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**The Mitigation Rule  
Retrospective: A Review of the  
2008 Regulations Governing  
Compensatory Mitigation for  
Losses of Aquatic Resources**

2015-R-03





# Institute for Water Resources

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*Views, opinions, and/or findings contained in this report should not be construed as an official Department of the Army position, policy or decision unless so designated by other official documentation.*

### *Disclaimer*

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## **ACRONYMS AND ABBREVIATIONS**

**ASWM** – Association of State Wetland Managers

**CFR** – Code of Federal Regulations

**Corps** – U.S. Army Corps of Engineers

**CWA** – Clean Water Act

**CY** – Calendar Year

**DA** – Department of the Army

**DARTER** – Data on Aquatic Resources Tracking for Effective Regulation

**DOD** – Department of Defense

**DOI** – Department of the Interior

**DOJ** – Department of Justice

**DOT** – Department of Transportation

**ELI** – Environmental Law Institute

**EO** – Executive Order

**EPA** - U.S. Environmental Protection Agency

**ESA** – Endangered Species Act

**FHWA** – Federal Highway Administration

**FWS** – U.S. Fish and Wildlife Service

**FY** – Fiscal Year

**GAO** – Government Accountability Office

**GCA** – Grants Competition Advocate

**GIS** – Geographic Information System

**GP** – General Permit

**HQ** – Headquarters

**HUC** – Hydrologic Unit Code

**HUD** – Department of Housing and Urban Development

**ICWWG** - Interagency Coastal Wetlands Work Group

**ILF** – In-lieu Fee

**IP** – Individual Permit

**IRT** - Interagency Review Team

**LOP** – Letter of Permission

**LTA** – Land Trust Alliance

**MOA** – Memorandum of Agreement

**MOU** – Memorandum of Understanding

**NDAA** - National Defense Authorization Act

**NEPA** – National Environmental Policy Act

**NHD** - National Hydrography Dataset

**NMFS** - National Marine Fisheries Service

**NOAA** – National Oceanic and Atmospheric Administration

**NPDES** – National Pollutant Discharge Elimination System

**NPS** – U.S. National Park Service

**NRC** –National Research Council

**NRCS** –Natural Resources Conservation Service

**NWI** – National Wetlands Inventory

**NWMAP** – National Wetlands Mitigation Action Plan

**NWP** – Nationwide Permit

**OMB** – Office of Management and Budget

**OMBIL** - Operations and Maintenance Business Information Link

**ORM** – OMBIL Regulatory Module (versions 1 and 2)

**PGP** – Programmatic General Permit

**PRM** – Permittee Responsible Mitigation

**QPDS** - Quarterly Permit Data System

**RAMS/RAMSII** - Regulatory Analysis and Management System

**RGP** – Regional General Permit

**RHA** – Rivers and Harbor Act

**RIBITS** – Regulatory In-lieu Fee and Banking Information Tracking System

**SOP** – Standard Operating Procedures

**SP** – Standard Permit

**TCF** – The Conservation Fund

**TNC** – The Nature Conservancy

**USDA** – U.S. Department of Agriculture

**USFS** – U.S. Forest Service

**USGS** – U.S. Geological Survey

## **EXECUTIVE SUMMARY**

In 2008, the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) issued regulations clarifying compensation requirements for losses of aquatic resources.<sup>1</sup> Compensatory mitigation refers to the restoration, establishment, enhancement, and/or preservation of wetlands, streams, or other aquatic resources conducted for the purpose of offsetting impacts to these resources authorized by permits issued under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Rivers and Harbors Act (RHA) of 1899. The 2008 Mitigation Rule incorporates recommendations from the National Research Council for improving the planning, development, implementation, and performance of wetland compensatory mitigation projects, including the adoption of a Watershed Approach to compensatory mitigation project site selection and design. The 2008 Mitigation Rule establishes equivalent standards for aquatic resource compensatory mitigation projects regardless of whether they are conducted by mitigation banks, in-lieu fee programs, or permit applicants.

Mitigation banks are aquatic resource compensatory mitigation projects implemented by a sponsor to produce credits that can be sold or transferred to permittees to fulfill the compensatory mitigation requirements in their CWA Section 404 or RHA Section 10 permits. In-lieu fee programs are aquatic resource compensatory mitigation projects implemented by a governmental or non-profit natural resources entity that are authorized to sell or transfer credits to permittees. Permittee-responsible mitigation is a compensatory mitigation project implemented by the permittee or his or her contractor. When compensatory mitigation is required to offset impacts to wetlands, streams or other aquatic resources authorized by a Corps permit, those compensation requirements may be satisfied by securing credits from an approved mitigation bank or in-lieu fee program or the permit applicant can execute a permittee-responsible compensation project.

Although it is the permit applicant's responsibility to propose an appropriate compensatory mitigation option, mitigation banks and in-lieu fee programs are the preferred forms of compensatory mitigation under the 2008 Mitigation Rule as they usually involve consolidating compensatory mitigation projects where ecologically appropriate, using a watershed approach, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success.

The Corps and EPA have prepared this retrospective review to provide information on implementation of the 2008 Mitigation Rule. The primary sources of data used for this

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<sup>1</sup> The compensatory mitigation regulations promulgated jointly by the Corps and EPA appear in the Corps' regulations at 33 CFR §§ 332.1 - 332.8 and EPA's regulations at 40 CFR §§ 230.91 - 230.98

retrospective review are the Corps Regulatory Program's automated information system, the Operations and Maintenance Business Information Link (OMBIL) Regulatory Module Version 2 (ORM2), and the Regulatory In-lieu Fee and Banking Information Tracking System (RIBITS). The agencies present Regulatory Program permit data from 2010 to 2014, including authorized impacts and required compensatory mitigation. This report also presents data on approved mitigation banks and in-lieu fee programs and the credits those mitigation providers are producing. This report summarizes the extensive training and outreach efforts conducted by the Corps and EPA to educate staff, mitigation providers, and other stakeholders on the 2008 Mitigation Rule; compiles the range of implementing guidance documents developed by Corps districts to support implementation of the 2008 Mitigation Rule; and analyzes trends in impact and compensation data since implementation of the 2008 Mitigation Rule.

Key findings indicate that substantial progress has been made in implementation of the 2008 Mitigation Rule. Numerous Corps districts have developed regional guidelines to effectively implement the 2008 Mitigation Rule. Advances in Corps Regulatory Program data collection and tracking have been made through investments in ORM2 and RIBITS, and increased data sharing with the public using RIBITS.

Over the past five years, the Corps issued approximately 56,400 written authorizations per year under its permit authorities, and approximately 10% of those authorizations required compensatory mitigation to offset permitted impacts to aquatic resources. This modest percentage reflects the fact that, during the review process managed by the Corps, permit applicants are required to avoid and minimize impacts to jurisdictional waters and wetlands to the maximum extent practicable before a permit decision is made. Because of the stringent avoidance and minimization requirements, most permitted impacts to jurisdictional waters and wetlands fall below the thresholds established in the Corps' regulations for determining when compensatory mitigation should be required. Another factor is that numerous authorizations are for regulated activities that do not result in permanent losses of aquatic resource area or function, such as habitat restoration projects or maintenance activities and authorizations for structures or dredging in navigable waters under Section 10 the RHA.

When compensatory mitigation is required, the vast majority of compensatory mitigation is done to offset authorized wetland and stream impacts. For those authorizations between 2010 and 2014 that required compensatory mitigation, 41% used mitigation bank credits, 11% used in-lieu fee program credits, 37% did on-site permittee-responsible mitigation, and 11% conducted off-site permittee-responsible mitigation.

There has been continued increases in the numbers of mitigation banks and new in-lieu fee programs being approved to provide 3<sup>rd</sup> party compensatory mitigation and a marked increase in the proportion of the country served by 3<sup>rd</sup> party mitigation options.



As of December 2014, there were 1,428 mitigation bank sites that have been approved by the Corps. Through 2014, 45 in-lieu fee programs have been approved by the Corps. Since 2008, the number of mitigation banks providing stream mitigation credits has more than doubled and the number of mitigation banks providing wetland credits has increased by 52%. There has been a substantial increase in the amount of wetland and stream mitigation credits available at mitigation banks and in-lieu fee programs for use as compensatory mitigation.

The Corps' permit data show that use of mitigation banks can reduce permit processing times, while permit processing times for projects that utilize permittee-responsible mitigation have been increasing. For authorized activities that required compensatory mitigation, processing times for individual permit applications and general permit verifications were fastest when mitigation bank credits (120 days) or in-lieu fee program credits (136 days) were the approved source of compensatory mitigation. When permittee-responsible mitigation was required, authorizations where on-site compensatory mitigation was required were processed faster than authorizations where off-site compensatory mitigation was required (177 days versus 243 days, respectively) with both showing trends from 2010 to 2014 of increased processing times. The longer processing times for permits requiring off-site permittee-responsible mitigation are likely due to a number of factors, including the need to review and assure that the mitigation plan complies with the more comprehensive compensation standards included in the 2008 Mitigation Rule and to conduct additional evaluations and consultations (e.g., Endangered Species Act Section 7 consultations or National Historic Preservation Act Section 106 consultations) for the proposed compensatory mitigation project site.

The Corps and EPA continue to strive to carry out the 2008 Mitigation Rule and have identified specific future steps to ensure effective implementation. The Corps and EPA will continue investment in education to all stakeholders (e.g., Interagency Review Teams, mitigation bank and in-lieu fee sponsors, and Federal field staff) and database enhancements to improve and expand upon existing capabilities. Corps districts will further refine and enhance guidelines to allow for greater applicability to their specific environment.

This retrospective focuses on the administrative aspects of executing the 2008 Mitigation Rule. This retrospective does not examine the ecological outcomes of aquatic resource compensatory mitigation projects required through implementation of the 2008 Mitigation Rule. The agencies look forward to seeing the results of scientific studies that examine the ecological outcomes of aquatic resource restoration, enhancement, and establishment projects that were approved under the standards and requirements of the 2008 Mitigation Rule.

## 1.0 INTRODUCTION

In 2008, the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) jointly issued regulations for compensatory mitigation to offset losses of aquatic resources caused by authorized discharges of dredged or fill material into jurisdictional waters and wetlands. The compensatory mitigation regulation also applies to aquatic resource losses caused by structures or work in navigable waters authorized by the Corps. Compensatory mitigation refers to the restoration, establishment, enhancement, and/or preservation of wetlands, streams, or other aquatic resources conducted specifically for the purpose of offsetting authorized impacts to these resources (see Appendix A). The 2008 Mitigation Rule seeks to improve the planning, implementation, and management of wetland and stream compensatory mitigation projects by emphasizing a watershed approach in selecting compensatory mitigation project locations, requiring measurable and enforceable ecological performance standards with regular monitoring, and specifying the components of a complete compensatory mitigation plan. Those components include long-term protection of compensation project sites, financial assurances to ensure successful completion, and identification of the parties responsible for specific project tasks.

The Corps evaluates permit applications under four authorities:

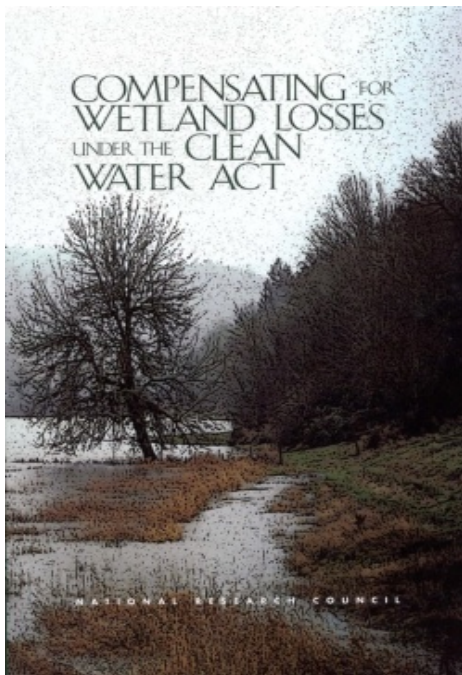
- Section 9 of the Rivers and Harbors Act of 1899 (RHA) authorizes the Corps to issue permits for dams, dikes, and causeways in navigable waters of the United States;
- Section 10 of the RHA authorizes the Corps to issue permits for structures and work in navigable waters of the United States;
- Section 404 of the Clean Water Act (CWA) authorizes the Corps to issue permits for discharges of dredged or fill material into waters of the United States;
- Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 authorizes the Corps to issue permits for the transportation of dredged material for the purpose of disposal into ocean waters.

Permits issued under these authorities may require compensatory mitigation to satisfy statutory requirements or applicable regulations. Compensatory mitigation may be required to ensure that an authorized discharge of dredged or fill material into waters of the United States complies with the CWA Section 404(b)(1) Guidelines. The 404(b)(1) Guidelines are the substantive environmental criteria issued by EPA for evaluating proposed discharges of dredged or fill material into jurisdictional waters and wetlands. Compensatory mitigation may also be required to ensure that the permitted activity is not contrary to the public interest. The Corps evaluates 20 public interest review factors when it makes decisions on whether to issue or deny permits. Compensatory mitigation may also be required as a result of the review conducted to comply with the National

Environmental Policy Act, through the preparation of an environmental assessment or environmental impact statement. Compensatory mitigation requirements are added through permit conditions, so that they are legally binding and enforceable.

Applications for Corps permits are evaluated by Corps district offices. For any Corps permit, compensatory mitigation may be required by district engineers to offset environmental losses resulting from authorized activities. Compensatory mitigation may be provided by the permittee at a location on or contiguous to the impact site or at an off-site location preferably in the same watershed, or it may be provided by a third party (through an approved mitigation bank or in-lieu fee program). Such third party compensation generally occurs at an off-site location (See Appendix A). This retrospective focuses on section 404 permits and section 10 permits, the vast majority of compensatory mitigation requirements are imposed on section 404 permits. Some section 10 permits require compensatory mitigation in cases where the authorized activities adversely affect wetlands, vegetated shallows, or other important coastal resources. Section 103 permits generally do not require compensatory mitigation, and the Corps issued few section 9 permits during 2010-2013.

### **Concerns regarding effectiveness of compensatory mitigation**



During the 1980s and 1990s, research and experience began to raise questions regarding whether compensatory mitigation was being successfully implemented and whether it was effectively offsetting permitted impacts, especially for wetland impacts. In response to these concerns, EPA asked the National Research Council (NRC) to conduct an in-depth, independent evaluation of wetland compensatory mitigation in the CWA Section 404 permit program. In 2001, NRC published its detailed findings and recommendations. The NRC's findings highlighted the numerous challenges encountered in successfully implementing wetland compensatory mitigation projects. Its recommendations included numerous opportunities for improvements in wetland compensatory mitigation project site selection, design, implementation,

performance monitoring, adaptive management and long-term stewardship<sup>2</sup>. The Corps and EPA embraced these recommendations and took immediate steps to explore the best mechanisms for implementing them.

Congress recognized the need to strengthen rules governing wetland compensatory mitigation and the standards and requirements that apply to the various compensatory mitigation providers when it enacted Section 314 of the National Defense Authorization Act (NDAA) for Fiscal Year 2004 (Public Law 108-136). Section 314 of the NDAA required the Secretary of the Army, acting through the Chief of Engineers, to issue regulations establishing, to the maximum extent practicable, equivalent performance standards and criteria for the use of on-site, off-site, and in-lieu fee mitigation and mitigation banking as compensation for lost wetland functions in Department of the Army (DA) permits.

Congress directed that the 2008 Mitigation Rule:

- Maximize available credits and opportunities for compensation for wetland losses,
- Provide flexibility for regional variations in wetland resources and their associated functions and services, and
- Apply equivalent standards and criteria to all providers of mitigation.

### **The 2008 Mitigation Rule**

The statutory directive to develop compensatory mitigation regulations in the NDAA, provided the Corps and EPA with the opportunity to address concerns regarding both the effectiveness of compensatory mitigation and the need for consistent and effective standards for all compensatory mitigation providers, and to take steps to improve the ecological outcomes of all aquatic resource compensatory mitigation projects required by DA permits, not just wetland compensatory mitigation. In 2008, the Corps and EPA published these regulations entitled [Compensatory Mitigation for Losses of Aquatic Resources \(The 2008 Mitigation Rule\)](#) (33 CFR Part 332 and 40 CFR Part 230, subpart J).

The 2008 Mitigation Rule incorporates most of the NRC's (2001) recommendations designed to improve the planning, development, implementation, and performance of wetland compensatory mitigation projects. It also applies to compensatory mitigation required for losses of streams and other types of open waters, because the agencies believe that a compensatory mitigation regulation should also cover the basic standards and requirements for compensatory mitigation for all types of aquatic resources.<sup>3</sup> It also ensures that all aquatic resource compensatory mitigation projects are held to equivalent standards regardless of whether they are performed by permittees, mitigation

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<sup>2</sup> National Research Council (2001). [Compensating for Wetland Losses under the Clean Water Act](#). Washington, D.C., National Academy Press.

<sup>3</sup> Preamble to the proposed rule published in the Federal Register on March 28, 2006 (71 FR 15520).

banks, or in-lieu fee programs. Requirements of the 2008 Mitigation Rule apply to compensatory mitigation projects conducted to offset losses of all categories of waters of the United States authorized by permits issued by the Corps under Section 404 of the CWA and Sections 9 and 10 of the RHA. This approach is intended to promote regulatory efficiency, consistency, and predictability by establishing equivalent and effective standards and criteria that apply to compensatory mitigation requirements associated with authorized impacts to all regulated waters of the United States. The 2008 Mitigation Rule does not change when compensation is required for DA permits, because the Corps issued a regulation in 1986 that already addressed that aspect of compensatory mitigation for DA permits. The 2008 Mitigation Rule focuses on “where” and “how” compensatory mitigation is to be conducted, especially how it is planned, implemented, and managed to improve ecological success and sustainability. The provisions of this rule are also intended to help improve the quality of aquatic resource compensatory mitigation, by incorporating recommendations of the NRC and lessons learned from other aquatic resource compensatory mitigation studies to improve the planning, development, implementation, and performance of compensatory mitigation projects.

### **1.1 PURPOSE OF THIS RETROSPECTIVE REVIEW**

The Corps and EPA have prepared this retrospective review to provide information on implementation of the 2008 Mitigation Rule, and share analysis of pre- and post-rule compensatory mitigation practices. The primary sources of data used for this retrospective review are the Corps Regulatory Program’s automated information system, the Operations and Maintenance Business Information Link (OMBIL) Regulatory Module (ORM), and the Regulatory In-lieu Fee and Banking Information Tracking System (RIBITS). The data used in this retrospective review are from permit decisions issued during the period of 2010 to 2014. These automated information systems are described in more detail in the Improvement in the Regulatory Permit Data Collection and Management section of this document. This retrospective review focuses on the administration of the 2008 Mitigation Rule during the past five years. It does not evaluate the ecological performance of compensatory mitigation projects approved after the effective date of the rule.

## 2.0 BACKGROUND OF THE CORPS REGULATORY PROGRAM AND MITIGATION POLICY

### 2.1 U.S. ARMY CORPS OF ENGINEERS REGULATORY PROGRAM

The Corps is a decentralized agency, with Corps district offices having the responsibility for the majority of day-to-day implementation of the Regulatory Program. Permit applications are reviewed, evaluated, and issued by Corps staff in field offices organized into 38 districts which fall into 8 divisions. The geographic areas of responsibility for the 8 Corps division offices are shown in Figure 1. District regulatory boundaries may be based on state boundaries or, to some extent, watershed boundaries. Each Corps division office is commanded by a Division Engineer, and each Corps district office is commanded by a District Engineer. Permit decisions, including compensatory mitigation requirements for those permits, are made by the district engineer, or his or her staff. Corps district engineers have substantial discretion in making permit decisions, establishing compensatory mitigation requirements, and determining whether to approve mitigation banking or in-lieu fee program instruments. Division engineers are responsible for providing oversight of district implementation of the Regulatory Program, and for reviewing administrative appeals of permit decisions.

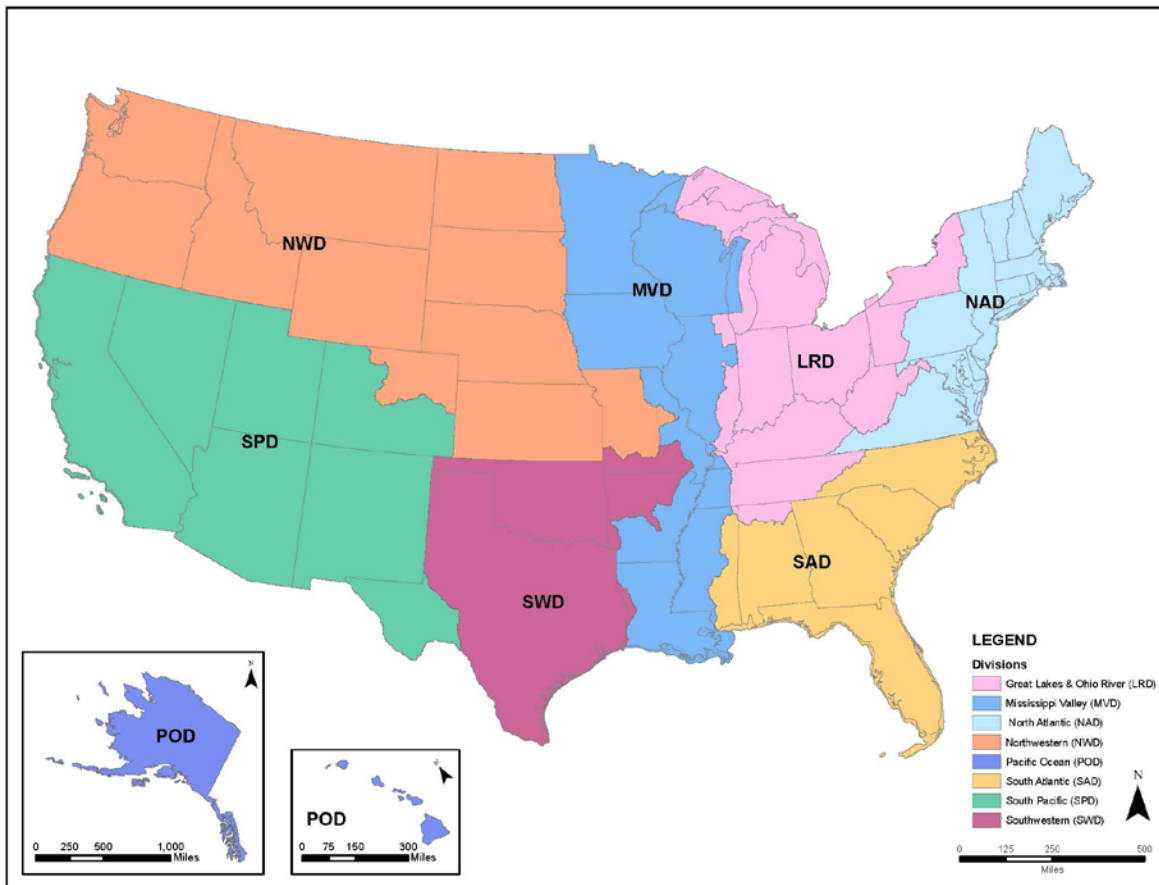


Figure 1. Map of the Corps Division boundaries for the Regulatory Program

Certain types of permit applications require coordination with federal and state resource agencies, such as EPA, U.S. Fish and Wildlife Service (FWS), National Oceanic and Atmospheric Administration (NOAA) - National Marine Fisheries Service (NMFS), state departments of natural resources, and other state or local agencies that a Corps district determines are appropriate. For example, the Corps consults with the FWS and/or NMFS under Section 7 of the Endangered Species Act (ESA) when the Corps determines there will be an effect on a listed species, the State Historic Preservation officer under Section 106 of the National Historic Preservation Act when cultural or historic resources are present, and with the respective state agencies for compliance with the CWA Section 401 water quality certifications and for consistency with a state's approved coastal management program under the Coastal Zone Management Act. In addition, for all Individual permits and issuance of a General permit a public notice that seeks comment from federal and state agencies (see section 2.1.1 for information on types of permits issued by the Corps). These agencies may make specific comments concerning compensatory mitigation for activities that require Corps authorization.

There is considerable variability in aquatic resources across the country. This variability has effects on implementation of the Regulatory Program, including the establishment of compensatory mitigation requirements for DA permits as Wetlands and streams vary in density and structure and function across the U.S. (Section 5.5).

**Individual Permit:** issued after a case-specific evaluation and a determination that the proposed activity is not contrary to the public interest

- **Standard Permit:** permit that authorizes a specific activity after issuing a public notice to solicit comments and conducting a public interest review and other required analyses.
- **Letter of Permission:** permit issued after conducting an abbreviated processing procedure, including coordination with federal and state agencies, and making a public interest determination.

**General Permits:** authorizes activities that are similar in nature and cause only minimal individual and cumulative adverse environmental impacts

- **Nationwide Permit:** general permit issued by Corps Headquarters, to authorize activities across the country
- **Regional General Permit:** general permit issued by a District Engineer to authorize categories of activities within a specific geographic area
- **Programmatic General Permit:** general permit issued by a District Engineer to authorize categories of activities regulated by another agency, to reduce duplication.

## 2.1.1 TYPES OF PERMITS

Most of the authority to issue Department of the Army (DA) Corps permits under Section 404 of the CWA, Sections 9 and 10 of the RHA, and Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, is delegated to District Engineers and their designees. There are two general categories of Corps permits: individual permits and general permits.

Individual permits include standard permits and letters of permission. Individual permits involve an activity-specific review, which includes either a public notice or agency coordination, with the preparation of an activity-specific public interest review and, where applicable, a CWA Section 404(b)(1) Guidelines analysis.

General permits are issued on a nationwide, statewide, or regional basis for a category or categories of activities that are similar in nature and do not cause more than minimal individual and cumulative adverse environmental effects. General permits include nationwide permits, regional general permits, and programmatic general permits. Some general permits may require activity-specific review by Corps district engineers prior to conducting the general permit activity.

Nationwide permits are issued by Corps Headquarters. There are currently 50 nationwide permits. Regional general permits are issued by a district or division engineer and can improve regulatory consistency and enhance program efficiency by authorizing activities that are not covered by nationwide permits. Programmatic general permits are issued to reduce the duplication of permitting between the Corps and another agency. The majority of the categories of work authorized under a programmatic general permit are for minor actions which are regulated by the Corps and the state or other government entity in a similar manner. The implementation of the programmatic general permits may reduce the need for separate approval from the Corps for minor work located in waters of the United States, including navigable waters, when that work is authorized by the a separate agency. General permits help districts direct their limited resources to permit applications that may have greater environmental impacts. A number of general permits are non-reporting (i.e., they do not require advance notification to the Corps). Therefore, when the Corps reports the number of activities authorized by general permits, it reports the numbers of activities that required advance notification or were voluntarily reported to the Corps, and where the Corps issued written verifications that those activities were authorized by the general permits.

Most of the information in this retrospective review is presented for a national perspective. However, information on permitting and compensatory mitigation requirements during 2010-2014 is also presented in Section 5.5 to illustrate regional variations (by Corps division) in Regulatory Program implementation. Compensatory mitigation requirements are imposed on DA permits through permit conditions to offset losses of aquatic resources caused by the activities authorized by those permits.

A national and regional characterization of regulatory permitting must also take into account the substantial year-to-year variation in the number of permits issued. There are many factors which affect the number of permit applications received and permits issued annually, including economic conditions and changes in regulations and jurisdiction.

However, the number of permits issued annually does not reflect the amount of permitted impacts to jurisdictional waters, since the amount of impacts to jurisdictional waters authorized by DA permits can vary greatly, from 0.0001 acre up to hundreds of acres. The figures in Section 2.2 show the impact acreage of permits issued per year.



While the number of standard permits issued per year is relatively constant over time, the number of activities authorized by nationwide permits and other general permits can vary considerably.

### **2.1.2 NATIONAL COMPENSATORY MITIGATION POLICY**

Compensatory mitigation policies under Section 404 of the CWA and Sections 9 and 10 of the RHA have gone through substantial changes over time. Since the early 1970s, the Corps regulations authorized district engineers to add permit conditions to require permittees to eliminate or mitigate damages to fish and wildlife resources. The 404(b)(1) Guidelines issued by EPA in 1980 included “habitat development and restoration” as a minimization measure that could be required to compensate for unavoidable habitat losses resulting from discharges of dredged material into waters of the United States (see 40 CFR 230.75(d)). In 1985, the Corps issued a Regulatory Guidance Letter on the implementation of fish and wildlife mitigation measures recommended by the FWS under the Fish and Wildlife Coordination Act. When it amended its permit regulations in 1986, the Corps issued a more comprehensive mitigation policy for Department of the Army permits, especially individual permits (see 33 CFR 320.4(r)). The Corps 1986 mitigation policy states that all “compensatory mitigation will be for significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment.” The 1990 Mitigation Memorandum of Agreement (MOA) issued by EPA and Army further clarified the mitigation requirements in the 1980 404(b)(1) Guidelines and included more explicit guidance on mitigation sequencing (i.e., impact avoidance, minimization, and compensation) and compensatory mitigation. The 1991 amendments to the Corps’ nationwide permits regulations established a mitigation policy specific to general permits, in which district engineers could add conditions to general permit authorizations to ensure that general permit activities result in minimal adverse environmental effects (see 33 CFR 330.1(e)(3)).

After the 1990 Mitigation MOA was issued, the Corps and EPA worked closely with other federal agencies including FWS, NOAA, and U.S. Department of Agriculture (USDA) on the development of additional compensatory mitigation guidance including:

- The 1995 Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks - issued to clarify the use of mitigation banks to compensate for authorized impacts to aquatic resources.
- The 2000 Federal Guidance on the Use of In-lieu Fee Arrangements for Compensatory Mitigation under Section 404 of the CWA and Section 10 of the RHA – issued to clarify the agencies policy on the manner in which in-lieu fee mitigation may be used to satisfy compensatory mitigation requirements.

The 2002 Regulatory Guidance Letter (02-2) Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts under the Corps Regulatory Program Pursuant to Section 404 of the CWA and Section 10 of the RHA. On December 24, 2002, the Corps, EPA, NOAA, FWS, NRCS, and U.S. Department of Transportation issued the National Wetlands Mitigation Action Plan (NWMAP) to “further achievement of the goal of no net loss by undertaking a series of actions to improve the ecological performance and results of wetlands compensatory mitigation under the CWA and related programs.” Several guidance documents were issued through the NWMAP, including a multi-agency compensatory mitigation plan checklist, guidance on incorporating the National Research Council’s Mitigation Guidelines into the CWA Section 404 Program, guidance on the Transportation Equity Act for the 21st Century preference for mitigation banking to fulfill Section 404 compensatory mitigation requirements, and a review of stream assessment protocols. Because the mitigation regulation required by the 2004 NDAA covered most of the remaining tasks to be completed under the NWMAP, the agencies shifted their efforts to the rulemaking process.

The Corps and EPA published the proposed rule in the Federal Register in March 2006. The final rule was published in the Federal Register in April 2008, and it went into effect in June 2008. After the 2008 Mitigation Rule was issued, the agencies expended considerable effort on outreach, training, and implementation of the final rule.

The 2008 Mitigation Rule supersedes the 1995 Mitigation Banking Guidance, 2000 In-Lieu Fee Program Guidance, Regulatory Guidance Letter 02-2, and those portions of 1990 Mitigation MOA that address the amount, type, and location for compensatory mitigation projects of standard permits that are required to offset losses of permitted impacts to jurisdictional waters or wetlands. The 2008 Mitigation Rule did not change the Corps’ 1986 mitigation policy or the 1991 nationwide permit program mitigation policy, and those policies remain in effect. The 2008 Mitigation Rule complements the 1986 and 1991 mitigation policies by addressing the planning, implementation and management of compensatory mitigation projects, including the use of a watershed approach, establishing standards and requirements for the three main mechanisms of compensatory mitigation, and clearly defining the method of compensatory mitigation.

### **THREE MECHANISMS OF COMPENSATORY MITIGATION**

- **MITIGATION BANK:** a wetland, stream or other resource area that has been restored, enhanced, established, and/or preserved for the purpose of providing compensatory mitigation for permitted impacts to jurisdictional waters or wetlands. The aquatic resource functions restored, enhanced, established, or preserved at the mitigation bank are quantified as “credits” which can be sold to permittees to fulfill the compensatory mitigation requirements of their permits. When credits are sold, the responsibility for providing compensatory mitigation is transferred from the permittee to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.
- **IN-LIEU FEE PROGRAM:** conducts the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental agencies or non-profit natural resources management entity by permittees to satisfy compensatory mitigation requirements for their Corps permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.
- **PERMITTEE-RESPONSIBLE MITIGATION:** a permittee (or an authorized agent or contractor) implements a compensatory mitigation project to fulfill the compensatory mitigation requirements in his or her permit. The permittee retains responsibility for the implementation and success of the compensatory mitigation project.

Mitigation banks and in-lieu fee programs are considered third party mitigation because they assume the legal responsibility of providing the compensatory mitigation required by a permit issued under Section 404 of the CWA and/or Section 10 of the RHA, after they sell credits to permittees. In such cases, if the Corps determines that the mitigation bank or in-lieu fee program sponsor is not complying with the provisions of the mitigation banking instrument or in-lieu fee program instrument, then the Corps will take action against the sponsor, not the permittee.

### **FOUR METHODS OF COMPENSATORY MITIGATION:**

The 2008 Mitigation Rule recognizes four general methods of conducting compensatory mitigation projects, and those methods are distinguished in terms of the degree to which they result in increases in aquatic resource functions and whether they result in increases in aquatic resource area. One general method, restoration, is divided into two

subcategories because they result in different degrees of increases in aquatic resource functions, and only one of those subcategories results in an increase in aquatic resource area. Aquatic resource functions are the physical, chemical, and biological processes that occur in wetlands, streams, and other aquatic resource types.

By distinguishing compensatory mitigation actions through these definitions, the Corps and EPA can more effectively track how compensatory mitigation projects contribute to the national goal of “no overall net loss” for wetlands. The Corps Regulatory Program’s automated information system, ORM2, uses these terms for permittee-responsible mitigation project data stored in that database.

- **RESTORATION:** the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: reestablishment and rehabilitation.
  - **RE-ESTABLISHMENT:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.
  - **REHABILITATION:** the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.
- **ENHANCEMENT:** the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.
- **ESTABLISHMENT (CREATION):** the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.
- **PRESERVATION:** the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

### **2.1.3 KEY CHANGES INCORPORATED IN THE 2008 MITIGATION RULE**

The 2008 Mitigation Rule includes a comprehensive set of improvements to all aspects of compensatory mitigation project site selection, planning, implementation, performance monitoring, adaptive management, and long-term site protection and stewardship. It also includes other changes to foster greater efficiency, predictability, consistency, and transparency in compensatory mitigation decision-making. The following are a few of the key changes incorporated in the 2008 Mitigation Rule.

- **Watershed approach (33 CFR 332.3(c)/40 CFR 230.93(c))**

The 2008 Mitigation Rule emphasizes the use of an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs and how locations and types of compensatory mitigation projects address those needs. The goal of this watershed approach is to maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation sites. To support this goal, the 2008 Mitigation Rule emphasizes using existing approved watershed plans to inform compensatory mitigation decisions, when such plans are determined to be appropriate for use in this context. Where approved and appropriate watershed plans do not exist, the Rule describes the types of considerations and information that should be used to support a watershed approach to compensation decision-making.

