

**Restoration Authorities of the U.S. Army Corps of Engineers:  
A Discussion Paper**

**Adopted by the  
Chief of Engineers Environmental Advisory Board**

The Recommendations and Findings contained in this document represent the opinions and views of the Chief of Engineers Environmental Advisory Board based on technical information provided by the Corps of Engineers

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## **Discussion Paper**

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## **I. INTRODUCTION**

### ***A. The EAB Ecosystem Restoration Initiative- An Overview***

Recent decades have seen a gradual evolution in approaches to resource management, with large scale, ecosystem restoration, protection and sustainable use initiatives gaining favor at all levels of government and within the broader stakeholder community. Multi-jurisdictional, basin-oriented programs are at various stages of development in many regions of the country, often benefiting from the active support and leadership of the Administration, the Congress and relevant state governments and legislatures. This reflects a continuing shift away from the longstanding model of single media resource management by geo-political boundary to a more comprehensive, multi-media approach that embraces hydrologic boundaries.

The ecosystem-based approach to restoration, protection and sustainable use calls for a paradigm shift in governance arrangements, requiring unprecedented levels of collaboration at all levels of government and the stakeholder community. At the federal level, inter-agency cooperation, program integration and the application of multiple authorities is essential to success.

The U.S. Army Corps of Engineers has historically played a prominent role in restoration efforts at various geographic scales, drawing upon a number of legislative authorities. As the trend toward large scale, comprehensive restoration initiatives accelerates, the Corps' current and prospective role has become a matter of heightened interest. Numerous critical questions have since been raised. For example: Does the Corps have the legislative authorities it needs to fully participate in large scale ecosystem restoration efforts? If not, where are the gaps and how can they be resolved? If the requisite authorities do exist, are they being fully exercised? If not, what are the barriers and how might they be overcome?

### ***B. Subgroup on Restoration Authorities***

To address these and related questions, the Chief of Engineer's has called upon his Environmental Advisory Board to review the past, present and prospective future of the Corps' role in large scale ecosystem restoration efforts. The Board has approached its task by establishing a series of subgroups to explore various dimensions of the Corps role. In addition to the subgroup on authority gaps (the focus of this paper), other subgroups are addressing adaptive management, outreach/ partnering; regulatory issues; independent scientific review; environmental benefits assessment; and performance measures/ indicators.

The goal of the Restoration Authorities Subgroup is to recommend actions that optimize the Corps' ability to lead/ support ecosystem restoration efforts at different geographic scales. Objectives associated with this goal include assessing the adequacy of existing Corps authorities, determining the extent to which they are

used, documenting any gaps and/ or barriers that might exist, and determining means to fully access/ exercise the authorities needed to assume a leadership/ support role.

The subgroup goal and objectives were addressed via EAB dialogue, consultation with Corps staff at various levels (headquarters, division, district and Institute for Water Resources), and literature review. Of particular value was the Corps' "Civil Works Restoration Policy" (1999) and the associated "Ecosystem Restoration-Supporting Policy Information."

## II. THE DIMENSIONS OF ECOSYSTEM RESTORATION

### A. *Ecosystem Restoration Defined*

Although the concept of ecosystem restoration has enjoyed broad and growing support in recent years, the lack of a widely accepted definition has compromised progress in applying the concept. At one end of the continuum are those who view restoration as a return to pre-European settlement conditions by fully reinstating natural flow regimes and eliminating any resources uses and

