

# New Jersey Wetland Program Plan 2014-2018



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### Prepared by:

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### Contacts:

#### **New Jersey Department of Environmental Protection**

*Bob Hazen, Office of Science*

*Madhu Guru, P.E., Land Use Management*

*Leslie McGeorge, Water Resource Management*

*Kathleen Walz, Natural and Historic Resources*



## **Agency Participants**

The following people in the New Jersey Department of Environmental Protection contributed to the development of the New Jersey Wetland Program Plan:

### **OFFICE OF SCIENCE**

*Bob Hazen, Thomas Belton, Dorina Frizzera*

### **WATER RESOURCE MANAGEMENT**

#### **Water Supply and GeoScience**

*Karl Muessig, Jim Boyle, Steve Domber*

#### **Water Monitoring and Standards**

*Bureau of Environmental Analysis,  
Restoration and Standards*

*Barbara Hirst, Jay Springer*

*Bureau of Freshwater & Biological  
Monitoring*

*Leslie McGeorge, Dean Bryson, Anna  
Signor*

*Bureau of Marine Water Monitoring  
Bruce Friedman, Marc Resciniti*

### **LAND USE MANAGEMENT**

*Ginger Kopkash*

#### **Division of Land Use Regulation**

*Madhu Guru, Larry Torok, John  
Heilferty, Susan Lockwood*

#### **Office of Policy Implementation**

*Jill Aspinwall*

#### **Office of Coastal and Land Use Planning**

*Steven Jacobus*

### **NATURAL AND HISTORIC RESOURCES**

#### **Green Acres**

*State Land Acquisition Bureau  
Fawn McGee*

*Office of Natural Resources Restoration  
John Sacco, Ruth Ehinger*

#### **Historic Preservation Office**

*Kate Marcopul*

#### **State Parks**

*John Trontis, Diane Lowrie*

#### **State Forestry Services**

*Office of Natural Lands Management  
Kathleen Walz, Cari Wild*

*Bureau of Forest Management*

*Donald Swaysland, Todd Wyckoff*

*Bureau of Forest Fire Management*

*Bill Edwards*

*Forestry Regulation and Policy*

*Sandra Chen*

### **Division of Fish and Wildlife**

*Endangered & Non-Game Species Program*

*Dave Jenkins, Brian Zarate*

*Bureau of Land Management*

*Tony Petrongolo, Laurie Pettigrew,  
Dave Golden*

*Bureau of Wildlife Management*

*Ted Nichols*

*Bureau of Freshwater Fisheries*

*Lisa Barno*

*Bureau of Marine Fisheries*

*Brandon Muffley*

*Bureau of Shellfisheries*

*Russ Babb*

*Mosquito Control*

*Mary Evangelista*

### **SITE REMEDIATION PROGRAM**

*Janine MacGregor*

*Bureau of Environmental Evaluation and  
Risk Assessment*

*Nancy Hamill*

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## **New Jersey Wetland Program Plan 2014-2018**

New Jersey has taken a multi-faceted, comprehensive, Department-wide approach to managing and protecting freshwater and coastal wetlands. This five-year Wetland Program Plan provides a framework for the State of New Jersey to strengthen the core elements of its wetland program and continue to reach the goals listed herein. The steps outlined will serve to direct current and future wetland protection and management efforts along a coordinated path to the benefit of New Jersey's wetland resources and the quality of life for future generations.

### **OVERALL GOAL**

The New Jersey Department of Environmental Protection's (NJDEP) core mission is and will continue to be the protection of the air, waters, land, and natural and historic resources of the State to ensure continued public benefit. The NJDEP's mission is advanced through effective and balanced implementation and enforcement of environmental laws to protect these resources and the health and safety of our residents. Paramount to meeting the intent of this mission is to guide our many programs toward a collective goal of comprehensive natural resource and water resource management.

The development of this Wetland Program Plan (WPP) will serve to integrate the diverse efforts of the NJDEP's multiple programmatic efforts to analyze, assess, preserve and protect freshwater and coastal wetland resources. To this end, the NJDEP's intent is to develop a comprehensive wetland plan that focuses New Jersey's public and private resources toward a unified goal of:

*Improving and protecting the significant ecosystem services and functions provided by wetlands including flood control, shoreline stabilization, coastal storm surge protection, water purification, nutrient cycling, sediment retention, provision of habitat for plants and wildlife, reservoirs of biological diversity supporting food webs, as well as providing meaningful recreation, sustainable economic benefits from tourism, and excellent opportunities for environmental education.*

Five Core Elements are addressed in this 5-year plan including 1) Monitoring and Assessment; 2) Regulation; 3) Voluntary Wetland Restoration, Creation, Enhancement and Protection and Improved Coastal Shoreline Resiliency; 4) Water Quality Standards for Wetlands; and 5) Public Outreach and Education. The first four are defined in the U.S. Environmental Protection Agency (EPA) 2009 Core Elements Framework, and the fifth core element has been added to elevate the importance of cross-program coordination with wetland monitoring, assessment, regulation, restoration and protection in efforts regarding public outreach and education. The status of the five Core Elements in New Jersey is as follows.

