

**Oklahoma's Wetland Program Plan
2013-2018**



**Prepared by:
The Oklahoma Conservation Commission and
The Oklahoma Wetland Technical Work Group**

INTRODUCTION

The Oklahoma Wetlands Program (OWP) was formally created in 1990 when the Oklahoma Legislature directed the Oklahoma Conservation Commission (OCC) to prepare a wetlands management strategy. While OCC was appointed the lead agency in wetland planning and strategy development, the OWP, since its inception, has represented a collaborative effort among partner agencies and organizations through the Oklahoma Wetland Workgroup (OWWG). While Oklahoma has not formally adopted a wetland definition, the definition included in the original Oklahoma Comprehensive Wetland Conservation Plan will serve the purpose of this document. Therefore, we define wetlands according to the United States Army Corps of Engineers (USACE) and United State Environmental Protection Agency (USEPA) joint definition.

“Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” (Federal Register 1980, 1982)

With assistance from the OWWG and financial aid from US Environmental Protection Agency (USEPA) wetland program development grants, Oklahoma’s Comprehensive Wetland’s Conservation Plan (OCWCP) was published in 1996 (OCC 1996). The OCWCP set the foundation for the Oklahoma Wetland Program by outlining 12 programmatic objectives and associated action items. This report updates the original objectives from the OCWCP based on the results and outcomes of wetland projects completed over the last 16 years as well as the 2008 framework for wetland program plan (WPP) development published by the USEPA (USEPA 2008). To provide initial guidance for updating the OCWCP, the Oklahoma Wetland Technical Work Group (OWTWG) published a letter report in the summer of 2012, summarizing all previous wetland activities within the state and providing recommendations for future directions to meet programmatic objectives (OCC 2012). For this WPP, the OWTWG has taken the recommendations from the letter report and distilled them into actions and activities that fall under the core elements for a wetland program outlined by the USEPA. The core elements include (1) **Monitoring and Assessment**, (2) **Regulation**, (3) **Voluntary Restoration and Protection**, and (4) **Water Quality Standards**. Though not one of the core elements outlined by the USEPA, the OWTWG agreed that a fifth element of Education and Outreach was essential to the success of the wetlands program. While the objectives of the OCWCP have been updated and reorganized for this document, the goal of the wetlands program remains the same: **To conserve, enhance, and restore the quantity, quality, and biological diversity of all wetlands in the state**. The letter report is presented in Appendix A for background on the relationship between the original 12 objectives from the OCWCP and the new structure of core elements, actions and activities in this Wetland Program Plan.

The purpose of Oklahoma’s Wetland Program Plan is to guide and focus wetland related activities within the state to ensure that programmatic goals are met. This document is organized into five sections for each of the four USEPA core elements and the additional element of Education and Outreach. For each of the five elements, the OWTWG has identified an overall

objective and specific activities nested within broad based actions designed to advance programmatic objectives and goals. The timeframe for the completion of the included activities is six years beginning in January 2013 and ending in December 2018. Oklahoma's WPP should be considered a "living document" subject to revision as a result of funding constraints and as the knowledge base concerning wetlands in the state expands.

MONITORING AND ASSESSMENT

Monitoring and assessment are crucial components of a successful wetland program. “Monitoring is the systematic observation and recording of current and changing conditions, while assessment is the use of that data to evaluate and appraise wetlands to support decision making and planning processes” (USEPA 2008; pp 1). Well rounded monitoring and assessment programs can appraise the health of waterbodies (including wetlands) at multiple scales, from system to entire watersheds. Such efforts provide foundational data that informs the development of the other core elements. Within the regulatory framework, wetland assessment can be used to identify and track the success of mitigation projects for Clean Water Act (CWA)§404 projects. In the context of systematic and random monitoring programs, assessment can identify high quality wetlands for protection and low quality sites in need of restoration and enhancement. Finally monitoring and assessment efforts are crucial to development of reasonable and appropriate water quality standards and, in turn, to determine if the standards are being met (USEPA 2008).

