

**Draft**  
**Nationwide Permits**  
**Programmatic Environmental Impact Statement**

*Prepared by*

*U.S. Army Corps of Engineers*

*The Institute for Water Resources*  
*Alexandria, Virginia*

31 July 2001

(1) holding workshops with other agencies to discuss tools and methods for analyzing cumulative effects and (2) implementing a geographic information system (GIS) to help assist permit decisions, especially in states or other regions that have already developed such systems. In most cases, the GIS is linked to state or other Federal agency databases.

### **S.10.3 Compensatory Mitigation Success Deficiencies**

Compensatory mitigation is a critical part of the equation of achieving minimal impacts and the nationwide permit contribution to "No overall net loss of wetlands". Compensatory mitigation that is not implemented or does not achieve performance criteria strongly jeopardizes full replacement of lost wetlands and impacted functions. However the extent to which it replaces or does not replace lost wetlands and function cannot now be ascertained. Scientific and other literature generally suggests problems with compensatory mitigation in terms of both permit compliance and ecological success. While it is not evident that many compensatory mitigation projects required as a condition attached to issued nationwide permits are reviewed for compliance with permit conditions, increased review itself is not sufficient to minimize the problems.

Poor mitigation project design and siting are major deterrents to compliant mitigation and replacement of lost functions and values. Many Corps districts are attempting to improve compensatory mitigation success by establishing region-specific guidelines (or using state or other agency guidance) for compensatory mitigation projects.

Many of the problems reported for compensatory mitigation projects are related to risky techniques (e.g., in non-hydrologically sustainable environments) or poor siting (e.g., adjacent to the authorized wetland impact otherwise surrounded by commercial development). If compensatory mitigation is required for a permit, but only risky compensation options are available, preservation as compensation should be encouraged (at high exchange ratios to account for incremental function gained/lost) in concert with watershed vision. Preservation, when there is immediate or relative certainty of non-regulated threat to the wetland, could be especially utilized when permit compensatory mitigation conditions require greater acreage than authorized impact acreage. In such a case, preservation could provide the compensation amounts that exceed the authorized impact acreage.

**S.10.3.1 Using a Watershed or Regional Perspective.** Mitigation planning (design and siting) can be improved through application of a watershed-based (or some other appropriate region, e.g., ecoregion) approach that considers past and current aquatic resource conditions. A watershed or regional approach can be enabled through:

- Development of watershed or regional plans (e.g., Special Area Management Plans) or priorities and strategies that identify aquatic resource needs and appropriate compensatory mitigation sites.
- Establishment of regionally based mitigation ventures sited according to the watershed or regional needs and permitted impacts, e.g., mitigation banks and in-lieu fee arrangements.

databases. GIS data layers (e.g., streams, and wetlands) linked to permit data can help the Project Manager consider remaining resource stock and permitting trends on a case-by-case basis. Corps regulatory GIS development is especially facilitated in states or other regions that have already implemented such systems.

### **3.5.3 Compensatory Mitigation Success Deficiencies**

Compensatory mitigation is a critical part of the equation of achieving minimal impacts and the nationwide permit contribution to “no overall net loss of wetlands”. Compensatory mitigation that is not implemented, or does not achieve performance criteria, strongly jeopardizes full replacement of lost wetlands and impacted functions. However the extent to which it replaces or does not replace lost wetlands and function cannot now be ascertained. Scientific and other literature generally suggests problems with compensatory mitigation in terms of both permit compliance and the ability to replace lost functions and values. While it is not evident that many compensatory mitigation projects required as a condition to issued nationwide permits are reviewed for compliance with permit conditions, increased review itself is not sufficient to minimize the problems. Poor mitigation project design and siting are major deterrents to the replacement of lost functions and values. Improvements in these planning aspects are in progress as discussed below. Other options for improvement are also offered below. Some of the options would be outside of the Corps domain to implement.

#### **3.5.3.1 Guidelines at Corps District Level**

In the past several years, many Corps districts have established guidelines (or use recently established state guidance) describing planning, construction, and monitoring of compensatory mitigation sites. Also many state agencies (and other agencies) are developing compensatory mitigation guidance. Many districts apply compensation ratios that are at least partially based on some estimation of likelihood of mitigation success. Appendix B provides a list of districts with compensatory mitigation guidance.

#### **3.5.3.2 Using A Watershed or Regional Perspective**

Mitigation planning (design and siting) can be improved through application of a watershed-based (or some other appropriate region, e.g., ecoregion) approach that considers past and current aquatic resource conditions to identify appropriate sites and desired wetland classes. Such an approach can be enabled through: (1) development of official watershed or regional plans (e.g., Special Area Management Plans) or other priorities and strategies, and (2) establishment of regionally-based mitigation ventures sited according to the watershed or regional needs and expected mitigation needs, e.g., mitigation banks and in-lieu fee arrangements. Towards this end, local, state, and Federal agencies should promote development of regional approaches.

to judge in less than several years following mitigation action (because of the time lag required for vegetation colonization and succession) mitigation success for permits issued in FY 1998 is not yet ready for evaluation. Given the time lag in compensatory mitigation response and the relatively low mitigation requirement of the early 1990s (Figure 4.2-1), Corps wetlands permitted in FY 1998 for fill probably were continuing to be lost at a faster rate than compensated, even if mitigation success was high.

More likely, however, mitigation success has not been high, if studies outside the Corps are indicative. A number of studies conducted during the past decade suggest that mitigation success is less than 100%, but may be improving (e.g., Ambrose In Press, Johnson et al. 2000). Appendix C.6.2 provides a more detailed review.

No consistent standards existed for past studies of mitigation success, which adds to the uncertainty of success estimates. The collective results of qualitative (no exact measures) studies of mitigation success indicate that complete failures based on achieving wetland vegetation structure are relatively few—that is, most mitigation actions result in a vegetated wetland of some type as defined by Cowardin et al. (1979). Based on these studies, functional success is commonly 50 to 75%, indicating that the overall mitigation ratio for Corps projects in 1998 would be adequate for ultimate replacement of unavoidably lost wetlands. A 50% success with a 1.30 mitigation ratio would fall below complete impact compensation and a 75% success would just about compensate. More quantified assessment appears less encouraging, however, indicating a higher functional failure rate than qualitative methods. Compensatory mitigation may not generate much more than 50% of the self-sustaining function expected program-wide, even for wetlands that have undergone substantial research. Study results and Corps program experience indicates that restoration of the hydrology to the original state is a critical prerequisite for complete wetland restoration. In many locations the seed source is still viable and planting may not be necessary. However, in many urban and suburban areas, nonnative species proliferate even in natural wetlands (Magee et al. 1999)

#### **4.2.6 Area Impacted by Nationwide Permits In Fiscal Year 1998**

All impacts to Corps-defined wetlands were measured in acres and the data summarized in Table 4.2-4 are relatively accurate estimates of impacts in tidal and non-tidal wetlands. Impacts on waters other than wetlands were entered into the Corps data base as acreage for some impacts and linear feet for other impacts, complicating estimates of impacts to other waters and total impact in acres.

Table 4.2-5 summarizes the acreage impacted in FY 1998 for wetlands and other waters under the nationwide permit program in the five different aquatic systems of Cowardin et al. (1979). Wetland impacts were estimated entirely in acres and 7,200 acres of wetland impacts were permitted in FY 1998. Most of the impact was in palustrine wetlands. Less than 1% of the identified impact occurred in tidal waters of estuarine and marine wetlands. Riverine systems were impacted most after wetlands.