

CHAPTER 19

ENVIRONMENTAL RESTORATION AND PROTECTION

19-1. Introduction. This chapter has been significantly revised to reflect the increased emphasis being placed upon ecosystem restoration and protection within the Corps of Engineers (Corps) Civil Works Program. In particular, this chapter attempts to clarify the linkages among the various environmental statutes and the programs and policies established by recent Water Resources Development Acts (WRDAs), such that the Corps role in ecosystem restoration and protection is more clearly defined. Ecosystem restoration and protection is the concept or "umbrella" under which the Corps' more traditional environmental responsibilities involving, e.g., wetlands, fish and wildlife resources, and endangered species, are to be implemented. Each of these traditional environmental topics are discussed and their relationship to ecosystem restoration and protection established. In addition to examining these more traditional environmental policies and their relationship to ecosystem restoration and protection we also discuss the application of ecosystem principles in our more traditional mission areas of flood control and navigation, i.e., the beneficial use of dredged material and the modification of project features and/or their operations to benefit the environment.

19-2. Ecosystem Restoration and Protection in the Civil Works Program. The Corps began seriously considering environmental issues following the passage of the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190), as amended, which required that all Federal agencies prepare a statement describing the environmental impacts of any proposed activity on the natural and social resources within a project area. (see also paragraphs 3-2 and 25-2; ER 200-2-2; ER 1105-2-100, Chapter 2; and, 40 CFR 1500-1508) since the initial response to NEPA's requirements, the Corps Civil Works Program has matured to now include projects whose purpose is to restore and/or protect significant environmental resources. Within the Civil Works Program, one of the project purposes considered for inclusion in the budget are projects whose purpose is the restoration of degraded ecosystem functions and values, including the ecosystem's hydrology, plant and animal communities, and/or portions thereof, to a less degraded ecological condition (see current Corps annual budget guidance; ER 1105-2-100, Chapter 4, Section VIII). Budgetary priority is to be given to cases where Corps projects have contributed to the degradation of the ecosystem or where the modification of existing Corps projects is the most cost-effective means of restoring the resources of the degraded ecosystem.

19-3. Corps Focus in Ecosystem Restoration and Protection. Corps activities in ecosystem restoration and protection will concentrate on engineering solutions to water and related land resource problems. The Corps principal focus in ecosystem restoration will be on those ecological resources and processes that are directly associated with, or are directly dependent upon, the hydrologic regime of the ecosystem(s) and/or watershed(s) in which they are found. There will be instances where components of an ecosystem restoration plan are better addressed by other agencies through their missions and programs; however, given the dependent nature of ecosystem components it would be prudent to collaborate, to the extent permitted by our authorities, with other agencies in the implementation of ecosystem restoration activities. Those ecosystem restoration activities that involve modification of hydrology or aquatic substrates are most

likely to be appropriate for Corps initiatives and include ecosystems classified as wetlands, riparian and other aquatic systems. Budget limitations require the Corps to focus its restoration efforts on those initiatives most closely tied to the Corps traditional mission areas of flood control and navigation and its areas of expertise; however, it is emphasized that collaborative efforts with other agencies will allow limited appropriations to be focused in areas of identified ecosystem restoration need. Generally, it will not be appropriate for the Corps to conduct ecosystem restoration activities on upland, terrestrial sites unless they are closely linked to water and related land resources projects in the Corps Civil Works Program. Ecosystem-based restoration will be authorized in the same manner that flood damage reduction and navigation projects are authorized, i.e., by individual study authorities, by Congressional resolutions, or by favorable studies initiated under Section 216 of the River and Harbor and Flood Control Act of 1970 (Public Law 91-611). Ecosystem-based restoration can also be pursued under Section 1135 of WRDA 1986, and/or the authority of Section 204 of WRDA 1992 for the beneficial use of dredged material, and/or Section 206 (Aquatic Ecosystem Restoration) and Section 210 (Environmental Protection and Restoration) of WRDA 1996 (See also paragraphs 19-22 through 19-35 below, ER 1105-2-100, and the current guidance on Section 1135, Section 204, Section 206 and Section 210, respectively).

19-4. Restoration and the Ecosystem Approach. Corps activities to meet natural resource restoration and stewardship objectives will be conducted using an ecosystem approach while maintaining the traditional Corps watershed focus on water and related land resources. An ecosystem is a dynamic and interrelated complex of plant and animal communities, including humans, and their associated non-living environment. Ecosystems occur at spatial scales that range from local through regional to global. Restoration is the process of implementing measures to return a degraded ecosystem's functions and values, including its hydrology, plant and animal communities, and/or portions thereof, to a less degraded ecological condition. The goal of restoration is to return the study area to as near a desired natural condition as is justified and technically feasible. Consideration of ecosystems within (or encompassing) a watershed provides a useful organizing tool to approach ecosystem-based restoration planning as watersheds are physically and hydrologically distinct. The ecosystem approach consists of restoring and/or protecting the structure and function of an ecosystem, or parts thereof, recognizing that all its components are interrelated. The ecosystem approach also recognizes and seeks to address the problems of habitat fragmentation and the piecemeal restoration and mitigation efforts that have been previously applied in dealing with the Nation's natural resources. Further, the ecosystem approach also recognizes that existing and planned infrastructure is a legitimate feature of the human environment and should co-exist and benefit (restore and protect) the natural features of the ecosystems in which they are placed. Projects should also be conceived and operated in a more comprehensive, holistic context. This means including the activities of other Federal, state, tribal and local agencies and considering aquatic (including marine and estuarine), wetland and closely associated terrestrial complexes, in order to provide the potential for long-term survival as productive and sustainable ecosystems. In recognition of the principles of the ecosystem approach the Corps, along with 13 other Federal agencies, signed a MOU "To Foster the Ecosystem Approach" in December of 1995. The MOU states it is the policy of the Federal Government to " ... provide leadership in and

cooperate with activities that foster the ecosystem approach to natural resource management, protection and assistance. Federal agencies will use their authorities in a manner that facilitates an ecosystem approach. Consistent with their authorities, Federal agencies will administer their programs in a manner that is sensitive to the needs and rights of landowners, local communities, and the public and will work with the public to achieve common goals."

19-5. Federal and Ecosystem Restoration Objectives. The Federal objective in water resources planning, as defined within the Water Resources Council's Principles and Guidelines (P&G), is to contribute to National Economic Development (NED) in order to alleviate problems and/or realize opportunities related to water and related land resources, consistent with protecting the Nation's environment. The P&G allow for the formulation of alternative plans which reduce net NED benefits in order to address other Federal, state, local and international concerns not fully addressed by the NED plan. The P&G state that the NED plan is to be selected unless the Secretary of the Army grants an exception when there are overriding reasons for selecting another plan, such as Federal, state, tribal, local and international concerns, or the provision of significant environmental outputs, such as ecosystem restoration. Consistent with the analytical framework established in the P&G, alternative plans to address ecosystem restoration should be formulated, and measures for restoring ecological resources recommended, based upon their projected monetary and non-monetary benefits. These ecosystem restoration measures do not need to exhibit net NED benefits, but should be judged on the basis of both non-monetary and monetary outputs consistent with the procedures outlined in paragraph 19-21.a and the P&G selection criteria (P&G, 1.10.2), and be offered for consideration and budget support.

