

Habitat Management

The Planning Process for Management of Christmas Bay and Armand Bayou Coastal Preserves

*J. Rollin MacRae, Robert W. Spain, and William J. Sheffield
Texas Parks and Wildlife Department
Resource Protection Division*

When Galveston Bay was approved in 1988 as one of the initial National Estuary Programs, an early essential requirement was the selection of an "Action Demonstration Project" to establish the feasibility of approaches to estuarine problem solving. The Project selected was the establishment of Texas Coastal Preserves in two unique components of the Galveston Bay system: Christmas Bay and Armand Bayou (Figure 1). The Texas Coastal Preserve Program was a pre-existing, albeit young, effort of the Texas General Land Office and Texas Parks and Wildlife Department to better protect sensitive coastal areas by improved planning and interagency cooperation. Two areas had already progressed through the study and management plan phases, and the approach used appeared applicable to the Galveston Bay system, with Armand Bayou and Christmas Bay as the test cases.

The initial step was to justify the areas nominated. Did they have appropriate qualities of sensitivity, uniqueness, and importance to become components of the system? The two areas exhibited striking differences in function, degree of previous impact, and interaction with Galveston Bay, but each, on its own characteristics, justified inclusion in the Coastal Preserve Program. Management planning commenced.

Coastal Preserve management planning had already evolved to meet specific problems. While many regional studies and planning efforts preceded the program, detailed baseline information on the resources and functions of areas nominated were invariably deficient to support direct management initiatives. The locations of the preserves are, by nature, downstream, downslope, and surrounded by other land interests. Further, the areas would include numerous overlapping (possibly conflicting) interests and jurisdictions. Intensive review of available information on each area was needed. This effort would also yield a list of resource problems in need of management approaches, as well as identifying vulnerable functions within the systems. Suggested approaches to problems and functional conservation could then be devised.

Similarly, and perhaps simultaneously, a survey of regulations, regulatory entities, and other potential cooperators was completed as an adjunct to the environmental baseline and problems review. Combining these two studies indicated logical approaches and participants in cooperative management.

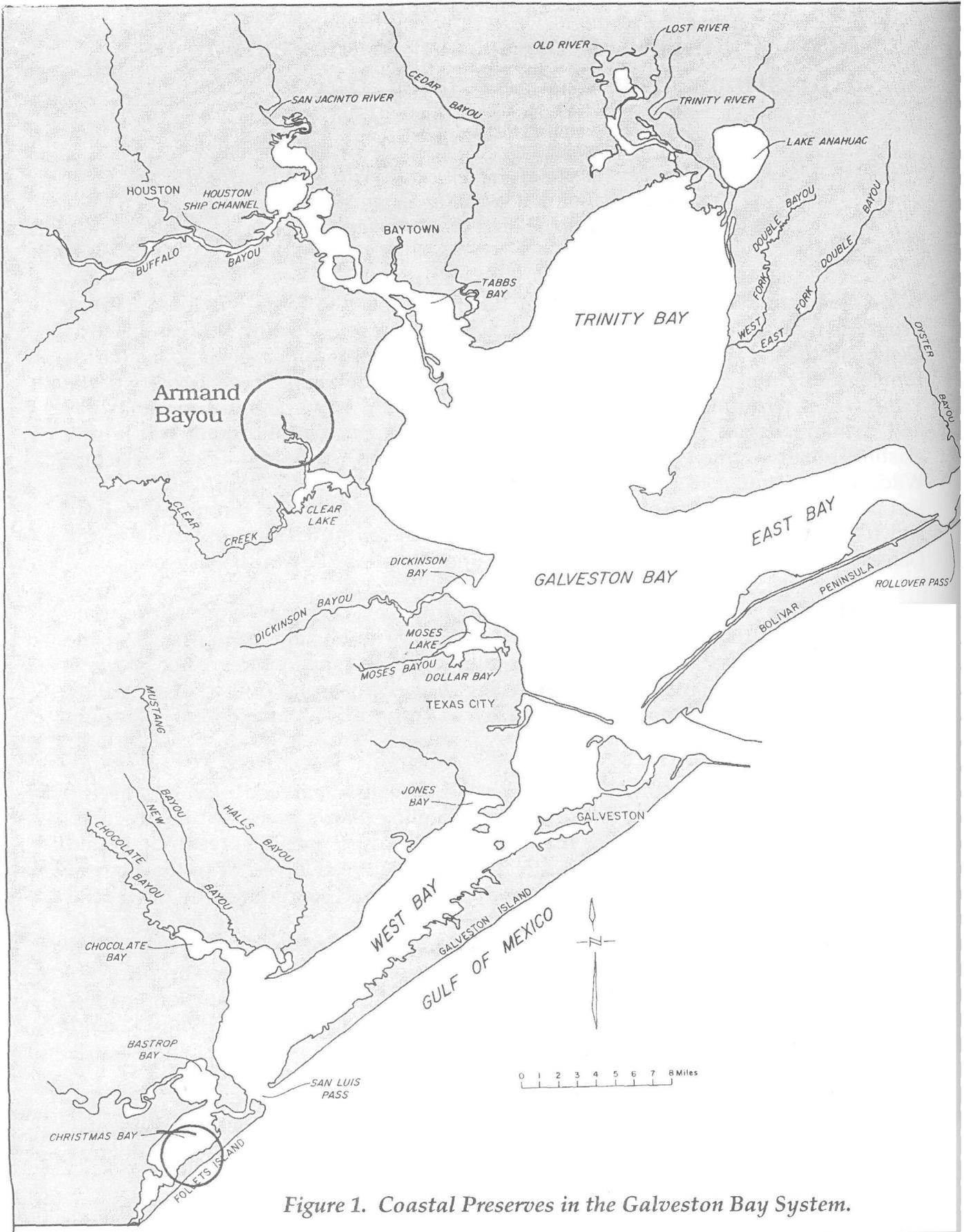


Figure 1. Coastal Preserves in the Galveston Bay System.

