

## Missouri State Wetland Program Summary



*Photo Title: Missouri River Floodplain Wetland  
Photo Credit: USGS*

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### **Section A. Quick View**

#### **Description of Missouri Wetlands**

Palustrine forested wetlands (swamps and other forested wetlands), Palustrine emergent wetlands (marshes and fens), and palustrine scrub-shrub wetlands (shrub swamps) constitute most of the wetland acreage in Missouri. Most of the State's wetlands are associated with rivers and streams.

#### **State Definition of Wetlands**

Wetlands are included in the definition of waters of the state, which included "waters of the United States within the state of Missouri."

Classified wetlands: Class W – Wetlands are waters of the state that meet the criteria in the Corps of Engineers Wetland Delineation Manual (1987) and subsequent federal revisions and supplements. Class W waters do not include wetlands that are artificially created on dry land and maintained for the treatment of mine drainage, stormwater control drainage associate with road construction or industrial, municipal or agricultural waste.

State water quality standards include a specific definition that is used by, and consistent with, the administration of the Section 404 Program (33) CFR 328.3(b):

General Wetland Definition: EE Wetland – Those areas that are inundated or saturated by surface groundwater at a frequency or 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.

For more information go to: <http://www.sos.mo.gov/adrules/csr/current/10csr/10c20-7a.pdf>

### Historic Wetland Loss/Gain

Original Wetland Acreage	Remaining Wetland Acreage	Acreage Lost	% Lost
4,844,000	643,000	4,201,000	87%

### Primary State Wetlands Webpage

Wetlands and Water Quality Standards Development Committee – Wetlands Subcommittee

<http://dnr.mo.gov/env/wpp/cwforum/adv-uncl-waters-wetlands.htm>

### Department of Natural Resources Wetlands Webpage

<http://dnr.mo.gov/env/wrc/wetlands.htm>

### State Wetland Program Plan

[http://dnr.mo.gov/env/wrc/docs/Missouri\\_Wetland\\_Program\\_Plan.pdf](http://dnr.mo.gov/env/wrc/docs/Missouri_Wetland_Program_Plan.pdf)

Note: A final draft of a new plan will be available in September 2015.

### State Resources for Wetland Work

State Name	Core element #1: Regulation	Core Element #2: Monitoring and Assessment	Core Element #3: Wetland Water Quality Standards	Core Element #4: Voluntary Wetland Restoration
<b>Agency</b>	Missouri Department of Natural Resources (401 Certification)	Missouri Department of Conservation	Missouri Department of Natural Resources	Missouri Department of Conservation
<b>Source(s)</b>	Unknown	Unknown	Unknown	319 staffing
<b>Amount</b>	Unknown	Unknown	Unknown	Unknown
<b>FTE</b>	1.25 FTE	1.5 FTE	0.2 FTE	0.2 FTE
<b>Agency</b>		Missouri Department of Natural Resources – Water Resources (water protection; not wetland-specific)		Land Reclamation (Rain gardens, water quality/quantity/SW)
<b>Source(s)</b>		Unknown		Unknown
<b>Amount</b>		Unknown		Unknown
<b>FTE</b>		Unknown		Unknown
<b>Agency</b>		University		Transportation
<b>Source(s)</b>		Unknown		Unknown
<b>Amount</b>		Unknown		Unknown
<b>FTE</b>		0.5 FTE		Unknown

### State Permitting Fees

State Permitting Fee	State Name
Yes/No	YES
Amount (range)	\$75 (fees are changing)
Agency	Department of Natural Resources

For more information: <http://www.sos.mo.gov/adrules/csr/current/10csr/10c20-6.pdf>

### Innovative Features

- MDNR has established a Missouri Corporate Aquatic Restoration Team as a way to implement the **Corporate Wetland Restoration Program** in Missouri. MDNR seeks corporate participants for the program and has developed a technical team to provide guidance to the corporate board from among its partner agencies and organizations.
- MDEC has Wetland Evaluation Teams (WET Teams) that help NRCS
- Integrated Sensitive Areas