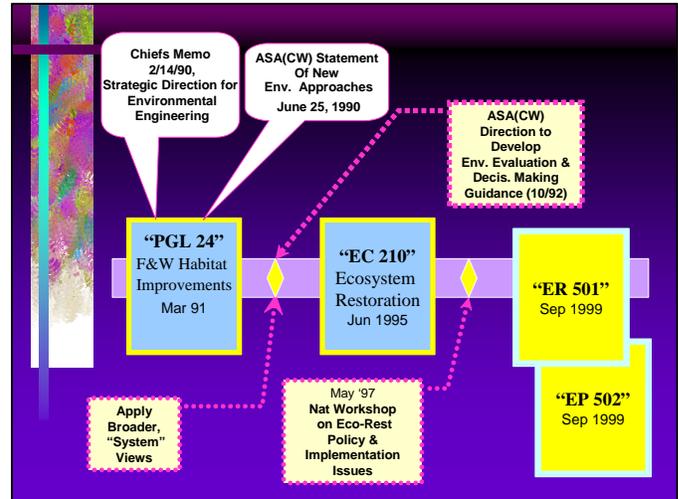


components of the built environment that alter "natural" ecological processes. At the other end of the continuum are those that view restoration in the context of human intervention that seeks to maximize economic and social values through extensive infrastructure and other measures that control ecological processes within specified bounds of acceptability. Most definitions are found between these two extremes and have been documented by the National Oceanic and Atmospheric Administration (Science-Based Restoration Monitoring of Coastal Habitats, Volume One; NOAA Coastal Ocean Program, Decision Analysis Series No. 23, Volume One, October 2003)

Ecosystem restoration is a primary mission of the Corps' Civil Works program, and is defined as achieving a "return of natural areas or ecosystems to a close approximation of their conditions prior to disturbance, or to less degraded, more natural conditions." (Ecosystem Restoration- Supporting Policy Information.) In

offering that definition, the Corps recognizes that, in some circumstances, a return to pre-disturbance conditions may not be feasible. In those instances, “the goal is to partially or fully reestablish the attributes of a naturalistic, functioning, and self regulating system.”

***B. Approaches to Ecosystem Restoration An Overview***



**History:**

**1989** - President George Bush and Secretary of Defense Cheney acknowledged that economic and national security depends upon a healthy natural resource base, and declared dedication to a sound environment. The President’s stated goal was maintaining and restoring the health of the environment.

**1990** - Chief of Engineers Memo: “Statement of New Environmental Approaches” articulates a strategic direction for environmental engineering in the Corps for implementing the President’s Environmental Goal through the Civil Works Program. It emphasized:

- Creative use of Corps expertise and authorities;
- Coordination and cooperation with other agencies to attain environmental restoration goals;
- Operation and maintenance of projects to contribute to restoration of fish And wildlife resources while maintaining authorized levels of project purposes; and
- Full consideration of restoration of environmental values in new project Planning and mitigating unavoidable adverse effects.

The same year, the Assistant Secretary of the Army for Civil Works [ASA(CW)] issued a Statement of New Environmental Approaches, also supporting the President’s Environmental Goals, and making fish and wildlife habitat restoration a budgetary priority. Both were assimilated into Policy Guidance Letter (PGL) No.24 – Fish and Wildlife Improvements, March 1991

**1991-1992** - The ASA(CW) recognized that guidance on evaluation and decision making was needed for fish and wildlife habitat restoration projects – the traditional dollar-based benefit-cost analysis would not work. Additionally, external

discussions were promoting more integrated approaches to resource and “system” restoration. Corps policy evolved to incorporate the system view, focusing on “ecosystem”, rather than “habitat” restoration. The cost-effectiveness and incremental analysis approach was adopted for evaluation in support of investment decisions. Guidance in the form of EC 1105-2-210 was developed by a headquarters task force and field workgroup (1995).

A number of issues surfaces during experiences with ecosystem restoration studies and projects. These were identified and discussed at a National Workshop on Eco-Rest Policy and Implementation Issues, hosted by SAJ in May '97. Many of the issues raised at this workshop shaped the content of ER 1165-2-501 & EP 1165-2-502.

Ecosystem restoration in the Corps focuses on:

- Ecological resources as opposed to cultural and historic, aesthetic and HTRW (HTRW is addressed by different authorities and funding streams);
- Restoration of significant ecosystem function, structure and dynamic processes that have been degraded;
- Protection of significant ecological resources from degradation;
- Ecological systems related to water resources; and
- The types of work that can utilize the Corps' expertise – as opposed to primarily land acquisition.

The Corps' definition of ecosystem restoration guides the agency's contributions to ecosystem restoration through the Civil Works Program, as determined by authorities, policy and administration budget priorities.

Other agencies and entities that are integral players in ecosystem restoration success may have different definitions, resulting in some level of confusion and debate. However, the reconciliation of these definitions may not be as important as the development of common understandings of desired outcomes and relevant ecosystem process and structural changes that are necessary to achieve the desired outcomes. The notion of “completeness” and interconnectivity is embedded in Corps restoration policy and guidance to ensure linkage of Corps contributions to restoration with those of others to accomplish the desired restoration outcomes.