With the two baseline documents completed, a series of workshops was convened with invited agencies and experts to address the identified issues and problems. These efforts expanded the planning information base, and developed specific management recommendations to address the problems. Necessary areas of interagency cooperation and other feasible partnerships were sketched and agreements drafted.

A key finding was that the resource identification and system functions will be continually clarified, and that much that seemed obvious was not fact. Agencies' responsibilities and powers changed significantly during the two-year period. The management plan must continue to adjust to new information and new problems, and to access new authorities or assistance as they evolve.

Mitigation Banking: Moving From What We Have to What We Want

Frederick T. Werner
U. S. Fish and Wildlife Service, Clear Lake

Mitigation banking is, quite simply, building a wetland forest or marsh and manipulating it for several years until the regulatory community is satisfied that it is successful; i.e., a self-sustaining system that will probably not fail except under most unusual circumstances (hurricane erosion, prolonged flooding or drought, destruction by insect or fungus, etc.). This area then becomes an up-front compensation site from which credits can be taken for **unavoidable** losses to wetlands from development projects. Such banks can be extremely valuable to small businesses or organizations which lack the resources and technical expertise to build compensation sites for their projects. Mitigation banking has already been identified as a possible strategy for habitat protection around the Galveston Bay system.

Some important considerations for operating a bank include:

1. Where will construction funds come from and who will build the bank;
2. Who will own the land on which the bank sits;
3. How will relative wetland values be decided upon when replacing project losses with habitat from the bank (the infamous replacement ratios); and
4. Who will be responsible for record keeping.

These are all institutional problems that can be solved in due course by Memoranda of Agreement between bankers and permitting agencies such as the Corps of Engineers. I believe the most important consideration is deciding what wetland scenarios we really would like to have — where will they be located, what size will they be, what do we want growing in these wetlands, what animals do we want using them, and how much buffer do we need to obtain wildlife use.

The regulatory community has for a long time applied a fundamental compensation philosophy that says wetland losses should be replaced in kind and on site. We are beginning to realize after evaluating a lot of wetland creation attempts that this is probably the wrong approach unless there are extenuating circumstances such as an overriding need to use the wetland for water storage to ameliorate on-site flooding created by a development. Wetland inventory between

1956 and 1979 for the Galveston Bay system shows us that we have lost about 33 percent of our valuable emergent marsh, most of this from subsidence, which has created shallow open water, and from the invasion of tallow trees. If in-kind mitigation is our exclusive management goal, then we can never reverse this trend (e.g., shallow open water would always be replaced with shallow open water). It makes much better sense to replace losses with more valuable or declining habitats. On site mitigation is another basic mistake. Normally, on site mitigation plots are too small, virtually surrounded by development with no buffers or other seclusion for wildlife use, and have radical hydrology because the basin has been converted to artificial drainage to accommodate the development. These wetlands fluctuate between dry and flooded; correction with artificial water control structures is unacceptable unless one can find an "environmental Monk" that is willing to devote his life to operating and maintaining them.

A mitigation bank solves all of these problems. It is the perfect performance bond — the wetland has been created and proven successful. It has been built by someone who really cares if it works because it is an economic venture and not a nuisance project associated with development. It can be built where it is most useful and at a location that contributes to success (the wetland is built on cheap land in a low lying area, there is a reliable supply of water from flooding or runoff, and little earthwork is needed to intercept and control this flow).

Mitigation banks of most concern to the national estuary program will be those containing brackish or intermediate marsh. These banks will normally be used to compensate for small wetland losses from pipelines, oil field roads and pads, public utilities such as wastewater treatment plants, fills associated with water dependent facilities such as marinas, and privately-owned industry and housing where wetland displacement from improvements is unavoidable because of existing structures.

Several such banks are already being devised around the estuary. Friendswood Development Corporation is looking at a 600-acre tract of land in terms of creating and improving fresh to brackish marsh there to compensate for future housing development losses that will be unavoidable or involve low value wetlands. The Galveston Bay Foundation has a 36-acre tract of land on Bolivar Peninsula that is being evaluated as a possible mitigation bank through fresh marsh creation and improvement. A private developer is looking at creating a mitigation bank on the south shore of Dickinson Bay as part of a development by consolidating small wetland losses on the property into one large compensation site that exceeds the mitigation requirements for the site.

The Galveston District Corps of Engineers is presently working with the regulatory community to develop a set of guidelines for those interested in attempting a mitigation bank. It is clear in the guidelines that preservation is not an acceptable bank strategy. Conserving wetlands that already exist does not result in wetland bank credits; there must be creation or improvement of wetland habitat to realize

benefits in the bank. Upland buffer zones are also recognized as an important part of a wetland management unit and appropriate credit will be given for this seclusion or isolation factor. These guidelines are important because future bankers must be able to rely on commitments from the *regulatory community to accept a bank if it follows the guidelines.*

I believe that one of the easiest and cheapest ways to create a bank is to find wetland areas around the bay shoreline that have been isolated from the estuarine complex and re-establish the hydrology to improve fish or wildlife values. There are many bank possibilities and we only have to take the time and effort to inventory potential bank sites and sell the idea of banking to the entrepreneurs.