### Models and Templates

- MO Sensitive Areas Program  
<http://dnr.mo.gov/env/swcp/service/SensitiveAreas.htm>
- Missouri Stream Method  
[http://www.mvm.usace.army.mil/Portals/51/docs/regulatory/May\\_2013\\_Missouri\\_Stream\\_Mitigation\\_Method.pdf](http://www.mvm.usace.army.mil/Portals/51/docs/regulatory/May_2013_Missouri_Stream_Mitigation_Method.pdf)

### Section B. Regulation

#### How are Wetlands Regulated in the State?

Missouri regulation of wetlands rests solely with 401 certifications and the state's general water quality standards. Missouri DNR issues §401 certifications (<http://dnr.mo.gov/env/wpp/401/index.html>). For more information about state §401 rule making, go to: <http://dnr.mo.gov/env/wpp/cwforum/401cert.htm>.

#### Wetland Delineation

Delineation Guidance	Yes	No	Detail
Use State's own Method		X	
Use Corps' 87 Manual and Regional Supplement	X		
Other (Please describe)		X	

#### No Net Loss/Net Gain Goal

Executive Order (96-3) directs "no new loss." However, a no net loss goal is not in any statute or regulation.

## Evaluation Methodology

Missouri can use the Aquatic Resource Mitigation Guidelines ([http://dnr.mo.gov/env/wpp/401/docs/mitigation\\_guidelines.pdf](http://dnr.mo.gov/env/wpp/401/docs/mitigation_guidelines.pdf)) , which were developed with the help of federal and state resource agencies, to derive mitigation ratios based on Cowardin’s wetland classification system. The state relies primarily on best professional judgement.

## Exempted Activities

Consistent with federal. Missouri does not include MODOT or wetlands under Nationwide Permits.

## Special Provisions for Agriculture and Forestry

Consistent with federal.

## Penalties and Enforcement

State clean water law provides for both judicial and administrative penalties; however, there are very few enforcement cases in Missouri.

## Permit Tracking

The state currently has a database of all 404 permits issued within the state. This data is searchable by applicant, Corps permit #, affected waterbody, county, and several other parameters. Mitigation is not tracked in the database, but plans are required for certification, and hard-copies are in our files.

## State General Permit (statewide vs. regional coverage)

Permit Coverage	Yes	No	Detail (Type of Permit)
Regional General Permit	X		
Statewide General Permit	X		

**Detail:** Missouri General Permits include GU-09046 (USACE Lakes Maintenance); GS-09501 (Steps, Walkways and Footbridges); GF-09092 (Water pipelines, pumps and coils); GK-09045 (Boat Launching Ramp Construction); GP-4 (Boat Docks on Missouri, Osage, and Gasconade Rivers); GP-34M (Sand and Gravel Extraction); GP-38M (Shoreline Projects – Lake of the Ozarks); GI-10972 (Recreational Activities); GP-41M (Flood Recovery and Repair Activities); and GP-35 (Protection/Repair of Flood Damaged Structures). The state pre-certifies all General Permits.

## Assumption of 404 Powers

Assumption Status	Yes	No	Detail
Assumed		X	
Applying for Assumption		X	
Explored Assumption	X		Assumption of Section 404 powers was explored and found to be unfeasible due to lack of funding (~2000)

## **Joint permitting**

MDNR and USACE have a Memorandum of Understanding specific to the public comment process, which institutes a uniform protocol for processing Clean Water Act Section 404 Department of the Army Permits and Section 401 Water Quality Certifications. Missouri is in the process of developing a joint agreement with the Corps to outline “who does what and when”

## **Special Area Management Plans and Advanced Identification Plans**

Unknown

## **Mitigation Policy**

MDNR has participated in interagency discussions and aid in development of the Missouri Wetland Mitigation Method, which will establish procedures for calculating impacts (debits) and improvements (credits) for both wetland and buffer work. These procedures are expected to be available in Spring 2015.

