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State Wetland Protection

Status, Trends, & Model Approaches

A 50-state study by the
Environmental Law Institute

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Appendix: State Profiles

Missouri

I. Overview

Originally, the State of Missouri was comprised of 4.8 million acres of wetlands, or about 11 percent of the state's land area. Studies conducted in the 1990s estimated the state's wetland acreage at approximately 643,000 acres, less than two percent of the state's land area.[1] Various state activities are underway in order to protect and regulate the state's remaining wetland acreage. The primary form of wetland regulation in Missouri is water quality certification under §401 of the Clean Water Act (CWA). The state is also proactive in partnering with federal agencies on restoration and conservation programs. State and federal restoration activities have contributed thousands more wetland acres since 1995, specifically with the establishment of Wetland Emphasis Teams (WETs) on which both the U.S. Department of Agriculture, Natural Resource Conservation Service and Missouri Department of Conservation (MDC) participate.[2]

II. Regulatory Programs

Wetland definitions and delineation

The Missouri Clean Water Law defines "waters of the state" as

> [a]ll rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or by two or more persons jointly or as tenants in common and includes waters of the United States lying within the state.[3]

The state's regulatory definition for wetlands is consistent with federal definitions:

> Class W - Wetlands that are waters of the state that meet the criteria in the *Corps of Engineers Wetlands Delineation Manual* (January 1987), and subsequent federal revisions. 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 associated with road construction, or industrial, municipal or agricultural waste. Class W determination on any specific site shall be consistent with federal law.[4]

The state relies upon the U.S. Army Corps of Engineers ("Corps") 1987 *Wetlands Delineation Manual* for delineating wetlands.[5]

Organization of state agencies

Missouri Department of Natural Resources. The state regulates wetlands primarily through CWA §401 water quality certification, which is administered by Missouri Department of Natural

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[1] MO. DEP'T OF NATURAL RES., MISSOURI WATER QUALITY REPORT (2002), *available at* http://www.dnr.mo.gov/env/wpp/waterquality/2002_305b.pdf.
[2] Personal Communication with Kevin Dacey, Mo. Dep't of Conservation (Apr. 11, 2007).
[3] MO. REV. STAT. § 644.016(26); MO. CODE REGS. ANN. tit. 10, § 20-2.010(82).
[4] MO. CODE REGS. ANN. tit. 10, § 20-7.031(1)(F)(7).
[5] MO. CODE REGS. ANN. tit. 10, § 20-7(1)(F).

Resources' (MODNR) §401 Water Quality Certification Unit.[6] Funding for the program, approximately $150,000 annually, comes from permit fees and U.S. Environmental Protection Agency (EPA) grants.[7] Two full-time equivalents (FTEs) work in the unit, primarily on issuance of §401 water quality certifications, although additional activities sometimes include assistance to permit applicants and enforcement referrals. The program is based in the MODNR headquarters office in Jefferson City.[8]

Other MODNR offices cover wetland-related activities, but not on a regular basis. The Water Quality Monitoring and Assessment Unit, the program that conducts stream monitoring and assessment activities, occasionally conducts permit review.[9] The Water Resources Program conducts research activities such as the development of methodologies to determine the flooding regimes of riparian wetlands, the study of remote sensing in order to identify wetland resources, and the research of urban wetlands in the state.[10] The Communications and Education Office offers a variety of environmental education courses and materials on water resources, including wetlands.[11] Finally, the Watershed Protection Section (§319 program) occasionally funds constructed wetland projects aimed at watershed protection.[12]

Missouri Department of Conservation. MDC partners with various federal agencies on wetland restoration programs. MDC Wetland Biologists partner with Natural Resources Conservation Service (NRCS) staff to form WETs. WETs provide technical assistance to private landowners on implementing wetland restoration programs. The agency employs five wetland biologists dedicated to delivering wetland expertise and technical assistance to private landowners. The biologists are funded under a cost-share agreement between the U.S. Department of Agriculture (USDA) and MDC. In addition, many more within the agency's headquarter and regional offices work indirectly on wetland restoration programs by providing administrative support and coordination among federal agencies, state agencies, and landowners.[13]