In Oklahoma, there is currently no formal monitoring and assessment program for wetlands. However, over the last five years a great deal of work has been done to better characterize the wetland resources throughout the state. Hydrogeomorphic (HGM) classification systems and HGM based wetland inventories have been developed for wetlands based on system hydrology and geomorphology for the Cross Timbers and Central Great Plains Ecoregions of Oklahoma (Brinson 1993, Dvoretz et al. 2012). These data serve as the foundation to identify appropriate monitoring and assessment strategies. The objective of this WPP for monitoring and assessment is to: **Develop a sensible monitoring and assessment strategy to serve as the foundation for tracking local and statewide trends in wetland health and extent, prioritizing and tracking restoration activities, and guiding compensatory mitigation projects.** For this WPP, we identified four key actions to meet this objective:

1. Complete Hydrogeomorphic (HGM) classification and functional characterization to further understanding of the distribution and functions of wetlands in Oklahoma.
2. Develop an assessment tool that can be used to identify unique and pristine wetlands for protection and degraded wetlands for restoration as well as estimate wetland functions for guiding and tracking wetland compensatory mitigation.
3. Develop remote tools to expand tracking general trends in wetland loss, gain and health.
4. Develop a preliminary monitoring strategy utilizing field and remote assessment tools.

A table of activities that will be completed to achieve these actions are listed below. The OCC will be the lead agency for the completion of these actions. However, to successfully complete many of these activities will require financial assistance from USEPA wetland program development grants and other sources and technical support from partner universities and agencies through the OWTWG.

Action 1: Complete HGM classification and functional characterization						
Activity	2013	2014	2015	2016	2017	2018
1: Complete HGM subclass development and functional characterization for wetlands in the Arkansas Valley, Central Irregular Plains and South Central Plains.	x	x				
2: Create functional profiles for playa wetlands through coordination with the regional wetland management entities (Playa Lakes Joint Venture, Rainwater Basin Joint Venture, Texas Parks and Wildlife Department, etc.) and HGM characterization in the field.	x	x				
3: Integrate previously developed HGM subclassifications for Oklahoma Ecoregions into a statewide dichotomous key for HGM wetland classification with field indicators and functional descriptions of each subclass.			x			
Action 2: Develop a modular field-based assessment tool						
Activity	2013	2014	2015	2016	2017	2018
1: Conduct a review of methodologies from surrounding states for assessing wetland condition and function.	x					
2: Conduct a literature review of landscape and local stressors that impact wetland structure, processes and biota.	x					
3: Convene the Oklahoma Wetland Technical Work Group (OWTWG) to develop a list of potential biotic, structural, hydrologic and landscape assessment metrics for inclusion in condition and functional assessments based on previous empirical data collection within the state, literature review and field observations.	x					
4: Calibrate potential assessment metrics to landscape and local stressors based on field assessments at sites ranging from highly degraded to "pristine" at surface-water depressions.	x	x	x			
5: Develop draft condition assessment tools and draft functional assessment tools for oxbow wetlands and surface-water depressions. Validate and refine the methods' ability to assess condition and function through application of the tools in the field.			x	x	X	

6: Assess the effectiveness of the condition and functional assessment methods on two additional wetland subclasses within the state and refine methods as necessary.					X	x
Action 3: Develop remote assessment tools.						
Activity	2013	2014	2015	2016	2017	2018
1: Convene the OWTWG to identify areas within the state with high concentrations of wetlands, areas where wetlands are at risk of loss or degradation, and areas where National Wetlands Inventory (NWI) maps are inaccurate. Develop a priority "wetland area" list for remapping efforts within the state.		x				
2: Map the top two highest priority "wetland areas" complying with Federal Geographic Data Committee (FGDC) standards.			x	x		
Action 4: Advance the wetland monitoring program						
Activity	2013	2014	2015	2016	2017	2018
1: Develop a wetland monitoring strategy identifying how assessment tools as well as fixed and probabilistic monitoring efforts will be utilized to track trends in wetland health and extent.			x	x		
2: Conduct probabilistic monitoring to track gains/losses in the two highest priority "wetland areas" and one randomly selected HUC 8 watershed according to the US Fish and Wildlife Service (USFWS) publication "Technical procedures for conducting status and trends of the Nation's wetlands."				x	X	