19-6. Collaboration with Other Agencies. The collaborative efforts of multiple Federal agencies as well as nonfederal interests will often be necessary to achieve ecosystem restoration goals. Successful restoration at the landscape level will depend on program coordination and integration among those agencies responsible for management decisions on separate ecosystem components. Corps ecosystem restoration efforts should complement and be complemented by the various authorities and activities of other Federal and state agencies, Native American tribes and private groups, such that common management and restoration objectives are identified early in the study process. The Corps will, in some instances, lead in the development of alternative restoration plans, and in other instances, play only a supporting role. Collaborative partnerships provide the means to more efficiently use limited dollars and resources among participants. Major Subordinate Commands (MSCs) should encourage and develop partnerships with Federal and state agencies and tribal and non-governmental organizations in the accomplishment of restoration studies and project implementation and financing. It is particularly important that potential cost-sharing partners understand the Corps ecosystem restoration philosophy. The Corps now focuses more on ecosystems and the restoration and protection of their associated plant and animal communities rather than on recreation oriented (hunting and fishing) outputs. The use of recreation-oriented outputs are still legitimate in an ecosystem restoration project; however, recreation benefits should be considered Aadd-on@ and their generation should not in any way jeopardize the production of ecological outputs anticipated from the ecosystem restoration project. (See also paragraph 5-8.e)

19-7. Authorities Supporting Ecosystem Restoration. The Federal involvement in environmental quality, including ecosystem restoration, is supported in law, Executive Order, and International treaties. Consequently, the Corps Civil Works Program's involvement in the protecting and restoring the quality of environmental resources is also broadly supported, but not limited to, the following examples:

- a. Fish and Wildlife Coordination Act of 1958, as amended.
- b. Federal Water Project Recreation Act of 1965, as amended.
- c. National Environmental Policy Act of 1969, as amended.
- d. Coastal Zone Management Act of 1972, as amended.
- e. Clean Water Act of 1972, as amended.
- f. Marine Protection, Research and Sanctuaries Act of 1972, as amended.
- g. Endangered Species Act of 1973, as amended.
- h. Water Resources Development Acts of 1986, 1988, 1990, 1992, and 1996.
- i. Coastal Wetlands Planning, Protection, and Restoration Act of 1990 (Title III of Public Law 101-646).
- j. Executive Order 11990, "The Protection of Wetlands."
- k. Executive Order 11991, "Relating to Protection and Enhancement of Environmental Quality."
- m. Numerous International Conventions on the Conservation of Habitat and Migratory Birds dating from 1929 through 1989.

19-8. Environmental Authorities within WRDAs. Environmental authorities with direct applicability to the Civil Works Program are found within the various WRDAs and include the following:

a. Section 906 of WRDA 1986 (Public Law 99-662) establishes a comprehensive mitigation policy for water resources projects, including:

(1) Subsection 906(a) authorizes mitigation activities to be done either before the start of construction or concurrently with the initiation of project construction. Mitigation measures will generally be scheduled for accomplishment concurrently with the initiation of construction of other project features. Should there be circumstances warranting accomplishment of mitigation activities as the first or the last element of project construction, the prior approval of HQUSACE will be required before proceeding.

(2) Subsection 906(b) authorizes the Secretary of the Army to provide for fish and wildlife mitigation resulting from any water resources project under his or her jurisdiction, whether completed, under construction or to be constructed without specific Congressional authorization. Such mitigation activities may include the acquisition of lands, or interests therein, except for certain limitations. The limitations are:

(a) Land acquisition will be on a willing seller basis if, on 17 November 1986, 10 percent or more of the project is physically completed.

(b) Acquisition of water or interests therein will be on a willing seller basis.

(c) Up to \$30,000,000 may be obligated in any fiscal year to study and implement fish and wildlife mitigation under this authority, with a single project limit of \$7,500,000 or 10 percent of total project costs (including the mitigation), whichever is greater. The authority of subsection 906(b), however, does not apply to fish and wildlife enhancement activities and because of policy and budget restrictions has been limited to projects under construction or to be constructed. (See ER 1105-2-100, Chapter 4, Section VIII)

(3) Subsection 906(c) requires that fish and wildlife mitigation costs be allocated among the purposes which caused the need for the mitigation activities and that they be cost shared to the same extent as other costs for such project purposes are shared, except where contracts were previously signed with non-Federal interests prior to enactment of WRDA 1986.

(4) Subsection 906(d) requires that all subsequent reports to Congress will contain either a determination by the Secretary of the Army that such projects will have negligible adverse impacts on fish and wildlife resources or they will contain specific mitigation recommendations to address fish and wildlife losses. Such plans will mitigate impacts to bottomland hardwood forests in-kind to the fullest extent possible. The requirement to justify mitigation measures was not rescinded, as the amount of mitigation recommended is still dependent upon the development of justifiable and cost effective mitigation measures. (See paragraph 19-21a below)

(5) Subsection 906(e) provides that when the Secretary of the Army recommends fish and wildlife enhancement measures in reports to Congress the first costs shall be Federal when:

(a) The benefits are determined to be national in character - including benefits for species identified by the National Marine Fisheries Service (NMFS) as of national economic importance; species subject to treaties or international convention to which the United States is a party, and anadromous fish; or

(b) The recommended enhancement is designed to benefit species listed as threatened or endangered by the Secretary of the Interior (under the terms of the Endangered Species Act, as amended; 16 U.S.C. 1531, et seq.); or

(c) The recommended enhancement activities are located on lands managed as a national refuge. If the benefits do not so qualify, 25 percent of first costs of enhancement shall be provided by non-Federal interests during implementation. In either event, the non-Federal share of subsequent operations, maintenance, and rehabilitation (OMR) costs for fish and wildlife enhancement shall be 25 percent. (See also paragraph 6-14) The authority of subsection 906(e), however, is not being implemented because of policy and budget restrictions (See ER 1105-2-100, Chapter 4, Section VIII).

b. Section 907 of WRDA 1986 (Public Law 99-662) authorizes the

Secretary of the Army, in the evaluation of the costs and benefits of a water resources project, to consider the benefits attributable to measures included in a project for the purpose of environmental quality, including environmental improvements and fish and wildlife enhancement, to be at least equal to the costs of such measures. (See also paragraph 19-23)

c. Section 908 of WRDA 1986 (Public Law 99-662) provides that the Secretary may undertake mitigation prior to project construction funding using appropriated mitigation funds. Monies so used must be repaid to the mitigation fund established under Section 906(b) from the first appropriation for construction. Section 908 has not been implemented since normal project funding would allow for the accomplishment of mitigation features as an early project implementation item, thus there was no need to establish a separate mitigation fund.

d. Section 1135 of WRDA 1986 (Public Law 99-662), as amended, authorizes the Secretary of the Army to modify the structures and operations of water resources projects constructed by the Corps to improve the quality of the environment consistent with authorized purposes; and to undertake measures for restoration of environmental quality where the construction or operation of a water resources project built by the Corps has contributed to the degradation of the quality of the environment and such measures do not conflict with the authorized project purposes. (See also paragraphs 19-29 through 19-35).

e. Section 306 of WRDA 1990 (Public Law 101-640) authorizes the Secretary of the Army to include environmental protection (i.e., measures undertaken to protect and preserve elements of an ecosystem's structure and functions against degradation) as one of the primary missions of the Corps. Guidance on this provision of WRDA 1990 has not been specifically developed, as the guidance on ecosystem restoration is believed to account for the requirements of this provision.

f. Section 307(a) of WRDA 1990 (Public Law 101-640) establishes a "no net loss of wetlands" and an "increase in the quality and quantity of the Nation's wetlands" as goals of the Corps Civil Works water resources development program. (See also paragraphs 19.10 through 19.13).

g. Section 203 of WRDA 1992 (Public Law 102-580) authorizes the Secretary of the Army to accept contributions of cash, funds, materials and services from persons, including governmental entities, but excluding the project sponsor, in connection with the implementation of a water resources project for environmental protection and restoration purposes or for recreation. (See paragraph 11-13.b and ER 1130-2-500, Chapter 11)

h. Section 204 of WRDA 1992 (Public Law 102-580), as amended, by Section 207 of WRDA 1996 authorizes the Secretary to carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging conducted for construction, operation, or maintenance of an authorized Federal navigation project. (See also paragraphs 19-22 through 19-28 below).

i. Section 206 of WRDA 96 (Public Law 104-303) authorizes the

Secretary to carry out projects for aquatic ecosystem restoration and protection if the Secretary determines that the project will improve the quality of the environment, is in the public interest, and is cost-effective. (See paragraph 19-36 below and the most recent guidance on the Section 206 program)

19-9. Ecosystem Restoration Relationship to Traditional Environmental Topics. Thus, as can be seen from the discussion of authorities above, there is a large body of legislation that supports the Corps role in ecosystem restoration. Following are discussions that cover a number of traditional environmental topics and how they relate to ecosystem restoration and protection.

