



# 2010-11 ANNUAL REPORT

Ecosystem Enhancement Program

The mission of the Ecosystem Enhancement Program (EEP) is to restore and protect North Carolina's natural resources for future generations while supporting responsible economic development.

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North Carolina Department of Environment and Natural Resources

Dee Freeman, Secretary | Beverly Perdue, Governor | Michael Ellison, Deputy Director

This annual report is designed as primarily an electronic document. It features interactive applications using Web technologies that will invite reader participation in EEP's work. Front Cover: EEP's Needmore Tract High Quality Preservation Site and Wildlife Resources Game Land. *Photo by Hal Bryson.* Back Cover: EEP's Crooked Creek #2 Wetland Restoration Site. *Photo by Deborah Amaral.*



## Executive Summary

The N.C. Ecosystem Enhancement Program, now in its eighth year of restoring, enhancing and preserving the state's streams, wetlands and streamside buffers, is an initiative within the N.C. Department of Environment and Natural Resources (NCDENR). Its mission is to improve the environment and, by design, also facilitate responsible economic development. EEP works where the need has been identified to be the greatest through watershed planning, and collaborates with local and state partners including willing landowners.

The N.C. Department of Transportation (NCDOT) and other developers voluntarily use EEP as a compensatory-mitigation provider to move their projects forward in a timely and affordable manner. EEP continues to partner successfully with the federal, state and local governments, contractors, willing landowners and others to provide high-quality mitigation. This vital work is achieved by outsourcing project design, construction and monitoring to private-sector partners. During FY 2010-11, the program paid \$24,642,580.45 to private mitigation companies, design firms and construction contractors.

As described in the following section on [Key Developments](#), several important events occurred this past year. These include: a change in leadership for the program with the retirement of founding director Bill Gilmore; the enactment of new legislation affecting local government access to EEP's mitigation programs, and specifying a procurement hierarchy for the outsourcing undertaken to secure mitigation credits; and the implementation of EEP's new operating instrument, formally approved in July 2010.

During FY 2010-11, EEP continued to see declines in activity for all of its mitigation programs. These declines are attributable to the current economic conditions and state legislation that promotes the purchase of credits from mitigation banks when they are available. Data that inform the relative influence of these factors on the measured declines are not available to EEP at this time, but the declines have been most pronounced in the Riparian Buffer and Nutrient Offset in-lieu fee programs.

While it is difficult to predict how program use will trend into the future, in the near term EEP expects activity to remain low. Localized increases in places such as the Jordan and Falls Lake management areas, where new regulatory requirements are in effect, may occur.

This year's Annual Report highlights program improvements made during FY 2010-11. In particular, EEP has:

- Worked with NCDENR to establish a Science Advisory Panel on Aquatic Resource Restoration that will help integrate the best available science into the work conducted by EEP and other mitigation providers in North Carolina;
- Improved financial transparency by sharing all contracts and receipts data online;
- Reduced the overall time to process contracts by an average of 35 days;
- Established a mechanism during its strategic planning process to program the purchase of credits from mitigation banks;
- Reorganized operations for enhanced efficiency and effectiveness; and
- Launched a new [interactive web portal](#) with improved program information, including a [new interactive map](#) where visitors can view projects on a statewide map and examine project changes over time, as well as access reports and documents associated with individual projects.

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Also during FY 2010-11:

- EEP's project inventory reached 582 projects in various stages of development, with 500 projects (86 percent) in post-construction phases of monitoring or long-term stewardship. The majority (54 percent) of restoration projects implemented by EEP are located in geographic targets developed through watershed planning.
- Regulatory compliance remained very high in EEP's In-Lieu Fee (ILF) programs, ranging from 98 to 100 percent compliance for streams and wetlands.
- EEP remained a national leader in establishing successful mitigation credits in advance of permitted impacts – more than 800,000 stream credits and more than 10,000 wetland credits.
- Monitoring statistics show that 95 percent of all projects are successfully meeting regulatory criteria.
- EEP updated the [River Basin Restoration Priority](#) (RBRP) plans for the Neuse, Tar-Pamlico and White Oak River basins.
- EEP continued development of six [local watershed plans](#), with 29 having been completed.
- EEP completed another year without any reportable safety incidents, bringing the total to 988 consecutive days without work-related injury.
- The State Property Office closed on 32 transactions to acquire 657 acres of easements or property for EEP preservation and restoration projects. Another 30 transactions (primarily temporary construction easements) were also completed by the SPO in support of EEP restoration projects.
- Although no stream or wetland projects were closed out (i.e., regulatory agency final approval and validation of mitigation credits generated) during FY 2010-11, 51 stream and wetland sites met all final regulatory criteria and were closed out in August 2011. Some of these projects also included buffer assets, and six projects with buffer and/or nutrient assets closed out during the fiscal year. The closed-out projects are included in this Annual Report.
- Since 1996, 49,440 acres have been purchased by or donated to EEP and its predecessor, the Wetlands Restoration Program. These properties will be protected in perpetuity.

During FY 2010-11, EEP extended its record of carrying out its mission without a single transportation-project delay because of a lack of mitigation. EEP has assisted NCDOT in moving forward nearly \$8 billion in transportation-infrastructure improvements since its founding in 2003.

This year's Annual Report builds upon continuing efforts to improve the program's reporting and provide greater understanding about EEP. While it is intended to satisfy all reporting requirements as defined in G.S. 143-214.13 and as associated with program operating agreements, it is also meant to support the information needs of interested parties. The report has been developed to function best as an interactive, web-based document, and a limited number of hard copies will be produced.

This document continues the practice established last year of supplying an online Annual Report Feedback Survey for readers. Last year's survey responses indicated that readers approved of embedded hyperlinks that lead to other information pertinent to the subject at hand, and expressed the desire for more photos of EEP's work. In general, readers found that adjustments to the reports in recent years have improved comprehension of the program; however, because of the complexity of mitigation programs, readers may wish to consult the program's [web portal](#) for further information.

EEP anticipates continued progress in the year ahead on providing a more holistic approach to mitigation – facilitating the delivery of watershed planning-based projects that help to drive the state's economy, and restoring, enhancing and protecting the state's wetlands, waterways and natural areas for future generations.

# Key Developments in FY 2010-11

## EEP Director Gilmore Retires

A decade after helping to conceive of the Ecosystem Enhancement Program and ultimately spearheading its operations for eight years, [EEP Director Bill Gilmore](#) retired from state government on June 30, 2011.

Gilmore compiled 25 combined years of service to the state at both EEP and the N.C. Department of Transportation. While his tenure as director of EEP technically began with [the program's founding](#) in July 2003, Gilmore also served on the interagency team that formulated EEP in the early part of the last decade.

Retiring Director Gilmore receives Order of the Long Leaf Pine from NCDENR Secretary Dee Freeman



Under his guidance, EEP won numerous national and state awards for innovation and environmental excellence. Gilmore himself was a two-time recipient of the Commander's Award for Public Service from the [U.S. Army Corps of Engineers Wilmington District](#) (an original sponsor of EEP along with NCDENR and NCDOT), and he also received the [Order of the Long Leaf Pine](#) from Gov. Bev Perdue on his final day at EEP, one of the highest honors that a sitting governor can bestow on a North Carolinian.

## Implementation of new federal mitigation rule

During Fiscal Year 2010-11, EEP began operating under the provisions of EEP's new [In-Lieu Fee Mitigation Instrument](#) executed on July 28, 2010. The agreement was developed and entered into to comply with the [2008 federal mitigation rule](#).

The new instrument enhanced EEP's watershed planning approach to mitigation using a new framework to guide development of plans, modified how credits from projects are derived and how mitigation requirements are satisfied. The instrument, however, did not change the advanced timelines and goals for providing successful in-the-ground mitigation years before NCDOT impacts. Pursuant to the new operating agreement, this Annual Report includes information on the status and utilization of advance credits as defined by [federal rules](#). In addition, the report revamps the section on program costs to break down financial data by expenditure type, as prescribed in EEP's instrument.



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## **Implementing Session Law 2011-343**

On June 17, 2011 the N.C. General Assembly passed [Session Law 2011-343](#), broadening the effects of [Session Law 2009-337](#) and limiting most local governments from accessing EEP's ILF programs when mitigation credits are available from private mitigation banks. The law also developed a preference hierarchy for how EEP outsources and contracts new mitigation procurement.

In July, NCDENR updated an [implementation document](#) originally developed in 2009 to respond to S.L 2009-337 to address provisions in S.L. 2011-343 regarding local governments. The 2011 legislation went through numerous modifications after being introduced, particularly on provisions addressing how EEP will procure mitigation credits from private-sector companies. NCDENR did not oppose the legislation in its final form but had concerns about its effect on local governments, which had been specifically exempted from similar provisions in earlier legislation.

## **Actual Cost Method Implemented for Nutrient Offset Fees**

In FY 2010-11, EEP began implementing the [Actual Cost Method \(ACM\)](#) to set fees for the Nutrient Offset Program. The rule changes were approved by the N.C. Environmental Management Commission on July 15, 2010, and the N.C. Rules Review Commission on Aug. 19, 2010. The ACM, developed with involvement of stakeholders, compiles all of the program's receipt and cost data, including administrative and project costs, to accurately calculate the program's actual costs per credit. Using a new database that categorizes and stores all cost data, EEP calculates actual costs per-unit nutrient reduction for the program on a quarterly basis. An adjustment factor is used in the calculation if the program's total costs exceed receipts, which ensures that sufficient receipts are collected to pay the full cost of the program. Fees were changed once during FY 2010-11 and again at the beginning of FY 2011-12. For more detailed information about the ACM, see the end of the [Program Financial Information](#) section of this report, as well as [additional information](#) available online.

**Nutrient Offset Fees at End of FY 2010-2011  
(before annual recalculation of rates)**

<b>River Basin</b>	<b>ACM RATE Per Pound</b>
<b>Tar Pamlico N</b>	<b>\$11.79</b>
<b>Tar Pamlico P</b>	<b>\$142.02</b>
<b>Neuse Program - N</b>	<b>\$12.97</b>
<b>Neuse 01 - N</b>	<b>\$20.59</b>
<b>Neuse Falls Lake - N</b>	<b>\$20.59</b>
<b>Neuse Falls Lake - P</b>	<b>\$142.02</b>
<b>Jordan Lake - N</b>	<b>\$20.59</b>
<b>Jordan Lake - P</b>	<b>\$142.02</b>

# Continuous Improvement Initiatives and Program Partnerships

With support and guidance from NCDENR leadership in FY 2010-11, EEP sought to identify and implement modifications to existing processes, as well as to institute new initiatives that improve program outcomes. In addition, the program continued to foster key partnerships that magnify the effects of its projects. This section provides information on initiatives undertaken during the fiscal year and highlights examples of partnerships that are generating on-the-ground improvements to the state's environment.

## New Initiatives for Efficiency and Effectiveness

In October 2010, EEP announced [four initiatives](#) designed to refine and improve program operations and data sharing. Each of the initiatives is described in more detail below.

### Science Advisory Panel

The first initiative, formation of the NCDENR [Science Advisory Panel on Aquatic Resource Restoration](#), led to an inaugural meeting in April 2011. The nine-member panel represents a breadth of expertise in a variety of disciplines relevant to the types of projects implemented by EEP, and is intended to:

- Ensure that pertinent results of recent scientific studies are considered in the selection and implementation of restoration projects;
- Support the development and execution of research projects that further best practices for conservation and restoration projects; and
- Provide technical expertise and input on issues related to aquatic resources restoration and management (i.e., watershed planning and project selection; project implementation; and data management and analysis).

During its first meeting the group identified a number of possible issues that it may consider going forward, especially project goals, measures of success, and site selection criteria. [Information](#) on the meetings of the panel and its composition are available on EEP's web portal.