### **Core Element 1: Monitoring and Assessment**

The NJDEP has been engaged in wetland monitoring and assessment for more than four decades. Mapping of tidal wetlands was completed for the first time in the 1970's, and freshwater wetlands were first mapped in the 1980's. Since 1986 the State has classified land use/land cover and produced maps based on aerial photography. These map products are available as GIS downloads and interactive mapping online, and have allowed the State to evaluate changes in land use and wetlands over time. Finer scale wetland mapping efforts by the NJDEP Regulatory Program will begin in 2014. Since 1996, EPA Wetland Program Development Grants have been utilized by the NJDEP to conduct inventory, classification, mapping, condition assessment, and baseline monitoring for rare freshwater and coastal

wetland types throughout the State. Additional research has been conducted since 2000 to develop a wetlands mitigation rapid assessment tool, a wetland quality and function assessment tool, and wetlands biological indicators for forested riparian wetlands in the Highlands. While all wetlands are valued under State law regardless of value and function, these assessment tools will help evaluate condition of wetlands at various scales as well as set restoration targets.

Beginning in 2002, the USEPA required states to integrate their 305(b) and 303(d) water quality monitoring reports. These reports are used by Congress and USEPA to establish program priorities and funding for federal and state water resource management programs. New Jersey Integrated Water Quality Monitoring and Assessment Reports for 2002, 2004, 2006, 2008, 2010, and 2012 have provided data on wetlands acreage and updates on the Department's activities in wetlands research, protection, wetlands mitigation, and wetlands program development, and support the required integration of the 305(b) and 303(d) water quality monitoring reports.

New Jersey participated in the first National Aquatic Resource Surveys (NARS) for Wetlands in the 2011 National Wetland Condition Assessment (NWCA). The NJDEP's Natural and Historic Resources program is leading the effort to conduct statewide wetland condition assessments, and is supported by the NJDEP's Water Resources Management program. Wetland assessment tools developed for the National Wetland Condition Assessment using the EPA 3-tiered multi-scale approach (landscape remote sensing, rapid field, and intensive field assessment) are currently being used in conjunction with an Ecological Integrity Assessment Protocol to assess the condition of freshwater and tidal wetlands statewide. Results from these studies have been and will continue to be presented at NJ Water Monitoring Council meetings and NJDEP/Council Water Monitoring conferences. Wetland habitat monitoring is also occurring as part of U.S. Fish & Wildlife Service Section 6 grant projects to monitor and assess Federally-designated endangered, threatened, and candidate plant and animal species that depend upon wetlands. Inter- and intra-agency collaboration between State and Federal partnerships has strengthened this wetland monitoring and assessment work.

The NJDEP continues to participate in National and Regional wetland monitoring and assessment forums including the Mid-Atlantic Wetland Work Group (MAWWG), the Mid-Atlantic Coastal Wetland Assessment (MACWA), the National Water Quality Monitoring Council (NWQMC) conferences and meetings, and the NJ Water Monitoring Council. Cooperation between the NJDEP and EPA National Estuary Programs including the Barnegat Bay Partnership, Partnership for the Delaware Estuary, and New York-New Jersey Harbor Estuary Program on coastal wetland monitoring and assessment projects continues to improve our data and understanding of these critical natural resources, particularly in the context of catastrophic storms like Sandy.

The AmeriCorps Watershed Ambassador Program is an environmental community service program funded by the USEPA and administered by the NJDEP to raise public awareness about water and watershed issues and to promote watershed stewardship through direct community involvement. The watershed ambassadors work with local governments and watershed groups on volunteer projects including water quality monitoring and wetland assessment and restoration, and provide a crucial educational service about water, wetlands and watersheds to the public.

Lastly, the Natural Heritage Program (NHP) in State Forestry Services and Endangered and Non-Game Species Program (ENSP) in the Division of Fish and Wildlife maintain the Biotics database on occurrences of elements of biodiversity in the State, including rare wetland and water-dependent plant and animal species, as well as wetland habitats. Both programs conduct monitoring and assessment of selected rare species and associated wetland habitats in the State.

## **Core Element 2: Regulation**

The State of New Jersey has a long and distinctive record in regard to the regulation of the State's wetlands and water resources. First and foremost, New Jersey has passed laws and regulations specifically designed to protect both coastal wetlands (Wetlands Act of 1970 W N.J.S.A. 13:9A-1 et seq.) and freshwater wetlands (Freshwater Wetlands Protection Act N.J.S.A. 13:9B-1 et seq.). While New Jersey continues to share permitting authority with the U.S. Army Corp of Engineers (ACOE) for coastal wetlands, our freshwater wetland protection program has been identified as one of the most stringent in the country and deemed of sufficient quality that the EPA granted the State of New Jersey the federal Clean Water Act (CWA) permitting authority in March of 1994. As one of only two "Assumed Programs" in the United States, EPA has made the finding that New Jersey's regulation of activities in and around freshwater wetlands is consistent with the Federal 404b(1) Rule and acknowledges that the State has implemented a regulatory process of wetland delineating and permitting that is comparable to or more stringent than that found at the Federal level. Accordingly, the State's In Lieu Fee program is being amended to bring it in stricter compliance with the Federal Mitigation regulations. A draft In Lieu Fee document has been submitted to the EPA and New Jersey hopes to finalize this shortly.