- **Mitigation hierarchy (33 CFR Part 332.3(b)/40 CFR Part 230.93(b))**

The 2008 Mitigation Rule requires the district engineer to consider compensatory mitigation options in the following order:

- Credits from a mitigation bank
- Credits from an in-lieu fee program
- Permittee-responsible mitigation under a watershed approach
- Permittee-responsible mitigation through on-site and in-kind mitigation
- Permittee-responsible mitigation through off-site and/or out of kind mitigation

The rationale for selecting a particular compensatory mitigation should be explained in the decision document for the individual permit or general permit verification.

- **Fundamental elements of a mitigation plan (33 CFR 332.4(c)/40 CFR 230.94(c))**

The Mitigation Rule establishes 12 fundamental elements that all mitigation plans must address. For additional detail see Appendix A.

- Objectives
- Site selection
- Site protection
- Baseline information
- Determination of credits
- Mitigation work plan
- Maintenance plan
- Performance standards
- Monitoring requirements
- Long-term management plan
- Adaptive management plan
- Financial assurances

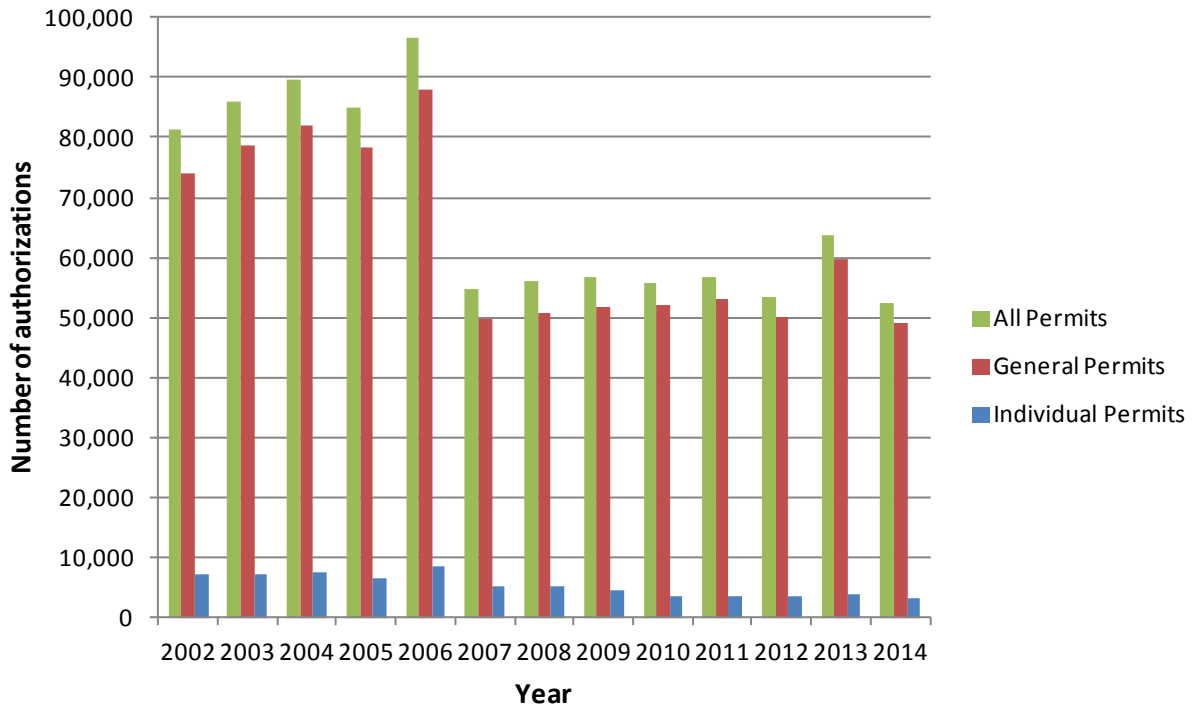
- **Timelines for decision-making (33 CFR 332.8/40 CFR 230.98)**

To improve efficiency and predictability for mitigation bank and in-lieu fee program sponsors, the Mitigation Rule includes specified timelines for accomplishing key events in the evaluation process for mitigation banking and in-lieu fee program instruments and instrument modifications.

## **2.2 CHARACTERIZATION OF REGULATORY PROGRAM IN RECENT YEARS**

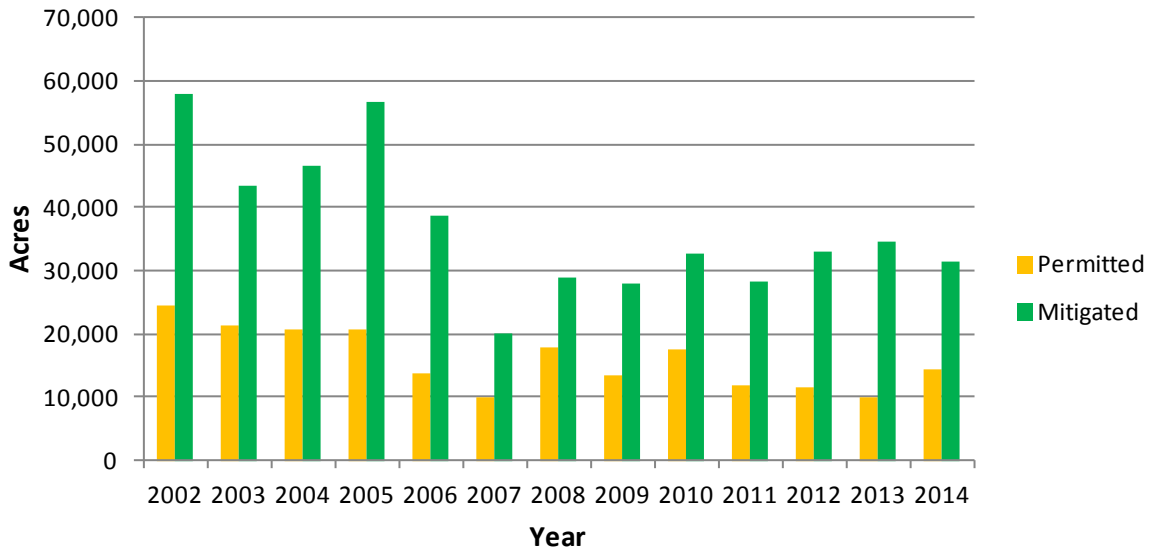
The numbers of written authorizations that the Corps issues, including individual permits and general permit verifications, varies considerably from year-to-year. The numbers of individual permits and general permits issued by the Corps during the past 13 years are shown in Figure 2. From 2002 to 2006, the average number of written authorizations issued per year was 87,593. After 2006, the average number of written authorizations issued each year dropped to 56,222. The substantial decline in the average number of written authorizations issued each year during the period of 2007 to 2014 is likely due to a number of factors, and a primary factor is probably the economic downturn that began in 2007 and the slow recovery that followed.

The relative ratio of general permits to individual permits has stayed constant at 90 percent general permits to 10 percent individual permits up until fiscal year 2010 where it shifted and stayed at a 95 percent to 5 percent ratio.



**Figure 2. Numbers of total permit decisions; general permits verified; and individual permits issued by year**

Figure 3 illustrates, for individual permits and general permit verifications issued from 2002 to 2014, all authorized wetland impacts and the amount of required wetland compensatory mitigation. The authorized wetland impacts and required wetland compensatory mitigation follows a similar pattern to the numbers of issued authorizations shown in Figure 2. During the years of 2002 to 2006, the average annual authorized wetland impact was 20,291 acres per year, and the average annual wetland compensatory mitigation required was 48,654 acres per year. Similar to the lower numbers of individual permits and general permit verifications issued each year that occurred during the period of 2007 to 2014, the authorized wetland impacts and required wetland compensatory mitigation also declined. From 2007 to 2014, the average annual wetland impacts authorized was 13,338 acres per year. During that time frame, the average annual wetland compensatory mitigation required was 29,624 acres per year.



Note: Data for 2004 to 2009 were estimates because of the transition from legacy automated information systems to ORM during that time period (see section 4.1). The data for 2010 to 2014 include acres of wetland permittee responsible mitigation required (from ORM data) and the acres of wetland credits debited from approved mitigation banks and in-lieu fee programs, which was provided from RIBITS

**Figure 3. Acres of authorized (by individual and general permits) wetland impacts and compensatory mitigation by year**

With the development and implementation of ORM2, the Corps has improved its ability to track impacts to jurisdictional waters and wetlands authorized by the permits that it issues. The Cowardin classification system and a more general aquatic resource type classification system are used to identify the types of waters and wetlands impacted by authorized activities. Authorized impacts are categorized as temporary or permanent, and activities that result in permanent losses of aquatic resources are identified in the database. In ORM2, the Corps also distinguishes different impact activity types, from discharges of fill material, discharges of dredged material, regulated excavation activities, structures or work in navigable waters, ecological restoration activities, and other types of regulated activities that do not fit into these categories. Table 1 summarizes the numbers of the most frequently used impact activity types for 2010-2014, as well as the general categories of waters in which those impacts occurred. Activities to perform ecological restoration primarily are authorized as part of Nationwide Permit Number 27 for voluntary aquatic restoration activities. The various impact activity types and the ability to identify specific permitted activities in ORM2 as resulting in losses of jurisdictional wetlands allows the Corps to more effectively track the Corps Regulatory Program's contribution to the national "no overall net loss" goal for wetlands. With respect to compensatory mitigation requirements for individual permits and general permit verifications, ORM2 data collection efforts focus on on-site and off-site permittee-



responsible mitigation, while RIBITS is used to track credit transactions for approved mitigation banks and in-lieu fee programs. For the 2010-2014 wetland compensatory mitigation acreages shown in Figure 3, conversion factors from RIBITS were used to determine the number of wetland acres that resulted from mitigation bank and in-lieu fee program credits used to fulfill the compensatory mitigation requirements of the individual permit and general permit authorizations.

**Table 1. Comparison of 2010 - 2014 by total number of authorizations and total number of Impact entries**

	Total Authorizations	Total Impact Entries	Primary Activities			Aquatic Resource		
			Discharge of Dredged or Fill Material (section 404) impact entries	Structures, Dredging, and Work (section 10) impact entries	Ecological Restoration impact entries	Rivers and Streams impact entries	Wetlands (Tidal and non-Tidal) impact entries	Lakes impact entries
<b>2010</b>	55,832	61,373	37,504	14,103	1,626	10,032	14,490	6,668
<b>2011</b>	56,600	72,547	42,992	18,283	2,181	39,440	18,156	7,250
<b>2012</b>	53,493	82,632	45,525	15,124	2,223	44,788	21,454	6,961
<b>2013</b>	63,595	84,029	49,282	16,181	2,890	43,780	14,120	7,414
<b>2014</b>	52,409	83,297	55,739	16,291	2,178	17,362	26,053	4,964

Note: One authorization may have multiple impact entries. In addition, a variety of permit types may authorize Ecological Restoration, but predominantly NWP 27 is used to perform those types of activities.

## **2.3 WHEN COMPENSATORY MITIGATION IS REQUIRED**

There are several reasons why compensatory mitigation may be required to offset losses of aquatic resources that result from activities authorized by DA permits. There are two general policies in the Corps regulations that discuss the thresholds for requiring compensatory mitigation. The general mitigation policy published in the Corps' November 13, 1986, final rule at 33 CFR Part 320.4(r)(2) states that:

All compensatory mitigation will be for significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment. Also, all mitigation will be directly related to the impacts of the proposal, appropriate to the scope and degree of those impacts, and reasonably enforceable.

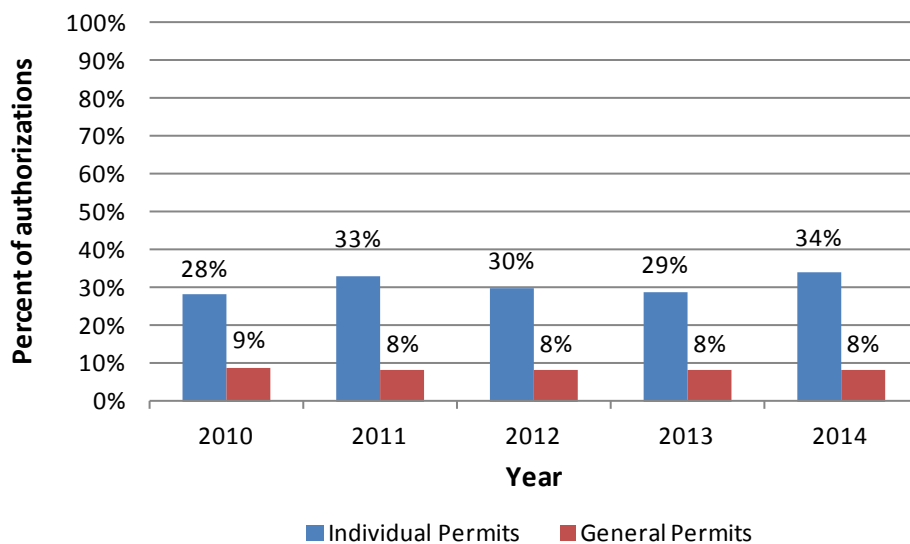
For general permits, Corps districts generally follow the Nationwide Permit Program mitigation policy stated in 33 CFR 330.1(e)(3), which states that mitigation (including compensatory mitigation) may be required by district engineers to ensure that activities authorized by nationwide permits result in minimal individual and cumulative adverse environmental effects.

Therefore, there are different thresholds for individual permits and general permits to determine when compensatory mitigation should be required by district engineers. For individual permits, compensatory mitigation is required to offset significant resource losses, and for general permits it is required to ensure authorized activities comply with the minimal effects requirement for those permits.

Compensatory mitigation may be required to ensure that the authorized activity is not contrary to the public interest. Compensatory mitigation may also be required to ensure compliance with the Section 404(b)(1) Guidelines, which are the environmental criteria for evaluating permit applications under Section 404 of the CWA. Compensatory mitigation may also be required to ensure an activity does not have significant effects on the human environment, so that compliance with the National Environmental Policy Act (NEPA) can be accomplished through the preparation of an environmental assessment instead of an environmental impact statement. Losses of specific aquatic resource functions may also require compensatory mitigation. For example, a regulated activity may not result in a loss of jurisdictional wetlands or waters, but reduces or eliminates a specific function. An example is the conversion of a forested wetland to an emergent wetland in a utility line right-of-way, in which there is a loss of forest habitat functions and thus compensatory mitigation could be required.

Compensatory mitigation is most frequently utilized for activities that result in a permanent loss of aquatic resources. It is less likely to be required for activities that do not result in permanent loss of an aquatic resource, such as navigational dredging, the installation of structures in navigable waters such as piers and buoys, temporary fills, aquatic resource restoration activities, or aquaculture activities.

The Corps issues approximately 56,400 written authorizations per year (five year average) under its various statutory authorities. In general, about one-third of individual permits require compensatory mitigation and approximately 10 percent of general permit verifications require compensatory mitigation (see Figure 4). An average of 49 percent of standard permits issued during 2010-2014 required compensatory mitigation. For a more detailed analysis of compensatory mitigation requirements see Table 4 in section 5.2.1. Generally, compensatory mitigation is not typically required for impacts authorized under only Section 10 of the RHA or Section 103 of the Marine Protection, Research, and Sanctuaries Act, and is more commonly required for Section 10 of the RHA and CWA Section 404 authorizations, where appropriate.



**Figure 4. Percentage of Corps authorizations requiring compensatory mitigation by permit category (2010-2014)**

The percentages of authorizations requiring compensatory reflects the fact that, during the individual permit application review process managed by the Corps and the terms and conditions of general permits, permit applicants are required to avoid and minimize impacts to jurisdictional waters and wetlands to the maximum extent practicable before

a permit decision is made or an activity is authorized by a general permit. Because of the stringent avoidance and minimization requirements in regulations and general permit conditions, most permitted impacts to jurisdictional waters and wetlands fall below the thresholds established in the Corps' regulations for determining when compensatory mitigation should be required. The threshold for individual permits is found at 33 CFR 320.4(r) and the threshold for general permits is provided at 33 CFR 330.1(e)(3).

Additionally, avoiding the costs of compensatory mitigation either through securing credits from an approved mitigation bank or in-lieu fee program or completing permittee-responsible mitigation is a strong incentive for permit applicants to get their impacts below those thresholds. Also, as discussed above, compensatory mitigation is less likely to be required for regulated activities that do not result in permanent losses of aquatic resource area or function, such as habitat restoration projects or maintenance activities and authorizations for structures or dredging in navigable waters under Section 10 the Rivers and Harbors Act of 1899.

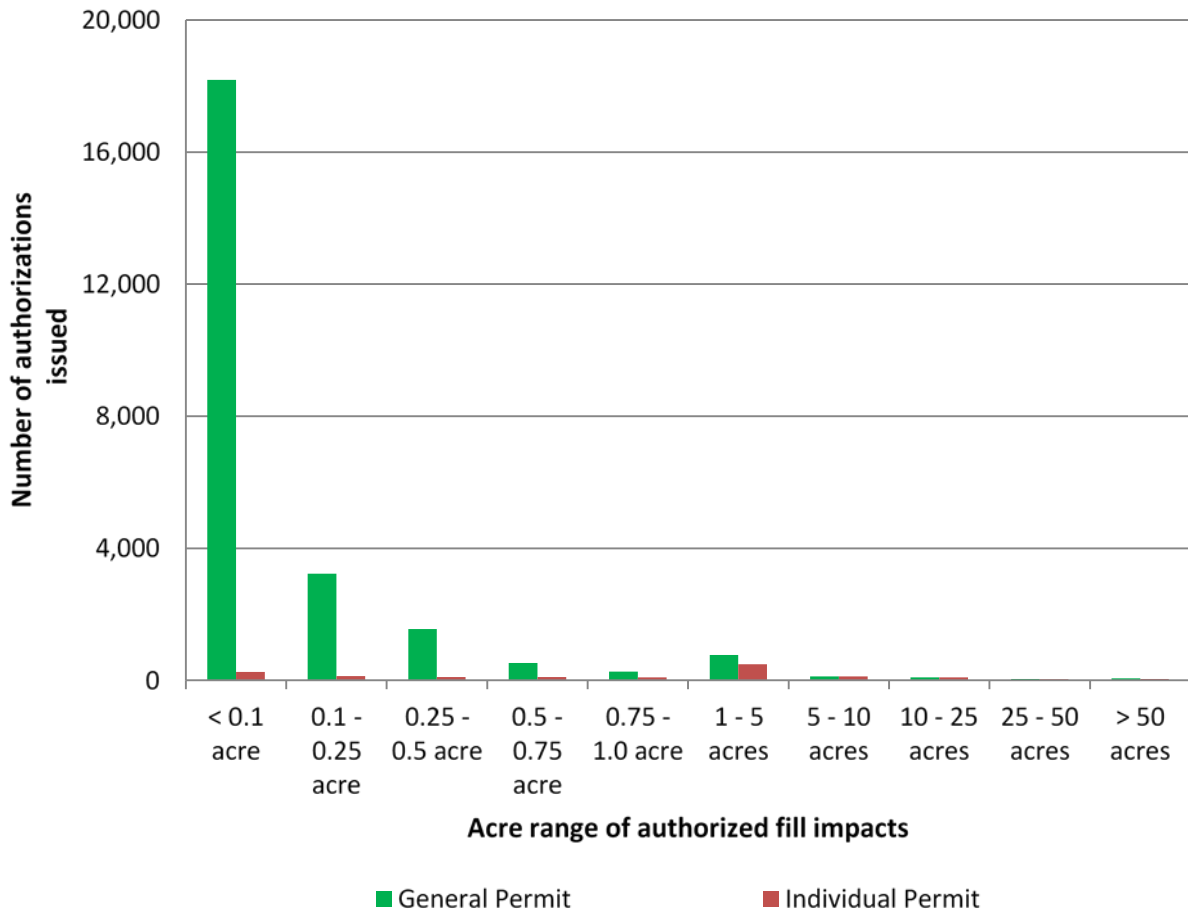
The vast majority of required compensatory mitigation is done to offset authorized wetland and stream impacts. For those authorizations between 2010 and 2014 that required compensatory mitigation, 41% used mitigation bank credits, 11% used in-lieu fee program credits, 37% did on-site permittee-responsible mitigation, and 10% conducted off-site permittee-responsible mitigation (see Figure 13).

Over 90 percent of the activities authorized by general permits do not require compensatory mitigation because they involve small impacts to jurisdictional waters and wetlands where the adverse environmental effects are minimal and it would also be unnecessary or impractical to require compensatory mitigation for such small impacts. Many activities authorized by general permits that do not require compensatory mitigation involve aquatic resource restoration activities, maintenance of existing structures and fills, temporary fills for utility lines or road crossings, and bank stabilization activities. In accordance with the mitigation general condition for the Nationwide Permits (NWP) issued in 2012, compensatory mitigation is generally not required for wetland losses of less than 0.1 acre. Additional discussion is found in Section 5.

To illustrate the avoidance and minimization that occurs before an individual permit or general permit verification is issued; Figure 5 shows the acreage of impacts authorized by section 404 permits by acreage range. It illustrates that on average the vast majority of impacts authorized by the Corps are less than 0.1 acre in size (See section 2.1.1 for additional information on the types of permits authorized by the Corps). Figure 6 focuses solely on individual permit authorizations and illustrates the similar downward trend as with general permit authorizations, but with an increase at the 1-5 acre range

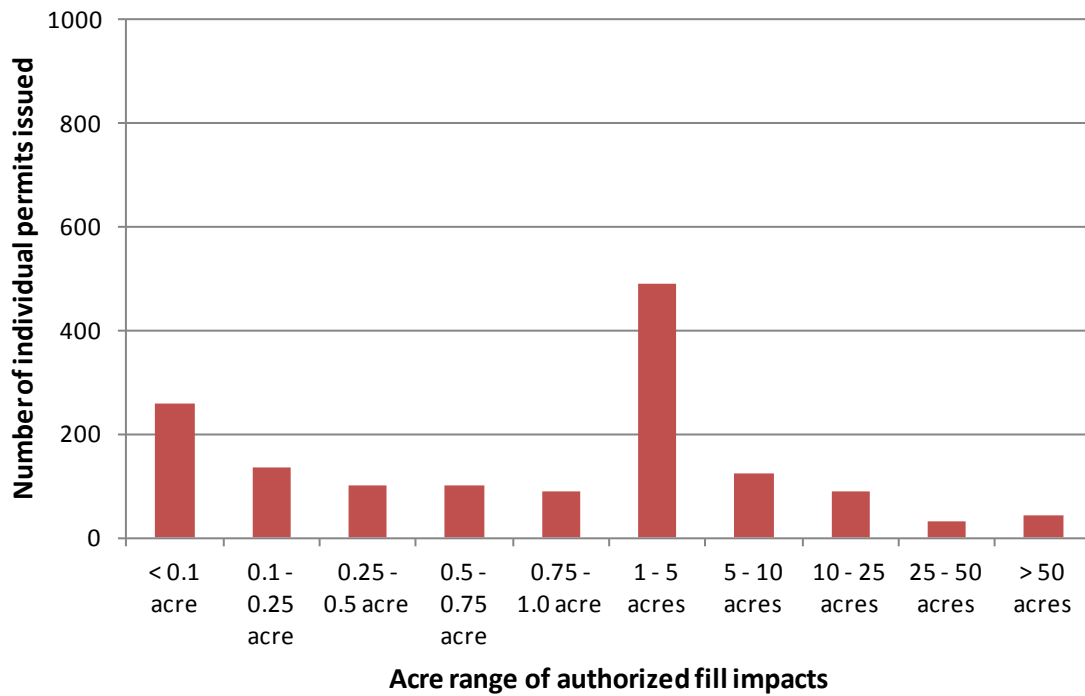
that then declines as impacts become larger. A number of those larger impacts are attributed to aquatic ecosystem restoration projects and projects with temporary impacts in which the area is returned to pre-existing conditions. For a detailed breakdown of impact acre ranges for all years see Table 2.

In terms of the types of jurisdictional waters, most of the compensatory mitigation required is for impacts to non-tidal wetlands, tidal wetlands, and streams. The Corps Regulatory Program contributes to the national “no overall net loss” goal for wetlands by requiring wetland compensatory mitigation when appropriate. Over the past two decades there has been an increasing scientific understanding and recognition of the important functions and services streams perform in the landscape. Accordingly, after the 2008 Mitigation Rule was issued more Corps districts have expanded their requirements for compensatory mitigation to offset unavoidable impacts to streams (Section 5).



Note: Mean annual numbers of authorizations were calculated from impacts authorized during the period of 2010 to 2014

**Figure 5. Mean annual number of general permit and individual permit authorizations for discharges of dredged or fill material into waters of the United States, both permanent and temporary, by acreage range of authorized impacts**



Note: Mean annual numbers of authorizations were calculated from impacts authorized during the period of 2010 to 2014

**Figure 6. Mean annual number of individual permit authorizations for discharges of dredged or fill material into waters of the United States, both permanent and temporary, by acreage range of authorized impacts**

Table 2. Numbers of authorizations issued during 2010-2014, by range of authorized fill impact acreage, both permanent and temporary, for individual permits and general permits

Year	Permit type	Number of Authorizations Issued, by Impact Acreage									
		< 0.10 acre	0.10 – 0.25 acre	0.25 – 0.50 acre	0.50 – 0.75 acre	0.75 – 1.0 acre	1 – 5 acres	5 – 10 acres	10 – 25 acres	25 – 50 acres	> 50 acres
2010	GP	<b>12,576</b>	2,630	1,284	426	220	641	107	72	31	36
	IP	193	113	84	96	85	<b>423</b>	120	82	26	48
2011	GP	<b>14,647</b>	2,460	1,252	338	185	602	79	58	19	30
	IP	220	133	105	92	90	<b>465</b>	114	83	25	36
2012	GP	<b>22,463</b>	3,6463	1,665	610	291	943	201	186	90	181
	IP	349	170	111	108	91	<b>502</b>	118	93	39	45
2013	GP	<b>20,995</b>	3,921	1,953	604	314	876	129	91	37	39
	IP	250	137	98	98	82	<b>525</b>	136	95	30	40
2014	GP	<b>20,268</b>	3,493	1,839	639	310	790	77	35	15	6
	IP	272	115	95	107	91	<b>530</b>	133	97	35	41
Annual Mean	GP	<b>18,190</b>	3,229	1,599	523	264	770	119	88	38	58
	IP	257	134	99	100	88	<b>489</b>	124	90	31	42

Bolded figures indicate the highest values for each row

*Italicized* figures indicate the lowest values for each row



### **3.0 EFFORTS UNDERTAKEN TO IMPLEMENT THE MITIGATION RULE**

A critical component in implementing the 2008 Mitigation Rule is educating Corps and EPA staff, other agencies, the private sector, private non-profits, and the general public on the requirements of the 2008 Mitigation Rule and specific elements of compensatory mitigation project plans; such as performance standards, monitoring, site protection, credit determination, financial assurances, and long-term management of compensatory mitigation projects. This outreach began with a series of six ***Mitigation Rule Familiarization Workshops*** held by the Corps and EPA in 2008 and 2009 to provide training on the major requirements of the 2008 Mitigation Rule not only to Corps and EPA, but also to state and other federal agency staff. The Corps' and EPA's efforts for training and outreach on the 2008 Mitigation Rule are summarized in Table 3.

***Corps National Workshops.*** After the initial introduction of the 2008 Mitigation Rule to the Federal agencies, the Corps held six national workshops starting in 2009 for Corps field staff. These workshops addressed mitigation plan review, monitoring, impact and mitigation data entry in ORM2, documenting compensatory mitigation decisions and requirements, and other topics such as financial assurances, long-term management, and site protection.

***District training.*** Complementing the national workshops, many Corps districts developed and implemented their own mitigation training workshops for staff and the public. For example, the Charleston District held orientation sessions on the 2008 Mitigation Rule as part of its annual public "road show" that provides members of the regulated public and interested stakeholders with opportunities to interact with Corps district staff and learn about the Regulatory Program.

***Other Interagency Training Efforts.*** Many Corps districts have partnered with EPA regions to develop local training on various elements of the 2008 Mitigation Rule. For example:

- Alaska District, in cooperation with EPA Region 10, held a course on mitigation banking and in-lieu fee programs for federal and state agency staff working in Alaska.
- EPA Region 5 and St. Paul District held a mitigation banking course designed to familiarize federal and state agency staff working in Minnesota with the requirements of the 2008 Mitigation Rule and Minnesota's Wetland Conservation Act.
- Los Angeles District, in cooperation with EPA Region 9, held a workshop to train in-lieu fee program sponsors on mitigation rule requirements for in-lieu fee programs.

Other outreach efforts have addressed stream mitigation in Appalachia with a focus on compensatory mitigation for impacts associated with surface coal mining and conservation banking at the regional level. Training and education partnerships have involved a wide variety of organizations and agencies, including the FWS, NOAA, Federal Highway Administration (FHWA), USDA, Army, Navy, US Marine Corps, the Environmental Law Institute (ELI), The Conservation Fund (TCF), The Nature Conservancy (TNC), the Association of State Wetland Managers (ASWM) and the National Mitigation Banking Association.

**Webinars.** Webinars have been used to assist in training efforts because they are a cost-effective alternative to workshops and other types of in-person training approaches. In 2008 and 2009, Corps and EPA held a number of webinars on the 2008 Mitigation Rule requirements, resulting in a great expansion of information-sharing and education. ELI, through a grant from EPA, facilitated trainings on the development and approval of in-lieu fee programs through 10 webinars. The Corps and EPA helped identify relevant topics for these in-lieu fee program webinars, including advance credits, in-lieu fee program structures and accounting, the compensation planning framework, short term financial assurances, long-term management, feasibility analyses, and service areas. The presentations and reference materials can be found on ELI's website at <http://www.eli.org/events/2013-in-lieu-fee-mitigation-training-webinar-series> . The ASWM also hosted a series of webinars to help states better understand the requirements for in-lieu fee programs established in the 2008 Mitigation Rule.

**Public Outreach Efforts.** Nationally, both the Corps and EPA sought to educate the public on the 2008 Mitigation Rule through a variety of media including print, such as through articles in the National Wetlands Newsletter; online posting of information on district and headquarters web pages and through the use of RIBITS; webinars sponsored by a wide variety of organizations; and through conferences such as meetings of the National Transportation Research Board and the States Organization for Boating Access. The Corps and EPA have also cooperated in the development and implementation of specific training seminars at national conferences such as the Mitigation Bank and Stream Mitigation Primers held at the annual National Mitigation and Ecosystem Banking Conference and the compensatory mitigation seminar at the 2012 Land Trust Alliance (LTA) Rally in Salt Lake City.

**Interagency Review Team Training.** Beginning a year before the 2008 Mitigation Rule was issued, the Corps, EPA, FWS, and The Conservation Fund began holding a Mitigation Bank and In-lieu Fee Program Training course for agency staff that participate in interagency review teams. Interagency review teams are involved in the review and oversight of mitigation banks and in-lieu fee programs. For mitigation banks and in-lieu fee programs that will be used to provide compensatory mitigation for DA

permits, the Corps serves as the chair of the interagency review team and decides whether to approve an instrument after considering input from the other agencies on the review team. This week-long course focuses on providing team members with an understanding of the legal, scientific, and technical requirements necessary for the establishment and operation of mitigation banks and in-lieu fee programs. Training materials and course topics for the 2014 course can be found at: <http://www.conservationfund.org/what-we-do/conservation-leadership-network/our-services/training-resources-3rd-party-mitigation-interagency-review-team>

**Conservation Banking Training Courses.** Beginning in 2010, FWS in conjunction with federal and state stakeholders (FHWA, Army, US Marine Corps, etc.) developed and implemented a number of training courses on conservation banking. Conservation banks provide habitat that is conserved and managed to benefit endangered and threatened species. The operation and establishment of conservation banks are overseen by FWS and/or NOAA Fisheries. Many of these banks also provide compensatory mitigation for impacts to wetlands and other waters of the United States. The Corps has been part of the planning and implementation team for these courses, and, through these courses, has had the opportunity to educate attendees on aspects of CWA Section 404 mitigation banking and in-lieu fee programs including site protection, financial assurances, in-lieu fee programs, credit determination, and joint CWA Section 404/Endangered Species Act banking.

**Handbooks.** To complement and supplement education and information-sharing, the Corps prepared working resource handbooks for field staff on key elements of The 2008 Mitigation Rule. The Corps has completed the handbook for financial assurances: [“Implementing Financial Assurance for Mitigation Project Success”](#). Others in preparation include documents for site protection, long-term management, and the watershed approach.

The Corps and EPA have also assisted other groups in the development of handbooks regarding aspects of compensatory mitigation. For example, the Corps and EPA provided direction to ELI and LTA on a handbook developed to aid land trusts in better understanding compensatory mitigation and the various roles land trusts can play in helping to identify, design, implement, and manage compensatory mitigation sites. This handbook can be found at: <http://www.eli.org/research-report/wetland-and-stream-mitigation-handbook-land-trusts>

TNC and ELI have published a handbook that characterizes a broad array of efforts across the country to take a watershed approach to compensatory mitigation site selection and design, a key goal of the 2008 Mitigation Rule. The handbook can be found at: <http://www.eli.org/research-report/watershed-approach-handbook>.

**Table 3. Types of outreach and training efforts to assist in understand the 2008 Mitigation Rule**

Type	Attendees	Attendance
Rule Familiarization Workshops (6 during 2008-09)	Federal & State	500+
Corps Regulatory Workshops by Headquarters (6)	Corps Regulatory staff	200+
District-led workshops (many)	Corps Regulatory staff	500+
Public Outreach at national & local conferences, e.g., National Land Trust Alliance	Varied	1000+
Webinars (many)	Government, Private Sector	1000+
Interagency Review Team Training Course (annual since 2007)	Federal & State Interagency Review Team	300+
Other Interagency Training (e.g., streams, in-lieu fee, banking)	Interagency/Local	1000+
Conservation Banking courses and workshops (many since 2010)	Federal, State, Private Sector, bank sponsors	400+

#### **District-level resources**

- 50 standard operating procedures
- 30 mitigation bank or in-lieu fee program establishment guides and templates
- 37 site protection instructions and templates
- 38 impact and compensation assessment methods
- 16 approaches to mitigation monitoring and template reports
- 16 mitigation plan guidelines
- 7 financial assurances guides and templates
- 6 long-term management of mitigation projects guides and templates

***District-level Resource Information.*** At the field level, Corps Districts have issued a series of documents including Standard Operating Procedures (SOPs), templates, and guidelines for District application and for public awareness and understanding. SOPs provide general evaluation criteria and considerations for compensatory mitigation practices, requirements, and implementation in their review of permit applications, especially standards for compensatory mitigation plans. Templates are standardized documents relating to compensatory mitigation such as real estate protection instruments, financial assurance documents, mitigation banking instrument, and long-term management plans. District guidelines provide regional considerations on specific topics such as mitigation monitoring, service areas, mitigation

ratio checklists, etc. A list of District documents relating to the 2008 Mitigation Rule are available in Appendix B. To date, more than 260 district-specific compensatory mitigation resource documents are available on district web-pages and/or RIBITS. Nearly 70 percent of those resource documents were developed following issuance of the 2008 Mitigation Rule.