NCDENR Science Advisory Panel convenes, April 21, 2011

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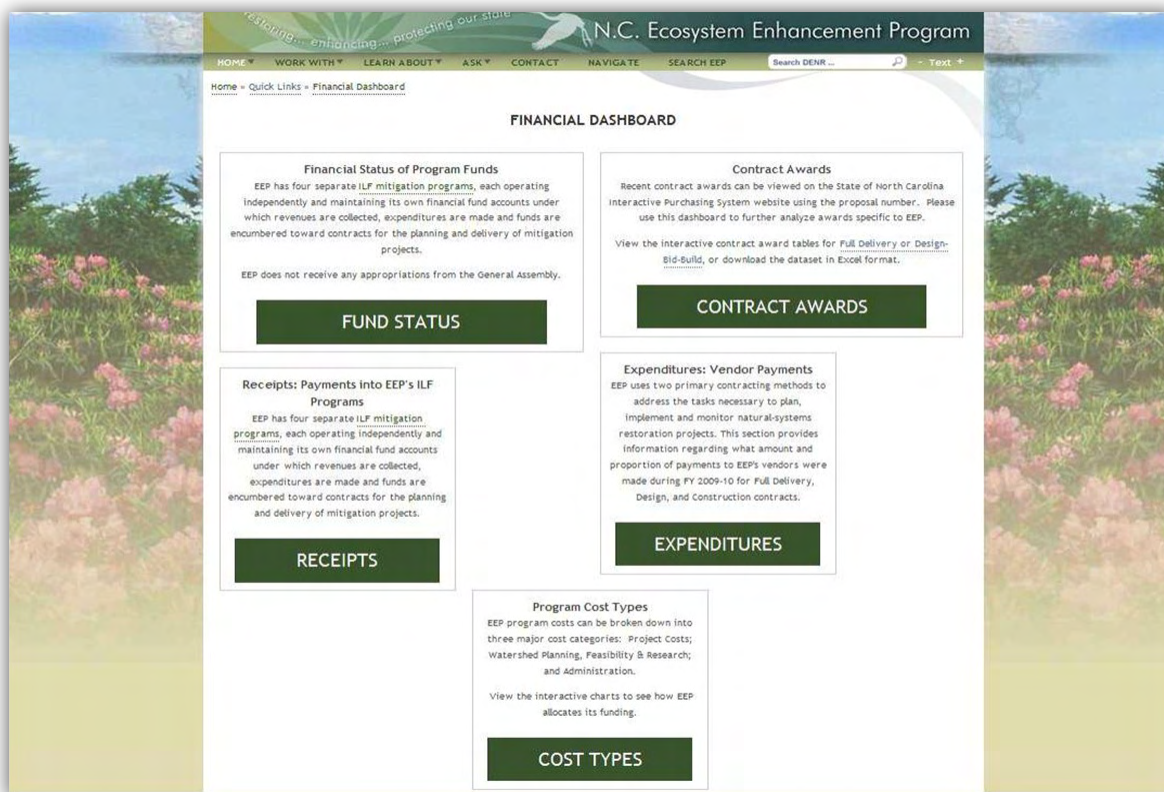
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A screenshot of EEP's new Financial Dashboard designed to increase transparency of program finances

## Improving Financial Transparency

As an outgrowth of a University of North Carolina School of Government [report on EEP operations](#) in May 2010 that evaluated EEP mitigation procurement methods, EEP has taken significant strides towards increasing transparency, especially as it relates to program finances. All [data related to receipts and contract awards](#) are available in summary and detailed form through EEP's web portal. Visitors may browse the information or download data and conduct individualized analyses. EEP intends to continue to add new features to its web portal to continuously improve information-sharing with interested parties.

## Expediting Contracts and Amendments

Also related to the UNC School of Government report, and as part of ongoing collaboration with private-sector partners, EEP has worked to reduce processing times for contracts and contract amendments to increase the production and efficiency of contract administration. As a result of this initiative, overall processing time for contract administration has been reduced by an average of 35 days. EEP is continuing to work with the N.C. Department of Administration and the NCDENR Division of Purchase and Services to improve current procedures and develop new procurement methods that better serve the program's outsourcing needs.

## Bank Programming Initiative

In the fall of 2010, EEP initiated an effort focused on more deliberately seeking to purchase available mitigation-bank credits to satisfy mitigation requirements for which EEP is responsible. As part of this effort, EEP surveyed private companies involved with the development and establishment of mitigation banks on the type and location of available mitigation credits. This information is considered when EEP is determining the best approach to securing credits from the private sector to satisfy state and federal mitigation requirements.



## Reorganization and Changes in Leadership

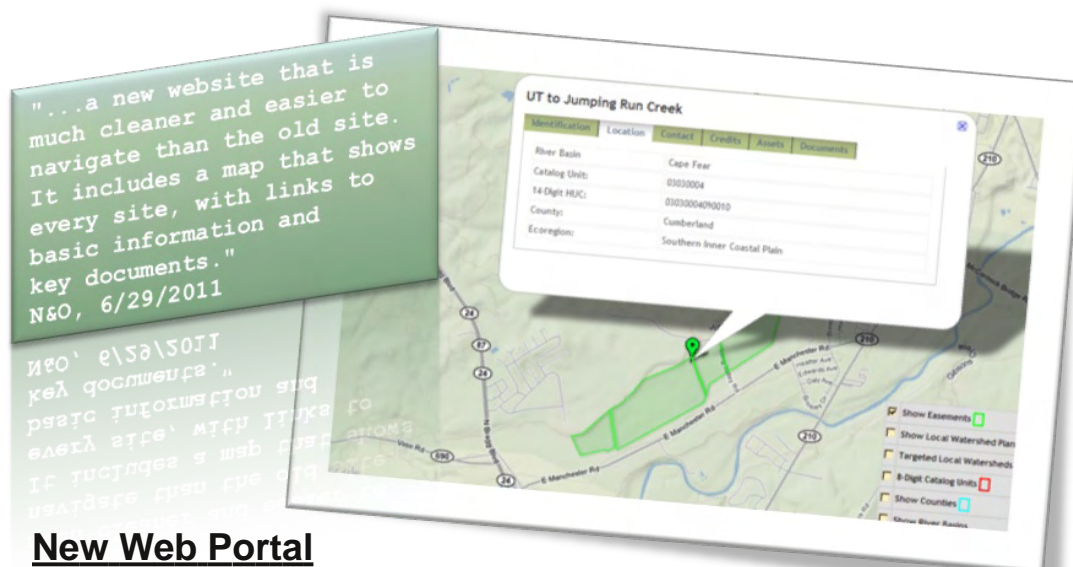
In early 2011, leadership within NCDENR and EEP reorganized the program's organizational structure and made strategic operational adjustments to improve overall efficiency and effectiveness. Key components of these changes included:

- A predominant emphasis on securing mitigation credits through the purchase of credits from existing banks and use of full-delivery contracts.
- Improving project continuity by maintaining the same project manager and consultant team throughout the life of a project.
- Utilization of matrix-management techniques to establish work teams that promote project-focused management and communication, and ensure that expertise from all areas within the organization are utilized optimally on each project.

As a result, EEP's primary organizational sections were modified and redefined as Project Management; Science and Analysis; Contracts, Plan Review and Permitting; Asset Management and Reporting; and Planning and Property.

FY 2010-11 also brought two major changes to EEP's organizational leadership: Along with the [retirement of founding Director Bill Gilmore](#), the newly created position of deputy director was filled with the hiring of Michael Ellison. Ellison led the organizational restructuring and brings more than 20 years of experience in private-sector mitigation work to the post.

New interactive map on new web portal



## New Web Portal

EEP continued an emphasis on improved online interactivity with the launch of a [new interactive web portal](#) in April 2011. The site is designed to bring greater functionality for sharing information with EEP's customers and partners, including an upgraded [interactive map](#) that displays EEP mitigation projects across the state and over time, and allows users to link directly to project data, documents and watershed plans. Visitors to the web portal are encouraged to submit comments and feedback at various locations throughout the site.

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## Program Partnerships

EEP has found invaluable its partnerships with government agencies, private landowners, environmental organizations and private-sector contractors to accomplish program goals. In recent years, for example, EEP has improved and strengthened its association with private-sector colleagues through enhanced coordination with trade associations such as the N.C. Environmental Restoration Association and the American Council of Engineering Companies/North Carolina.

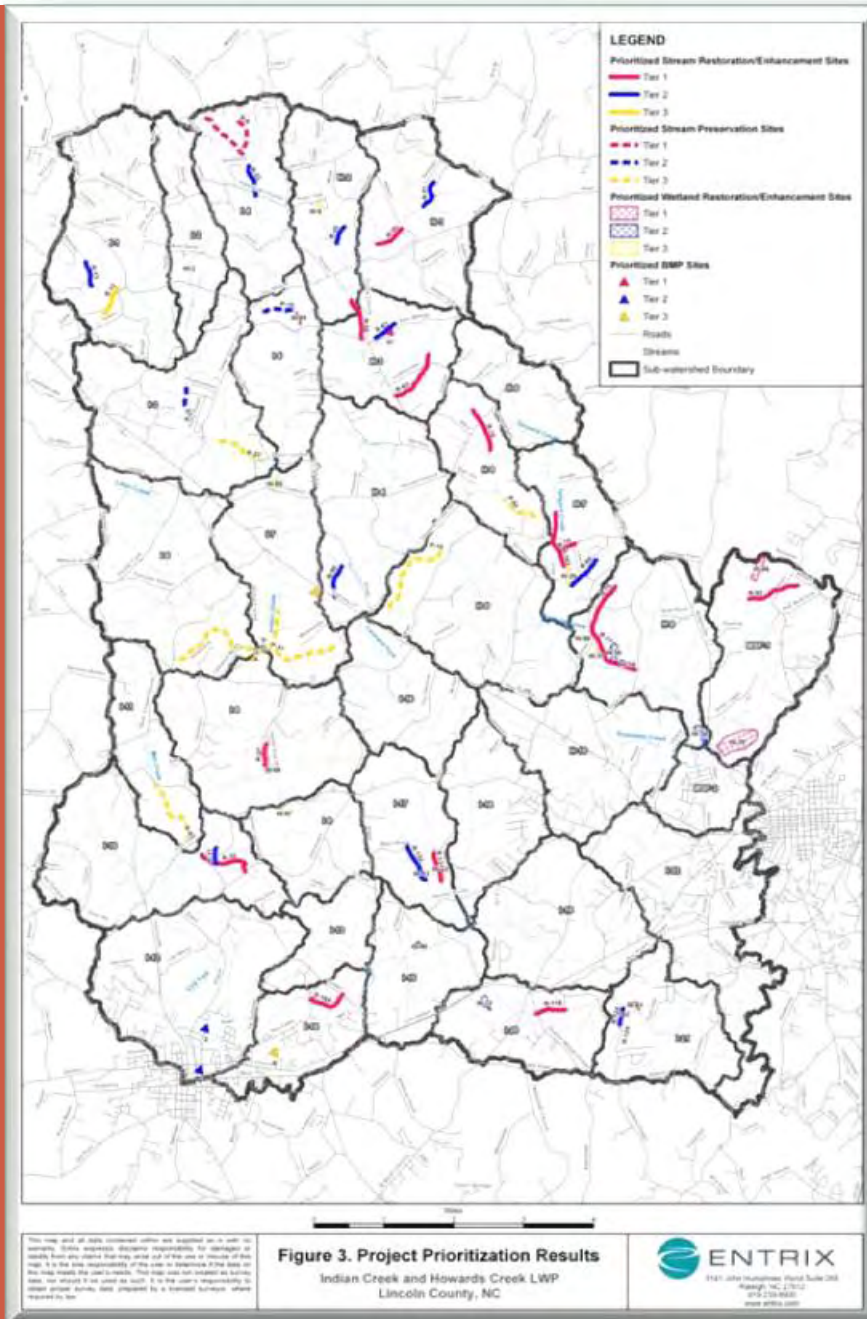
Collaboration with these organizations has led to several program enhancements, many of which are described in this and previous reports. EEP will continue regular interactions with these organizations and will also coordinate further with the N.C. Association of Environmental Professionals.

EEP's work on watershed planning and project implementation involves cooperation and teamwork with a variety of partners across the state. The program has recently begun spotlighting particular examples on its web portal where partnerships are working to magnify the beneficial effects of compensatory mitigation as practiced by EEP.

Of particular note in FY 2010-11 is EEP's participation in NCDENR's Watershed Restoration Improvement Team, a collaborative effort that focuses the department's resources in priority watersheds across the state. The initiative is focusing on the Indian Creek watershed, part of Indian and Howards Creek Local Watershed Plan developed by EEP in October 2010.

Through this collaboration, multiple state and local partners including EEP, the

N.C. Division of Environmental Health, the N.C. Division of Water Quality and the Lincoln County Soil and Water Conservation District and Lincoln County government are contributing time and resources to implement watershed management recommendations. The initiative provides support for grant funding and water-quality monitoring and is developing strategies to document uplift provided by cooperative watershed-improvement projects.