One of the fundamental ideas presented in the draft In Lieu Fee document is the idea of creating, enhancing and restoring wetlands for mitigation using intra-agency cooperative agreements among the NJDEP's Green Acres Office of Ecological Restoration, State Parks, State Forestry Services, and Division of Fish & Wildlife programs.

In addition to regulating wetlands New Jersey places buffers around certain wetlands, which far exceed the federal protection levels, to further protect them from degradation. Wetlands that are classified as intermediate or exceptional resource value are associated with a 50 and 150 foot buffer, respectively. Under the State's Freshwater Wetlands Protection Act, wetlands that discharge to trout-production waters or which are present or documented habitat for threatened or endangered species are considered exceptional resource value wetlands and are therefore associated with a 150-foot buffer. Most trout production waters are also designated as Category One waters pursuant to the State's Surface Water Quality Standards rules (N.J.A.C. 7:9B). Category One waters are protected from degradation through the implementation of a 300-foot buffer known as the Special Water Resource Protection Area in the State's Stormwater Management rules (N.J.A.C. 7:8). Such waters are also protected through the implementation of the State's Flood Hazard Control Act Regulations, which require a 300-foot riparian zone immediately adjacent to Category One waters and upstream waters within the same HUC14 sub-watershed. These buffers are often coincident with wetlands that are protected in permanent conservation restrictions through the NJDEP's permitting program.

When unavoidable disturbances to Coastal and Freshwater wetlands occur as a result of permitting, these losses are mitigated at a ratio of 2:1 for creation/restoration and at higher rates for enhancement and preservation of wetlands. For coastal wetlands the ratio may vary between 1:1 and 2:1 depending on the resource impacted.

In addition to the laws listed above, wetlands and waters receive coincident and supplemental protection from NJDEP regulations that apply to flood protection (Flood Hazard Area Control Act N.J.S.A. 58:16A et seq.), regional planning and management (Pinelands Protection Act N.J.A.C. 7:50-1 et. seq., Highlands Water Protection and Planning Act N.J.A.C. 7:38-1 et seq., Coastal Area Facilities Control Act N.J.A.C. 7:7E -1 et. seq.) and water quality (Stormwater Management Rules - N.J.A.C. 7:8; Surface Water Quality Standards - N.J.A.C. 7:9B). Under the Stormwater Management and Surface Water Quality rules, wetland protection is attained by holding regulated activities that may affect wetlands to a higher standard of water quality maintenance and water quality. The Office of Coastal and Land Use Planning, partnered with the regulatory and permitting programs mentioned previously, ensures that activities permitted in

and around wetlands are conducted in accordance with their plans, while actions that have impacted wetland resources without a permit are held to permitting standards for minimized impacts and appropriate mitigation. As a result, New Jersey finds itself in the unique position of being further along in satisfying EPA core elements for regulatory protection when compared to other programs in the country. *NJDEP laws and regulations can be found at <http://www.nj.gov/dep/landuse/lawsregs.html>.*

New Jersey wetlands are further protected pursuant to N.J.A.C. 7:26E, Technical Requirements for Site Remediation. Under this regulation, the NJDEP's Site Remediation Program (SRP) has been proactive in the investigation and remediation of wetlands within, or impacted by, known contaminated industrial sites. An ecological evaluation is required to be conducted for all listed contaminated sites pursuant to N.J.A.C. 7:26E-1.16, during which wetlands are identified and evaluated for the presence of contaminants of potential ecological concern. To ensure that site remediations are protective for environmentally sensitive natural resources, including wetlands habitat and wetlands ecological receptors, SRP has prepared the Ecological Evaluation Technical Guidance, August 2012, available at <http://www.nj.gov/dep/srp/guidance/index.html>. Direction is provided on how to conduct an Ecological Evaluation (EE) and an Ecological Risk Assessment (ERA) and, if remediation is required, for the derivation of site-specific ecological risk-based remediation goals and Risk Management Decisions (RMD). The guidance devotes an entire section to investigation and remediation in wetlands, including the NJDEP Land Use Regulation Program's (LURP) restoration and mitigation requirements for impacts to the wetlands from site discharges and remedial construction. The primary reference for this document is USEPA's Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments, EPA 540-R-97-006, Office of Solid Waste and Emergency Response, Washington, DC (ERAGS - USEPA, 1997). Cross-program coordination occurs within the NJDEP between the SRP and programs involved with monitoring, assessment and restoration.

### **Core Element 3: Voluntary Wetland Restoration, Creation, Enhancement and Protection and Improved Coastal Shoreline Resiliency**

The State of New Jersey has active programs in place for ecological restoration and for protection of wetlands through land acquisition and watershed planning. Restoration is accomplished both by the NJDEP and in partnership with local governments, the federal government and non-profits and watershed organizations. NJDEP considers wetlands restoration, creation and enhancement to be voluntary unless it is required to satisfy a regulatory requirement. The legal definitions for wetland creation, enhancement and restoration can be found in the Freshwater Wetlands Protection Act rules, N.J.A.C. 7:7A.

