



A DISCUSSION PAPER ON DEVELOPING STATE WATER QUALITY STANDARDS FOR WETLANDS

**By Jon Kusler, Esq.
Association of State Wetland Managers, Inc.**

This discussion paper was originally prepared for the
Maryland Department of the Environment.
It has been edited and updated.

Funded by U.S. Environmental Protection Agency State Wetland
Program Development Grant BG 973027-03

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FORWARD

This paper was prepared to assist the Maryland Department of the Environment (MDE) in preparing draft water quality criteria for wetlands. It has been slightly modified to make it more broadly applicable to the states. It addresses several key issues: What are Clean Water Act and U.S. Environmental Protection Agency requirements for state adoption of water quality standards for wetlands? What wetland water quality standards have other states adopted?¹ What recommendations may be made based upon these requirements and state experiences?

We have attempted to make this paper as useful as possible to someone drafting wetland water quality standards by providing descriptions of the fourteen state wetland water quality programs in other states (See Appendix A). We have also provided examples of actual regulatory language used by existing state programs (See Appendix B).

This paper is one of four issue papers developed by the author for MDE dealing with water quality standards for wetlands. The other three papers include:

- Kusler, Jon, How Wetlands Differ From Traditional Waters; What This Means to Wetland Water Quality Standards (2010)
- Kusler, Jon, TMDLs and Wetlands (2010)
- Kusler, Jon, Implications and Management Options for Wetlands That Fail To Meet “Designated Use” Criteria (2010)

The following paper provides a partial synthesis of materials from the prior three papers along with more detailed discussion of wetland/water quality programs in other states. Conclusions and recommendations based upon the other three papers are included in Part 3 of this paper, below. All four deal with state water quality standards for wetlands.

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The ideas expressed in this paper are those of the author and not necessarily those of the Association of State Wetland Managers or the State of Maryland.

We want to thank Denise Clearwater of the Maryland Department of the Environment for directing the project and providing helpful comments on the papers.

¹For an overall description of state wetland programs including an overview of water quality standards for wetlands see Environmental Law Institute, State Wetland Protection: Status, Trends, and Model Approaches (2008) and http://www.elistore.org/Data/products/d18_06.pdf

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PART 1. WHAT ARE EPA REQUIREMENTS?

The Clean Water Act (CWA) establishes a federal/state/tribal partnership to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” (See Section 101 of the Act). The long term goal of the Clean Water Act is to eliminate the “discharge of pollutants into the navigable waters.” The interim goal is to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water.”²

States are required by Section 402 of the Act to regulate pollution discharges into waters of the U.S. If states fail to do so, the U.S. Environmental Protection Agency (EPA) is authorized to directly regulate waters. Section 303(c)(2)(A) requires states to adopt water quality standards for waters to “protect the public health or welfare” and “enhance the quality of water.” Section 305(b) and 303(d) of Clean Water Act and regulations adopted by EPA pursuant to these sections require states to list “impaired” waters. States are to establish Total Maximum Daily Loads (TMDLs) for impaired waters. See a companion paper: Jon Kusler, TMDLs and Wetlands. No distinctions are made in the CWA between wetlands and other waters.

According to EPA, a water quality standard consists of four basic elements:³

- “1. designated uses of the waterbody (e.g., recreation, water supply, aquatic life, agriculture),
2. water quality criteria to protect designated uses (e.g., numeric pollutant concentrations and narrative requirements,
3. an antidegradation policy to maintain and protect existing uses and high quality waters, and
4. general policies addressing implementation issues (e.g. low flows, variances, mixing zones).”

Water quality standards may include both narrative and numeric water quality criteria as will be discussed below.

Fourteen states have adopted wetland-specific water quality standards for wetlands including California, Wisconsin, Minnesota, Hawaii, Colorado, Wyoming, Maine, Massachusetts, Nebraska, Ohio, North Carolina, Florida, Iowa, and Washington. See summary below and Appendices A and B.

Water quality standards can help states determine the appropriate level of protection for specific waters and wetlands, the adequacy of existing protection measures, and restoration needs. Water quality standards can help establish site-specific and more generic goals for protecting and restoring wetlands and watersheds.

In 1990 EPA published guidance for the states in developing water quality standards for wetlands.⁴ Selected elements of this guidance are reproduced in Appendix B of this paper.

²See 33 U.S.C. Section 1251(a) et seq.; Title 40 CFR 131.1 et. seq.

³<http://www.epa.gov/waterscience/standards/about/>

⁴See <http://www.epa.gov/owow/wetlands/regs/quality.html>. See also <http://www.epa.gov/waterscience/standards/handbook/handbookappxQ.pdf>

EPA guidance suggests that state water quality standards for wetlands:⁵

- “Include wetlands in the definition of “state waters.”
- Designate uses for all wetlands.
- Adopt aesthetic narrative criteria (the “free froms”) and appropriate number criteria for wetlands.
- Adopt narrative biological criteria for wetlands.
- Apply the state’s antidegradation policy and implementation methods to wetlands.”

States must not only adopt water quality standards for wetlands and other “waters of the U.S.” but must monitor and assess waters and review and revise water quality standards (302 (c)).⁶ EPA Clean Water Act regulations apply to wetlands as well as other waters of the United States such as coastal/estuarine waters, lakes and ponds, rivers and streams and other surface waters. However, ground water is not included as well as some “isolated” surface waters without a significant “nexus” to traditional waters.⁷

It is to be noted, that EPA does not presently require that states “list” wetlands or adopt TMDLs for wetlands impaired by non pollutants such as flow alterations: See <http://www.epa.gov/watertrain/cwa/cwa26.htm> which provides, in part:

Current EPA regulations call for 303(d) lists to include only waters impaired by "pollutants," not those impaired by other types of "pollution" (altered flow and/or channel modification). If it is certain that a waterbody's impairment is not caused by a "pollutant" but is due to another type of "pollution" such as flow, the waterbody does not need to be on the 303(d) list. If, however, biological monitoring indicates there is impairment of aquatic life uses, but it is not clear whether a pollutant is at least one of the reasons, the water should be on the 303(d) list, and further analysis to identify the causes are needed. Waters impaired by "non-pollutant pollution" should be identified in 305(b) reports.”

Although states may not be required by present EPA policies to regulate “non-pollutant pollution,” they apparently have the power to do under most state water pollution control acts.

In establishing water quality standards, states are to “determine appropriate uses taking into consideration the use and value of a water body for public water supply, fish, and wildlife, recreational purposes and agricultural, industrial, and other purposes”⁸ and also taking into consideration the use and value of waters for navigation.

In designating uses for a water body, states are to examine the suitability of the water body for uses based on the physical, chemical, and biological characteristics of the water body, its geographical setting and scenic quality, and economic considerations.⁹ The characteristics necessary to support a use are to be identified so that water bodies having those characteristics can be grouped together as supporting particular uses such as “aquatic life.”

⁵Id.

⁶The following paragraphs are derived (with slight modification) from EPA’s Wetlands and Water Quality Standards web site: <http://www.epa.gov/waterscience/standards/about/uses.htm>

⁷See *Solid Waste Agency of Northern Cook Cty. v. Army Corps of Engineers*, 531 U. S. 159 (SWANCC); *Rapanos v. United States*, 547 U.S. 715 (2006).

⁸See <http://www.epa.gov/waterscience/standards/about/uses.htm>

⁹<http://www.epa.gov/waterscience/standards/about/uses.htm>

Water quality criteria are to specify the amount of various pollutants that may be present in waters and still achieve designated uses. All state water quality permits must have effluent limitations at least as stringent as needed to maintain established beneficial uses and to attain the quality of water designated by states for their waters.¹⁰

A state must conduct a “use attainability analysis”¹¹ for any water body with designated uses that do not include the “fishable/swimmable” goal of uses identified in the section 101(a)(2) of the Clean Water Act.¹² EPA provides that a: “Use Attainability Analysis (UAA) is a structured scientific assessment of the factors affecting the attainment of uses specified in Section 101(a)(2) of the Clean Water Act (the so called "fishable/swimmable" uses). The factors to be considered in such an analysis include the physical, chemical, biological, and economic use removal criteria described in EPA's water quality standards regulation (40 CFR 131.10(g)(1)-(6)). Under 40 CFR 131.10(g) states may remove a designated use which is not an existing use, as defined in § 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

1. Naturally occurring pollutant concentrations prevent the attainment of the use; or
2. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
3. Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
4. Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
5. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
6. Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.”

Water bodies subject to a use attainability analysis must be reexamined every three years to determine if new information has become available that would warrant a revision of the standard. If new information indicates that fishable/swimmable uses can be attained, such uses must be designated. For steps in carrying out a suitability analysis, see http://www.epa.gov/waterscience/standards/handbook/images/figure2_2.pdf. See also more broadly <http://www.epa.gov/waterscience/standards/handbook>

¹⁰See Section 301(b)(1)(c) of the Clean Water Act.

¹¹EPA describes a “use attainability analysis” in the following way (http://www.epa.gov/waterscience/standards/uses/uaa/about_uuas.htm): “ A “Use Attainability Analysis (UAA) is a structured scientific assessment of the factors affecting the attainment of uses specified in Section 101(a)(2) of the Clean Water Act (the so called "fishable/swimmable" uses). The factors to be considered in such an analysis include the physical, chemical, biological, and economic use removal criteria described in EPA's water quality standards regulation (40 CFR 131.10(g)(1)-(6))”. See also Jon Kusler: Implications And Management Options For Wetlands That Fail To Meet “Designated Use” Criteria.