REGULATION

Wetland regulatory programs are generally built around the Clean Water Act (CWA) §404 and §401. The broad goal of the CWA is to “restore and maintain the physical, chemical and biological integrity of the Nation’s waters” (USEPA 2008; pp 2). Sections 404 and 401 help to meet this goal by requiring avoidance, minimization and compensation for impacts of the discharge of dredge or fill into waters of the U.S (USEPA 2008). States can have varying degrees of responsibility for regulatory actions. While some states administer the §401 water quality certification program, two have also assumed responsibility for §404 permitting programs as well (USEPA 2008). In Oklahoma, the United States Army Corps of Engineers (USACE) administers the CWA §404 program and the Oklahoma Department of Environmental Quality (DEQ) administers the §401 water quality certification program. Where activities such as draining or filling of wetlands are conducted to make possible the production of an agricultural commodity for USDA program participants, the Natural Resource Conservation Service (NRCS) is responsible for wetland determinations and delineations for compliance with the Food Security Act of 1985 (USDA 2005). The objective for the regulation core element for this WPP is to: **Promote greater understanding of the scope of the program in wetlands.** In order to more clearly define the scope of the wetland regulatory program in Oklahoma, three actions have been identified for this WPP.

1. Provide input for the revisions to the USACE Tulsa District Mitigation and Monitoring Guidelines
2. Develop guidelines for the creation/maintenance of stormwater detention and wastewater treatment wetlands.
3. Advance wetland mitigation banking in the state.

The Tulsa District Mitigation and Monitoring Guidelines are designed to improve predictability of mitigation requirements for permit applicants and to increase the likelihood of success of the mitigation plan (USACE 2004). The OWTWG will provide comments on the forthcoming revisions to the Mitigation and Monitoring Guidelines to further improve clarity and consistency in the §404 process within Oklahoma. When wetland mitigation is required under §404, wetland mitigation banks are the preferred method (EPA 40 CFR 230; USACE 33 CFR 332). Mitigation banks are permanently protected lands that are being restored or enhanced for biological diversity and a variety of ecosystem functions. Once established, the bank is assigned a value in credits by federal and state agencies which can then be sold to permit applicants as wetland mitigation. Action 3 will advance wetland mitigation banking in the state through literature reviews and by identifying potential locations for mitigation bank creation.

A table of activities that will be completed to achieve these actions are listed below. The OCC will be the lead agency for this core element. However, to successfully complete these activities will require technical assistance from the USACE, DEQ and the entire OWTWG.

Action 1: Provide input for the revisions to the US Army Corps of Engineers (USACE) Tulsa District Mitigation and Monitoring Guidelines.						
Activity	2013	2014	2015	2016	2017	2018
1: Convene the OWTWG to review the revisions to the USACE Tulsa District Mitigation and Monitoring guidelines and provide comments. (timing depends on the completion of the revisions)						
Action 2: Develop guidelines for creation/maintenance of stormwater detention and wastewater treatment wetlands.						
Activity	2013	2014	2015	2016	2017	2018
1: Conduct literature review of guidance for stormwater detention and wastewater treatment wetlands.		x				
2: Convene OWTWG to draft a guidance document for stormwater detention and wastewater treatment wetlands.			x	x		
Action 3: Advance wetland mitigation banking in the state.						
Activity	2013	2014	2015	2016	2017	2018
1: Conduct literature review on wetland mitigation in surrounding states.		x				
2: Identify priority areas for the creation of wetland mitigation banks by reviewing locations of Clean Water Act (CWA)§404 permits and coordinating with the entities most in need of wetland mitigation sites.			x	x		
3: Apply the "restorable wetland identification method" in areas of high mitigation need to identify any large restorable areas suitable for mitigation banking.					x	x