Natural Resource Restoration is administered by the NJDEP's Office of Natural Resource Restoration, which was established in the 1990's to restore for environmental injury caused by multiple oil spills and discharges. The authority for addressing injuries to the public's natural resources is derived from the Public Trust Doctrine. This common law provides that public lands, waters and living resources are held in trust by the government for the benefit of its citizens. Examples of recent and on-going wetlands restoration, creation and enhancement efforts by the NJDEP Office of Natural Resource Restoration include the removal of landfill material and recreation of a salt marsh in Hudson County, dam removals that have the effect of increasing water quality and wetlands quality along the Raritan River, and stream restoration work.

The NJDEP's Division of Fish and Wildlife (DFW) has been involved in the restoration of tidal wetlands for over 50 years. Programs to restore tides to salt hay impoundments along the Delaware Bay and to convert *Phragmites*-dominated marshland along the entire coast to native *Spartina* species have been actively and successfully pursued since the 1960's. Dam removal programs to restore anadromous fish runs and native aquatic habitats have also been active for many decades. In recent years, the DFW has

actively cooperated with the NJDEP Bureau of Forest Management to restore Atlantic White Cedar wetlands in the Pinelands and has cooperated with the Office of Natural Resource Restoration to create and restore a variety of tidal and freshwater wetland ecosystems throughout the State.

Throughout the past several decades the NJDEP State Forestry Services has restored Atlantic white-cedar in freshwater wetland habitats in the Pinelands and assisted in the development of “Atlantic White-Cedar: Ecology and Best Management Practices Manual.” Typical Atlantic white-cedar restoration efforts include wetland site preparation, vegetation management, and fencing to prevent deer browse on young trees. Atlantic white-cedar stands have important ecological value in New Jersey and the associated wetland restoration work is critical to maintaining those functions.

Additionally, the State has an active land acquisition program that is overseen by the NJDEP Green Acres Program, which seeks to acquire both uplands and wetlands. New Jerseyans have long supported open space preservation, as demonstrated through the approval of thirteen (13) statewide Green Acres ballot initiatives since 1961, when the Green Acres Program was created to meet New Jersey's growing recreation and conservation needs. Green Acres funding is also used to leverage federal funding made available to preserve wetlands. For example, Green Acres has preserved wetlands with federal funding such as the Cooperative Endangered Species Conservation Fund Land Recovery Acquisition Grants Program (authorized under Section 6 of the Endangered Species Act), Wetlands Reserve Program, Wetlands Reserve Enhancement Program, and North American Wetlands Conservation Act (NAWCA). Together with public and private partners, Green Acres has protected almost 640,000 acres of open space around the State.

A tool for strategic wildlife habitat protection called the NJDEP DFW Landscape Map provides wildlife habitat mapping for community land-use planning and species conservation. NJDEP SFS Office of Natural Lands Management's Natural Heritage Priority Sites coverage identifies critically important areas to conserve New Jersey's biological diversity, with particular emphasis on rare plant species and ecological communities in both upland and wetland ecosystems.

The NJDEP's DFW has initiated a project to develop a Statewide Habitat Connectivity Plan. The project, being developed by a multi-partner, multi-disciplinary working group made up of over 40 different agencies across the state, represents a strategic plan for wildlife conservation that will identify key areas and actions needed for preserving and restoring critical habitat linkages for terrestrial wildlife in New Jersey. The end products of this effort will consist of a statewide analysis depicting areas crucial for habitat connectivity and provide a menu of implementation actions, relating to each identified wildlife corridor that will provide guidance on how to secure, or restore each corridor, including mitigating the impacts of roads on wildlife and habitats. This effort by experts in science, policy and communication will incorporate riparian habitat and other hydrologically connected wetland corridors in New Jersey's fragmented landscape.

The NJDEP Bureau of Environmental Analysis, Restoration and Standards (BEARS) partners with local governments and watershed organizations to conduct ecological restoration projects that implement approved watershed plans to advance the NJDEP's Comprehensive Water Resource Management (CWRM) paradigm. Under CWRM, BEARS evaluates the water resources management issues of each region to ensure that identified problems are addressed comprehensively and holistically, with the most efficient and effective use of both regulatory and non-regulatory tools and partnerships, to achieve measureable environmental outcomes. Recent projects have included the creation of riparian buffers and installation of stormwater measures to improve the quality of waters and wetlands. Education and outreach are also important elements of this program.