19-10. Consideration of Wetland Resources Within the Civil Works Program. Wetlands represent an ecosystem that has generated vast political, social and scientific interest. Many wetlands are important natural resources contributing significant benefits to both the natural and human environments because they are transition areas between purely terrestrial and aquatic ecosystems. As transitional areas wetlands possess features of both aquatic and terrestrial systems. Consequently wetlands are generally areas of great natural productivity, hydrologic utility, and biodiversity, providing natural flood control, and contributing to improved water quality, flow stabilization of streams and rivers and habitat for fish and wildlife resources. Wetlands can also contribute to the production of agricultural products and timber and provide numerous recreational, scientific and aesthetic resources of national interest. Because of the regulatory program established under Section 404 of the Clean Water Act, as amended, a legal definition of wetlands has been developed that defines wetlands as "... areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." (33 CFR 328.3; see also paragraph 3-5 and Chapter 22)

19-11. Wetland Policy. The Corps recognizes that certain wetlands constitute a productive and valuable public resource. Their unnecessary alteration or destruction is discouraged as contrary to the public interest as these wetlands perform functions important to the public interest. Wetlands which perform important public interest functions include:

a. Wetlands which provide significant natural biological functions, including food chain production, general habitat, and nesting, spawning, rearing, and resting sites for aquatic or land species;

b. Wetlands set aside for the study of the aquatic environments or as sanctuaries or refuges;

c. Wetlands, the destruction or alteration of which, would detrimentally affect natural drainage characteristics, sedimentation patterns, salinity distribution, flushing characteristics, current patterns, or other environmental characteristics;

d. Wetlands which are significant in shielding landward areas from wave action, erosion, or storm damage. Such wetlands are often associated with barrier beaches, islands, reefs and bars;

e. Wetlands which serve as valuable storage areas for storm and flood waters;

f. Wetlands which are groundwater discharge areas that maintain minimum base flows important to aquatic resources and those which are prime natural recharge areas. Prime recharge areas are locations where surface and groundwater are directly interconnected; and

g. Wetlands which through natural water filtration processes serve significant water purification functions.

19-12. Administration's Wetlands Plan. The Administration announced its wetlands policy on 24 August 1993. This policy is based upon five principles including the adoption of the interim goal of no overall net loss of the Nation's wetlands and the long term goal to increase the quality and quantity of the Nation's wetland base in a manner similar to that described in Section 307 of WRDA 1990. The five principles are as follows:

a. Support for the interim goal of no net loss of the Nation's remaining wetlands and the long-term goal of increasing the quality and quantity of Nation's wetlands base;

b. Regulatory programs must be efficient, equitable, flexible and predictable and administered in a manner that avoids unnecessary impacts upon private property;

c. Non-regulatory programs, such as advanced planning and wetlands restoration, are vital elements of meeting the wetlands goals;

d. The Federal Government should expand partnerships with state, tribal and local governments and the private sector and approach wetlands protection and restoration in an ecosystem/watershed context; and

e. Federal wetlands policy should be based upon the best scientific information available. It was further stated that the restoration of drained or otherwise degraded wetlands would be key to achieving this goal, thus it can be seen that the Civil Works water resources program has a unique opportunity to make a significant contribution to the President's wetland goals through the development and implementation of ecosystem restoration and protection projects and through its regulatory functions.

19-13. Executive Order (EO) 11990, Protection of Wetlands. This EO directs the Corps, along with other executive branch agencies, to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out its Civil Works activities. The EO sets forth several major requirements that Federal agencies are required to comply with before undertaking any new construction in wetlands. They are:

a. Prior to undertaking an action in wetlands, determine whether a practicable alternative to the action exists (if a practicable alternative exists, the action should not be undertaken in wetlands).

b. If the action must be undertaken in wetlands, include all practical measures to minimize harm to wetlands which may result from such use.

c. Preserve and enhance the natural and beneficial values of the wetlands; and

d. Involve the public early in the decision-making process for any action involving new construction in wetlands.

The key requirement of the EO is determining whether a practicable alternative to locating an action in wetlands exists. This requires the identification and evaluation of alternatives that could be located outside of wetlands, i.e., alternative sites; other means that would accomplish the same purpose(s) as the proposed action, i.e., alternative actions; and, no action. If there is no practicable alternative to locating an action in wetlands, the EO requires that the action include all practical measures to minimize harm to the wetlands and preserve and enhance the natural and beneficial values, i.e., the provision of appropriate and justified mitigation. Provision for Corps compliance with this EO is its incorporation within Corps planning guidance, as part of the required specific and general environmental compliance considerations for every planning investigation undertaken. (See also ER 1105-2-100, Chapter 7)

19-14. Section 150 of the Water Resources Development Act of 1976 (Public Law 94-587). This provision authorizes the Chief of Engineers to plan and establish wetland areas in connection with the dredging required for authorized water resources development projects where the increased cost of such wetland areas will not exceed \$400,000. This provision does not include any requirement for non-Federal cost-sharing and has been supplanted with the partnership principles established by WRDA 1986 and Section 204 of WRDA 1992 (See also paragraphs 19-22 through 19-28 and the most recent guidance on Section 204). Therefore, Section 150 authority will not be pursued.

19-15. Section 307 of the Water Resources Development Act of 1990 (Public Law 101-640). Section 307(a) of WRDA 1990 establishes, as part of the Corps of Engineers water resources development program, an interim goal of no overall net loss of the Nation's remaining wetlands base and a long-term goal to increase the quality and quantity of the Nation's wetlands, as defined by acreage and function. The Corps shall utilize all appropriate authorities, including those to restore and create wetlands, in meeting the interim and long-term goals, e.g., the Section 1135 Program, the Section 204 Program, the Ecosystem Restoration Program, the Natural Resources Management Program, the Regulatory Program, etc. in an effort to support this provision of WRDA 1990 and the President's wetland goals as discussed above.

19-16. Consideration of Fish and Wildlife Resources in the Civil Works Program. Fish and wildlife resources were initially of concern as being representative of those natural resources most conspicuously utilized by humans, primarily hunting and fishing. Originally defined to include only those living natural resources such as terrestrial and aquatic animal populations, the description of fish and wildlife resources now includes their required habitat, including the vegetation, necessary to satisfy feeding, nesting and resting requirements, along with the necessary soil, moisture and temperature conditions to sustain the required vegetative communities. Clearly, our growing knowledge of the linkages among animal and vegetative

communities along with the relationships to their physical conditions represents a greater recognition and appreciation of complex natural ecosystems. Perhaps equally or more important to our growing knowledge of ecosystems, is how our activities have and will potentially impact these resources in the future. Today, the sustainability of many fish and wildlife resources are threatened on numerous fronts ranging from unwise land use and development to contamination from pollutants. There are opportunities within the Corps Works Program that should be recognized and alternative solutions examined in the development of new and the rehabilitation of older water resources projects using the principals of ecosystem restoration and protection described above in paragraphs 19-2 through 19-6 and within the most recent guidance on ecosystem restoration. Additionally, efforts undertaken in implementing the Fish and Wildlife Coordination Act, the Endangered Species Act, the Clean Water Act, discussed below, and the environmental provisions of several WRDAs, discussed above in paragraph 19-8, support the Corps ecosystem restoration and protection goals and ultimately the fish and wildlife resources of the nation.

19-17. Fish and Wildlife Coordination Act (FWCA) of 1958 (Public Law 85-624; 16 U.S.C. 661-666). The FWCA directs that equal consideration be given to fish and wildlife resources and that measures to conserve these resources are incorporated, along with other project features, into water resources development projects. Further, the Act requires the Corps to give full consideration to the recommendations, including those for mitigation, of the USFWS, the NMFS and those of the appropriate state agencies. Funds are transferred to the USFWS in accordance with a 1982 Transfer Funding Agreement with the Department of the Interior, which requires a coordination act report be developed and included in any feasibility study of a proposed water resources project with the potential to impact fish and wildlife resources. The FWCA, in Section 662(h), exempts new impoundments of less than ten surface acres or land management and use activities carried out by Federal agencies on Federal lands from its provisions. Each of the important provisions of the FWCA are summarized below.

a. Section 661 provides, in part, that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resources development programs through effective planning, development, maintenance and coordination of fish and wildlife conservation and rehabilitation features.

b. Section 662 describes the compliance responsibilities of Federal agencies, with the exception, in subsection 662(g), that projects or separable project units that had obligated sixty percent of their estimated construction costs, as of 12 August 1958, are exempt from the requirements of the FWCA.