The state’s Aquatic Resource Mitigation Guidelines establish the hierarchy of avoidance, minimization, and mitigation, as well as mitigation ratios for wetland impacts. They can be downloaded at [http://www.dnr.mo.gov/env/wpp/401/mitigation\\_guidelines.pdf](http://www.dnr.mo.gov/env/wpp/401/mitigation_guidelines.pdf)

Missouri DNR has full authority to conduct mitigation in state statute.

## **Mitigation Database**

MDNR does not currently have a mitigation database, but plans to update the state’s 401 Certification Management System database to include mitigation tracking. Updates will include debit types and amount, credit types and amounts, monitoring needs, and date of completion.

## **Section C. Monitoring and Assessment**

### **Agency Responsible for Wetland Monitoring and Assessment**

Missouri DNR is working in partnership with the Department of Civil and Environmental Engineering of the University of Missouri to develop a physical wetlands monitoring pilot program. MDNR is in the process of testing a wetland rapid assessment methodology (MORAM) on sites throughout Missouri’s ecoregions.

## **Mapping/Inventory**

Missouri does not have its own wetland maps. The state works with NWI and has added some physical attributes (features) to NWI maps. Also adding tabular information patterned after LLW tier efforts.

## **State Wetland Mapping Public Portal**

The state does not have a public portal at this time. However it does have shape files for ARCGIS, Google Earth at Missouri GIS (<http://dnr.mo.gov/gis/>)

### Wetland Classification and Assessment

None. State rules states that MOUS and regulatory delineation is a Class A wetland. The state is working on developing a state wetland classification system with the new MO-RAM.

### Statewide Monitoring Plan

None.

### Overall Wetland Gain and Loss Tracking System

None.

### Wetland Monitoring and Assessment Characteristics

Level	None	Level 1	Level 2	Level 3
<i>Missouri</i>		X	X	

Type	None	IBI	Conditional	Functional
<i>Missouri</i>		X	X (ecological condition; rooted in NWCA)	

Frequency	None	Project Specific	Ongoing
<i>Missouri</i>		X	X (6 stations linked to groundwater monitoring program)

### Participation in National Wetland Condition Assessment

NWCA Study Type	Yes	No
National Study	X	
State Intensification Study		X

### Section D. Water Quality Standards

The state has a 401 program (10CSR 20 6.060); state applies an anti-degradation policy to wetlands. In 1990 Missouri Water Quality Standard revisions specified wetlands as a water of the state and created a new “beneficial use” category for wetlands. The next revision in 1993 included more specific criteria on water quality for wetlands.

For more information about the state’s Water Quality Standards, go to the Wetland Water Quality Standards Subcommittee webpage at: <http://dnr.mo.gov/env/wpp/cwforum/adv-uncl-waters-wetlands.htm>.

## Wetland and Water Quality Standards

Type	None	Use Existing WQ Standards	In Process	Adopted	Future Direction
Wetland-specific Designated Uses				X (Have WL-specific DUs for wetlands, but figuring out how to apply them)	
Narrative criteria in the standards to protect designated wetland uses		X	X		
Numeric criteria in the standards based on wetland type and location to protect the designated uses	X		X		Will be working on trying to develop these in the future
Anti-degradation policy includes wetlands		X			

**Description:** Missouri is in the process of developing a wetland monitoring methodology. In 2013, Missouri started to discuss wetland classification. They are currently working on refining wetland language in the state's water quality rule. By the end of 2017 the state plans to have identified candidate reference wetlands, developed habitat metrics for wetlands, developed a methodology for determining reference wetland conditions, begun the establishment of statewide reference wetland dataset, and developed an IBI for wetlands. The state's anti-degradation policy is often cited when denying wetland fill projects that do not propose mitigation for impacts.

As for state water quality standards applied to wetlands (From 10 CSR 20-7.031): (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life; (E) There shall be no significant human health hazard from incidental contact with the water; (F) There shall be no acute toxicity to livestock or wildlife watering; (G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community; and (H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200–260.247.