## In-Lieu Fee Customer Satisfaction Survey

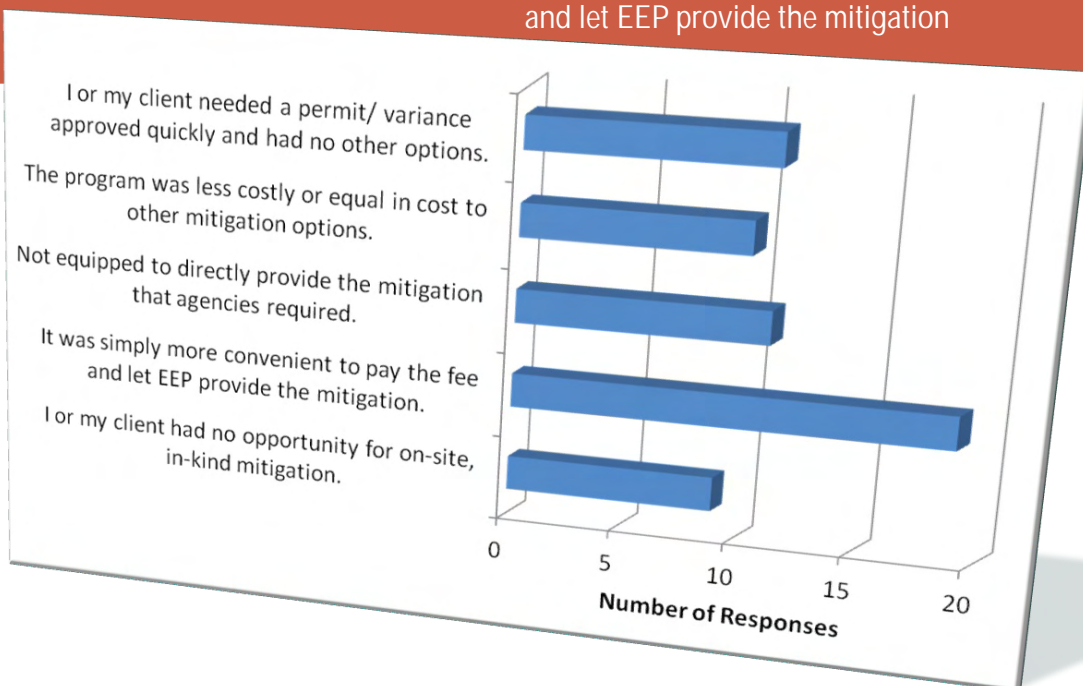
EEP's ILF Program customers again registered overall satisfaction with the program's performance and fee schedule in the FY 2010-11 customer-satisfaction survey. Survey questions can be found in [Appendix A-1](#).

Of the 32 responses received in the online survey, 100% were satisfied and more than 60 percent responded that they were extremely satisfied. Almost 40 percent of participants responded that the fee paid was very reasonable, and that it would have cost more to do the mitigation without using the program. The survey results are presented in detail in [Appendix A-2](#).

When asked why they chose to use the program, the most frequent response was that it was simply more convenient to pay the fee and let EEP provide the mitigation; however, about one-third of the respondents also indicated that they were in need of rapid permit approval, and similarly, about one-third indicated that they were not equipped to provide the mitigation that was required.

All respondents agreed that they would use or recommend that their clients use the ILF Program in the future. Comments received from the survey respondents praised EEP staff for being timely, professional, courteous, helpful, knowledgeable and responsive, and EEP as being "business friendly."

### In-Lieu Fee Program participants choose to pay the fee and let EEP provide the mitigation



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# EEP In-Lieu Fee Programs

EEP has [four separate ILF mitigation programs](#), each operating independently and maintaining its own financial fund accounts under which revenues are collected, expenditures are made and funds are encumbered toward contracts for the planning and delivery of mitigation projects. EEP does not receive any appropriations from the General Assembly.

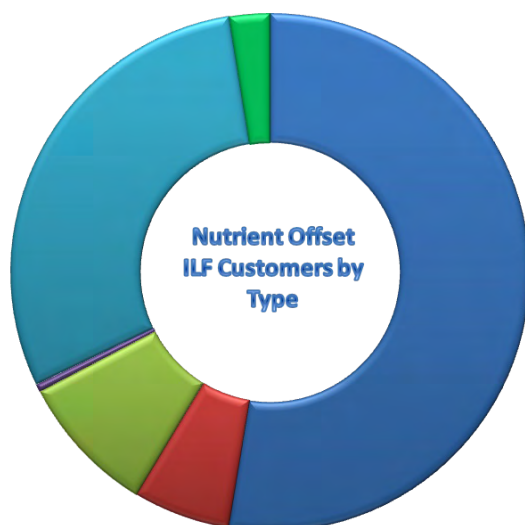
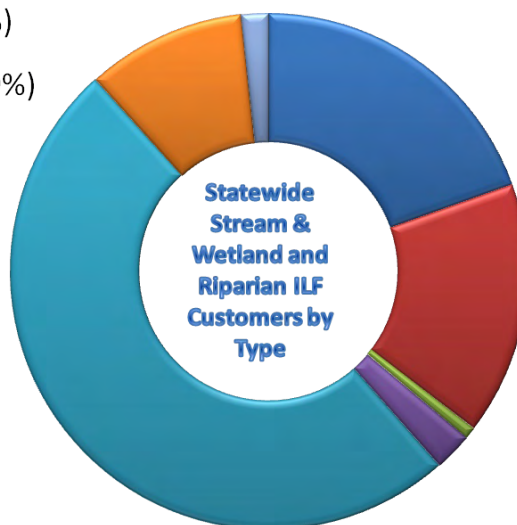
EEP's ILF programs include:

- 1) NCDOT Stream and Wetland;
- 2) Statewide Stream and Wetland;
- 3) Riparian Buffer Mitigation; and
- 4) Nutrient Offset.

Eligibility to participate in an EEP program is a joint decision made by the developer, EEP and the regulatory agencies ([legislative mandates](#) in recent years have affected eligibility in various ways for participation in EEP's ILF programs). In each of the mitigation programs, applicants make payments to EEP instead of providing mitigation themselves. Upon payment, EEP assumes the full legal responsibility for planning, developing and implementing the required types and amounts of mitigation, and applicants are no longer liable for the mitigation requirement.

## In-Lieu Fee Program Customers

- Commercial, Industrial & Retail (19.5%)
- Local/State/Federal Government (15.9%)
- Non-Profit Organization (0.7%)
- Private Utilities (2.4%)
- Residential (49.8%)
- DOT (10.0%)
- Military (1.7%)



- Commercial, Industrial & Retail (52.6%)
- Local/State/Federal Government (6.0%)
- Non-Profit Organization (8.8%)
- Private Utilities (0.5%)
- Residential (29.6%)
- Private Educational (2.6%)

## **NCDOT Stream and Wetland Program**

The NCDOT Stream and Wetland Program has been a national leader in producing mitigation credits in advance of unavoidable environmental impacts, which is the primary objective of the program. The goal is to produce sufficient mitigation credits to offset impacts from the implementation of the entire NCDOT seven-year [Transportation Improvement Program](#) (TIP) in advance of the permitting phase of those roadway projects. By 2015 mitigation projects will be designed, constructed and monitored for at least two years prior to the letting of any specific TIP project. To date, the NCDOT Stream and Wetland Program has more than 790,000 stream credits and more than 8,500 wetland credits ready to use for future NCDOT projects that are already programmed.

The NCDOT Stream and Wetland Program historically operated under the 2003 [Memorandum of Agreement](#) (MOA) among NCDENR, NCDOT and the U.S. Army Corps of Engineers (USACE). In 2010, the program began operating under the [In-Lieu Fee Mitigation Instrument](#). Both documents outline the procedures for NCDOT's utilization of EEP as an ILF program for NCDOT's offsite stream and wetland mitigation needs, and specifies performance metrics for the delivery of that mitigation.

Each February, NCDOT provides EEP with a programmatic mitigation order by forecasting NCDOT's future impacts and mitigation needs for the TIP. EEP secures the mitigation needed by NCDOT following the timelines and protocols outlined in the 2003 MOA and 2010 Instrument.

In FY 2010-11, EEP received permits for 36 NCDOT transportation projects that required stream and/or wetland mitigation to offset impacts associated with TIP and NCDOT division-level projects across the state. Due to the scope, scale and advanced nature of the NCDOT Stream and Wetland Program, NCDOT makes quarterly invoice payments to EEP based on the next quarter's projected cash-flow costs of implementing the program. Costs are primarily comprised of existing mitigation projects in development, new projects that have expenditures expected to start in the next quarter, and administrative costs.

For the 36 permitted projects, EEP provided 66,014 stream mitigation credits and 283 wetland mitigation credits. In addition to these projects, EEP received five additional division-level permits representing 735 stream credits that are in the process of mitigation responsibility transfer to EEP. As a matter of procedure, EEP provided the mitigation for division-level permits during the fiscal year.

## **Statewide Stream and Wetland Program**

A voluntary, receipt-based ILF program available to the general public, the program provides applicants for Clean Water Act Section 404 permits, Section 401 Water Quality certifications, and/or Coastal Area Management Act permits an option to satisfy compensatory mitigation requirements for their wetland and stream impacts. Permit applicants (commercial and residential developers, governmental agencies including municipalities and military installations, among others) have three primary options for satisfying mitigation needs: 1) produce the mitigation themselves; 2) purchase credits from a mitigation bank; or 3) request that EEP satisfy the mitigation requirement. *(Note: EEP is not an option for nongovernmental entities when mitigation banks have available credits. S.L. 2011-343 redefined all local governments except Charlotte, Greensboro and Raleigh as non-governmental entities.)*

EEP generates mitigation in all of North Carolina's 17 river basins. If no private mitigation banks exist in the service area of the wetland or stream impacts, applicants may pay into EEP's ILF program. All payments collected (receipts) and expenditures for this program are made from the Statewide Stream and Wetland Fund.

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Upon acceptance of a mitigation requirement and subsequent payment, EEP provides the off-site compensatory mitigation necessary to satisfy the regulatory requirement. The work may consist of restoring, enhancing and/or protecting streams and wetlands. The availability of this program helps the general public by providing a service that is cost-effective and expedites the regulatory processes.

Protocols for mitigation delivery under this program are specified in the 2010 In-Lieu Fee Mitigation Instrument. [Stream and wetland payment data](#) are now available on EEP's web portal.

In FY 2010-11, 62 payments were made into the Statewide Stream and Wetland Program, totaling \$7,466,303.75. Of this amount, 28 payments resulted from requirements of both USACE (CWA Section 404) and DWQ (CWA Section 401), 31 payments had requirements from USACE only, and three had requirements from DWQ only. Payments represented 13,381 stream credits and 51.82 wetlands credits.

Thirty-four percent of payments into this program were from government entities. A majority of these projects were local infrastructure projects such as water lines, sewer improvements, schools and roads. Sixty-six percent of payments for wetlands and streams came from private developers, including utility companies, retailers, industry/manufacturing and other commercial developers, farms, schools and residential projects.

## **Riparian Buffer Mitigation Program**

The Riparian Buffer Mitigation Program is an option to meet compensatory-mitigation requirements associated with riparian-buffer impacts in the Neuse, Tar-Pamlico and Catawba River basins, and the Randleman Reservoir and Jordan Lake watersheds in the Cape Fear River basin. Payments and expenditures are managed in the Riparian Buffer Restoration Fund (Fund Code Account 2982) according to the regulatory schedule of fees for buffers. [Payment data for the Riparian Buffer Program](#) are available on EEP's website.

In FY 2010-11, EEP received 24 payments for 717,585 square feet (16.5 acres) of buffer mitigation. Approximately 40 percent of the requirements came from NCDOT, while other government entities and private developers represented 32 percent and 28 percent respectively of buffer requirements paid. Development projects supported by this program include local government water and sewer projects, roads, schools, utilities, farms and commercial and residential development projects. At the close of the fiscal year, EEP has accepted responsibility for 686.23 acres of buffer-mitigation requirements since the program's inception in the applicable river basins.

## **Nutrient Offset Program**

The Nutrient Offset Program is an option to meet compensatory-mitigation requirements associated with nutrient loadings under the Neuse, Falls Lake and Tar-Pamlico [nutrient-management strategies](#). Applicants seeking permits for construction-related impacts to upland areas may elect to undertake additional on-site measures to meet nutrient-reduction requirements, purchase nutrient reductions from a private mitigation bank or pay a fee to EEP to produce the mitigation. (Note: Session Law 2009-337 and Session Law 2011-343 established that nongovernmental entities, including most local governments, may not elect to use EEP's Nutrient Offset Program if private mitigation banking credits are available.)

During FY 2010-11, 41 nutrient-offset payments were made to offset nutrient loading for development projects authorized by Durham and Franklin counties and the municipalities of Durham, Greenville, Henderson, Kinston, Raleigh, Rocky Mount and Washington. Payments covered 988 pounds of nitrogen reduction in the Neuse River basin, 3,307 pounds of nitrogen and 34 pounds of phosphorus reduction in the Falls Lake watershed, and 9,107 pounds of nitrogen reduction and 431 pounds of phosphorus reduction in the Tar-Pamlico River basin.

Development projects supported by this program include local-government services, schools, churches and commercial development projects. Seventy-five percent of payments came from private developers. Nutrient Offset payment data are now available on EEP's web portal.



# EEP Watershed Planning and Mitigation Projects

The development and delivery of high-quality mitigation projects by EEP involves activities related to watershed planning, property acquisition, project implementation and long-term stewardship. This section provides a high-level description of program activities within these categories during FY 2010-11.

## Watershed Planning

EEP's [enabling legislation](#), the [2008 federal compensatory-mitigation rule](#) and EEP's ILF Mitigation Instrument require EEP to implement mitigation projects based on watershed planning. All of EEP's stream and wetland mitigation projects developed after July 2010 must be implemented using a watershed planning approach, with exceptions requiring approval by the state-federal Interagency Review Team. EEP's adherence to the watershed approach outlined in the 2008 federal rule is documented in the Compensation Planning Framework included as Appendix I of the In-Lieu Fee Mitigation Instrument.