## **4.0 REGULATORY PROGRAM DATA COLLECTION AND MANAGEMENT**

### **4.1 OMBIL REGULATORY MODULE, VERSION 2 (ORM2)**

The Corps uses ORM2, a geospatial database implemented in 2007, to track and manage the business process of issuing individual permits and general permit verifications, as well as other tasks. Data collected in ORM2 during the period of 2010 to 2014 were used to produce data summaries on permit decisions and compensatory mitigation requirements for this retrospective review. From 2007 to 2009 data collection on authorized impacts and required compensatory mitigation was incomplete because the database structure in ORM2 was not fully developed to collect that information. Therefore, this retrospective does not include comprehensive data on authorized impacts or required compensatory mitigation collected prior to 2010. The use of mitigation bank credits and in-lieu fee program credits to provide compensatory

mitigation for individual permits and general permits is tracked more comprehensively in the Regulatory In-lieu Fee and Banking Information Tracking System (RIBITS), which is described below.

ORM2 allows Corps supervisors and managers to track and assess the workload of Regulatory project managers. It is utilized by Corps Regulatory project managers to record a variety of information for each permit application or general permit verification request, including the locations of proposed and authorized activities, specific tasks associated with the evaluation of those permit applications or general permit verification requests (e.g., ESA Section 7 consultations, National Historic Preservation Act Section 106 consultations), proposed and authorized impacts to jurisdictional waters and wetlands, and proposed and required compensatory mitigation. Other tasks tracked in ORM2 include compliance actions, jurisdictional determinations, site visits, the review of proposed mitigation banks and in-lieu fee programs, and administrative appeals. See Appendix C for a more detailed description of the information collected in ORM2.

Prior to 2007, the Corps used different automated information systems to track regulatory actions, including authorized impacts and required compensatory mitigation. During the period of 2004 to 2007, some Corps districts used ORM1, which had a different database structure than ORM2. Other Corps districts continued to utilize the databases that were in place prior to the limited deployment of ORM1 in 2004. The ability to collect information on authorized impacts to jurisdictional waters and wetlands and required compensatory mitigation was severely limited in ORM1. Originally, ORM1 was developed as the Regulatory component of the Operations and Management Business Information Link (OMBIL), an automated information system used by the various business lines in the Corps' Operations Community of Practice, including Navigation, Natural Resources Management, Hydropower, Asset Management, and Regulatory. When ORM2 was developed it was separated from OMBIL and is currently independently managed by Corps Regulatory Program staff.

Before 2004, there were two automated information systems used in the Corps Regulatory Program: the Regulatory Analysis and Management System (RAMS) and the Quarterly Permit Data System (QPDS). Since 1990, most Corps districts used RAMS to track regulatory actions and other Corps districts utilized a later version of RAMS called RAMSII. Three Corps districts (i.e., Alaska, Chicago, and Norfolk Districts) did not use RAMS or RAMSII and developed their own automated information systems, but those districts were required to collect, at a minimum, data elements similar to those collected in RAMS or RAMSII to support national reporting through QPDS. As a national reporting system utilized from 1988 to 2003, QPDS was used by Corps divisions and districts to take information from RAMS, RAMSII, or district-specific systems to report regulatory actions up to Corps Headquarters in a standard format.

In QPDS, the Corps counted the number of permit actions taken each quarter, by permit type, as well as the number of days it took to make decisions on those permit applications. From 1993 to 2003, the Corps also used QPDS to track authorized wetland impacts and required wetland compensatory mitigation for both individual permits and general permits. It was also utilized to record wetland impacts and restoration requirements for enforcement actions. The wetland impact and wetland compensatory mitigation data were segregated by non-tidal wetlands and tidal wetlands, and by individual permits and general permits. For impacts and compensatory mitigation to non-wetland waters (e.g., rivers and streams) associated with activities authorized by individual permits and general permits, Corps districts had the discretion to collect that data in RAMS, RAMSII, or their own automated information systems, but those data were not reported to Headquarters through QPDS for national reports on program performance.

Some of the data collected in QPDS, RAMS, RAMSII, or the three district-specific systems used before 2004 could not be transferred to either ORM1 or ORM2. From 2007 to 2009 substantial changes were made to ORM2 to improve data collection and management for individual permit applications, general permit verification requests, and jurisdictional determinations. By 2010, the structure of ORM2 was sufficiently developed to provide a comprehensive and standard means of tracking authorized impacts to jurisdictional waters and wetlands, and the compensatory mitigation required by the Corps to offset the authorized impacts.

Quality assurance and quality control measures for the data collected in ORM2 are being improved. Corps Headquarters has issued a standard operating procedure (SOP) for ORM2 data entry, to provide guidance to Corps Regulatory staff on how to enter data into ORM2 in a consistent and accurate manner. The ORM2 SOP is updated periodically as changes are made to the structure of ORM2. The latest version of the ORM2 SOP (version 1.3) was released in February 2014. In addition, Corps Headquarters issued more detailed guidance on the mandatory data fields that need to be completed for permit actions and other regulatory actions, with a focus on consistent approaches to recording authorized impacts and required compensatory mitigation in ORM2. The mandatory fields guidance was issued on January 24, 2014. Corps Headquarters has also requested that Corps divisions and districts use the reporting tools available in ORM2 to review the data on a periodic basis to look for data entry errors, and to take action to correct any data entry errors that are discovered through this quality assurance/quality control process.

For the purposes of this retrospective, the ORM2 data summaries are produced from specific data fields. The permit types tracked in ORM2 are individual permits, which include standard individual permits and letters of permission, and general permits, which are comprised of nationwide permits, regional general permits, and programmatic

general permits. For these five permit categories, authorized impacts and required compensatory mitigation are tracked in the same manner. For all permit actions, a mandatory data field must be completed to indicate whether compensatory mitigation is required for an authorized activity. If compensatory mitigation is required, district Regulatory staff is required to specify the source of the compensatory mitigation, using four choices: on-site permittee-responsible mitigation, off-site permittee-responsible mitigation, credits from an approved mitigation bank, or credits from an approved in-lieu fee program.

The type of aquatic resource impacted by the activity requiring Department of the Army authorization or required as compensatory mitigation is recorded by using two classification systems: the Cowardin classification system (Cowardin et al. 1979) or a general classification system developed for ORM2. The general classification system developed for ORM2 consists of the following categories: non-tidal wetlands, tidal wetlands, rivers/streams, harbor/ocean (i.e., estuarine and marine waters), lakes, and ponds. Since there is a large number of wetland classes in the Cowardin classification system, to simplify the information in this retrospective document the ORM2 data summaries and charts utilize the six general categories of waters developed for ORM2. The units of measure used to quantify authorized impacts to jurisdictional waters and wetlands and required permittee-responsible mitigation are acres or linear feet. Corps Regulatory project managers have the discretion to choose which unit of measure is appropriate for quantifying a particular authorized impact or compensatory mitigation requirement. If mitigation banks or in-lieu fee programs are to be used to satisfy the compensatory mitigation requirements of an individual permit or general permit authorization, the amount of credits required to offset the permitted impacts is entered in ORM2, but there are no standard units of measure for these credits since there is a substantial amount of variability in how those third party mitigation credits are quantified. The use of mitigation bank credits and in-lieu fee program credits to fulfill the compensatory mitigation requirements of individual permits, general permits, and enforcement actions is tracked more comprehensively through RIBITS.

To better track the variety of impacts to jurisdictional waters and wetlands that can result from activities authorized by individual permits and general permits, and to provide additional resolution to distinguish the various types of impacts that may occur as a result of those permitted activities, ORM2 uses impact activity types. There are currently 11 impact activity types used to categorize authorized impacts:

- Discharge of fill material
- Discharge of dredged material
- Excavation associated with the discharge of dredged or fill material
- Conversions (i.e., changing from one type of waters to another type)
- Ecological restoration activities



- Structures in navigable waters subject to Section 10 of the RHA
- Dredging in navigable waters subject only to Section 10 of the RHA
- Work in navigable waters subject to Section 10 of the RHA
- Removal activities (e.g., removal of fills)
- Transport of dredged material for open water disposal
- Other activities (i.e., activities that do not fall within the other 10 impact categories, such as commercial shellfish aquaculture activities)

The duration of authorized impacts is also categorized as either permanent or temporary. There is also a field in ORM2 to characterize an authorized permanent impact as a “loss.” Impacts authorized by individual permits or general permits may or may not result in changing a jurisdictional water or wetland to an upland area. Losses change a jurisdictional water or wetland to an upland area.

A more detailed discussion of the data collected in ORM2 is provided in Appendix C. This appendix also describes the Corps current plans for modifying ORM2 to improve data collection and reporting.

#### **4.2 REGULATORY IN LIEU FEE AND BANK INFORMATION TRACKING SYSTEM (RIBITS)**

RIBITS was developed to provide public access to information on mitigation and conservation banking and in-lieu fee programs across the country. Non-Corps staff (interagency review team agencies, mitigation bank and in-lieu fee program sponsors, etc.) can upload data (credit withdrawals and documents) into RIBITS to insure quality and timeliness.

RIBITS allows users, including permit applicants and regulatory agencies, to access information on the types and numbers of mitigation and conservation bank and in-lieu fee program sites, associated documents, mitigation credit availability, service areas, as well as information on national and local policies and procedures that affect mitigation and conservation bank and in-lieu fee program development and operation. Mitigation bankers can use the data for market analyses. Applicants and regulators can search for potential mitigation credit availability to satisfy compensatory mitigation requirements. RIBITS is an exemplary data management tool ensuring transparency, accountability, and efficiency for key aspects of mitigation bank and in-lieu fee program management.

Originally developed for the Mobile District in 2002, RIBITS was later expanded to Norfolk and Sacramento Districts. Based on the success of these pilot efforts, in 2008, Corps Headquarters directed RIBITS to be used nationally. Corps HQ's goal is to accurately depict current mitigation practices in each district while enabling data to be rolled up or summarized on a national basis. In 2010, USFWS adopted the use of RIBITS to track conservation banking (compensatory mitigation for listed and at-risk

species), followed by NOAA Fisheries in 2012 to track its conservation banks. Also, in 2012 FHWA funded the Corps to modify RIBITS to improve search capabilities across the nation.

At the end of 2014, RIBITS had records for over 2,500 mitigation bank and in-lieu fee project sites in various states of operation; the database also includes some information regarding proposed mitigation banks. The system contained over 51,000 credit ledger transactions, more than 22,000 documents, and continued to grow, adding approximately 2 mitigation bank or in-lieu fee project records per week. The Corps continues to improve RIBITS as additional needs are identified.

## 5.0 POST-RULE “PROGRAM PERFORMANCE”

### 5.1 CHARACTERIZATION OF CORPS PERMITTING IN 2010-2014

#### 5.1.1 PERMITS ISSUED

The Corps issued approximately 281,929 authorizations during 2010 – 2014. A majority of these authorizations have been Nationwide Permits which are issued for projects with minimal individual and cumulative effects. The numbers of permits issued over those five years for each of the five types of authorizations is presented in Table 4.

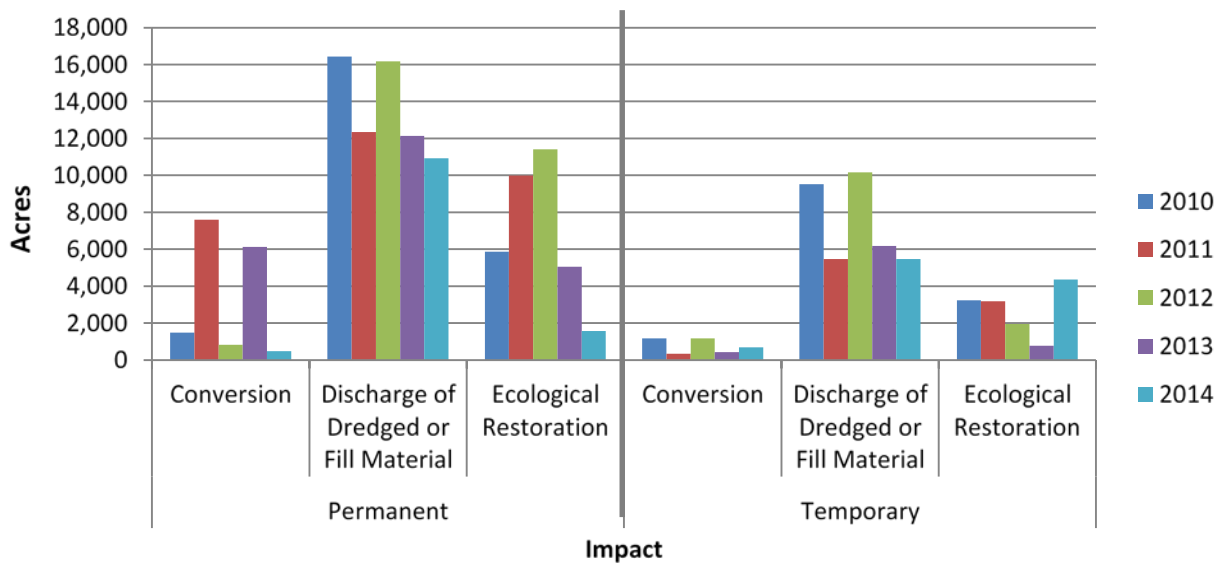
**Table 4. Individual permits and general permit verifications issued in 2010-2014. Permit types include nationwide permits (NWP), programmatic general permits (PGPs), regional general permits (RGPs), standard permits (SPs), and letters of permission (LOPs)**

Year	General Permits			Individual Permits		Total
	NWP	PGP	RGP	SP	LOP	
2010	30,896	7,722	13,558	2,046	1,610	<b>55,832</b>
2011	28,455	8,814	15,731	1,973	1,627	<b>56,600</b>
2012	29,127	6,986	13,867	1,790	1,723	<b>53,493</b>
2013	34,214	8,254	17,127	1,987	2,013	<b>63,595</b>
2014	32,864	5,256	11,067	1,693	1,529	<b>52,409</b>
<b>Average</b>	<b>31,111</b>	<b>7,406</b>	<b>14,270</b>	<b>1,898</b>	<b>1,700</b>	<b>56,386</b>

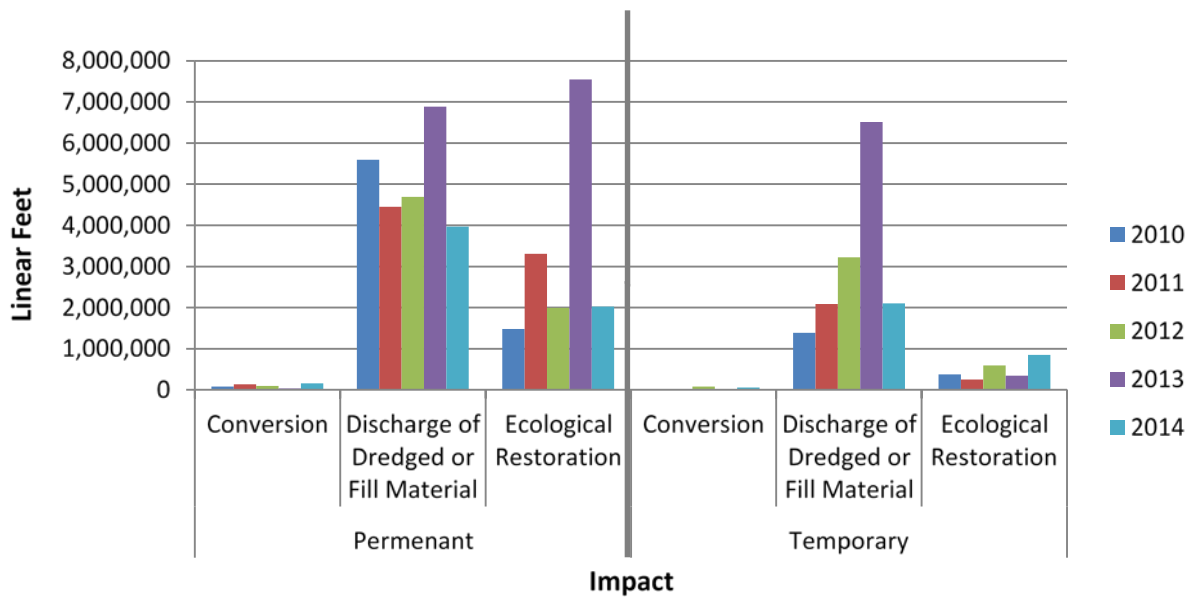
### 5.1.2 PERMITTED IMPACTS BY IMPACT ACTIVITY TYPE

The Corps is responsible for issuing permits pursuant to Section 404 of the CWA and Section 10 of the RHA (for more information on Corps authorities see Section 2). These acts provide authorization to the Corps to regulate certain types of activities in jurisdictional waters. This analysis assessed the three major categories of impact activity types (discharge of dredged or fill material, ecological restoration, and conversion) and their impact duration (permanent or temporary). The “discharge of dredged or fill material” category includes excavation activities that involve regulated discharges and require Corps authorization. The ecological restoration category only contains impact activities that result in restoration of aquatic systems and does not include compensatory mitigation projects.

The relative contribution and amount of authorized impacts can vary substantially over time for all categories of impact and their durations as shown in Figures 7 and 8. The impacts in Figure 7 are quantified in acres which is generally the unit of measure used most frequently for with wetland impacts, while the impacts in Figure 8 are quantified as linear feet, which is generally the unit of measure for impacts used most frequently for, but not limited to, rivers and streams.



**Figure 7. Acreage of authorized permanent and temporary impacts during 2010-2014 for the three major impact activity types associated with CWA Section 404 permits**



**Figure 8. Linear feet of authorized permanent and temporary impacts during 2010-2014 for the three major impact activity types associated with CWA Section 404 permits**

### 5.1.3 PERMITTED IMPACTS BY RESOURCE TYPE

Section 404 of the CWA and Section 10 of the RHA govern certain types of activities in jurisdictional waters and wetlands. The aquatic resource categories available for entry in ORM2 are a simplification of the Cowardin classification system allowing for greater degree of consistency with previous data collection efforts at the national level. Permanent and temporary authorized impacts by resource type for 2010 to 2014 are shown in Figures 9 and 10 as acres, and in Figures 11 and 12 in linear feet. These charts are limited to discharges of dredged or fill material into waters of the United States, including regulated excavation activities, because it is those types of activities that typically require compensatory mitigation. As discussed in Section 4, Corps project managers are given discretion to choose which impacts are measured in acres and which are measured in linear feet. Generally, non-tidal wetland impacts are most often characterized in acres and impacts to rivers and streams are often quantified in linear feet. Figure 9 shows the acreage of authorized permanent impacts and Figure 10 shows the acreage of authorized temporary impacts for each year during the period of 2010 to 2014. The authorized linear feet of permanent and temporary impacts are shown in Figures 11 and 12, respectively. As indicated in Section 5.1.2, more often linear amounts are most associated with impacts to river/streams, but could also be used to identify length of coastline or shoreline of tidal waters, lakes, or ponds. Most of the authorized impacts are to non-tidal wetlands and rivers/streams. The tidal wetland, harbor/ocean, lake, and pond aquatic resource categories make up smaller overall totals within the permanent impact duration category, but display some variability from year to year. Figures 10 and 12 show that temporary impacts entered using acres or

linear feet have greater variability between years and resource types. As discussed in Section 2, compensatory mitigation is not typically required for those temporary impacts because permittees are required to restore those areas to pre-project conditions.

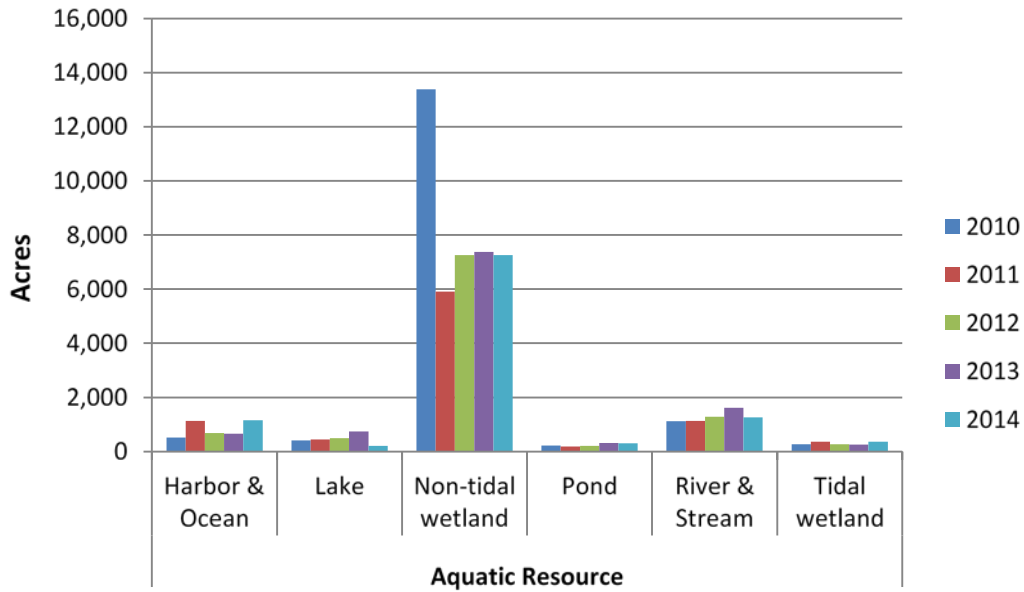


Figure 9. Acreage of authorized permanent impacts by aquatic resource type for 2010-2014

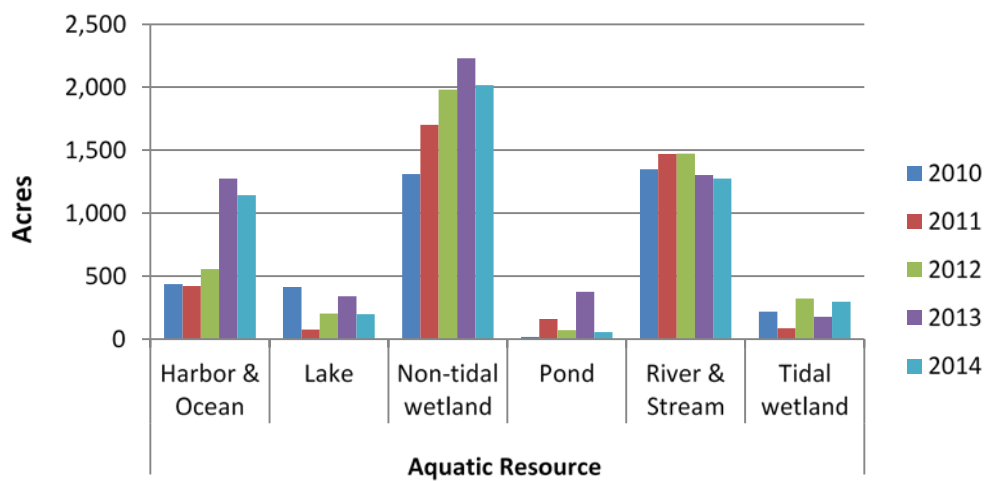


Figure 10. Acreage of authorized temporary impacts by aquatic resource type for 2010-2014

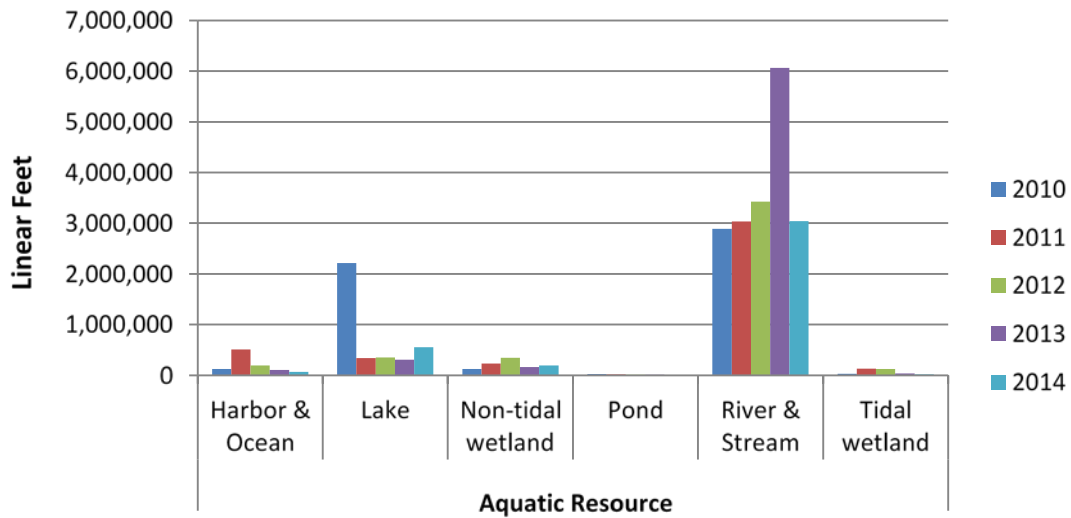


Figure 11. Linear feet of authorized permanent impacts by aquatic resource type for 2010-2014

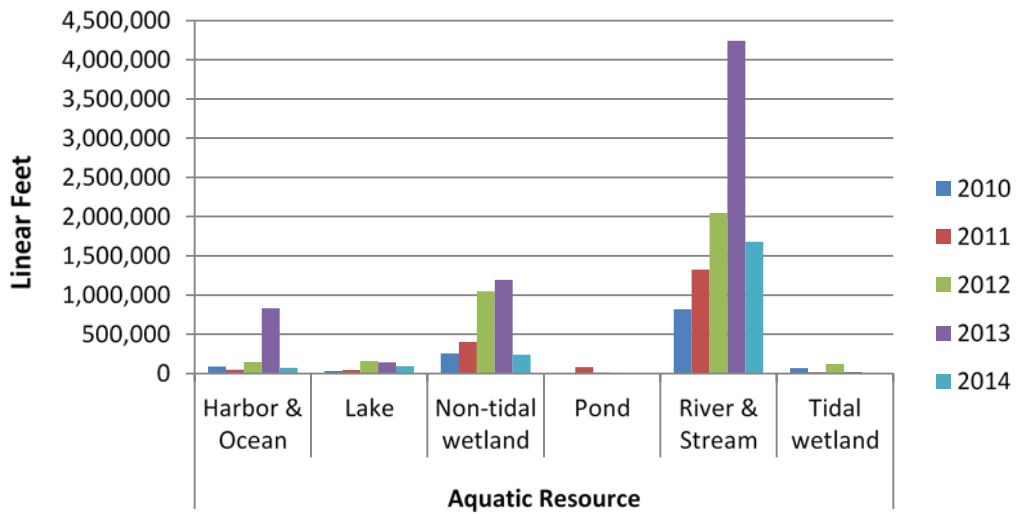


Figure 12. Linear feet of authorized temporary impacts by aquatic resource type for 2010-2014

## 5.2 COMPENSATORY MITIGATION PRACTICES UNDER THE 2008 RULE USING DATA FROM ORM2 AND RIBITS FROM 2010 TO 2014

### 5.2.1 PERCENT OF PERMITS REQUIRING COMPENSATORY MITIGATION

The 2008 Mitigation Rule did not change the criteria the Corps uses for determining when compensatory mitigation should be required for activities authorized by Department of the Army permits (see Section 2 for discussion of compensatory mitigation requirements). The Corps 1986 mitigation policy at 33 CFR 320.4(r) established thresholds for requiring compensatory mitigation for individual permits. The Corps 1991 Nationwide Permit Program regulations provided direction on when compensatory mitigation should be required for activities authorized by nationwide permits. The compensatory mitigation provisions of the 1991 regulations are generally applied to other types of general permits that are regional general permits and programmatic general permits. For the last four years there have been minor fluctuations in the percentage of permits requiring compensatory mitigation, as shown in Table 5. Any variations in the observed numbers in Table 5 below can be further explained in Section 5.5.

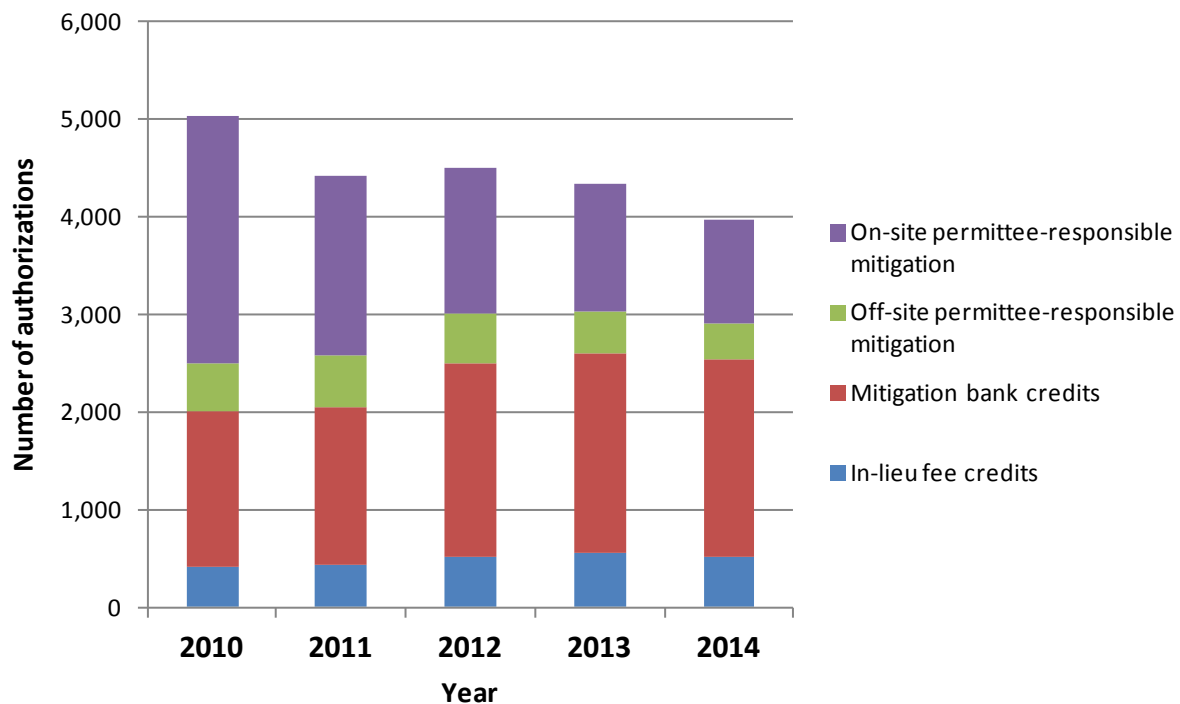
**Table 5. Percentage of authorizations requiring compensatory mitigation issued in Calendar Years 2010-2014.**

Year	General Permits				Individual Permits			All Permits
	All GP	NWP	PGP	RGP	All IP	SP	LOP	
2010	10%	12%	5%	8%	33%	50%	12%	11%
2011	7%	11%	1%	5%	32%	48%	11%	9%
2012	10%	15%	1%	5%	29%	46%	10%	12%
2013	7%	9%	1%	5%	29%	48%	10%	8%
2014	8%	10%	6%	2%	34%	54%	13%	10%
<b>Mean</b>	<b>8%</b>	<b>11%</b>	<b>3%</b>	<b>5%</b>	<b>31%</b>	<b>49%</b>	<b>11%</b>	<b>10%</b>

Permit category type acronyms include General Permits (GP) and Individual Permits (IP). Permit type acronyms include nationwide permits (NWP), programmatic general permits (PGP), regional general permits (RGP), standard permits (SP), and letters of permission (LOP)

## 5.2.2 USE OF DIFFERENT COMPENSATION SOURCES

Figure 13 summarizes the number of authorizations by compensatory mitigation source (i.e., permittee-responsible mitigation, mitigation banks, in-lieu fee programs) for the last five calendar years. In 2014 about 64 percent of the authorizations required third party compensatory mitigation. During these five years, the proportion of compensatory mitigation requirements being satisfied through permittee-responsible mitigation has decreased, while the percentage of compensatory mitigation required being provided through mitigation banks and in-lieu fee programs has increased.



**Figure 13. Number of all authorizations (individual permits and general permits) requiring compensatory mitigation, by mitigation source, during the period of 2010-2014**

Figure 14 compares the number of authorizations separated by permit type for each compensatory mitigation source. Starting in 2012 there was an increase in the number of individual and general permits that used mitigation banks to provide compensatory mitigation compared to a decline in the use of permittee responsible mitigation.