(1) Subsection 662(a) provides that whenever the waters of any stream or other body of water are proposed to be impounded, diverted, the channel deepened, or otherwise controlled or modified, including the issuance of permits to conduct such a modification, the Corps shall consult with the USFWS and/or the NMFS as appropriate, and the agency administering the fish and wildlife resources of the state. This consultation shall consider conservation of fish and wildlife resources with the view of preventing loss of and damages to such resources as well as providing for their development and improvement in connection with such water resources development. Additionally,

although not a requirement of the FWCA, full consideration should also be given to the potential for collaboration with the programs of the USFWS, the NMFS and the appropriate state fish and wildlife agencies in order to more efficiently utilize the financial and technical resources of the parties involved in a manner similar to the process established under the Coastal America Partnership to which the Corps is a signatory; both the original MOU, dated 16 April 1992 and the most recent MOU, dated 12 July 1994.

(2) Subsection 662(b) provides that any reports and recommendations of the fish and wildlife agencies shall be included in authorization documents for the construction or for the modification of water resources projects. The Corps shall give full consideration to the reports and recommendations of the fish and wildlife agencies, and include such justifiable means and measures for fish and wildlife mitigation and/or enhancement as the Corps finds should be adopted to obtain maximum overall project benefits and that are consistent with the principals of ecosystem restoration and protection.

(3) Subsection 662(c) authorizes the modification or additions of structures and operations to water resources projects not substantially completed as of the date of the Act and to acquire lands for the conservation of fish and wildlife resources. For projects authorized prior to the date of enactment, such modifications or land acquisition shall be compatible with the basic project purposes; the costs shall be an integral part of the cost of such projects; and the costs allocated to fish and wildlife conservation may be cost shared by a non-Federal interest. However, prior to any land acquisition a report must be provided to Congress and the acquisition authorized in accordance with subsection 663(c).

(4) Subsection 662(d) requires that the planning, construction or installation, and maintenance of such means and measures adopted for fish and wildlife conservation purposes shall be an integral part of the cost of such projects. The costs associated with improvements for fish and wildlife conservation shall not extend beyond those necessary for land acquisition; facilities as recommended in project reports; modification of the project; and/or modification of project operations. These costs shall not include the operation of fish and wildlife facilities.

(5) Subsection 662(e) authorizes the Corps, if construction is to be conducted by the Corps, to transfer general investigation, engineering, or construction funds to the USFWS and/or the NMFS, as appropriate, to conduct all or part of the investigations necessary to carry out the provisions of Section 662(a). This requirement, along with those of subsections (a), (b), (d) and (f) are met with the execution of the 1982 Transfer Funding Agreement with the between the Corps and the Department of the Interior (USFWS). This agreement establishes procedures whereby information on fish and wildlife resources is provided to the Corps for consideration in all investigations and activities covered by the FWCA.

(6) Subsection 662(f) requires that reports to Congress include an estimate of the fish and wildlife benefits or losses for projects, including benefits for measures recommended specifically for enhancement; that part of the cost of joint-use facilities allocated to fish and wildlife; and, that part of the cost to be reimbursed by non-Federal interests.

c. Section 663 provides that in subsection 663(a) consistent with primary project purposes, project land and water areas shall be made available for conservation, maintenance, and management of fish and wildlife and their habitat by the states or the Secretary of the Interior. Use of such areas under the authority of this Act shall be in accordance with general plans as provided for in subsection 663(b) and the 1955 agreement between USFWS and the Corps. Subsection 663(c) provides that before properties are acquired to preserve and assure, for the public benefit, the fish and wildlife potentials of a project area, specific authorization must be obtained from Congress; unless, these properties are consistent with the requirements of Section 906(b) of WRDA 1986. (See also paragraph 19-8(a)(2))

19-18. The Endangered Species Act (ESA) of 1973 (Public Law 93-205). The (ESA), as amended, has a unique place within the water resources program of the Corps as it is one of the few pieces of environmental legislation that has criminal liability associated with non-compliance with its provisions. The ESA itself is divided into three principal areas. First, Section 4 requires the identification and listing of imperiled species, as well as their critical habitat. Second, and perhaps the most important provision for Corps activities, Section 7 prohibits agency actions from jeopardizing listed species or adversely modifying their designated critical habitat. Section 7 also requires agencies to undertake affirmative programs for the conservation of listed species. Finally, Section 9 prohibits all persons, including all Federal, state and local governments, from taking listed species of fish and wildlife. The important provisions of Section 7 are outlined below, with additional information provided in paragraph 25-11 and in ER 1105-2-100, Chapter 7 which provides the guidance necessary for compliance. Offsetting measures, environmental design features, or environmental protection measures for endangered species under Section 7 of ESA should be a separable element from habitat mitigation under the (FWCA) and Corps regulations for wetlands (ER 1105-2-100, para. 7-49).

a. Section 7(a) of the amended ESA, requires all Federal agencies, in consultation with the Secretary of the Interior or Commerce, to utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species protected by the ESA. Additionally, on 28 September 1994 a Memorandum of Understanding (MOU) was signed by the Acting Assistant Secretary of the Army along with six other Federal departments to establish a general framework for greater cooperation and participation among the departments in the exercise of their responsibilities under the ESA. The MOU stated that the departments "... will work together to achieve the common goals of (1) conserving species listed as threatened or endangered under the ESA; (2) using existing federal authorities and programs to further the purposes of the ESA; and, (3) improving the efficiency and effectiveness of interagency consultations conducted pursuant to Section 7(a)(2) of the ESA." Further, Section 7 of the ESA also requires that all Federal agencies, in consultation with either the USFWS or the NMFS, shall insure that any action authorized is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction of their critical habitat.

b. Section 7(b) of the amended ESA requires the USFWS and/or the NMFS to complete the consultation within 90 days after the date it was initiated unless the Corps, the USFWS and/or the NMFS mutually

agree to an extension.

c. Section 7(c) of the amended ESA, requires the Corps, on all construction projects for which no contract for construction had been entered into or for which no construction had begun as of 10 November 1978, to request of the USFWS and/or the NMFS information regarding species listed or proposed to be listed that may be in the proposed project area. If the USFWS and/or the NMFS advises that listed species may be present, the Corps shall conduct a biological assessment to identify any listed species which are likely to be affected by the project. The biological assessment shall be completed within a time period mutually agreed to by the Corps, the USFWS, and/or the NMFS, but before any contract for construction is entered into and before construction is begun. If the findings of the biological assessment determine that an endangered or threatened species or its critical habitat will be impacted, the Corps must notify the USFWS and/or the NMFS of these findings. This notification triggers the formal consultation process. Under the ESA, the finding by the Corps that a proposed construction or operational activity will negatively impact an endangered or threatened species or its critical habitat will initiate the preparation of a biological opinion by the USFWS and/or the NMFS. This biological opinion must include a summary of the information upon which the opinion is based; a detailed discussion of the proposed action's effects on the species or its critical habitat; and the opinion of the USFWS and/or the NMFS as to whether the proposed action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat. The USFWS and/or the NMFS have basically two options, (1) to determine that the proposed action will not jeopardize the species and/or its critical habitat or (2) that the proposed action will result in jeopardy to the species and/or its critical habitat. When there is a finding of potential jeopardy, the USFWS and/or the NMFS must include in their biological opinion reasonable and prudent alternatives that would allow the project to continue.

d. Section 7(d) of the amended ESA states that after initiation of consultation required under Section 7(a) the Corps shall not make any irreversible or irretrievable commitment of resources which will have the effect of foreclosing the formulation or implementation of any reasonable and prudent alternatives to avoid jeopardizing the continued existence of any endangered or threatened species or their critical habitat.

e. Section 7(e) provides authority for the establishment of the Endangered Species Committee (composed of six cabinet level members and one state representative) that is empowered to grant an exemption from the requirements of Section 7(a) to Federal agencies, the governor of a state and/or permit applicants.

f. Section 7(h) provides the criteria to be considered by the Endangered Species Committee whether or not to grant an exemption to Section 7(a) of the ESA.