¹²<http://www.epa.gov/waterscience/standards/about/uses.htm> /:
http://www.epa.gov/waterscience/standards/uses/uaa/about_uuas.htm

Glossary of Terms

The following definitions are derived primarily from an EPA web site: Impaired Waters and Total Maximum Daily Loads. <http://www.epa.gov/owow/tmdl/glossary.html>:

Antidegradation policy. A Clean Water Act federal and state policy protecting existing uses of water, keeping healthy waters healthy and giving strict protection to outstanding waters. See <http://www.epa.gov/owow/tmdl/glossary.html>

Designated uses. Designated uses are those uses specified in water quality standards for each water body or segment. Recreational uses; the propagation and growth of a balanced, indigenous population of aquatic life; wildlife; and the production of edible and marketable natural resources are generally stated as "fishable and swimmable" uses. Other uses may be industrial water supply, irrigation, and navigation. See <http://www.epa.gov/owow/tmdl/glossary.html>

In designating uses for a water body, states and tribes must examine the suitability of a water body for the uses based on the physical, chemical, and biological characteristics of the water body, its geographical setting and scenic qualities, and economic considerations. See <http://www.epa.gov/waterscience/standards/about/uses.htm>

Narrative "free froms. Narrative "free froms" are general water quality criteria that apply to all surface waters. These criteria state that all waters shall be free from sludge, floating debris, oil and scum, color and odor producing materials, substances that are harmful to human, animal or aquatic life, and nutrients in concentrations that may cause algal blooms.

Impaired waterbody. A waterbody (i.e., stream reaches, lakes, waterbody segments) with chronic or recurring monitored violations of the applicable numeric and/or narrative water quality criteria. See <http://www.epa.gov/owow/tmdl/glossary.html>

Loading capacity. The greatest amount of a pollutant that a water can assimilate and still meet water quality standards. See <http://www.epa.gov/owow/tmdl/glossary.html>

Narrative criteria. Non-numeric, qualitative guidelines that describe a desired water quality goal. See <http://www.epa.gov/owow/tmdl/glossary.html>

Narrative biological criteria. Non-numeric, qualitative guidelines that describe a desired biological goal.

Numeric criterion. A measurable value determined for the pollutant of concern that, if achieved, is expected to result in the attainment of water quality standards in the listed waterbody. See <http://www.epa.gov/owow/tmdl/glossary.html>

Pollutant. As defined in Clean Water Act Sec. 502(6), a pollutant means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. See <http://www.epa.gov/owow/tmdl/glossary.html>

Pollution. The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water. See <http://www.epa.gov/owow/tmdl/glossary.html>

Total Maximum Daily Loads (TMDLs). Under section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop TMDLs for these waters. A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. See <http://www.epa.gov/owow/tmdl/>

Use attainability analysis. A state must conduct a use attainability analysis for any water body with designated uses that do not include the "fishable/swimmable" goal uses identified in the section 101(a)(2) of the Clean Water Act. See <http://www.epa.gov/waterscience/standards/uses/uaa/index.htm>

Water quality criteria. EPA uses this term to describe water quality standards expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use. See <http://www.epa.gov/owow/tmdl/glossary.html>

Water quality standards. State or federal statutes or regulations consisting of a designated use or uses for the waters of the United States, water quality criteria for such waters based upon such uses, and an antidegradation policy and implementation procedures. Water quality standards protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. See <http://www.epa.gov/owow/tmdl/glossary.html>

BENEFITS OF WETLAND WATER QUALITY STANDARDS TO THE STATES

Why should a state adopt wetland water quality standards? Some reasons include:

- EPA has interpreted the Clean Water Act to require adoption.¹³
- Water quality standards can assist the state in preparing 305(b) and 303(d) reports.
- Water quality standards can form the basis for quantified water quality-based effluent limitations in NPDES permits.¹⁴
- Explicit wetland water quality standards can provide greater certainty to landowners in the use of their wetlands and regulators in processing state regulatory permits.
- Water quality standards can aid a state in reviewing federal permits pursuant to Section 401 of the Clean Water Act.

¹³EPA guidance provides that "Water quality standards for wetlands are necessary to ensure that the provisions of the Clean Water Act (CWA) applied to other surface waters are also applied to wetlands."

<http://www.epa.gov/owow/wetlands/regs/quality.html#2.0> Inclusion of Wetlands in the Definition of State Waters

¹⁴33U.S.C. 1311(b)(1)(C).

- Wetland water quality standards can help states achieve not only the protection of wetland water quality but achieve the Clean Water Act goal and similar state goals to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” (Section 101 of the Act).
- Water quality standards can form the basis for calculating total maximum daily loads.
- Water quality standards can be used as benchmarks to help a state determine how it is doing in protecting and restoring wetlands and meeting a no net loss goal.
- Wetland water quality standards adopted as part of state pollution controls or as water regulations can provide at least partial protection for wetlands in states which have not adopted independent wetland regulatory statutes. State water quality standards for wetlands may be more politically acceptable than broader wetland regulations.
- Waters quality standards adopted to achieve pollution control and protect water supplies are particularly likely to be supported by the courts.
- Water quality standards can provide another layer of protection for wetlands in states which have also adopted separate wetland regulatory statutes.
- Wetland water quality standards can help states integrate wetland protection and restoration with broader water planning and regulation including watershed management by establishing goals for such broader efforts and implementation mechanisms including establishment of TMDLs.

IMPEDIMENTS TO STATE ADOPTION OF WETLAND WATER QUALITY STANDARDS

Despite these benefits, states have been slow to adopt water quality standards for wetlands for several reasons:

- Many states already regulate or partially regulate wetlands pursuant to wetland, coastal zone, public water, shoreland or other statutes. Water quality is already one consideration in regulatory permitting. Adoption of another layer of permitting may be viewed as unnecessary.
- Wetlands ecosystems are highly varied, complicating attempts to adopt water quality standards with broad scale applicability.
- There may be hundreds of thousands or millions of wetlands in a state. A state may lack the funding to adopt wetland-specific water quality standards for more than a few.
- Wetlands share many characteristics with other waters but are also quite different from a water quality perspective. For example wetlands share high habitat value (in most circumstances) with other waters. But, wetlands are also dry a portion of the time, extremely sensitive to changes in hydrology, and threatened by not only pollution but fills, drainage, and flooding. See a companion paper: Jon Kusler, How Wetlands Differ From Traditional Waters. This discourages, in some instances, the development of water quality

standards similar to those for other waters. For example, other waters may often be “restored” by stopping pollution. But, wetlands which have been drained or filled (common impacting activities) require more.

- Establishment of systematic procedures and criteria for “exceptions” to a state anti-degradation policy has proven difficult.
- Many wetlands are being constructed or restored to help protect other waters from sediment, nutrients, and other pollutants. The water quality standards applied to natural wetlands may not be appropriate for these “working” wetlands.
- Wetland science is in early stages in developing reliable biological and other indicators for wetland functions and values needing protection by water quality standards.

MAJOR COMPONENTS OF WETLAND WATER QUALITY STANDARDS

EPA recommends three major components for state wetland water quality standards.¹⁵ These include (1) designated uses, (2) standards for designated uses, and (3) an overall antidegradation policy. In addition, general policies are needed to address implementation issues. EPA requirements for each will be briefly discussed:

Designated Uses

EPA regulations require that states and authorized Indian tribes specify appropriate water uses (designated uses) to be achieved and protected for wetlands along with other coastal/estuarine waters, lakes and ponds, rivers and streams and other surface waters. As described above, appropriate uses are to be identified with consideration of the use and value of the water body for public water supply, for protection of fish, shellfish, and wildlife, and for recreational, agricultural, industrial, and navigational purposes. Physical, chemical, and biological characteristics of the water body, its geographical setting and scenic qualities, and economic considerations are to be considered.¹⁶

In no event may a beneficial existing use (any use which is actually attained in a water body on or after November 28, 1975) be removed from a water body or a segment. Where water quality standards specify designated uses less than those which are presently being attained or have been attained since November 28, 1975, the state or tribe is required to revise its standards to reflect the uses actually being attained since that date.

Each water body does not necessarily require a unique set of uses. Instead, the characteristics necessary to support a use can be identified so that water bodies having those characteristics can be grouped together as supporting particular uses such as aquatic life support or swimming.

Use Attainability Analysis

As indicated above, a state or tribe must conduct a “use attainability analysis” for any water body with designated uses that do not include the “fishable/swimmable” goal identified in the section

¹⁵<http://www.epa.gov/waterscience/standards/about/>

¹⁶<http://www.epa.gov/waterscience/standards/about/uses.htm>

101(a)(2) of the Act.¹⁷ Such water bodies must be reexamined every three years to determine if new information has become available that would warrant a revision of the standard. If new information indicates that "fishable/swimmable" uses can be attained, such uses must be designated.¹⁸

Examples of Designated Uses (DUs)

Examples of common state water quality designated uses include the following (see Appendices A and B for other examples). EPA observes in <http://www.epa.gov/watertrain/cwa/cwa6.htm> that "Typically, the DUs assigned to a waterbody reflect the public's answer to the question, "To what uses do we, or might we want to, put this waterbody?" Answers might include: swimming, boating, water skiing, wind surfing, recreational fishing, commercial fishing, subsistence fishing, supporting communities of aquatic life, supplying water for drinking, irrigating crops and landscaping, and industrial purposes." Common use designations include the following:¹⁹

- "Drinking water
 - Treated/untreated
- Water-based recreation
 - Noncontact/short-term/long-term
- Fishing/eating
- Aquatic life
 - Warm water species/habitat
 - Cold water species/habitat
- Agriculture water supply
- Industrial water supply"

However, states have included other uses as well such as:

- Ecologically sensitive water bodies
- Natural and scenic waterways
- Groundwater recharge
- Wildlife habitat
- Shellfish harvesting
- Anadromous fish habitat
- Endangered or threatened species
- Outstanding state resource water
- Outstanding national resource water

Standards and Criteria for Designated Uses²⁰

States are to adopt not only designated uses but "protective" standards for the designated uses. These standards may address not only water chemistry but the physical and biological characteristics of water bodies. See, e.g., EPA's Wetland Bioassessment Fact Sheet 7 (1998)

¹⁷<http://www.epa.gov/waterscience/standards/about/uses.htm>

¹⁸Id.

