

## CHAPTER 5 ENVIRONMENTAL CONSEQUENCES

**Environmental Consequences**—This section forms the scientific and analytic basis for the comparisons under 1502.14 (Comparison of Alternatives). (40 CFR 1502.16)

This chapter describes the direct, indirect, and cumulative environmental impacts of the nationwide permit programmatic alternatives. The chapter analyzes impacts of current (1996) and proposed alternative approaches on the aquatic environment, including wetland ecosystems. It also analyzes the nationwide permit effects on human communities, including permit applicants, and the cumulative impacts of the nationwide permits on the natural and human aspects of aquatic resources.

### 5.1 Analysis Approach and Chapter Organization

This section describes how the analysis of nationwide permit impacts was conducted and how this environmental consequences chapter is organized.

#### 5.1.1 Impacts Analysis Approach

The Corps study team analyzed the environmental consequences of the nationwide permit program alternatives by examining implementation of the permitting process in eight case study districts. Corps regulatory permitting data was used primarily to estimate cumulative impacts at the national level on aquatic resources, on permit applicants, and on administration of the regulatory program. Details of the methodology are presented in Appendices B through D.

#### 5.1.2 Organization of the Chapter

This chapter has two major analytical sections. The first section describes the manner in which the nationwide permit program is implemented at the field level. The second section describes and estimates impacts of activities authorized by nationwide permits. The impacts discussion has three components. The first is impact on the biotic environment, the second is impact on permit applicants, and the third is impact on administration of the program.

### 5.2 Impacts of Nationwide Permit Practices on Ecosystems: Procedures and Field Implementation

#### 5.2.1 Section Organization and Assumptions

This section examines how districts have implemented nationwide permit procedures to meet five criteria: ensure minimal adverse effects, ensure protection of endangered species, ensure protection of cultural and historical resources, ensure consistency with state water quality certifications and coastal zone consistency determinations, and ensure expedited review and

decision-making. The prime sources of information are the district case studies (see Appendix B for more information).

### **5.2.2 Procedures for Ensuring Minimal Adverse Effects and Field Implementation**

Districts employ a number of procedures for ensuring minimal adverse effects, individually and cumulatively, at the regional or local level. Districts can develop regional conditions to provide further protection, e.g., endangered species, fishery resources, and designated critical or important areas. Districts also can use discretionary authority as a means of ensuring minimal effects. This section examines district use of the above procedures to ensure minimal adverse effects, methods for assessing cumulative effects, agency coordination, compensatory mitigation, and other permit processing procedures to address the minimal adverse effects goal.

#### **5.2.2.1 Regional Conditions**

The Corps regulations (33 CFR 330.8) allow division engineers and district engineers to develop and implement regional conditions for the nationwide permit program as a whole or for certain activities or geographic areas. Although division engineers have had the authority in the past to implement regional conditions, the 1996 nationwide permit program re-emphasized this approach to ensure that only minimal individual and cumulative effects will occur.

Regional conditions are developed in cooperation with Federal and state agencies and individual permit public notice procedures are used to solicit public comment before their adoption and implementation. Regional conditions may involve procedural changes, general and activity specific conditions, best management practices, and in some cases, revocation of authorization for certain activities in specific areas.

Regional conditions may also be required by state Section 401 water quality certification or for coastal zone management consistency determinations.

The use of regional conditions ensures that nationwide permits authorize only activities with minimal individual and cumulative adverse effects on the aquatic environment.

#### **5.2.2.2 Summary of District Use of Regional Conditions**

Most districts use regional conditions to further protect water quality, special aquatic sites, designated critical or important areas, endangered species and fishery resources. Additional pre-construction notification requirements (e.g., notification to the Corps and possibly other Federal and state resource agencies) or special conditions were added to ensure protection for regionally important resources. In some instances the regional conditioning process requires that applicants coordinate the activity with an agency (e.g. U.S. Fish and Wildlife Service) prior to undertaking the activity. Some districts determined that regional conditions were unnecessary in light of the 1996 nationwide permit guidance (e.g., encouraging mitigation for impacts greater than one-third of an acre and use of discretionary authority or special conditions for individual activities).

Agency interviews conducted by the Institute for Water Resources suggest that their involvement in nationwide permit activities is minimal owing to the regional conditioning process.

### **5.2.2.3 Summary of Use of Regional Conditions Associated with State Water Quality and Coastal Zone Management Consistency Determinations**

Districts coordinate water quality certification and coastal zone management consistency determinations for nationwide permits with states, the U.S. Environmental Protection Agency, and Tribes as appropriate.<sup>1</sup> As a result, Section 401 water quality certification and coastal zone management consistency determinations for the nationwide permits vary widely depending on the individual state and tribal priorities.

Some states may issue water quality certification for certain nationwide permits, or issue water quality certification with conditions for certain nationwide permits, or deny water quality certification for certain nationwide permits. For example, in 1996 Virginia issued water quality certifications for all nationwide permits with the exception of nationwide permit 26. Florida denied water quality certification for nationwide permits 26 and 29, issued water quality certification with conditions for nationwide permits 2, 3, 4, 5, 23, and 20, and issued water quality certification for the remaining nationwide permits.

In some cases Corps districts and states may agree to deny or condition the nationwide permits' water quality certification in certain geographic regions or ecosystems (e.g., in Nebraska water quality certification is denied in designated outstanding state resource areas). Certain states have laws that require that all nationwide permits receive water quality certification (e.g., Wyoming). Regardless of the variation in water quality certification, nationwide permit general conditions 9 and 10 state that in certain states an individual water quality certification and/or coastal zone management consistency concurrence must be obtained or waived.

### **5.2.2.4 Discretionary Authority**

In 1991, the Corps changed its 1986 regulations (33 CFR 330.8, Federal Register 1986) on discretionary authority to allow district engineers to use this authority for a specific activity (33 CFR 330.5(d), Federal Register 1991).<sup>2</sup> Asserting discretionary authority allows district engineers to review certain nationwide permit activities that may result in more than minimal adverse effects on the aquatic environment through the standard permit process. The decision to assert discretionary authority is based on concerns for the aquatic environment (to ensure

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<sup>1</sup> Interestingly, in some cases water quality certification has been denied by the U.S. Environmental Protection Agency or Tribes within the exterior boundary of the reservation but in areas outside this boundary, the state certifying agency has issued water quality certification. As a result applicants within the exterior boundaries of the reservation must apply for an individual water quality certification while those outside the boundary do not have to apply for an individual certification.

<sup>2</sup> Division engineers continue to approve regional conditions developed primarily by districts.

compliance with the Section 404(b)(1) guidelines<sup>3</sup> and should not be used merely because a project is controversial.<sup>4</sup>

In some instances projects that initially do not meet the terms and conditions of the nationwide permit for one reason or another, may, after being evaluated through the individual permit process and adverse effects are avoided, minimized or appropriately conditioned, be authorized as a nationwide permit. Often these actions may not be tracked in the Regulatory Analysis and Management System (RAMS).

#### **5.2.2.5 Summary of District Use of Discretionary Authority Procedures**

Discretionary authority is rarely used in the districts to move an activity from nationwide permit into a standard permit review. However, districts did indicate that often project managers negotiate with project applicants special conditions (within the nationwide permit process) that are necessary to ensure minimal impacts. Most applicants accept these conditions to avoid delays and costs and therefore it is not necessary to assert discretionary authority.

RAMS data indicates that in Fiscal Year (FY) 1998, discretionary authority was asserted 67 times in the seven case study districts that use nationwide permits. However, those districts indicate that discretionary authority is rarely used.<sup>5</sup>

#### **5.2.2.6 Summary of District Use of Permit Specific Special Conditions to Ensure Minimal Adverse Effects**

At least 15% of permits randomly sampled employed special conditions (FY 1998), which addressed mitigation, endangered species, cultural resources and other environmental requirements. About three-quarters of the special conditions addressed mitigation requirements. The number of permit conditions may be underestimated because, in some cases, if mitigation is included in the applicant's request as part of the proposed activity request, separate mitigation conditions may not be included in the permit authorization (e.g., Minnesota in the St. Paul District).

15% of permits randomly sampled and reviewed included special conditions
75% of special conditions related to mitigation
3.6% related to Endangered Species or Cultural Resources
Remaining "other" issues

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<sup>3</sup> Factors considered include: alternatives are not available or do not have less impact or are not feasible in light of cost, logistics or technology; the project does not jeopardize endangered species, does not violate marine sanctuary restrictions or toxic effluent standards, and does not violate state water quality standards; practicable measures have been taken and will be implemented to minimize adverse effects--if all are satisfied, the project is in compliance.

<sup>4</sup> See Corps Standard Operating Procedures for the Regulatory Program, page 5 (Corps 1999).

<sup>5</sup> Project managers may be using the discretionary authority code (DA) code in RAMS when in fact they are requiring special conditions as part of the nationwide permit process and not formally requesting to assert discretionary authority.

### **5.2.2.7 Cumulative Impact Analysis Procedures**

Environmental documentation and cumulative impacts analyses are conducted on a national basis for the nationwide permit program, on a regional basis if additional conditions are required, and on a case-by-case basis for individual permit actions.

Several steps were taken in 1996 to better ensure that projects authorized by nationwide permits have minimal adverse effects, both individually and cumulatively. Specifically, substantial changes were made to nationwide permit 26. Other changes that would contribute to minimal cumulative effects were the encouragement of the use of regional conditions to reduce potential adverse effects and to require mitigation for most impacts greater than one-third of an acre.