§401 certification

As in other states, any actions that require a federal permit, license, or approval that result in a discharge into waters of the state, including §404 dredge and fill permits and nationwide permits, require CWA §401 certification. MODNR staff evaluate proposed projects to ensure compliance with the state's water quality standards. In general, applicants must show that they will take all possible steps to avoid or minimize potential impacts to wetlands and that they have provided compensatory mitigation for any remaining, unavoidable impacts.[14]

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[6] The §401 Water Quality Certification Unit is run under the MODNR Water Protection and Soil Conservation Division, Water Protection Program, Permit and Engineering Section.
[7] Personal Communication with Kevin Mohammadi, Mo. Dep't of Natural Res. (Aug. 18, 2004).
[8] Personal Communication with Scott Hamilton, Mo. Dep't of Natural Res. (Aug. 12, 2004).
[9] Personal Communication with Scott Goodin, Missouri Department of Natural Res. (Aug. 17, 2004).
[10] Missouri Department of Natural Resources, *Wetlands*, *at* http://www.dnr.mo.gov/env/wrc/wetlands.htm (last accessed July 25, 2007).
[11] Personal Communication with Joe Pitts, Mo. Dep't of Natural Res. (Aug. 19, 2004).
[12] Personal Communication with Becky Shannon, Mo. Dep't of Natural Res. (Aug. 19, 2004).
[13] Personal Communication with Kevin Dacey, Mo. Dep't of Conservation (Aug. 19, 2004).
[14] Hamilton, *supra* note 8.

Approximately 1,000 §401 water quality certifications are issued by the MODNR each year. The majority of project applications are approved, with less than three percent denied annually. These denials are usually due to incomplete applications. MODNR staff rely on best professional judgment in assessing proposed projects.[15]

Nationwide permits

The §401 Water Quality Certification Unit conducts regular reviews of the Corps' nationwide permits (NWPs) and on the Corps districts' regional conditions. Conditions, denials, and approvals for §401 water quality certification are then issued. The Corps did not accept MODNR's conditions to the renewal of NWPs in 2002, requiring the state to certify every project individually. In January 2004, the State received approval on 16 of the Corps' 44 NWPs, including the majority of the most commonly issued ones.[16] Missouri's action on the 2007 NWPs could not be reviewed within the reporting period.

Mitigation

Missouri has not adopted legislation regarding compensatory mitigation for wetlands. The state has, however, published mitigation guidelines, *State of Missouri Aquatic Resources Mitigation Guidelines*,[17] for mitigation required under §401/404 of the Clean Water Act. The guidelines, issued by the MODNR in 1998, were developed in conjunction with MDC and the state Department of Transportation, as well as the U.S. Fish and Wildlife Service (FWS), EPA, Corps, and NRCS. The guidelines outline acceptable amounts and forms of mitigation for compliance with the CWA, National Environmental Policy Act, Executive Order 11000 on the protection of wetlands, and Missouri water laws and regulations. Specifically, the guidelines address avoidance and minimization of impacts; mitigation site, type, and method; [18] replacement ratios;[19] and planning.[20]

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[15] *Id.*

[16] The agency has issued authorization (with conditions) for the following NWPs: NWP#3 - Maintenance; NWP#4 - Fish and Wildlife Harvesting, Enhancement and Attraction Devices and Activities; NWP#5 - Scientific Measurement Devices; NWP#6 - Survey Activities; NWP#7 - Outfall Structures and Maintenance; NWP#12 - Utility Line Activities; NWP#13 - Bank Stabilization; NWP#14 - Linear Transportation Projects; NWP#18 - Minor Discharges; NWP#27 - Stream and Wetland Restoration Activities; NWP#33 - Temporary Construction, Access and Dewatering; NWP#36 - Boat Ramps; NWP#40 - Agricultural Activities; NWP#41 - Reshaping Existing Drainage Ditches; NWP#42 - Recreational Facilities; NWP#43 - Storm Water Management Facilities. *See* Missouri Department of Natural Resources, *401 Water Quality Certification*, *at* http://www.dnr.mo.gov/env/wpp/401 (last visited July 25, 2007).