¹⁹<http://www.epa.gov/watertrain/cwa/cwa6.htm>

²⁰<http://www.epa.gov/waterscience/criteria/>. See this web site for description of water quality criteria and many links to specific categories of criteria. See also <http://www.epa.gov/waterscience/standards/handbook/chapter03.html#section1>.

which provides²¹ that: “States and tribes can establish physical, chemical, and biological water quality criteria.” The EPA guidance also provides that “When designating uses for wetlands, states may establish an entirely different format to reflect the unique functions and values of wetlands.”²² EPA regulations provide that “for waters with multiple use designations, the criteria shall support the most sensitive use.”²³

Standards and criteria for designated uses may be both quantitative (numeric) and unquantitative (narrative) including the following:

Numeric and Nonnumeric (Narrative) Standards

Section 304(a) directs EPA to provide guidance to states and tribes in adopting water quality standards.²⁴ These may include both numeric and narrative standards. Section 304(a)(1) of the Clean Water Act requires EPA to develop water quality criteria “accurately reflecting the latest scientific knowledge....” Water quality criteria are to be based on science alone although designated uses may also take into account economics. These criteria are to be based solely on data and scientific judgments on pollutant concentrations and environmental or human health effects.

Criteria have been developed by EPA for the protection of aquatic life as well as for human health. EPA has developed minimum, quantitative water quality criteria and standards for a wide variety of pollutants in surface waters that include recommended maximum concentrations of pollutants. These criteria are developed nationally based upon laboratory and other data to protect most aquatic species most of the time. See discussion below. States must incorporate the water quality criteria developed by EPA or state-approved site-based criteria as enforceable water quality standards. Examples include sediment and nutrient guidelines.

EPA provides quantitative standards for aquatic life and human health.²⁵ See the websites listed below for greater detail:

EPA's compilation of national recommended, quantitative water quality criteria for specific substances is presented as a summary table available on the Internet. These criteria include recommended water quality criteria for the protection of aquatic life and human health in surface water for approximately 150 pollutants. These criteria are published pursuant to Section 304(a) of the Clean Water Act and provide guidance for states and tribes to use in adopting water quality standards. See generally National Recommended Water Quality Criteria Table, <http://www.epa.gov/waterscience/criteria/wqctable/2004-table-fs.htm>

Guidance for “aquatic life” and “human health” includes the following:

²¹http://www.epa.gov/owow/wetlands/wqual/bio_fact/fact7.html

²²Id.

²³Title 40 CFR Part 131.11

²⁴Id. In establishing criteria, states should: “ (1) Establish numerical values based on: (i) 304(a) Guidance; or (ii) 304(a) Guidance modified to reflect site-specific conditions; or (iii) Other scientifically defensible methods; (2) Establish narrative criteria or criteria based upon biomonitoring methods where numerical criteria cannot be established or to supplement numerical criteria.”

²⁵See <http://www.epa.gov/waterscience/standards/about/uses.htm>,
<http://www.epa.gov/waterscience/criteria/wqctable/2004-table-fs.htm>

Aquatic Life

EPA aquatic life criteria list chemical concentration goals to protect surface water for specific aquatic life (biological) uses.²⁶ These include biological criteria and nutrient criteria.

Biological criteria²⁷ are based on the numbers and kinds of organisms present and describe the biological condition of aquatic communities inhabiting surface waters.

Nutrient criteria²⁸ pertain primarily to phosphorous and nitrogen and prevent over-enrichment of surface waters.

Human Health

EPA criteria for human health includes technical information and guidance on the standards for surface water, drinking water and microbials.²⁹

Standards for microbial organisms³⁰ are used to protect the public from exposure to harmful levels of pathogens in ground and surface waters, food sources, and drinking water.

Recreational criteria³¹ protect people who swim and play in coastal recreational waters from exposure to pathogens.

ANTI-DEGRADATION POLICY³²

State water quality standards must include, in addition to designated uses and standards for designated uses, an antidegradation policy and implementation methods and procedures for implementing such a policy.³³

Antidegradation implementation procedures are to identify the steps and questions that must be addressed when regulated activities are proposed which may affect water quality. The specific steps to be followed depend upon which tier or tiers of antidegradation policy apply.

EPA water quality standard regulations require states and tribes to establish a three-tiered antidegradation program although the specifics may differ, depending upon state circumstances and preferences:³⁴

“Tier 1 maintains and protects existing uses³⁵ and water quality conditions necessary to support such uses. An existing use can be established by demonstrating that fishing,

²⁶See <http://www.epa.gov/waterscience/criteria/aqlife/>, <http://www.epa.gov/waterscience/criteria/>

²⁷Id.

²⁸See <http://www.epa.gov/waterscience/criteria/>.

²⁹Id.

³⁰Id.

³¹Id.

³²See <http://www.epa.gov/waterscience/standards/about/adeq.htm>

³³Id.

³⁴Id.

swimming, or other uses have actually occurred since November 28, 1975, or that the water quality is suitable to allow such uses to occur. Where an existing use is established, it must be protected even if it is not listed in the water quality standards as a designated use. Tier 1 requirements are applicable to all surface waters including wetlands.

Tier 2 maintains and protects "**high quality**" waters -- water bodies where existing conditions are better than necessary to support CWA § 101(a)(2) "fishable/swimmable" uses. Water quality can be lowered in such waters. However, State and Tribal Tier 2 programs identify procedures that must be followed and questions that must be answered before a reduction in water quality may be allowed. In no case may water quality be lowered to a level which would interfere with existing or designated uses. Tier 2 regulations apply to all "high quality" waters identified by states including wetlands.

Tier 3 maintains and protects water quality in outstanding national resource waters (ONRWs). Except for certain temporary changes, water quality cannot be lowered in such waters. ONRWs generally include the highest quality waters of a state. However, the ONRW classification also offers special protection for waters of exceptional ecological significance, i.e., those which are important, unique, or sensitive ecologically. Decisions regarding which water bodies qualify to be ONRWs are made by states and authorized Indian Tribes." Tier 3 applies to outstanding national resource waters identified by the states including wetlands.

PART 2: WHAT WETLAND WATER QUALITY STANDARDS HAVE STATE PROGRAMS ADOPTED?

According to the Environmental Law Institute (ELI), all states now directly or indirectly have the authority to regulate wetlands because wetlands are explicitly or implicitly included within the definition of state waters although the term wetland may not be used.³⁶ At least 14 states have adopted "wetland-specific water quality standards."³⁷ These include California, Hawaii, Colorado, Iowa, Wisconsin, Minnesota, Florida, Massachusetts, Maine, Ohio, North Carolina, Wyoming, Nebraska and Washington State. See Appendix A for more detailed description of these programs. Washington State has not adopted wetland water quality standards per se but has prepared guidance for applying broader water quality standards to wetlands.³⁸ According to ELI,

³⁵See <http://www.epa.gov/watertrain/cwa/cwa5.htm>. EPA explains that "the term "existing use" has a somewhat different meaning, in the context of the CWA, than one might expect. Rather than actual or current uses, it refers not only to those uses the waterbody is capable of supporting at present but also any use to which the waterbody has actually attained since November 28, 1975. Even if the waterbody is currently not supporting a use attained since November 28, 1975, for purposes of the CWA, it is still an "existing use." (Even if there has been no documentation that a use has occurred since November 28, 1975, evidence that water quality has been sufficient to support a given use at some time since November 28, 1975 can be the basis for defining an "existing use" for a waterbody.)"

³⁶For an overall summary of state water quality standards for wetlands see Figure 2-E on page 15, Environmental Law Institute, State Wetland Protection: Status, Trends, and Model Approaches (2008) and http://www.elistore.org/Data/products/d18_06.pdf

³⁷See Figure 3-A, 3-B, Environmental Law Institute, State Wetland Protection: Status, Trends, and Model Approaches (2008) and http://www.elistore.org/Data/products/d18_06.pdf. Of these, nine describe water quality criteria narratively. See Environmental Law Institute, State Wetland Protection: Status, Trends, and Model Approaches (2008) and http://www.elistore.org/Data/products/d18_06.pdf

³⁸See Washington State Water Quality Guidelines for Wetlands <http://www.ecy.wa.gov/pubs/9606.pdf>

37 states have adopted water quality criteria, anti-degradation policies, or designated uses which may apply to wetlands although the water quality criteria are not wetland-specific.³⁹

State water quality standards for wetlands are quite varied although many follow Wisconsin's regulations to a greater or lesser extent. Wisconsin was the first state to adopt water quality standards and regulations for wetlands and its regulatory language has been broadly adopted by other states.

OVERVIEW OF STATE PROVISIONS

Appendix A below describes the fourteen state wetland/water quality programs in greater depth. Appendix B provides specifics with regard to EPA recommendations for state program elements and examples of actual state regulatory language pertaining to these elements.

State water quality standards for wetlands in most states parallel the content of more comprehensive wetland regulatory statutes and administrative code regulations in some respects. For example, both wetland/water quality regulations and broader wetland protection statutes contain similar overall elements including:

- Statement of goals and objectives,
- Definition of state waters to include wetlands or separate definition of wetlands in water quality regulations,
- Description of regulated activities,
- Antidegradation policy (or the equivalent thereof),
- Statement of designated (beneficial) uses,
- Statement of protective criteria and standards for designated uses,
- Procedures for seeking permits, and
- Monitoring and enforcement requirements.

However, there are also differences. State wetland/water quality regulations are typically more concise than their more comprehensive counterparts. Most explicit, numeric state wetland water quality standards are contained in larger pollution control statutes and regulations although Nebraska has incorporated some numeric criteria directly in their wetland regulations. As one would expect, wetland water quality standards are couched in "water quality" terms and concepts such as "beneficial uses," "criteria" for beneficial uses, and "antidegradation" policy. Also, as one would also expect, there is an emphasis upon water pollution.