Conducting cumulative impact analysis is a difficult task. However, several districts have implemented approaches to address cumulative effects in the permit program. For example, many districts assign project managers by county or watershed basis. Others have linked the RAMS database to a Geographic Information System (GIS) so that project managers can quickly assess the numbers and types of permits issued and calculate impacts within a certain geographical area.

### **5.2.2.8 Summary of Field Implementation of Cumulative Impact Analysis**

Assessment of cumulative impacts is mostly only informally accomplished as the result of staff experience. Permit evaluators typically have knowledge of permit history and resources in the affected area that serves as an implicit cumulative impact reference base.

There is technical support for cumulative impact consideration. Staff may search RAMS to identify previous permits in a particular area. They often have access to aerial photographs and other agency information. Clerical staff typically provides supporting information, such as maps of prior permits, proposed location, and topographic, soil survey and National Wetland Inventory maps.

In some cases, the regulatory database may be linked to a GIS, for example, the Fort Worth and Jacksonville Districts. The Jacksonville District has installed a system that performs watershed impact calculations.

One field office performed a study of nationwide permit 26 activities. Based on the study findings, the field office implemented a mitigation policy that required for compensatory mitigation for impacts greater than 1/3 acre. This study occurred before the nationwide permit replacement package proposal of 1998.

### **5.2.2.9 Procedures: Pre-Application Meetings**

Pre-application meetings allow Corps project managers to meet with potential applicants to advise them on the requirements of the program and the information needed to evaluate proposed

activities (33 CFR 325.1(b)). Often pre-application meetings are conducted at the request of the potential applicant. Other times, they may occur concurrently with field jurisdictional determinations. In some cases, other agencies attend these meetings to ensure that all Federal requirements are addressed early in the process. The level of effort associated with a pre-application meeting should be commensurate with the anticipated likelihood of an application being submitted to the Corps and with the level of adverse impacts to aquatic resources. Pre-application meetings support the goal of reducing uncertainty in the permit process.

Pre-application meetings offer an opportunity for Corps project managers to alert potential applicants about ways to ensure the most efficient permitting strategy. That is by avoiding jurisdictional areas, known cultural resources, endangered species, etc. In addition, these meetings may be used to further avoid and minimize impacts and to discuss on-site and off-site alternatives as necessary.

#### **5.2.2.10 Summary of District Use of Pre-Application Meetings**

Most of the districts indicate that pre-application site visit meetings are generally reserved for activities that would require review under the standard permit procedures. However, several districts indicate that pre-application meetings may be held for complex nationwide permits, or if requested by the public. Interagency meetings and teleconference calls facilitate the review of potential applications in lieu of an on-site meeting. Jurisdictional field determinations usually involve some form of recommendation (e.g. avoidance and minimization through project redesign, best management practices) to facilitate the most efficient permitting strategy.

#### **5.2.2.11 Determining Federal Jurisdiction of Waters of the United States**

Site visits and desktop determinations are used determine whether or not federally regulated waters are present. To ensure that decisions are made in a timely manner, many of the jurisdictional determinations are handled in the office using existing information. For example, soil surveys, National Wetland Inventory maps, U.S. Geological Survey topographic maps, and aerial photography are used to determine the presence of jurisdictional areas at a project site. In addition, reports provided by applicants or their consultants may be used to determine if jurisdictional areas are present. Because of logistics, site visits must be reserved for complex nationwide permit activities and standard permit activities. Occasionally the Corps will prepare the wetland delineation; however, these circumstances are reserved for applications received from “mom and pop” operations.

#### **5.2.2.12 Summary of District Approaches to Jurisdictional Determinations**

Site visits are typically not conducted for nationwide permit activities, however, districts with several field office locations often are able to do field determinations. Minor activities, other agency information, quality of consultant delineation, and sometimes distance were offered as the primary reasons to determine whether a site visit is necessary for project managers to evaluate proposed activities. In addition, organization of project managers is usually by county or

watershed, lending use of “experience” with particular geographic areas for jurisdictional determinations.

Desktop determinations are made on every application that does not require a site visit. Most districts use soil surveys and National Wetland Inventory and U.S. Geological Survey maps to make office determinations. Some districts have recent aerial photography and GIS data layers available. Most districts (4 out of 8) make desktop determinations on nationwide permit activities, with the exception of nationwide permit 26.

Site visits are conducted on nationwide permits anywhere between 5% to 25% of the time for most districts. However, this represents a minimal number of actual site visits conducted since permit files may not have been complete (e.g. the site visit may not have been documented in file). One district (Norfolk) conducted site visits on almost 50% of the randomly sampled nationwide permit files reviewed by the Institute for Water Resources. This may be attributed to the number of factors including several field offices throughout the state, the district covers one state, permit workload, and the size of state.

#### **5.2.2.13 Alternatives Analysis**

Consideration of off-site and on-site alternatives is required by the Section 404(b)(1) guidelines for individual permits. The alternatives analysis is the first measure taken to ensure that impacts to aquatic resources are avoided to the maximum extent possible. The guidelines require that the least environmentally damaging practicable alternative be selected. Thus if destruction of waters of the United States can be reasonably avoided, it should be. The guidelines also provide a specific provision that allows a discharge if not allowing it would result in an alternative that has significant adverse environmental consequences.

For individual permits, the guidelines require that only practicable alternatives must be considered. Practicability is determined in light of costs, technical and logistic factors. Furthermore, in order for an off-site alternative to be practicable, it must be reasonably available or obtainable. However, ownership or lack of ownership does not necessarily determine reasonable availability. Only those alternatives that are reasonable in terms of the overall scope/cost of the proposed project and that are capable of achieving the basic project purpose should be considered.

The Corps Regulatory Guidance Letter 95-01 (Corps 1995) provides flexibility for small landowners in terms of consideration of alternatives under the Section 404(b)(1) guidelines. Off-site alternatives that are not currently owned by the landowner are not considered practicable. This flexibility is only afforded to small landowners proposing to construct or expand a residence or associated structures/features, construction of a farm building or other structure or for construction or expansion of a small business provided the impact to waters of the United States is less than or equal to 2 acres.

Project specific alternatives analyses are not required for categories of activities that are authorized by general permits, including nationwide permits. Instead, on-site alternatives (e.g., to site reconfiguration and design changes) may be considered to ensure that impacts are avoided to the maximum extent practicable.

#### 5.2.2.14 Mitigation

Mitigation in terms of the nationwide permit program is generally only required to the extent necessary to ensure minimal individual and cumulative adverse effects on the aquatic environment. Typically mitigation for a nationwide permit involves on-site avoidance and minimization and under some circumstances compensatory mitigation.<sup>6</sup> Since 1996 Corps districts have been encouraged to require mitigation for adverse impacts greater than one-third of an acre to ensure those activities have minimal adverse effects. Special permit conditions should be included in permit authorizations when the Corps is requiring mitigation.<sup>7</sup>

When determining whether or not compensatory mitigation is appropriate under the nationwide permit program, consideration is given to the environmental benefit of mitigation versus on-site avoidance and minimization. In addition, any mitigation required should be commensurate with the impact.

Compensatory mitigation for impacts associated with nationwide permits may be accomplished either on-site or off-site, including mitigation banks or through contributions to in-lieu fee programs. In some districts watershed management efforts may be used to support mitigation decisions.

Tabulation of mitigation in terms of the Corps regulatory program underestimates actual mitigation activity. For example, many districts indicate that, although not required by the Corps, compensatory mitigation may either be offered by the applicant as part of a project or it may be required by state or local permit requirements.

##### 5.2.2.14.1 Avoidance and Minimization

Most regulators believe the biggest Clean Water Act contribution to wetlands protection is through avoidance and minimization. However, there are only scant data available.

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<sup>6</sup> Mitigation “sequencing” under the Section 404(b)(1) guidelines does not apply to general permits (see 40 CFR 230.7). Off-site alternatives analysis is not required for any general permits, including nationwide permits.

<sup>7</sup> The Institute for Water Resources identified special conditions for 15% of randomly sampled permits (percent adjusted for variation in district sample and nationwide permit population size). Permit-specific special conditions for mitigation were imposed in 11% of the sampled verifications. Both estimates should be regarded as conservative owing to many incomplete files. Also this survey does not capture regional conditions that apply. They may not be specifically identified in the verification letter, but would be provided as an attachment to the verification letter. Many of these permits, perhaps more than the majority, would be covered with these additional constraints imposed upon them, since most districts have regional conditions covering the entire set of nationwide permits or specific nationwide permits, specified geographic regions or aquatic resources.

Sacramento District regulators opined that 50-90% of potential projects are redesigned to avoid or minimize during the pre-application request; little to no change occurred during the preconstruction notice review. The Minnesota Board of Water and Soil Resources tracks impacts and mitigation yearly (not including mining activities). In 1998, there were 4,839 landowner contacts, 1,100 wetland acres avoided, and 29 acres minimized. The 179 acres of wetlands that were filled or drained were replaced with 158 acres; 113 wetland acres were exempt from state regulation (Minnesota Board of Water and Soil Resources 2000).

Off-site alternative analyses for individual permits do not necessarily result in more impact avoidance than the nationwide permits. Standard permit alternative analyses typically do not result in withdrawal or denial of permits; that is, the impact is not avoided entirely. According to most case study district supervisors, only zero to two percent (to as much as five percent maximum) of off-site alternative analyses result in a move of the proposed project to another (off-site) location.

Fiscal Year 1998 RAMS data indicate that nationwide permits authorized acreage was 79% of the initial requests, which was similar to standard permits, as indicated in section 5.3.2.1.