The notion of a “restoration potential continuum” may be useful. This concept acknowledges that different potentials for different levels of restoration outcomes exist depending upon characteristics that include location and proximity to either more pristine or more degraded areas, and scale and connectivity.

### ***C. Current National Initiatives and Their Implications***

The “re-discovery” of watershed-based planning and management has been accompanied by a renewed interest in the multi-jurisdictional institutional arrangements needed to transcend geo-political boundaries and focus laws, policies, programs and projects on a hydrologic basis. Evidence of these trends is readily found in developments at the federal level over the past several years, such as U.S. EPA’s 2002 policy memorandum titled, “Renewed Commitment to Watershed Management”. During the same time frame, the Corps developed a Draft Civil Works Program Strategic Plan for FY2003- FY2008. This document stresses the growing importance of the comprehensive watershed approach to managing the nation’s water resources. The draft states “the foundation principles inherent to Corps planning- cost efficiency, environmental protection, and public participation- are consistent with a watershed approach.” The document also presents the federal agency obligation to “foster dialogue” about means to support state and local governments, but emphasized that “the complexity of contemporary water management requires a commitment on the part of those involved in water resources management across all levels of government to find consensus regarding the development, management and stewardship of America’s water resources.”

The U.S. Council on Ocean Policy, a legislatively mandated body charged with providing a comprehensive review and assessment of the nation’s ocean and freshwater policies and programs, issued its report in March 2004. Consistent with the tenor of the U.S. EPA and Corps statements noted above, the Commission recognized the need for a regional (i.e., watershed-based) approach to resource stewardship. Its sweeping recommendations placed interstate agencies and other multi-jurisdictional bodies (both existing and to be established) in a pivotal coordinative, planning and service delivery role.

Complementing these agency-specific endorsements of multi-jurisdictional governance arrangements is a pronounced trend toward large scale, ecosystem-based restoration programs that transcend individual agencies (at any level of government) and geo-political boundaries. Examples, among many others, include the Everglades Restoration Plan; the Chesapeake Bay Program; the Coastal Louisiana initiative; the Gulf of Mexico initiative, Gulf of Maine initiative and the Great Lakes Regional Collaboration. Such efforts have captured the imagination (and, increasingly, the funding support) of Congress.

The Corps’ role in these and other initiatives varies significantly, ranging from a central coordinative and implementation role (e.g., Everglades Restoration Plan) to a collaborative, support-oriented role (e.g., Great Lakes Regional Strategy.) Generally speaking, Corps authorities and capabilities are not a limiting factor in determining the nature of the role. Rather, this is a function of Administration (e.g., Executive Order) or Congressional (i.e., legislative) directive. Preferences regarding the respective roles of various federal agencies are a function of

numerous factors, including perceived capability to perform required functions, historic role in related efforts, and public perception of the ability/ desirability to lead.

Implications of the trend toward large scale ecosystem restoration initiatives are profound. The Corps will have increased opportunities to exercise its various restoration authorities in a lead or support role. The extent to which these opportunities are pursued will be a function of the Corp’ ability to work in a collaborative environment; gain the trust and confidence of partners and constituents; access the requisite financial and human resources, and draw from its varied authorities in crafting a multi-disciplinary, ecosystem-based approach to its tasks.

***D. Potential Contributions of the U.S. Army Corps of Engineers***

The Corps is uniquely positioned to play a leadership or key partnership role in large scale ecosystem restoration, protection and sustainable use. Though complex and dispersed, its ecosystem restoration authorities are sufficiently broad to accommodate the range of current and anticipated initiatives. The Corps has multi-disciplinary capabilities and, provided that Congressional appropriations are sufficient for the task at hand, is well-suited to large scale, labor intensive efforts. Further, it has substantial planning expertise and a record of success in guiding complex, multi-purpose and multi-jurisdictional programs.