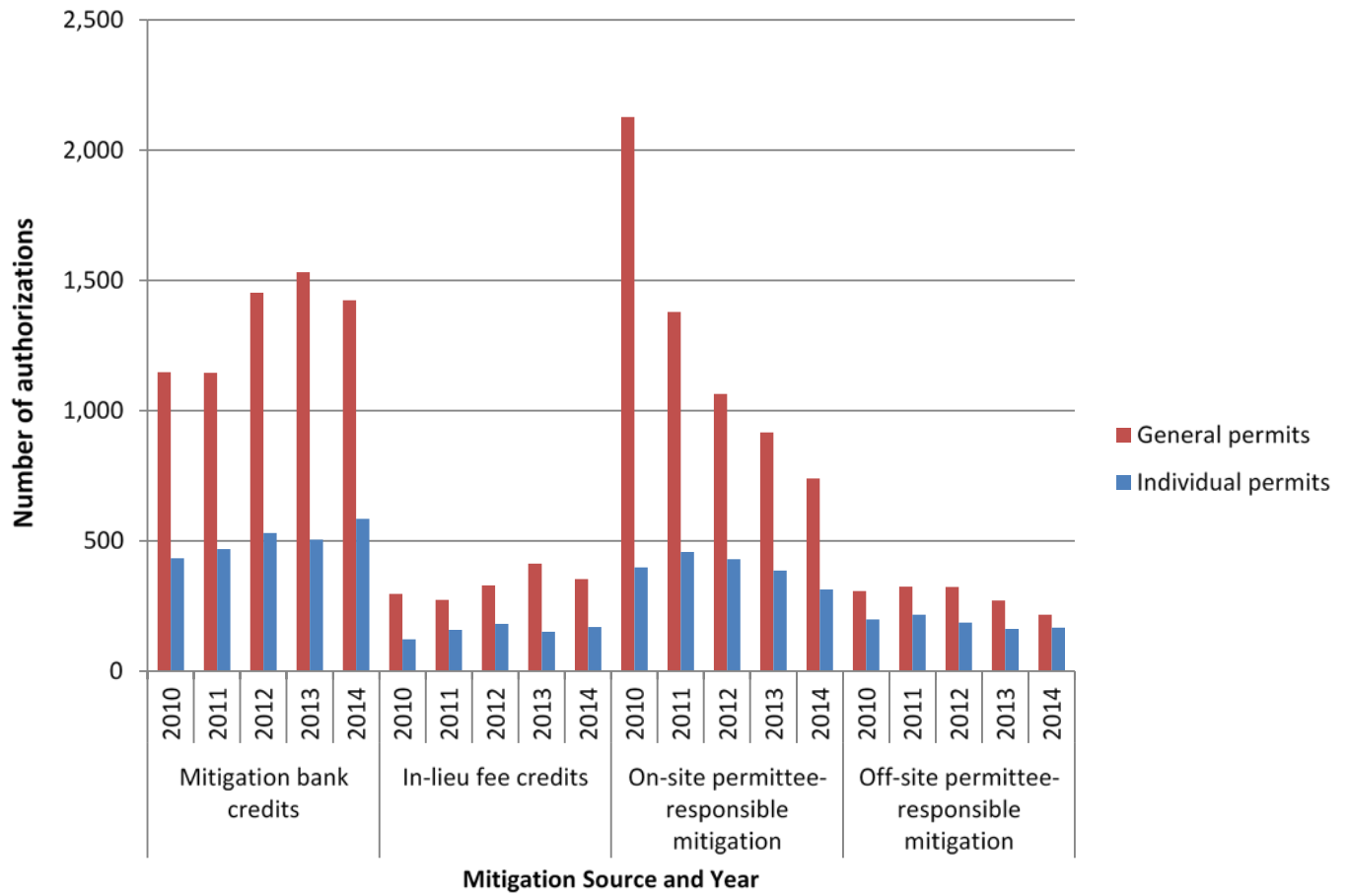
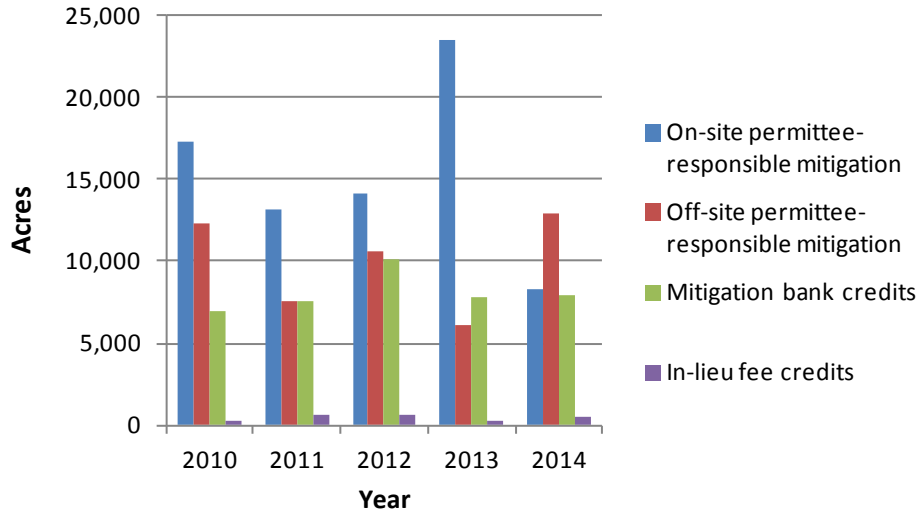
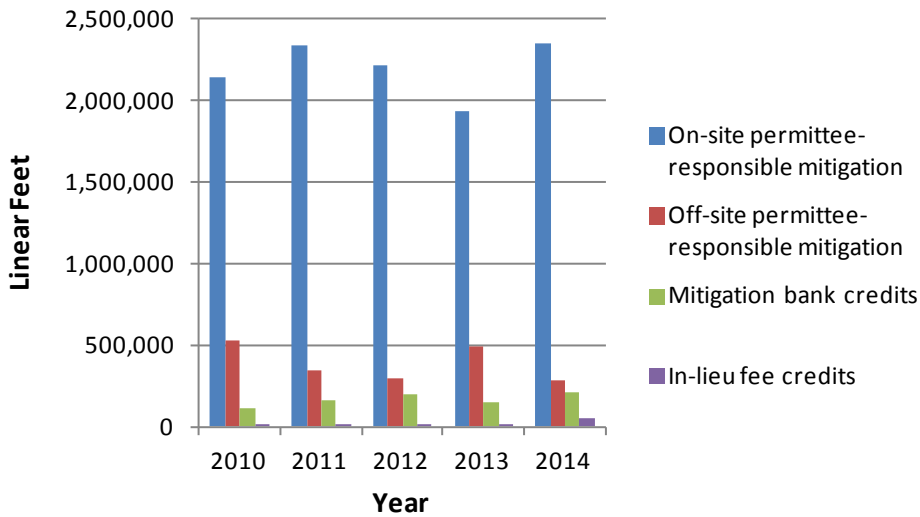


Figure 14. Number of authorizations by compensatory mitigation source and permit type for 2010-2014



Note: the acreages of on- and off-site permittee-responsible mitigation are taken from ORM2 and the acreage equivalents of mitigation bank and in-lieu fee program credits are taken from RIBITS

**Figure 15. Acreage of all compensatory mitigation required by on- and off-site permittee-responsible mitigation, mitigation bank credit transactions, and in-lieu fee program credit transactions during 2010 to 2014**

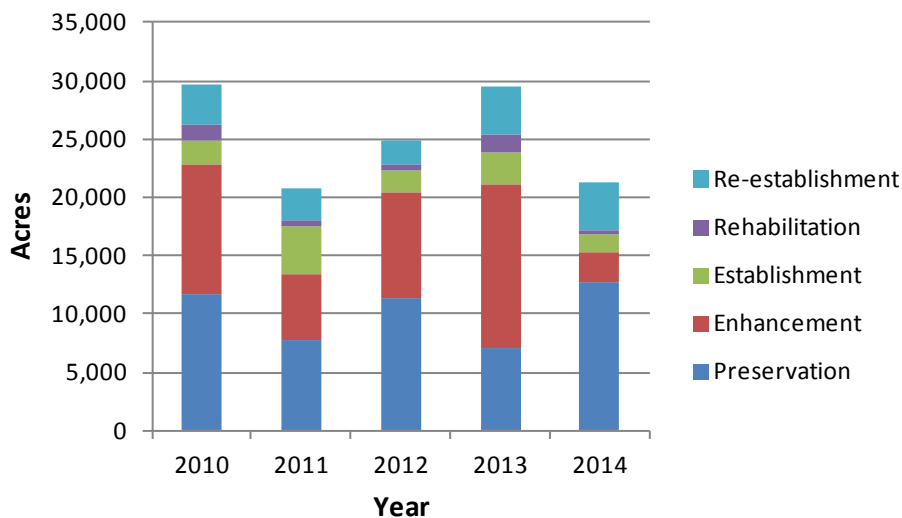


Note: the linear feet of on- and off-site permittee-responsible mitigation are taken from ORM2 and the linear foot equivalents of mitigation bank and in-lieu fee program credits are taken from RIBITS

**Figure 16. Linear feet of all compensatory mitigation required by on- and off-site permittee-responsible mitigation, mitigation bank credit transactions, and in-lieu fee program credit transactions during 2010 to 2014**

There are more authorizations requiring on-site permittee-responsible mitigation than off-site permittee-responsible mitigation (see Figure 13), and the total amount of acres and linear feet of on-site permittee-responsible mitigation is greater than off-site permittee-responsible mitigation (see Figures 15 and 16). In addition there is an increase in the relative contribution of mitigation banks and in-lieu fee programs over the last few years to the total acreage and linear feet of compensatory mitigation. Because the mitigation bank and in-lieu fee program data in Figures 15 and 16 are drawn from RIBITS, these charts underestimate the amount of in-lieu fee program credits secured. Data from a number of in-lieu fee programs that had not been re-authorized under the 2008 Mitigation Rule were not available. All in-lieu fee programs had to come into compliance with the 2008 Mitigation Rule by June 2013 or they could no longer provide compensatory mitigation for Department of the Army permits. Data from at least one state-sponsored in-lieu fee program are not currently available in RIBITS that is the North Carolina Ecosystem Enhancement Program.

Figures 17 and 18 illustrate that methods of compensatory mitigation vary by year regardless of the unit used to record the mitigation in ORM2 (acres or linear feet). However, in Figure 17 the proportion of required acreage for preservation and enhancement methods has remained similar. A large proportion of the linear feet of aquatic resource establishment identified in Figure 18 was associated with stream relocation activities required for permits authorizing discharges of dredged or fill material into jurisdictional waters and wetlands for mining, development, and road construction activities.



**Figure 17. Acreage of on- and off-site permittee-responsible mitigation required, by mitigation method, during 2010 to 2014 for all aquatic resource types**

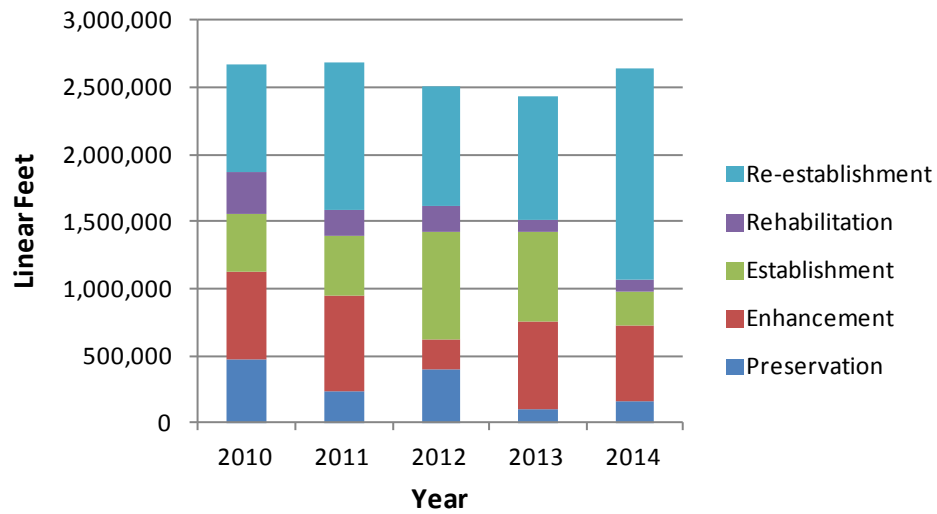


Figure 18. Linear feet of on- and off-site permittee-responsible mitigation required for Department of the Army permits, by mitigation method, during 2010 to 2014 for all aquatic resource categories

## **5.3 EFFECTS ON CORPS PROCESSES – DECISION-MAKING/TIMING**

### **5.3.1 PERMIT APPLICATION PROCESSING TIMES**

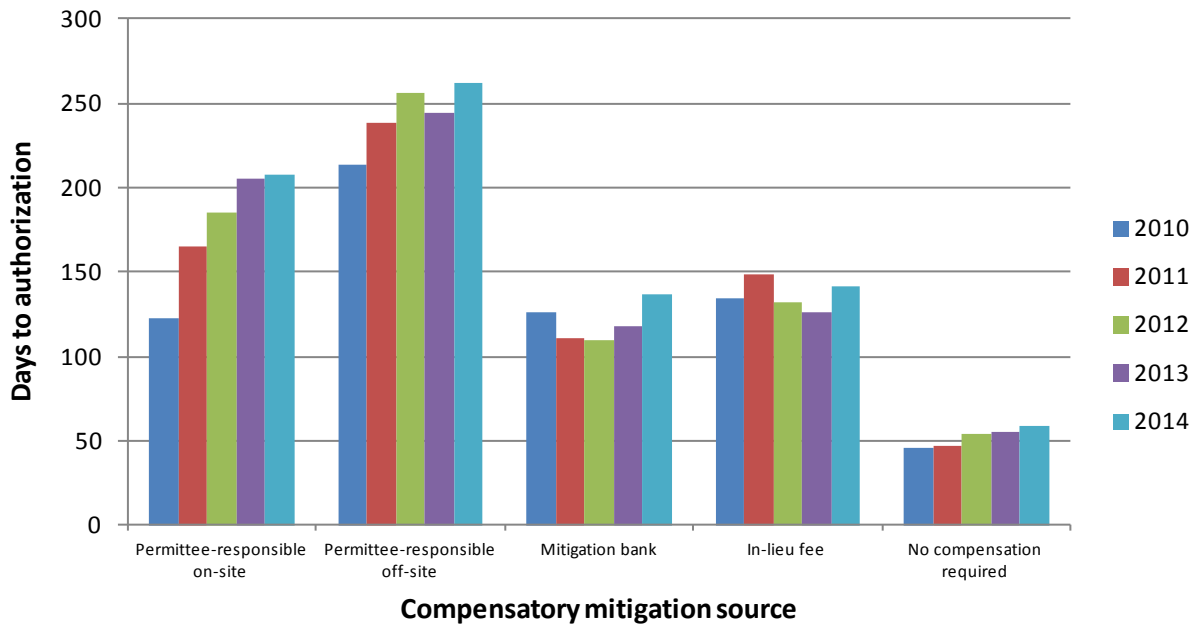
Processing times for individual permit applications and general permit verification requests are affected by whether compensatory mitigation is required, and if it is required, the source of that compensatory mitigation. Figure 19 shows the mean processing times for issued individual permits and general permit verifications by compensatory mitigation source, as well as the processing times for individual permits and general permit verifications where no compensatory mitigation was required. The processing times were calculated from ORM2 by subtracting the end date of a permit action from the begin date. This approach reflects the review period from the perspective of permit applicants from the date they approach the Corps with a proposed activity, to the date that activity is authorized by either an individual permit or a general permit.

For authorized activities where no compensatory mitigation was required, during 2010 to 2014 the average time for an authorization to be issued was 52 days. For authorized activities that required compensatory mitigation, processing times for individual permit applications and general permit verifications were fastest when mitigation bank credits (120 days) or in-lieu fee program credits (136 days) were the approved source of compensatory mitigation. When permittee-responsible mitigation was required, authorizations where on-site compensatory mitigation was required were processed faster than authorizations where off-site compensatory mitigation was required (177 days versus 243 days, respectively).

Use of third party mitigation helps reduce authorization processing times because those sources of compensatory mitigation have already been approved through the instrument approval process. Mitigation banks and released in-lieu fee program credits are based on approved mitigation plans, and Corps district project managers only need to determine that those credits are acceptable for fulfilling the compensatory mitigation requirements for the individual permits and general permits. They do not need to review a 12-component mitigation plan each time an approved mitigation bank or in-lieu fee program is to provide the required compensatory mitigation. Longer processing times are associated with permittee-responsible mitigation because Corps district staff have to review each proposed mitigation plan and ensure that each of the elements listed in 33 CFR 332.4(c)(2)-(14) are appropriately addressed to determine whether that permittee-responsible mitigation is acceptable and is likely to be ecologically successful and sustainable. Permit applicants proposing to use approved mitigation banks or in-lieu fee programs need to only address the baseline information and the determination of credits, and do not need to provide information on the other 10 elements of mitigation plans. The prior review and approval processes for all mitigation banks and in-lieu fee programs conducted by interagency review teams chaired by the Corps help reduce

processing times for permit applications and general permit verification requests, in situations where the project proponent wants to use mitigation bank credits or in-lieu fee program credits to fulfill compensatory mitigation requirements.

The longer processing times for permits requiring off-site permittee-responsible mitigation are likely due to a number of factors including the need to review and assure that the mitigation plan complies with the more comprehensive compensation standards included in the 2008 Mitigation Rule and to conduct additional evaluations and consultations (e.g., consultations required under Section 7 of the Endangered Species Act, Section 106 of the National Historic Preservation Act, government-to-government consultations with Tribes) for the proposed mitigation site. In cases where on-site permittee-responsible mitigation is proposed, those consultations were probably done concurrently with the evaluation of the proposed activity requiring Department of the Army authorization. The need for off-site permittee-responsible mitigation to offset the proposed losses of waters of the United States might not have been identified until later in the permit application evaluation process, thus adding to the processing time.



**Figure 19. Average processing times for individual and general permit authorizations, by compensatory mitigation source and for authorizations where no compensatory mitigation was required, for 2010 to 2014**

### **5.3.2 MITIGATION BANK AND IN-LIEU FEE PROGRAM DECISION-MAKING TIMELINES**

In an effort to improve efficiency and predictability for mitigation bank and in-lieu fee program sponsors, the 2008 Mitigation Rule includes specified timelines for prospectus review, instrument development, and other tasks associated with the approval and oversight of mitigation banks and in-lieu fee programs, such as credit releases. There are no quantitative data available for 2010-2014 to track compliance with these decision-making timelines. It is also important to note that the timeframes specified in the 2008 Mitigation Rule are often extended for a number of reasons identified in the rule (see (33 CFR Part 332.8(f)/40 CFR Part 230.98(f)). For example, instrument review timelines can be extended to allow for completion of ESA section 7 consultation if the proposed mitigation bank or in-lieu fee program may affect listed species or critical habitat. Proposed mitigation banks and in-lieu fee programs may also require consultation for potential effects to historic and cultural resources or government to government consultation with Tribes). Review times may also be extended as a result of failure of the sponsor to provide required information for a decision, and the lack of necessary information for a decision. In 2014, the Corps modified ORM2 to better track approvals of third party compensatory mitigation instruments and modifications of those instruments, including processing times.

Nationally, the Corps and EPA are working to improve decision-making timeframes for mitigation banks and in-lieu fee programs through ongoing training efforts on the 2008 Mitigation Rule. These training efforts include an emphasis on the process of development and approval of third party compensatory mitigation instruments, and the scientific, technical, and legal elements required in these instruments and associated mitigation plans. Cooperative efforts between interagency review team members and mitigation bank or in-lieu fee program sponsors can also help facilitate development and approval of third party compensation instruments.

At the district or state level, improvements to the review process for mitigation banking instruments and in-lieu fee program instruments is being achieved through clearly stated roles and responsibilities for members of interagency review teams; development of standard operating procedures governing mitigation banking and in-lieu fee program instruments; issuance of mitigation banking and in-lieu fee program guidelines, and related other tools such model instruments for site protection and financial assurances, performance standards, and other mitigation and monitoring guidelines. Standardized tools and practices, including regularly scheduled meetings of interagency review teams, can facilitate development and approval of third party mitigation proposals.

## 5.4 STATUS AND TRENDS IN THIRD PARTY MITIGATION FROM 2008 TO 2014

NOTE: Unless stated otherwise, RIBITS was the source of data on third party compensatory mitigation in this section.

### 5.4.1 GEOGRAPHY AND MAGNITUDE OF MITIGATION BANKING

The number of mitigation banks has increased steadily since the early 1990s as shown in Figure 20. Since issuance of the 2008 Mitigation Rule, mitigation banks have continued to be approved at least at the same rate as before the rule. This rate was maintained despite the substantial decline in permit authorizations which began prior to rule issuance (see Section 2.2). By the end of 2014, a total of 1,428 mitigation bank sites had been approved. This number includes bank sites that are sold-out, and a small number that have been suspended. These bank sites made up more than 870 square miles of protected lands. Another 303 bank proposals were under consideration by Corps districts.

Mitigation banks have now been implemented in most regions and states in the country (see Figure 21 depicting the locations of approved mitigation bank sites as of 2014). In terms of bank numbers and acreage, mitigation banking is most prevalent in the South Atlantic and Mississippi Valley Divisions.

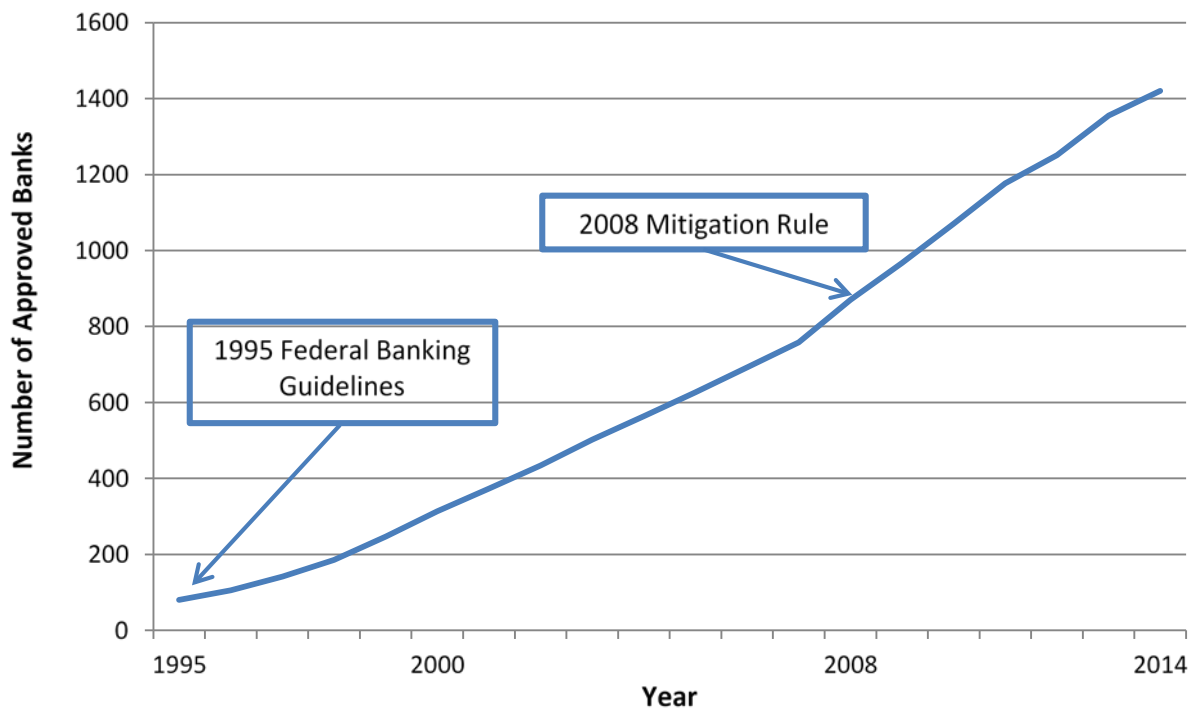


Figure 20. Cumulative total number of approved mitigation banks, from 1995 to 2014



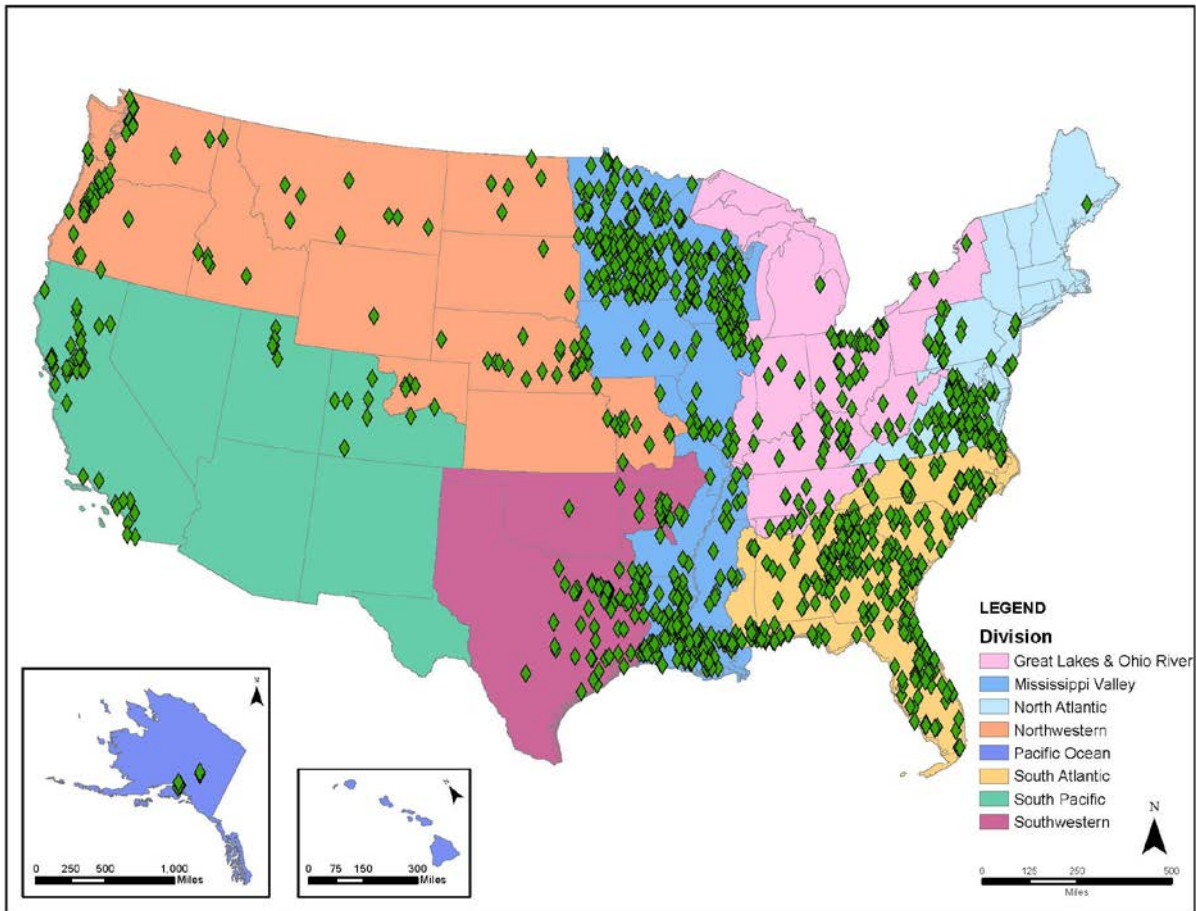


Figure 21. Locations of all approved mitigation bank sites through 2014

### 5.4.2 BANKS PROVIDING WETLAND AND STREAM COMPENSATORY MITIGATION

Most of the mitigation banks approved by the Corps provide wetland compensatory mitigation; thus the pattern of banks offering wetland credits tends to follow the overall pattern of mitigation banks. Figure 22 shows the distribution of wetland mitigation bank sites in the United States as of 2014.

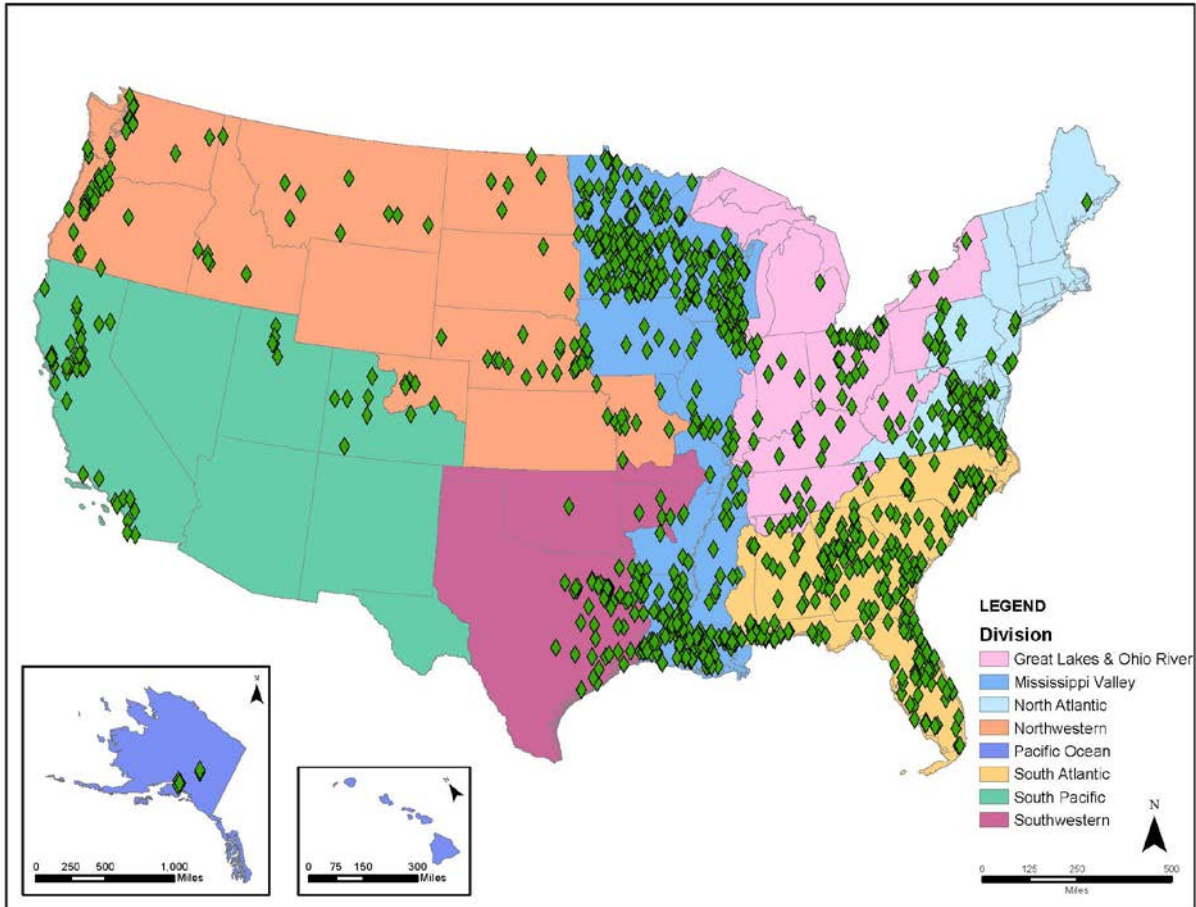
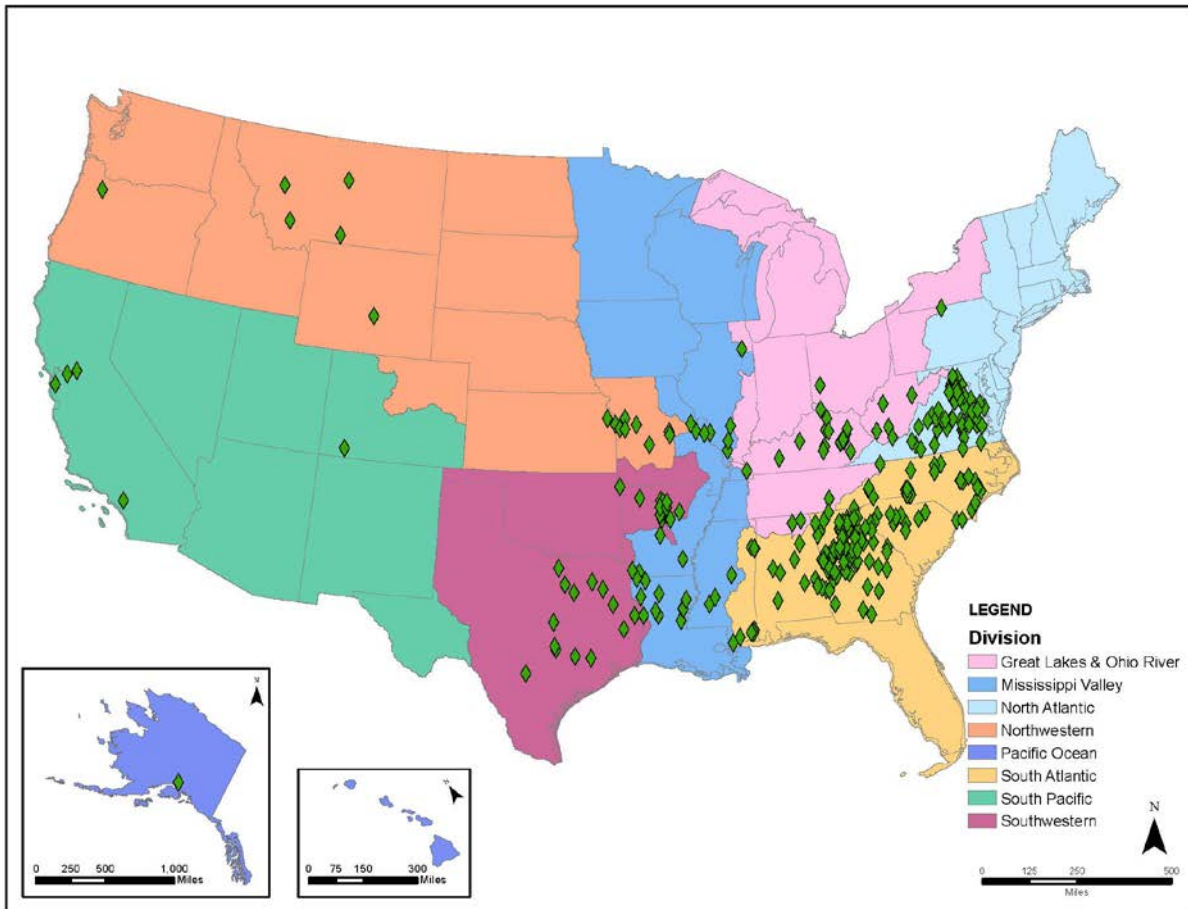


Figure 22. Locations of approved mitigation bank sites providing wetland credits as of 2014

Mitigation banks offering stream credits have been established across some areas of the country, although tending to concentrate in several eastern and southern states (see Figure 23). In 2008 there were 141 banks in 16 states providing stream mitigation credits. By the end of 2014 the number of mitigation banks providing stream mitigation credits had increased by more than 200% to 313 banks providing stream mitigation in 21 states. Most of those mitigation banks were approved after the 2008 Mitigation Rule went into effect. During the same period the number of mitigation banks providing wetland credit had increased by 52% from 825 to 1,256 banks (see Figure 24).



**Figure 23. Locations of approved mitigation bank sites providing stream credits as of 2014**

Mitigation banks may provide both wetland and stream credits, so the numbers of banks with wetland credits and those with stream credits are not additive (the sum will be greater than the total number of banks).

Figures 24 and 25 both depict marked growth in the numbers of banks providing stream mitigation credit beginning in 2005. Figure 25 shows the number of mitigation banks approved each year that provided wetland credits and stream credits.