VOLUNTARY RESTORATION AND PROTECTION

Wetland restoration is defined as “the manipulation of a former or degraded wetland’s physical, chemical, or biological characteristics to return to its natural functions” (USEPA 2008; pp 1). Protection is defined as “removing a threat or preventing the decline of wetland conditions” (USEPA 2008; pp 1). *Voluntary* restoration and protection refers to all restoration and protection activities that are not legally required such as conservation easements, changes to conservation practices, land trusts or invasive species removal (USEPA 2008). Voluntary restoration and protection play crucial roles in meeting the state wetland program’s goal: to conserve, enhance, and restore the quantity, quality, and biological diversity of all wetlands in the state. Restoration and protection are particularly important because close to 67% of Oklahoma’s wetland acres were lost to development between 1780 and 1980 (Dahl 1990). Several state and federal agencies as well as NGOs have active restoration and protection programs in Oklahoma. To date, a major source of wetland acquisition, protection and restoration in the state has been through the USFWS refuge acquisition program and through ODWC wetland development units and wildlife management areas. The Natural Resource Conservation Service (NRCS) wetland reserve program (WRP) has also restored and protected over 61,000 acres of wetlands and surrounding uplands since 1996 through permanent or 30 year easements. Because there are already numerous wetland restoration and protection programs in existence, a primary focus is to integrate these activities within the state to improve the effectiveness in restoring wetland functions and biological diversity to the landscape. Integration is also essential to provide landowners with a clear list of options for wetland restoration on their property. Wetland restoration and protection can also be improved in the state by integrating these programs with CWA §319 non-point source management programs. Wetlands can be restored to promote reduction in non-point source pollution to receiving waterbodies. As a result, 319 grant monies can be used both to improve water-quality and restore wetlands to the landscape. The objective for this WPP for voluntary restoration and protection is to: **Clearly and consistently establish integrative wetland restoration, enhancement, creation, and protection goals.** In order to meet this objective, the OWTWG identified two action items.

1. Integrate federal, state, and non-governmental organization (NGO) wetland restoration, enhancement, creation and protection (RECP) programs, promote wetland RECP, and develop informational tools for land-users.
2. Integrate wetland RECP with watershed based approaches.

A table of activities that will be completed to achieve these actions are listed below. The OCC will be the lead agency for this core element. However, to successfully complete these activities will require financial assistance from USEPA wetland program development grants and technical assistance from partners at the OWTWG.

Action 1: Integrate federal, state, and non-governmental organization (NGO) wetland restoration, enhancement, creation and protection (RECP) programs, promote wetland RECP, and develop informational tools for land-users.

Activity	2013	2014	2015	2016	2017	2018
1: Develop a RECP strategy document that identifies current priorities, how future priorities should be established, and the roles of federal, state, and NGO programs in wetland RECP within the state.		x				
2: Develop a web application/guidance for land-owners and land-users to evaluate wetland restoration, protection, creation and enhancement options.			x			
3: Promote the wetland registry to landowners with restorable wetlands and land-users in need of restoration locations. The wetland registry is a tool that was created to connect those in need of restoration opportunities with owners of restorable wetlands.	x	x	x	x	x	x
4: Develop a use-guidance tool for wetland land-owners and land-users. This tool will provide information regarding what types of activities are appropriate and legal within and surrounding jurisdictional and non-jurisdictional wetlands.				x	x	x

Action 2: Integrate wetland RECP with watershed based approaches.

Activity	2013	2014	2015	2016	2017	2018
1: Develop a "restorable wetland identification method" that identifies and prioritizes potential restoration sites using GIS mapping, spatial modeling, landowner outreach, and field verification.	x					
2: Apply the "restorable wetland identification method" to identify and prioritize restoration sites within priority watersheds for which Oklahoma Conservation Commission (OCC) watershed plans have been or are being developed.	x	x				
3: Create a restorable wetland database based on the application of the "restorable wetland identification method" to priority watersheds.		x				