Some of the key elements of wetland/water quality regulations include:

³⁹See page 38, Environmental Law Institute, State Wetland Protection: Status, Trends, and Model Approaches (2008) http://www.elistore.org/Data/products/d18_06.pdf

Goals. Most states establish broad goals for the protection and restoration of waters which include but are not limited to wetlands. For example see Maine Rev. Statutes, (Tit. 38:464) which provides, in part:

“The Legislature declares that it is the State’s objective to restore and maintain the chemical, physical and biological integrity of the State’s waters and to preserve certain pristine state waters. The Legislature further declares that in order to achieve this objective the State’s goals are:

A. that the discharge of pollutants into the waters of the State be eliminated where appropriate;

B. That no pollutants be discharged into any waters of the State without first being given the degree of treatment necessary to allow those waters to attain their classification; and

C. That water quality be sufficient to provide for the protection and propagation of fish, shellfish and wildlife and provide for recreation in and on the water. “

See also Minnesota’s comprehensive goals:

Minnesota Administrative Rules 1a. Definitions.7050.0186 Wetland Standards and Mitigation.

Subpart 1. Policy and wetland beneficial uses. It is the policy of the state to protect wetlands and prevent significant adverse impacts on wetland beneficial uses caused by chemical, physical, biological, or radiological changes. The quality of wetlands shall be maintained to permit the propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, preserve wildlife habitat, and support biological diversity of the landscape. In addition, these waters shall be suitable for boating and other forms of aquatic recreation as specified in part 7050.0222, subpart 6; general industrial use as specified in part 7050.0223, subpart 5; irrigation, use by wildlife and livestock, erosion control, groundwater recharge, low flow augmentation, stormwater retention, and stream sedimentation as specified in part 7050.0224, subpart 4; and aesthetic enjoyment as specified in part 7050.0225, subpart 2.

Definition of wetlands. Most states⁴⁰ define wetlands consistent with the U.S. Army Corps of Engineers Section 404 wetland definition.⁴¹ See, for example, Minnesota in Appendix B, below. However some states such as Iowa have adopted a more restricted regulatory definition which explicitly requires all three parameters (vegetation, soils, and hydrology) to be present. In contrast, others are more inclusive such as Wisconsin which allows identification of areas based upon vegetation and soil. Hawaii defines wetlands in several ways (e.g., “coastal wetlands”,

⁴⁰See Appendix B for references.

⁴¹The Corps of Engineers Section 404 regulatory definition is: “Wetlands” means those areas that are inundated or saturated by surface water or groundwater 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.”

“low wetlands” and “elevated wetlands”) for the purpose of regulations. See Appendix B, below.

Classification of wetlands. Some but not all states classify wetlands for water quality purposes.⁴² Hawaii and Nebraska establish several major categories of wetlands. Hawaii does this by adopting several wetland definitions related to elevation—elevation and low wetlands. Nebraska also divides wetlands into two categories: isolated and not isolated. Some states such as Wyoming make distinctions between wetlands which are adjacent to other waters and those which are not. Wetlands assume the classification of adjacent waters. See also Massachusetts. Most state regulations distinguish special resource waters from other waters in their general water quality regulations although wetlands are typically identified as a special category of protected waters.

In some states, the water regulatory agency is authorized to classify wetlands on a wetland by wetland basis as permit applications are submitted to the agency. For example, Ohio authorizes the regulatory agency to place wetlands into one of four categories with varying degrees of protection. Ohio Administrative Code provides, in part: (3745-1-54 Wetland antidegradation) See Appendix B for more detail.

(2)(a) Each wetland shall be assigned a category by Ohio EPA for the purposes of reviews of projects pursuant to this rule.

(i) A category will be assigned based on the wetland's relative functions and values, sensitivity to disturbance, rarity, and potential to be adequately compensated for by wetland mitigation.

(ii) In assigning a wetland category, the director will consider the results of an appropriate wetland evaluation method(s) acceptable to the director, and other information necessary in order to fully assess the wetland's functions and values.

Some states like Wyoming and Massachusetts place wetlands into broad protection categories along with other waters.

Regulated activities. State wetland regulations typically rely upon broader water quality regulations to define regulated activities. However, Wyoming regulations focus only on pollution. See Wyoming antidegradation policy below. North Carolina regulates not only pollution but draining wetlands.

Beneficial uses. Most states, like Wisconsin, briefly list beneficial uses such as “water supplies, propagation of fish and other aquatic life and wild and domestic animals, preservation of natural flora and fauna, domestic and recreational uses, and agriculture, commercial and industrial uses”. Washington State in its guidance for application of water quality standards to wetlands provides more detailed discussion of individual categories of beneficial uses.

Standards for protecting beneficial uses. State wetland water quality regulations typically list wetland functions and values which are to be protected and also set forth standards and procedures for protecting those functions. See, for example, Wisconsin, North Carolina, Ohio,

⁴²Id.

and Nebraska regulations in Appendix B. Wisconsin calls for “the conditions necessary to protect water quality related functions and values of wetlands including sediment and pollutant attenuation, storm and flood water retention, hydrologic cycle maintenance, shoreline protection against erosion, biological diversity and production and human uses such as recreation.” Ohio and Maine establish no net loss of function and values goals. Ohio provides in its antidegradation policy:

3745-1-54 Wetland antidegradation “Wetland designated uses shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions....”

Wyoming provides (DNV-WAT-1 Section 12) that:

Point or nonpoint sources of pollution shall not cause the destruction, damage, or impairment of naturally occurring wetlands except when mitigated through an authorized wetlands mitigation process.

Mitigation requirements. All states with water quality standards for wetlands establish some sort of mitigation requirements for activities in wetlands. See, for example, Wisconsin, Minnesota, North Carolina, and Ohio. Such standards typically call for avoidance, impact minimization, and compensation. See Minnesota in Appendix B, below. A number of states establish by regulation “mitigation” ratios including numeric standards for mitigation. See for example, Ohio in Appendix B, below. The Washington Administrative Code 173-201A-300 Antidegradation policy provides for restoration:

(3) Habitat restoration. Both temporary harm and permanent loss of existing uses may be allowed by the department where determined necessary to secure greater ecological benefits through major habitat restoration projects designed to return the natural physical structure and associated uses to a water body where the structure has been altered through human action.

Administrative requirements (permit application content, procedures). All states establish procedures for applying for permits including information gathering. Some, like Florida, establish monitoring requirements.

PART 3. RECOMMENDATIONS FOR ADOPTION OF STATE WETLAND WATER QUALITY STANDARDS

A number of recommendations may be made for adoption of wetland-specific water quality standards based upon EPA requirements and the regulations and administrative experience of other states. It is to be noted, however, that what will be appropriate for a given state may depend upon not only EPA requirements and the experiences of other states but existing wetland and other regulations, state court decisions, and social economic factors unique to the state. Regulatory provisions from other states can be a starting point for drafting regulations in a particular state.

We have divided the recommendations into three categories based upon this issue paper and the three other issue papers prepared by the author.

A. GENERAL RECOMMENDATIONS FOR WETLAND WATER QUALITY STANDARDS REFLECTING THE UNIQUE ASPECTS OF WETLANDS IN CONTRAST WITH MORE TRADITIONAL WATERS: EPA REQUIREMENTS; EXPERIENCE OF OTHER STATES.

- **Wetlands share many characteristics with more traditional waters but are also different in important ways which need to be reflected in the establishment of water quality criteria for wetlands.** See a companion discussion paper: Jon Kusler, How Wetlands Differ from More Traditional Waters. For example, if a state wishes to protect wetlands, it must regulate the full range of threats to wetlands such as drainage and not simply pollutants. Differences between wetlands and other waters need to be taken into account in establishing water quality standards for wetlands and in the processing of individual regulatory permits. For examples of water quality regulations which regulate not only pollution but other threats to wetlands see Wisconsin, Minnesota, Ohio, and North Carolina regulations in Appendices A and B below.
- **To comply with EPA requirements and better protect wetland systems, a state should adopt wetland-specific water quality standards.** EPA regulations and guidelines require states to adopt water quality standards for wetlands.⁴³ However, a state should do so not only because it is required to do so but because such regulations could help protect and restore the unique features of wetlands, provide more specific guidance for state pollution control staff and landowners in 401 water quality certification, and help coordinate wetland-related permitting activities in the state. Most states could adopt wetland-specific water quality regulations pursuant to existing pollution control statutes as has been done in Wisconsin, Minnesota, North Carolina and other states.
- **A state may best develop and adopt state wide, wetland-specific water quality standards for both nontidal and tidal wetlands.** See companion paper for a discussion of the benefits of such standards: Jon Kusler, Water Quality Standards for Wetlands. State water quality standards for wetlands are required by EPA. Standards could facilitate Section 401 reviews, provide the basis for “listing” of wetlands as impaired, and facilitate the adoption of TMDLs or other remedial measures short of actual listing.
- **Water quality standards for wetlands need to reflect both the “land” as well as the “water” characteristics of wetlands.** Water quality standards need to reflect the dual roles of wetlands as waters in their own right as well as roles in protecting other waters from pollution. Watershed approaches to wetland protection and management are therefore desirable including integrated assessments, integrated goal setting, and integrated regulations (wetland protection, flood loss reduction, stormwater management) and mitigation requirements for impacts to wetlands. Designated uses and criteria for such uses need to reflect these dual roles including the protection of other waters. However, dual roles also need to be approached with care because pollution and sediment control functions of wetlands to protect other waters may also result in destruction or impairment of wetlands.

⁴³<http://www.epa.gov/owow/wetlands/regs/quality.html>. EPA provides in its National Guidelines: Water Quality Standards for Wetlands that “Water quality standards for wetlands are necessary to ensure that the provisions of the Clean Water Act (CWA) applied to other surface waters are also applied to wetlands.”