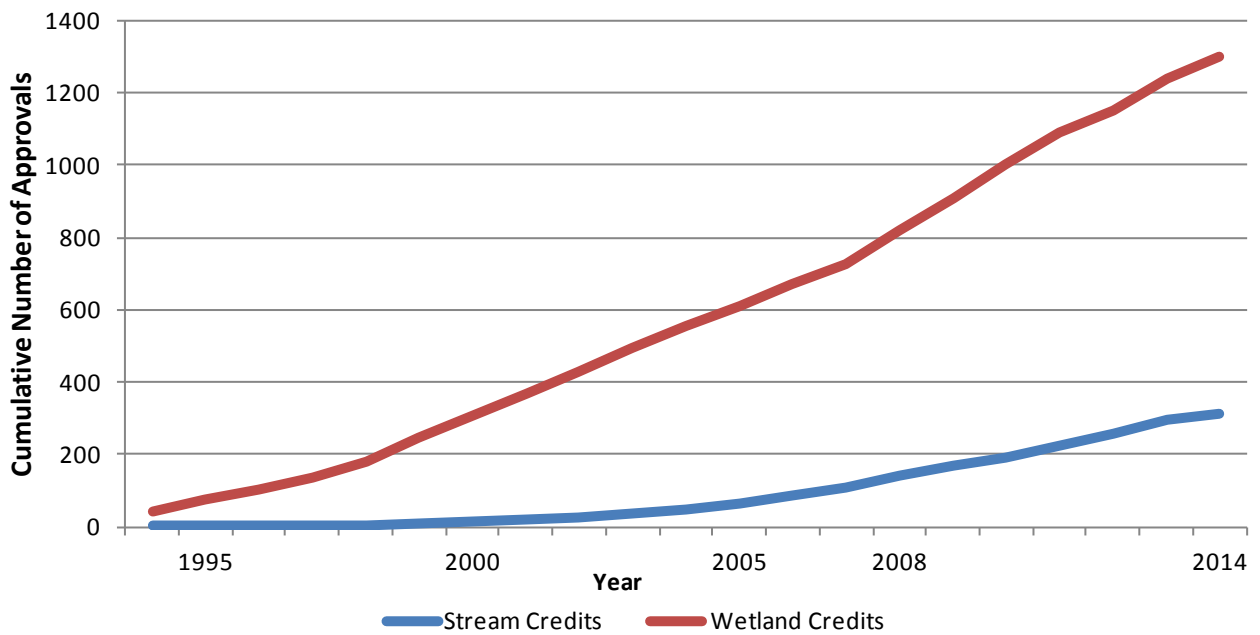


Figure 24. Cumulative approvals of banks providing wetland and stream credits through 2014

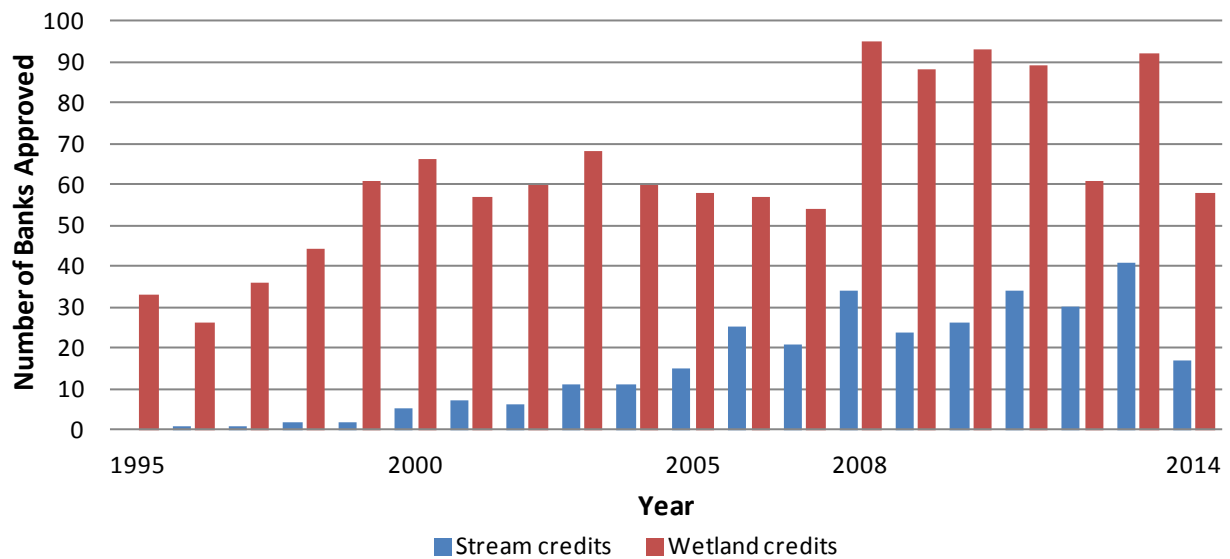
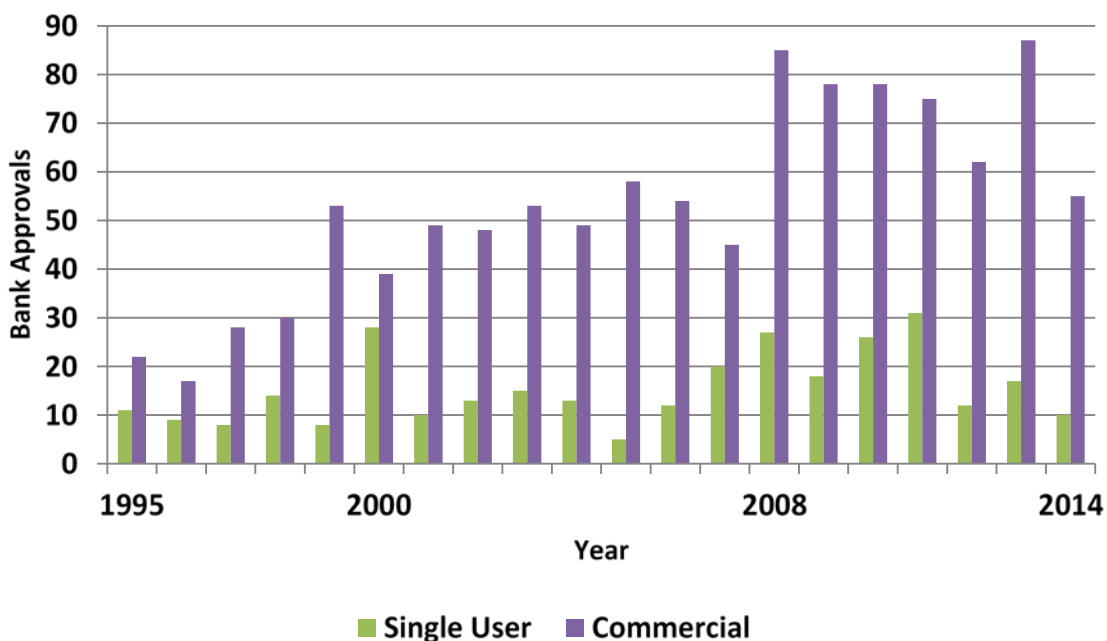


Figure 25. Annual approvals of mitigation banks providing wetland credits and stream credits

A small number of banks and in-lieu fee projects provide in-kind compensation for palustrine open water impacts (13 mitigation banks and 17 in-lieu fee projects). An even smaller number of banks and in-lieu fee projects provide compensation for impacts to subtidal resources (1 bank and 6 in-lieu fee projects).

### 5.4.3 MITIGATION BANK SPONSORSHIP

In the 1980s and early 1990s most mitigation banks were characterized as “single-user” or “single-client” banks. These are banks that provide compensation for a single government agency or company. Today, most (75%) of these single-user banks provide compensatory mitigation for road and highway projects. Since development of the federal guidance for mitigation banking in 1995, commercial banks (those banks that provide compensatory mitigation for a range of permittees, that is, the general public) have become the predominant form of mitigation bank sponsorship. Since the 2008 Mitigation Rule went into effect, commercial banks have made up 83% of the banks approved annually (Figure 26).



**Figure 26. Single-client and commercial mitigation bank approvals during 1995-2014**

The dominant form of commercial banks is the private commercial bank (for-profit/entrepreneurial banks). These private commercial banks make up 88% of all commercial banks, with the remainder of commercial banks divided between those sponsored by government agencies (state and/or local governments) and by private non-profit organizations. In addition, these private commercial banks are responsible for 96% of commercial bank area. A few commercial banks are jointly sponsored by both a public agency and a private sector entity.

The number of single-user banks, those banks that provide compensatory mitigation to only one user, such as a state's transportation department, increased from 217 in 2008 to 315 in 2014. The acreage of single-user banks has increased from more than 133 square miles in 2008 to nearly 170 square miles in 2014. During the same period the number of commercial mitigation banks has grown from 656 to 1,087, with a corresponding increase in area from nearly 460 square miles to more than 700 square miles (Figures 27 and 28).

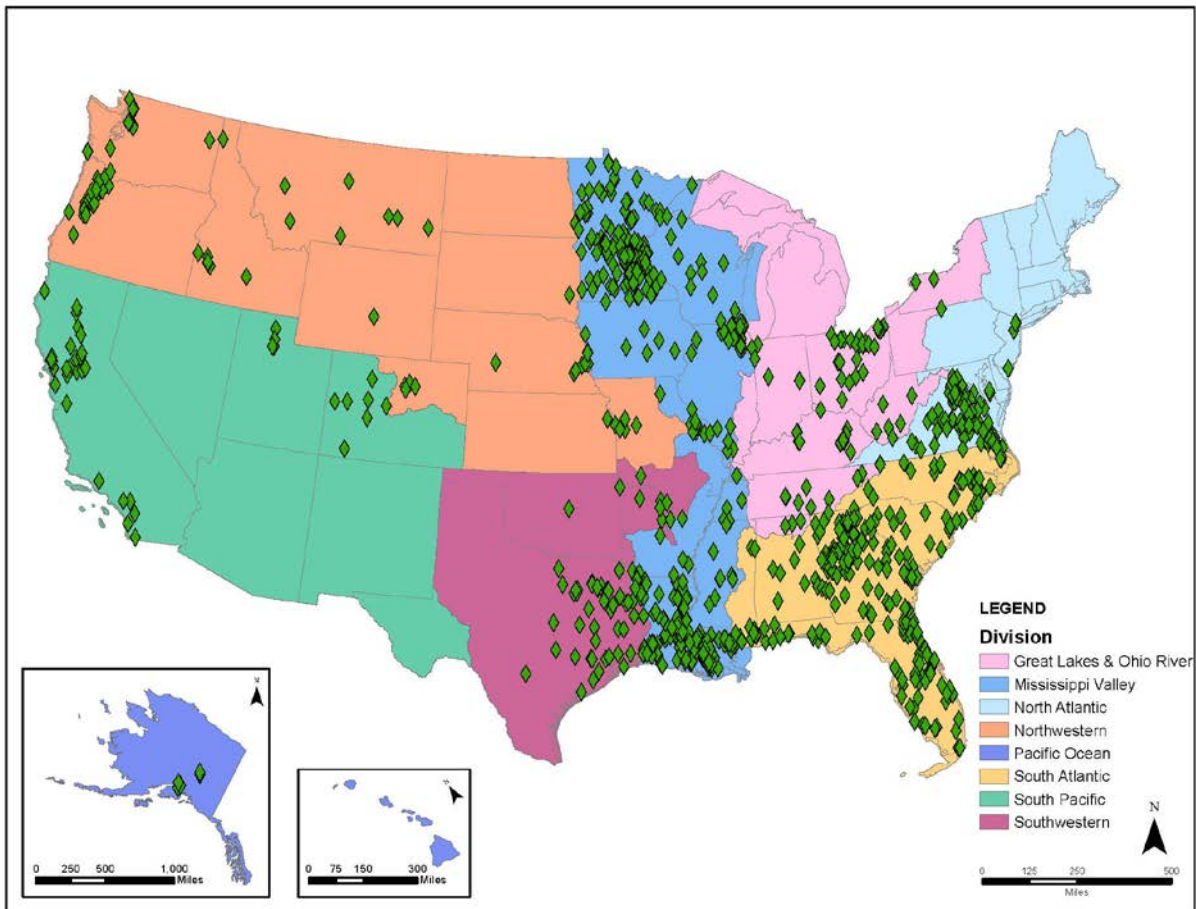
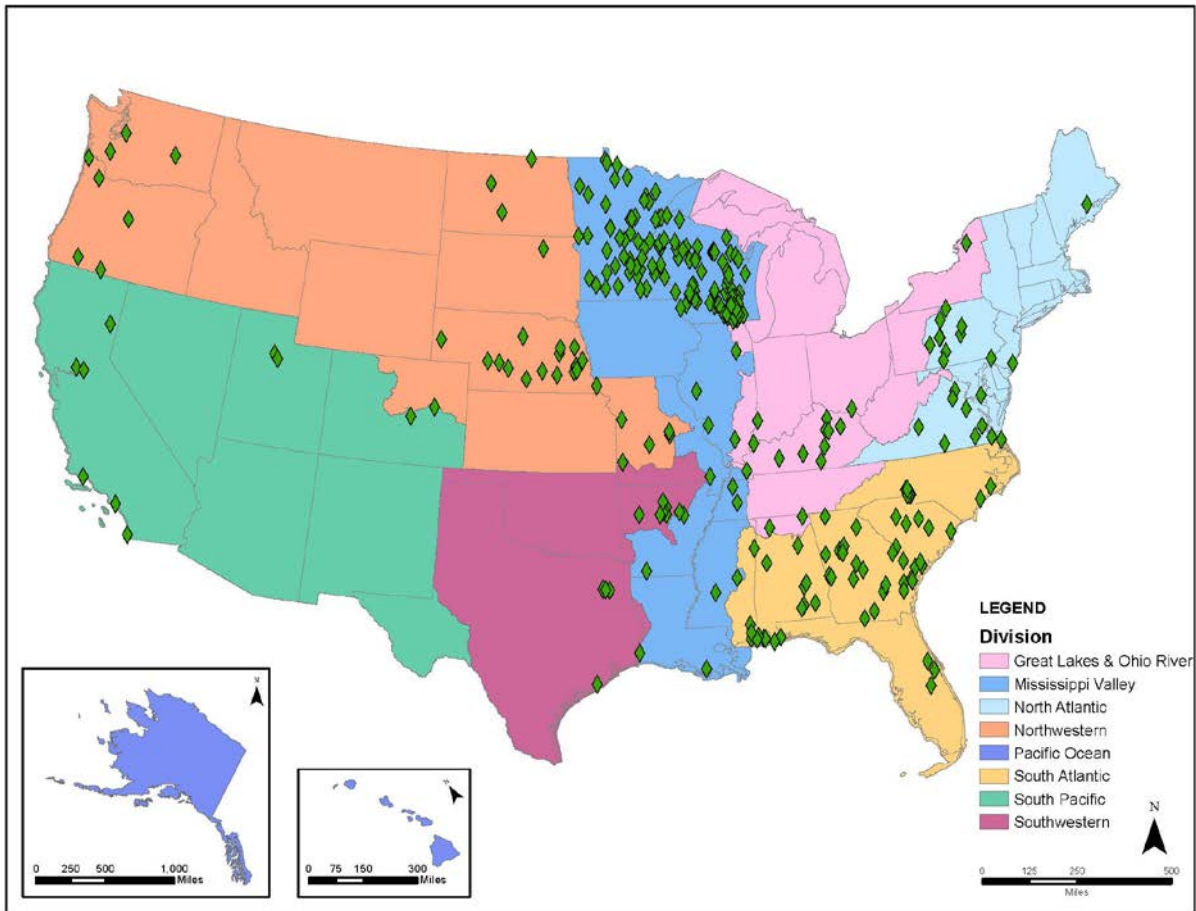


Figure 27. Distribution of approved commercial mitigation banks as of 2014



**Figure 28. Distribution of approved single-client mitigation banks as of 2014**

#### **5.4.4 IN-LIEU FEE PROGRAMS**

By the end of 2014 there were 45 in-lieu fee programs approved by the Corps since the 2008 Mitigation Rule went into effect (Figure 29). Twenty-four (24) of those programs were operational prior to the 2008 Mitigation Rule and have been re-authorized. The remaining 21 programs are new in-lieu fee programs. This is a slight reduction from the 47 in-lieu fee programs in operation immediately prior to the 2008 Mitigation Rule and may reflect the more rigorous regulatory requirements for in-lieu fee programs established by the 2008 Mitigation Rule (Appendix E). However, there are also more than 30 additional in-lieu fee programs currently proposed in 13 Corps Districts, so the total number of in-lieu fee programs is likely to exceed the numbers of in-lieu fee programs that were established before the 2008 rule.

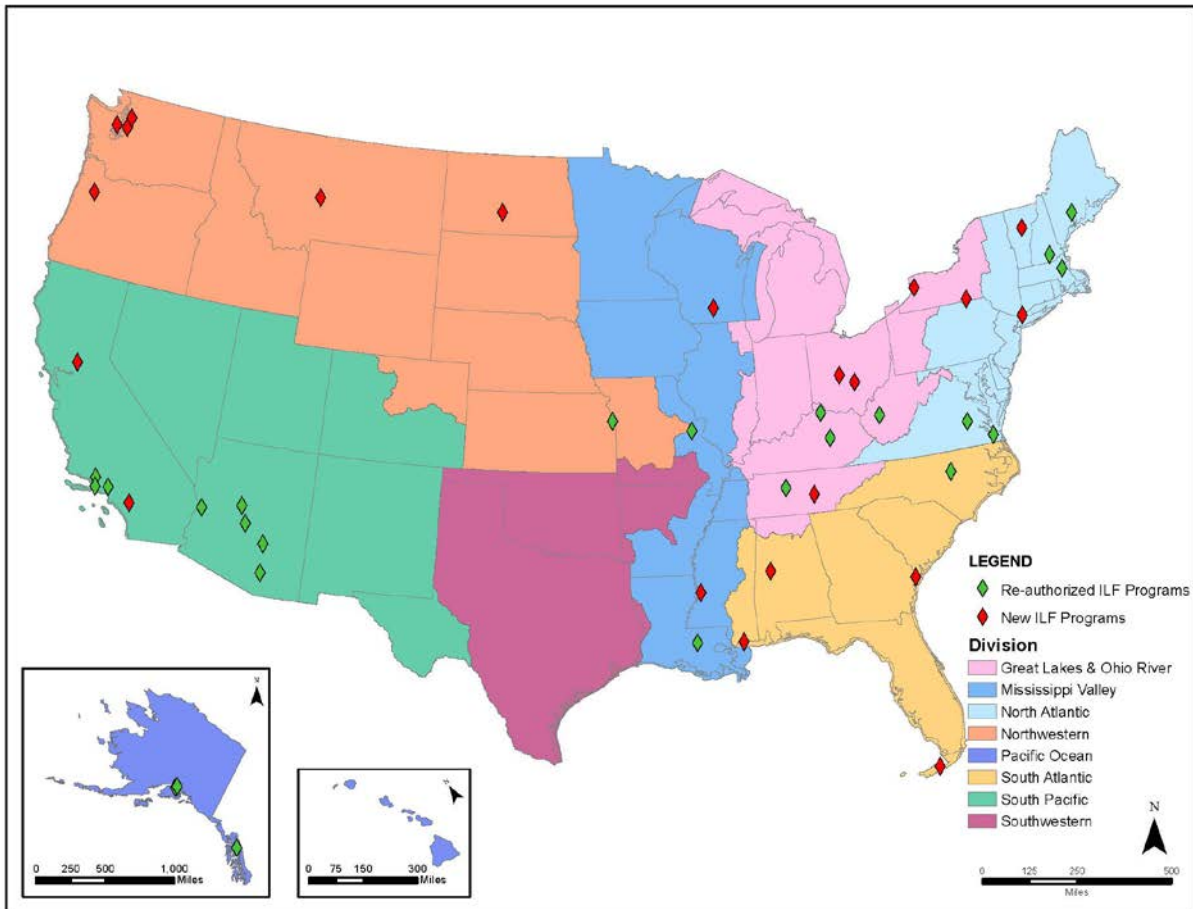
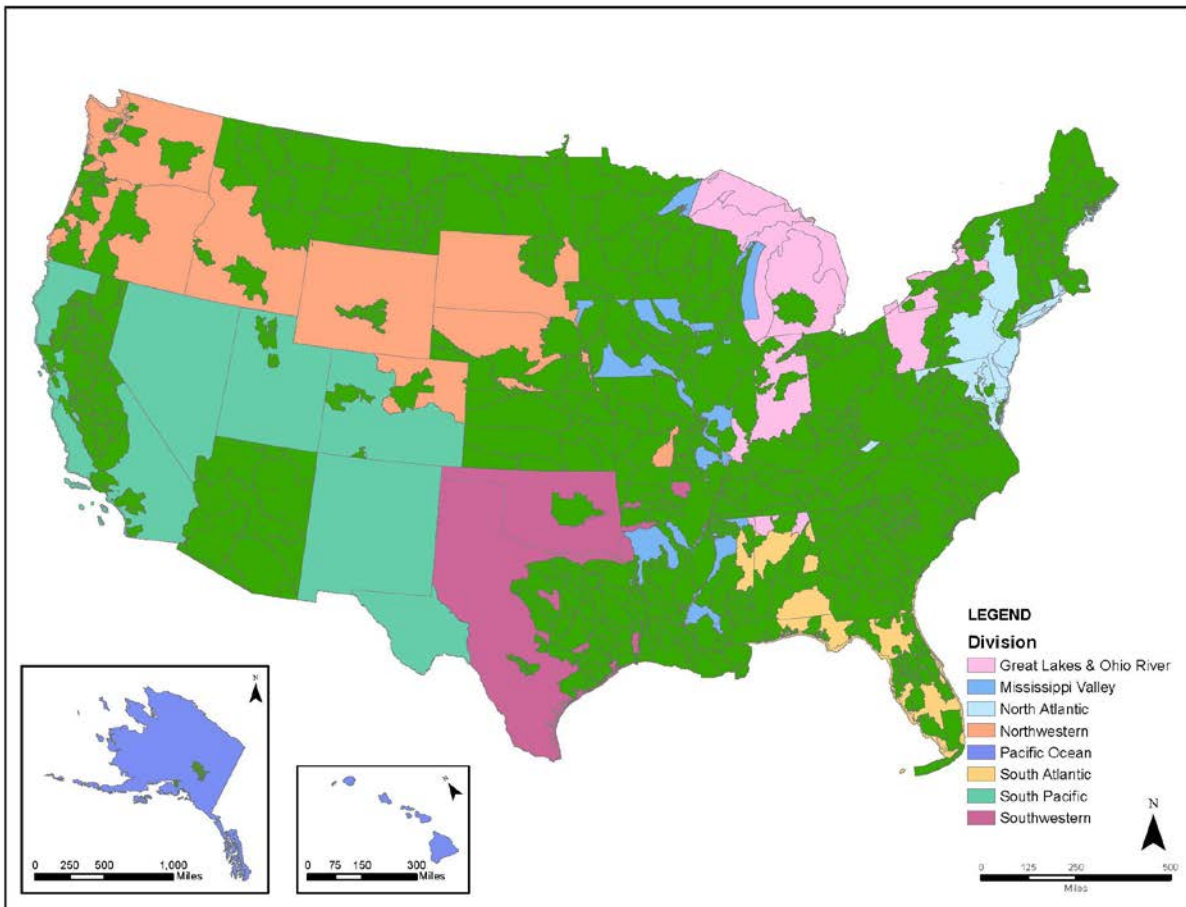


Figure 29. Location of approved in-lieu fee programs as of 2014

#### 5.4.5 MITIGATION BANK AND IN-LIEU FEE PROGRAM SERVICE AREAS

Much of the Gulf and South Atlantic, Coastal Plain, and Piedmont are now covered by the service area of at least one approved mitigation bank or in-lieu fee program (Figure 30). The same can be said of the Mississippi River Valley, the Ohio River Valley, the upper Midwest, and much of the Platte River valley. In the western US, only the populated areas of the Pacific Coast States are served by at least one bank. In a number of areas (including Virginia east of I-95, central Georgia, central Florida, Columbia South Carolina, northern and central Ohio, northern Illinois, Minnesota, Wisconsin, central and eastern Texas, the Louisiana coastal plain, the Sacramento Delta, and the Willamette Valley) there are multiple banks serving the same service areas. There are also a number of areas served both by banks and in-lieu fee programs (e.g. Virginia, North Carolina, West Virginia, Kentucky, Tennessee and portions of Alaska, California, Kansas, Montana, Ohio, Wisconsin, Louisiana, and Missouri).



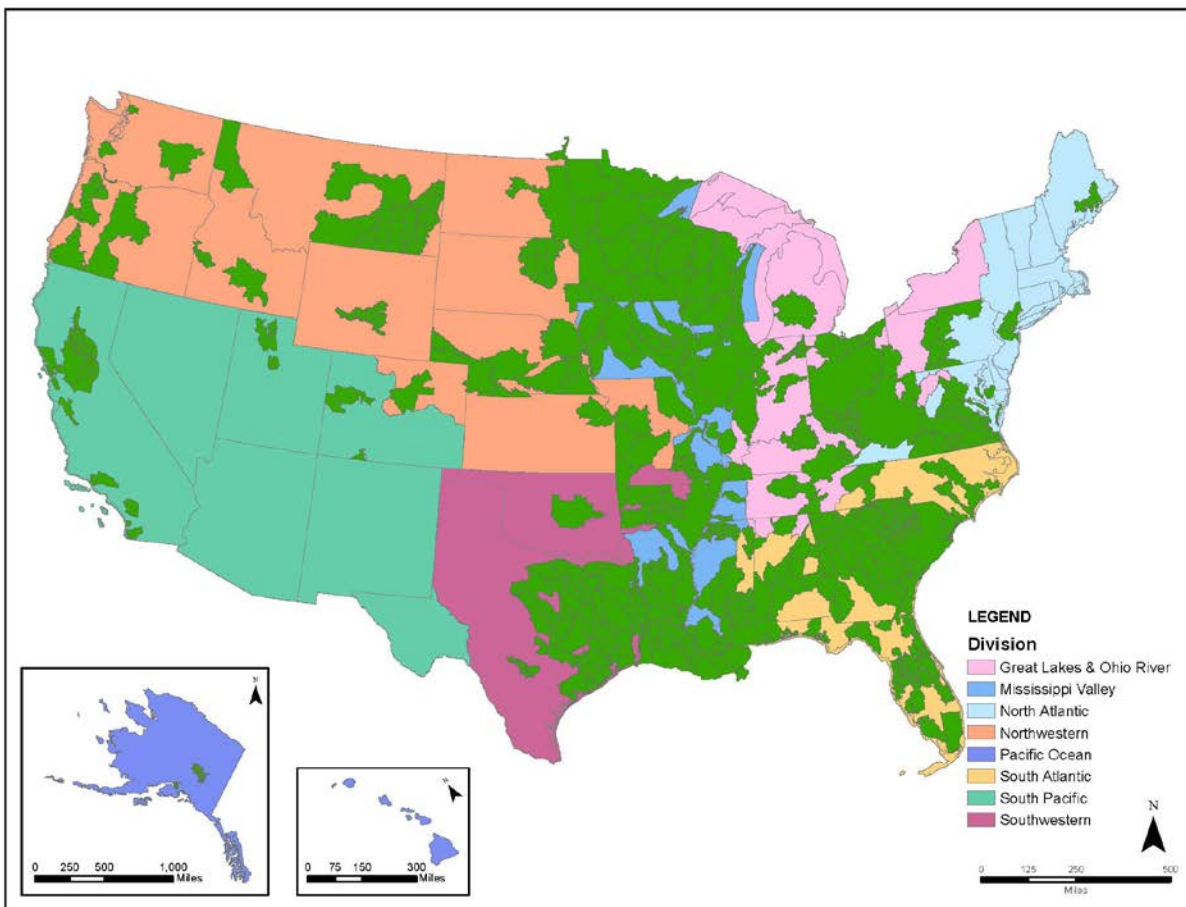


Note: Areas depicted represent largest coverage service areas approved

**Figure 30. Service Areas for Corps-approved mitigation banks and in-lieu fee programs as of 2014**

These data show that, under the 2008 Mitigation Rule, there has been sustained growth of mitigation banks providing both stream and wetland credits, despite a downturn in the economy and changes in the interpretation of CWA jurisdiction as a result of U.S. Supreme Court decisions.

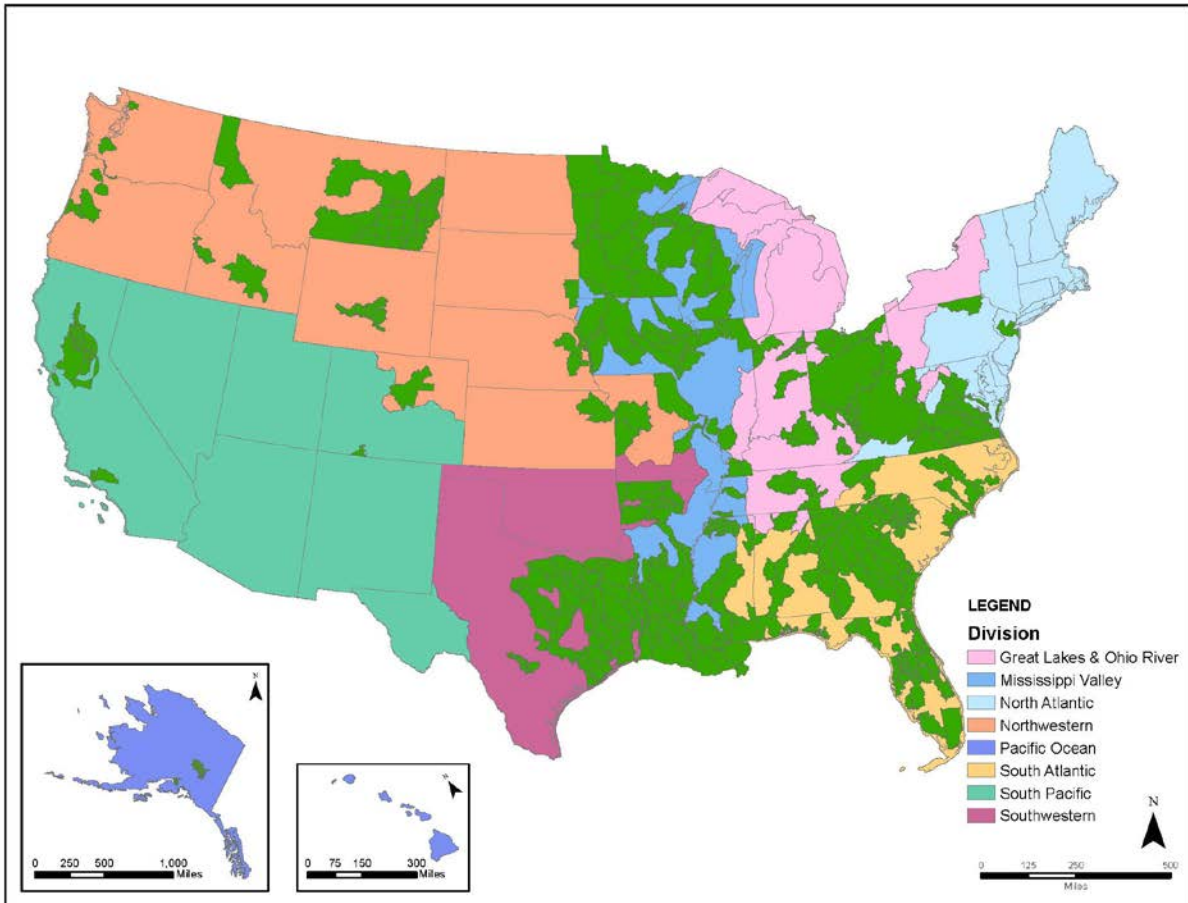
Since issuance of the 2008 Mitigation Rule, bank service areas were added in portions of 32 states. By the end of 2014, mitigation bank service areas included at least portions of 41 states (see Figure 31). Bank service area coverage is primarily in the mid-Atlantic, Southeast, South Central, Midwestern, and West Coast states. The following 9 states were not served by mitigation banks at the end of 2014: Arizona, Connecticut, Hawaii, Massachusetts, New Hampshire, New Mexico, Nevada, Rhode Island, and Vermont.



Note: Areas depicted represent largest coverage service areas approved

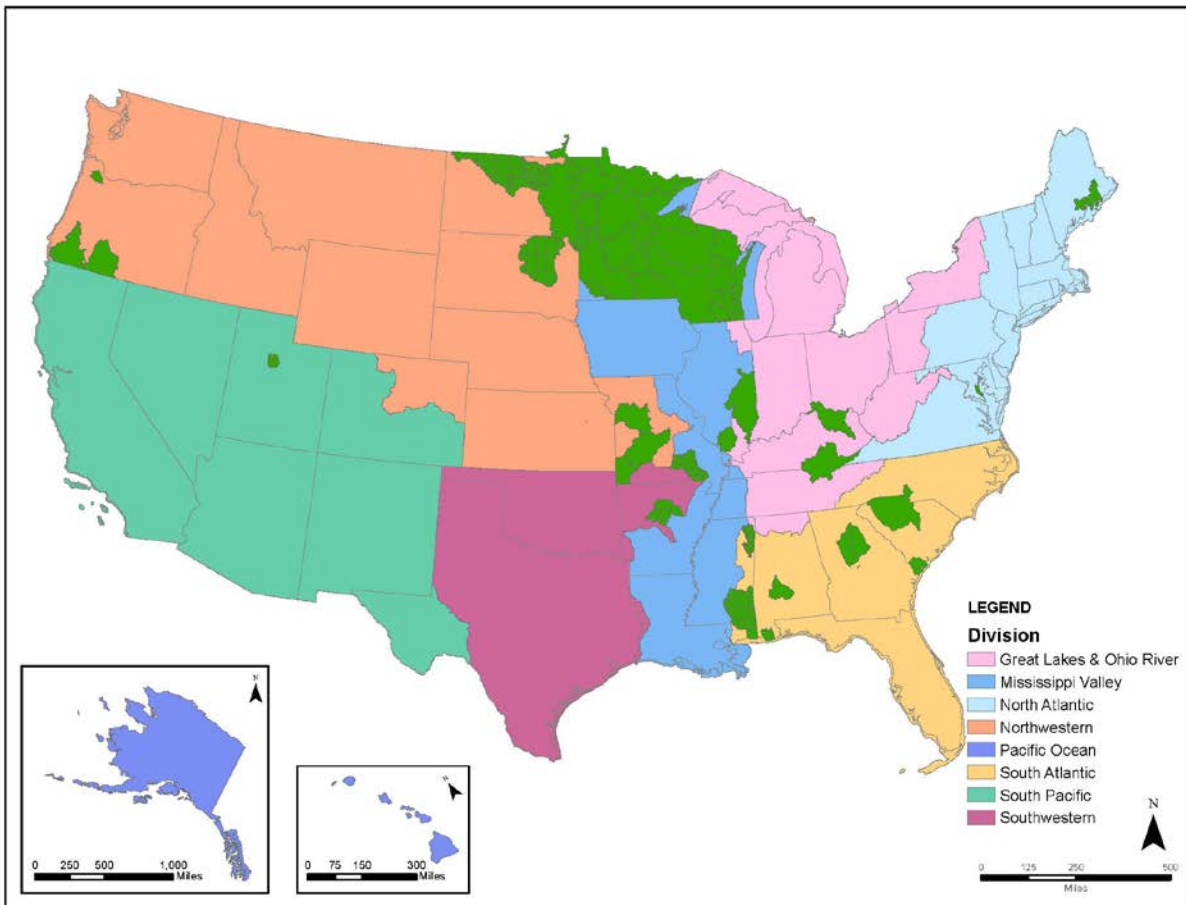
**Figure 31. All mitigation bank service areas as of 2014**

Most of the expansion in areas served by mitigation banks is attributable to commercial mitigation bank approvals. From 2008-2014 commercial banks service areas were either added or increased within 33 states (Figure 32). During the same period single-user mitigation bank service areas were either added or increased in 15 states (Figure 33).



Note: Areas depicted represent largest coverage service areas approved

**Figure 32. Service areas of commercial mitigation bank approved between 2008-2014**



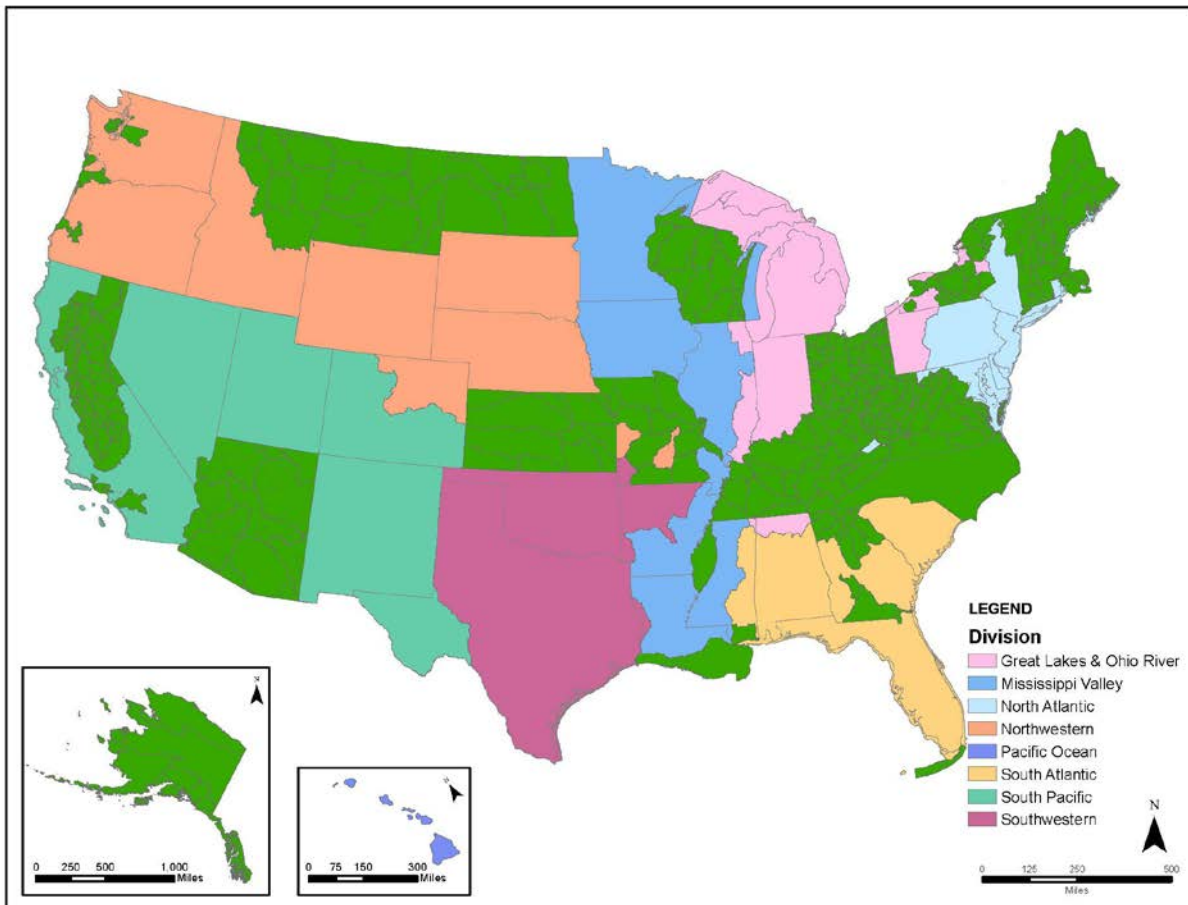
Note: Areas depicted represent largest coverage service areas approved

**Figure 33. Service areas of single-user mitigation banks approved between 2008-2014**

The 2008 Mitigation rules requires all in-lieu fee programs that were operational prior to the rule be reauthorized by June 2013, if those in-lieu fee program sponsors want to continue to provide compensatory mitigation for Department of the Army permits. Therefore all active in-lieu fee program service areas at the end of 2014 are functionally the same as all in-lieu fee program service areas established between 2008-2014 (Figure 34).