#### **Core Element 4: Water Quality Standards for Wetlands**

The State of New Jersey has been a national leader in developing robust state water quality standards. Efforts by wetland ecologists in the NJDEP to provide information for potential use in developing Water Quality Standards for Wetlands (WQSW) for the State are under way and will evolve as Monitoring and Assessment projects amass data on wetland condition using a reference-based approach along a gradient from high to low ecological integrity. The ecological integrity assessment is based on landscape and buffer condition, plus vegetation, soil and hydrology metrics and environmental stressors data. The building of wetland condition assessment tools is a long-term endeavor based on research and monitoring, and will serve as a foundation for development of wetland water quality standards in the future. New Jersey will also build on its aquatic biological assessment research and expertise from benthic macroinvertebrates, fish, and diatoms for developing wetland condition metrics. The utility of wetland diatom/algae data is being tested to see if a tiered aquatic life use (TALU) or index of biological integrity (IBI) model can be used in defining wetland water quality standards. To date, the NJ Floristic Quality Assessment Index (FQAI) based on floristic diversity has been a good predictor of wetland condition, and further tests are being conducted on a variety of freshwater and coastal wetland types along the condition gradient to confirm the utility of this tool in developing water quality standards for wetlands. The effort to develop meaningful and defensible WQSW is occurring nationwide, and the resulting data from other state approaches and national assessments will inform and adapt New Jersey's standards in the coming years.

#### **Core Element 5: Public Outreach and Education**

While public outreach and education are addressed in several of the Core Elements in this Wetland Program Plan, it is highlighted here because of its integral importance to successful efforts in wetland assessment, regulation and protection. Public outreach and stakeholder involvement has been critical to the success of the NJDEP's initiatives. The NJDEP is aware that the public values wetlands for the many ecological services they provide such as flood control, shoreline stabilization and storm protection, water purification, recreation and tourism. The NJDEP has developed innovative education and learning tools (e.g. NJ Watershed Ambassador Program), interactive mapping (e.g. NJ-GeoWeb, Landscape Project), guidance documents (e.g. wetland mitigation, vernal pool certification), and reports (e.g. New Jersey Integrated Water Quality Monitoring and Assessment Reports) that are posted on the NJDEP website and thus readily available to the public. The State also participates with the Rutgers Office of Continuing Education to provide wetlands training and information for a wide range of audiences. Environmental education opportunities and water-dependent public recreation (e.g. birding, fishing) and access (e.g. trails and boardwalks, boat launches) for the citizens of and visitors to our State are critical if our precious wetland resources are to be valued and protected.



## **CORE ELEMENT 1: MONITORING AND ASSESSMENT**

**GOAL:** To define ways to evaluate wetland condition in order to preserve the important functions that wetlands provide including surface-water and ground-water quality, flood control, coastal storm surge detention, nutrient transformation, sediment and particulate retention, shoreline stabilization, and provision of plant and wildlife habitat (fish, shellfish, amphibian, waterfowl, shorebird and other wildlife).

**OBJECTIVE 1: Develop a monitoring and assessment strategy consistent with Elements of a State Water Monitoring and Assessment Program for Wetlands (EPA, 2006) using a 3-tier approach and testing innovative new wetland condition assessment protocols.**

<b>Action 1: Identify program decisions and long-term environmental outcome(s) that will benefit from a wetlands monitoring and assessment program</b>					
ACTIVITY	2014	2015	2016	2017	2018
Document program's long-term environmental goals	x				
Identify programs that will ultimately use monitoring data, e.g. track trends, restoration, permitting, and meet with those State programs periodically to share information about progress and components of the strategy	x	x	x	x	x
Collaborate with water quality and wetland monitoring programs in Natural and Historic Resources and Water Resources Management	x	x	x	x	x
Identify how wetland data can be used to implement watershed planning			x	x	x
<b>Action 2: Define wetlands monitoring objectives and strategies</b>					
ACTIVITY	2014	2015	2016	2017	2018
Coordinate with most relevant partners, in federal, state, tribal, and local agencies, universities, National Estuary Programs, EPA Regional and National wetland work groups	x	x	x	x	x
Examine other sources for monitoring information within the state	x	x	x	x	x
Identify monitoring objectives	x		x		
Define data needs and uses	x		x		
Coordinate with the Water Monitoring program to identify shared goals and activities	x	x	x	x	x
Examine how to integrate wetlands monitoring strategy into existing and developing water quality monitoring efforts (e.g. headwaters), as feasible.	x	x	x	x	
Document wetlands monitoring strategy			x		
<b>Action 3: Develop monitoring design, or an approach and rationale for site selection that best serves monitoring objectives (e.g., census, probabilistic survey, rotating basin)</b>					
ACTIVITY	2014	2015	2016	2017	2018
Determine classification scheme in order to group the type, class, and size of wetlands	x				
Describe site selection process	x				
List universe of wetland resources from which sites could be selected if available	x				
Determine which data are already available	x				
<b>Action 4: Select a core set of indicators to represent wetland condition or a suite of functions</b>					
ACTIVITY	2014	2015	2016	2017	2018
Identify indicators that are relevant for established monitoring objectives	x				

Confirm indicators are scientifically defensible	x		x		
Develop/select field method(s)	x				
Develop Floristic Quality Assessment tools for vascular and non-vascular plant species	x				
Add supplemental indicators if needs dictate and as resources allow	x	x	x		