#### **5.2.2.14.2 Compensatory Mitigation: Field Implementation**

All case-study districts have developed mitigation guidance (including monitoring) or have state mitigation requirements/guidance that serve as applicant instructions and/or decision-support for regulators. For example, mitigation guidance may identify or discuss mitigation plan components, mitigation ratios, monitoring requirements, and real estate and financial assurances. Most guidance does not specifically identify whether or not nationwide permits are covered. Corps districts with compensatory mitigation policy or guidance are identified in Appendix B.8.

Several district practices may be directed by state rules or policy that set mitigation ratios depending on the nature of wetland replacement (e.g., type of construction, wetland class).

Some watershed/regional studies (e.g., Special Area Management Plans and Advance Identification of Disposal Sites efforts) may identify appropriate compensatory mitigation sites and/or set ratios.

In some districts many activities that do not require pre-construction notification to the Corps district are reported and mitigation provided. In Oregon, for example, impacts from activities that do not require pre-construction notification may be compensated by in-lieu fees paid to local organizations identified by the state.

Mitigation banking is increasingly being used to provide effective mitigation. Several states in the case study districts have extensive mitigation banking programs offering compensatory mitigation opportunities to qualifying permit applicants around much of those respective states.

Corps involvement in banking may involve a lot of coordination with state programs and other Federal agencies. Examples are the Minnesota Wetland Conservation Act Mitigation Banking Program, and Florida where an *Operational Draft Joint Mitigation Banking Book* provides guidance for the multiple-level government regulatory agencies involved—Federal, state, water management district, and county.

Other case-study districts have several mitigation banks that can provide compensatory mitigation locally or in some cases much of the individual states. For example, there are mitigation banks located in the greater Sacramento area of California's Central Valley (Sacramento District), around the margins of the Great Salt Lake (Sacramento District), the Denver area (Omaha District), and over much of Virginia (Norfolk District).

More recently many of the districts identified above and others are allowing applicants to contribute to in-lieu fee arrangements to provide required compensatory mitigation. In lieu fee programs have developed in response to the expected increase in nationwide permit applications. Case study districts with in lieu fee arrangements include Norfolk, Jacksonville, Fort Worth, Sacramento, Portland, and New England. In some cases, state or local governments have developed these in-lieu fee arrangements.

Several districts are in states with extensive Department of Transportation banking programs (Minnesota and Wisconsin). Other states using banks for Department of Transportation mitigation to some extent include Virginia, Florida, Nebraska, South Dakota, North Dakota, Montana, Nevada, and California. Florida Department of Transportation also uses an in-lieu fee program, which is required by a state statute.

#### **5.2.2.14.3 Permit Compliance (Primarily Compensatory Mitigation)**

Generally, few nationwide permit activities are reviewed for compliance with permit conditions. However, until recently, most nationwide permit activities were not conditioned with compensatory mitigation requirements.

Few districts have examined extent of nationwide permit activity mitigation compliance. Numerous studies by other agencies in the early 1990s showed lack of permit compliance; mitigation projects were most typically on-site creation mitigation.

#### **5.2.2.15 Agency Coordination**

Coordination with Federal and state agencies is an important part of the nationwide permit program and for other permit procedures, including individual permit evaluations. Information concerning endangered species, cultural resources, water quality, alternatives, and mitigation are among the types of information solicited during the agency coordination process. In addition, those activities that require a public notice enable the interested public to provide input to the Corps decision-making process.

This section looks at nationwide permit procedures for agency coordination as well as coordination for individual permits (i.e., standard permits and letters of permission).

#### **5.2.2.15.1 Individual Permits**

For standard permits a public notice is used to solicit comments from agencies and the public. The public notice affords 15 to 30 days for comment and an opportunity to request a public hearing on each proposed activity.

Letters of permission are a type of individual permit that may be issued using abbreviated processing procedures for both Section 10 and Section 404 activities. In both cases, agency coordination, a public interest evaluation, and, if the activity involves discharges of dredged or fill material into waters of the United States, a Section 404(b)(1) guidelines analysis, are required for each proposed activity.

Letters of permission can authorize work pursuant to Section 10 provided the work is minor and is not controversial. Proposed activities evaluated under Section 10 letter of permission procedures do not require a public notice, however, agencies and adjacent property owners are typically notified and given an opportunity to comment on the proposed work.

Categories of activities and abbreviated letter of permission evaluation procedures may be developed for Section 404 activities in consultation with Federal and state agencies. Comments and an opportunity for a public hearing on the proposed Section 404 letter of permission categories and procedures are solicited through a public notice. However, subsequent public notices are not issued for proposed activities reviewed under the Section 404 letter of permission procedures. Again, activities processed under the Section 404 letter of permission procedures require agency coordination and a public interest evaluation. Compliance with the Section 404(b)(1) guidelines must also be demonstrated for each proposed activity. Section 404 letters of permission procedures have been developed in a few districts throughout the country.

#### **5.2.2.15.2 Nationwide Permits**

Public notices are not required for individual activities authorized under the nationwide permit program. The opportunity for review, comment and to request a public hearing is accomplished prior to finalization of the nationwide permits on a national level and prior to incorporation of regional conditions at the regional level.

#### **5.2.2.15.3 Public Notice: Field Implementation**

Most districts use the Internet to advertise proposed activities being evaluated under individual permit procedures (letters of permission and standard permits) and to solicit comments from agencies and the public. Districts notify agencies when notices are placed on the Internet. Mailing lists continue to be maintained for individuals that wish to continue receiving public notices by mail.

### **5.2.3 Procedures to Ensure Protection of Endangered Species (Compliance with the Endangered Species Act) and Field Implementation**

#### **5.2.3.1 Procedures**

Nationwide permits may not authorize activities that will jeopardize the continued existence of a threatened or endangered species or destroy or adversely modify the critical habitat of such species (33 CFR 330.4(f)). At the national level, the Corps is working on programmatic consultation under Section 7 of the Endangered Species Act regarding procedures for administering the nationwide permit program. At the district level, a very prominent procedure for ensuring minimal impacts and protection of endangered species is the development of regional conditions, standard local operating procedures, and Programmatic Biological Opinions. These local procedures are developed with the U.S. Fish and Wildlife Service and National Marine Fisheries Service to support compliance with Section 7 procedures for nationwide permit activities.

In addition to these procedures, districts use existing information provided by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and state resource agencies (e.g. state natural heritage database) to screen all activities for endangered species, regardless of permit type. For example, in Fort Worth District, all applications are screened using U.S. Fish and Wildlife Service maps and species lists, applying professional judgment, and talking to the U.S. Fish and Wildlife Service when necessary.

Corps guidance on scope of analysis for the Endangered Species Act is based on the implementing regulations at 50 CFR Part 402. Generally evaluation of effects associated with the proposed activity are limited to the “permit area” which is defined as waters of the United States and uplands within a reasonable distance from the regulated work. However, the Corps will also evaluate physical direct, indirect and cumulative effects that are outside the permit area that result from the authorized activity.<sup>8</sup> In determining the scope of analysis for the purpose of endangered species, the Corps considers the likelihood of impacts occurring, if a Corps permit was not needed. For example, downstream effects of a dam on a species would not occur “but for” the Corps permit.

#### **5.2.3.2 Summary of Field Implementation for Protection of Endangered Species**

All districts interviewed for the Programmatic Environmental Impact Statement (PEIS) coordinate proposed activities in accordance with the national regulations (e.g., nationwide permit general condition 13) and for activities where coordination requirements have been negotiated with the U.S. Fish and Wildlife Service and National Marine Fisheries Service in accordance with regional procedures or conditions.

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<sup>8</sup> Expansion of the Corps scope of analysis will occur in 3 situations: when the regulated work has a physical effect on threatened or endangered species outside the permit area; linear projects where the Corps can “steer” the project away from habitat that is outside the permit area; and linear projects where the Corps has sufficient control and responsibility over the entire project. (Corps 1996)

In the Sacramento District, the U.S. Fish and Wildlife Service has completed a Programmatic Biological Opinion for vernal pool crustaceans. The district attaches the Biological Opinion to nationwide permit verification letters.

In several districts, agency coordination has often resulted in several general conditions that apply to activities that may be authorized by nationwide permits. For example, these conditions may include time of year restrictions, construction recommendations, and notification requirements for activities in areas where endangered species or their critical habitat is present (e.g., the manatee in Florida and the Preble's Meadow Jumping Mouse in Colorado). Other districts require applicants to coordinate projects with the appropriate resource agencies before applying for a Corps permit. This allows the applicants to address and resolve endangered species issues early in the process. For example, Norfolk District requires coordination with the U.S. Fish and Wildlife Service and appropriate state agencies for specific waters in Chickahominy, and James River where listed species are known to occur.

During the review of randomly sampled nationwide permit verifications, at least 1% of those authorizations had special conditions for endangered species. All permits reviewed indicate that permit applicants were also provided with copies of standard regional conditions for the protection of endangered species as appropriate.

#### **5.2.4 Procedures to Ensure Protection of Historic and Cultural Resources and Field Implementation**

##### **5.2.4.1 Procedures**

Procedures for ensuring protection of cultural and historic resources are located in 33 CFR Part 325, Appendix C (Federal Register 1986). Activities that may affect cultural and historic resources may not be authorized until compliance with Appendix C is achieved. Nationwide permits 14, 21, 26 (between 1-3 acres of impact), 29, 33, 37, and 38 are coordinated with the State Historic Preservation Officer. The scope of analysis is limited to the "permit area". Appendix C defines "permit area" as waters of the United States and uplands directly affected as a result of authorizing the work in those waters. Appendix C includes a three-part test that must be satisfied for the proposed work to be included in the permit area.