By the end of 2014, service areas for approved in-lieu fee programs included all or portions of 27 states. The entirety of the following 17 states were covered by in-lieu fee program service areas by the end of 2013: Alaska, Arizona, Connecticut, Kansas, Kentucky, Maine, Massachusetts, Montana, New Hampshire, North Carolina, North Dakota, Ohio, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

Additionally, portions of the following 10 additional states were covered by in-lieu fee program service areas by the end of 2014: Alabama, California, Florida, Georgia, Louisiana, Mississippi, Missouri, New York, Oregon, and Washington. See Section 5.5 for additional information.

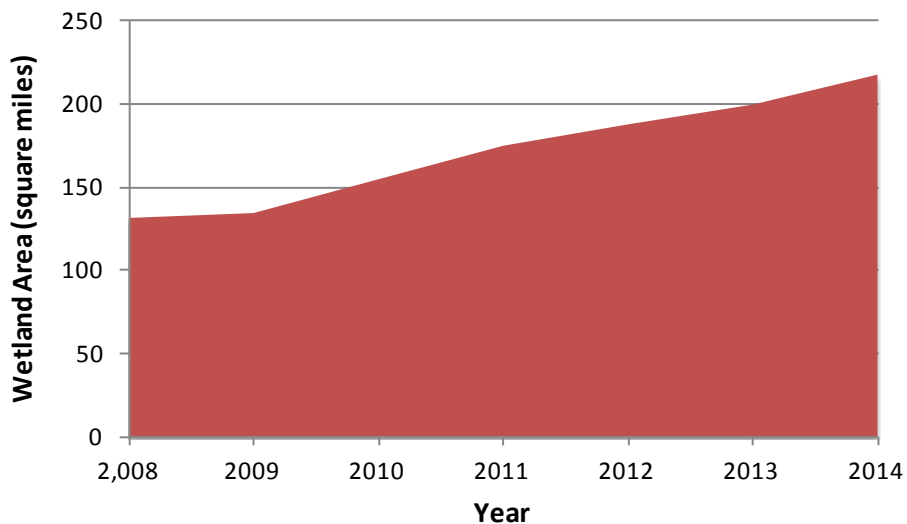


Note: this figure also show those service areas established between 2008-2013

**Figure 34. Service area of in-lieu fee programs approved as of 2014**

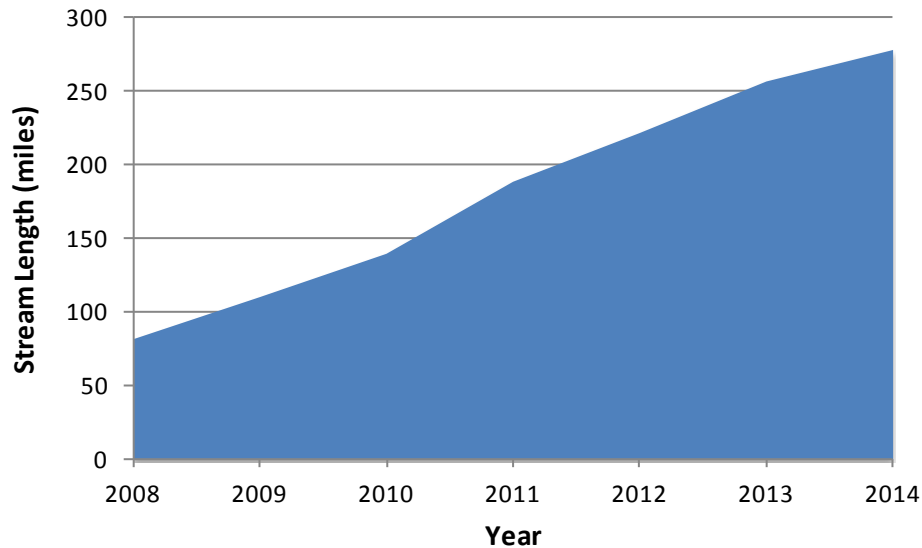
#### 5.4.6 AVAILABILITY OF THIRD PARTY MITIGATION CREDITS

The increase in the number of operational mitigation banks has meant an increase in the availability of mitigation credits (Figures 35 and 36). Since 2008 the amount of compensatory mitigation credits available has increased markedly. RIBITS provides approximate conversions of mitigation bank and in-lieu fee program credits to area of wetland mitigation and length of stream compensation. However it should be noted that not all credit classification types are interchangeable. Compensatory mitigation requirements established by Corps districts are often dependent on ecological considerations, such as in-kind mitigation to help ensure that permitted impacts are offset by a compensatory mitigation project that provides similar functions. For example, as a general rule, forested wetland impacts are not typically compensated for with submerged aquatic vegetation bed credits. Therefore if impacts occur within the service area of a mitigation bank or in-lieu fee program, but the available credits are not of the appropriate credit classification for offsetting the proposed impacts to jurisdictional waters and wetlands, the Corps will require the permittee to provide the required compensatory mitigation through other means, such as permittee-responsible mitigation.



Note: Values for each year are equal to the credits carried over from the previous year plus current year credit releases minus debits during the current year

**Figure 35. Available area of mitigation bank and in-lieu fee program wetland compensatory mitigation after the 2008 Mitigation Rule went into effect**



Note: Values for each year are equal to the credits carried over from the previous year plus current year release minus debits during the current year

**Figure 36. Available length of mitigation bank and in-lieu fee program stream compensatory mitigation after the 2008 Mitigation Rule went into effect**

## 5.5 REGIONAL VARIATION IN PERMITTING AND COMPENSATORY MITIGATION

### 5.5.1 General Landscape Characteristics by Division

There is considerable variability in type and extent of aquatic resources across the country. This variability affects implementation of the Regulatory Program, including the establishment of compensatory mitigation requirements for DA permits (Section 2.1.1). Aquatic resources such as wetlands and streams vary in density, structure and function across the U.S. and the eight Corps divisions as well as the amount and distribution of development, which results in regional variation in compensatory mitigation decision-making and, as explained elsewhere in this retrospective review, the geographic distribution of approved mitigation banks and in-lieu fee programs.

The greatest extent of wetlands in terms of land cover is in the Corps divisions covering the humid regions of the Gulf and Atlantic coastal plains extending into the Mississippi River Division in the southeastern contiguous U.S. as shown in Table 6. This and following characterizations exclude the Pacific Ocean Division which contains the State of Alaska. Lesser wetland area is characteristic of the semi-arid west covered by the South Pacific and Northwestern Divisions, apart from the immediate Pacific Coast for those two divisions. The Northwestern Division ranks in the middle division-wise in

terms of actual NWI wetland area owing to being the division with the largest land area. This variation in actual wetland area among Corps divisions is based upon the FWS' National Wetland Inventory (NWI). NWI classifies wetlands and deepwater habitats according to the FWS' official wetland classification system (Cowardin et al. 1979), but it does not include all wetlands, especially small wetlands and certain wetland types such as seasonally saturated wetlands<sup>4</sup>. As such, the NWI should only be viewed as a rough approximation of the extent of wetlands in the United States as defined by the CWA. Locally, wetlands may vary considerably from the extent represented in the NWI because of varying methodologies and patches of higher resolution mapping efforts through aerial imagery interpretation procedures.

The proportional amount of developed land (e.g., urban, agricultural, industrial) is another characteristic that could be used along with wetland area to explain to some extent differences among Corps divisions in the numbers of DA permits issued each year. Not surprisingly, the Corps divisions with the highest proportional developed land cover are the North Atlantic, South Atlantic and the Lakes and Rivers Divisions as shown in Table 6, which utilizes information from the 2011 National Land Cover Database.

**Table 6. Comparison of Division land area with available National Wetland inventory (NWI) wetland, and 2011 National Land Cover Database (NLCD) percent developed land**

<b>Division</b>	<b>Land Area (miles<sup>2</sup>)</b>	<b>NWI Wetland Area (miles<sup>2</sup>)</b>	<b>NLCD developed land (%)*</b>
Great Lakes & Ohio River	292,000	15,000	11%
Mississippi Valley	358,000	29,500	7%
North Atlantic	<i>172,000</i>	11,600	<b>12%</b>
Northwestern	<b>856,000</b>	14,200	3%
Pacific Ocean	570,000	<b>78,500</b>	<i>0.2%</i>
South Atlantic	256,000	44,300	11%
South Pacific	697,000	<i>5,100</i>	3%
Southwestern	331,000	8,200	7%
<b>Nationwide</b>	<b>3,532,000</b>	<b>206,400</b>	<b>6%</b>

\*Percent developed land includes high, medium, and low intensity development and developed open space.

Bolded figures indicate the highest values for each parameter

*Italicized* figures indicate the lowest values for each parameter

<sup>4</sup> Tiner, R. 1997. NWI maps – Basic information on the Nation's wetlands. Bioscience 47:269.



### 5.5.2 Permitting and Mitigation trends by Division

In response to the 2001 NRC report, the Corps conducted a nationwide survey in 2003 to identify the current practice and status of compensatory mitigation authorized by the Regulatory Program. The survey identified that approximately 43,550 acres of wetland compensatory mitigation was required for authorized impacts, including 3,407 acres of tidal wetland mitigation and 40,143 acres of non-tidal wetland mitigation. There were 13,080 acres of wetland compensatory mitigation required via permittee-responsible mitigation required in Corps permit authorizations as well as over 860,000 mitigation bank credits and 2.4 million In-lieu fee program credits<sup>5</sup>. These data provide a snapshot of the baseline of compensatory mitigation practices nationwide prior to the 2008 Mitigation Rule. This report documents the first data driven characterization of mitigation practices nationwide and at the division level.

As discussed above, the 2008 Mitigation Rule states that district engineers should consider compensatory mitigation options in the following order: 1) credits from an approved mitigation bank, 2) credits from an approved in-lieu fee program, and 3) permittee-responsible mitigation. Figure 14 suggests that after the 2008 Mitigation Rule went into effect, there has been an increasing reliance on the use of mitigation bank and in-lieu fee program credits to fulfill compensatory requirements and a decreasing reliance on permittee-responsible mitigation. There can be considerable variation between the Corps Divisions in the relative uses of each source of compensatory mitigation, as shown in Tables 7-11.

In addition to the permitting variation across the divisions the availability of third party mitigation also varies. Numbers of banks and bank acreage is most prevalent in the South Atlantic and Mississippi Valley Divisions, divisions also having the greatest wetland proportional areas. Conversely, the division with the fewest banks and least bank acreage also has the least wetland extent, the South Pacific Division. Furthermore, the distribution of banks or bank land area by Corps Division does not appear to correspond much with numbers or proportions of permits requiring compensatory mitigation in Corps Divisions (Tables 7-11). However, the two Divisions with the most banks and bank acreage, totaling 64% and 76%, respectively of the national totals the South Atlantic and Mississippi Valley Divisions, are the two Divisions with the greatest number of IPs issued in 2014 (Tables 11) and are either at or above the national average in Individual Permit and General Permit authorizations requiring compensatory mitigation.

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<sup>5</sup> These value estimates combine acreage and linear foot amounts as well as credit amounts, which prevent an accurate comparison to post Rule values

**Table 7. Summary of compensatory mitigation requirements for authorizations issued, by Corps division for 2010 (data from ORM2)**

Corps Division	Individual permits issued (2010)	Individual permits requiring compensatory mitigation	General permit verifications issued (2010)	General permit verifications requiring compensatory mitigation	Compensatory mitigation source (2010)			
					On-site permittee-responsible mitigation	Off-site permittee-responsible mitigation	Mitigation bank credits	In-lieu fee program credits
Lakes and Rivers	492	101 (21%)	7,078	838 (12%)	798	93	77	48
Mississippi Valley	688	250 (36%)	6,878	697 (10%)	181	116	667	32
North Atlantic	525	64 (12%)	9,568	224 (2%)	180	37	63	31
Northwestern	303	97 (32%)	5,192	704 (14%)	667	76	81	14
Pacific Ocean	130	42 (32%)	683	58 (8%)	55	7	7	37
South Atlantic	1,015	333 (33%)	5,694	633 (11%)	313	117	507	177
South Pacific	256	83 (32%)	2,043	382 (19%)	310	59	73	87
Southwestern	207	56 (27%)	2,180	186 (9%)	122	24	127	0

Note: For this Division level characterization due to the specific data screening process, totals may not be the same as the national level reporting tables and figures reported elsewhere in this report. Compensatory mitigation source was counted once per individual permit or general permit verification, except when two or more mitigation sources were used to provide compensatory mitigation for a particular individual permit or general permit activity (e.g., on-site permittee-responsible mitigation plus mitigation bank credits). Counts of general permit verifications issued were calculated using Department of the Army permit numbers, which may include numerous separate authorizations for linear projects (e.g., utility lines authorized by nationwide permit 12 and linear transportation projects authorized by nationwide permit 14). For linear projects, compensatory mitigation is often consolidated at one or more mitigation sites, instead of one compensatory mitigation site for each crossing of jurisdictional waters and wetlands.

**Table 8. Summary of compensatory mitigation requirements authorizations issued, by Corps division for 2011 (data from ORM2)**

Corps Division	Individual permits issued (2011)	Individual permits requiring compensatory mitigation	General permit verifications issued (2011)	General permit verifications requiring compensatory mitigation	Compensatory mitigation source (2011)			
					On-site permittee-responsible mitigation	Off-site permittee-responsible mitigation	Mitigation bank credits	In-lieu fee program credits
Lakes and Rivers	464	110 (24%)	7,124	270 (4%)	222	95	81	46
Mississippi Valley	667	270 (40%)	6,511	612 (9%)	158	69	685	20
North Atlantic	504	65 (13%)	9,620	232 (2%)	167	53	70	39
Northwestern	315	147 (47%)	4,764	613 (13%)	601	82	98	17
Pacific Ocean	154	68 (44%)	741	87 (12%)	80	14	6	56
South Atlantic	928	323 (35%)	5,847	566 (10%)	251	107	463	181
South Pacific	252	97 (38%)	1,905	368 (19%)	284	68	75	92
Southwestern	269	84 (31%)	2,228	219 (10%)	132	71	174	9

See caption for Table 6 for additional explanation

**Table 9. Summary of compensatory mitigation requirements for authorizations issued, by Corps division for 2012 (data from ORM2).**

Corps Division	Individual permits issued (2012)	Individual permits requiring compensatory mitigation	General permit verifications issued (2012)	General permit verifications requiring compensatory mitigation	Compensatory mitigation source (2012)			
					On-site permittee-responsible mitigation	Off-site permittee-responsible mitigation	Mitigation bank credits	In-lieu fee program credits
Lakes and Rivers	533	113 (21%)	6,618	307 (5%)	226	91	120	52
Mississippi Valley	670	278 (41%)	6,960	754 (11%)	136	68	958	18
North Atlantic	446	69 (15%)	9,899	256 (3%)	143	64	94	62
Northwestern	321	143 (46%)	5,698	482 (8%)	444	69	125	9
Pacific Ocean	144	56 (39%)	720	41 (6%)	22	10	4	66
South Atlantic	1,351	397 (29%)	5,158	676 (13%)	261	104	607	213
South Pacific	244	73 (30%)	1,989	323 (16%)	186	86	72	103
Southwestern	253	62 (25%)	2,107	163 (8%)	112	36	133	3

See caption for Table 6 for additional explanation

**Table 10. Summary of compensatory mitigation requirements for authorizations issued in 2013, by Corps division (data from ORM2)**

Corps Division	Individual permits issued	Individual permits requiring comp. mitigation	General permit verifications issued	General permit verifications requiring compensatory mitigation	Compensatory mitigation source (2013)			
					On-site permittee-responsible mitigation	Off-site permittee-responsible mitigation	Mitigation bank credits	In-lieu fee program credits
Lakes and Rivers	689	125 (18%)	7,421	303 (4%)	231	80	115	76
Mississippi Valley	559	241 (43%)	6,539	742 (11%)	114	46	832	12
North Atlantic	481	71 (15%)	9,242	285 (3%)	175	64	90	64
Northwestern	313	142 (45%)	4,902	374 (8%)	315	85	129	20
Pacific Ocean	144	52 (36%)	653	43 (7%)	17	3	7	70
South Atlantic	1,016	318 (31%)	5,474	735 (13%)	205	59	632	249
South Pacific	214	62 (29%)	1,814	290 (16%)	168	65	84	71
Southwestern	261	71 (27%)	1,865	195 (10%)	105	38	155	1

See caption for Table 6 for additional explanation

**Table 11. Summary of compensatory mitigation requirements for authorizations issued in 2014, by Corps division (data from ORM2)**

Corps Division	Individual permits issued	Individual permits requiring comp. mitigation	General permit verifications issued	General permit verifications requiring compensatory mitigation	Compensatory mitigation source (2014)			
					On-site permittee-responsible mitigation	Off-site permittee-responsible mitigation	Mitigation bank credits	In-lieu fee program credits
Lakes and Rivers	485	113 (23%)	5,996	357 (6%)	229	80	133	99
Mississippi Valley	565	274 (49%)	6,633	554 (8%)	118	33	670	23
North Atlantic	445	83 (19%)	8,373	267 (3%)	130	56	121	69
Northwestern	273	133 (49%)	4,438	336 (8%)	250	62	137	36
Pacific Ocean	102	31 (30%)	427	32 (7%)	14	4	6	43
South Atlantic	875	351 (40%)	5,226	714 (14%)	101	56	744	225
South Pacific	215	50 (23%)	1,679	248 (15%)	154	49	81	28
Southwestern	263	76 (29%)	1,683	123 (7%)	57	44	114	0

See caption for Table 6 for additional explanation

**Table 12. Status and Characterization of Approved Mitigation Banks across Corps Divisions as of 2014**

Corps Division	Number of Active Mitigation Banks	Number of Closed Mitigation Banks	Proportion of Mitigation Bank Sites	Proportion of Wetland and Stream Mitigation Bank Acreage*	Average Mitigation Bank Size (acres)**
Great Lakes and Ohio River	100	31	9%	3%	137
Mississippi Valley	<b>366</b>	<b>219</b>	<b>42%</b>	24%	227
North Atlantic	112	14	9%	4%	177
Northwestern	102	6	8%	2%	<i>107</i>
Pacific Ocean	6	0	<1%	0.2%	218
South Atlantic	290	25	23%	<b>51%</b>	<b>897</b>
South Pacific	43	10	4%	4%	342
Southwestern	67	3	5%	11%	891
<b>National</b>	<b>1,086</b>	<b>308</b>			<b>409</b>

\*Proportion of banks is the Acreage of Banks in a Division divided by the total national bank acreage

\*\* Average mitigation bank size includes aquatic resource areas and upland areas.

Bolded figures indicate the highest values for each parameter

*Italicized* figures indicate the lowest values for each parameter

As illustrated above there is substantial variation in permitting and compensatory mitigation activities by Corps Division. Similar variability can be shown by the distribution of approved mitigation banks and in-lieu fee programs across the country. At the end of 2014, mitigation banks providing wetland credits were concentrated in the South Atlantic, Mississippi Valley, Southwest, Lakes and Rivers Divisions as well as the southern portion of North Atlantic Division (Virginia) and coastal portions of the Northwest and South Pacific Divisions. There were relatively few mitigation banks in the Pacific Ocean Division and the remaining portions of the North Atlantic, Northwestern, and South Pacific Divisions (Figure 21). In some areas, such as portions of the South Atlantic, Mississippi Valley, and North Atlantic Divisions, there are 5 or more mitigation banks serving the same geographic area.

By the end of 2014, approved in-lieu fee programs were found in all 8 Corps Divisions and their associated service areas included all or portions of 25 states. In 5 states (Arizona, Connecticut, Massachusetts, New Hampshire, and Vermont) in-lieu fee programs were the only source of third party compensatory mitigation. In 13 states (Alaska, California, Florida, Kansas, Maine, Montana, North Carolina, North Dakota, New York, Oregon, Washington, West Virginia, and Virginia) in-lieu fee programs provided compensatory mitigation over areas unserved by mitigation banks. In 16 states (Alabama, California, Georgia, Kentucky, Louisiana, Maine, Missouri, Mississippi, Montana, North Carolina, North Dakota, Ohio, Tennessee, Virginia, West Virginia, and Wisconsin) in-lieu fee program service areas overlapped with areas served by mitigation banks, although in some cases in-lieu fee programs provided different types of compensatory mitigation than mitigation banks in the same service areas (stream credits versus wetland credits, emergent wetland versus pine savanna credits). Areas that are not covered by mitigation bank or in-lieu fee program service areas include portions of the North Atlantic, Lakes and Rivers, Northwestern, Southwestern, South Pacific, and Pacific Ocean Divisions (Figure 30). Most of these areas have low extent of wetlands or may not have enough demand (using NLCD percent developed as a proxy) to support third party compensatory mitigation efforts (see Table 6).

## **6.0 RULE IMPLEMENTATION CONCERNS BY MITIGATION BANK AND IN-LIEU FEE PROGRAM SPONSORS**

### **6.1 TIMELY DECISIONS**

Mitigation bank sponsors across the country have indicated that prospectus review, bank instrument development, and credit releases have not adhered to timeframes specified in the 2008 Mitigation Rule for processing these kinds of proposals and requests. Many sponsors contend that issues are discussed repeatedly by the interagency review team and that frequently the Corps, as the team chair, is reticent to make a decision. The National Mitigation Banking Association has stated that it prefers a decision on the suitability of a prospectus early in the review process, even if that decision is negative because it provides the sponsor an opportunity to stop investing additional resources into planning and design of a mitigation bank project that is unlikely to be approved.

The issue of timely review and approval of mitigation bank proposals predates the 2008 Mitigation Rule. On a national level, the Corps and EPA are seeking to improve the review process through ongoing training efforts on the 2008 Mitigation Rule, especially the annual interagency review team training course sponsored by The Conservation Fund. That training, and other training conducted by the agencies, includes an emphasis on the requirements for all forms of compensatory mitigation, review and



approval processes for compensatory mitigation proposals, and consideration of the mitigation hierarchy. The process for review and approval of mitigation bank proposals is also addressed at the district level through development of clearly stated roles and responsibilities for interagency review team members; development of standard operating procedures governing compensatory mitigation; issuance of mitigation banking and in-lieu fee program guidelines including the definition of service areas, site selection, financial assurances, site protection, credit release, and long-term management; development of standardized forms and checklists that facilitate development and review of mitigation bank instruments including templates for bank instruments, prospectuses, financial assurances, long-term management plans, and site protection documents.

It is also important to note that the time frames for processing of mitigation bank proposals can be extended for a number of reasons: completion of endangered species consultation; historic resource coordination; government-to-government consultation with Tribes; failure of the sponsor to provide required information for a decision; and the lack of necessary information for a decision (see 33 CFR 332.8(f)/40 CFR 230.98(f)). The Corps will not approve a mitigation banking instrument before it has completed any consultations required by law or regulation, or before it has the information it believes is necessary to make a sound decision on the proposed mitigation bank.

## **6.2 USE OF MITIGATION BANKS**

A number of mitigation bank sponsors have indicated that while bank credits are regularly used as compensatory mitigation for small losses, many districts are reluctant to approve the use of mitigation bank credits to offset large losses of jurisdictional wetlands and waters.

These concerns also predate the 2008 Mitigation Rule. In reviewing a mitigation proposal, the Corps is tasked with determining whether the proposed compensatory mitigation will be effective in offsetting the permitted losses. In some cases, mitigation bank credits by themselves may not be sufficient in replacing the suite of lost aquatic resource functions, which might occur for a permit authorizing large losses of aquatic resources, so that an effective mitigation proposal may need to include both onsite permittee-responsible mitigation and offsite compensation through bank or in-lieu fee program credits.

Another concern that has arisen recently is where approved ESA Habitat Conservation Plans and district decisions on associated regional general permits have effectively removed certain localities from mitigation bank service areas. In some cases, districts have addressed this by allowing expansion of the mitigation bank service area into another adjoining area, by approving an instrument modification under the 2008 Mitigation Rule.

### **6.3 EQUIVALENT STANDARDS**

Some mitigation bank sponsors have expressed their views that many districts have not held permittee-responsible mitigation and in-lieu fee programs to the equivalent standards required of mitigation banks. They believe that this has resulted in permittee-responsible mitigation and in-lieu fee programs as being presented as less expensive alternatives to mitigation banks.

On a national level, the Corps and EPA are seeking to ensure that all forms of compensatory mitigation are held to equivalent standards through ongoing training of staff on the requirements for mitigation plans (monitoring, performance standards, site protection, long-term management, etc.) as specified in the 2008 Mitigation Rule.

The mitigation rule establishes 12 fundamental elements that all mitigation plans must have or address (33 CFR 332.4(c)/40 CFR 230.94(c) (see also Section 2.1.3). These 12 elements apply to mitigation plans for permittee-responsible mitigation, in-lieu fee projects, and mitigation banks. Agency staff have been instructed to critically review all mitigation plans to ensure that those plans include all applicable elements, when those elements are necessary to ensure the ecological success and sustainability of compensatory mitigation projects. Agency staff should also inform the parties responsible for compensatory mitigation projects of how those 12 elements are to be implemented, so that the responsible parties can understand the associated costs and commitments necessary for completing and maintaining compensatory mitigation projects. These efforts are expected to help permittees make informed decisions on the relative costs and benefits of the various compensatory mitigation options. This may result in more permittees opting to use mitigation bank credits or in-lieu fee program credits because they can transfer the responsibility for fulfilling compensatory mitigation requirements to a third party, instead of taking on the substantial time and resource commitments associated with permittee-responsible mitigation. Data from 2010 to 2014 suggest that permit applications are increasingly relying on mitigation banks and in-lieu fee programs to satisfy their compensatory mitigation requirements (Figure 15).

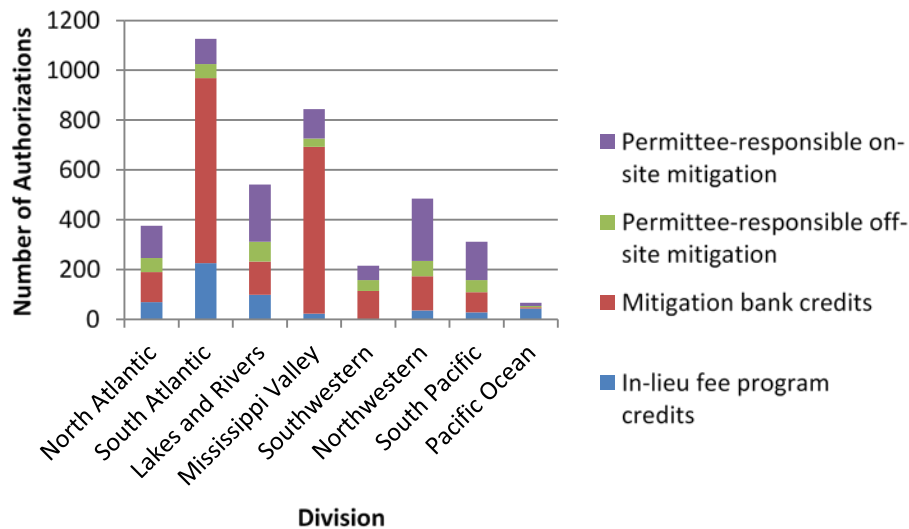
### **6.4 MITIGATION PREFERENCE HIERARCHY**

A commonly voiced concern about implementation of the 2008 Mitigation Rule is implementation of the mitigation preference hierarchy in the rule (33 CFR 332.3(b)/40 CFR 230.93(b)). Some stakeholders believe it is not being followed, with permittee-responsible mitigation or in-lieu fee program credits being selected preferentially over mitigation bank credits.

The mitigation hierarchy in the 2008 rule is intended to manage risk and uncertainty in compensatory mitigation, by establishing a preference for compensatory mitigation options that are already being implemented or have a greater likelihood of being

successfully implemented. The mitigation hierarchy encourages use of released credits over advance credits or permittee-responsible mitigation. The regulation provides flexibility for Corps districts and is best considered an evaluation framework for compensatory mitigation options rather than a rigid sequencing requirement. Additionally, the rule identifies examples of when in-lieu fee program credits or permittee-responsible mitigation might be equivalent or preferable to mitigation bank credits.

In reviewing a compensatory mitigation proposal, the Corps is responsible for determining whether that proposal is appropriate, capable of offsetting lost aquatic resource functions, and is practicable. Credit availability is another consideration that tends to get overlooked by those who allege that the Corps is not following the mitigation hierarchy. Figure 37 shows the compensatory mitigation sources used for authorizations issued in 2014 for each of the eight Corps divisions. When examining Figure 21 (the locations of approved mitigation banks in the United States) and Figure 37 together, the two divisions where the most mitigation banking credits are produced (i.e., Mississippi Valley Division and South Atlantic Division) are also the two divisions where mitigation bank credits are the predominant source of compensatory mitigation for Department of the Army permits. In other words, when mitigation bank credits of the appropriate resource type are available at the time a permit decision is being made, they are being used to fulfill compensatory mitigation requirements of Department of the Army permits. In areas where there are relatively fewer mitigation bank or in-lieu fee program credits available (e.g., North Atlantic, Northwestern, Lakes and Rivers, and South Pacific), a greater proportion of the required compensatory mitigation is provided through permittee-responsible mitigation.



Note: some authorizations may have required compensatory mitigation from more than one source (e.g., a combination of on-site permittee-responsible mitigation and mitigation bank credits)

**Figure 37. Compensatory mitigation sources for authorizations issued in 2014, by Corps division**

As discussed in Section 5.2.2, Figure 14 suggests that since the 2008 Mitigation Rule went into effect, there has been an increasing use of mitigation banks and in-lieu fee programs to address compensatory requirements. This may also be due to the fact that the number of approved mitigation banks has increased after the effective date of the 2008 Mitigation Rule (see Figures 24 and 25). The numbers of available wetland and stream credits (area and length) have increased since the effective date of the 2008 rule (see Figures 35 and 36).

## **6.5 COMPENSATION PLANNING FRAMEWORK**

The ASWM and the ELI have each queried current and prospective in-lieu fee program sponsors to identify their concerns with implementation of the 2008 Mitigation Rule. One of the key concerns was the difficulty in developing a compensation planning framework, which is the planning tool used for strategic selection of compensatory mitigation projects by in-lieu fee program sponsors. This framework must include the 10 elements identified in the 2008 Mitigation Rule at 33 CFR 332.8(c)/ 40 CFR 230.98(c).

While development of compensation planning frameworks for strategic in-lieu fee project selection can demand considerable efforts, it was intended to ensure that projects selected and implemented by in-lieu fee programs actually help address aquatic resource needs in the watersheds in which they are located. A compensation planning framework is essentially a watershed plan design to support aquatic resource restoration efforts.

There have been a variety of approaches used in the development of compensation planning frameworks. Some like that of the Oregon Department of State Lands utilized existing statewide conservation planning tools and strategies. Others like Maine's Natural Resource Conservation Program drew heavily upon the state's Wildlife Action Plan. The Virginia Aquatic Resource Trust Fund utilized NatureServe data, The Nature Conservancy's Ecological Planning approach, and review of information provided by federal, state, local, and non-profit stakeholders. Both the Corps and EPA worked closely with ASWM and ELI in the development of their webinar series on in-lieu fee programs to point out the range of approaches that can be used to develop a compensation planning framework for an in-lieu fee program instrument. The Corps ensures that approved in-lieu fee program instruments and their associated compensation planning frameworks are made available to the public through RIBITS.

## **6.6 ESTABLISHMENT OF ADVANCE CREDITS**

Determining the appropriate number of advance credits for a new in-lieu fee program instrument is another challenge under the 2008 Mitigation Rule. Some in-lieu fee programs, like the Coastal Mississippi Land Trust, chose not to pursue advance credits.

For that program, credits are only available for sale or transfer to permittees when projects produce released credits through the achievement of performance milestones. Other programs, such as Vermont's in-lieu fee program, have based the number of advance credits on some percentage of permitted impacts or compensatory mitigation required for some previous period of time. Another approach, used by the North Carolina Ecosystem Enhancement Program, considered projected compensatory mitigation needs by the state Department of Transportation in its Transportation Improvement Plan as well as other compensatory mitigation demands averaged over 5-7 years in a given watershed.

As these examples illustrate, there are numerous approaches that can be used for determining the appropriate amount of advanced credits. In determining the appropriate amount of advanced credits the Corps and the interagency review team must consider the compensation planning framework, the sponsor's past performance, the projected financing necessary, and other information at the district engineer's discretion (see 33 CFR 332.8(n)/40 CFR 230.98(n)). A variety of approaches to advanced credits are presented to attendees of the national interagency review team training courses held annually at the National Conservation Training Center. These examples were also shared with in-lieu fee program sponsors in the ASWM and ELI webinar series as well as at the EPA Region 9 in-lieu fee program sponsor workshop.

## **6.7 OTHER IN-LIEU FEE PROGRAM SPONSORS CONCERNS**

In-lieu fee program sponsors have also found challenging the provisions of the 2008 Mitigation Rule addressing in-lieu fee program accounting, establishing fee schedules, incorporating new in-lieu fee projects into programs, and program accounting requirements. The 2008 Mitigation Rule established significant changes for in-lieu fee programs and the Corps and EPA have strived to assist program sponsors through active participation in ASWM and ELI outreach efforts via webinars, and through local and national training courses. Several districts have developed template in-lieu fee program instruments for use by potential in-lieu fee program sponsors; see Appendix B for additional information.