- **Water quality designated uses and standards for wetlands need to reflect the full range of unique services and functions provided by wetlands.** For example, designated uses and regulatory standards need to protect not only pollution control, swimming and fishing but flood storage, flood conveyance, wave attenuation, erosion control and ground water recharge.⁴⁴ See, for example, the wetland and water quality standards of North Carolina, Wisconsin, Minnesota, and Ohio which list such broader services and functions as “designated uses” and establish protection standards for them.
- **Designated uses and standards for wetlands need to reflect the number of individual wetlands in a state.** This favors adoption of narrative water quality criteria and procedures for wetlands as a whole or classes of wetlands rather than water quality standards for individual wetlands although there should be flexibility in procedures so that state could adopt wetland-specific water quality standards for particular wetlands when important wetland resources are threatened. Adoption of TMDLs may also be appropriate in some cases for individual wetlands threatened by pollution or other activities. See discussion in the appendices of a companion paper: Jon Kusler, TMDLs and Wetlands.
- **A general wetland antidegradation policy is needed with careful review procedures for exceptions.** A general antidegradation policy with implementing procedures makes sense for both traditional waters and wetlands to achieve the Clean Water Act goal to “restore and maintain.” All of the states with wetland water quality standards have adopted antidegradation policies although the specifics differ. Limited and carefully proscribed exceptions in the application of this policy are also needed, particularly for activities involving some measure of pollution or impairment of wetlands (e.g., agriculture). This may degrade wetlands though the wetlands subject to such a designated use may serve to improve waters as a whole. At a minimum, destruction or serious impairment of a natural wetland should not be allowed.⁴⁵ A state should require compensatory mitigation where some measure of degradation is allowed. See, for example, the wetland and water quality standards of Minnesota, Wisconsin, Ohio and North Carolina and the general wetland water quality guidance of Washington State in Appendices A and B below.
- **Water quality designated uses and standards for wetlands need to reflect the sensitivity of wetlands to small changes in hydrology and the cumulative impact of land and water use activities upon wetlands.** This favors protection and management of wetlands within watershed planning and management contexts. Cumulative impacts should be addressed. See appendices of Jon Kusler, Wetlands and TMDL’s.
- **There is the potential utilizing the “outstanding resource waters” designation as part of an antidegradation policy to better protect rare wetland types or wetlands with special functions and values.** Such wetlands have to some extent already been identified

⁴⁴See EPA Wetlands and 401 Certification: Opportunities and Guidelines for States and Eligible Indian Tribes (1989) which provides, in part that “Clearly, the integrity of waters of the U.S. cannot be protected by an exclusive focus on wastewater effluents in open waters...A State’s authority under Section 401 includes consideration of a broad range of chemical, physical, and biological impacts. The State’s responsibility includes acting upon the recognition that wetlands are critical components of health, functioning aquatic systems.”

⁴⁵See 40 CFR 131.10 which provides, in part: “In no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States.”

in states such as Maryland and New Mexico. For examples from other states see Wisconsin and Minnesota in Appendix B of this paper.

- **Water quality standards for wetlands need to reflect not only relative biological condition of wetlands but broader goods and services, the opportunity wetlands may have to provide such goods and services, and the social significance of these services.** Measurement of wetland biological condition relative to undisturbed wetlands can help develop and apply water quality standards to individual wetlands or classes of wetlands. Nevertheless, biological condition will (typically) only partially reflect wetland goods and services and other factors which need to be considered in determining beneficial uses and criteria for protecting beneficial uses in the public interest. See the regulations of Wisconsin, Minnesota, North Carolina, and Ohio which address a range of goods and services including “values.”
- **Many states could best combine adoption of wetland-specific water quality standards with improved inventories of wetland and related resources including updated wetland maps and (possibly) the preparation of more specific wetland maps indicating wetland areas with specific functions and values such as flood storage and conveyance, erosion control and pollution control.** These efforts would build upon existing efforts to map wetlands, to identify potential wetland restoration sites, to identify wetlands as waters of special importance, and to provide a general characterization of wetland functions of the sort undertaken by the US Fish and Wildlife Service in cooperation with the state of Maryland for the Nanticoke watershed.
- **A state may best develop a cooperative wetland monitoring program with the help of other state agencies, federal agencies, local governments and private organizations (e.g. the Nature Conservancy).** Such monitoring could help the state develop, over time, more specific water quality standards for wetlands, track regulatory permits, determine the effectiveness of mitigation, and help determine net losses and gains of wetland and related resources. Establishment of a system of state wetland reference sites like that developed in Pennsylvania should be part of such a monitoring program. See Minnesota for an example of a state-wide monitoring program with many elements.

B. RECOMMENDATIONS FOR WETLANDS AND TMDLS INCLUDING DESIGNATION OF “IMPAIRED” WETLANDS FOR THE PURPOSES OF STATE 305(B) AND 303(D) LISTS.

Based upon EPA requirements and state experiences to date, the following suggestions may be offered for the adoption of state TMDLs for wetlands. For more detailed discussion, see a companion paper: Jon Kusler, TMDLs and Wetlands.

There are many unanswered questions concerning the legality and practicality of various options for wetlands that fail to meet “designated use” criteria. Nevertheless, it is possible to suggest several options:

- **A state may best take a cautious approach to wetland TMDLs and, alternatively, look to watershed planning and regulations to address most impairments to wetlands.** See Jon Kusler, TMDLs and Wetlands. Because of the cumbersome nature of TMDLs, difficulty in establishing numeric standards for total maximum daily loads, and

many unanswered legal questions, a combination of multiobjective, watershed planning and regulations is more promising in most circumstances to address the full range of sources of wetland impairment rather than “listing” of individual wetlands and adoption of a TMDL for each pollutant. In many instances, regulation of pollutants alone addressed by TMDLs will not, alone, meet Clean Water Act goals to “restore and maintain” waters of the U.S.

- **Although a cautious approach is justified for preparation of TMDLs, there are situations in which wetland TMDLs are justified.** A state may best “list” and prepare TMDLs for wetlands subject to quantifiable discharges not in compliance with water quality criteria for pollutants such as toxics or bacteria. In such situations, wetlands can and should be treated like other waters. This is consistent with the Clean Water Act requirements for all surface waters. In addition, if a state is to list wetlands and prepare TMDLs, it should not confine the TMDLs to “pollutants” and should also address broader sources of “pollution” such as drainage.
- **A state may be able to use wetland “listing” and TMDLs as a planning/regulatory tool to help identify and address not only point sources of pollution but nonpoint sources of pollution or combined point and nonpoint sources as done by Los Angeles County for trash discharges into wetlands and rivers/streams.** See also, for example, the proposed TMDL for the Chesapeake. <http://edocket.access.gpo.gov/2009/pdf/E9-22410.pdf>
- **As an alternative to “listing,” a state might, through cooperative state/local watershed planning and plan implementation efforts, “go directly to the solution” of problems and address the causes of wetland impairments rather than list wetlands as impaired and trigger TMDL requirements.** The legality of directly addressing problems rather than going through the TMDL process remains to be seen but it is likely such an approach would be upheld given the broad discretion courts have given states in adopting TMDLs to date.
- **A state may best document the water quality component of “nonpollutant” activities on wetlands (e.g., fills, drainage).** Over time, this component may then be quantified and serve as basis for more wetland-specific water quality standards for wetlands, and for preparing TMDLs or applying alternative watershed plans and management approaches.
- **A state may best use constructed and restored wetlands as part of TMDLs to help reduce nutrient, sediment, and toxic chemical pollution of rivers, streams and other water bodies and help achieve broader goals for those water bodies.** Restoration can also be used to restore impaired wetland functions. See Jon Kusler, TMDLs and Wetlands. However, use of restored wetlands for pollution control may in many instances result in long term degradation of wetlands and should be approached with care.⁴⁶

⁴⁶See, for example, 40 CFR 131.10 which provides, in part: “In no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States.”

- **A state may best ask EPA for clarifications on unanswered questions.** Maryland should develop a list of unanswered questions and submit the list to EPA. Answers would help the state evaluate the need for additional actions. See Appendix A of Kusler, Jon, Implications and Management Options for Wetlands That Fail To Meet “Designated Use” Criteria (2010).

C. EXISTING REGULATORY PROVISIONS CAN BE USED AS A STARTING POINT FOR DRAFTING AND ADOPTING REGULATIONS FOR STATES LACKING REGULATIONS

Existing regulatory provisions may be useful as a starting point for drafting wetland/water quality regulations for a state lacking such regulations. Particularly useful are the regulatory provisions from Wisconsin, Minnesota, North Carolina, and Ohio. These states have adopted the most comprehensive water quality standards for wetlands and have also had the longest experience in determining what works and does not work.

A state may best incorporate regulatory provisions with the following sorts of characteristics:

- **Broad purposes and goals.** See Maine and Minnesota above and Appendices A and B. See also Maryland Nontidal Wetlands Program statement of legislative findings.
- **A wetland definition consistent with the Corps of Engineers and EPA’s definition of wetland.** For consistency purposes, a state might best use the wetland definitions contained in an existing wetland acts and regulations to classify wetlands for water quality purposes. Most states have done so.
- **Provisions explicitly applying existing numeric and nonnumeric existing water quality standards to wetlands.** See Massachusetts for possible language.
- **A antidegradation policy which includes no net loss of function and value for wetlands.** See Ohio, North Carolina, Wisconsin, Minnesota.
- **Define designated uses to include “functions” as well as more traditional categories of designated uses such as “water for public supplies, propagation of wildlife, fish and aquatic life, and domestic agricultural, industrial, recreational, and other legitimate beneficial uses.”** See Maryland Code, 9-302 Envir. (b)(2). See also Wisconsin, North Carolina, and Ohio for lists of such functions.
- **Establish narrative standards for designated uses (as well as defining designated uses) to protect and restore “functions” including hydrologic and biological criteria.** See Wisconsin, Minnesota, North Carolina, Ohio.
- **Require “sequencing” including avoidance, impact reduction, and compensation for impacts.** See Wisconsin, Minnesota.
- **Require impact reduction and compensation for losses including cumulative impacts.** See Wyoming, Ohio, Wisconsin, Washington.

