



**CHIEF OF ENGINEERS
ENVIRONMENTAL ADVISORY BOARD
WASHINGTON, D.C. 20314-1000 (CECW-P)**

2 September 2010

Lieutenant General Robert L. Van Antwerp
Chief of Engineers
441 G Street NW
Washington, DC 20314-1000

Dear General Van Antwerp,

At your request, the Environmental Advisory Board (EAB) reviewed materials regarding the Deep Water Horizon Incident in the Gulf of Mexico to help the U.S. Army Corps of Engineers (USACE) address the challenges presented by the oil release. In addition the EAB was briefed on the USACE activities related to incident and the efforts to address the actual and potential problems resulting from the release. Although, from a scientific perspective the EAB can understand the nature of the environmental impacts that have and are likely to emerge, the extent and timing of these impacts will be dependent on currents, weather, and other natural processes that will unfold over time in the Gulf. Consequently, the EAB recommends that USACE, in partnership with other federal agencies, states and others (i.e., tribes, NGOs) pursue a two-phased approach to restoration of ecosystems impacted by the Gulf oil release:

1. In the short term, "shovel-ready" projects that can minimize the impact of the oil and/or capitalize on near-term restoration opportunities should be implemented as soon as practical.
2. In the longer term, development and implementation of system-scale plans that address the potential longer term impacts on Gulf ecosystems are needed.

The Federal agencies are in the process of identifying a number of prospective projects for addressing oil-related problems in the Gulf. The EAB recommends that USACE develop objective criteria for prioritizing these projects. Potential criteria identified by the EAB include: the relationship of the proposed project to habitats directly impacted by the oil, the ecosystem services provided by the project relative to those affected by the oil and how these services would be protected/enhanced by the project, the relative certainty of providing such services within a short period of time, requisite funds secured, and ease of implementation (e.g., likelihood that the proposed project can be accomplished with equipment and resources already on or nearly on site).

In the longer term, the current situation in the Gulf and the need to develop a plan for restoration given multiple objectives, scientific uncertainties and limited resources presents some similarities to other large scale ecosystem restoration projects underway across the country in which the USACE is involved. Although the Gulf situation is unique in combining an

unprecedented oil spill with an ecosystem already experiencing considerable stress, lessons can be learned from these other efforts.

Great Lakes

More than a decade ago, the management agencies involved with the Great Lakes realized that the restoration of the lakes required a detailed plan and would be dependent upon effective collaboration among the many federal, local, state, and tribal agencies, industry, and stakeholders. The catalyst for this collaboration was in May 2004 when President Bush issued Executive Order 13340 and created the Great Lakes Interagency Task Force and subsequently the Great Lakes Regional Collaboration (GLRC). Through the GLRC process, a shared vision for sustainability was developed and a remarkable level of consensus was achieved about specific restoration needs and the requisite action plans for implementation were developed. The GLRC clearly laid the foundation for funding, which became available in 2010 through the Great Lakes Restoration Initiative. The allocation of funds was consistent with the priority projects developed through the GLRC.

Florida Everglades

The Comprehensive Everglades Restoration Plan (CERP) is now a decade-old, a mature effort involving more than 60 separate projects to be undertaken by the USACE and its local partner, the South Florida Water Management District (SFWMD). CERP was faced with an issue similar to the problem of prioritizing the Deep Water Horizon Incident projects. CERP organized the priorities of the various projects by defining how each project fit into the overall hydrologic system. For example, projects to store water and to improve its quality were to be accomplished first, followed by projects to deliver the water to ecosystems that need it. In other words, the hydrologic system itself dictated some priorities, and this very well may be the case in the Gulf. The movement and redistribution of oil may guide choices. For example, projects that are likely to control or remove oil from places where it is concentrated might be accomplished first, because if controls are exerted there, other areas “downstream” will not be threatened with contamination. Projects dealing with dispersed oil might have lower priority in such an approach.