## **OBJECTIVE 2: Implement a sustainable monitoring program consistent with the wetlands monitoring strategy.**

<b>Action 1: Ensure the scientific validity of monitoring and laboratory activities</b>					
ACTIVITY	2014	2015	2016	2017	2018
Participate in wetlands science and technical advisory team representing NJDEP programs and external research institutions	x	x	x	x	x
Draft and peer review Quality Management Plan	x	x	x	x	x
Draft and update Quality Assurance Project Plan for Statewide Wetland Condition Assessment	x				
Update New Jersey Ecological Integrity Assessment Field Operations Manual	x				
Select, prioritize, and peer review candidate assessment indicators	x		x		
<b>Action 2: Monitor wetland resources as specified in strategy</b>					
ACTIVITY	2014	2015	2016	2017	2018
Evaluate components necessary to implement a sustainable wetlands monitoring and assessment program	x				
Participate in EPA National Wetland Condition Assessments (NWCA)			x		
Identify and train staff to monitor for each indicator	x	x	x		
Verify monitoring strategy by conducting statewide wetland condition assessment utilizing NatureServe's Ecological Integrity Assessment, EPA NWCA, and Mid-TRAM protocols	x	x			
Develop a schedule for monitoring wetland resources	x	x	x	x	x
Work with NJ AmeriCorps Watershed Ambassador Program volunteers to include wetlands in water monitoring projects as feasible	x	x	x	x	x
Work with New Jersey Pinelands Commission and Meadowlands Environmental Research Institute scientists to coordinate wetland monitoring and assessment efforts	x	x	x	x	x
<b>Action 3: Establish reference condition</b>					
ACTIVITY	2014	2015	2016	2017	2018
Define reference condition (the gradient from unimpaired to impaired)	x	x	x		
Define reference standard condition by wetland type (e.g., Best Attainable Condition, Least Disturbed Condition, Minimally Disturbed Condition, Historical Condition, Best Professional Judgment)	x	x	x	x	X
Determine process for measuring reference standard condition (e.g., reference sites, historical data)	x	x	x		
Select reference sites using a systematic approach	x	x	x		
<b>Action 4: Track monitoring data in a system that is accessible, updated on a timely basis, and integrated with other state water quality data</b>					
ACTIVITY	2014	2015	2016	2017	2018
Design a data management system that supports program objectives	x	x	x		
Administer and update data system so that state or tribe can use it for analysis	x	x	x	x	x
Coordinate data metric definitions and data management system with wetland monitoring research in-state and cross-state collaborators and partners	x	x	x		

Make data system compatible with wetland metrics that may be used in Water Quality Standards for Wetlands					x
Integrate with other water quality data systems (e.g., state watershed planning databases) as possible			x	x	x
Geo-reference data as it is gathered for reporting	x	x	x	x	x
Identify sites to sample repeatedly for a trend network	x		x		
<b>Action 5: Analyze monitoring data to evaluate wetlands extent and condition/function or to inform decision-making</b>					
ACTIVITY	2014	2015	2016	2017	2018
Document data analysis and assessment procedures	x	x	x		
Develop assessment method to determine condition thresholds relative to reference standard condition	x	x	x		
Establish baseline wetland condition	x	x	x		
Analyze changes in wetland extent or condition relative to reference conditions			x	x	x
Analyze changes in coastal wetland extent or condition in response to sea level rise			x	x	x
Regularly report wetlands status and trends in State Integrated 305(b) and 303(d) Report	x		x		x
<b>Action 6: Public Education and Outreach.</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop a wetland monitoring and assessment education program for state and local watershed groups			x	x	x
Provide web-based information to the public on available wetland monitoring protocols and assessment tools			x		

### **OBJECTIVE 3: Incorporate monitoring data into agency decision-making.**

<b>Action 1: Evaluate monitoring program to determine how well it is meeting the state's monitoring program objectives</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop schedule to evaluate monitoring program			x		
Ensure the assessment method is providing the necessary information and make changes as necessary	x	x			
Review other wetlands program elements (e.g., restoration, regulation, water quality standards)	x	x	x	x	x
<b>Action 2: Evaluate the environmental consequences of a federal or state action or group of actions; modify programs as needed based on M&amp;A data</b>					
ACTIVITY	2014	2015	2016	2017	2018
Modify mitigation reporting protocol and standards as needed based on tested monitoring and assessment tools			x		
<b>Action 3: Improve the site-specific management of wetland resources.</b>					
ACTIVITY	2014	2015	2016	2017	2018
Incorporate monitoring and analysis into restoration techniques	x	x	x	x	x
Establish ecologically-meaningful benchmarks for gauging restoration success			x	x	x
Evaluate the performance of compensatory mitigation sites				x	
Evaluate the functions provided by individual wetlands or types of wetlands			x	x	x
Evaluate the ecosystem services provided by individual wetlands or types of wetlands			x	x	x
<b>Action 4: Develop geographically-defined wetland protection, restoration, and management plans</b>					
ACTIVITY	2014	2015	2016	2017	2018
Identify and prioritize management areas (e.g. identify vulnerable wetlands, prioritize restoration potential)				x	x
Incorporate wetlands into a comprehensive Watershed Plan that serves state water quality management needs					x
Evaluate progress toward meeting wetland objectives identified in other projects/programs,			x		

Inform broader watershed activities			X	X	X
Meet with wetland scientists at NJ Pinelands Commission, NJ Meadowlands Commission, Meadowlands Environmental Research Institute, and Highlands Water Protection and Planning Council to explore collaboration and cooperation opportunities in wetlands research, monitoring, assessment, protection, restoration, and management	X	X	X	X	X

## **CORE ELEMENT 2: REGULATION**

**GOAL:** To avoid and minimize wetland loss, preserve wetland function, replace unavoidable or un-authorized losses with healthy wetlands that are equivalent or greater in size and which function similar to or better than the lost wetlands and, where-ever possible, increase the quantity and quality of freshwater wetlands through creation and enhancement projects.