19-19. The Clean Water Act of 1972, as amended (Public Law 92-500 and 33 USC 466 et. seq.). The objective of the Clean Water Act (CWA) as amended, is to "... restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA goes on to state that this objective is to be achieved, in part, by providing interim water quality which provides for the "... protection and propagation

of fish, shellfish , and wildlife" The Corps has two primary responsibilities under the CWA, i.e., compliance with Section 401, state water quality certification, and Section 404 (b)(1), the discharge of dredged or fill materials into the waters of the United States. (See also Chapter 3, paragraph 3-5 and ER 1105-2-100, Chapter 7; and, 40 CFR 230)

19-20. Legal Basis for Mitigation of Damages to Fish and Wildlife Resources. There are three different and substantive legal requirements as to when the Corps must provide mitigation for adverse impacts on the environment, including fish and wildlife resources as discussed in paragraph 19-16. For Corps projects involving the discharge of dredged or fill materials into the waters of the United States, the 404 (b)(1) guidelines (40 CFR 230) establish the mitigation standard for adverse impacts on the aquatic environment. The guidelines (40 CFR 230.10(d)) prohibit the discharge of dredged or fill material "... unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem." In addition, the FWCA, Section 662(b) requires that reports submitted to Congress for authorization of Civil Works projects include "... such justifiable means and measures" of mitigation "... to obtain maximum overall project benefits." Finally, supplementing the responsibilities and authorities of the Secretary of the Army under the Fish and Wildlife Coordination Act, Section 906, entitled "Fish and Wildlife Mitigation" was enacted in 1986 as part of the comprehensive Water Resources Development Act. Section 906(d) requires reports submitted to Congress for authorization shall contain "... a recommendation with a specific plan to mitigate fish and wildlife losses created by such project or a determination by the Secretary that such project will have negligible adverse impacts on fish and wildlife." (See also paragraph 19-8.a(4) above). Finally, while not technically defined as mitigation, "reasonable and prudent measures" are to be provided by either the USFWS or the NMFS when a project will jeopardize the continued existence of an endangered or threatened species and/or their critical habitat under the ESA. These reasonable and prudent measures must be complied with in order to construct and/or operate a project and, because they represent a means to lessen or eliminate an impact, could be classified as a mitigation requirement.

19-21. Mitigation Principals. Damages to fish and wildlife resources will be prevented to the extent practicable through good planning and design incorporating the mitigation principles defined within Council on Environmental Quality's (CEQ) NEPA guidelines, i.e., first avoid the impact; next, minimize the impact; and, finally compensate for unavoidable damages to significant fish and wildlife resources. Measures to offset unavoidable damages to significant fish and wildlife resources will be included in projects when the cost of these measures are justified by the combined monetary and non-monetary benefits attributable to the proposed measures. These mitigation plans are to contain the most efficient and least costly measures appropriate to reduce fish and wildlife resource losses. Mitigation of losses will be provided to the maximum extent practicable through the development and implementation of mitigation measures on project lands. If project lands cannot fulfill our mitigation requirements, then separable public lands adjacent to project lands, to the extent possible, should be considered next. Any consideration of separable private lands not adjacent to project lands should be the last option considered. Acquisition of an interest in any lands or waters for mitigation of damages to fish and wildlife resources that do not

comply with the limited authority provided by Subsection 906(b) of WRDA 1986 requires specific congressional authorization (See paragraph 19-8.a(2)). Measures to mitigate project caused damages to significant fish and wildlife resources are project costs and will be allocated to the responsible (causative) purposes of the project in the same way as other project costs. Mitigation costs will also be shared to the same extent as the other costs allocated to such purposes are shared. The mitigation costs include separable first costs (any lands and construction) and separable operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) costs.

a. Justification. The basis for justifying which fish and wildlife resources are to be mitigated should be a combination of two major factors: (1) those significant fish and wildlife resources that will be unavoidably damaged as determined by an impact assessment of various alternative plans being considered; and (2) an examination of the cost effectiveness of various mitigation alternatives designed to achieve the mitigation goals established by the impact analysis. The significance of ecological resources to be protected, restored or created must be established through their legal or institutional recognition, their scientific recognition, and/or their public recognition. (See also the P&G and ER 1105-2-100) A separate benefit cost ratio for mitigation measures will not be computed, nor should economics be used as the only basis for justification of mitigation. However, dollar values associated with user-days generated by a mitigation plan, as well as user-days lost because of project construction, are proper factors to consider. Additionally, non-monetary values, e.g., habitat units lost and gained with each proposed mitigation measure, should be developed and considered, along with the monetary values, when selecting and determining the justification of mitigation plans. Non-monetary benefits should be quantified in appropriate units such as, e.g., increased number of nests, habitat units, quantity and quality of acres modified (including acres of specific habitat type), diversity indices, etc. With and without project conditions should be briefly described and each additional increment of the proposed modification should have its associated quantifiable benefits documented. Non-monetary values should also reflect the importance or significance of the affected fish and wildlife resources from local, regional and national recognition, as noted above. The objective is to maintain the integrity and viability of significant natural resources and their contributions to local and regional ecosystems rather than considering all resource losses inherently equal. This demands that the concept of ecosystem management be fully applied, i.e., planners need to be aware of the biological and physical relationships among individual species and among different species in assessing significance. Finally, mitigation plans shall be justified incrementally, i.e., when an increment or management measure is added to a plan, it should increase the plan's net benefits.

b. Implementation. Generally, the Corps implements mitigation measures concurrently with the initiation of construction of other project features as per Subsection 906(a) WRDA 1986 (See also paragraph 19-8a(1) and ER 1105-2-100, Chapter 7). Since this requires that the Corps maintain the ability to condemn lands, reports proposing land acquisition for mitigation purposes should not contain recommendations that would preclude the Corps from exercising the power of eminent domain.

c. Operation and Maintenance. Responsibility for operation,

maintenance, rehabilitation and replacement (OMRR&R) of mitigation features is typically defined in authorizing legislation. However, since the passage of WRDA 1986, Corps policy has been for the non-Federal interest to assume 100 percent of the OMRR&R. Mitigation features should be operated and maintained by the agency that can most efficiently do the job. Reports proposing the authorization of mitigation measures should identify the agency that will subsequently be responsible for funding and managing the OMRR&R. Responsibility for funding OMRR&R rests with the agency responsible for those activities. Authorization reports should not propose that the Corps budget funds annually for transfer to other agencies for OMRR&R activities. At projects not operated and maintained by the Corps, where local interests other than the project sponsor is the managing agency for mitigation features, a lump sum payment for the Federal share of the OMRR&R (when minor) will be made to the managing agency rather than being deducted from the non-Federal contribution toward first costs. This will be covered in preauthorization planning studies, and, unless there is some legal restraint, the Corps will require the project sponsor's share of mitigation OMRR&R costs to be capitalized and turned over to the managing agency concurrently with the Federal contribution.

e. Review of Completed Projects. It is the general policy of the Corps to review completed projects for additional mitigation measures only in response to congressional authorization, other legal requirements, or through the application of Section 216 of the River and Harbor and Flood Control Act of 1970 (RHFCA 1970). This provision of the RHFCA 1970 authorizes the Corps to undertake studies to review the operation of completed federal projects and recommend project modifications "... when found advisable due to significantly changed physical or economic conditions ... and for improving the quality of the environment in the overall public interest." (See also ER 1165-2-119, "Modifications to Completed Projects")

f. Monitoring. Post-construction monitoring of mitigation measures may be necessary, in some cases, and should be designed to evaluate whether or not the mitigation measures are working as planned following their construction. Adaptive management is a technique that should be considered for monitoring programs for projects/measures that have the potential for uncertainty in achieving their objectives. (See ER 1105-2-100, Chapter 4) The cost and duration of a mitigation monitoring program should be included in the estimate of the construction cost of the project and in appropriate reports (feasibility reports, re-evaluation reports, or other decision documents, as well as cost sharing agreements). The monitoring plan will describe the nature of the monitoring required as well as the period of time within which it will be conducted. Monitoring proposals will consider the local sponsor's ability to carry out and fund its monitoring responsibilities and specify who will actually carry out the monitoring activities. Any monitoring requirements will be clearly specified in the Project Cooperation Agreement (PCA).