Louisiana Coast

Federal efforts to restore coastal Louisiana began in earnest in 1990 with the passage of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). USACE chairs the CWPPRA Task Force which over the years has adjusted the way it selects restoration projects for inclusion on its annual list beginning with cost-effectiveness and over time considering other factors. A series of restoration plans have been developed for coastal Louisiana since the 1993 CWPPRA plan, including those which are strategic in nature (e.g., Coast 2050 in 1998) and others that focus on near-term project implementation (e.g., the Louisiana Coastal Area study). Implementation of comprehensive restoration has been limited in part by a lack of agreement on desired restoration outcomes and the challenge of dealing with trade-offs among multiple objectives. This has only become more challenging since 2005 when the State of Louisiana combined planning for ecosystem restoration with planning for protection from storm-related

damages. The state has now developed a 'Prioritization Tool' which uses scientific analysis of expected project outcomes, explicit consideration of uncertainties, and procedures such as multi-criteria decision analysis and optimization to identify which groups of projects best achieve spatially variable desired outcomes within limits imposed by resource constraints. This tool will be used to develop an implementable plan with expected restoration and protection outcomes for legislative approval in 2012.

San Francisco Bay/Delta

Conflict between water supply and ecosystem needs, specifically related to several threatened and endangered fishes, have been ongoing for decades. The situation in the Sacramento-San Joaquin delta – a critical area for both the California water system and at-risk species – is compounded by the vulnerability of the in-delta levee system to both floods and earthquakes, and upstream needs to flood damage reduction, hydropower and water storage. USACE has a number of projects in this system including navigation channels, dams, and levees. Several of these, e.g., Napa and Hamilton City, represent important examples of how ecosystem restoration and flood management can be combined. However, long-term system scale planning has thus far failed to produce an agreed upon implementable plan to meet water supply and ecosystem restoration objectives despite the potential of the CALFED program and the recent Delta Vision initiative. The Bay-Delta Conservation Planning (BDCP) process, despite agency agreement to produce a draft plan by November 2010, is still (as of late August 2010) trying to agree on specific goals and objectives for ecosystem restoration that the plan will seek to fulfill. This plan is also proceeding largely in isolation of state and federal plans for flood damage reduction in other parts of the system.

From these large scale ecosystem restoration efforts, some insights can be drawn that can help shape an effective long-term response to the Gulf. These include the following.

1. Early definition of problems to be addressed and specific objectives or desired outcomes provide a context for difficult decisions and ensure all parties have similar expectations of the results.
2. Criteria are necessary that reflect how either local ecosystem needs and/or preferred restoration approaches can be successfully used to discriminate among many restoration options. For example, sequencing criteria were identified early in CERP.
3. The characteristics and dynamics of the ecosystem must be considered in determining need, approach and expected outcomes. Larger systems may need to be compartmentalized, e.g., the central valley of California could have different needs than the delta, but interactions among parts needs to be explicitly considered.
4. Because of the complexity of large scale ecosystem restoration efforts, system-level approaches are necessary. Such a systematic approach is more than simply identifying and implementing a discrete number of individual projects. Synergy among the components of the system can result in greater overall benefits. A systematic approach requires monitoring to provide feedback on effectiveness of actions taken and to allow

for adaptive management. Monitoring of ecosystem restoration measures in the Gulf of Mexico should require the ability to not only capture project-level outcomes, but also progress towards system-level recovery.

5. Large scale ecosystem restoration requires a long-term commitment of resources, both fiscal and human, integration of continually developing scientific knowledge, early and frequent engagement of stakeholders from all levels (national or even international to local), and recognition that desired outcomes may not be achieved easily or soon. The challenging ecosystem problems this Nation faces, not least of which is the current Gulf situation, reflect decades of mismanagement or at best unintended consequences – these problems are rarely amenable to quick fixes.

The EAB believes that these insights can help design an effective approach for the long term, sustainable recovery of the Gulf of Mexico and urges USACE to pursue how these insights can be used as they work with other federal agencies, states and other partners. The EAB is committed to supporting the USACE efforts in this major ecosystem restoration effort. If we can provide additional assistance, please let us know.

Sincerely,



James E. Kundell

Chairman

Chief of Engineers Environmental Advisory Board