##### **5.2.4.2 Summary of Field Implementation of Procedures to Protect Cultural Resources**

All districts send pre-construction notifications to the State Historic Preservation Officer as required. Some districts also coordinate with state historic preservation officers in areas of known sites, regardless of whether pre-construction notification is required (e.g. St. Paul for proposed activities on the Mississippi River). If the State Historic Preservation Officer's comments are received after the close of the coordination comment period, districts may rescind or modify as required to ensure compliance with Appendix C and the National Historic Preservation Act. Nationwide permit verification letters often include language to reiterate the requirements of nationwide permit general condition 12 in the body of the letter if cultural

resource issues were addressed in the permit evaluation.

Most districts use the Corps Civil Works planning archaeologist as needed to review projects with potential cultural resource concerns. Usually the archeologist reviews standard permits and nationwide permit 26 activities. One district has an archaeologist on its staff to review all permit types for potential effects on cultural resources.

### **5.2.5 Nationwide Permit Impacts on Permit Applicants: Procedures and Implementation**

Expedited reviews and decision-making are important objectives of general permits. Several procedures are utilized to assist expedited reviews and decision-making. These include use of provisional permits and multiple permits. Also, there are different time requirements for processing the various types of permits

The nationwide permit process is designed to allow proposed activities that have minor impacts to be processed expeditiously. For certain proposed nationwide permit activities, Corps project managers must coordinate the notification with Federal and state agencies. Agency coordination may include a brief project description including proposed impacts and mitigation, or perhaps the application and plans as provided by the applicant. Commenting agencies have five days to notify the Corps of their intent to provide written comments and an additional ten days to provide those comments, for a total of 15 days. Generally nationwide permit verification decisions are made in less than 30 days.

Individual permits require much more time to evaluate and make decisions. Upon receipt of a complete application, a public notice will be issued to solicit comments from agencies and the public. The comment period for public notices is usually between 15 and 30 days. Typically the public interest review and 404(b)(1) guidelines evaluation and subsequent permit decision takes approximately 30 to 60 days, for a total of 60 to 90 days to make a decision on a standard permit application. However, depending on the complexity of the project and the range of factors that must be considered, as well as the nature of the public comments received and analysis that is necessary, the standard permit evaluation time can exceed 90 days.

To demonstrate the differences between the evaluation times of the various types of Corps permits, data from FY 1998 were used to calculate average evaluation days for each permit type. The average evaluation days for general and individual permits are presented in Table 5.2-1.

#### **5.2.5.1 Provisional Permits**

In an effort to ensure that permit decisions are made in a timely manner, the Corps may conditionally verify nationwide permit activities provided that those activities meet all terms and conditions. Provisional verifications are most often used when the Corps has completed its review, but state water quality certification or coastal zone consistency determinations have not been made. Provisional verifications stipulate that work cannot begin until the required state and local authorizations are received. This process enables the Corps to accurately reflect the time it

takes to issue its nationwide permit verifications. Regulatory Guidance Letter 93-01 provides information related to use of provisional permits for standard permit activities. This guidance letter is also used to avoid denying nationwide permit activities that meet the terms and conditions of the nationwide permit with the exception of the water quality certification or coastal zone management consistency concurrence. If provisional permits were not used, the Corps would be required to deny the activity without prejudice.

**Table 5.2-1. Average evaluation days for Corps permits in FY 1998.**  
The average evaluation days were calculated from data from the Quarterly Permit Data System for all 38 Corps districts.

Statutory Authority	Average Evaluation Days – FY 1998			
	Nationwide Permits	Regional General Permits	Standard Permits	Letters of Permission
Section 10 only	15	7	76	35
Section 404 only	18	12	102	43
Section 10/404	18	12	96	36
Mean	18	10	95	36

**5.2.5.2. Provisional Permits: Field Implementation**

Most districts use provisional verifications to accurately reflect the time to review nationwide permit activities. Under circumstances where the state agency has denied the water quality certification or coastal zone consistency determination for a category or categories of nationwide permits, the Corps coordinates its review with the state agency. If the state agency does not make its decision on the water quality certification or coastal zone management consistency determination within a reasonable time frame, and the Corps determines that the activity meets the terms and conditions of the nationwide permit, the Corps can issue a provisional verification, instead of denying the nationwide permit authorization without prejudice. However, the nationwide permits include conditions that state that water quality certification and coastal zone management consistency determinations must be received before work may begin. This allows the Corps to accurately report the actual time for its review.

If, during its review, the Corps finds significant water quality issues, the Corps will generally deny the activity without prejudice. However, review of permit files indicates that most districts are not using the provisional permit transmittal form and they are not sending draft verification letters as required by the guidance in Regulatory Guidance Letter 93-01.

### 5.2.5.3 Multiple Permits (Stacking) Procedures

Multiple use of permits or “stacking” allows the Corps to authorize different categories of work using one or more nationwide permits. For example, certain projects involve fills for buildings, utility lines and roadways. If the overall impacts associated with the activity are minimal, nationwide permits 26, 12, and 14 could be used to authorize the proposed work, provided the overall project impacts do not exceed the limits of any of these nationwide permits.<sup>9</sup>

This policy ensures that the most efficient process to authorize activities while ensuring minimal adverse effects under the nationwide permits. Additionally, nationwide permit program rules require that no nationwide permit may be used more than once for one project. In the 1996 nationwide permits, generally only seven of the nationwide permits are “stacked”. These nationwide permits are 3, 12, 13, 18, 19, 26, and 33. Furthermore, any multiple use of nationwide permits 12-40 requires a pre-construction notification to the Corps, and for nationwide permit 29, total impacts may not exceed 1/2 acre.

Nationwide permits may also be “stacked” with standard permits. This approach allows permit applicants to implement certain components of a project that are shown to have independent utility, that is that the activity authorized by the nationwide permit must be independent from the overall project. However, if independent utility is not established a nationwide permit verification cannot be issued and the entire activity must be reviewed under the standard permit procedures. Project managers must emphasize to applicants that activities authorized by a nationwide permit will not assure that future activities will necessarily be authorized by a standard permit and that all adverse effects, including those associated with the nationwide permit verification, will be assessed during the individual permit review.

### 5.2.5.4 Field Implementation of “Stacking”

In an attempt to accurately report the number of times a nationwide permit is used, districts may assign separate tracking numbers to each nationwide permit verified for a single and complete project. As a result it was difficult for the Institute for Water Resources to review all files associated with single and complete projects. This is a file and data management and data collection issue.

Many nationwide permit verification letters however did describe all activities that were associated with the action but these applications, plans and correspondence may have been located in a separate file. In any case, based on the Institute for Water Resource’s limited review of this issue, it appears that the case study districts are reviewing projects in accordance with the rules (that is, the activity has independent utility, etc.). In addition, at least one file review indicated that all future work would be considered in light of overall impacts including those associated with the work authorized by the nationwide permit. In addition, if multiple permits were used, and agency coordination was required, all proposed activities were provided to the

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<sup>9</sup> Nationwide permit 26 was replaced in March 2000 by five new and six modified nationwide permits.

agencies for review and comment.

One other issue worth mentioning is the use of a nationwide permit for each aquatic resource site being affected. For example, if fill was being placed in multiple areas on a property, districts would issue more than one nationwide permit 26 verification for each area rather than issue one nationwide permit 26 verification for the entire project. However, this is not considered to be a problem because the acreage of impact did not exceed the maximum threshold in either case (individual site or total project impact).

### **5.3 Comparison of Impacts under Different Permit Types: Cumulative Impacts**

#### **5.3.1 Comparison of Environmental Impacts Under Different Permit Types**

##### **5.3.1.1 Impact Avoidance**

Impact avoidance is increased by the Corps permitting process at two levels: 1) before a permit request is made and 2) between the permit request and permit issuance or denial. Corps regulators generally believe that the major effect of Corps permitting requirements is to reduce impacts before permit requests are made.

What is not shown by data and is generally unknown is the degree to which the mere existence of the nationwide permit alternative within the permit program caused avoidance of impacts to waters of the United States in FY 1998 before a permit application was made. Because costs to the developer are higher for requests of standard permits and letters of permission, the developer is benefited by reducing development impacts enough to qualify for a general permit, or even by avoiding impacts altogether. The substantially greater costs of standard permits and letters of permission encourage applicants to seek the cheaper, more environmentally restrictive general permits (more restrictive in requiring an upper impact limit be met). For many types of actions, a nationwide permit is less costly to developers operating across regions than dealing with numerous regional general permits. There is no evidence that regional general permits are more effective than nationwide permits in encouraging avoidance of impacts before permit applications are made.

There is a record indicating increased avoidance of impact as a consequence of a reduction in acreage of impact requested to the actual acreage permitted. Table 5.3-1 indicates that the total acreage permitted was 79% of the initial total requests, an indication of effective avoidance mitigation. This avoidance was negotiated by Corps regulators during the permit review process by encouraging alternative development usually involving upland ecosystems.

This form of impact avoidance was equally high for standard permits and nationwide permits. Very little avoidance in this form resulted from letters of permission and regional general permit negotiations. However, some undocumented avoidance probably occurred through preapplication meetings and other preliminary processes. Corps project managers interviewed for the study indicated that most avoidance occurs prior to permit requests. There are no quantified data to substantiate the extent of this avoidance or whether it depends on permit type.