## **7.0 FUTURE ACTIONS**

### **7.1 DATA MANAGEMENT**

Additional improvements to ORM2 and RIBITS are planned or are underway to better enable tracking of compensatory mitigation performance and to ensure that program operations are more transparent.

Mitigation modules have been implemented in ORM2 and compensatory mitigation compliance modules are planned. The mitigation modules enable ORM2 to more

accurately track approval and implementation of third party compensatory mitigation, including modification of mitigation banking instruments and in-lieu fee program instruments. The compliance module will enable ORM2 to track compensatory mitigation performed and monitoring/compliance efforts, not just the mitigation required for permits.

The Corps is required by the Office of Management and Budget to evaluate its performance at a national level using information obtained from ORM2. The Corps Regulatory Program's performance measures that evaluate compliance inspections of approved mitigation bank and in-lieu fee programs has been modified to obtain mitigation bank and in-lieu fee program information directly from RIBITS to ensure use of the best available information.

In December 2014 RIBITS was moved from a research and development server at the Cold Regions Research and Engineering Laboratory to a production server supported by the Corps' Information Technology group. This move will ensure regular system maintenance and facilitate public access.

In the longer term, RIBITS will provide ORM2 with data on in-lieu fee program advance credits, released credits (credits generated through successful in-lieu fee project implementation), as well as geospatial data. This will provide more accurate information on credit availability and bank and in-lieu fee project locations to Corps project managers. We anticipate more compensatory mitigation data from ORM2 will be made available through the Corps HQ web-site.

Improved sharing of RIBITS data with other agencies is anticipated. That data sharing may be by XML file transfer or through web services. For example, the FWS is seeking resources to enable an exchange of RIBITS data with its Information, Planning, and Conservation (IPaC) decision support system. EPA has also expressed interest in data sharing with its workflow management system Data on Aquatic Resources Tracking for Effective Regulation (DARTER).

RIBITS is currently being used to track the Corps mitigation bank and in-lieu fee program compensatory mitigation, as well as conservation banking activities by the FWS and NOAA Fisheries. It could also be used as a platform for tracking other forms of offsets including compensation for impacts to at-risk species, and water quality trading managed by state governments.

The Corps and EPA continue to work to improve RIBITS data quality. The Corps will work to increase in-lieu fee project information in RIBITS and to make all mitigation bank and in-lieu fee program records (e.g., approved, sold-out, suspended, etc.) visible to users. The Corps has an interagency agreement with the Federal Highway Administration that may facilitate efforts to secure and load state Department of

Transportation legacy banking data in RIBITS. This would provide users with better information on compensatory mitigation availability and future demands for compensatory mitigation credits and other types of offsets. Incorporating data from state programs into RIBITS, including the states that have assumed the CWA Section 404 permit program (i.e., Michigan and New Jersey) would provide more complete information on the availability of third party compensatory mitigation to RIBITS users, particularly permit applicants and sponsors. We continue to strive for more timely entry of credit transaction data in RIBITS mitigation bank and in-lieu fee program ledgers. In many districts more timely data entry can be achieved by allowing bank and in-lieu fee program sponsors limited permissions to upload credit transaction data and through the development of new tools for batch-loading ledger data into RIBITS. We are also striving to make more project-related files such as mitigation plans and monitoring reports available to RIBITS users.

Standardized and regularly scheduled training in use and administration of RIBITS will encourage more active use of the system. The Corps has developed an online training modules in the use of RIBITS and instructional modules covering the creation and administration of mitigation bank and in-lieu fee program records.

The Corps is developing a set of standardized operating procedures for RIBITS that will establish minimum standards for bank records, ledgers, documents, and updates and encourage more use of this system.

## **7.2 POLICY AND PRACTICES**

Districts will continue to work with other members of interagency review teams to develop templates for compensatory mitigation projects, including mitigation plans, monitoring reports, financial assurances, long-term management plans, as well as mitigation bank and in-lieu fee program related templates. Templates facilitate development, review, and approval of instruments and mitigation projects. More districts will develop tools for assessment of aquatic resource impacts and compensatory mitigation, including ecological performance of compensatory mitigation projects. More district-specific guidelines on aspects of compensatory mitigation including definitions of service areas and strategic selection of compensatory mitigation projects in a watershed context are expected in the future.

The Corps and EPA will continue their efforts to improve outreach to the public. Opportunities include national and local conferences, agency web sites, publications, and social media outlets.

### **7.3 TRAINING**

We expect to continue the training of Corps and EPA staff in conventional training courses and workshops as discussed above. However, the continuing decline in training and travel resources present a challenge. More of a focus will be placed on bringing the instructors to the students in regional, district, or state-oriented training courses and to the expanded use of webinars and online training efforts. Development of collaborative training courses that include other related agency programs like FWS conservation banking or state water quality trading efforts would be one way to optimize limited agency resources. The Corps is also developing an “Advanced topics in compensatory mitigation” webinar series to provide more in-depth training for regulators. NOAA, FWS, the National Conservation Training Center, and others are developing a restoration training resources registry that would provide training materials, courses of study, and identify potential instructors as a way to facilitate development of more training efforts.

### **8.0 CONCLUSION**

Substantial progress has been made in implementation of the 2008 Mitigation Rule. Since the 2008 Mitigation Rule was issued:

- Extensive and systematic training of and outreach on the 2008 Mitigation Rule has been completed.
- Regional implementing guidelines, including templates, have been developed by numerous Corps districts to facilitate effective implementation of the 2008 Mitigation Rule.
- Advances in Corps Regulatory Program data collection and reporting have been made through investments in ORM2 and RIBITS. Expanded use of RIBITS has enabled extensive data sharing of mitigation banks and in-lieu fee programs with the public.
- There has been continued increases in the numbers of approved mitigation banks both in areas where mitigation banking was prevalent prior to the 2008 Mitigation Rule and in areas previously unserved by mitigation banks.
- Many new in-lieu fee programs have been approved to provide compensatory mitigation in many previously unserved areas, including Connecticut, Montana, and Vermont and portions of California, Oregon, Washington, Mississippi, and New York.



- As the number of approved mitigation banks and in-lieu fee programs has increased and more wetland and stream credits produced by those mitigation providers, there has been an increasing reliance on the use of mitigation banks and in-lieu fee programs to fulfill the compensatory requirements of individual permits and general permits. There has been a concurrent decrease in reliance on permittee-responsible mitigation, especially on-site permittee-responsible mitigation.
- Data show that use of mitigation banks and in-lieu fee programs can reduce permit processing times, when compared to the processing times for permits where compensatory mitigation requirements are fulfilled through permittee-responsible mitigation.
- The number of mitigation banks providing stream mitigation credits has more than doubled with a majority of the banks located in the southeastern and south central United States.
- The number of mitigation banks providing wetland credits has increased by 52%, however wetland banks are most scarce in the Great Plains, Southwest, Rockies, and Alaska, with none in Hawaii.
- Most of the operational mitigation banks are private sector commercial banks.
- The growth in numbers of mitigation banks along with re-authorized in-lieu fee programs has resulted in a marked increase in the proportion of the country served by third party compensatory mitigation.
- There has been a substantial increase in the amount of wetland and stream mitigation credits available at mitigation banks and in-lieu fee programs for use as compensatory mitigation.

Moving forward, additional steps are necessary to continue effective implementation of the 2008 Mitigation Rule including:

- Continued investment in training and outreach including national Interagency Review Team training, state/district-based Interagency Review Team training, and outreach to mitigation bank and in-lieu fee program sponsors.
- Continued investment in ORM2 and RIBITS to improve and expand data collection and tracking for authorized impacts and required compensatory mitigation.

- Continued development of additional implementing guidelines, by Corps districts including ecological performance standards guidelines, Standard Operating Procedures, credit/debit determination and additional templates for mitigation bank and in-lieu fee program prospectuses and instruments.
- Encourage evaluations of the ecological performance of compensation sites approved under the 2008 Mitigation Rule to determine if it is resulting in improved ecological outcomes.

## **APPENDIX A: MITIGATION TYPES AND METHODS**

### **THREE MECHANISMS OF COMPENSATORY MITIGATION:**

#### **1. MITIGATION BANKS**

A mitigation bank is a wetland, stream or other aquatic resource area that has been restored, created, enhanced, or, in certain circumstances, preserved for the purpose of providing compensatory mitigation for impacts authorized by [Corps] permits. The value of a bank is determined by quantifying the aquatic resource functions restored or created in terms of “credits.” Permittees, upon approval of the permitting agency, can purchase these credits to meet their requirements for compensatory mitigation. The operation and use of a mitigation bank are governed by a mitigation banking instrument.

#### **2. IN-LIEU FEE MITIGATION**

In-lieu fee mitigation occurs when a permittee provides funds to an in-lieu-fee sponsor, which must be a public agency or non-profit conservation organization, to satisfy compensatory mitigation requirements for a Corps permit. Typically, the in-lieu-fee sponsor collects funds from multiple permittees in order to pool the financial resources necessary to build and maintain a compensatory mitigation project. The in-lieu-fee sponsor is responsible for the success of the compensatory mitigation project. Like mitigation banking, mitigation occurs off-site, but unlike mitigation banking, mitigation typically occurs after the permitted impacts. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.

#### **3. PERMITTEE-RESPONSIBLE MITIGATION**

A permit applicant (or an authorized agent or contractor) may implement a compensatory project at or near the impact site (i.e., on-site mitigation) or at another location usually within the same watershed as the permitted impact (i.e., off-site mitigation). The permittee retains responsibility for the implementation and success of the compensatory mitigation project.

### **FOUR METHODS OF COMPENSATORY MITIGATION:**

#### **1. RESTORATION**

The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource.

For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: reestablishment and rehabilitation.

### **1.1 RE-ESTABLISHMENT**

The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

### **1.2 REHABILITATION**

The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

## **2. ENHANCEMENT**

The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

## **3. ESTABLISHMENT (CREATION)**

The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.

## **4. PRESERVATION**

The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

## **12 FUNDAMENTAL ELEMENTS OF A MITIGATION PLAN**

### **1. OBJECTIVES**

A description of the resource type and amount that will be provided, the method of compensation (restoration, establishment, preservation etc.), and how the anticipated functions of mitigation project will address watershed needs.

### **2. SITE SELECTION**

A description of the factors considered during the site selection process. This should include consideration of watershed needs and the practicability of establishing an ecologically self-sustaining project site.

### **3. SITE PROTECTION**

A description of the legal arrangements and documentation of site control or ownership, and demonstration of arrangements for the long-term protection of the mitigation project site.

### **4. BASELINE INFORMATION**

A description of the pre-project ecological characteristics of the proposed mitigation project site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, and a map showing the locations of the impact and mitigation project sites.

### **5. DETERMINATION OF CREDITS**

A description of the number of credits to be provided including a brief explanation of the rationale for this determination.

### **6. MITIGATION WORK PLAN**

Detailed written specifications and work descriptions for the mitigation project, including: construction methods, timing, and sequence; source(s) of water; methods for establishing the desired plant community; plans to control invasive plant species; proposed grading plan; soil management; and erosion control measures.

## **7. MAINTENANCE PLAN**

A description and schedule of maintenance requirements to ensure the continued viability of the mitigation project site once initial construction is completed.

## **8. PERFORMANCE STANDARDS**

Ecologically-based standards that will be used to determine whether the mitigation project is achieving its objectives. These are often tailored to the region or even the individual site.

## **9. MONITORING REQUIREMENTS**

A description of parameters monitored to determine whether the mitigation project is on track to meet performance standards, and if adaptive management is needed. A schedule for monitoring and reporting monitoring results must be included.

## **10. LONG-TERM MANAGEMENT PLAN**

A description of how the mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the site, including long-term financing mechanisms and identification of the party responsible for long-term management.

## **11. ADAPTIVE MANAGEMENT PLAN**

A management strategy to address unforeseen changes in site conditions or other components of the mitigation project.

## **12. FINANCIAL ASSURANCES**

A description of financial assurances that will be provided, and how they are sufficient to ensure a high level of confidence that work at the mitigation project will be successfully completed in accordance with its performance standards.

## APPENDIX B: DISTRICT MITIGATION SUMMARY

As of October 2014

Table 13. Publically available mitigation documents by district and division

Division/District	Document Title	On RIBITS	On public website
<b>Great Lakes and Ohio River</b>			
Buffalo	Guidelines for Wetland Mitigation Banking in Ohio March 2011		Y
	Frequently Asked Questions on the Mitigation Rule	Y	
Chicago	Interagency Coordination Agreement on Mitigation Banking Within the Regulatory boundaries of Chicago District, Corps of Engineers June 2008	Y	Y
	Chicago District Permittee Responsible Mitigation Requirements (Revised October 2009)	Y	Y
Detroit	Interagency Coordination Agreement on Wetland Mitigation Banking within the State Of Indiana Modified: April 24, 2002		Y

	Detroit District U.S. Army Corps of Engineers Mitigation Guidelines and Requirements December 2008		Y
Huntington	Agreement Concerning In-lieu Mitigation Fees between West Virginia Department of Environmental Protection and U.S. Army Corps of Engineers		Y
	Guidance on the West Virginia Interagency Review Team Initiatives Administered in Accordance with the 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources within the U.S. Army Corps of Engineers, Huntington and Pittsburgh Districts		Y
	Guidance on the West Virginia Interagency Review Team Initiatives Administered in Accordance with the 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources within the U.S. Army Corps of Engineers, Huntington and Pittsburgh Districts		Y
	West Virginia Stream and Wetland Valuation Metric v2.0 (February 2011)	Y	Y
	Guidelines for Wetland Mitigation Banking in Ohio March 2011		Y



Louisville	The New Mitigation Rule: 33 CFR 332 Louisville District Highlights & Frequently Asked Questions For Use in Evaluating, Documenting, and Compensating for Impacts to Waters of the US Section 404 of the Clean Water Act and Sections 9 and 10 of the Rivers and Harbors Act of 1899 Effective June 9, 2008	Y	Y
Nashville	none		
Pittsburgh	West Virginia Stream and Wetland Valuation Metric v2.0 (February 2011)		Y
<b>Mississippi Valley</b>			
Memphis	State of Missouri Stream Mitigation Method Last Revised April 2013		Y
New Orleans	Corps of Engineers, New Orleans District Modified Charleston Method MVN MCM		Y
	Compensatory Mitigation Standard Operating Procedures	Y	Y

	MCM Workbook October 2013	Y	
	MCM Guidebook 2013	Y	
	Prospectus Checklist	Y	
	Prospectus template	Y	
	Mitigation Banking Instrument Template	Y	
	Mitigation Work plan (resource dependent)	Y	
	Conservation Servitude Template	Y	
	Escrow Agreement - construction & Establishment	Y	
	Escrow Agreement - long-Term	Y	
Rock Island	Illinois Stream Mitigation Guidance Stream Mitigation Method for Processing Section 404 Clean Water Act Permit Applications in the State of Illinois		Y
	Illinois Stream Mitigation Method		Y
	Iowa Mitigation Banking <i>Last revised: February 2011</i>	Y	Y
	State of Missouri Stream Mitigation Method Last Revised April 2013		Y

	Department of the Army – Rock Island District Standard Mitigation Reporting Form		Y
	Department of the Army – Rock Island District Standard Mitigation Reporting Form		Y
St. Louis	Illinois Stream Mitigation Guidance Stream Mitigation Method for Processing Section 404 Clean Water Act Permit Applications in the State of Illinois		Y
	Illinois Stream Mitigation Method		Y
	Public Notice Announcing the Current St. Louis District Mitigation and Monitoring Guidelines		Y
	Department of the Army Corps of Engineers State of Missouri Stream Mitigation Method Updated February 2007		Y
	State of Missouri Stream Mitigation Method Last Revised April 2013		Y
St. Paul	Guidance regarding use of Wetland Preservation For Mitigation Banking in Minnesota		Y
	MN Wetland Mitigation Guidelines (009)	Y	

	Typical performance standards for mitigation bank sites	Y	
	MN Performance Bond Template	Y	
	MN Perpetual Conservation Easement Template	Y	
	MN Mitigation Banking Instrument Template	Y	
	St. Paul District's MN Mitigation Policy	Y	
	Guidelines for Wetland Mitigation in WI	Y	
	WI Conservation Easement Template	Y	
	WI Mitigation Banking Instrument Template	Y	
	WisDOT banking and mitigation guidelines	Y	
	MN Routine Assessment Method	Y	
Vicksburg	Compensatory Mitigation Guidelines Working Draft, Subject to Change Last Revised October 7, 2010 Guidelines for Preparing a Compensatory Mitigation Plan		Y
<b>North Atlantic</b>			

Baltimore	Typical Compensatory Mitigation Cost Estimate Components		Y
	(Draft) Declaration of Restrictive Covenants		Y
	(Draft) Declaration of Restrictive Covenants		Y
	Information for a Complete Mitigation Bank Prospectus		Y
	Requirements for Mitigation Bank & In-lieu Fee Program Instruments		Y
	Mitigation Cost Estimate Components for Determining the Amount of a Financial Assurance		Y
New England	Success Of Corps-Required Wetland Mitigation in New England		Y
New York	Public Notice Announcing the Compensatory Mitigation Guidelines and Mitigation Checklist for Review of Mitigation Plans for the U.S. Army Corps of Engineers, New York District		Y
Norfolk	Unified Stream Methodology Frequently Asked Questions and Answers May 13, 2008		Y

	Unified Stream Methodology for use in Virginia U.S. Army Corps of Engineers, Norfolk District Virginia Department of Environmental Quality January 2007		Y
	Stream Assessment Form 1 Unified Stream Methodology for use in Virginia For use in wadeable channels classified as intermittent or perennial		Y
	Corps-DEQ Mitigation Guidelines	Y	
	Norfolk Mitigation Regulations FAQs	Y	
	Norfolk-VA USFWS MOA	Y	
	Norfolk- VA DEQ Public Notice on Voluntary Restoration as Mitigation	Y	
	VA Offsite Mitigation Location Guidelines	Y	
	Checklist for VA Offsite Mitigation Location Guidelines	Y	
	2009- Corps & DEQ Mitigation Do's & Don'ts	Y	
	Norfolk District Prospectus Checklist	Y	
	Final MBI Template (2010)	Y	
	District SOP for MBI Development & Approval	Y	
	Checklist for Initial Release of Credits	Y	

Philadelphia	Public Notice		Y
	Mitigation and Monitoring Guidelines Philadelphia District Regulatory Program U.S. Army Corps of Engineers November 2004		Y
	Mitigation QA		Y
<b>Northwestern</b>			
Kansas City	Solicitation for Entities Available to hold Conservation Easements on Compensatory Mitigation Lands		Y
	Checklist for review of Conservation Easements and Restrictive Covenants		Y
	Conservation Easement Holder List December 4, 2012		Y
	In-lieu Fee Program Instrument Outline For Proposed In-lieu Fee Programs in the States of Kansas and Missouri		Y
	Mitigation Banking Instrument Outline For Proposed Mitigation Banks Within the State of Kansas (April 2013)		Y
	Riparian Buffer Creation, Enhancement, Restoration and Preservation Worksheet		Y

	Update of Kansas Stream Mitigation Guidance (KSMG)		Y
	Department of the Army Kansas City District, Corps of Engineers Kansas City District Regulatory Office Kansas Stream Mitigation Guidance (SMG) – Version 2 – 25 June 2010 ( <i>Version 1, dated 30 October 2008, is obsolete</i> )		Y
	Mitigation Banking Instrument Outline For Proposed Mitigation Banks Within the State of Missouri (April 2013)		Y
	(Draft) Conservation Easement		Y
	(Draft) Declaration of Restrictive Covenants		Y
	Department of the Army Corps of Engineers State of Missouri Stream Mitigation Method Updated February 2007	Y	Y
	State of Missouri Stream Mitigation Method Last Revised April 2013		Y
	Missouri Stream Mitigation Method		Y
	Implementation of the Updated Missouri Stream Mitigation Method (MSMM)		Y



	Compensatory Mitigation Plan Requirements for Permittee Responsible Mitigation Projects Kansas City District, Corps of Engineers January 2010		Y
	This Notice Announces the Release of the Mitigation Banking Instrument Outline, the In-lieu Fee Mitigation Program Instrument Outline, and the Permittee-Responsible Mitigation Plan Outline for the State of Kansas	Y	Y
	This Notice Announces the Release of the Mitigation Banking Instrument Outline, the In-lieu Fee Mitigation Program Instrument Outline, and the Permittee-Responsible Mitigation Plan Outline for the State of Missouri	Y	Y
Omaha	The U.S. Army Corps of Engineers' Guidance for Compensatory Mitigation and Mitigation Banking in the Omaha District		Y
	Appendix A: Definitions:		Y
	Appendix B - Mitigation Checklist and Supplement		Y
	Appendix C - IWI maps (watershed)		Y
	Appendix D - Chronology of Mitigation Banking Planning and Design		Y

	Appendix E - Outline of Prospectus		Y
	Appendix F - Outline of Instrument	Y	Y
	Appendix G - Outline of Monitoring Report		Y
	Appendix H - Example of Mitigation Bank Agreement		Y
	Appendix I1: Conservation Easement for Mitigation Banks - template	Y	Y
	Appendix I2: Deed Restriction - template		Y
	J - Floristic Quality Index		Y
Portland	Portland District requires long-term site protection on compensatory mitigation projects in accordance with the Federal Compensatory Mitigation Rule for Losses of Aquatic Resources (33 CFR 332.7(a)).	Y	Y
	U.S. Army Corps of Engineers (USACE) Portland District Mitigation Plan Template		Y
Seattle	Wetland Mitigation in Washington State <i>Part 1: Agency Policies and Guidance</i>		Y

	Wetland Mitigation in Washington State <i>Part 2: Developing Mitigation Plans</i>		Y
	Selecting Wetland Mitigation Sites Using a Watershed Approach		Y
	Interagency Regulatory Guide Advance Permittee-Responsible Mitigation		Y
	Interagency Review Team for Washington State Guidance Paper Using Credits from In-lieu Fee Programs: Guidance to Applicants on Submittal Contents for In-lieu Fee Use Plans		Y
	In-lieu Fee Program Prospectus Template		Y
	Interagency Review Team for Washington State Guidance Paper Using Credits from Wetland Mitigation Banks: Guidance to Applicants on Submittal Contents for Bank Use Plans		Y
	Interagency Review Team for Washington State Guidance Paper Using Credits from Wetland Mitigation Banks: Guidance to Applicants on Submittal Contents for Bank Use Plans		Y
	Mitigation Bank Prospectus Submittal Procedures	Y	
	Mitigation Bank Instrument Submittal Procedures	Y	
	In-lieu Fee Program Prospectus Template	Y	

	Credit Guide for Wetland Mitigation Banks	Y	
	Template Standby Trust Agreement	Y	
	Long-Term Management & Maintenance Escrow Agreement Template	Y	
Walla Walla	none		
<b>Pacific Ocean</b>			
Alaska	Mitigation Team Guidance on Compensatory Mitigation	Y	Y
	Alaska Mitigation Brochure	Y	
	Guidelines for Applicant Mitigation statements	Y	
	Rapid Assessment Forms Slope-Flat Wetlands Cook Inlet Ecoregion	Y	
	Rapid Assessment Forms Riverine Wetlands Cook Inlet Ecoregion	Y	
Hawaii	none		

<b>South Atlantic</b>			
Charleston	Compensatory Mitigation Guidelines Working Draft, Subject to Change Last Revised October 7, 2010 Guidelines for Preparing a Compensatory Mitigation Plan		Y
	Charleston Mitigation Plan Checklist	Y	
	Prospectus		Y
	Working Draft, Subject to Change Last Updated January 6, 2009 Mitigation Banking Instrument		Y
	Procedures for Mitigation Bank Establishment in SC	Y	
	Charleston District Conservation Easement Model of September 2010	Y	Y
	Charleston District Restrictive Covenant Model of September 2010	Y	Y
	Mitigation Plan Template Working Draft, Subject to Change Last Revised October 7, 2010 Permittee-Responsible Mitigation Plan Template	Y	Y
	Numerous wetland/stream worksheets		
Jacksonville	Worksheets Calculating Mitigation Version 4.1		Y

	Calculating Mitigation Version 4.0		Y
Mobile	Department of the Army Mobile District Corps of Engineers Compensatory Stream Mitigation Standard Operating Procedures and Guidelines	Y	Y
	Department of the Army Mobile District Corps of Engineers Compensatory Stream Mitigation Standard Operating Procedures and Guidelines	Y	Y
	Bayhead Drain Habitat	Y	Y
	Bottomland Hardwoods	Y	Y
	Pine Savannah Field Sampling Diagram	Y	Y
	Modified Wetland Rapid Assessment Procedure for Pine Savanna Wetlands	Y	Y
	Mitigation Performance Standards for Wet Pine Flats Alabama-Mississippi Mitigation Banking Review Team May 12, 2003	Y	Y
	Technical Publication Reg -001 Wetland Rapid Assessment Procedure (Wrap)		Y
	Conservation Easement Template	Y	
	Initial Bank/ In-lieu Fee Review Checklist	Y	

	2013 Draft Mitigation Bank Instrument Template	Y	
Savannah	Amendments to the Declaration of Covenants and Restrictions Department of the Army Corps of Engineers, Savannah District 7 Jan 2004	Y	Y
	U.S. Army Corps of Engineers, Savannah District Regulatory Program Standards for Qualified Conservation Easements	Y	Y
	Mitigation Bank Consistency Review within the Savannah District, Regulatory Division		Y
	Savannah District, US Army Corps Of Engineers, Regulatory Guidelines to Evaluate Proposed Mitigation Bank Credit Purchases in the State of Georgia	Y	Y
	Savannah District, US Army Corps Of Engineers, Draft Guidelines to Establish and Operate Mitigation Banks in Georgia	Y	Y
	Department of the Army Savannah District, Corps of Engineers PO Box 889 Savannah, Georgia 31402-0889 Standard Operating Procedure Compensatory Mitigation Wetlands, Openwater & Streams	Y	Y
	Compensatory Stream Mitigation Definitions of Factors		Y

	Compensatory Stream Mitigation Worksheets		Y
	Wetlands and Open Waters Compensatory Mitigation Definitions of Factors		Y
	Wetlands and Open Waters Mitigation Worksheets		Y
	Model Declaration of Conservation Covenants and Restrictions updated December 2009	Y	Y
	Model Declaration of Conservation Covenants and Restrictions updated December 2009	Y	Y
Wilmington	Model Conservation Easement	Y	Y
	Model Declaration of Restrictions	Y	Y
	Wilmington District Process for Preservation of Mitigation Property November 25, 2003	Y	Y
	PN Rescinding Dam Removal Guidelines	Y	
	PN for Monitoring Requirements & Performance Standards in NC (2013)	Y	
	PN for Draft NC Stream Assessment Method (2013)	Y	
	NC Mitigation FAQs	Y	
	Wetland Mitigation Considerations Checklist	Y	



	NC WAM Dichotomous Key	Y	
	NC Stream Mitigation Guidelines (2003)	Y	
	Stream Mitigation Considerations Checklist	Y	
	Coastal Plain Stream Restoration Info (2007)	Y	
	NC Stream Preservation Guidance (2012)	Y	
	NC Interagency Review Team Framework & Procedures Process (2011)	Y	
	Memo to Bank Sponsors Regarding RIBITS Ledger Procedures	Y	
	Wilmington District Mitigation Responsibility Transfer Guidelines	Y	
	Wilmington District Mitigation Bank Credit Release Schedule (2013)	Y	
	Mitigation Bank Prospectus Checklist (2012)	Y	
	MBI Template	Y	
	Template Letter of Credit	Y	
	NC Stream Assessment Tools	Y	
	NC Wetland Assessment Tools	Y	
	Restrictive Covenant Guidance August 2003	Y	Y

<b>South Pacific</b>			
Albuquerque	12501-SPD Regulatory Program Standard Operating Procedure for Determination Of Mitigation Ratios		Y
	Albuquerque District Mitigation and Monitoring Guidelines		Y
Los Angeles	12501-SPD Regulatory Program Standard Operating Procedure for Determination Of Mitigation Ratios		Y
	12505-SPD Regulatory Program Uniform Performance Standards for Compensatory Mitigation Requirements		Y
	Appendix A Guidance on Preparing a Compensation Planning Framework	Y	Y
	Cover Sheet In-lieu Fee Program Proposal Procedures Draft Prospectus/Prospectus March, 2011	Y	Y
	SPL In-lieu Fee Program Instrument Template (2012)	Y	

	CA Mitigation Bank Enabling Instrument Template (2008)	Y	
	CA Long-Term Management Plan Template (2008)	Y	
	CA Conservation Easement Template	Y	
	CA Property Assessment & Warranty Template	Y	
Sacramento	Mitigation and Monitoring Proposal Guidelines December 30, 2004	Y	Y
	Monitoring Report Outline	Y	
	Recommended Mitigation Proposal Outline	Y	
	CA Mitigation Bank Enabling Instrument Template (2008)	Y	
	CA Long-Term Management Plan Template (2008)	Y	
	CA Conservation Easement Template	Y	
	CA Property Assessment & Warranty Template	Y	
	Final Service Area Guidance	Y	
	CA Mitigation Banking Checklists (2010)	Y	

San Francisco	Mitigation Bank Enabling Instrument	Y	Y
	Cover Sheet Mitigation Banking Proposal Procedures <i>[Revised September 2010 by the Multi-Agency Product Delivery Team]</i>		Y
	(Draft) Conservation Easement Deed	Y	Y
	(Draft) Long-term Management Plan	Y	Y
	(Draft) Property Assessment and Warranty	Y	Y
	Enhancement Crediting Alternatives for Wetland Mitigation Banks in the Santa Rosa Plain for permits authorized under Section 404 of the Clean Water Act (33 U.S.C. Section 1344)		Y
	**Also had all SPD mitigation docs linked		
<b>Southwestern</b>			
Fort Worth	Mitigation Banking in the Fort Worth District December 23, 2008		Y
	(Draft) Conservation Easement Agreement		Y
	Fort Worth District Mitigation Banks		Y
	U.S. Army Corps of Engineers (USACE) Fort Worth District Mitigation Bank Prospectus Form	Y	Y

	U.S. Army Corps of Engineers (USACE) Fort Worth District Mitigation Banking Instrument Template	Y	Y
	U.S. Army Corps of Engineers (USACE) Fort Worth District Mitigation Plan Template	Y	Y
	U.S. Army Corps of Engineers (USACE) Fort Worth District Annual Monitoring Report Form		Y
	Fort Worth RIBITS Instructions For Bankers	Y	
	Fort Worth District Banking Guidelines (2011)	Y	
	Additional Fort Worth Mitigation Banking Guidelines (2012)	Y	
	TX Rapid Assessment Modules & Scoring Sheets	Y	
Galveston	SWG interim HGM SOP	Y	
	SWG iHGM Modules	Y	
Little Rock	Addendum to Charleston Compensatory Mitigation Method dated September 19, 2002 <i>This supplement should be used within the Little Rock District Corps of Engineers geographic boundary as a regional modification.</i>		Y

	RD-SOP-02-01 Regulatory Division - Standard Operating Procedure Issued September 19, 2002 Compensatory Mitigation		Y
	Little Rock District Stream Method	Y	Y
	State of Missouri Stream Mitigation Method Last Revised April 2013	Y	Y
Tulsa	none		

## **APPENDIX C: ORM2 INFORMATION:**

### **FUTURE MODIFICATIONS TO ORM2**

The Corps is continuously working to improve ORM2, to make data collection, management, and reporting more accurate and efficient. Over the next five years, the Corps plans to make the following modifications to improve ORM2:

- Adding an email notification system – pilot for appeal actions
- Expanding tools to enhance efficiency (large project uploads)
- Better Quality Assurance/Quality Control tools and expanded data correction capabilities
- Streamline data entry screens
- Expanded geospatial searches
- Reporting for cumulative effects in accordance with the 404(b)(1) Guidelines
- Permits issued for discharges of dredged or fill material within a geographic area
- Integrate national/regional cumulative effects analysis tools
- Improved tracking for compliance and enforcement actions
- Improved use of special conditions in form letters

### **DATA ELEMENTS RELATED TO DEPARTMENT OF THE ARMY PERMITS THAT ARE COLLECTED IN ORM2 INCLUDE:**

- Location of the permitted activity
- Location of permittee-responsible mitigation (on- or off-site)
- The class of waters impacted by the authorized activity, using the classification system by Cowardin et al. (1979)
- The hydrogeomorphic (HGM) class of wetland impacted by the authorized activity
- For activities authorized by general permits, the Nationwide Permit or Regional General Permit number
- Additional actions taken during the review of the permit application or general permit verification request, such as:
  - Endangered Species Act Section 7 consultation
  - Essential Fish Habitat consultation
  - National Historic Preservation Act Section 106 consultation
  - Completeness determination
  - Water quality certification
  - Coastal Zone Management Act consistency determination

- Permit authority for the authorized activity (e.g., Section 404 of the CWA, Section 10 of the RHA)
- Is compensatory mitigation required? (Y/N)
- If compensatory mitigation is required, what mechanism will be used to provide the compensatory mitigation:
  - Permittee-responsible mitigation
  - Mitigation bank credits
  - In-lieu fee program credits

For authorized impacts and required compensatory mitigation, ORM2 tracks the following:

- The aquatic resource type where impacts or mitigation occurs within the project location
  - Cowardin class
  - HGM class
  - Size of the aquatic resource
- The impact type:
  - Conversion of waters type (e.g., forested wetland to emergent wetland, stream to lake)
  - Discharge of dredged material
  - Discharge of fill material
  - Dredging
  - Ecological restoration
  - Excavation involving discharge of dredged or fill material
  - Removal
  - Structure
  - Transport of dredged material for open water disposal
  - Work
  - Other (e.g., directional boring, crossings)
- Is the impact a permanent loss of waters? (Yes/No)
- Impact duration
  - Permanent
  - Temporary
- Functional assessment (select a method from a list)
- Impact amounts
  - Initially proposed, by fill area (e.g., acres or hectares) or linear (feet or meters)
  - Proposed, by fill area (e.g., acres or hectares) or linear (feet or meters)
  - Authorized, by fill area (e.g., acres or hectares) or linear (feet or meters)
- Mitigation type



- Permittee-responsible mitigation on-site
- Permittee-responsible mitigation off-site
- Mitigation bank
- In-lieu fee program
- For permittee-responsible mitigation (on-site or off-site):
  - Location of the permittee-responsible mitigation
  - The aquatic resource type
  - Compensatory mitigation mechanism
    - Re-establishment
    - Rehabilitation
    - Establishment
    - Enhancement
    - Preservation
  - Mitigation kind
    - In-kind
    - Out-of-kind
  - Date mitigation plan approved
  - Legal protection instrument (yes/no) and type:
    - Conservation easement
    - Deed restriction
    - Restrictive covenant
    - Other
  - Financial assurance (yes/no) and type:
    - Escrow account
    - Letter of credit
    - Performance bond
    - Other
  - Permittee-responsible mitigation amounts
    - Proposed, by area (e.g., acres or hectares) or linear (feet or meters)
    - Required, by area (e.g., acres or hectares) or linear (feet or meters)
- For use of mitigation bank credits:
  - Name of the mitigation bank
  - Date credit purchased
  - Mitigation kind
    - In-kind
    - Out-of-kind
  - Mitigation Cowardin type (select one)
    - Marine
    - Estuarine

- Riverine
  - Palustrine
  - Riparian
  - Lacustrine
  - Uplands
- Functional assessment (select from list)
- Mitigation bank credit amounts
  - Proposed
  - Required
  - Purchased
- For use of in-lieu fee program credits
  - Name of the in-lieu fee program
  - Date credits purchased
  - Mitigation kind
    - In-kind
    - Out-of-kind
  - Mitigation Cowardin type (select one)
    - Marine
    - Estuarine
    - Riverine
    - Palustrine
    - Riparian
    - Lacustrine
    - Uplands
  - Functional assessment (select from list)
  - In-lieu fee credit amounts
    - Proposed
    - Required
    - Purchased

## APPENDIX D: COMMERCIAL BANK SPONSORSHIP

Figures 38 and 39 are based on data from RIBITS and indicate that the overwhelming majority of commercial banks are sponsored by the private sector. Almost all of the commercial bank acreage is attributable to banks established by the private sector.