### Section E. Voluntary Wetland Restoration

Missouri does not have a wetland-specific voluntary wetland restoration program. The state’s focus is on protection, not restoration. The Missouri Department of Conservation forms Wetland Evaluation Teams (WET Teams) that provide technical assistance to private landowners conducting voluntary wetland restoration projects.

MDNR funds eligible 319 NPS Program grant projects for wetlands floodplain and riparian needs. Missouri’s new Nonpoint Source Management Plan (NPSMP) includes prioritization of wetland projects as a best management practice for reducing NPS water pollution and improving aquatic live use. Similarly, dam/stream obstruction removal and riparian protection and restoration are among the NPSMP top priorities. Preference may be provided to OMW watersheds and NPS impaired waters or TMDLs. Funding eligibility of projects will be determined by federal guidance, the Clean Water Act, the Missouri NPS Management Plan, and Department priorities. Wetland protection and restoration are recognized as priorities of the 319 NPS Program due to their multiple environmental and ecological benefits, including substantial NPS pollutant load reduction potential.

Other efforts include development of rain gardens, buffer restoration and protection and fencing out cattle from sensitive areas.

**Types of Wetland Restoration Work Funded by the State:**

Type of Work	YES	NO	Description
Public Wetland Restoration	X		Through the 319 program
Private Wetland Restoration	~		Sensitive Areas
Both Public and Private	~		Conservation Department works with Ducks Unlimited
Technical Assistance	X		Through WETs (Conservation Dept), DNR can assist
Tax Incentives		X	
Other – Sales Tax	X		The wetland program is supported by a sales tax.

**Voluntary Wetland Restoration Program Components**

*Note: ASWM may want to include information about the MO Sensitive Areas Program in the future. Contact Colleen Meredith, Director of the Soil & Water Conservation Program at the Missouri Department of Natural Resources.*

Wetland Restoration Efforts	Nothing in the Works	Planning	In Progress	Complete
Program has a set of restoration goals	Unavailable			
Coordinate with relevant agencies that outline restoration/protection goals and strategies and timeframes	Unavailable			
Developed multi-agency body to coordinate restoration/ protection efforts	Unavailable			



Set restoration goals based on agency objectives and available information	Unavailable			
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**Goals for Restoration Projects**

NWCA Study Type	Yes	No	Description
No Net Loss	X		
Reverse Loss/Net Gain	Unknown		
NPS	Unknown		
TMDLs	Unknown		
Habitat	Unknown		
Costal Protection	Unknown		
Floodwater Protection	Unknown		
Groundwater	Unknown		
Other (please describe)	Unknown		

**Landowner Guides and Handbooks to Assist with Voluntary Wetland Restoration Efforts**

None at the Missouri Department of Natural Resources; but may have some at the Missouri Department of Conservation.

**Section F. Innovative and/or Highly Effective Education and Outreach**

None.

**Section G. Climate Change and Wetlands**

The Missouri Wetlands Program does not work on climate change issues. Missouri has not developed a statewide adaptation plan and is not monitoring the effects of climate change on wetlands. The state is in the process of developing a proposal to develop set-backs and protection areas for riparian areas in pre- and post-construction requirements through the MS4 stormwater program.

**Section H. Integration**

Entity/Program Area	Yes/No	Description of the Connection
NPDES/Stormwater  (Note: Stacia Bax is transitioning from the state §401 program to MS4 permitting, bringing knowledge of both programs together)	X	MDNR funds eligible 319 NPS Program grant projects for wetlands floodplain and riparian needs. Missouri’s new Nonpoint Source Management Plan (NPSMP) includes prioritization of wetland projects as a best management practice for reducing NPS water pollution and improving aquatic live use.  Green infrastructure plans and greenways listed in Wetland Program Plan.
303(d)	NO	