(1) Monitoring for mitigation measures will be cost-shared with the local sponsor in accordance with the project purpose that caused the damages to the fish and wildlife resources.

(2) The local sponsor will assume normal O&M responsibility for the project, including any monitoring requirements specified in the PCA, upon receipt of the O&M manual. There may be instances where it would be more cost effective for Corps operational elements to

conduct specified monitoring responsibilities, with appropriate non-Federal reimbursement.

g. Relationship of Mitigation to Ecosystem Restoration and Protection. As discussed above in paragraphs 19-2 through 19-6 and in paragraph 19-16 the Corps focus is upon recognizing the importance of fully functioning ecosystems. Mitigation deals, in part, with the concept of ecosystem restoration and protection by its recognition of the importance of certain features of the ecosystem. Mitigation addresses these ecosystem features by attempting to eliminate and/or lessen the impact of our water resource activities upon these features. Restoration and protection activities, on the other hand, will often utilize the same techniques as used in mitigation; however, the purpose of our activities will be to restore some ecological condition that has been degraded, either by our activities or those of others. Consequently, the procedures used to justify our activities, whether they are for mitigation or restoration purposes, will typically be the same. The only distinguishable difference between mitigation and restoration activities is when they are applied. This is further clarified in the discussions that follow on the beneficial uses of dredged material and the project modifications for improvement of the environment.

19-22. Consideration of the Beneficial Uses of Dredged Material Within the Civil Works Program. Section 204 of WRDA 1992 (Public Law 102-580), as amended by Section 207 of WRDA 1996 (Public Law 104-303), and ER 1105-2-100 recognize that clean dredged materials can be used as a resource to benefit aquatic ecosystems. Important provisions of Section 204 include:

a. Section 204(a) authorizes the Secretary of the Army to carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands (hereinafter referred to as ecosystem restoration and protection projects) in connection with dredging for construction, operation, or maintenance by the Corps of an authorized Federal navigation project.

b. Section 204(b) states that projects may be undertaken upon a finding by the Secretary of the Army that the environmental, economic, and social benefits of the project, both monetary and non-monetary, justify the cost thereof and the project would not result in environmental degradation.

c. Section 204(c) requires non-Federal interests to enter into a cooperative agreement in accordance with the requirements of Section 221 of the Flood Control Act of 1970 and provide 25 percent of the cost associated with the construction of the project including provision of all lands, easements, rights-of-way, and necessary relocations (LERR). The non-Federal sponsor must also agree to pay 100 percent of the OMRR&R costs associated with the project.

d. Section 204(d) states that project costs are limited to incremental construction costs in excess of those costs necessary to dredge the authorized navigation project in the most cost effective way, consistent with economic, engineering, and environmental criteria.

e. Section 204(e) indicates that in developing and carrying out a project for navigation involving the disposal of dredged material, the Secretary of the Army may select a disposal method that

is not the least cost option if the Secretary determines that the incremental costs of such disposal method are reasonable in relation to the environmental benefits.

f. Section 204(f) establishes an annual appropriations limit of \$15,000,000 for the Section 204 program.

19-23. Justification of Ecosystem Restoration Using Dredged Material. Justification is established by demonstrating that the monetary and non-monetary benefits (outputs) of the ecosystem restoration project are greater than the incremental costs above the base plan, in a manner consistent with the justification process described for mitigation in paragraph 19-21.a above. The base plan for navigation purposes is defined as the plan that accomplishes the disposal of dredged material associated with the construction or maintenance dredging of navigation projects in the least costly manner, consistent with sound engineering practices and in compliance with all applicable Federal and state environmental standards, including those established by Section 404 of the CWA of 1972, as amended, and Section 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972, as amended. If the ecosystem restoration project is part of the base plan, it is a navigation (harbor or inland system) construction or maintenance cost and funded accordingly. Where the ecosystem restoration project is not part of the base plan for the navigation purpose, the base plan serves as a reference point for measuring the incremental costs of the ecosystem restoration project that are attributable to the environmental purpose. Where the ecosystem restoration project involves separable increments, each increment must be justified. In the case of recommendations for new navigation improvements, where justification of the ecosystem restoration measures have been demonstrated, the incremental costs of such measures shall not be included in the overall navigation project benefit-cost ratio and navigation net benefits in accordance with Section 907 of WRDA 1986. (See also paragraph 19-8.b)

19-24. Cost Sharing of Ecosystem Restoration Using Dredged Material. Ecosystem restoration projects are funded as navigation construction or O&M costs up to the level of the base plan.

a. Non-Federal interests must agree to provide 25 percent of the incremental costs above the base plan associated with construction of the ecosystem restoration project, including provision of all LERR. No credit will be allowed for work-in-kind. Where the value of LERR exceeds the non-Federal sponsors 25 percent share, the sponsor will be reimbursed for the value of LERR exceeding the 25 percent non-Federal share. The non-Federal sponsor is responsible for the entire cost of OMRR&R associated with the project.

b. While the cost sharing policy for ecosystem restoration projects allows for reimbursement in cases where the value of lands, easements and rights-of-way exceed the 25 percent non-Federal share, the land values for most ecosystem restoration projects should be less than 25 percent of total project costs.

19-25. Environmental Monitoring of Ecosystem Restoration Using Dredged Material Projects. Allowance in project costs can be made for reasonable follow-up and monitoring studies to assure performance criteria or environmental compliance commitments are met. Monitoring costs will be considered part of construction costs and cost shared accordingly.

19-26. Procedures for Ecosystem Restoration Using Dredged Material for New Navigation Projects or Modifications (Construction). Feasibility studies for new navigation projects or modifications to existing navigation projects shall include an examination of the feasibility of using dredged material for ecosystem restoration. Ecosystem restoration measures included in specifically authorized navigation projects do not rely on the authority of Section 204 of WRDA 1992 and do not count against the annual appropriation limits of Section 204. Funding for implementation of these measures would be requested as part of the specific Construction, General (CG) funding for the new navigation project or improvement following authorization.

19-27. Procedures for Ecosystem Restoration Using Dredged Material for Existing Navigation Projects (Maintenance Dredging). Identifying opportunities for use of maintenance dredging material for ecosystem restoration projects will require the close cooperation of planning and operations elements and early coordination with potential non-Federal sponsors. In the development of dredged material management plans for each Federal project, an examination of the potential for ecosystem restoration projects using dredged material should be included. Large habitat projects using maintenance dredging material which are beyond the scope of the Section 204 program may be pursued under a specific study authority or studied under the authority of Section 216 of the River and Harbor and Flood Control Act of 1970, (PL 91-611) and be specifically authorized. (See paragraph 5-2.d)

19-28. Procedures for Ecosystem Restoration Using Dredged Material for Navigation Projects In Pre-Construction Engineering and Design (PED) or Construction. The authority of Section 204 of WRDA 1992 may be used to add ecosystem restoration measures to utilize dredged material from navigation projects in the PED or construction phases where such measures were not included in the authorized plan for the project. PED or construction funds for the basic navigation project would be utilized for the initial appraisal for these ecosystem restoration projects. Ecosystem restoration projects added during the PED phase must be carefully coordinated to be compatible with the navigation project schedule and not unduly delay the initiation of navigation project construction.

19-29. Consideration of Project Modifications for Improvement of the Environment. Section 1135 of WRDA 1986, as amended (Public Law 99-662) recognizes the potential of modifying existing Corps project structures, operations, and/or areas where the Corps project contributed to the degradation of the ecosystem for the purposes of providing environmental benefits in the public interest. Relevant provisions of Section 1135 of WRDA 1986, as amended, include:

a. Section 1135(a) which authorizes the Secretary of the Army to review the operation of water resources projects constructed by the Secretary to determine the need for modifications for the purpose of improving the quality of the environment in the public interest.

b. Section 1135(b) which authorizes the Secretary of the Army to make such modifications in the structures and operations of water resources projects which are feasible and consistent with the authorized project purposes, and which will improve the environment in the public interest.

c. Section 1135(c) which states that if the Secretary determines that construction of a water resources project by the Secretary or operation of a water resources project constructed by the Secretary has contributed to the degradation of the quality of the environment, the Secretary may undertake measures for the restoration of environmental quality at locations that have been affected by the construction or operation of the project.

d. Section 1135(d) which states that the non-Federal share of the cost shall be 25 percent and not more than 80 percent of the non-Federal share may be in-kind. Not more than \$5,000,000 in Federal funds may be expended on any single modification.

e. Section 1135(g) which authorizes maximum annual appropriations of \$25 million for this section.

f. Section 1135(h) which defines a "water resources project constructed by the Secretary" to include a water resources project constructed or funded jointly by the Secretary and the head of any other Federal agency.