[17] MO. DEP'T OF NATURAL RES., STATE OF MISSOURI AQUATIC RESOURCES MITIGATION GUIDELINES *(*1998*), available at* http://www.dnr.mo.gov/env/wpp/401/mitigation_guidelines.pdf.

[18] On-site mitigation is preferred except: where it is impractical, where it does not adequately replace lost functions, or where it is determined that off-site mitigation is environmentally preferable given the type of wetland impacted and historic losses in the watershed. Off-site mitigation should be adjacent to the impacted site and/or in the same watershed, except where it is demonstrated to be impractical. In-kind mitigation is also preferred, except where it is impractical. Acceptable mitigation methods include restoration (preferred), creation, enhancement, preservation, mitigation of non-wetland aquatic resources, in-lieu-fee, and banking. The guidelines outline circumstances under which each of these mitigation methods are acceptable.

[19] Replacement ratios for compensatory wetlands to impacted wetlands (as classified by Cowardin et al.'s *Classification of Wetlands and Deepwater Habitats*) include the following: 1.0:1.5 for farmed wetlands; 1.0:3.0 for emergent; 1.5:3.0 for shrub-scrub wetlands; 2.0:4.0 for wooded wetlands; and 1.0:1.0 for open water. Stream mitigation ratios are determined on a case-by-case basis.

[20] MO. DEP'T OF NATURAL RES., *supra* note 17.

Both the MODNR and the MDC are members of the region's Mitigation Banking Review Team (MBRT). The MBRT is chaired by the Missouri NRCS and includes representatives from the Corps (St. Louis, Little Rock, Rock Island, Kansas City, and Memphis Districts), EPA Region VII, and FWS. The MBRT was established to review and seek consensus on banking instruments and final plans for the restoration, monitoring, and management of wetland banks. Either NRCS or the Corps can initiate MBRT meetings. Other MBRT participants, such as Agricultural Conservation Innovation Center representatives, mitigation bankers, and landowners can request a meeting by contacting either NRCS or the Corps.[21]

Compliance and enforcement

Although CWA enforcement is generally handled at the federal level, state water quality compliance and enforcement laws[22] apply to wetlands because they are considered "waters of the state." Water quality enforcement is handled MODNR's Water Protection Program, under the Water Protection Branch of the agency. Although MODNR's Water Protection Program has several tools, including administrative penalties, available for water quality enforcement,[23] wetland-related enforcement actions rarely arise.[24]

Tracking systems

The MODNR Water Quality Certification Unit maintains a relatively simple database of permit information, including applicant information, site location, and whether or not mitigation was performed for the project. Mitigation plans are referenced in the database, but are maintained in hard copy on file.[25]

III. Water Quality Standards

Missouri has not adopted wetland-specific water quality standards (WQS). However, wetlands are subject to the state's open water WQS, designated uses, and antidegradation policies, as they are included in the definition of waters of the state. State water quality criteria are chemical, physical, and biological in nature and relate to wetland functions such as flood control, fish and wildlife habitat, and minimum stream flows.[26] The state's antidegradation standards outline three tiers of waters for which water quality and uses must be maintained.[27] Tier I includes waters that "maintain a level of water quality that protect[s] public health and existing in-stream water uses…"[28] Tier II applies to waters that "maintain a level of water quality better than applicable water quality criteria." For these waters, "[e]xisting levels of water quality shall be fully maintained and protected unless lowered water quality is necessary to allow important

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[21] Tom Waters, Missouri Levee and Drainage Ditch Association, *Agricultural and Wetland Mitigation Banks, at* http://www.mldda.org/wetlandbank.htm (last visited July 25, 2007).
[22] MO. CODE REGS. ANN. tit. 10, § 20-3.010.
[23] *Id.*
[24] Mohammadi, *supra* note 9.
[25] Hamilton, *supra* note 10.
[26] MO. CODE REGS. ANN. tit. 10, § 20-7.031(1)(C).
[27] *Id.* § 20-7.031(2).
[28] *Id.* § 20-7.031(2)(A).