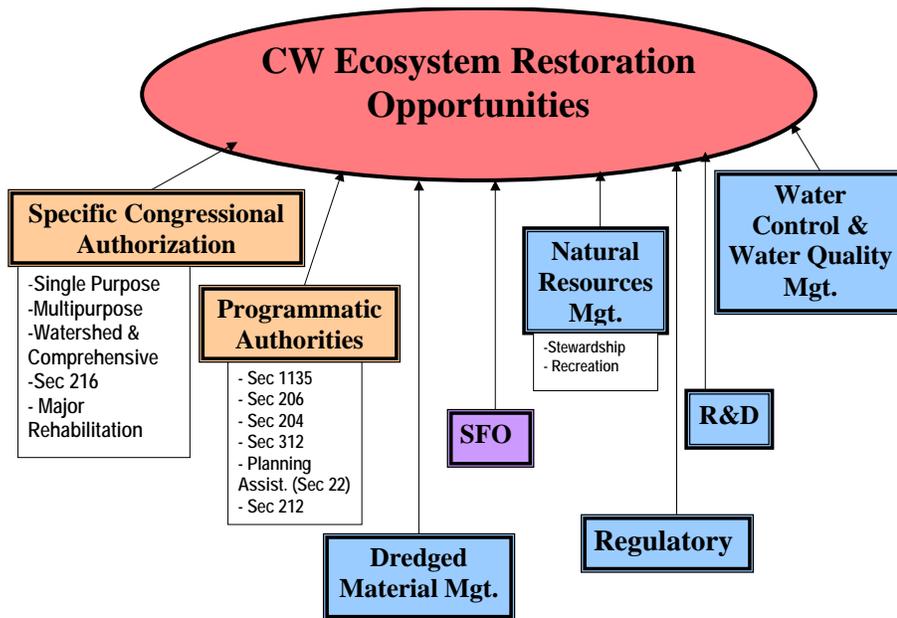
**III. THE CORPS’ ROLE IN ECOSYSTEM RESTORATION: PAST, PRESENT AND FUTURE**

Presented below in tabular format is a summary of relevant Corps authorities and associated references, characteristics and barriers/ opportunities in the categories of restoration; natural resource management; water control management; beneficial use of dredged material to restore aquatic ecosystems; regulatory programs; aquatic plant control; and planning assistance to the states.

<b>Type</b>	<b>Authority</b>	<b>Reference Policy document</b>	<b>Restoration Characteristics</b>	<b>Barriers or Opportunities</b>	<b>Notes</b>
<b>Restoration</b>	1135, WRDA 86	ER 1165-2-501 EP 1165-2-501, ER 1105-2-100	Continuing authority to modify Corps structures and operations built or to perform restoration at other locations affected by construction or operation of Corps projects.	Program authorization cap \$35million; w/up to \$5M allowed as Federal share  Sponsor cost share 25% of first costs to include feasibility study, plans and species, and 100% of operations and	

				maintenance	
	206, WRDA 96 PL 104-303	ER 1165-2-501 EP 1165-2-501, ER 1105-2-100	Corps carries out ecosystem restoration and protection projects if the project will improve environmental quality, is in public interest, and cost effective	Federal limit \$5 million.  Local sponsor pays 35% project costs and 100% operations and maintenance	
	216 RHFACA 70	ER 1165-2-119, ER 1105-2-100,	Modification of Completed Projects General Investigation new starts	Feasibility studies cost shared 50/50	
	Individual authorization	ER 1165-2-501 EP 1165-2-501, ER 1105-2-100	Mitigation of project impacts	Project cost sharing, LERRD, and 100% of operations and maintenance	
<b>Natural Resource Management</b>	ER 1130-2- 540		Environmental stewardship operations and maintenance policies for management of Corps lands under ecosystem management principles integrating natural and cultural resources in a total system, multiple-use concept.	Limited to Corps owned land within a watershed  Collaborative opportunities for ecosystem management within a watershed	
<b>Water Control Management</b>	Section 102, CWA; PL 92-500  Section 103, WRDA 86; PL 99-662	ER 1110-2-8154	Operation of dams and other water control projects to achieve water flows and quality in support of ecosystem restoration objectives.	Considers influences of basin activities that influence WQ and other ecosystem objectives. Must consider the impacts on other authorized project purposes involving storage and releases.  Some discretionary operational flexibility exists, beyond that may require additional authority, and cost sharing.	Sustainable Rivers initiative w/TNC <a href="http://nature.org/success/dams.html">http://nature.org/success/dams.html</a>
<b>Beneficial Use of Dredged Material to</b>	Section 204WRDA 92		Continuing authority that allows the Corps to carry out	Sponsor pays 25% of project first costs including	