Watershed planning is used to determine the best locations for mitigation projects based on an analysis of watershed needs. EEP does this by conducting both [River Basin Restoration Priority \(RBRP\) planning](#) and [Local Watershed Planning](#). More information about EEP watershed planning, including [documents searchable by county or river basin](#), and [contact information for EEP planners](#) in each area, is available on EEP's web portal.



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Adkin Branch Stream Restoration Project in Kinston, NC

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## River Basin Restoration Priority Plans

RBRPs outline where watershed restoration or protection is most needed and identify watersheds in which EEP and its partners may best implement conservation through both restoration and preservation of natural resources. In FY 2010-11, EEP staff updated RBRP documents for the Neuse, Tar-Pamlico and White Oak basins. [All RBRP documents are posted on the EEP web portal](#), searchable by river basin or county.

By statute, EEP must develop RBRPs a minimum of every five years for each of the state's 17 river basins. EEP continues to coordinate with DWQ regarding water quality monitoring data updates and basinwide planning schedules to develop priorities. RBRPs are produced by conducting a detailed screening analysis for each eight-digit catalog unit (CU) within a river basin. In addition to office-based assessments using spatial and other data for a river basin, EEP visits each of the CUs for field verification of the data and meetings with local experts, including resource professionals from other agencies. RBRPs list restoration goals for each CU within a river basin and identify Targeted Local Watersheds (TLWs), which are 14-digit hydrologic units that have an appropriate mix of not just problems, but also assets and opportunities that will support watershed improvement.



## Local Watershed Plans

Local watershed planning merges identified Targeted Local Watersheds with projected impacts from development projects (primarily NCDOT road projects) to determine where future mitigation investments can provide the greatest benefit for the state's aquatic resources. The development of local watershed plans is typically a four-phase process: preliminary watershed characterization (Phase I); detailed assessment (Phase II); development of a watershed management plan, that includes a project atlas of potential watershed improvement projects (Phase III); and implementation of identified projects (Phase IV). Stakeholders representing local interests and expertise participate extensively in the local watershed planning process, often bringing current knowledge to the table and helping to promote watershed improvement activities beyond the formal reach of the LWP, through their engagement with local citizens and landowners.



EEP also supports watershed plans developed by other state, federal, tribal and/or local government agencies or non-governmental organizations that demonstrate the six key elements outlined in the Compensation Planning Framework included as part of [EEP's ILF Instrument](#). Organizations seeking EEP acceptance of watershed-planning initiatives may complete a [LWP submittal](#) form available on EEP's portal. Once a plan is accepted, EEP may augment the existing plan and will work to implement projects identified in the watershed plan as mitigation needs develop.

The plans are defined as completed by EEP at the end of Phase III with the production of a watershed-management plan and project atlas that details mitigation and other opportunities for improvement and protection of the watershed. Phase IV focuses on outreach and implementation of projects derived from the planning process, often with the involvement and support of stakeholders who participated in plan development.

The plans are designed such that they result in a suite of watershed-restoration recommendations (such as changes to local ordinances and public education to improve stormwater management) that can be implemented by a myriad of public and private entities over an extended period of time. At the close of FY 2010-11, EEP had completed 29 plans; a summary of plans completed and the status of Phase IV efforts is included as [Appendix B-1](#).

EEP is continuing work on watershed analysis across the state, with six plans in various stages of development. Four other plans are currently on hold due to decreases in mitigation needs. [Appendix B-2](#) presents a summary of the ongoing plans; these are efforts that haven't yet resulted in a final watershed management plan or project atlas. [Appendix B-3](#) summarizes funding for additional watershed projects conducted by EEP planning partners and leveraged by EEP watershed plans. [Fact sheets](#) summarizing EEP's local watershed planning efforts and links to associated timelines and reports are available on EEP's portal. A [clickable map](#), also on the portal, shows the current EEP planning areas and provides an alternative path to information on specific plans.

EEP is developing modifications to the planning process so that plan products are more conducive to full-delivery outsourcing. Next year's annual report will include details on this initiative.



Photo Credit: Tar River Land Conservancy

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## Property Acquisition

In addition to acquisition of mitigation properties in a timely manner through the State Property Office, EEP is charged with protecting the conservation values of the lands that the program has acquired or restored. An important part of this is the prevention of encroachments or violations of conservation-easement restrictions.

In recent years, new policies have been established and carried out to refine boundary placement and marking techniques to help partnering property owners, the public and adjacent landowners recognize protected areas. Improvements in electronic data-sharing have allowed EEP to compile electronic records for most of the protected properties and to complete quality assurance on most of the conservation easements, deeds and survey plats.

Information is now available to allow all EEP staff, other state and federal agencies, partnering landowners and other citizens to view a subset of the restored or protected areas on the new web portal. Work is underway to finalize information and provide it during the coming year through the EEP portal.

All properties connected to EEP mitigation projects are permanently protected through fee-simple property acquisition or by acquisition of a permanent conservation easement. During FY 2010-11, the State Property Office closed on 61 transactions totaling 657 acres associated with EEP's enhancement, restoration, and preservation projects, including 31 permanent conservation easements and two fee-simple acquisitions.

Twenty-four transactions were temporary construction easements, and one transaction was recorded of each of the following types: modification of conservation easement, technical correction, allocation of property interest and notice of sale. All properties that closed during FY 2010-11 are shown in [Appendix C-1](#). Landowners formally agreed to give EEP the right to acquire an easement or property for 33 parcels, listed in [Appendix C-2](#).

A full inventory of all properties acquired for compensatory mitigation since the inception of the Wetlands Restoration Program in 1996 is presented in [Appendix C-3](#). More than 49,440 acres have been purchased or donated to date.



## Project Implementation

In FY 2010-11, EEP used two primary contracting methods for outsourcing the design, construction and monitoring of restoration projects needed to meet compensatory mitigation compliance obligations: Design-Bid-Build and Full Delivery. Both of these methods are critical to EEP's success in meeting the state's mitigation needs. Since EEP's 2010-11 Full Delivery project contracts were awarded during the fiscal year and executed in June and July 2011, these projects are included in this report. A more detailed description of contracts executed and payments made to contractors during the period can be found in the [Program Financial Information](#) section of this report and additional data concerning contracts and payments for project implementation are provided in the Appendices. The EEP project inventory consists of 582 projects, including 37 in design, 45 in active construction, 177 in monitoring, 99 in the closeout process with regulatory agencies and 224 in long-term stewardship.



## Monitoring and Closeout

Of the 177 projects in the monitoring phase; EEP studied a sample of 110 projects to evaluate degrees of success these projects are showing at attaining regulatory performance standards. EEP evaluated stream stability, wetland hydrology and vegetative performance.

Stonefly larva, an indicator of good water quality on EEP stream projects

*(Note: The projects are still developing sites and the evaluation was designed to show a snapshot of project performance, specifically for the 2010 monitoring year.)*

### 2010-11 Project Performance Statistics

The 110-project sample evaluated projects spanning all phases of post-construction measurement. The overall sample included approximately 200 stream reaches. Three main indicators of channel stability were assessed: 1) bed stability; 2) bank stability; and 3) the stability of engineered structures. The results of the study indicate that greater than 95 percent of all stream reaches exhibit stability for all three measures and are meeting regulatory standards. These data indicate that overall, the majority of the program's stream reaches are exhibiting acceptable levels of stability.

Wetland hydrology is measured to assess the degree to which the water table is raised sufficiently to support wetland systems previously drained and impacted. Of the 110 projects in the overall sample, 49 projects included wetlands. Wetland hydrology was measured using about 350 groundwater-elevation gauges. The majority of wetland gauges and associated acreage (79 percent) exhibited requisite hydrology in 2010.

Riparian and wetland vegetation was monitored through a combination of visual assessment and fixed plots. All 110 projects were evaluated using more than 1,000 vegetation plots; 84 percent of plots equaled or exceed the regulatory standard of 320 woody stems per acre. The mean density for these plots was approximately 1,200 stems per acre. These wetland data indicate that overall, the majority of the program's wetlands are exhibiting requisite hydrology and vegetation measures.

### 2010-11 Project Maintenance

The process of restoring and rehabilitating small-scale ecosystems requires nurturing during the initial stages and even repair in some cases, until the systems can achieve their own equilibrium. This often involves the suppression of aggressive non-native plants and supplemental planting of areas within the site that are subject to attrition or poor growth due to a variety of factors including drought, variation in soil conditions, encroachment and wildlife pressures.

In FY 2009-10, 32 projects were identified by EEP staff and contractors for invasive plant control and 29 projects identified as requiring supplemental planting within EEPs design-bid-build project inventory. All of those projects identified as requiring invasive plant control were treated in 2010 and again in the 2011 growing season. Ten of those projects identified for supplemental planting were planted in the 2010-11 dormant season, with the remaining 19 planned for the 2011-12 dormant season.

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Approximately 20 additional sites have been identified for supplemental planting and invasive control based on observations from 2010 monitoring. The majority of these projects identified in 2010 represent small supplemental planting efforts in localized areas or early preventive maintenance to control aggressive invasive vegetation before they become problematic. Structural repairs were either contracted or implemented in 2010-2011 for eight projects, four of which were stream projects. Four others included both streams and wetland features. Seven of the eight projects were stream repairs, with the eighth involving an adjustment to stream features to better support target wetland hydrology.

[Appendix D-1](#) contains a list of 184 projects that EEP actively monitored during FY 2010-11. [Monitoring reports](#) can be viewed in the EEP portal library.

In coordination with state and federal regulatory agencies through the IRT, 30 EEP projects will be proposed for closeout during FY 2011-12 (closeout is the process by which the regulatory agencies give final approval to projects and validate the number of mitigation credits generated). These projects are shown in detail in [Appendix D-2](#) and comprise a total of 270,275 stream mitigation credits, 185 riparian-wetland mitigation credits, 846 nonriparian-wetland mitigation credits, and 3,308,382 riparian-buffer mitigation credits.

## **Long-Term Stewardship**

At the close of FY 2010-11, EEP had 224 projects in long-term stewardship. Of these, EEP has transferred responsibility for 132 sites to the NCDENR Stewardship Program. No significant easement violations on any of these sites have been reported.

Because of economic impacts of falling interest rates, reduced revenue and re-evaluation of stewardship needs, the [NCDENR Stewardship Program](#) is revisiting its current fee structure and stewardship model. Representatives from EEP, NCDOT and the NCDENR Stewardship Program are working to develop a modified framework for stewardship administration during the coming year. Advice from financial advisors and other experts will be sought prior to the development and implementation of the final long-term stewardship model.

In the interim, stewardship of newly closed-out sites either will be the responsibility of the agency or nonprofit that has formally accepted management of the site or, depending upon the holder of the property interest, will be temporarily retained by EEP or NCDOT. EEP remains committed to the long-term protection of all its compensatory mitigation sites.

## **Project Analysis**

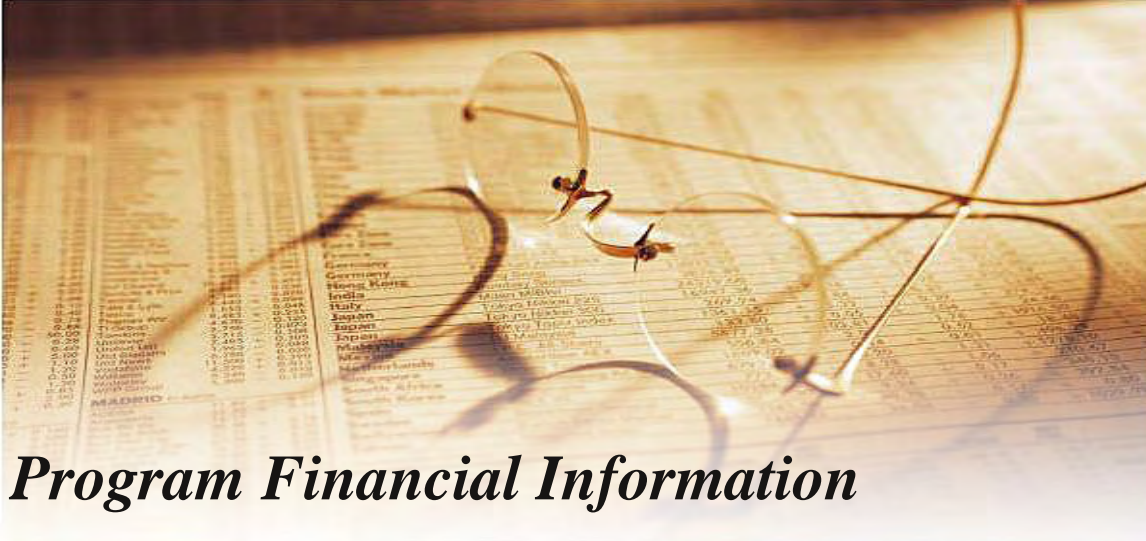
EEP's reorganization, described in the Continuous Improvement Initiatives and Program Partnerships section of this report, renewed its commitment to the development of sound scientific data, continual analysis of mitigation strategies and collaboration with the scientific community. The new EEP Science and Analysis section was created from the Monitoring and Research group and was expanded to include technical expertise in hydrologic modeling, watershed-scale functional changes, wetlands, vegetation, databases and geographic-information systems.