305(b)	NO	
TMDL	NO	
Climate Change/ Resiliency	NO	Not currently, but some plans for the future
Land Use /Watershed planning	X	Urban Planning Efforts Listed in Wetland Program Plan; The 319 Grants program allows for monies to be used for watershed rehabilitation, including wetland creation projects.
Flood/Hazard Mitigation	YES	Discussion about Mississippi River flood reduction concept using wetlands to capture flood flow (Levee Districts).
Coastal Work	NO	
Wildlife Action Plan	YES	Related to waterfowl
Statewide Comprehensive Outdoor Recreation Plan (SCORP)	YES	State parks include wetlands; wetland visiting listed as an activity in wetland parks information
Other (Specify)	YES	Resotration of "Sensitive Areas"

## Wetland Program Development Continuum

Continuum Stage		Core Element 1: Regulation	Core Element 2: Monitoring & Assessment	Core Element 3: Wetland Water Quality Standards	Core Element 4: Voluntary Restoration
Mature Stage	High	401 Certification Program			
Initial Implementation Stage	↑		X (ecological assessment)		
Development Stage			X (all other)		
Early Stage	Low			X	X (However, there is a Sensitive Areas Program)

*Note: Missouri DNR would like to improve the 401 Certification program. Enforcement is low and most permits are approved.*

### Section I. Contact Information

Stacia Bax  
 NPDES Permits and Engineering Section  
 Water Resources Program  
 Missouri Department of Natural Resources  
 PO Box 176  
 Jefferson City, MO 65102-0176  
 (573-526-4586  
[Stacia.bax@dnr.mo.gov](mailto:Stacia.bax@dnr.mo.gov)

### Section J. Useful State Websites

#### State Government Programs

1. Department of Natural Resources
  - a) Water Resources Center: Wetlands  
<http://dnr.mo.gov/env/wrc/wetlands.htm>
  - b) State Water Plan  
<http://dnr.mo.gov/env/wrc/statewaterplanMain.htm>
  - c) Water Protection Program

<http://dnr.mo.gov/env/wpp/index.html>

- i. 401 Water Quality Certification  
<http://dnr.mo.gov/env/wpp/401/index.html>
  - ii. Section 319 Nonpoint Source Implementation Program  
<http://dnr.mo.gov/env/wpp/nps/index.html>
  - iii. Water Quality Assessment and Impaired Waters  
<http://dnr.mo.gov/env/wpp/waterquality/index.html>
1. Department of Transportation
    - a) Wetland Mitigation  
<http://www.modot.org/ehp/WetlandMitigation.htm>
  2. Department of Conservation
    - a) Wetland Improvements  
<http://mdc.mo.gov/your-property/improve-your-property/wetland-improvements-0>

### **Federal Government Programs**

1. USDA Natural Resource Conservation Service  
Wetlands Reserve Program  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/mo/programs/easements/>
2. USDA Farm Service Agency  
Missouri Conservation Reserve Program  
[http://www.fsa.usda.gov/FSA/newsReleases?area=newsroom&subject=landing&topic=pfs&newstype=prfactsheet&type=detail&item=pf\\_20000901\\_cons\\_v\\_en\\_crepmo00.html](http://www.fsa.usda.gov/FSA/newsReleases?area=newsroom&subject=landing&topic=pfs&newstype=prfactsheet&type=detail&item=pf_20000901_cons_v_en_crepmo00.html)

### **Other Organization Wetland Programs**

1. Ducks Unlimited  
<http://www.ducks.org/conservation/public-policy/wrp-helping-to-restore-bottomland-hardwoods-in-the-mississippi-alluvial-valley>  
<http://www.ducks.org/missouri/>
2. Missouri Stream Team  
<http://www.mostreamteam.org/>
3. Missouri Coalition for the Environment  
<http://www.moenviron.org/index.php/program-areas/clean-water-program/wetland-preservation-restoration>
4. Missouri Botanical Garden  
<http://www.missouribotanicalgarden.org/visit/family-of-attractions/shaw-nature-reserve/conservation-at-shaw-nature-reserve/plants-animals-habitats/wetlands-and-ponds.aspx>