economic and social development in the area."[29] Water quality may not be lowered for Tier III waters under any circumstances. These waters are listed in the state's regulations and include outstanding state or national resource waters.[30] Approximately 270 acres of wetlands, or 0.04 percent of the state's total wetland acreage, are listed as outstanding state resource waters.[31]

Because wetland-specific numeric and narrative criteria have not yet been developed by MODNR, staff rely on best professional judgment in issuing National Pollutant Discharge Elimination System (NPDES) permits and §401 water quality certifications. In general, discharges to wetlands are not allowed in NPDES permitting.[32] For §401 water quality certification decisions, MODNR staff refer to antidegradation standards and general water quality criteria for waters of the state.[33]

Future revision of the state's WQS include plans to classify wetlands in conformance with existing methods, designate appropriate beneficial uses for each wetland category, develop specific numeric criteria where appropriate, and assemble a state wetland inventory that includes data on location, type, unique characteristics, and other information.[34] In addition, the state's WQS call for developing wetland-specific standards and provide general guidelines as to what they should include.[35] MODNR also staff have expressed interest in including wetlands in the state's water quality standards and criteria, and various discussions have taken place; however, currently there are no immediate plans to make these changes.[36]

IV. Monitoring and Assessment

MODNR has not established a monitoring and assessment program for wetlands, but the agency's Water Protection and Soil Conservation Division does have a Water Quality Monitoring and Assessment Unit in place for rivers and streams. Several assessment methodologies have been developed for regulatory purposes. For example, the MODNR's "2004 Listing Method," which relies on chemical and biological criteria, was developed specifically for the purpose of compiling §303(d) lists and §305(b) reports. The state also utilizes a standard operating procedure for conducting rapid visual and qualitative benthic examination of streams and a standard low flow assessment as screening methodologies for impaired water quality assessment. The program is funded by the grants from EPA.[37]

The agency's monitoring program collects data for several purposes: to characterize reference conditions, habitats, and biological communities; to better understand processes, flows, and impacts to water quality; to check for compliance; and to monitor the effectiveness of water pollution control activities. MODNR coordinates with several agencies in the collection of data,

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[29] *Id.* § 20-7.031(2)(B).
[30] *Id.* § 20-7.031(2)(C).
[31] Goodin, *supra* note 11.
[32] Personal Communication with Peter Good, Mo. Dep't of Natural Res. (Aug. 17, 2004).
[33] Hamilton, *supra* note 9.
[34] Personal Communication with Scott Goodin, Mo. Dep't of Natural Res. (Aug. 25, 2004).
[35] MO. CODE REGS. ANN. tit. 10, § 20-7.031(4)(A)(5).
[36] Personal communication with Phil Schroeder, Mo. Dep't of Natural Res. (Apr. 10, 2007).
[37] Goodin, Scott *supra* note 9.

including the Corps, MDC, EPA, and U.S. Geological Survey, among other state and federal agencies and universities.[38]

The program, in conjunction with the MDC, also works with the Missouri Stream Team, a volunteer monitoring group. The two state agencies provide volunteers with training on data collection and submission. Volunteer-collected data is used at the screening level, supplementing the state's monitoring and assessment data. The stream monitoring and assessment program also works with the MODNR §319 program to address monitoring needs and potential projects.[39]

V. Restoration and Partnerships

Most of the state's restoration activities are conducted by MDC, in partnership with federal agencies such as NRCS and FWS. MDC has built significant and enduring partnerships with federal agencies. Missouri is often cited as a model state for wetland-related programs such as NRCS' Wetland Reserve Program, Emergency Watershed Protection Program, and Conservation Reserve Program (CRP), as well as FWS' Partners for Fish and Wildlife Program.[40]

MDC also has partnered with the USDA Farm Services Agency (FSA), NRCS, and Ducks Unlimited (DU) to provide a CRP wetland-oriented enhancement program. As a part of this program, lands that are accepted into the CRP program may overbuild the berms associated with the original wetland practice to affect adjacent cropland acres outside of the boundaries of the original CRP agreement. MDC and DU provide 100 percent cost share dollars for the over build (e.g., additional dirt work, additional height of water control structure additional height, pipe length) associated with this enhancement.[41]