- **Encourage watershed approaches.** See Minnesota and Wisconsin watershed approaches described in Appendices D and E in Jon Kusler, *Wetlands and TMDLs*.

APPENDIX A. EXAMPLES OF STATE WETLAND WATER QUALITY STANDARDS⁴⁷

CALIFORNIA

Wetland Definition

The U.S. Army Corps of Engineers definition of wetland is used in most California basin planning and regulation and for 401 water quality certification. The California Coastal Commission uses its own more specific definition for coastal wetlands:

“Land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentration of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to vegetated wetland or deepwater habitats.”

The Keene-Nejedly California Wetlands Preservation Act defines wetlands similarly:

“Lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens and vernal pools.”

Wetland Water Quality Standards⁴⁸

The State Water Resources Control Board and regional water quality boards regulate discharges into wetlands and other waters.⁴⁹ Boards establish basin plans to guide such discharges. Some of the water quality boards have adopted wetland-specific water quality standards including the water boards for Region 2 (San Francisco), Region 4 (Los Angeles), Region 6 (Lahontan) and Region 8 (Santa Anna). Water Boards are presently developing a Stream and Wetland Protection Policy

Designated Uses

⁴⁷The following profiles are derived, in part, from summaries of state wetland programs prepared by the Environmental Law Institute and by the Association of State Wetland Managers. They are also derived from examination of statutes and regulations by the author and, from discussions with state wetland staff. It is to be noted that more than one half of the states included below as having wetland-specific water quality standards have adopted only relatively general water quality standards for wetlands. Yet they contain at least some wetland-specific provisions. For this reason, we have chosen to include them as states with wetland/water quality standards.

⁴⁸Id..

⁴⁹Id.

Some basin plans assign water quality objectives and beneficial uses to wetlands.⁵⁰ San Francisco's basin plan assigns water quality objectives for the San Francisco Bay and Delta and the Suisan Marsh. Los Angeles's Basin Plan assigns narrative water quality objective to all wetlands. Lahontan explicitly recognizes wetlands as surface waters in its basin plan and has a number of beneficial uses related to wetland functions including Water Quality Enhancement and Flood Peak Attenuation/Flood Water Storage, which are assigned to wetlands in each hydrologic area. Santa Ana's basin plan includes water quality objectives for the San Joaquin Freshwater Marsh.

Narrative and/or Numeric Criteria

Some basin plans include numeric and narrative water quality objectives (standards) to protect beneficial uses. See Designated Uses above.

Antidegradation Policy

The State Water Resources Control Board has established a broad antidegradation policy which applies to "all waters of the state." Resolution 68-16 (Antidegradation policy) allows water quality to be lowered as long as beneficial uses are protected (pollution or nuisance will not occur), best practical treatment and control...of the discharge is provided, and the degradation is in the best interest of the people of California."

COLORADO

Wetland Definition

Water quality regulations (5 Colorado Regulations 1002-31.5) define wetlands as "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." This is the definition applied by the Corps. For purposes of the regulations, Colorado provides additional definitions for "constructed" wetlands, "created" wetlands, and "tributary" wetlands.

Wetland Water Quality Standards

The Water Quality Control Division implements water quality standards for wetlands and other waters. It also operates a Section 401 program. In Colorado, stream segments are classified according to use and those classifications identify the uses that are to be protected on a given stream segment. Numerical standards for specific pollutants are then adopted which are designed to protect the designated uses.

Designated Uses

Designated uses are the same as those applied to all waters in the state. No specification of designated uses specifically for wetlands has occurred.

⁵⁰Id.

Narrative and/or Numeric Criteria

Colorado Regulations, provide, in part: Standards for Surface Waters in Wetlands:

“(A) Tributary wetlands to which the interim classifications referenced in section 31.13(1)(e)(iv) apply, shall be subject to the following interim standard:

(1) Until such time as the Commission adopts site-specific standards for the tributary wetland, water quality in the wetland shall be maintained for each parameter at whichever of the following levels is less restrictive:

(a) ambient quality, or

(b) that quality which meets the numeric standards (except for numeric standards for pH, dissolved oxygen, and any standard established for the protection of a domestic water supply use) of the tributaries of the surface water segment to which the wetland is most directly hydrologically connected. Where the applicable numeric standard is based on section 31.16, table III, of this regulation, the numeric standard applicable to the wetland may be implemented taking into account the water effect ratio of the pollutant.

(2) Ambient quality shall be determined in accordance with section 31.7(1)(b)(ii) and shall take into account the location, sampling date, and quality of all available data. Ambient quality shall be determined as of the time the first regulatory action is undertaken which requires the identification of water quality standards for wetlands. If available information is not adequate to otherwise determine or estimate ambient quality, the interim standard set forth in section 31.7(1)(b)(iv)(A)(1)(b) shall apply.

(B) Wetlands for which the Commission has adopted a site-specific "wetlands" classification described in section 31.13(1)(e)(v), shall be subject to numeric standards and designations adopted by the Commission. The Commission shall adopt any numeric standards and designations determined to be appropriate in view of the functions and values to be protected for the wetlands in question.

(C) Created wetlands, shall be subject only to the narrative standards set forth in section 31.11, unless the Commission has adopted the wetlands classification and appropriate numeric standards. All created wetlands will have a use-protected designation unless determined otherwise as a result of a site-specific hearing.

(D) Compensatory wetlands shall be subject to the standards of the segment in which they are located, unless the Commission adopts a wetlands classification and appropriate numeric standards.

(E) All other wetlands which are state waters shall be subject only to the narrative standards set forth in section 31.11, unless the Commission has adopted the wetlands classification and appropriate numeric....” (Note, Section 31.11 provides, in part, “regulatory, narrative standards are also applied to any pollutant of concern, even where there is no numeric standard for that pollutant. These standards can be paraphrased as waters of the state shall be "free from harmful substances in harmful amounts." However, wetlands are exempted from some of the surface water standards applied to other waters. See 31.11, Basic Standards Applicable to Surface Waters of the State.

Antidegradation Policy

The antidegradation policy is consistent with policies applied to all other waters in the state. Colorado regulations broadly provide:

“1) Except where authorized by permits, BMPs, 401 certifications, or plans of operation approved by the Division or other applicable agencies, state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which:

(a) for all surface waters except wetlands;

(i) can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud; or (ii) form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or

(iii) produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or

(iv) are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or

(v) produce a predominance of undesirable aquatic life; or

(vi) cause a film on the surface or produce a deposit on shorelines; and

(b) for surface waters in wetlands;

(i) produce color, odor, changes in pH, or other conditions in such a degree as to create a nuisance or harm water quality dependent functions or impart any undesirable taste to significant edible aquatic species of the wetland; or

(ii) are toxic to humans, animals, plants, or aquatic life of the wetland.”

FLORIDA

We have characterized Florida as a state with wetland water quality standards because of its broad water classification system which applies to wetlands and other waters and because of the detailed criteria and procedures dealing with wetlands and stormwater and wetlands and waste waters. See Florida Administrative Code Section 62-611.700. However, the state has not adopted broad scale wetland-specific water quality standards.

Wetland Definition

Wetlands are considered “waters of the State,” and are included in the five classes of waters. See below. Most water bodies in Florida, including wetlands, are classified as Class III waters. Florida Statutes Annotated, Section 373.019(25) defines wetlands as

“Those areas that are inundated or saturated by surface or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils...Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, tidal marshes, mangrove swamps, and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto.”

Wetland Water Quality Standards

Florida Statutes, Section 373.414 requires compliance by permit applicants with applicable water quality standards:

“(1) As part of an applicant's demonstration that an activity regulated under this part will not be harmful to the water resources or will not be inconsistent with the overall objectives of the district, the governing board or the department shall require the applicant to provide reasonable assurance that state water quality standards applicable to waters as defined in s. 403.031(13) will not be violated and reasonable assurance that such activity in, on, or over surface waters or wetlands, as delineated in s. 373.421(1), is not contrary to the public interest. However, if such an activity significantly degrades or is within an Outstanding Florida Water, as provided by department rule, the applicant must provide reasonable assurance that the proposed activity will be clearly in the public interest.”

However, to date, no broader wetland-specific rules governing the water quality in wetlands have been adopted other than the general rules for surface waters described below.

Designated (Beneficial) Uses

For a listing of beneficial uses in Florida, see antidegradation policy below. In addition, all surface waters in Florida including all wetlands fall into one of five classifications based upon their present and future most beneficial use (designated use). The five classifications include:

| “Class | Designated Use |
|--------|---|
| 33I | Potable Water Supplies |
| 33II | Shellfish Propagation or Harvesting |
| 33III | Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife |
| 33IV | Agricultural Water Supplies |
| 33V | Navigation, Utility and Industrial Use” |

Narrative and/or Numeric Criteria⁵¹

Narrative and numeric water quality criteria are listed in Chapter 62-302, Florida Administrative Code. They are designed to support the designated uses. More stringent criteria apply to waters in a “higher” classification (e.g., Class I waters have more stringent criteria than Class III waters). There are a number of biological water quality criteria contained in Chapter 62-302, Florida Administrative Code, including bacteriological quality, biological integrity, nuisance species, and nutrients.

Florida statutes Section 373.414 provide broad criteria for activities in surface waters and wetlands (note, these criteria are not limited to pollution considerations):

- a) In determining whether an activity, which is in, on, or over surface waters or wetlands, as delineated in s. [373.421](#)(1), and is regulated under this part, is not contrary to the public interest or is clearly in the public interest, the governing board or the department shall consider and balance the following criteria:
1. Whether the activity will adversely affect the public health, safety, or welfare or the property of others;
 2. Whether the activity will adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats;
 3. Whether the activity will adversely affect navigation or the flow of water or cause harmful erosion or shoaling;
 4. Whether the activity will adversely affect the fishing or recreational values or marine productivity in the vicinity of the activity;
 5. Whether the activity will be of a temporary or permanent nature;
 6. Whether the activity will adversely affect or will enhance significant historical and archaeological resources under the provisions of Section. [267.061](#); and
 7. The current condition and relative value of functions being performed by areas affected by the proposed activity.