19-30. Eligibility and Objectives for Section 1135 Projects.

a. The proposed project must modify the structures or operations of a permanent project constructed by the Secretary of the Army in response to a Corps construction authority. The scale of the proposed project modification should be reasonable with respect to the project being modified. Section 1135 may not be used to modify projects where the Corps involvement consists of works constructed under the generic Disaster Relief Acts and Section 5 of Public Law 77-228, as amended. Consideration should be given to using an authority other than Section 1135, if operational only changes are proposed which can be accomplished without additional cost.

b. The focus of the project modification should be on measures designed to achieve ecosystem restoration and protection objectives, as discussed in paragraphs 19-2 through 19-6 above, to a level that could be expected to sustain the natural carrying capacities of fish and wildlife resources. Considerations include:

(1) The emphasis of the proposed modification should be to restore or otherwise improve degraded ecosystems to their natural integrity, productivity, stability and/or biological diversity.

(2) The focus should be more toward multiple species that are representative of the biological communities being examined and not solely those of recreational and/or commercial importance. Acknowledgment of recreation-oriented outputs of an ecosystem restoration project is appropriate; however, these cannot be the primary basis for justification.

19-31. Objectives and Constraints for Section 1135 Projects.

a. The acquisition of additional lands should be kept to a minimum. As a target, land acquisition should not exceed 25 percent of total project modification cost.

b. Using the Corps engineering expertise to develop innovative solutions to ecosystem problems is encouraged; however, the accompanying design standards should reflect the legitimate risks

associated with potential failure.

c. Since the purpose of any proposed modification is ecosystem restoration and protection, proposals should be designed to avoid any need for a mitigation requirement. Further, Section 1135 proposals should not be used to fulfill the mitigation requirements of the basic project or any mitigation requirements that have been incurred by the local sponsor including their use as part of a mitigation bank.

d. The proposed modification must be justified on the basis of its monetary and non-monetary benefits exceeding the monetary and non-monetary costs, in a manner consistent with the justification process described for mitigation in paragraph 19-21a above.

e. Modifications designed primarily to halt erosion, to control sedimentation, to add a new project purpose such as water supply, or the addition of waterborne recreation at an existing dry reservoir should not be pursued using Section 1135 authority.

19-32. Program Cost Sharing for Section 1135 Projects. The planning and design phase(s) will initially be fully funded by the Government. However, these costs shall be included as part of the total project modification costs to be shared 75 percent Federal and 25 percent non-Federal.

a. In meeting its responsibility, the non-Federal sponsor shall provide all lands, easements, rights-of-way, suitable borrow and dredged or excavated material disposal areas, and perform or ensure performance of all relocations (LERRD), required for the project modification which are not otherwise available due to the construction or operation of the existing project.

b. The value and credit for LERRD provided for the project modification by the non-Federal sponsor shall be determined as described in ER 405-1-12 and the Section 1135 program guidance. If the value of the identified LERRD represents less than 25 percent of the total project modification costs, the non-Federal sponsor shall provide, during the period of implementation, a cash contribution in the amount necessary to make its total contribution equal to 25 percent.

c. If the value of LERRD contributions exceeds 25 percent of the total project modification costs, the Government shall refund the excess to the non-Federal sponsor. However, the non-Federal sponsor shall not receive any credit for LERRD previously provided as an item of cooperation for another Federal project nor shall the value thereof be included in the total project modification costs.

d. Credit will be allowed for work-in-kind provided that these services do not result in a reimbursement by the Government and their combination with the LERRD does not exceed 25 percent of project costs.

e. Federal Aid in Wildlife Restoration Act (Pittman-Robertson) and Federal Aid in Sport Fisheries Restoration Act (Dingel-Johnson) funds, and North American Wetlands Conservation Act funds (Mitchell Bill) may not be used by states as the non-Federal share of a Section 1135 project modification.

19-33. Operation and Maintenance for Section 1135 Projects. Usually,

the non-Federal sponsor shall be responsible for 100 percent of the incremental OMR&R costs associated with the project modification. The non-Federal sponsor shall OMR&R the project modification in a manner so that liability will not arise under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

19-34. Cost Allocation for Section 1135 Projects. Costs for implementation and OMR&R of project modifications undertaken pursuant to Section 1135 are incremental to the existing costs of the project being modified. The ecosystem restoration and protection features are in addition to authorized project purposes, and are not for mitigation. Therefore, the costs of the project modifications should not be allocated to other project purposes, but should be considered solely as ecosystem restoration and protection costs and shared in accordance with the provisions of Section 1135 of WRDA 1986, as amended. (See also paragraph 19-32 above)

19-35. Monitoring of Section 1135 Projects. Post-implementation monitoring may be warranted for some project modifications. The discussion of the recommended plan should include a description of and the rationale for any proposed monitoring. Monitoring should be limited to a 3- to 5-year period. The cost of monitoring will be included in the total project modification cost and cost shared with the non-Federal sponsor.

19-36. Consideration of Aquatic Ecosystem Restoration Within the Civil Works Program. Section 206 of WRDA 1996 authorizes the Secretary to carry out projects for aquatic ecosystem restoration and protection if the Secretary determines that the project will improve the quality of the environment, is in the public interest and is cost-effective. Section 206 projects will be accomplished in a manner generally consistent with the plan formulation and evaluation concepts outlined in paragraphs 19-2 through 19-6, above, and ER 1105-2-100. Project justification will require the use of cost effectiveness and incremental cost analysis techniques. Not more than \$5 million in Federal funds may be spent at a single locality. The program is limited to \$25 million in appropriations in a fiscal year. A non-Federal interest must provide 35 percent of the project cost including all LERR as well as a 100 percent of all OMR&R costs. Funds are budgeted and appropriated at the program level, and managed at Headquarters Planning Division.

19-37. Consideration of Cultural Resources Management Within the Civil Works Program. Cultural resources management is an equal and integral component of natural resource management at operating Civil Works projects. Further, our traditional view of cultural resources as representative of only the non-living and non-renewable components of natural resources as discussed under Section 101(b) of NEPA is changing. Today, as we gain greater insights and knowledge of other cultures, we are realizing that landscape features can have significant cultural significance as well as corresponding ecosystem values. Thus, it is the policy of the Corps to identify, evaluate, and manage cultural resources that are eligible for listing in, or listed in, the National Register of Historic Places. Associated with this policy is the Corps responsibility to ensure that cultural resource management activities are consistent with Federal laws and regulations pertaining to Native American rights, curation and collections management, and the protection of resources from looting and vandalism.

a. Mandatory Center of Expertise (MCX). The Corps MCX for Curation and Management of Archaeological Collections at St. Louis manages Corps-wide curation needs assessments and design services for the curation of archaeological collections. The MCX reviews the status of Corps-wide curation of collections and associated documents and ensures USACE compliance with the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA), Public Law 101-601, and 36 CFR Part 79 (Curation of Federally-Owned and Administered Archeological Collections).

b. Tribal Consultation. Consistent with NAGPRA, Public Law 95-341, American Indian Religious Freedom Act and Public Law 103-141, Religious Freedom Restoration Act of 1993, commanders are required to consult with affected tribes, groups, or individuals regarding appropriate action for project effect upon sacred sites, important to the practice of traditional Native American religion. Native American consultation topics may include access to sites, use and possession of sacred objects, freedom to worship unburdened except when government limitations meet the compelling interest test, and suitable preservation measures. Tribal consultation pursuant to cultural resource law may require Native American and/or Native Hawaiian attendance at meetings, on-site visits, and the sharing of information akin to intellectual property.