**OBJECTIVE 1:** Continue to improve upon existing wetland protection efforts under our assumed freshwater wetland program; develop more clearly definable coastal wetland protection standards; improve regulatory permit and data management processes to maximize efficiency and transparency; increase attention on mitigation processes, protocols and monitoring; strengthen coordination between permitting and enforcement programs and develop and implement public outreach services.

<b>Action 1: Improve program efficiency, transparency and regulatory guidance</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop e-permitting and e-submittal capabilities with capacity to upload shape files of site and wetlands	X	X	X	X	X
Develop GIS data layer for wetlands banks, mitigation and wetland delineations		X	X	X	X
Initiate a review of all inter and intra-agency MOAs	X	X			
Integrate mitigation data into one comprehensive database	X	X	X		
Develop and evolve Department programmatic websites	X	X	X	X	X
Develop riparian buffer mapping for the state		X	X		
<b>Action 2: Improve wetland regulations, policies or guidelines.</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop standard management units for watershed/ecoregion applications and assessments		X	X		
Prepare and up-date Department listed species protocols and survey standards	X	X	X	X	X
Seek stakeholder feedback on coastal wetland and habitat mitigation and buffer policies and regulations	X	X	X		
<b>Action 3: Evaluate regulatory activities and determine environmental results.</b>					
ACTIVITY	2014	2015	2016	2017	2018
Monitor wetland mitigation sites for compliance and/or success rates	X	X	X	X	X
Evaluate integrating and coordinating Department habitat preservation and land acquisition activities	X	X	X		
Assess values of wetland or riparian buffers to resource health based on water quality indicator research		X	X		
Identify and document secondary impacts on wetland and floodplain resources				X	X
Storm damage assessments and sustainable developments using wetlands as buffers	X	X			
Evaluate effectiveness of Coastal Wetlands Act of 1970 on protecting and restoring coastal wetlands	X	X			
Identify properties statewide suitable for mitigation	X	X	X	X	X

Coordinate cross-program with other State and Federal Agencies	x	x	x	x	x
Study the effectiveness of built Living Shorelines		x	x	x	x
Establish goals and needs to support intra- and inter-agency exchange of wetland research information	x	x	x	x	x
Annually evaluate wetland research results and reports relative to their application to regulatory needs and goals	x	x	x	x	x
<b>Action 4: Public Education and Outreach.</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop and implement a wetland regulatory public education program	x	x	x	x	x
Leverage web technology to further wetland outreach	x	x	x	x	x

### **CORE ELEMENT 3: VOLUNTARY WETLAND RESTORATION, CREATION, ENHANCEMENT AND PROTECTION AND IMPROVED COASTAL SHORELINE RESILIENCY**

**GOAL:** To prioritize and implement active programs for ecological restoration and protection of wetlands through land acquisition, watershed planning, and development of a coastal shoreline resiliency program with a focus on enhancing and increasing wetland resources statewide.

#### **OBJECTIVE 1: Clearly and consistently define restoration and protection goals.**

<b>Action 1: Establish goals that are consistent or compatible across relevant agencies</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop multi-agency body to coordinate restoration, creation, enhancement and protection efforts	x	x	x	x	x
Gather information on wetland location, class and condition/functions	x	x			
Maintain list of potential projects, e.g. dam removals, resilient shoreline projects, restoration, creation or enhancement	x	x	x	x	x
<b>Action 2: Consider watershed planning, wildlife habitat, and other objectives when selecting restoration/creation/enhancement/protection sites</b>					
ACTIVITY	2014	2015	2016	2017	2018
Identify rare, vulnerable, or important wetlands and prioritize for restoration/protection	x	x	x	x	x
Apply tools (GIS, color-infrared photography, mapping, modeling, field inspection of soil, vegetation, and hydrologic conditions) to identify projects	x	x	x	x	x
Develop resilient coastal shoreline program, including establishment of a network of partners for the development and implementation of the statewide resilient coastal shorelines plan; coordination of living shoreline practitioners; establishment of a website containing relevant information; and development of a shoreline inventory	x	x	x	x	x
Share priorities and approach with other organizations	x	x	x	x	x
<b>Action 3: Provide clear guidance on shoreline resiliency and establish common success measures</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop guidance for creation of resilient coastal shorelines	x	x	x		
Establish common measures of success	x	x			
Through guidance, encourage establishment of resilient coastal shorelines	x	x	x	x	x