The nationwide permits reveal real benefits compared to an alternative without nationwide permits, given the likelihood that nationwide permits reduce requested impacts and their impacts are equally negotiated downward once requested. The equality of negotiation effectiveness for nationwide permits and standard permits is a curious result because there is little apparent advantage to minimizing a standard permit request if it cannot be reduced to a size qualifying for a general permit. This result may be an indication of the general effectiveness of the program in reducing impacts requests regardless of permit type.

**Table 5.3-1. Estimated numbers of permits and estimated acres of direct impact to all wetlands and other waters permitted in FY 1998 under all permit types used in the Corps permit process.** Wetland acreage from 35 districts were used to estimate acres for all 38 districts, assuming a proportional impact by activities in the three missing districts. For the nationwide permits, the acreage of impacts to other waters was estimated from 32 of 38 districts. The relative distribution of impacts among the four permit types was approximated from the reports of the 2 districts that record that data for all permit types (see Appendix C.3 for method details).

Impact Category	Existing Permit Category				Total
	Standard	LOP	Regional	Nationwide	
Number of Permits Issued	4,855	2,719	40,404	41,879	88,857
% of Permits Issued	5.4	3.0	45.0	46.6	100.0
Permitted Acres Requested	25,209	103	3,130	10,392	38,834
Permitted Acres	19,632	100	3,023	8,125	30,880
% Permitted of Requested	77.5	97.1	96.6	77.2	79.3
% of Permitted Acres	63.5	0.3	9.8	26.4	100.0
Acres Impact /Permit Issued	3.22	0.040	0.010	0.018	0.35
Percent wetland acres	80.9	100.0	100.0	91.9	85.7
% of Permits Denied	1.69	0.03	0.14	0.18	0.25

### 5.3.1.2 Relative Impact of Permit Types

Table 5.3-1 shows the estimated number of permits issued and area impacted under the different permit types used in 1998. An estimated total of over 88,400 Corps authorizations were requested in FY 1998 to impact nearly 39,000 acres of aquatic resources. General permits (regional and nationwide) made up about 90% of all authorizations issued and about 36% of the area impacted. Over 60% of the area affected by the entire permit program was impacted under standard permits despite the small percentage of standard permits issued. This was caused by the large areal impact per standard permit.

Data on mean acreage of impact per permit are indicators of the relative benefits lost or gained for the costs. However, the high fraction of permits for which there was no entry of data on impact acreage compromised to some extent the value of this data for comparing the average impact size. These unreported data were counted as zero values in the estimated acres impacted per permit issued in Table 5.3-1 (See also Appendix C.4 ). They will understate the mean permanent impact per permit to the extent that impacted acreage was left out of the total. The practice of leaving what was believed to be a temporary impact blank until later confirmation is

a purposeful form of missing data which sometimes failed to be updated at a later time. Most of these blanks are likely to be zero impact, but some may prove otherwise.

Based on those assumptions, standard permits incurred more than 180 times the average permit impact, including zero impacts, of any of the permit types. This is to be expected because standard permits can authorize large impact activities and rarely would incur zero impact. More importantly, it also results because such a high proportion of project proponents submit pre-construction notifications to the Corps, even if such notification is not required by the terms and conditions of the general permits.

The three permit types other than standard permits had similar, small permitted impacts. Differences derive in part from different permitted activities. For example, unlike other permit categories, most letters of permission are for Section 10 rather than Section 404 activities. Section 10-only activities do not involve fill resulting in permanent loss of aquatic habitat. When Section 10 permits are eliminated from the comparison, the average impact per letter of permission is closer to the general permits. The high fraction of zero impact permits had a large effect on estimated mean size of impact. The average size of impacts for permits having at least some wetland impact acreage (zero impacts excluded) was for standard permits, 6.51 acres; for letters of permission, 0.60 acres; for regional general permits, 1.01 acres; for nationwide permits, 0.50 acres, and overall, 1.30 acres.

The mean impact size of the letter of permission activities was a bit smaller than the general permits and much smaller than standard permits. This may suggest that letters of permission are more effective in negotiating impact avoidance. However, relatively few letters of permission have been issued. They are expected to be noncontroversial activities, involving no discharge of dredged or fill material into the Nation's waters. Most districts restrict letters of permission to structures and dredging in navigable waters under Section 10. The effectiveness of minimizing impact size may fall substantially if more nationwide permit actions were switched to an alternative letter of permission process.

### **5.3.1.3 Impacts Among Tidal and Nontidal Wetlands**

Table 5.3-2 compares the direct impacts of the four permit types on tidal and nontidal wetlands, which comprise nearly 90% of all area impacted by nationwide permits. Over 26,000 acres of wetlands were directly impacted by activities authorized by Corps permits, of which about 5.2% was tidal wetland impact.

The relatively high percentage (61.0%) of wetland acreage processed under individual permits (standard permits and letters of permission) in part reflects the exceptional regulatory attention paid to tidal wetlands. Standard permits were required for 78.0% of tidal wetlands impacted by the activities authorized by Corps permits. Only 20.4% of the tidal wetland acreage was impacted under general permit. Of that, nationwide permits impacted only 42.8 acres (3.1% of tidal wetland impact), which was only 0.16% of the nearly 26,220 acres of all wetlands reported to be impacted. Standard permits authorized over 25 times the fill of tidal wetlands authorized by

nationwide permits compared to 2 times the fill of nontidal wetlands. These ratios reflect the strict limitations placed on nationwide permit use in tidal wetlands. In contrast, regional general permits authorized 5.6 times the total impact of tidal wetland area than was authorized by nationwide permits.

Even so, the percentage of impacted wetland acreage in tidal wetland is very close to the estimated estuarine wetland percentage of total wetland area in the coterminous United States (Mitsch and Gosselink 2000), indicating that tidal wetland impact was proportional to the relative abundance of tidal wetland.

**Table 5.3-2 Tidal and non-tidal wetland acreage directly impacted by Corps permits issued in 1998 under each permit type.** Data from 35 districts were used to estimate acres for all 38 districts, assuming a proportional impact by activities in the 3 missing districts (see Appendix C.3 for methods).

PERMIT TYPE	TIDAL WETLAND		NONTIDAL WETLAND		TOTAL WETLAND ACRES
	ACRES	%	ACRES	%	
Standard Permit	1,078.7	6.79	14,816.6	94.21	15,895.3
Letter of Permission	23.9	23.88	76.2	76.12	100.1
Regional General Permit	238.9	7.90	2,783.7	92.10	3,022.6
Nationwide Permit	42.8	0.59	7,158.8	99.41	7,201.6
Total	1,383.3	5.28	24,835.3	94.72	26,219.6

#### 5.3.1.4 Impacts Below the Notification Threshold

Individual permits have no threshold for required notification. In contrast, general permits often have both notification thresholds and acreage or linear limits. Whereas acreage or linear limits for general permits encourage impact avoidance and minimization to qualify, notification thresholds are intended to reduce unnecessary workloads for applicants and the Corps program where the impacts are minimal. In other words, the notification threshold is the impact size above which the adverse effects have the potential to be more than minimal, and require case-by-case review by the Corps to determine if an activity qualifies for general permit authorization. As a consequence, standard permits, which make up over 99% of the individual permit acreage, had less than 1% (0.55%) of permitted acreage in sizes less than 1/2 acre. Also, 95% of the acreage was for activities impacting over 3 acres per permit, which is the acreage limit for nationwide permit 26 (there are other nationwide permits with limits greater than 3 acres). The 5% of standard permits impacting less than 3 acres were by and large areas of exceptional concern.

The high reporting rate of zero impact actions is evidence that developers requested permit reviews for a large number of actions they were not required to have verified because they fell below notification thresholds of general permits. If developers are requesting verification of these zero-impact actions to assure compliance with the law, which seems likely, they are also likely to request verification for real impacts below notification thresholds. Of all the nationwide permit requests, as few as 58% and as many as 87% were requests for activities resulting in zero impact. The actual percentage probably approaches 87%. The uncertainty results in the high

percentage of empty data fields in this data column, probably a result of an improper use of blanks for zero entries as previously described and as detailed in Appendix C.4.

Analyses of the distributions of different impact sizes indicated that the unverified impact was greater for nationwide permits than for regional general permits and appeared mostly to be associated with nationwide permit 26. Regional general permits and nationwide permits other than nationwide permit 26 appeared not to have significant unreported impacts under notification thresholds. The assumption in the analysis is that distributions of impacts under notification thresholds would behave the same as impacts over notification thresholds if they were fully reported. Appendix C.3 illustrates this analysis in detail. Based on that analysis, somewhat over 350 acres of small impacts might have been captured in verification with a standard permit requirement. With recent changes in the nationwide permits, the total is now likely to be substantially smaller than it was in 1996.

### **5.3.1.5 Permit Denial**

Permits are denied when the proposed work is contrary to the public interest or when the project proponent cannot obtain other necessary authorizations, such as water quality certification. Standard permit denials are at least an order-of-magnitude greater than denials of other permit types but amount to less than 2% of all applications (Table 5.3-1). The difference in denial rates between standard permits (1.69%) and other permit types (averaged 0.12%) does not necessarily indicate that standard permits are more likely to discover serious permit problems. General permits are designed to circumvent complications leading to permit denial by screening out problematic applications. Some of the general permit denials amount to a reclassification of the permit to standard permit and some of them are denials without prejudice.