The new section will review emerging research and technologies and coordinate closely with the scientific community. It will evaluate the performance of projects at both the site and catchment scale, as well as make recommendations for future project-implementation and project-repair techniques.

In FY 2010-11, EEP:

- Began partnering with local universities to develop wetland hydrology and stream geomorphology databases;
- Participated in the formation of the NCDENR Science Advisory Panel as described in the Continuous Improvement Initiatives and Program Partnerships section of this report; and
- Evaluated a sample of EEP restoration projects to demonstrate water-quality benefits; and
- Initiated a study that focuses on evaluating channel morphology and bank scour along stream reference reaches to better determine what success criteria should be used to evaluate stream-restoration projects.





# Program Financial Information

Revenues collected by EEP through its ILF programs are used to implement mitigation projects that will provide maximum environmental benefits to the state's natural resources. A small part of EEP's revenues are used to administer the program. EEP may apply for and receive grants that may supplement non-mitigation efforts such as restoration-technology research, restoration training, environmental-resource information and educational outreach.

## Financial Status of Program Funds

The sections below provide details for each program's complete financial status for FY 2010-11. Common terms used in each of the sections are defined, below.

### Definitions for Terminology Used in the Description of Fund Status

<b>Beginning Balance</b>	The amount of cash in the fund account at the beginning of FY
<b>Receipts</b>	The amount of money collected during FY
<b>Expenditures</b>	The amount of money spent during FY
<b>Ending Cash Balance</b>	The amount of cash in the fund account at the end of FY
<b>Encumbered Cash - Current Projects</b>	The amount of cash encumbered for contracts for projects
<b>Cost to Complete Requirements</b>	The amount of money necessary to complete program requirements
<b>Adjustments Recently Executed Contracts</b>	Adjustments to encumbrances and cost to complete requirements due to contracts and expenditures made at end of year that were in process
<b>Unencumbered Cash Balance</b>	The amount of cash not encumbered at the end of FY
<b>Net Accounts Receivable</b>	The net amount of outstanding receipts that will be collected over time
<b>Estimated Value of Unused Credits</b>	The current estimated value of unused credits available for sale
<b>Overall Fund Status</b>	The sum of all financial assets and liabilities

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## NCDOT Stream and Wetland Program (Fund 2984)

This program applies only to stream and wetland mitigation supplied to NCDOT. At the request of NCDOT, payments made for mitigation production are programmed on a cash-flow basis. As a result, EEP invoices NCDOT for the actual cost for the work being processed to include administration, payments made to engineers, contractors and full-delivery providers.

EEP invoices NCDOT on a quarterly basis and secures only those funds required to cover anticipated operating costs for the upcoming quarter. Future-year obligations are guaranteed to be paid in accordance with an MOA between NCDOT and NCDENR. The current total amount of NCDOT obligations are listed as the "Net Accounts Receivable." [Appendix E-1](#) lists the NCDOT Stream and Wetland Program permitted requirements.

Detailed information is reported to NCDOT on a quarterly basis during routine invoicing processes. Also, as a matter of normal business practice, the NCDOT Inspector General's office audits the financial files at EEP quarterly before payment is made and has had no significant findings in nearly 30 inspections. In addition, no discrepancies have been found in each of the Federal Highway Administration's two on-site audits of EEP.

### Status of Fund 2984

<b>Beginning Balance</b>	\$3,090,951.57
<i>Plus: Receipts</i>	\$23,396,138.80
<i>Plus: Interest Earned</i>	\$54,026.17
<i>Subtotal</i>	\$26,541,116.54
<i>Less: Expenditures</i>	<u>(\$25,106,751.41)</u>
<b>Ending Cash Balance</b>	\$1,434,365.13
<i>Less: Encumbered Cash Current Projects</i>	<u>(\$58,648,058.73)</u>
<i>Less: Cost to complete Future Contract Requirements</i>	<u>(\$87,445,540.89)</u>
<i>Less: Adjustments Recently Executed Contracts</i>	<u>\$0.00</u>
<b>Unencumbered Cash Balance</b>	<u>(\$144,659,234.49)</u>
<i>Plus Total Net Accounts Receivable</i>	<u>\$144,659,234.49</u>
<i>Grand Total Projected Cash</i>	\$0.00
 <b>Net Asset Inventory Value</b>	 \$609,935,664.62
 <b>Grand Total Program</b>	 \$609,935,664.62

## Statewide Stream and Wetland Program (Fund 2981)

This program is a voluntary, receipt-based ILF program available to the general public. All payments collected (receipts) and expenditures for this program are made from the Statewide Stream and Wetland Fund (Fund 2981). [EEP's fees](#) for the program are listed on the EEP web portal.

The program is currently sound but has seen a steady decrease in cash balances as the cost of completing existing projects and requirements is paid out. The recent downturn in the economy, coupled with the effects of Session Law 2009-337 and Session Law 2011-343 that prevent non-governmental entities from purchasing credits from EEP in certain cases, has had a negative effect on fund receipts. [Appendix E-2](#) lists Statewide Stream and Wetland Program FY 2010-11 receipts and requirements.

A condition identified during FY 2009-10 is that the projected cost of completing all existing projects and requirements exceeds the current cash and accounts receivable. Counterbalancing this condition, the fund has unused and unobligated credits valued at approximately \$30 million that may be applied to customers seeking mitigation in the areas where those assets exist. EEP will continue to closely monitor projected expenditures and revenues related to this fund over the next year and will consider what actions may be necessary to protect its integrity.

EEP also will closely monitor the rate at which fees are paid. For this fund, accounts receivable are comprised mostly of NCDOT payments associated with an agreement between NCDOT and EEP's precursor, the Wetlands Restoration Program. Under that agreement, NCDOT agreed to pay the actual cost of mitigation associated with payments made to the Wetlands Restoration Program.

## Status of Fund 2981

<b>Beginning Balance</b>	\$14,716,636.97
<i>Plus: Receipts</i>	\$10,543,293.47
<i>Plus: Interest Earned</i>	\$158,961.78
<i>Subtotal</i>	\$25,418,892.22
<i>Less: Expenditures</i>	(\$12,506,143.99)
<b>Ending Cash Balance</b>	\$12,912,748.23
<i>Less: Encumbered Cash Current Projects</i>	(\$22,324,184.57)
<i>Less: Cost to complete Future Contract Requirements</i>	(\$16,141,600.00)
<i>Less: Adjustments Recently Executed Contracts</i>	(\$760,346.06)
<b>Unencumbered Cash Balance</b>	(\$26,313,382.40)
<i>Plus Total Net Accounts Receivable</i>	\$25,287,346.61
<i>Grand Total Projected Cash</i>	(\$1,026,035.79)
<b>Net Asset Inventory Value</b>	\$29,705,468.94
<b>Grand Total Program</b>	\$28,679,433.15

The projects with which those payments are associated are in the process of being completed. As each project is completed, EEP and NCDOT determine the final amount of additional payment or reimbursement necessary for that project, based on the original receipt and actual costs of that project. The rate of these collections is based on the rate at which these projects are deemed completed by the regulatory agencies.

Payments from NCDOT will be made over the next several years as projects are completed. The cash flow of expenditures and collections for this fund is closely monitored to ensure that sufficient cash integrity is retained.

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## Status of Fund 2982

<b>Beginning Balance</b>	\$9,290,280.87
<i>Plus: Receipts</i>	\$2,237,480.85
<i>Plus: Interest Earned</i>	\$88,118.59
<i>Subtotal</i>	\$11,615,880.31
<i>Less: Expenditures</i>	(\$3,929,905.81)
<b>Ending Cash Balance</b>	\$7,685,974.50
<i>Less: Encumbered Cash Current Projects</i>	(\$3,658,999.83)
<i>Less: Cost to complete Future Contract Requirements</i>	(\$7,697,562.00)
<i>Less: Adjustments Recently Executed Contracts</i>	\$4,940,484.56
<b>Unencumbered Cash Balance</b>	\$1,269,897.23
<i>Plus Total Net Accounts Receivable</i>	\$148,054.73
<i>Grand Total Projected Cash</i>	\$1,417,951.96
 <b>Net Asset Inventory Value</b>	 \$122,561.87
 <b>Grand Total Program</b>	 \$1,540,513.83

### Riparian Buffer Mitigation Program (Fund 2982)

This program collects payments and makes expenditures from the state's Riparian Buffer Fund for the Neuse, Tar-Pamlico and parts of the Catawba and Cape Fear River basins. Applicants seeking permits for unavoidable impacts to protected buffers along stream systems may elect to produce the mitigation themselves, purchase credits from a mitigation bank or pay EEP to produce the mitigation and satisfy permit requirements.

However, under Session Law 2009-337 and Session Law 2011-343, non-governmental entities may not use the Riparian Buffer Mitigation Program if a private mitigation bank has credits available. Because of decreased development activities and the recent session laws, receipts in FY 2010-11 were down by approximately 83 percent when compared to the last three fiscal years. [Appendix E-3](#) lists Riparian Buffer Program FY 2010-11 receipts and requirements.

The program's expenditures include the costs associated with mitigation production (contract engineering, construction, land acquisition and long-term protection of mitigation sites) and the administrative costs of implementing the program. The types of projects produced consist of re-establishment and protection of buffers (primarily involving the planting of vegetation) along streams and riverbanks in the protected basin. The availability of this program helps the general public by providing a service that is cost-effective and simplifies the permitting processes. The fee for a square foot of buffer mitigation was set at \$0.96 when the program started in 1999 and has remained unchanged.

The N.C. General Assembly withdrew and transferred to the N.C. General Fund \$488,118.59 from Fund 2982 during FY 2010-11. Despite this, the program appears sound at this time and probably has sufficient cash reserves to complete existing projects and program requirements. Any reserve funds available are a necessary safety factor since the monitoring periods on most of the projects in the program are not complete and unforeseen costs sometimes materialize during this period.

Furthermore, two new buffer program areas are being implemented in the Falls Lake and Jordan Lake watersheds. The cost of implementing projects in these areas is expected to be substantially higher than in other areas of the state. The initial rate of collections in the Falls and Jordan Lake areas also is not expected to completely cover the cost of implementing the first round of projects. In general, it can take dozens of payments to fully fund a single riparian-buffer mitigation project. Thus, any cash reserves are expected to be consumed during the initial development of these new areas.

## Status of Fund 2982 - Account 9829

<b>Beginning Balance</b>	\$8,064,305.62
<i>Plus: Receipts</i>	\$894,112.18
<i>Plus: Interest Earned</i>	\$71,975.23
<i>Subtotal</i>	\$9,030,393.03
<i>Less: Expenditures</i>	(\$3,185,607.97)
<b>Ending Cash Balance</b>	\$5,844,785.06
<i>Less: Encumbered Cash Current Projects</i>	(\$2,105,529.47)
<i>Less: Cost to complete Future Contract Requirements</i>	(\$3,491,631.00)
<i>Less: Adjustments Recently Executed Contracts</i>	\$2,245,981.12
<b>Unencumbered Cash Balance</b>	\$2,493,605.71
<i>Plus Total Net Accounts Receivable</i>	\$30,698.88
<i>Grand Total Projected Cash</i>	\$2,524,304.59
<b>Net Asset Inventory Value</b>	\$2,882,670.30
<b>Grand Total Program</b>	\$5,406,974.89

## Nutrient Offset Program (Fund 2982, Account 9829)

The Nutrient Offset Program collects payments and makes expenditures from the state's Nutrient Offset Account (Fund 2982-9829). The account has been in existence for the Neuse River basin since 1998, but in March 2006 the Tar-Pamlico River basin was added, and the Falls Lake and Jordan Lake watersheds are also being added as nutrient-program areas. Like all of EEP's ILF mitigation programs, this program is a voluntary program that provides an option to the regulated community.

The types of projects produced by EEP may consist of best management practices such as stormwater retention structures and stormwater wetland projects, or vegetated buffers that will reduce nitrogen and phosphorus loadings into river basins. The program's expenditures include the costs associated with mitigation production (contract engineering, construction, land acquisition and long-term protection of mitigation sites) and the administrative costs of implementing the program. The availability of this program helps the general public by providing a service that is cost-effective and expedites permitting processes. [Appendix E-4](#) lists the FY 2010-11 Nutrient Offset Program receipts and requirements.

The overall financial condition of this program is sound. During FY 2010-11, new rules were implemented that changed the program's nutrient fees to an [actual cost basis](#). As the program moves forward, the fee rates charged for nutrient offsets will be based on the actual costs of the program and will be automatically updated annually (or quarterly if the costs increase by 10 percent or more, according to Environmental Management Commission rule). The rates are locally specific to the costs and receipts collected in multiple regions.