c. Cultural Resources Management Plans. In accordance with provisions of the Archeological Resources Protection Act (ARPA) of 1979, as amended, and the National Historic Preservation Act (NHPA) of 1966, as amended, district commanders ensure that Cultural Resources Management Plans (CRMP), where appropriate, are developed for subordinate USACE projects.

d. Cultural Resources Protection Policy. Commanders have the ability to restrict access to associated records that contain information relating to the nature, location or character of a prehistoric or historic resource unless the commander determines that such disclosure would not create a risk of harm, theft or destruction to the resource or to the area or place where the resource is located. In addition, requests by other agencies or persons to conduct historic or archeological investigations of any type on Corps managed or controlled lands, sites, or properties, must be in accordance with the requirements of the ARPA of 1979, as amended (Public Law 96-95). Procedures for the development of permit requests as well as review and approval of permits for these investigations can be found in ER 405-1-12. Corps land managers should note that violators of protected properties can be prosecuted under 36 CFR Part 327, 14(a), which provides protection for historic properties and public property, or ARPA.

e. Additional or more detailed information on the treatment of the cultural environment at Corps operating projects can be found in ER/EP 1130-2-540, Project Operations: Environmental Stewardship.

19-38. Cultural Resources Management in the Planning Process. Historic properties are finite, nonrenewable resources which must be taken into account in formulating recommendations for project authorization and implementation. Preservation of significant cultural resources through avoidance of effects is preferable to any other form of mitigation. As early in the planning process as is possible, alternative solutions are sought to water resources problems that avoid effects on properties that are either listed or eligible

for listing in the National Register, and when such properties can be preserved, full consideration is given to this course of action. Those actions having an unavoidable effect or no effect on National Register or eligible historic properties are fully coordinated with the appropriate State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) in accordance with 36 CFR Part 800.

a. In the multi-phased process leading to Congressional authorization and construction of a project, cultural resource considerations are characterized by the following activities.

(1) Reconnaissance Phase Studies. Cultural resources investigations during the Reconnaissance Phase of Planning are usually restricted to a literature and records review, coupled with an on-site inspection (including, when possible, field check of recorded or potential site locations) or pedestrian overview. In unusual cases, the results of the Reconnaissance Phase studies may indicate that the cost of adequately mitigating the effects of alternative plans upon historic properties could exceed one percent of the total Federal amount authorized for appropriation. In those cases, the Reconnaissance Phase Report includes a narrative on the potential need to exceed the one percent level. This narrative includes the factual basis for concern and the need or likelihood of seeking a waiver under Section 208 of the National Historic Preservation Act Amendments of 1980.

(2) Feasibility Phase Studies. In consultation with the SHPO, commands design and implement such studies as are necessary to evaluate alternative plans in terms of their relative impact on historic properties. These studies should, when conducted on a sampling basis, provide for the efficient planning of any further cultural resource investigations that may be needed prior to initiation of construction. Feasibility phase studies are normally accomplished on a sampling basis formulated within a research strategy tailored to insure adequate coverage of the environmental zones within the alternative plan impact areas. However, when considered necessary or appropriate by the district commander, a sample survey may be waived in favor of an intensive survey/inventory, approaching 100 percent coverage, during the Feasibility Phase. Again, cultural resource studies completed during this phase of planning, may indicate that the cost of adequately mitigating the effects of a selected or primary plan upon historic properties could exceed one percent of the total Federal amount authorized for appropriation. In those cases, the feasibility phase report shall include a narrative on the potential need to exceed the one percent level.

b. Preconstruction Engineering and Design Phase Studies.

(1) During the period between completion of the feasibility report and initiation of construction, intensive surveys/inventories, if required or not previously conducted, are accomplished in the area of potential environmental impact of the recommended plan or authorized project. The results of such inventories serve as the basis for formulation of plans for management of historic properties prior to or during the construction and operational stages of projects.

(2) Such inventories are accomplished within the context of an explicit research design, formulated in recognition of prior work

by the Corps and others, and include such testing and other comparisons and evaluations as may be required to formulate a program which provides a defensible basis to:

(a) Seek determinations of eligibility of resources for the National Register of Historic Places.

(b) Determine when a project will have "no effect" on historic properties.

(c) Identify historic properties whose value lie only in their potential contribution to archeological, historic, or architectural research. For such properties, it may be appropriate to develop determinations of "no adverse effect" when a property's value can be substantially preserved through the conduct of appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines.

(d) Determine the need to mitigate adverse project effects on National Register and eligible properties in light of their historic or architectural significance or their potential to further archeological knowledge.

(e) Develop plans and cost estimates for such mitigation or other treatment of historic properties affected by the project.

(f) Serve as the basis for negotiation of a memorandum of agreement (if no memorandum has been previously prepared) with the ACHP and the SHPO specifying actions which will be taken by the Corps of Engineers prior to or during the project construction period to mitigate adverse effects on National Register and eligible properties.

(3) Should the estimated cost of these mitigation measures exceed one percent of the total estimated Federal appropriation required for construction of a project for which Congress has not specifically authorized expenditures in excess of this amount, a waiver request is submitted in accordance with Section 208 of the National Historic Preservation Act Amendments of 1980 and procedures established in ER 1105-2-100.

c. When Civil Works planning studies include cultural resources studies of lands held in fee title by the Corps of Engineers, provisions of NAGPRA apply to cultural items covered by the Act that are discovered in the fee owned lands.

(1) Cultural items, as defined by the Act, include human remains, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony.

(2) In treating cultural items and coordinating with Native American and/or Native Hawaiian groups, Corps commands are guided by the CECW-O/CECW-P "Interim Guidance for the Native American Graves Protection and Repatriation Act, Public Law 101-601", dated 5 June 1991, subsequent Corps-wide guidance issued from HQUSACE, and 43 CFR Part 10 ANAGPRA Regulations, Final Rule,@ dated 4 December 1995

19-39. Cultural Resources Management for Continuing Authority Projects. Procedures for the identification, evaluation, and mitigation of effects on historic properties within the impact area of projects planned and implemented under Continuing Authorities for

flood control, navigation, streambank erosion control and shore protection are also established in ER 1105-2-100.

a. Sections 103, 107, 111, and 205. The implementation of projects under these authorities includes two planning phases (reconnaissance and feasibility), preparation of plans and specifications, and construction. Cultural resources investigations during the reconnaissance phase of planning is consistent with the overall objectives of the study as well as time and cost limitations. The purpose of this appraisal is to evaluate, document the extent of, and validate the present knowledge of historic properties which might be effected by water resource development. The review of available information may also assist in the design of more intensive investigations of the planning area and the development of cost figures for later implementation phases. The feasibility phase should complete the plan formulation process and result in the preparation of a Detailed Project Report (DPR). If the literature and records review and limited field examination conducted in the reconnaissance planning phase reveal the presence, or likely presence of historic properties within the areas of potential project effect, the Corps command conducts an intensive survey/inventory. The results of the intensive survey/inventory shall be presented in the DPR along with the proposed plan for mitigation if adverse effects on historic properties will occur.

b. Should the estimated cost of mitigation measures exceed one percent of the total estimated Federal appropriation required for construction of a project for which Congress has not specifically authorized expenditures in excess of this amount, a waiver request shall be submitted in accordance with Section 208 of the National Historic Preservation Act Amendments of 1980 and ER 1105-2-100.

c. Section 14 and 208. Projects considered pursuant to these Continuing Authorities are subject to a single planning phase prior to the preparation of plans and specifications. Because of this accelerated implementation process, all necessary literature and records reviews, intensive survey/inventory, and interagency coordination are accomplished prior to the preparation of plans and specifications. If historic preservation mitigation is required, it is completed prior to the award of contract for construction.

d. Section 14 and 208 projects are not exempt from compliance with the National Historic Preservation Act of 1966 and 36 CFR Part 800.4 through 800.6 unless such projects comply with requirements under 36 CFR Part 78 and/or occur within 30 days of a disaster or emergency, or otherwise qualify as an emergency in accordance with provisions of 36 CFR Part 800.12 "Emergency Undertakings."