<b>Restore Aquatic Ecosystems</b>			ecosystem restoration and protection projects in connection with new or maintenance dredging of Federal Projects if benefits justify the costs and project does not degrade the environment	lands, easements and rights of way, and 100% of the operations and maintenance.	
	Federal Standard		State under CZM or CWA recommends use of the dredged material for a State beneficial use	Federal costs are limited to least cost, environmentally acceptable and feasibility federal costs. State pays for remaining benefits.	
<b>Regulatory Programs</b>		Clean Water Act	Protection of aquatic ecosystems under avoidance, minimizing and mitigation,  use of special area and general permits to encourage environmental preferred activities	Opportunity for multi-agency and public resource management  Resource planning commitment not normal regulatory activity	
<b>Aquatic Plant Control</b>	Section 104  Section 103  Section 225 and 540	1958 RHA; PL85-500  WRDA 86, PL 99-662  WRDA 96, PL 104-303	Corps may cooperate with non federal agencies for authorized plant control on navigable waters not under jurisdiction of Corps or other federal agencies	Program limit 12,000 per year; recon and feasibility studies must be approved by ASA(CW).  Local cost share 50%.	
<b>Planning Assistance to the States</b>	Section 22  Section 605  Section 221	WRDA 74; PL 93-251  PL 96-597  WRDA 96, PL 104-303	General authority to cooperate with states providing technical assistance in support of state	Local sponsor cost 50%; not more than \$500,000 to any one state per year	



#### IV. FINDINGS AND RECOMMENDATIONS

##### A. Action Items for Corps Consideration

- Finding:** Adequate authority for ecosystem restoration generally exists, but authorities are dispersed and not well understood by current and prospective partners and constituents.

**Recommendation:** The Corps should develop and implement an information/ education campaign to inform current and prospective partners and constituents of its authorities and capabilities for ecosystem restoration. This should include “general consumption” materials that clearly reference and describe authorities, document capabilities, explain the process for requesting Corps assistance and partnerships; and provide examples of successful restoration initiatives.

- Finding:** Restoration authorities are not fully exercised, generally due to funding constraints, competing priorities and limited partnership opportunities.

**Recommendation:** Elevate ecosystem restoration as a priority activity, and actively pursue opportunities to “market” Corps services to prospective partners and constituents.

- Finding:** The Corps’ role in large scale ecosystem restoration varies significantly from one initiative to the next, suggesting that authorities and capabilities are not being fully employed.

**Recommendation:** Review recently signed MOU's for collaborative restoration efforts (e.g., NRCS, EPA, DU, TNC) and identify/pursue specific tasks and timelines. Further, enter into additional MOUs where needed, to ensure that Corps restoration authorities are fully employed

***B. Items for EAB Attention***

- **Finding:** Numerous large scale ecosystem restoration initiatives are in various stages of development throughout the country, and offer a range of “lessons learned” that have relevance elsewhere.

**Recommendation:** Develop a detailed, descriptive inventory of selected ecosystem restoration efforts and, based on an assessment of those efforts, develop guidance for future efforts.

- **Finding:** The EAB is well positioned to offer practical advice and assistance, on a site-specific basis, to ecosystem restoration efforts in early stages of development.

**Recommendation:** Select, as a case study, a basin or watershed that is a candidate for ecosystem restoration. Collaborate with relevant public agencies and stakeholder groups to assist with the planning process and ensure that guidance from lessons learned elsewhere is fully employed.

- **Finding:** Ecosystem restoration is inherently a collaborative process, and success is dependent upon a thorough understanding (and employment of) authorities and capabilities across multiple agencies at all levels of government.

**Recommendation:** Identify and characterize the ecosystem restoration authorities and capabilities of all relevant federal agencies, compare and contrast with Corps authorities, and identify opportunities for partnership as well as constraints to be addressed.

- **Finding:** Despite existing authorities, ecosystem restoration planning and implementation efforts are typically constrained by funding limitations, reflecting hesitancy for legislators to commit to large scale, long term expenditures.

**Recommendation:** Through the use of case studies, develop and apply evaluation methodologies to determine the anticipated benefits of restoration initiatives. In so doing, characterize expenses as an investment with substantial return.