During FY 2010-11, the N.C. General Assembly withdrew and transferred to the N.C. General Fund \$738,784.25 from the Nutrient Offset Program Account (Fund 2982-9829). Despite these withdrawals, the program remains financially sound. The condition of the program is similar to the Riparian Buffer Program in that cash reserves are a necessary

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safety factor, since most of the projects in the program have not completed the monitoring period and unforeseen costs sometimes materialize during this period.

Furthermore, the Falls Lake and Jordan Lake watersheds are newly established nutrient program areas, and the cost of implementing projects in these areas is expected to be substantially higher than in other areas of the state because of land prices and the potentially high cost of finding suitable sites. Also, the rate of collections is not expected to completely cover the cost of implementing the first round of projects. In general, it can take more than 100 payments to fully fund a single nutrient mitigation project. Thus, the current cash reserve is expected to be consumed during the development of these first few projects.

## **Project Costs**

The total cost of a mitigation project is the sum of the costs of individual development phases, and may not be precisely known until the project has been completed, which can take seven to 10 years. Individual development phases include land acquisition; project design; project construction; maintenance; monitoring for project success; and long-term stewardship of the perpetually protected property.

In addition, a small amount of program funds are associated with EEP staff time to oversee contracting, project delivery, quality assurance and administration. It is important to recognize that individual project costs-per-credit do not represent the program's overall cost-per-credit. Overall costs would include all other costs incurred by the program such as administrative, watershed planning, feasibility studies, terminated projects, and inventory overhead, among others. The cost-per-credit numbers detailed below are limited to specific project costs implemented during FY 2010-11.

EEP employs two primary outsourcing methods to deliver mitigation and these procurement methods, described below, are referenced in the project cost discussion:

1) The Full Delivery method procures compensatory mitigation by issuing requests for proposals (RFPs) through the state Department of Administration. Each RFP specifies the river basin and CU within which mitigation is being sought, and the amount and type of mitigation needed (i.e., buffer, stream and/or wetland). Offerors are required to submit both a technical proposal and a cost proposal for each prospective submittal. The technical proposal details 1) the experience, qualifications and financial stability of the firm submitting the proposal; 2) the geomorphic features of the site that make it suitable for restoration; and 3) the conceptual plan for restoring the site to a more natural, stable condition, both physically and biologically. The cost proposal provides a unit cost per mitigation credit for the submittal. Qualifying proposals are evaluated based on the technical merits of the proposed restoration and the overall per-unit cost. Firms associated with selected proposals enter into a contract with EEP to convey a conservation easement to the state on the project area; develop and implement a restoration plan; and monitor the project for a minimum of five to seven years to verify that the restoration meets established success criteria.

2) The Design-Bid-Build method uses on-call design and consulting service authorizations to contract with private design and consulting firms for professional services for all stages of project development, including watershed planning, environmental resource investigations; restoration-site design and construction management; and post-construction monitoring. All construction contracts are awarded through a qualified competitive-bidding process.

## **EEP Project Costs for FY 2010-11**

Average per-unit costs of project implementation for the last fiscal year have been determined by examining both Full Delivery and Design-Bid-Build contracts awarded in FY 2010-11. Project costs this year have increased since last fiscal year. Reasons leading to per-unit cost increases include extended monitoring periods and standards required by agencies, changing regulatory policies and increasing maintenance and stewardship costs.

In FY 2010-11, EEP contracted the following types and amounts of mitigation for which average forecasted costs are presented. The costs below represent the specific project costs associated with the projects initiated this year, and do not reflect the overall program cost per credit for all projects and program costs. In FY 2010-11, no new design or construction contracts were issued for nutrient-offset projects.

- \$328 per unit of stream mitigation (82,836 stream mitigation units);
- \$63,095 per unit of riparian-wetland mitigation (113.75 riparian-wetland mitigation units);
- \$34,119 per unit nonriparian-wetland mitigation (14.75 nonriparian-wetland mitigation units); and
- \$1.21 per unit of riparian-buffer mitigation (2,962,080 units of riparian-buffer mitigation)



EEP continues to take measures to produce cost-effective mitigation through actions such as training contractors on wetland and stream construction techniques. A course taught in collaboration with N.C. State University has been offered several times in recent years, including November 2010. As understanding improves, cost efficiencies are provided through increased competition, and improved quality in project implementation is promoted.

Based on measured cost increases and anticipated regulatory changes that could increase costs, EEP is considering modifications to the program's fees for streams and wetlands. In September 2010, rate setting for the Nutrient Offset Program was converted to the Actual Cost Method, which allows rates to adjust based on actual costs incurred by the program. EEP is monitoring the performance of the method and is considering pursuit of its application in the Riparian Buffer Mitigation Program.

## Cost Analysis of Private Mitigation Banks

Reporting requirements of G.S. 143 214.13 require EEP to compare the cost of mitigation of EEP projects and private mitigation banks. To obtain the data necessary to accomplish this task, EEP sent a web-based survey requesting restoration cost information to the sponsor of each approved bank in North Carolina. [Appendix F-1](#) includes a listing of the banks that were requested to respond and a copy of the survey distributed.

All private mitigation bank sponsors were contacted by e-mail. The sponsors of those banks were requested to complete the brief survey found in [Appendix F-2](#). Of 32 banks contacted by email, five total responses were received during FY 2010-11. Respondents described nonriparian-wetland, riparian-buffer and nitrogen credits, some of which are currently available for sale in the Neuse river basin. The results are presented in [Appendix F-3](#).



## Contracts and Expenditures

This section provides information regarding the number and types of contracts currently active and awarded during FY 2010-11 for Full Delivery and Design-Bid-Build mitigation procurement. In addition, data on payments made to vendors in these different programs is provided. EEP provides [comprehensive contract data](#) on the web portal. EEP also uses NCDENR and federal agencies to provide planning, design, construction and monitoring services. This approach constitutes approximately four percent of the DBB process, and is authorized by NCDENR as described in the N.C. Administrative Code (see N.C. General Statute 143-59).

## Total Contracted Services

In FY 2010-11, the state awarded 70 new contracts to support EEP full-delivery, watershed-planning, project-implementation, monitoring and maintenance activities. The value of these new contracts was \$41,466,446.95. The following table summarizes the contract amounts by activity. Full delivery activities account for the majority of the work engaged. [Appendix G-1](#) lists all the contracts awarded this year.

## FY 2010-11 Payments to Vendors

EEP continues to contract with many vendors to support the implementation of the hundreds of projects within the program. This fiscal year, payments to vendors totaled \$24,563,135.45. The figure on the next page illustrates payments to private businesses by broad contract categories: Full Delivery, Design and Construction. [Appendix G-2](#) details the vendor payments by these contract categories. In FY 2010-11, more than 96 percent of all payments to vendors totaling \$24,642,580.45 were to private businesses.

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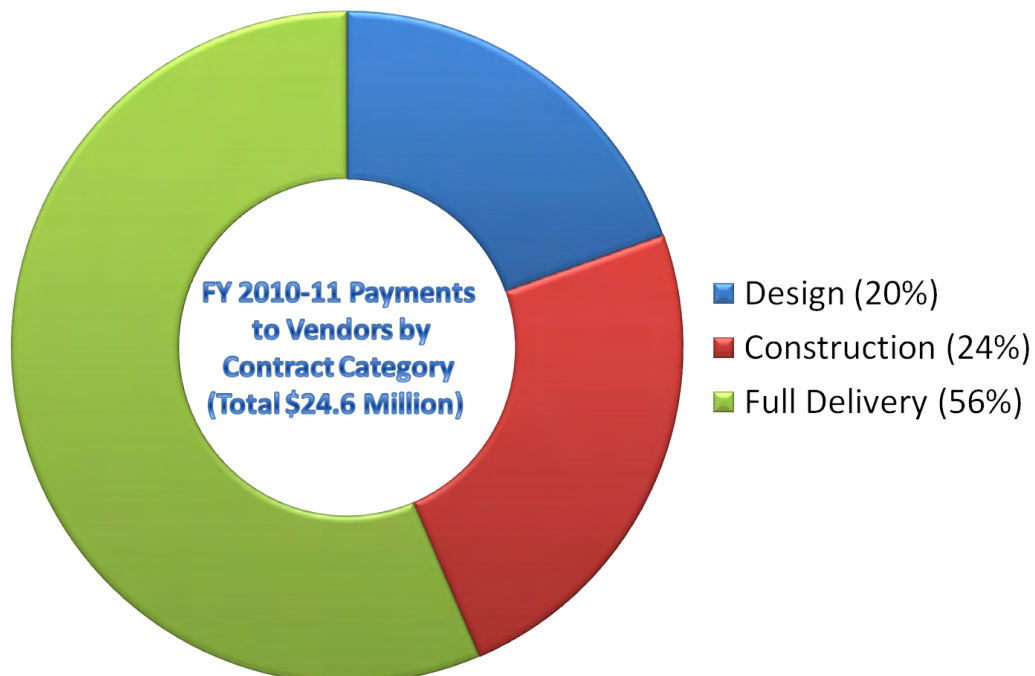
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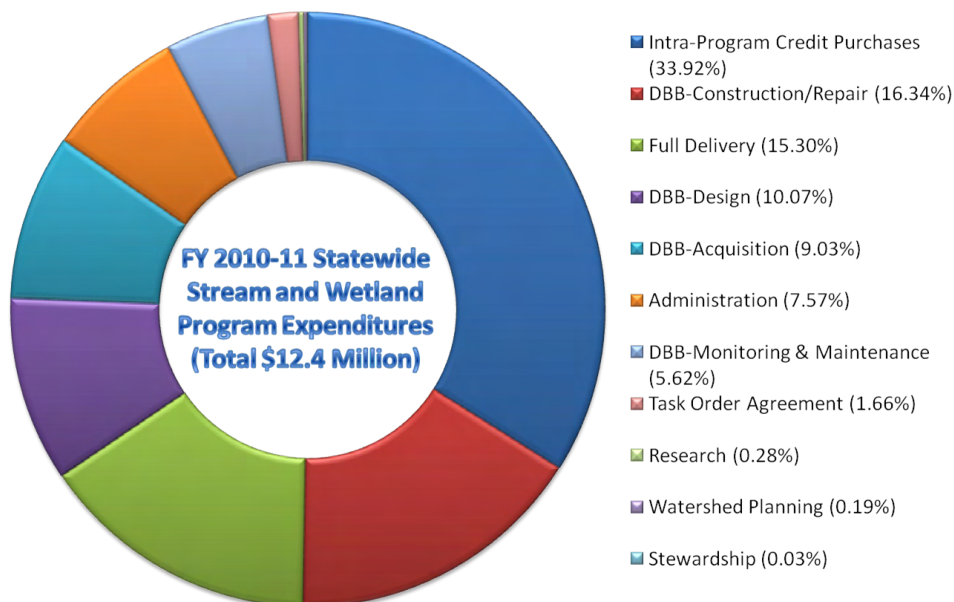
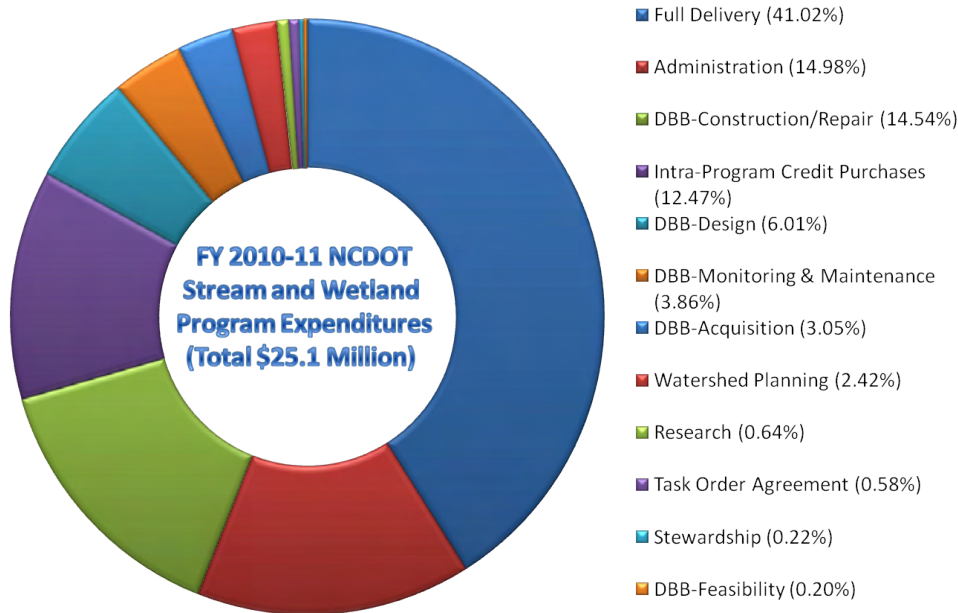
## Total Encumbered Contracted Services FY 2010-11

Contract Service	Number of Contracts	Amount
Total Full Delivery	23	\$34,428,946.88
Total Construction Services	26	\$4,960,823.07
Total Design Services	16	\$1,859,673.00
Total Monitoring Services	3	\$152,139.00
Total Watershed and Project Planning Services	2	\$64,865.00
<b>Total</b>	<b>70</b>	<b>\$41,466,446.95</b>



## Expenditures by Fund

In accordance with the [In-Lieu Fee Mitigation Instrument](#), EEP now reports the program expenditures by fund. [Appendix G-3](#) provides a listing of expenditures by payment type and fund. Intra-program Direct Purchases represent credit purchase expenditures made internally between EEP programs. These transactions simply alter the ownership of already procured EEP credits between EEP's four ILF programs. The following figures summarize the expenditures for each fund.