Problematic nationwide and regional general permit applications are typically reclassified under discretionary authority as standard permits when there are complications (e.g., endangered species, local restrictions) that should be addressed through a full public interest review. In effect, standard permits become the last appeal for problematic general permit applications before permits are finally denied with or without prejudice. In effect, this action is the safety net for assuring actions taken under nationwide and regional general permits are redirected to more careful scrutiny under standard permits when conditions so warrant.

### **5.3.1.6 Compensatory Mitigation**

#### **5.3.1.6.1 Mitigation Ratios**

From the mitigation Memorandum of Agreement of 1990, “The determination of what level of mitigation constitutes ‘appropriate’ mitigation is based solely on the values and functions of the aquatic resource that will be impacted.” (U.S. Environmental Protection Agency – Department of the Army 1990) The Corps monitors impact and mitigation requirements in acres within ecosystem classes to indicate progress in achieving the no overall net loss goal. While wetland compensatory mitigation is emphasized in policy and is tracked in the RAMS database,

compensatory mitigation for adverse impacts to waters other than wetlands also is a common permit condition when the district engineer determines that the aquatic ecosystem impacted by the authorized work warrants replacement. There is no evidence that, once compensatory mitigation is required, differences exist among permit types with respect to permit compliance or mitigation success. The history of verifying mitigation success is short, however, and mitigation policy provides substantial discretion to districts and individual regulators.

Assuming no errors in the database in FY 1998, nationwide permits did not differ from the permit program mitigation ratio, i.e., the ratio of compensatory mitigation acreage initiated to acreage of impact permitted during the same year (Table 5.3-3). An estimated 41,390 acres of compensatory mitigation were recorded. Both the nationwide permits and the entire program created, restored, or preserved wetlands at a ratio of 1.58 for impacted wetlands. The ratio of compensatory mitigation is similar for all permit types except for regional general permits, which was much lower than the rest.

Whereas standard permit, letter of permission, and nationwide permit programs appear to result in a net increase in wetland acreage, if mitigation is successful, the regional general permits result in lost acreage regardless of mitigation success rate. All but the regional general permits contribute to mitigation acreage in proportion to their impacts. The impacts authorized by regional general permits contribute a relatively small amount despite a relatively high percentage of mitigated permits. In contrast, many of the nationwide permits were issued for activities with no permanent impacts and the percentage of permits requiring mitigation is low.

**Table 5.3-3. Acres of mitigation activity initiated as a permit condition to compensate for wetland impacts from permitted activities.** The estimates are based on samples from 35 Corps districts, assuming the three remaining districts had proportional impact. Mitigation ratios in parentheses result if nationwide permit 27 is left out of the calculation (discussed in the text).

Impact Category	Existing Permit Category				Total
	Standard Permits	Letters of Permission	Regional General Permits	Nationwide Permits	
Acres Mitigated	27,167	151	2,458	11,614	41,390
Acres Impacted	15,895	100	3,023	7,201	26,219
Mitigation/Impact Ratio	1.70	1.51	0.81	1.61(0.71)	1.58(1.30)
% of Mitigation Acres	65.6	0.4	5.9	28.1	100.0
% of Permits Mitigated	18.7	3.1	2.6	5.1	6.6

The service value of some wetlands was enhanced without adding to the acreage counted in compensatory mitigation for adverse impacts. Any differences that may have occurred among permit types was not tracked. Also, there is no way to sum effects of enhancement and acreage replacement because no estimation of function or value change accompanies either measure.

Possible errors and inaccuracies in the database may have contributed to inaccurate estimates of the mitigation ratios in Table 5.3-3. These are described in detail in Appendix C.5. Of exceptional relevance is the disproportionate effect of nationwide permit 27, which had an exceptionally high mitigation acreage recorded, perhaps incorrectly. When it is left out of the

calculation the program mitigation acreage is reduced more than half and the mitigation/impact ratio falls to 0.71 (Table 5.3-3 and C.5.6-1.). While the relative number of nationwide permit 27 authorizations is small (1.8%), the average size of the impact acreage and the total acres is large (19.6%). Because of the high percentage of mitigation acres attributed to nationwide permit 27, any uncertainty in data associated with it has a large effect on program cumulative impacts.

The source of possible error is confusion that may have existed over what constitutes both the impact and the mitigation acreage for restoration activities authorized by nationwide permit 27. This nationwide permit authorizes wetland restoration and creation impacts to aquatic ecosystems as long as there is a net increase in aquatic resource functions and values at the project site. Sometimes existing water resources are unavoidably impacted, such as the loss incurred by placing a water control structure. These impact losses typically are small compared to the area restored and require no compensatory mitigation. For situations where previous water resources existed, some error may have occurred by placing the acreage of the restored or created area in the impact category, possibly in the belief that the existing water resources were impacted. Compensatory mitigation for any unavoidable loss, if required under the district engineer's discretion, should not include the acreage created or restored by the project. Review of the data indicates that the restoration action is sometimes mistakenly counted as mitigation for incurred losses, creating a misleadingly high mitigation ratio. Based on these observations, we would expect impact acreage to be lower and mitigation acreage lower still compared to the recorded amounts.

While the correct mitigation ratio may not be as low as 0.71, the uncertainty in proper accounting could have elevated a ratio of less than 1.0 to the reported ratio of 1.45 (Tables 5.3-3 and C.5.6-1)). Even so, the program ratio would remain well above 1.0 at 1.30 even if the nationwide permit ratio falls to 0.71.

**5.3.2.6.2 Mitigation Distribution By Size Category.** Because there are differences among the permit types in the sizes of authorized impacts, the mitigation ratio should differ among permit types if required mitigation is closely associated with impact size. Regardless of permit type, the percentage of permits requiring mitigation increased with the acreage of impact (Figure 5.3-1). Of the permit types, nationwide permits had the lowest percentage in the largest size category, over 3 acres, and the highest percentage in the smallest size category, under 0.1 acre.

In contrast, close to 90% of standard permits requiring mitigation were in the largest size category with very small percentages in each of the other size categories. These results were expected because the general permits typically served as the more attractive and suitable cost alternative for small impacts. The nationwide permits were more likely than any of the other permit types to have impacts mitigated in size categories below 3 acres.

For nationwide permits, a large fraction of the smallest mitigated impacts (0 – 0.1 acres) were associated with nationwide permits 12, 14, and 26. For nationwide permit 26, many of the reported impacts were below the notification threshold. For impacts over 3 acres, the largest fraction requiring mitigation was associated with nationwide permits 27, 21 and 31. For reasons

previously discussed, the high fraction due to nationwide permit 27 is likely to be in error. The percentage of permits recorded as requiring mitigation in the largest size category would be smaller than indicated in Figure 5.3-1 if nationwide permit 27 verifications were removed.

**Figure 5.3-1. Percentage of permitted acres in impact size categories for each of the permit types.** The size categories include 1= 0-0.1 acres, 2 = 0.1 –0.2 acres, 3 = 0.2-0.5 acres, 4 = 0.5-1.0 acres, 5 = 1.0-3.0 acres, and 6 = >3.0 acres.

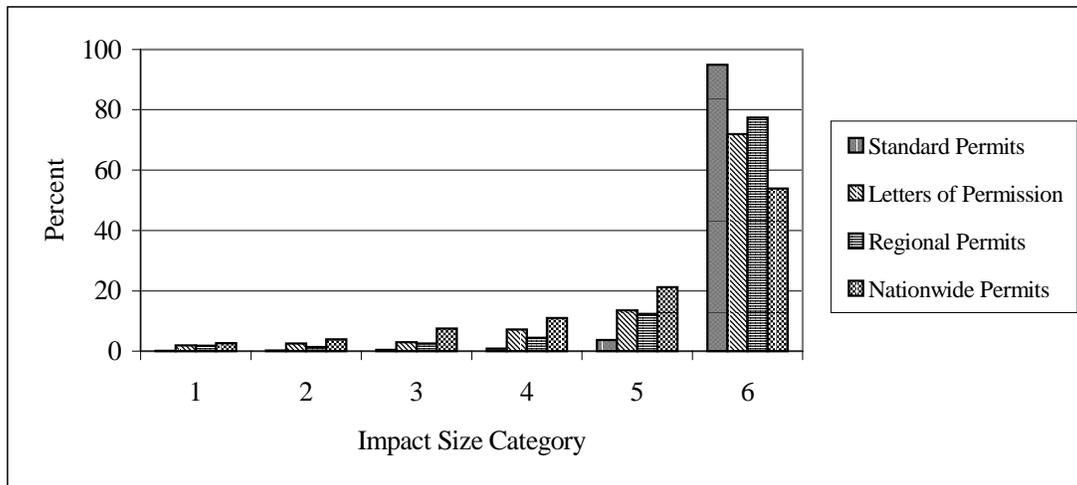
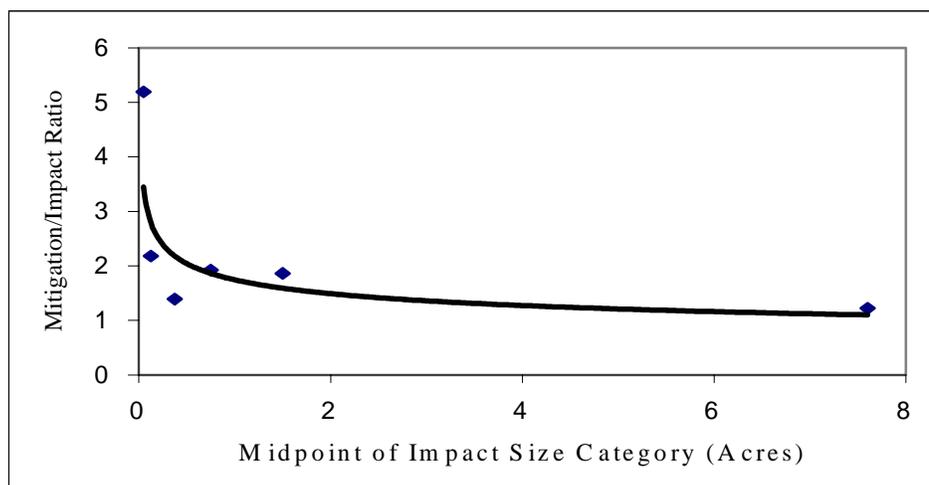