Antidegradation Policy

Florida’s antidegradation policy (DEP 62-302.300) is general and provides, in part:

“(1) Article 11, Section 7 of the Florida Constitution requires abatement of water pollution and conservation and protection of Florida’s natural resources and scenic beauty.”

Florida’s rules adopted to implement this policy require permit applicants to demonstrate that lowering of water quality is necessary or desirable under federal standards and under circumstances that are in the public interest. Certain portions of Chapter 62-611, Florida Administrative Code pertain to discharges of waste water to wetlands and discharges from such wetlands into other waters. This chapter allows for the use of some wetlands for treatment of wastewater in controlled circumstances. See <http://www.dep.state.fl.us/water/wastewater/dom/wetrule.htm>. See also Florida Administrative Code, 62-25.042 (Permit requirements for wetland stormwater discharge facilities.)

⁵¹Id.

HAWAII

Wetland Definition

Hawaii water quality standards (Hawaii Administrative regulations § 11-54-1 Definitions.) define wetlands as “land that is transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface off the land is covered by shallow water. A wetland shall have one or more of the following attributes: (1) at least periodically the land supports predominantly hydrophytic vegetation; (2) the substratum is predominantly undrained hydric soil; or the substratum is nonsoil (gravel or rocks) and is at least periodically saturated with water or covered by shallow water. Wetlands may be fresh, brackish, or saline and generally include swamps, marshes, bogs, and associated ponds and foofs, mud flats, isolated seasonal ponds, littoral zones of standing water bodies, and alluvial floodplains.” State waters are also defined to include wetlands. See § 11-54-1 Definitions.

Wetland Water Quality Standards

Hawaii Administrative Rules (§ 11-54-4 Basic water quality criteria applicable to all waters) contain broad water quality standards for waters. They explicitly include wetlands including “elevated wetlands,” “low wetlands,” “coastal wetlands,” “marine waters,” “marine bottom types,” and “recreational areas.”

Designated Uses

The Hawaii Administrative Code specifies that “basic” water quality standards apply to wetlands. Basic water quality standards include a variety of use classes. See § 11-54-3 Classification of water uses.

Narrative and/or Numeric Criteria

The Hawaii Administrative code sets forth both narrative and numeric criteria for waters in general. These criteria apply in part to wetlands. See, e.g., § 11-54-5.2 Inland water criteria.

Antidegradation Policy

The state has an antidegradation policy and wetlands are apparently covered under this policy as state waters. See § 11-54-1.1 (General policy of water quality antidegradation) which provides in part that “(a) Existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.” Exceptions are provided to this general policy. However, high quality waters are also to be protected.

IOWA

We include Iowa as a state with water quality standards for wetlands because the Iowa Administrative Code Environmental Protection [567] Chapter 61 includes some brief but broad wetland-specific water quality policies (see below). Iowa also applies its more general water quality standards to wetlands including Section 401 reviews.

Wetland Definition

The Corps definition is used:

“Wetlands” means those areas that are inundated or saturated by surface water or groundwater 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.”

This definition has been formally adopted for regulations dealing with municipal solid waste disposal (Section 567-113.6) and is apparently being applied to other regulations as well.

Wetland Water Quality Standards

Iowa’s wetland water quality standards are brief but establish important policies. For discharges of dredged or fill material resulting in permanent loss of more than 1/10 acre of waters of the United States (including jurisdictional wetlands), a compensatory mitigation plan to offset those losses will be required. See description of narrative and number criteria below.

Designated Uses

Iowa has designated use segments for water bodies as a whole. These are listed in Chapter 61. Separate designated uses are not specified for wetlands.

Narrative and/or Numeric Criteria

Iowa Code Chapter 455B, division 111, part 1. Amendment to paragraph 61.2(2) “h”. State water quality conditions provide a number of numeric and narrative criteria for wetlands and related areas including:

“(1) Side slopes of a newly constructed channel will be no steeper than 2:1 and planted to permanent, perennial, native vegetation if not armored.

....

(4) For discharges of dredged or fill material resulting in permanent loss of more than 1/10 acre of waters of the United States (including jurisdictional wetlands), a compensatory mitigation plan to offset those losses will be required. In addition, a preconstruction notice to the Corps of Engineers in accordance with general condition 27 will be required.

(5) For newly constructed channels through areas that are unvegetated, native grass filter strips, or a riparian buffer with native trees or shrubs a minimum of 35 feet wide from the top of bank must be planted along both sides of the new channel. A survival rate of 80 percent of desirable species shall be achieved within three years of establishment of the buffer strip.

(6) For single-family residences authorized under nationwide permit 29, the permanent loss of waters of the United States (including jurisdictional wetlands) must not exceed ¼ acre.

(7) For nationwide permit 46, the discharge of dredged or fill material into ditches that would sever the jurisdiction of an upstream water of the United States from a downstream water of the United States is not allowed.

(8) For projects that impact fens, bogs, seeps, or sedge meadows, an individual Section 401 Water Quality Certification will be required (Iowa Section 401 Water Quality Certification condition.)”

Antidegradation Policy

Wetlands are designated as general use water bodies and are covered under the general antidegradation policy provided in Chapter 61. This provides in 61.2(2) “Antidegradation policy: “It is the policy of the state of Iowa that: a. Existing surface water uses and the level of water quality necessary to protect the existing uses will be maintained and protected.”

MAINE

We include Maine in our list of states with water quality standards for wetlands because the state has adopted an antidegradation policy which explicitly protects wetland habitat. In addition, it has adopted wetland protection statutes for both tidal and freshwater wetlands. These statutes explicitly require compliance for activities in wetlands with broader water quality criteria.

Wetland Definition

Maine Department of Environmental Protection Regulations, Chapter 310, Wetlands and Water Bodies Protection state that the terms “wetland”, “wetlands”, “waterbody, and waterbodies” “are used interchangeably and collectively in this rule to refer to freshwater wetlands, great ponds, rivers, streams, brooks, coastal wetlands, and the areas adjacent to them.”

Wetland Water Quality Standards

Maine has adopted an antidegradation policy which explicitly protects wetland habitat. Wetland protection statutes for both tidal and freshwater wetlands explicitly require compliance with broader water quality criteria. The state is developing biological criteria for freshwater wetlands.

Designated Uses

Many wetlands are designated waters of special significance. In addition, the state has adopted an antidegradation policy which includes not only general designated uses but “habitat, including significant wetlands within a waterbody supporting existing populations of wildlife or aquatic, estuarine or marine life, or plant life that is maintained by the waterbody;” Maine Code of Rules, Chapter 310: Wetlands and Waterbodies Protection.

Narrative and/or Numeric Criteria

Maine regulations establish both narrative and numeric criteria for waters in general. These are explicitly made to apply to wetlands as well as other waters.

Antidegradation Policy

Maine has adopted a broad antidegradation policy which provides, in part, that

“Existing in-stream water uses and the level of water quality necessary to protect those existing uses must be maintained and protected. Existing in-stream water uses are those uses which have actually occurred on or after November 28, 1975, in or on a water body whether or not the uses are included in the standards for classification of the particular water body.

Determinations of what constitutes an existing in-stream water use on a particular water body must be made on a case-by-case basis by the department. In making its determination of uses to be protected and maintained, the department shall consider designated uses for that water body and:

- (a) Aquatic, estuarine and marine life present in the water body;
- (b) Wildlife that utilize the water body;
- (c) Habitat, including significant wetlands, within a water body supporting existing populations of wildlife or aquatic, estuarine or marine life, or plant life that is maintained by the water body;
- (d) The use of the water body for recreation in or on the water, fishing, water supply, or commercial activity that depends directly on the preservation of an existing level of water quality. Use of the water body to receive or transport waste water discharges is not considered an existing use for purposes of this antidegradation policy; and
- (e) Any other evidence that, for divisions (a), (b) and (c), demonstrates their ecological significance because of their role or importance in the functioning of the ecosystem or their rarity and, for division (d), demonstrates its historical or social significance.”

MASSACHUSETTS

Wetland Definition

Surface waters are defined in 314 CMR4:00 to include for the purposes of the water pollution control act:

“Surface waters. All waters other than ground waters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters and vernal pools.”

Vernal pools are defined to include:

“Vernal Pool. A waterbody that has been certified by the Massachusetts Division of Fisheries and Wildlife as a vernal pool. Vernal pools are confined basin depressions which, at least in most years, hold water for a minimum of two contiguous during the spring and/or summer, and which are free of adult fish populations.”

Wetland Water Quality Standards

Massachusetts regulates wetlands pursuant to a number of explicit wetland statutes. Regulation is jointly undertaken by the state and local governments.

In addition to the wetland statutes, Massachusetts has adopted limited, explicit water quality standards for wetlands which provide, in part (314 CMR 4.06):

“(2) Wetlands. Wetlands bordering Class A Outstanding Resource Waters are designated Class A Outstanding Resource Waters. Vernal pools are designated Class B Outstanding Resource Waters. All wetlands bordering other Class B, SB or SA Outstanding Resource Waters are designated as Outstanding Resource Waters to the boundary of the defined area. All other wetlands are designated Class B, High Quality Waters for inland waters and Class SA, High Quality Waters for coastal and marine waters.”

Special pollution control regulations have also been adopted for vernal pools (Id.):

“12. Vernal Pools. No point source discharge shall be allowed to a vernal pool certified by the Massachusetts Division of Fisheries and Wildlife; and no discharge of dredged or fill material shall be allowed to a vernal pool certified by the Massachusetts Division of Fisheries and Wildlife unless a variance is granted under 314 CMR 9.08.”