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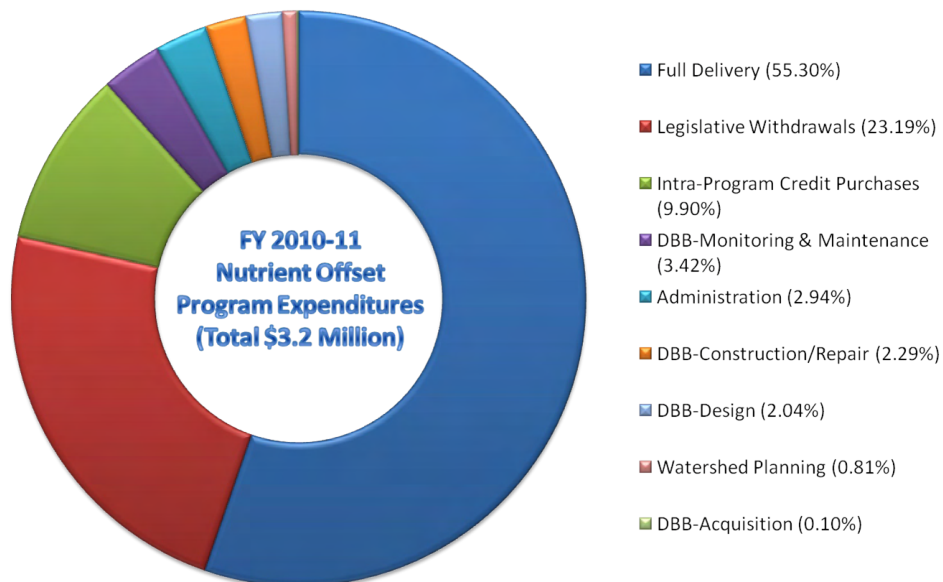
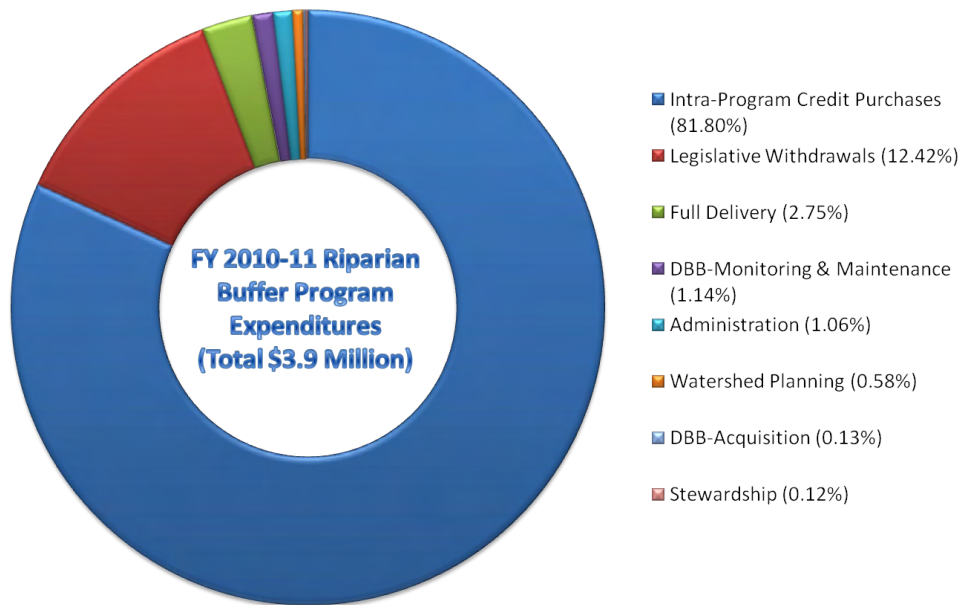
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## Actual Cost Method

Pursuant to [S.L. 2007-438](#), on Sept. 1, 2010, EEP established nutrient-offset rates based on an [Actual Cost Method](#) (ACM), a procedure that ensures that the EEP Nutrient Offset Program sets rates based on the actual cost of providing nutrient load-reduction credits. The ACM was developed through a [stakeholder process](#) in which participants were asked to contribute to the method itself and the rules that would establish it as the means to set EEP nutrient-offset fees. During the development of the ACM, EEP also developed a database that categorizes and stores EEP cost data to allow for per-unit nutrient reduction costs to be calculated accurately and efficiently.

### ACM Goals:

- All costs must be accounted for in the method.
- Must be understandable and easy to use.
- Must be predictable and equitable.
- Rates must adjust as actual costs change.
- Method must be applicable at various geographic scales.
- Method must be applicable to either nitrogen or phosphorus offsets.

The Actual Cost Rate is calculated using cost data from EEP projects, adjusted for inflation. The rate includes an adjustment factor that is used if the EEP Nutrient Offset Program's total costs are greater than receipts. The adjustment factor ensures that sufficient receipts are collected to pay for the full cost of the program.

### Actual Cost Method Rate Formula

$$ActualCostRate = \frac{ActualCosts_{PresentDay}}{TotalPoundsOffset_{PresentDay}} + AdjustmentFactor$$

The ACM established [general and special rates](#) for the following specific watersheds:

- Neuse River basin (eight-digit CUs 03020202, 03020203, 03020204).
- Tar-Pamlico River basin (CUs 03020101, 03020102, 03020103, 03020104).
- Falls Lake watershed (a portion of Neuse 03020201).
- Jordan Lake watershed.
- Neuse 03020201 exclusive of Falls Lake.

The rules require that rates be evaluated using the ACM at least annually, with more frequent, quarterly adjustments if program costs increase more than 10 percent. One quarterly adjustment was made, and an annual adjustment was made on July 1, 2011.

In new rate areas where there are no nutrient-reduction projects, the highest program rate is used until two projects are available for use in determining the rate for that area.

Special rates are allowed in any eight-digit CUs in which costs are 40 percent greater than in the river basin, for example Neuse 03020201. The [current rates, as well as a more detailed description of the ACM](#), are available on the program's web portal.

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# Program Inventory and Compliance

This section provides detailed tables and charts regarding EEP mitigation assets, permit requirements and permit compliance for each of EEP's four ILF mitigation programs. EEP is accountable for mitigation production in 17 river basins and 54 watersheds under 15 federal and state mitigation categories. EEP is required to track and apply credit assets to specific permit requirements by program, mitigation type and mitigation location. [Appendix H-1](#) lists all non-HQP assets and [Appendix H-2](#) lists all HQP assets. For simplicity, all assets summarized below have been converted from physical quantities (feet of stream, acres of wetland, square feet of buffers and pounds of nutrients) into mitigation credits.

The inventory includes a summary of the total amount of mitigation credits produced in the program to date (gross assets), as well as the amount of unused advanced-mitigation credits currently available in the programs (net assets). Unused credits are advance mitigation in that they have been developed in advance of environmental impacts, as is part of EEP's charge. Program inventory is broken into the four ILF programs described earlier in this report. (Note: "Applied Credits" can be greater than "Mitigation Due (credits)" because of additional permit-specific conditions and/or because of debits made to requirements before they are due.)

## **Stream and Wetland Programs**

### **Advance Credits**

The [In-Lieu Fee Mitigation Instrument](#) allocated advance credits by river basin and eight-digit cataloging unit for use by EEP. Available advance credits may be transferred from one CU to another within the same river basin with prior approval from the agencies that are party to the Instrument. No transfers were made during this fiscal year. Pursuant to the new operating agreement, this Annual Report includes information on the status and utilization of "Advance Credits" as defined by [federal rules](#), in [Appendix I-1](#).

### **NCDOT Stream and Wetland Program**

The NCDOT Stream and Wetland Program established a model for ILF programs nationwide, and is a national leader in producing compensatory mitigation in advance of unavoidable environmental impacts. The advancement of mitigation ahead of permitted impacts reduces temporal loss of ecosystem functions. It is an important tenet of the agreement among NCDOT, NCDENR and USACE, which has allowed NCDOT to move forward with almost \$8 billion in road development projects without delays associated with compensatory mitigation since 2003.

#### ***NCDOT Stream and Wetland Program Inventory***

The charts on the next page represent the program's credit inventory at the end of FY 2010-11. The NCDOT Stream and Wetland Program's gross inventory totaled 1,153,648.6 stream credits and 11,259.6 wetland credits. The vast majority of these credits are unapplied and available for future permit requirements as projected in the TIP. Detailed information about the NCDOT Stream and Wetland Program inventory can be found in [Appendices J-1](#) and [J-2](#).

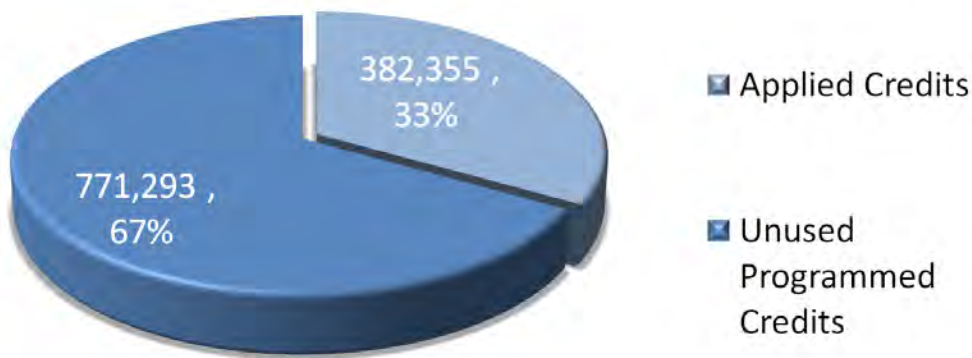
#### ***NCDOT Stream and Wetland Requirements and Compliance***

The NCDOT Stream and Wetland Program continued to achieve excellent compliance with meeting its permit requirements during FY 2010-11. The table below summarizes these results.

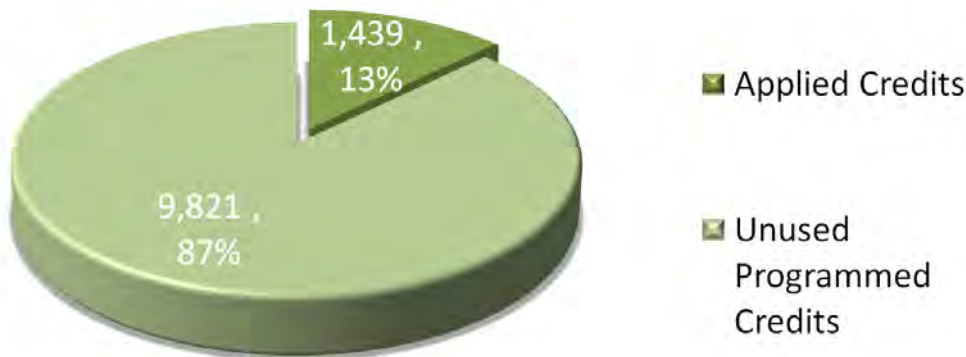
NCDOT Stream and Wetland Requirements - FY 2010-11

DOT Program Type	Requirements Due (Credits)	Requirements Met (Credits)	Requirements Unmet (Credits)	Compliance (Credits)	Advanced Mitigation (Undebited)
Stream	343,727.20	343,727.20	0	100.00 %	771,293.30
Wetlands	1,003.77	998.62	5.15	99.49 %	9,820.61





NCDOT Stream and Wetland Program Inventory 1,114,745 total stream credits (gross)



NCDOT Stream and Wetland Program Inventory 10,822 total wetland credits (gross)



Silt collection device for sediment removal during pumping operations

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## Statewide Stream and Wetland Program

The Statewide Stream and Wetland Program began under legislation passed in 1996 and is the oldest ILF program in North Carolina.