WATER QUALITY STANDARDS

Water quality standards “define the goals for a water body by designating its highest attainable uses, setting criteria that reflect the current and evolving body of scientific information to protect those uses, and establishing provisions to protect water bodies from further degradation” (USEPA 2008; pp 1). Because wetlands are unique relative to other surface water bodies, default standards are often not relevant (USEPA 2008). The USEPA recommends five key steps for the development of water quality standards for wetlands: “(1) define wetlands as “state waters”, (2) designate uses that protect the structure and function of wetlands, (3) adopt narrative criteria and appropriate numeric criteria in the standards to protect the designated uses (4) adopt narrative biological criteria in the standards, and (5) extend the antidegradation policy and implementation methods” (USEPA 1990). Currently Oklahoma does not have wetland specific water quality standards; instead, default criteria for warm water streams apply. The objective for this WPP for water quality standards is to: **Develop wetland-specific water quality standards.** In order to meet the stated objective, the OWTWG identified three action items:

1. Develop the role of water quality standards and how they could be applied.
2. Advance the development of criteria specific to wetlands.
3. Identify appropriate mechanisms for listing impaired wetlands.

A table of activities that will be completed to achieve these actions are listed below. The Oklahoma Water Resources Board (OWRB) will be the lead agency for Actions 1 and 2 of this core element. The OCC will be the lead agency for Action 3. However, these activities will require technical assistance from the DEQ and all partners at the OWTWG.

Action 1: Develop the role of water quality standards and how they could be applied.						
Activity	2013	2014	2015	2016	2017	2018
1: Convene the OWTWG to discuss the role of water quality standards within the state and general implementation.	x					
Action 2: Advance the development of criteria specific to wetlands.						
Activity	2013	2014	2015	2016	2017	2018
1: Conduct literature review on narrative criteria developed in the surrounding states.	x					
2: Develop and propose wetland-specific water quality standards. The OWRB will work with the Wetlands Working Group, EPA Region 6, and stakeholders to: a) Provide a specific definition for wetlands, which are currently considered “waters of the state”, b) Designate uses that protect the structure and function of wetlands, c) Adopt narrative criteria and appropriate numeric criteria in the standards to protect designated uses, d) Adopt narrative biological criteria in the standards, and e) Extend the antidegradation		x				

policy and implementation methods.						
Action 3: Identify appropriate mechanisms for listing impaired wetlands.						
Activity	2013	2014	2015	2016	2017	2018
1: Convene the OWTWG to identify appropriate mechanisms for listing impaired wetlands and how lists will be reported and stored.		x	x			

EDUCATION AND OUTREACH

While education and outreach is not among the core elements defined by the USEPA, the OWTWG believe that dissemination of wetland related information, guidance and tools to Oklahomans is an essential aspect of a successful wetland program. The objective of education and outreach for this WPP is to: **Provide landowners, land-users and land-managers with the necessary information to manage wetland resources and provide the general public with information regarding the importance of wetlands.** In order to meet the programmatic objective, the OWTWG identified one action item:

1. Improve the availability of wetland information to landowners, land-users, land-managers and the general public.

This action item will be achieved through several activities including creating a wetland program website where all wetland related information, tools, reports and data can be disseminated. Among the information available on the website, will be an application that allows land-users to identify solutions to wetland specific issues such as invasive species management and water quality improvement. Trainings and educational programs will also be provided to land managers regarding new developments in wetland assessment, monitoring and management in the state.

A table of activities that will be completed to achieve this action are listed below. The OCC will be the lead agency for this core element. However, these activities will require technical assistance from partners at the OWTWG.

Action 1: Improve the availability of wetland information to landowners, land-users, land-managers and the general public.						
Activity	2013	2014	2015	2016	2017	2018
1: Create a wetland program website for the dissemination of all relevant state wetland information, reports, tools and data to other wetland managers and the general public.	x					
2: Maintain the wetland program website by adding new project information, project reports, wetland tools and relevant data.		x	x	x	x	x
3: Continue ongoing wetland education efforts for youth, parents and teachers.	x	x	x	x	x	x
4: Create an educational program for land managers as an avenue to disseminate new information regarding the wetland program and provide trainings on the proper usage of assessment methods and tools.				x	x	x
5: Develop a web application that allows landowners, land-users and land-managers to identify solutions to wetland specific issues					x	x

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APPENDIX A: Letter Report on the Status for all Wetland Activities in Oklahoma