Figure 5.3-2 shows that the mitigation-impact ratio for nationwide permit impacts was outstandingly large for the smallest impact size category and decreased relatively little in larger

**Figure 5.3-2. The mean mitigation ratio for direct impacts in impact size categories for nationwide permits.** The size categories include 1= 0 - 0.1 acres, 2 = 0.1 –0.2 acres, 3 = 0.2-0.5 acres, 4 = 0.5-1.0 acres, 5 = 1.0-3.0 acres, and 6 = >3.0 acres.



size categories in FY 1998. Whereas the smallest percentage of impacts were mitigated in the smallest size category, the average size of the mitigation actions was large. It is difficult to interpret an implication from this result. The result does not necessarily imply that a greater compensatory value was placed on these smallest impacts. It may have come about unintentionally because the cost of additional mitigation in actions of such small size is relatively small. Also, when mitigation is required for such small impacts, the wetland typically is regarded as exceptional. The mitigation ratio for other permit types varied less consistently across size categories.

**5.3.1.6.3 Compliance and Mitigation Monitoring**

The last influence of the Corps permitting process is associated with inspections to assure mitigation project compliance and monitoring checks on compensatory mitigation success. Table 5.3-4 summarizes the record of compliance inspections, which often, but do not always include sites where mitigation is required. Compliance inspections seek variations from the agreed plan, which may or may not include mitigation. They do not always seek to confirm whether mitigation action is successful with respect to the sustained ecological functions that are to be compensated. Ordinarily, compliance inspections are conducted sooner than full mitigation of functional loss would be expected to take effect, which may take years if not decades. Inspections are not made of each mitigation project, nor are they random. Those controversial, complex, or otherwise significant activities are the most likely to be inspected. According to regulatory performance standards, at least 25% of all standard permits are to be inspected for compliance. A discretionary number of general permits are inspected. This number may be smaller because the general permits are limited to conditions where impacts are expected to be minimal.

**Table 5.3-4. Reported compliance inspection of permitted activities in wetlands for each of the permit types.** The estimates are based on reports (RAMS I and II) from 35 Corps districts, assuming the 3 remaining districts acted proportionally (See Appendix C.3 for methods).

Permit Type	Total Inspected	In Compliance	Non-Compliance	% In Compliance	% Inspected of Permitted	% Inspected of Mitigated
<b>Standard</b>						
# of permits	282	274	8	97.2	4.6	24.5
permitted acres	1078.9	1078.6	0.17	99.9	5.5	4.0
<b>Letter of Permission</b>						
# of permits	76	73	3	96.1	2.6	85.4
Permitted acres	27.5	27.5	0.0	99.9	0.3	18.2
<b>Regional General</b>						
# of permits	422	416	6	98.6	1.2	49.4
Permitted acres	35.9	35.9	0.1	99.9	1.2	1.5
<b>Nationwide</b>						
# of permits	541	491	50	90.8	1.2	14.6
Permitted acres	91.4	72.5	19.0	79.3	1.1	0.8
<b>Total</b>						
# of permits	1321	1254	67	94.9	1.5	12.8
Permitted acres	1233.7	1214.5	19.2	98.4	4.0	2.3

In FY 1998, the percentage of mitigated sites inspected was substantially lower for nationwide permits than for regional general permits, which had the highest rate of inspection for mitigated projects. Standard permits also met the performance standard, within the estimation error. Compliance was confirmed in the vast majority of inspections for all permit types. However, nationwide permits had the lowest percentage of permits and acreage in compliance when inspected (Table 5.3-4). These data for FY 1998 suggest that based on compliance, the mitigation success of nationwide permits may be about 20% lower than for other permits, at least at the time of the compliance inspection. Compliance inspections appeared to be biased toward sites with smaller mitigation acreage.

### **5.3.1.7 Environmental Impact Summary**

In FY 1998, nationwide permits appeared to be more effective at reducing total program impact acreage by encouraging developers to reduce requests below the 3 acre limit for nationwide permit 26. Acreages requested also were just as effectively reduced as for standard permits. While over one half of the issued permits were nationwide permits, they resulted in slightly more than one fourth of the documented impact and nearly all of that impact occurred in relatively abundant nontidal wetlands. Regional general permits impacted tidal wetlands over 5 times more than nationwide permits. Impacts below threshold size were estimated to add about 5% to the total nationwide impact. Permit compliance was generally high among all permit types, but nationwide permits were relatively more likely to be in noncompliance. There is no evidence otherwise that mitigation success differs among permit types, once mitigation is required. The mitigation ratio for nationwide permit impacts is uncertain and may be half that of individual permits, but no lower than for regional general permits. Given the information available and excepting the possible low mitigation ratio, nationwide permits in 1998 appeared to complement standard permits well in reducing net environmental impact.

### **5.3.1.8 Procedural and Threshold Variation of the Nationwide Permits**

The information used to evaluate a variation of the nationwide permits is the same as that used to evaluate the historic program. The variation places greater restrictions on applicants. This alternative would reduce the upper nationwide permit limit to 1/2 acre and a lower reporting threshold to 1/10 acre for certain nationwide permits. Two new general conditions would prohibit discharges in designated "critical resource waters" and adjacent wetlands and restrict discharges resulting in above-grade fills in waters in mapped 100-year floodplains (and within floodways if in headwaters).

In general, this variation would affect nationwide permits 12, 14, 26, and 29 the most. The PEIS estimates about one-third of the wetland acreage affected by nationwide permits under the No Action Alternative would be transferred from a nationwide permit to a standard permit process. It is unlikely that impacts transferred to the standard permit would result in a substantial increase in acreage denied because controversial nationwide permit activities are shunted to standard permit process regardless of impact size. No differences in mitigation requirements apply.

The PEIS estimates that most of the acreage shifted from the nationwide permit to the standard permit process is due to the acreage limit reduction alone, approximately 96%. The floodplain and “critical resource waters” condition restrictions account for remainder of the acreage shift, 3% and 1%, respectively.

Because a high fraction of the nationwide permit applicants report activities that fall below preconstruction notification requirements already (under the No Action Alternative), not many more are expected to report as a result of reduced preconstruction notification to 0.1 acre (see Appendix D.2.1.2.2.2, Unreported Nationwide Permit 26 Activities, for more detailed discussion of this assumption). Thus, since the high fraction of such below preconstruction notification level impacts is already reported, the amount of unreported impacts is not expected to vary substantially from the No Action Alternative. See Appendix C.8 for a detailed explanation of the methodology used to estimate acreage shifts.

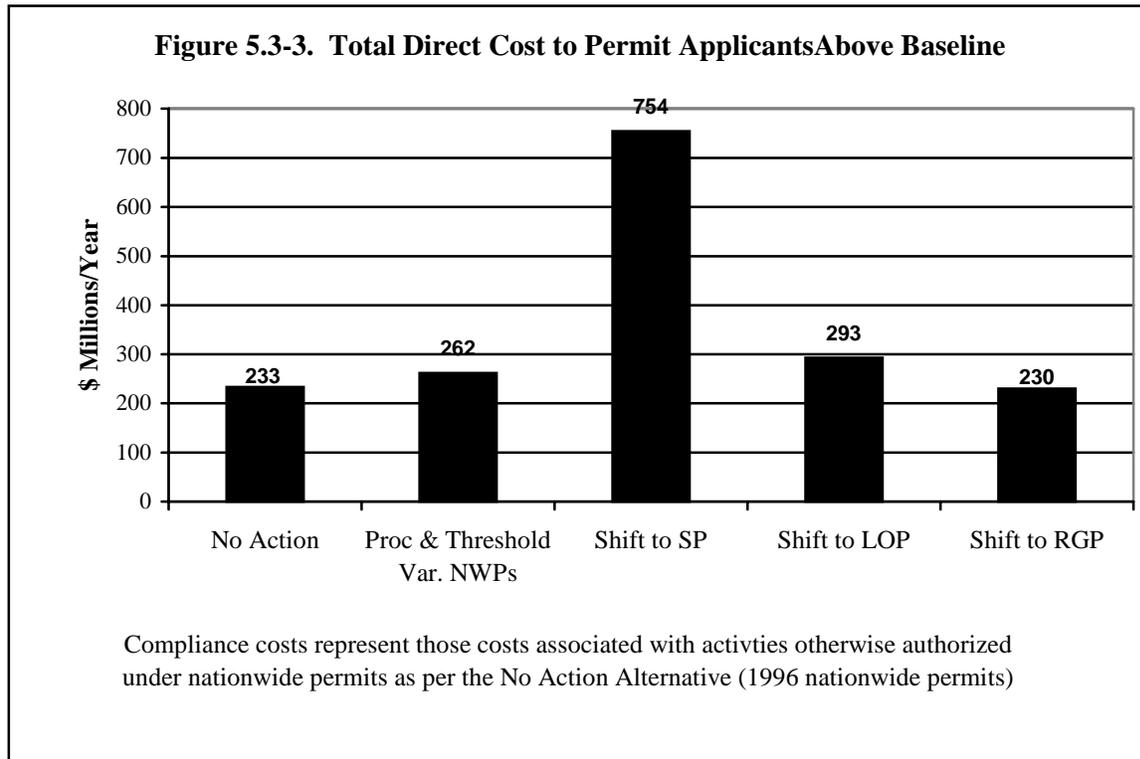
### **5.3.2 Costs to Permit Applicants**

The assessment of compliance costs in dollar terms focused primarily on direct costs associated with permit application. Direct costs vary greatly by type of permit, geography and region of the country. Details of the analytical framework to estimate these costs are presented in Appendix D. While the importance of indirect costs is recognized, estimation of these costs is complicated by, among other things, the wide variability in the types and characteristics of potentially affected activities and the economic settings in which they occur.