### Statewide Stream and Wetland Program Inventory

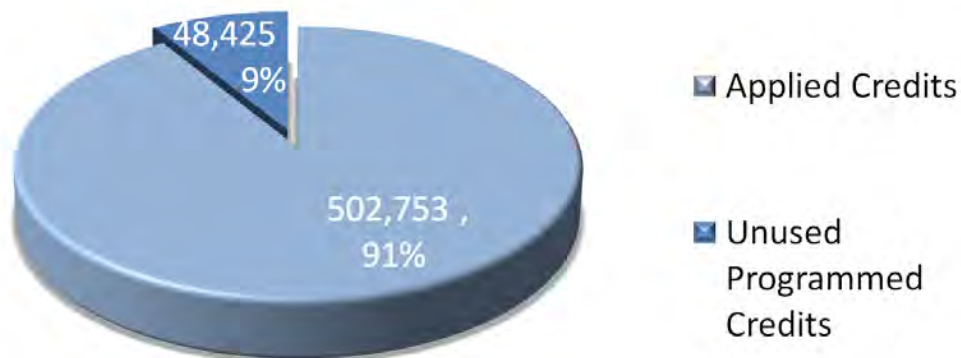
At the end of FY 2010-11, the Statewide Stream and Wetland Program's gross inventory totaled 554,059.68 stream credits and 1,347.33 wetland credits. Detailed information about the Statewide Stream and Wetland Program's inventory can be found in [Appendix J-3](#). The charts on this and the next page represent the program's inventory status of applied and unused advance mitigation at the end of FY 2010-11.

### Statewide Stream and Wetland Requirements and Compliance

For FY 2010-11, the Statewide Stream and Wetland Program had satisfied 99.61 percent of all requirements. The table below summarizes these results. The Statewide Stream and Wetland Program also measures compliance by percentage of permits satisfied. EEP continues to implement projects to address all of EEP's permit requirements.

Statewide Stream and Wetland Requirements - FY 2010-11

Statewide Program Type	Requirements Due (Credits)	Requirements Met (Credits)	Requirements Unmet (Credits)	Compliance (Credits)	Advanced Mitigation (Undebited)
Stream	503,050.70	496,287.70	6,763.00	98.66%	48,425.30
Wetland	831.78	813.65	18.13	97.82%	258.70



Statewide Stream and Wetland Program Inventory 544,713 total stream credits (gross)



Statewide Stream and Wetland Program Inventory 1,072 total wetland credits (Gross)

## **Riparian Buffer Mitigation Program**

The EEP Riparian Buffer Mitigation Program started in 1999 in the Neuse River basin. The program later expanded to the Tar-Pamlico and Catawba River basins and a portion of the Cape Fear basin (Randleman Watershed). This mitigation option is also now available to permit applicants who are required to comply with 2009 legislation requiring riparian buffer mitigation in the Jordan Lake and Falls Lake watersheds. Before accessing the program, developers must verify compliance with S.L. 2009-337 and S.L. 2011-343 and other rules that govern when EEP's ILF program may be an option for satisfying compensatory mitigation.

### **Riparian Buffer Credit Inventory**

The table on the next page summarizes the Riparian Buffer Mitigation Program's inventory, permit requirements, compliance and available (unused) advance mitigation at the end of FY 2010-11. Overall, compliance remained good throughout the fiscal year and finished at 92.86 percent overall, with 100 percent compliance in the Catawba basin, 98.04 percent compliance in the Neuse basin, and 86.89 percent compliance in the Tar-Pamlico basin. EEP plans to issue a new request for Full Delivery proposals in 2011 to satisfy the remaining permit requirements in the Tar-Pamlico basin.

The Cape Fear basin has one permit that is lowering the overall program compliance rate. This permit represents 67.3 percent of the unmet requirements across all river basins. Twice in the past, EEP initiated a project sufficient to satisfy this permit, but discovered legal constraints that made the projects infeasible. EEP successfully initiated multiple projects in 2011 to address the Cape Fear needs and has issued a new request for Full Delivery proposals in 2011 to satisfy the remaining permit requirements. Detailed information about the Riparian Buffer Program's inventory can be found in [Appendix J-4](#).

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## Riparian Buffer Mitigation Program Requirements - FY 2010-11

Buffer Program Type	Requirements Due (Credits)	Requirements Met (Credits)	Requirements Unmet (Credits)	Compliance (Credits)	Advanced Mitigation (Undebited)
Cape Fear	7,891,657.60	6,488,701.59	1,402,956.01	82.22%	7.87
Catawba	110,583.00	110,583.00	0.00	100.00%	107,217.00
Neuse	18,791,264.33	18,422,855.90	368,408.43	98.04%	17,300.69
Tar-Pamlico	2,381,722.58	2,069,420.14	312,302.44	86.89%	3,143.05
Overall	29,175,227.51	27,091,560.63	2,083,666.88	92.86%	127,668.61

## Nutrient Offset Mitigation Program

EEP's Nutrient Offset Program assists developers and others who must comply with Neuse and Tar-Pamlico nutrient-management strategies and are unable to meet their reduction requirements onsite. The voluntary program allows developers to choose to make a payment to EEP rather than construct mitigation onsite. EEP then becomes responsible for the nutrient reduction and implements projects to meet the nutrient-reduction needs. EEP accepts payments for nitrogen reduction in the Neuse basin and nitrogen and phosphorus in the Tar-Pamlico basin, the Falls Lake watershed and (as of Sept. 1, 2010) in the Jordan watershed.

Overall compliance remained good throughout the fiscal year and finished at 99.21 percent, with 100 percent compliance in the Neuse basin and 79.47 percent compliance in the Tar-Pamlico basin for nitrogen and 84.34 percent for phosphorus. Detailed information about the Nutrient Offset Program's inventory can be found in [Appendix J-5](#). The status of the Nutrient Offset Program is shown below.

## Nutrient Offset Program Requirements - FY 2010-11

Nutrient Offset Program Type	Requirements Due (Credits)	Requirements Met (Credits)	Requirements Unmet (Credits)	Compliance (Credits)	Advanced Mitigation (Undebited)
Neuse Nitrogen	1,353,586.82	1,353,586.82	0.00	100.00%	11,262.42
Tar-Pamlico Nitrogen	51,699.59	41,087.16	10,612.43	79.47%	106,119.34
Tar-Pamlico Phosphorus	3,606.59	3,041.97	564.62	84.34%	6,474.83
Overall	1,408,893.00	1,397,715.95	11,177.05	99.21%	123,856.58

# Summary Remarks and Future Direction

EEP continued to serve the mitigation needs of the state's development community during FY 2010-11 while seeking to maximize the environmental returns realized from the implementation of successful wetland, stream and riparian-buffer mitigation projects. As described in the [Key Developments](#) and [Continuous Improvements and Program Partnerships](#) sections of this report, the program also implemented changes to improve

program performance and outcomes. And as discussed in the FY 2009-10 Annual Report, EEP's work focus has shifted as projects have matured from the development stage into construction and post-construction monitoring.

Statistics derived from a sample of 110 restoration projects in post-construction monitoring show that the vast majority of EEP's project investments are meeting and exceeding regulatory standards. While EEP conducted eight repairs during the fiscal year, these projects represent only 2.6 percent of

South Fork Hoppers cross vane during construction

the total population of projects that are in post-construction monitoring. EEP is now seeing an increase in the

number of projects moving through to regulatory closeout. Feedback from the regulatory community during final project review has been positive.

In FY 2011-12, EEP will focus on compliance with the new In-Lieu Fee Mitigation Instrument, technical excellence and process efficiency. Compliance with the new Instrument is a core function of the program that is supported by other initiatives and needs no further discussion. But the remaining two focus areas are described below.

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While technical excellence has been important to the program since its inception, EEP is seeking to heighten this commitment. The establishment of the NCDENR Science Advisory Panel is principal to this initiative, with appointees bringing a high caliber of expertise to the panel. The panel's efforts are designed to support the potential development and implementation of new standards for improved restoration outcomes. In addition, EEP is developing technical databases that will catalog the vast amount of data it holds. This will support analyses that will contribute to the advancement of restoration practices within North Carolina and throughout the nation.

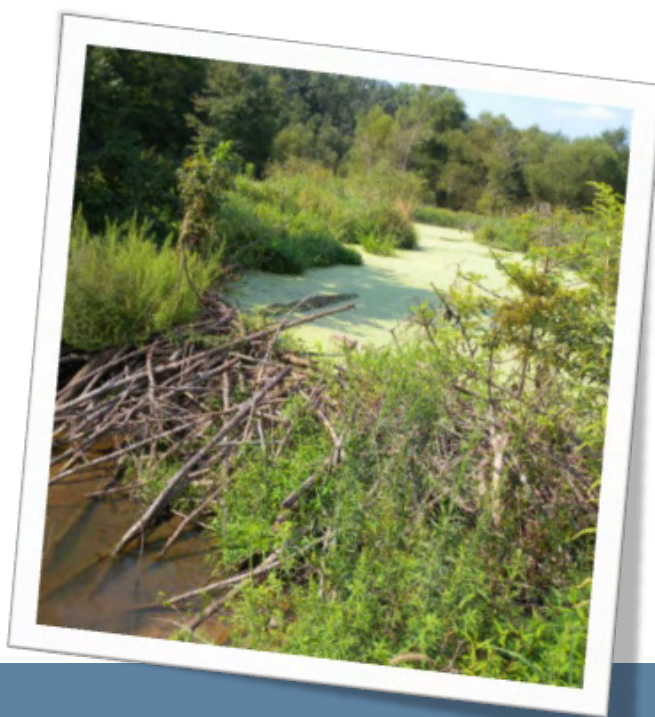
Additional actions that have been taken and will be implemented over the next year to promote technical excellence include:

- Elevation of the Science and Analysis group within the program's organizational structure;
- Development of new criteria for project selection;
- Encouraging the use of more rigorous assessment and design tools;
- Increased use of numerical simulations to promote better restoration outcomes; and
- Encouraging program partners in higher level technical analyses through project scoring criteria.

In general, improvement in technical excellence as implemented by EEP and private sector colleagues, especially in early phases of project development and implementation, will reduce the risk of the need for repairs on projects and will increase positive outcomes for targeted functional uplift.

As described in the [Continuous Improvement Initiatives and Program Partnerships](#) section of this report, EEP has recently placed increased emphasis on procurement of credits from existing mitigation banks and full-delivery contracts. This initiative expedites contracting and reduces the program's administrative burdens by decreasing the number of contracts needed; improves the program's compliance posture and reduces EEP's risk related to project performance

Finally, EEP recognizes that having consultants and other contractors maintaining responsibilities throughout the life of a project will improve process efficiencies. The organizational changes described in this report employ the use of project teams that include representatives from each of EEP's core sections to facilitate project delivery. EEP is promoting cradle-to-grave project management continuity, both internally and externally, with its contractors.



Large beaver dam on Terrible Creek

Bog turtle, pitcher plants and tree frog





# ***Annual Report Feedback*** (Note: Please use the latest standard pdf reader to submit form.)

The Ecosystem Enhancement Program strives to provide quality reporting. EEP this year builds on last year's effort in reporting (based on feedback from last year's Annual Report Feedback form) with the goal of providing a more informative and reader-friendly report.

The following questionnaire gives you the opportunity to help EEP continue to improve the clarity and usefulness of its reports. Thank you for reading the annual report, and for taking an interest in the program.

1. Select the affiliation with which you most identify:

- |                               |                                      |
|-------------------------------|--------------------------------------|
| a. Environmental organization | f. Landowner doing business with EEP |
| b. Engineering/Construction   | g. NCDOT board member                |
| c. Mitigation Bank            | h. NCDOT employee                    |
| d. Regulatory community       | i. NCDENR employee                   |
| e. ILF customer               | j. Other                             |

2. If you noticed tool-tips provided in this report, did you find them beneficial?

- |        |                                    |
|--------|------------------------------------|
| a. Yes | c. I did not notice any tool-tips. |
| b. No  |                                    |

3. This 2010-11 report highlighted EEP continuous improvement by making that topic its own section. Would you like more information on continuous improvement at EEP?

- a. Yes
- b. No

4. Select the section of greatest interest to you:

- |                      |   |
|----------------------|---|
| a. Executive Summary | e. Watershed Planning & Mitigation Project Delivery |
| b. Key Developments  | f. Program Financial Information                    |
| c. EEP Programs      | g. Program Inventory & Compliance                   |
| d. EEP Programs      | h. Summary Remarks & Future Direction               |

5. In addition to the standard charts and tables historically provided in EEP annual reports, this year a summary of expenditures by category is provided. Did you find this format helpful?

- a. Yes
- b. No
- c. I did not notice the expenditure data, please [show that information](#).

## A. Surveys

1. [Ecosystem Enhancement Program - In-Lieu Fee Customer Satisfaction Survey](#)
2. [Ecosystem Enhancement Program - In-Lieu Fee Customer Satisfaction Survey Results](#)

## B. Local Watershed Planning

1. [Local Watershed Plans – Completed Through Phase III](#)
2. [Local Watershed Plan Initiatives in Progress](#)
3. [Summary of funding Leveraged in EEP Local Watershed Planning Areas](#)

## C. Property Information

1. [Properties Closed](#)
2. [Properties Optioned](#)
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Restoring...  
enhancing...  
protecting our state