first of these was an "Estuary of the Month Seminar" presented in Washington, D.C. hosted by the National Oceanic and Atmospheric Administration, on March 14, 1988. The second was a similar public seminar sponsored by the Coastal Society, the Texas Environmental Coalition, and the Galveston Bay Foundation on July 23, 1988 in Houston.

Speakers at these two seminars included many of the scientists and technical people most familiar with Galveston Bay, many of whom are now on various committees of the Management Conference. From these meetings a list of identified problems was compiled, was approved by the GBNEP Policy Committee on February 3, 1989, and was transmitted to EPA Region VI on February 13, 1989.

This work will specifically address OMEP guidance element number 1, development of a Priority Problems List. The following program components describe work to be completed:

- o Compile draft Priority Problems List based on previous work concerning Galveston Bay, summarized in Galveston Bay: Issues, Resources, Status and Management (NOAA Estuary-of-the-Month Seminar Series No. 13), and based on the Governor's Supplemental Nomination of Galveston Bay as an Estuary of National Significance. (completed)
- o Submit draft Priority Problems List for review by Management Committee, and approval by Policy Committee as a working list for public and scientific/technical review and ranking of problems. (completed)
- o Revise Priority Problems List based on review by the public, CAC and S/TAC, and rank problems utilizing the suggested criteria below. An affirmative response for each criterion would tend to confer higher significance, and additional criteria may be included as necessary.
 - Is the problem real (vs. perceived)?
 - Does the problem have a general (systematic) influence on the estuary (or if not, is it serious enough to warrant inclusion anyway?)

- Does the problem affect public health?
 - Can the probable cause of the problem be identified?
 - Is it feasible to correct the problem?
 - Is a reasonable research effort/expenditure sufficient to develop management activities to correct the problem?
 - Is the problem of great concern to public, private, and governmental parties involved?
- o Submit ranked Priority Problems List for recommendation by Management Committee and approval by Policy Committee and distribute list to the public and EPA Region VI and OMEP as a basis for work during the characterization phase of the Program.
 - o Re-evaluate Priority Problems List as necessary during the characterization phase of program, as new information becomes available, so that final management recommendations reflect the best possible knowledge of critical estuary problems.

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TABLE 2

PRIORITY PROBLEMS LIST

Approved by Policy Committee
February 3, 1989

<u>Problem Areas</u>	<u>Potential Causes</u>	<u>Possible Effects</u>	<u>Suggested Actions</u>
o Water quality deterioration	Increased wastewater loading Nonpoint source impacts Toxic sediment resuspension Salinity concentration changes	Fishery declines Shellfish bed closures Eutrophication Changes in designated uses	Identify noncompliant point source dischargers; effect compliance Investigate nonpoint source mitigation through use of BMPs in segments identified in NPS Assessment Report Examine existing pretreatment programs Determine freshwater inflow needs of estuary
o Freshwater inflow reduction	Reservoir construction in watershed Water consumption increases	Reduction in species diversity Increase in undesirable species Wetlands loss	Complete/refine studies on freshwater inflow requirements Implement freshwater releases in accordance with estuary needs
o Pathogenic impacts	Increased wastewater loading Improper sludge handling practices Septic tank problems Sewer line overflows/bypasses	Shellfish bed closures Changes in contact recreational uses Public health impacts	Adjust wastewater discharge permit parameters as necessary Identify and correct noncompliant point source discharges Identify and correct sewer line bypasses, overflows and septic tank malfunctions
o Toxic impacts	Dredge spoil disposal Wastewater loading Hazardous waste site runoff Nonpoint source impacts	Fishery declines Changes in species diversity Shellfish bed closures	Evaluate alternative spoil disposal methods/beneficial uses of spoil Evaluate current pretreatment program effectiveness Identify/implement appropriate nonpoint source BMPs
o Wetlands loss	Freshwater inflow reduction Subsidence Bay water level increases Urban expansion Dredge spoil disposal	Living resource declines Water quality deterioration Shoreline erosion increases	Implement/recommend freshwater releases Evaluate ongoing subsidence control programs Evaluate wetlands creation/restoration techniques including beneficial uses of spoil
o Shellfish loss	Salinity concentration changes Dredge spoil disposal Increased wastewater loading Nonpoint source impacts Freshwater inflow reduction	Negative economic impacts Reduction in species diversity	Insure adequate freshwater releases Examine alternative spoil disposal methods/beneficial uses of spoil Identify/implement nonpoint source mitigation measures Insure point source discharge compliance

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TABLE 2 (Continued)

<u>Problem Areas</u>	<u>Potential Causes</u>	<u>Possible Effects</u>	<u>Suggested Actions</u>
o Habitat reduction	Subsidence/Erosion Freshwater inflow reduction Dredge spoil disposal Energy resource extraction Urban expansion	Living resource declines Reduction in species diversity Negative economic impacts	Evaluate ongoing subsidence control programs Insure adequate freshwater inflow to estuary Examine alternative spoil disposal methods/beneficial uses of spoil Insure compliance with energy development license/permit requirements
o Eutrophication	Wastewater loading Nonpoint source loading In-situ regeneration of nutrients Interactive processes	Habitat loss Water quality deterioration Reduction in species diversity	Insure point source discharge permit compliance Implement recommended nonpoint source mitigation measures Examine feasibility of nutrient budget model for estuary
o Living resource reductions	Bacterial contamination Toxic material impacts Freshwater inflow reduction Habitat loss Salinity concentration changes Energy resource extraction	Negative economic impacts Reduction in species diversity	Point source discharge permit/pretreatment program compliance Investigate wetlands creation/restoration techniques including beneficial uses of spoil Insure adequate freshwater releases Insure energy extraction license/permit compliance
o Modification of circulation patterns	Alteration in freshwater inflow Channelization activities Placement of fill material or artificial reefs Subsidence/Erosion	Water quality deterioration Habitat loss Reduction in living resources Negative economic impacts	Develop a hydrodynamic model for the Bay Develop mitigation strategies