Average permit application costs were estimated for reporting nationwide permits, Section 10 letters of permission, Section 404 letters of permission, and standard permits. These estimates were \$5,500, \$3,000, \$11,000, and \$18,000, respectively. Regional general permit application costs were assumed to be roughly similar to reporting nationwide permits. Total compliance costs for permit applicants for each alternative were estimated using these unit application costs multiplied by the estimated permit applications by permit type (that is, the permit shift) for the respective alternative. A comparison of the estimated compliance costs for each alternative are shown in Figure 5.3-3.

Replacement of nationwide permits with standard permits would more than triple the direct compliance costs for current nationwide permits (as per the No Action Alternative A). This would represent an 80% increase in the compliance cost for the overall regulatory program. Procedural variation of the No Action Plan would cost permit applicants about 15-20% more than the No Action Plan.

Indirect costs discussed in Chapter 4 were not estimated. It was also assumed that compensatory mitigation costs would not vary despite the permitting alternative utilized.



### 5.3.3 Costs to Government Administration

Each of the alternative permit programs evaluated by the PEIS involves modifying or replacing the nationwide permit program. These changes in the permit workload faced by Corps districts will directly affect the efficiency with which each district is able to process each type of permit. Changes in permitting efficiency also have implications for permit applicants. Increases in permit workload would likely increase the average evaluation days required to process a permit, all other things equal (e.g., budget). Similarly, increases in the number of days the district dedicates to permitting would likely decrease the average evaluation days required to process a permit. The PEIS estimated the systemic effects of each alternative on number of permits issued and the average evaluation days required for processing a permit. The methodology and analysis are presented in Appendix D.

Implementation of Alternative B (shifting nationwide permits to standard permit processing) would increase the number of Section 404 standard permits issued fourfold and the average evaluation days approximately 13 to 17% by year 5. The national estimates of standard permits issued and average evaluation days over time for Alternative B are shown in Table 5.3-5.

**Table 5.3-5. National Estimate of Standard Permits Issued and Average Evaluation Days (AED) Over Time for Alternative B.** Year 0 estimation is based on Fiscal Years 1996-1998 data.

	<b>Year 0</b>	<b>Year 1</b>	<b>Year 3</b>	<b>Year 5</b>
Issue Sec. 10	864	1324	1328	1329
Issue Sec. 404	2349	8205	7969	7896
Issue Sec. 10-404	1579	3051	3012	2994
AED Sec. 10	75.6	66.2	66	66
AED Sec. 404	101.6	114.5	117.8	118.9
AED 10-404	105.8	111.9	113.3	114

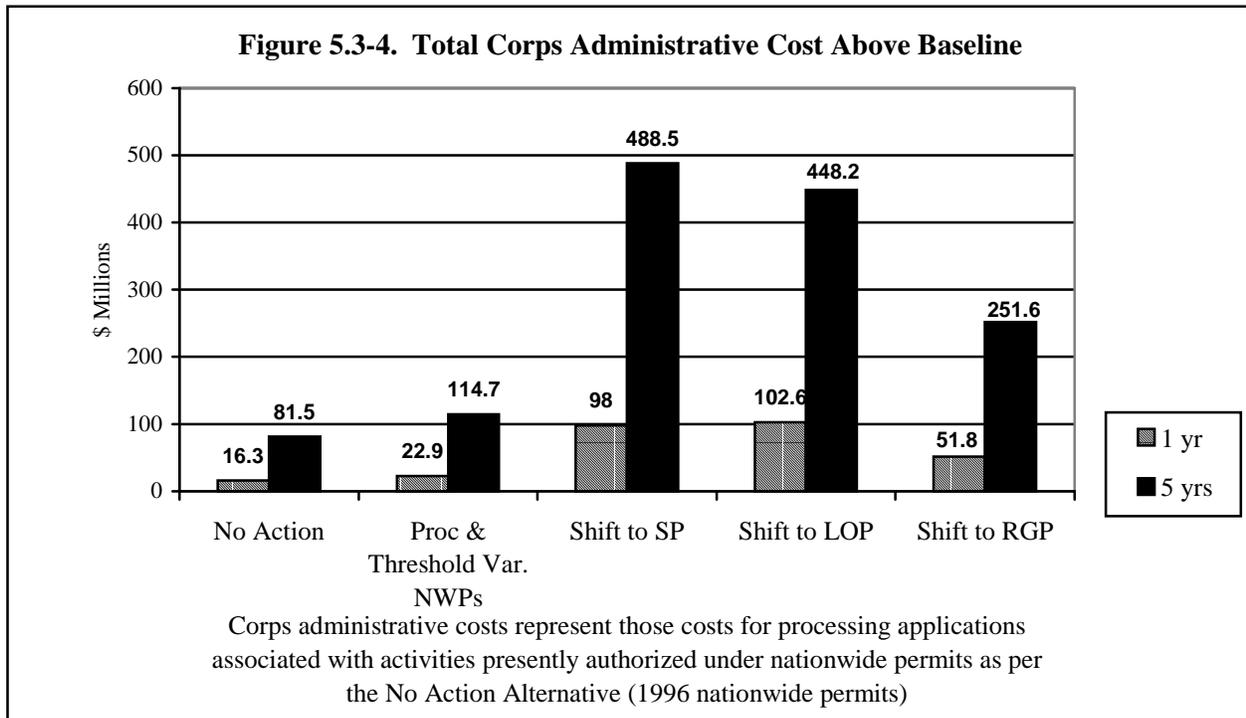
In essence, Year 0 represents Alternative A (No-Action Alternative). Under Alternative C (shifting to letters of permission), the effects on each district’s permit program are assumed to be the same as Alternative B. That is, the additional letters of permission a district is able to process under Alternative B are assumed to be the same as the additional standard permits under Alternative B. Use of regional general permits to replace nationwide permits (Alternative D) would not be expected to increase average evaluation days. Each district was assumed to be able to process all regional general permits in the year in which they were received.

The estimates of increased permitting times presented in Table 5.3-5 are based on the assumption that Corps district annual permitting budgets would remain roughly at current levels. The PEIS also estimated the increased regulatory program permitting budget that the Corps would need to implement the replacement package while maintaining current levels of permitting efficiency.

The estimated Corps administrative costs in the first year and over five years for each alternative are presented in Figure 5.3-4. Implementation of Alternatives C and D would face one-time permit development costs – costs incurred only in the first year of the program and not faced by Alternative B. These costs would be associated with developing, coordinating, and implementing a letters of permission or regional general permit process.

Replacement of nationwide permits with standard permits or letters of permission would increase Corps costs six-fold over the cost of the No Action Alternative (nationwide permits). This would represent about a 100% increase in overall Corps program costs. The total estimated expenditure for processing FY 1998 nationwide permits is \$17 million. The total Corps regulatory budget was \$107 million. Procedural variations of the No Action Plan would increase Corps costs from 60% to 80% over the No-Action Plan costs.

This estimate of changes in permitting workload is best suited for illustrating the effects on costs of marginal changes. To the extent that changes in permitting workload lead to non-marginal increase, the equations used to provide the estimates may change significantly.



#### 5.4 Summary of Comparison of Alternatives

- Nationwide permits provide an efficient component in the administration of the Corps regulatory program.
- Little evidence exists for suggesting major variation in environmental service impact among the alternatives. This assumes that compensatory mitigation would be required to offset impacts and be of similar quality for each of the considered alternatives.
- Replacement of the nationwide permit process with individual permits – standard permits, letters of permission – would require increased involvement of other Federal and state agencies to fully capture or realize the environmental oversight inherent to those permits. However, it is not evident that the other agencies have sufficient staffing to accommodate a large increase in review workload.

- Most other alternatives considered are much more costly to administer and impose higher compliance costs (in some cases much higher) on permit applicants. However, the Alternative A1 Procedural and Threshold Variation on the No Action Plan Alternatives is less costly than the other alternatives to the No Action Alternative. The variation has the potential to increase, marginally, activities reviewed and permitted. This alternative has higher administrative and permit applicant costs than the No-Action Alternative.
- Replacement of the nationwide permit process with the regional general permit process would result mostly in reduced coordination with other agencies.
- Replacement of the nationwide permit process with state programmatic general permits could only be accomplished in states with agencies that have programs that offer similar protection of aquatic resources. Categories of activities and procedures for evaluation and coordination can be developed for state programmatic general permits.
- Replacement of the nationwide permit process with an “Activity Regulation by Rules” would eliminate case-by-case project review for activities that meet specified terms and conditions (similar to non-reporting nationwide permits in the current program). That is, there would no application to the Corps and thus no associated administrative costs. Tracking impacts under this scenario would be difficult if not impossible. Impacts associated with this alternative would be similar to the 1996 program or perhaps greater if thresholds were greater than the 1996 program.