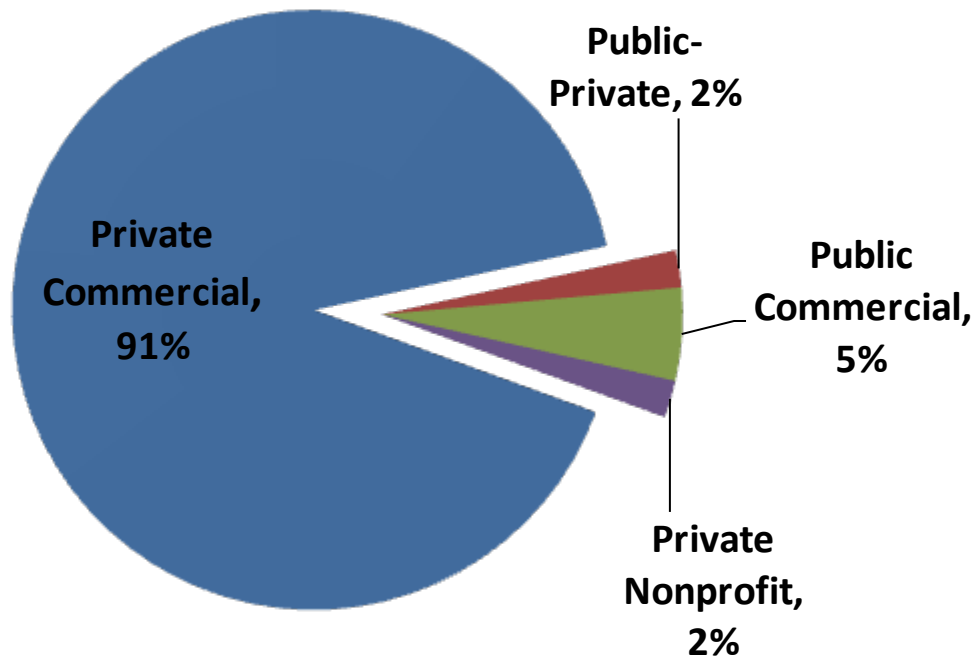


Figure 38. Percentage of commercial bank sites by sponsor type

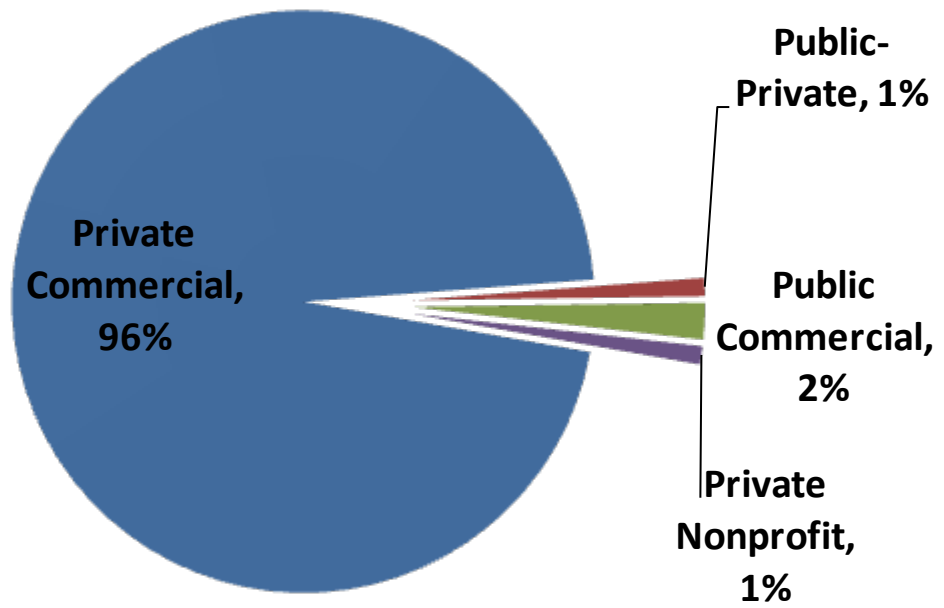


Figure 39. Percentage of commercial bank site area (acreage) by sponsor type

## **APPENDIX E: IN-LIEU FEE PROGRAM REQUIREMENTS AND PROJECT SITES**

The 2008 Mitigation Rule requires mitigation banks and in-lieu fee programs to undergo the same development process (prospectus, public notice, draft and final instrument). Both share many requirements in common including transfer of mitigation liability, geographic service areas, accounting procedures, sponsor qualifications, and default and closure procedures. Both mitigation banks and in-lieu fee projects must have or address the required elements of mitigation plans (work plan, monitoring requirements, financial assurances, long-term management, etc.). However, there are a number of elements unique to in-lieu programs that are intended to ensure transparent operations, strategic selection of mitigation projects, and timely and successful implementation of in-lieu fee projects.

- Compensation Planning Framework
  - In-lieu fee programs must identify a compensation planning framework that will direct the selection of future in-lieu fee projects. The compensation planning framework must support a watershed approach to mitigation.
- Advance Credits
  - Advance credits are available to an in-lieu fee program prior to implementing in-lieu fee projects and the sale of these credits may finance these compensatory mitigation projects. The specific number of advanced credits available for a service area is specified in the in-lieu fee program instrument.
- Advance Credit Fee Schedule
  - In-lieu fee program sponsors are also required to identify the price they will charge for advanced credits. The price must reflect the full cost of in-lieu fee project implementation and management.
- Credit Methodology
  - In-lieu fee programs instruments must also specify the methodology that will be used to determine credits generated by future in-lieu fee projects as well as the methodology that will be used to determine advance credit prices.
- In-lieu Fee Program Account
  - In-lieu fee program sponsors must establish a program account at a FDIC-member institution that will be used to hold funds for mitigation projects only.

Many in-lieu fee program sponsors have found development of these elements challenging and have often required considerable time and effort. However, the fact

that the number of in-lieu fee programs approved under the 2008 Mitigation Rule is approaching the number of in-lieu fee programs in existence prior to that rule, demonstrates that the new in-lieu fee program requirements are not discouraging the development of in-lieu fee programs. The number of approved in-lieu fee programs will soon exceed the number of pre-rule in-lieu fee programs (47).

According to RIBITS, ILF program annual reports, etc., as of 2014, there were 294 in-lieu fee projects that were approved under pre-mitigation rule in-lieu fee program agreements. This number is an underestimate and does not include many in-lieu fee project sites in a number of states including Alaska, Arizona, and North Carolina. An additional 223 in-lieu fee projects have been approved for in-lieu fee programs authorized under the 2008 Mitigation Rule. The locations of these in-lieu fee project sites are shown in Figure 40. Figure 40 also includes 50 proposed in-lieu fee projects were under review by the end of 2014.

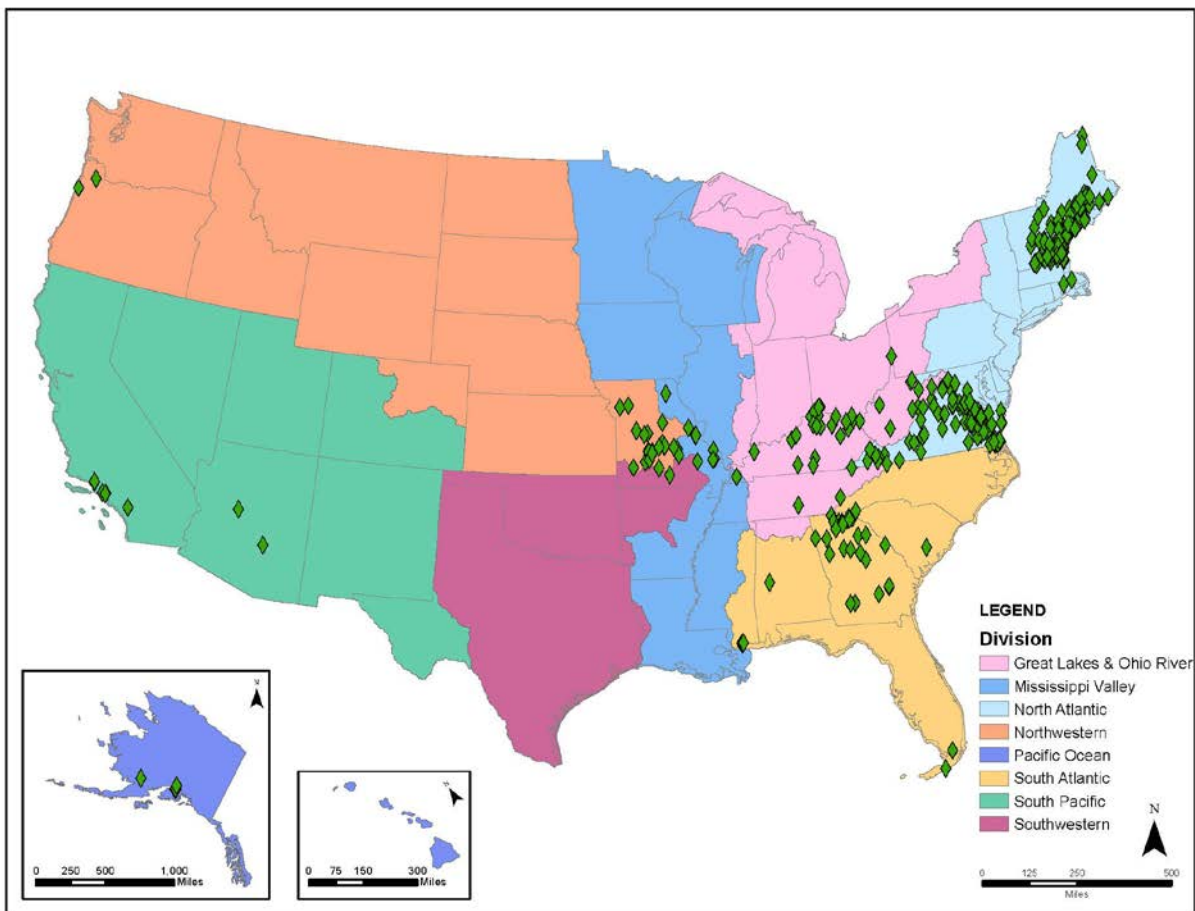


Figure 40. In-lieu fee project site in RIBITS as of 2014

## **In-lieu Fee Programs Approved Under the 2008 Rule as of 2014**

1. \*Oregon Department of State Lands
2. Living River Restoration Trust (formerly Elizabeth River) (VA)
3. \*Mississippi Delta In-lieu Fee Program (Ducks Unlimited) (MS)
4. \*Land Trust for the Mississippi Coastal Plain (MS)
5. North Carolina Ecosystem Enhancement Program
6. Virginia Aquatic Resources Trust Fund
7. \*King County Mitigation Reserves Program (WA)
8. \*Vermont In-lieu Fee Program (Ducks Unlimited)
9. Maine In Lieu Fee Program [Maine Natural Resources Compensation Program]
10. Southeast Alaska Land Trust In-lieu Fee Program
11. Kentucky Department of Fish and Wildlife Resources
12. New Hampshire Aquatic Resource Mitigation Fund
13. \*Tennessee Wildlife Federation Statewide Wetland In-Lieu Fee Program
14. Northern Kentucky University Center for Applied Ecology and Northern Kentucky University Research Foundation
15. \*Riverside-Corona Resource Conservation District In-lieu Fee program (CA)
16. \*Hood Canal Coordinating Council In-lieu Fee program (WA)
17. \*Ducks Unlimited – New York In-lieu Fee Program
18. \*Alabama Department of Conservation and Natural Resources
19. \*Montana Statewide In-lieu Fee Program
20. Missouri Stream Stewardship In-lieu Fee Program
21. The Conservation Fund In-lieu Fee Program (Alaska)
22. Arizona Game and Fish Department
23. Prescott Creeks Preservation Association (AZ)

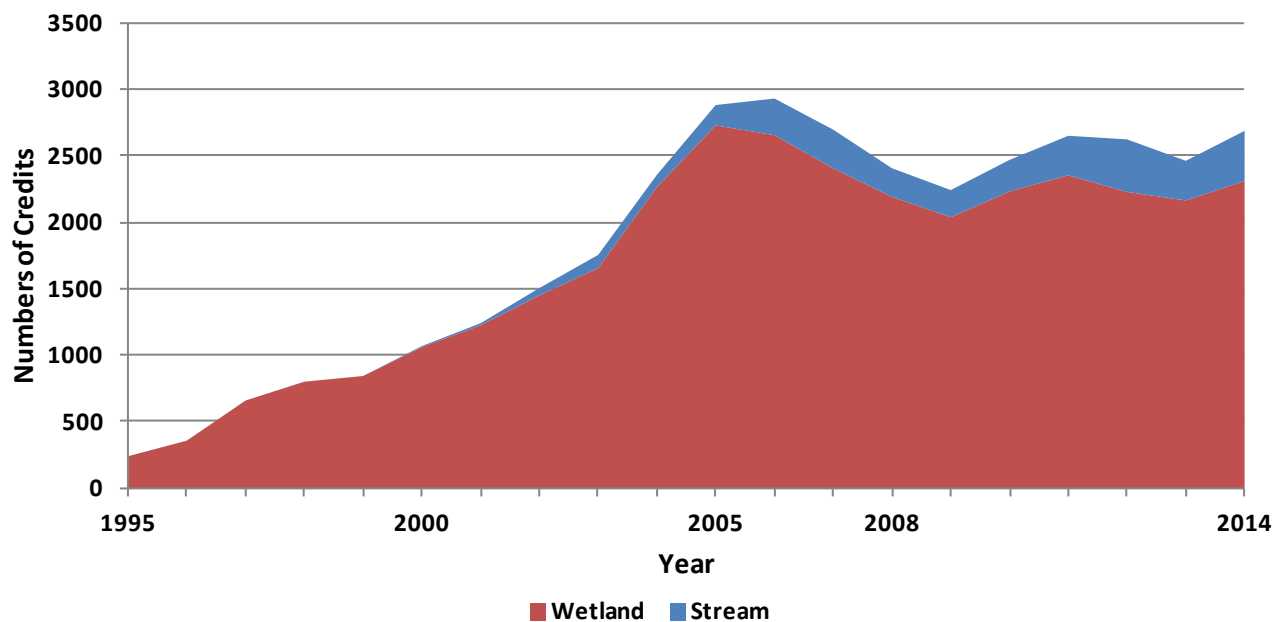
24. Tucson Audubon/Pima County Regional Flood Control District (AZ)
25. Superstition Land Trust (AZ)
26. La Paz County Endangered Species Fund No. 290 (AZ)
27. Ventura River Watershed In-lieu Fee (managed by the Ojai Valley Land Conservancy) (CA)
28. West Virginia Department of Environmental Protection In-lieu Fee
29. Tennessee Stream Mitigation Program
30. Great Land Trust – 2012 (AK)
31. \*Connecticut In-Lieu Fee Program
32. \*Keys Restoration Fund (FL)
33. Mountains Restoration Trust – 2013 (CA)
34. \*Susquehanna Basin Headwaters In-lieu Fee Program (NY)
35. \*Quil Ceda Village In-lieu Fee Program (WA)
36. \*Georgia Land Trust In-lieu Fee Program
37. Watershed Land Trust Aquatic Resource Mitigation Program (KS)
38. Louisiana Coastal Restoration Fund
39. \*North Dakota Aquatic Resource ILF Program
40. Calleguas Creek Watershed ILF Program
41. \*Ohio Wetlands Foundation ILF
42. Massachusetts ILF Program
43. \*National Fish & Wildlife Foundation ILF Sacramento District California
44. \* Wisconsin Wetland Conservation Trust
45. \*The Nature Conservancy Ohio Wetland & Stream ILF Program

. \* Developed and approved under the 2008 Mitigation Rule



## APPENDIX F: MITIGATION BANK AND IN-LIEU FEE PROGRAM CREDIT TRANSACTIONS

The wetland and stream credit assessment protocols in use vary widely across the country. Third party mitigation credits in one part of the country are not equivalent to credits in another part of the country. Because of these differences, totaling credit activity across the country does not produce meaningful results. However, we can characterize the numbers of credit transactions. The number of wetland credit transactions (credit withdrawals or debits) at mitigation banks and in-lieu fee programs peaked in 2005 and then declined reflecting the 2007 economic downturn (see Figure 41). The number of stream mitigation credit transactions has increased steadily since the first stream mitigation bank transactions were reported in 2001 and peaked in 2012. The increase in transactions reflects the increase in third party compensatory mitigation projects providing stream mitigation. This is similar to trends in permits issued and permits requiring mitigation.

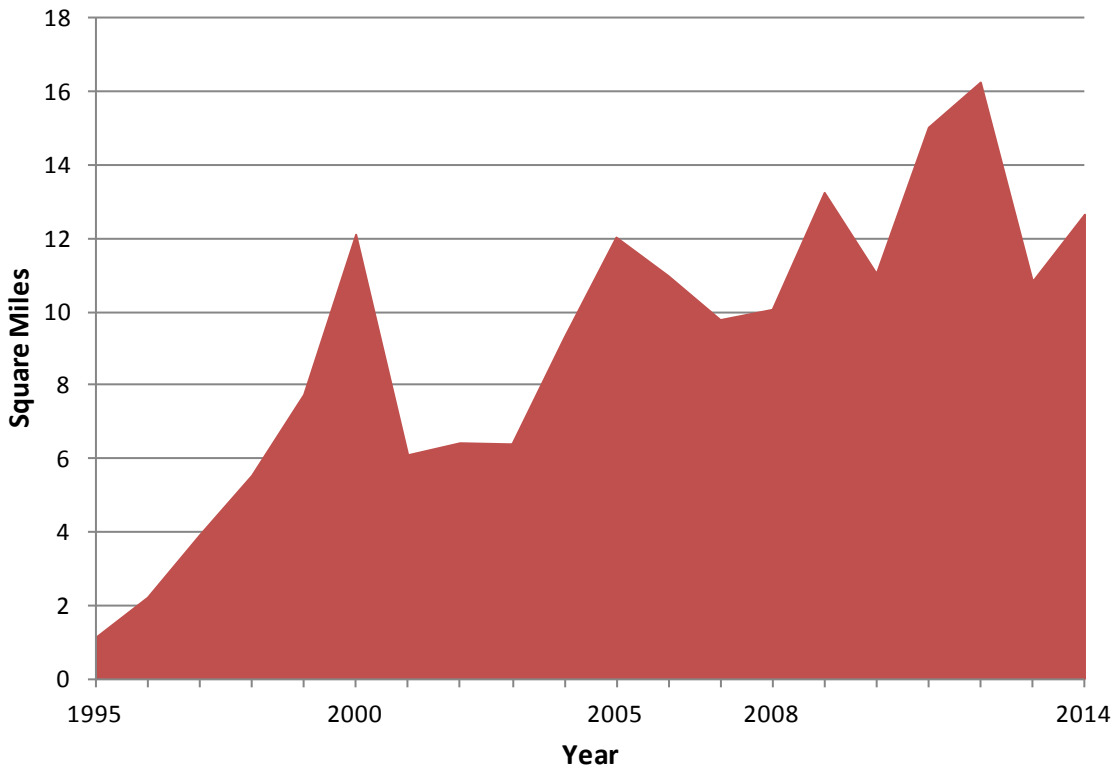


Note: Data source RIBITS

Figure 41. Mitigation bank and in-lieu fee program credit withdrawals from 1995 to 2014

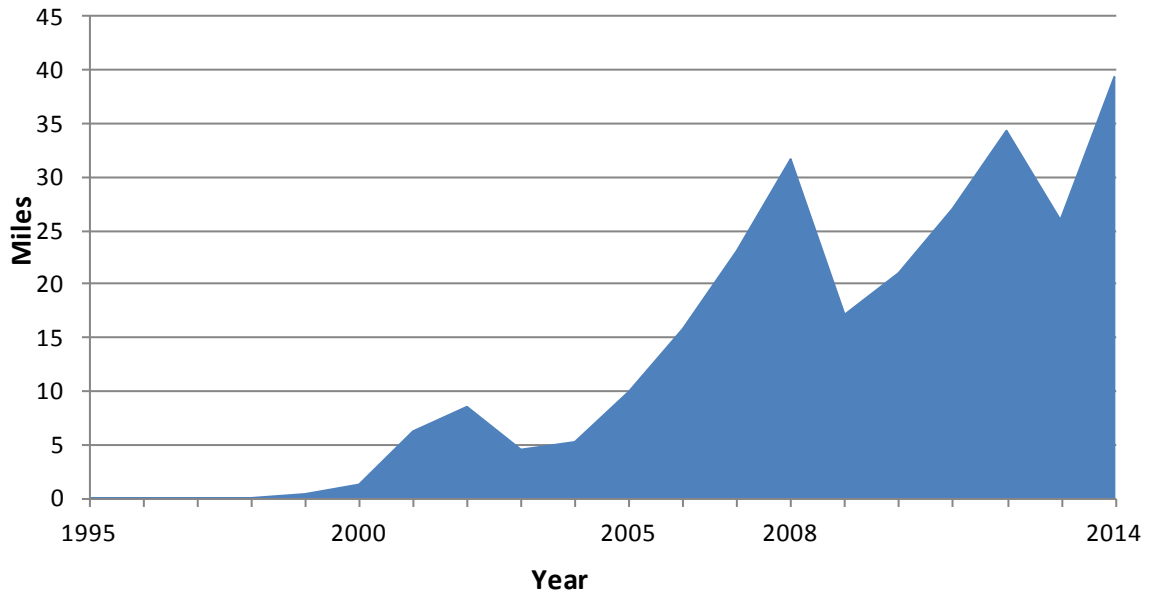
The number of transactions alone is not sufficient to characterize mitigation transactions because it does not describe the amount of stream or wetland compensation debited. RIBITS ledger structure allows users to convert credits to an approximation of area (acreage) or length (feet).

The wetland acreage debited peaked in 2012 after the 2007 economic downturn (Figure 42). Stream mileage debited spiked sharply before the issuance of the 2008 Mitigation Rule, then again in 2009, but reached its peak in 2012 (Figure 43).



Note: Data source: RIBITS

**Figure 42. Mitigation bank and in-lieu fee program wetland area debited from 1995 to 2014**

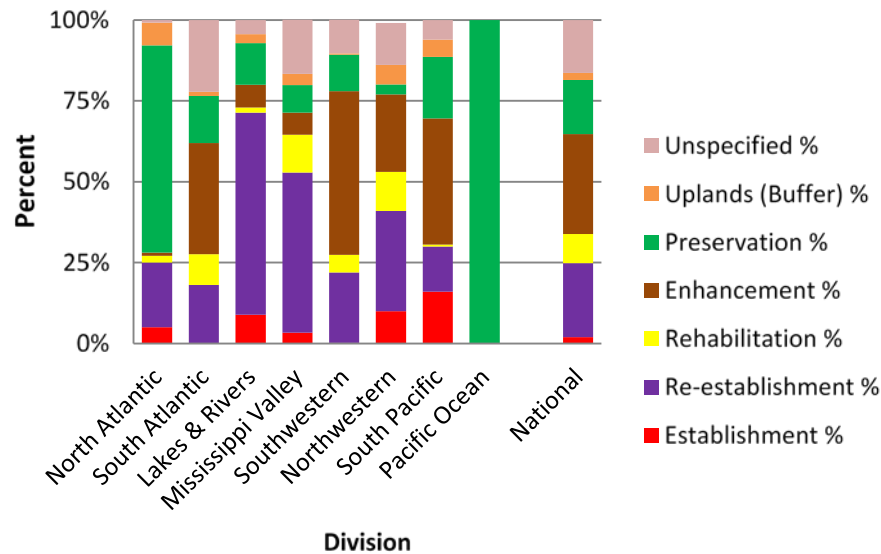


Note: Data source RIBITS

**Figure 43. Mitigation bank and in-lieu fee program stream length debited from 1995 to 2014**

## APPENDIX G: MITIGATION METHODS USED BY MITIGATION BANKS AND IN-LIEU FEE PROGRAMS

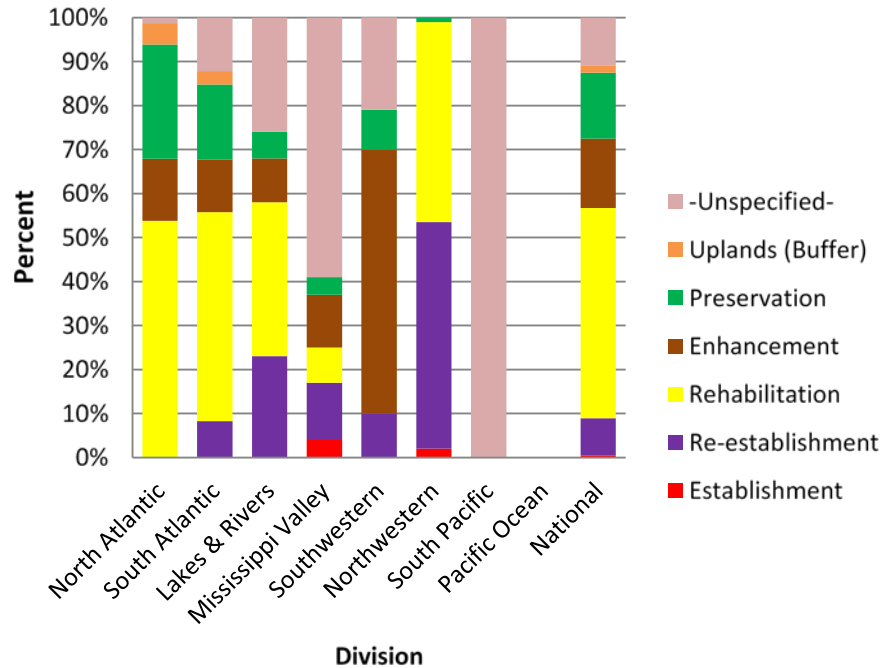
We can characterize the lands used to provide compensatory mitigation in mitigation banks and in-lieu fee programs by method of compensatory mitigation (i.e., establishment, restoration, enhancement, and preservation). By 2014 most of the third party compensatory mitigation acreage was provided through re-establishment and enhancement of wetlands (Figure 44).



Note: Data from RIBITS

**Figure 44. Wetland compensatory mitigation methods used by mitigation banks and in-lieu fee programs, by Corps division and nationally as of 2014**

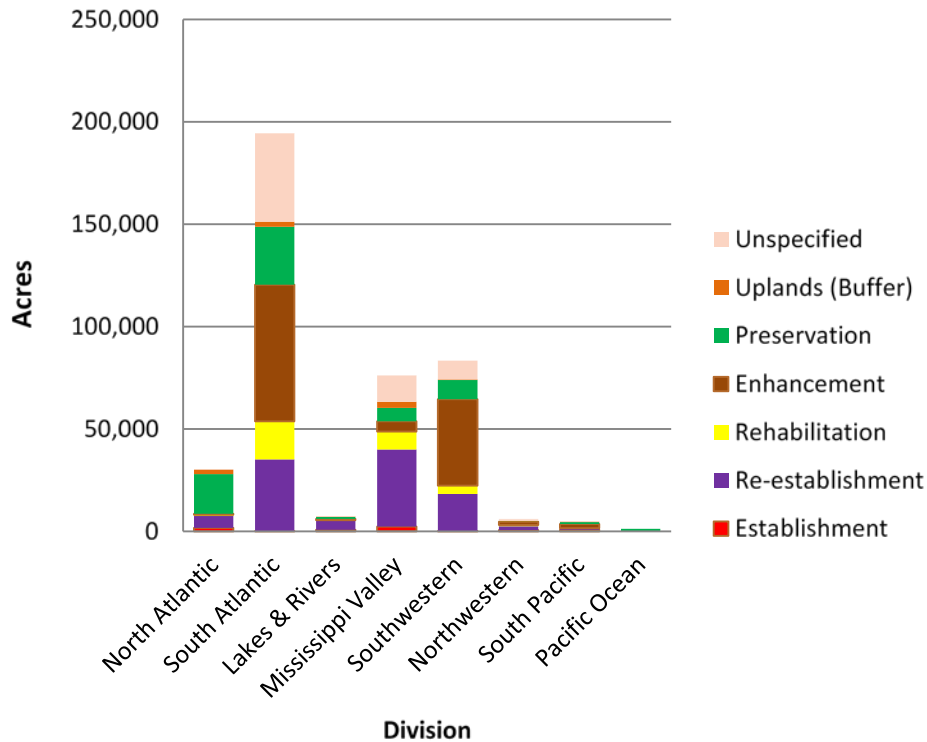
Most stream mitigation provided by mitigation banks and in-lieu fee programs is through restoration that is rehabilitation and/or re-establishment of streams. Preservation and enhancement makes up less than 20% of the stream compensation. Establishment of streams is a very rare practice for mitigation banks and in-lieu fee programs (see Figure 45).



Note: Data from RIBITS

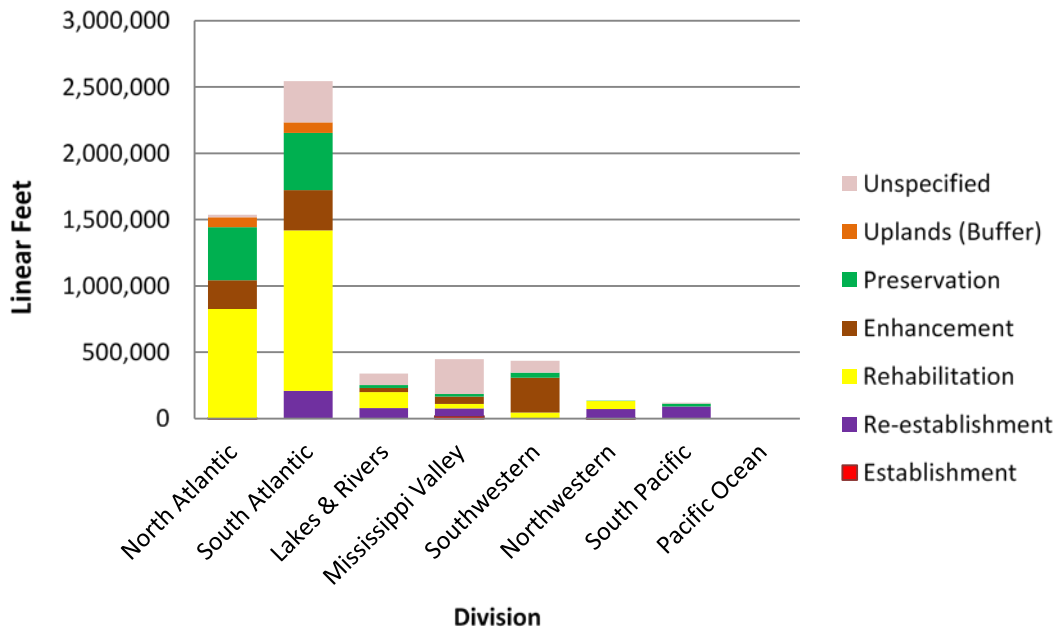
**Figure 45. Stream compensatory mitigation methods used by mitigation banks and in-lieu fee programs, by Corps division and nationally as of 2014**

Collectively, establishment, rehabilitation, re-establishment, and enhancement of wetlands make up most of the wetland compensatory mitigation area in banks and in-lieu fee sites in most Corps divisions (Figure 46). Preservation is the primary form of compensatory mitigation in Alaska and makes up all of the wetland mitigation lands in the Pacific Ocean Division. Most mitigation bank and in-lieu fee project lands in North Atlantic Division are preserved wetlands. This is due largely to the importance of preservation of wetlands at risk of destruction or alteration in Norfolk and New England Districts. Currently, mitigation banks and in-lieu fee projects are not providing stream mitigation in the Pacific Ocean Division (see Figure 47).



Note: Data from RIBITS

**Figure 46. Acreages of mitigation types comprising wetland compensatory mitigation provided by mitigation banks and in-lieu fee projects as of 2014**



Note: Data from RIBITS

**Figure 47. Mitigation types comprising stream compensatory mitigation provided by mitigation banks and in-lieu fee projects as of 2014**

## **APPENDIX H: NUMBERS OF BANK SITES AND THE DEFINITION OF BANK STATUS IN RIBITS**

By the end of 2014, there were 1,916 Section 404 CWA bank sites in RIBITS. That total included 1,086 approved, 308 sold-out, 303 pending, 34 suspended, and 185 terminated/withdrawn bank sites.

- **Approved:** The bank instrument (or site plan for umbrella banks and in-lieu fee programs) has been approved. All requirements for credit release may not have been met.
- **Sold-Out:** Approved site where all credits have been released and debited and all administrative and ecological performance standards have been met.
- **Pending:** A prospectus or draft instrument is under review by the Corps and the Interagency Review Team.
- **Suspended:** Mitigation bank or in-lieu fee project site operations (including credit transactions) have been halted by the Corps for failure to comply with mitigation banking instrument or in-lieu fee program instrument requirements.
- **Terminated/Withdrawn:** The mitigation bank or in-lieu fee program prospectus is no longer under consideration by the Corps or the instrument has been invalidated.

The Corps is required to provide an initial evaluation of a prospectus following public notice. Mitigation bank sites prior to Corps approval are considered to be “pending” banks. In the initial evaluation the Corps determines whether the proposed mitigation bank or in-lieu fee program is potentially suitable for providing compensatory mitigation or whether additional information is needed. This initial evaluation is one of two points in the mitigation bank/in-lieu fee program approval process where processing of unsuitable proposals can be halted. Unsuitable proposals are those that have a low likelihood of providing appropriate compensatory mitigation, of meeting ecological performance standards, or of being sustainable.

“Terminated” and “withdrawn” are often used synonymously so we have grouped them together. Terminated/withdrawn sites are primarily those proposals that either the Corps or the sponsor has withdrawn from further consideration. The numbers of terminated/withdrawn proposals are indicative of the Corps exercising its responsibility to determine whether a proposal is potentially suitable to provide compensatory mitigation.

Bank operations are suspended for failure to comply with the requirements of the bank instrument, work plan, and associated documents. The most common reason for suspension is failure to implement the required compensatory mitigation needed to offset the initial release of credits. Operations have been suspended for failure to comply with the work plan, site protection, financial assurance or monitoring and reporting requirements, as well as failure to comply with success standards. Bank suspension is usually temporary, with the sponsor, the Corps, and the Interagency Review Team working to resolve the deficiency. When the deficiency cannot be resolved, the Corps may “terminate” the bank instrument. Corps districts have terminated operations for 9 banks that failed to comply with requirements of the approved bank instrument or plan and could not be brought into compliance. Those banks can no longer provide CWA Section 404 compensation. The numbers of suspended banks, although relatively small indicate that Corps districts will suspend mitigation bank operations for failure to perform or to comply with their bank instrument, site plan, or other associated elements.







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