MDC provides "one-stop shopping" for landowners looking to develop wetlands on their lands. Regional wetland teams provide landowner assistance and technical expertise on restoration and have been successful at obtaining buy-in from landowners throughout the state. MDC has also helped produce various outreach materials targeting landowners, including a pamphlet on the NRCS Wetland Reserve Program and a 17-minute video on wetland restoration.[42]

MODNR's Watershed Protection Section (the §319 program) also has administered various grants for wetland construction and wetland-related outreach and education and has provided planning targeted at watershed protection.[43]

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[38] MO. DEP'T OF NATURAL RES., *supra* note 1.
[39] Personal Communication with John Ford, Mo. Dep't of Natural Res. (Aug. 17, 2004).
[40] Dacey, *supra* note 13.
[41] Personal communication with Kevin Dacey, Mo. Dep't of Conservation (May 16, 2007). *See also* Kevin Dacey, Missouri Department of Conservation, *Wetland Renaissance*, 68 MISSOURI CONSERVATIONIST, Jan. 2007, at 18, *available at* http://www.mdc.mo.gov/documents/conmag/2007/20070101.pdf.
[42] *Id.*
[43] Shannon, *supra* note 12.

VI. Education and Outreach

MODNR conducts a diversity of education and outreach activities. The agency's Environmental Education Office offers workshops and college courses and distributes educational material. While there are no wetland-focused activities or materials, water-related materials and workshops often include wetland information. The Communications and Education Office focuses its efforts on K-12 teachers, using limited resources to distribute information to a wider audience of children.[44] The office organizes Big River Systems Educational Workshops and River Cleanup Events, Water Education Training (Project WET) workshops, and various one-credit college courses and distributes educational materials and curricula.[45]

VII. Coordination with State and Federal Agencies

Missouri state agencies do coordinate to some extent on wetland issues. For example, the Department of Transportation, MODNR, and MDC established a wetland mitigation team to develop more efficient and biologically effective methods for mitigating road impacts. MODNR and MDC also coordinate on other issues, such as training for citizen monitoring groups for streams and rivers, as well as education and outreach.

State agencies also coordinate with federal agencies on both regulatory and non-regulatory issues. For example, MODNR staff often do site visits in conjunction with FWS, Corps, and EPA.[46] As previously mentioned, MDC has built strong partnerships with the USDA and the FWS on conservation and restoration programs.

The State of Missouri developed a State Wetland Conservation Plan in the 1990s. MODNR's Water Resources Program is responsible for administering the plan, which encourages the protection and restoration of wetlands and the provision of technical assistance to other agencies involved in wetland issues. Goals of the plan include the following: the investigation of methods that will aid in the collection of data, management, restoration, and protection of wetlands; the creation and submission of proposals to secure resources to support wetland protection; the study of reports, studies, and proposed projects that relate to wetlands; and the development of projects for the advancement of wetland sciences. The plan also calls for the creation of a State Wetland Coordinator position in MODNR.[47] Although the plan has been in existence for over a decade, it has not been fully implemented.[48]

VIII. Acronyms and Abbreviations

CSR – Code of State Regulations

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[44] Pitts, *supra* note 11.
[45] Missouri Department of Natural Resources, *Environmental Education and the Show Me Standards, at* http://www.dnr.mo.gov/services/educ.htm (last revised Apr. 12, 2007).
[46] Hamilton, *supra* note 8.
[47] Missouri Department of Natural Resources, *supra* note 10.
[48] Personal Communication with Karen Rouse, Mo. Dep't of Natural Res. (Aug. 17, 2004).

CWA – Clean Water Act
EPA – U.S. Environmental Protection Agency
FTEs – Full-time equivalents
FWS – U.S. Fish and Wildlife Service
MBRT – Mitigation Banking Review Team
MDC – Missouri Department of Conservation
MODNR – Missouri Department of Natural Resources
MRS – Missouri Revised Statutes
NPDES – National Pollutant Discharge Elimination System
NRCS – U.S. Department of Agriculture, Natural Resources Conservation Service
NWPs – Nationwide Permits
USDA – U.S. Department of Agriculture
WET – Water Education Training
WETs – Wetland Emphasis Teams
WQS – Water Quality Standards