**OBJECTIVE 2: Protect wetlands from degradation or destruction.**

<b>Action 1: Establish long term wetland protection through acquisition</b>					
ACTIVITY	2014	2015	2016	2017	2018
Continue to acquire conservation easements or acquire land in fee that includes wetlands	x	x	x	x	x
Continue to pursue grant opportunities for wetland acquisition	x	x	x	x	x

**OBJECTIVE 3: Increase wetland acres and improve wetland condition and function.**

<b>Action 1: Increase wetland acreage through wetland restoration and creation and improve wetland conditions and functions through enhancement</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop site specific plans for wetland restoration, creation and enhancement projects and monitor completed projects			x		
Evaluate tracking 1) acres of wetlands restored, created and enhanced and 2) the level of or improvements in function/condition based on wetland indicators			x		
<b>Action 2: Improve resilience of coastal shorelines</b>					
ACTIVITY	2014	2015	2016	2017	2018
Develop site specific plans to improve coastal shoreline resiliency consistent with guidance and monitor completed projects			x		
Consider tracking length of shoreline improved and associated acres of wetlands restored, created and enhanced	x	x	x	x	x
Provide technical assistance for coastal shoreline resiliency projects as needed	x	x	x	x	x
<b>Action 3: Establish partnerships to leverage more wetland restoration, creation and enhancement and more resilient coastal shorelines</b>					
ACTIVITY	2014	2015	2016	2017	2018
Share restoration, creation, and enhancement priorities and resilient coastal shoreline approach with partners. Include projects that advance wetlands restoration, and meet funding eligibility requirements, as a priority for award of funds under 319(h).	x	x	x	x	x
Provide technical assistance to partners as needed	x	x	x	x	x
<b>Action 4: Modify projects to improve success</b>					
ACTIVITY	2014	2015	2016	2017	2018
Review monitoring results to take measures to improve project success as necessary and adapt techniques as necessary	x	x	x	x	x

## **CORE ELEMENT 4: WATER QUALITY STANDARDS FOR WETLANDS**

**GOAL:** Improve the quality of New Jersey wetlands in accordance with the Clean Water Act by setting benchmarks for wetland condition. Water Quality Standards for Wetlands (WQSW) will evolve as the Monitoring and Assessment program collects and analyzes data using a reference-based approach to define quality along a stressor and condition gradient.

### **OBJECTIVE 1: Develop wetland-specific water quality standards.**

<b>Action 1: Gather information that would inform standards development</b>					
ACTIVITY	2014	2015	2016	2017	2018
Identify work completed to define wetlands categories in New Jersey and in other states based on wetland vegetation and hydrogeomorphic classification systems	x	x	x		
Evaluate hydrogeomorphic characterization as a tool to evaluate wetland function	x	x	x		
Test the New Jersey Floristic Quality Assessment tool for use in defining wetland condition	x	x	x		
Define stressors to wetland water quality	x	x	x		
<b>Action 2: Begin to define wetland-specific designated uses to be achieved and protected</b>					
ACTIVITY	2014	2015	2016	2017	2018
Explore options for differentiating different wetland types and their uses (e.g., recreation, wildlife habitat, etc.)				x	x
Determine feasibility of developing maps depicting where designated uses apply				x	x
<b>Action 3: Consider revisions to existing SWQS applicable to wetlands</b>					
ACTIVITY	2014	2015	2016	2017	2018
Consider options for wetlands specific SWQS (narrative, numeric)					x
Update monitoring strategy and methods to help inform development of water quality standards for wetlands					x
<b>Action 4: Better define state/tribal anti-degradation policies for wetlands</b>					
ACTIVITY	2014	2015	2016	2017	2018
Evaluate current anti-degradation policies as applied in wetlands					x
Evaluate effectiveness of these policies					x

## **CORE ELEMENT 5: PUBLIC OUTREACH AND EDUCATION**

**GOAL:** To encourage and cultivate Departmental practices and programs that strives to increase public understanding, awareness and appreciation of wetlands through education, information, outreach and involvement.

**OBJECTIVE 1:** To improve and expand upon efforts to educate the general public on wetlands functions, benefits and values; increase opportunities for passive and active recreational interaction, raise awareness of the foundations and justification for regulatory practices and seek to develop a general appreciation of the role wetlands play in maintaining the health and stability of the existing and future landscape environment.

<b>Action 1: Communicate the value of wetlands, in particular their functions and ecosystem services, and provide public education opportunities</b>					
ACTIVITY	2014	2015	2016	2017	2018
Invite stakeholder feedback on the New Jersey Wetland Program Plan	x				
Coordinate communication and public outreach about New Jersey's work on the EPA core elements (wetlands monitoring & assessment, regulation, voluntary restoration & protection, and wetland water quality standards)	x	x	x	x	x
Develop public education programs on wetlands that can be used in training workshops and as exhibits at local events			x		
Develop web-based tools for the public to use in assessing and monitoring wetlands			x		
Publicize success stories in wetland associated events, restoration projects, recreational and volunteer opportunities	x	x	x	x	x