Designated Uses

Massachusetts does not list wetland specific designated uses but depends upon the broader designated uses for all waters.

Narrative and/or Numeric Criteria

Massachusetts water quality regulations establish both numeric and nonnumeric standards for surface waters which are defined to include wetlands. Numeric standards apply to dissolved oxygen, temperature, pH, bacteria, soils, color and turbidity, oil and grease, and taste and odor. In addition, Massachusetts water quality regulations contain some additional, special standards for wetlands near public water supplies. Regulations provide, in part (314 CMR 4:00)

“No discharge of dredged or fill material into wetlands or waters of the Commonwealth shall be allowed within 400 feet of the high water mark of a Class A surface water (exclusive of tributaries), unless conducted by a public water supply system...., maintenance or repair of existing public roads or railways, or conducted by a person granted a variance....”

Antidegradation Policy

Massachusetts regulations set forth antidegradation provisions for waters as whole including wetlands. (314 CMR 4.04) provides in antidegradation provisions that “in all cases existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected.” Other antidegradation provisions apply to high quality and other significant resource waters and outstanding resource waters.

MINNESOTA

Wetland Definition

All wetlands are considered waters of the state for the purposes of Minnesota Rules 7050.0186 pertaining to water quality. More specifically, wetlands are defined:

B. "Wetlands" are those areas that are inundated or saturated by surface water or groundwater 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. Constructed wetlands designed for wastewater treatment are not waters of the state. Wetlands must have the following attributes:

- (1) a predominance of hydric soils;
- (2) inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition; and
- (3) under normal circumstances, support a prevalence of such vegetation.

Wetland Water Quality Standards

Minnesota pollution control regulations provide, in part, that

“7050.0450 Multiclassifications.

All surface waters of the state are classified in more than one class, and all the water quality standards for each of the classes apply. If the water quality standards for particular parameters for the various classes are different, the more restrictive of the standards apply.”

In 1994, the state codified narrative wetland water quality standards incorporating wetlands as Waters of the State. Wetlands are included in the state use classification system and include 2D Aquatic-Life Use, 3D Industrial Consumption, 4C Agricultural and Wildlife, class 5 Aesthetic Enjoyment and Navigation, class 6 Other Uses, and Class 7 Limited Use Waters.

Designated Uses

As cited above, the state has designated use classifications for the state’s wetlands. Unless specified otherwise, wetlands are protected for class 2, 3, 4, 5 and 6 uses.

State regulations provide, more specifically, with regard to designated uses that:

“7050.0186 WETLAND STANDARDS AND MITIGATION.

Subpart 1. Policy and wetland beneficial uses. It is the policy of the state to protect wetlands and prevent significant adverse impacts on wetland beneficial uses caused by chemical, physical, biological, or radiological changes. The quality of wetlands shall be maintained to permit the propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, preserve wildlife habitat, and support biological diversity of the landscape. In addition, these waters shall be suitable for boating and other forms of aquatic recreation as specified in part 7050.0222, subpart 6; general industrial use as specified in part 7050.0223, subpart 5; irrigation, use by wildlife and livestock, erosion control, groundwater recharge, low flow augmentation, stormwater retention, and stream sedimentation as specified in part 7050.0224, subpart 4; and aesthetic enjoyment as specified in part 7050.0225, subpart 2.”

Narrative and/or Numeric Criteria

Minnesota pollution control regulations provide, in part, that

“Subp. 1b. Wetland pollution prohibited. Wetland conditions shall be protected from chemical, physical, biological, or radiological changes to prevent significant adverse impacts to the designated beneficial uses listed in subpart 1. The nondegradation provisions in this chapter are applicable to wetlands.”

Antidegradation Policy

Wetlands are explicitly included in the State’s non-degradation policy which states, in part:

“7050.0185 Nondegradation for All Waters.

Subpart 1. Policy. The beneficial uses inherent in water resources are valuable public resources. It is the policy of the state to protect all waters from significant degradation from point and nonpoint sources and wetland alterations and to maintain existing water uses and aquatic and wetland habitats. Existing beneficial uses and the water quality necessary to protect the existing uses must be maintained and protected from point and nonpoint sources of pollution.”

NEBRASKA

Wetland Definition

The state uses a wetland definition consistent with the federal definition and the federal 1987 Wetland Delineation Manual.

Wetland Water Quality Standards

Nebraska Department of Environmental Quality has adopted regulations for state review of federal permits pursuant to Section 401 (Title 120) of the Clean Water Act and water quality standards for all surface waters including wetlands (Title 117). The state has applied its antidegradation policy to wetlands. Wetland-specific regulations have been adopted which establish two major classes of wetlands: isolated and surface water overflow wetlands. Protected uses have been designated for wetlands.

Designated Uses

Beneficial uses assigned to all waters include “primary contact recreation, aquatic life, water supply and aesthetics.” See Title 117, Chapter 4 001. More specific beneficial uses for wetlands are: “aquatic life, wildlife, agricultural water supply, and aesthetics.” Some wetlands may have additional beneficial uses.

Narrative and/or Numeric Criteria

Beneficial uses are protected by the narrative and numerical water quality criteria listed in Chapter 7 of Title 117 - Nebraska Surface Water Quality Standards. Nebraska regulations provide in part in 117 NAC 7-004.01A:

“General Criteria

Water quality criteria are established to protect assigned beneficial uses. However, traditional water quality parameters in wetlands such as pH, temperature, dissolved oxygen, ammonia, chloride, and conductivity may naturally vary outside accepted ranges for other surface waters. Water quality criteria for specific wetlands or wetland complexes, except numerical criteria for toxic substances (paragraph 004.01C1), petroleum oil (paragraph 004.01D), and residual chlorine (paragraph 004.01F), shall be based on natural background values for traditional water quality parameters. However, these criteria shall be no more stringent than those associated with the Class B Warmwater Aquatic Life classification or the General Criteria for Aquatic Life of Chapter 4, Paragraphs 003.01 A, 003.01B, 003.01G, and 003.04B.”

Regulations also provide biological criteria and numeric criteria for toxic substances. Nebraska is the only state with rather extensive numeric water quality criteria specifically for wetlands.

Antidegradation Policy

Assigned and existing beneficial uses are protected by the antidegradation Clause in Chapter 3, Title 117. This policy broadly provides that “(t)he water quality of surface waters, consistent with uses applied in these Standards, shall be maintained and protected. Water quality degradation which would adversely affect existing uses will not be allowed.” Standards for beneficial uses are set forth in Appendix B, below.

NORTH CAROLINA

Wetland Definition

15A North Carolina Administrative Code 2B .0202 Definitions provides

“(71) Wetlands are "waters" as defined by G.S. 143-212(6) and are areas that are inundated or saturated by an accumulation of 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. Wetlands classified as

waters of the state are restricted to waters of the United States as defined by 33 CFR 328.3 and 40 CFR 230.3.”

Wetlands and Water Quality Standards

The state has adopted wetland standards and procedures for the Section 401 Certification Program as well as an Isolated Wetland Permit Program. For standards and criteria for the certification program see 15A North Carolina Administrative Code, 2H .0506 Review Of Applications.

Designated Uses

Designated uses are provided in 15A NCAC 2B .0231 and exemptions to those standards are provided in 15A NCAC 2B .0230. Designated uses include the following:

“5A NCAC 2B .0231 Wetland Standards

(a) General. The water quality standards for all wetlands are designed to protect, preserve, restore and enhance the quality and uses of wetlands and other waters of the state influenced by wetlands. The following are wetland uses:

- (1) Storm and flood water storage and retention and the moderation of extreme water level fluctuations;
- (2) Hydrologic functions including groundwater discharge that contributes to maintain dry weather streamflow and, at other locations or times, groundwater recharge that replenishes the groundwater system;
- (3) Filtration or storage of sediments, nutrients, toxic substances, or other pollutants that would otherwise adversely impact the quality of other waters of the state;
- (4) Shoreline protection against erosion through the dissipation of water energy and water velocity and stabilization of sediments;
- (5) Habitat for the propagation of resident wetland-dependent aquatic organisms including, but not limited to fish, crustaceans, mollusks, insects, annelids, planktonic organisms and the plants and animals upon which these aquatic organisms feed and depend upon for their needs in all life stages; and
- (6) Habitat for the propagation of resident wetland-dependent wildlife species, including mammals, birds, reptiles and amphibians for breeding, nesting, cover, travel corridors and food.”

Narrative and/or Numeric Criteria

General criteria are provided for various activities in wetlands by 15A NCAC 2B .0231 and exemptions to those standards are provided in 15A NCAC 2B .0230. More specifically, 5A NCAC 2B .0231 WETLAND STANDARDS provides “(b) The following standards shall be

used to assure the maintenance or enhancement of the existing uses of wetlands identified in Paragraph (a) of this Rule:

- (1) Liquids, fill or other solids or dissolved gases may not be present in amounts which may cause adverse impacts on existing wetland uses;
- (2) Floating or submerged debris, oil, deleterious substances, or other material may not be present in amounts which may cause adverse impacts on existing wetland uses;
- (3) Materials producing color, odor, taste or unsightliness may not be present in amounts which may cause adverse impacts on existing wetland uses;
- (4) Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause adverse impacts on existing wetland uses;
- (5) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent adverse impacts on;
 - (A) Water currents, erosion or sedimentation patterns;
 - (B) Natural water temperature variations;
 - (C) The chemical, nutrient and dissolved oxygen regime of the wetland;
 - (D) The movement of aquatic fauna;
 - (E) The pH of the wetland; and
 - (F) Water levels or elevations.
- (6) The populations of wetland flora and fauna shall be maintained to protect biological integrity as defined at 15A NCAC 2B .0202.”

Antidegradation Policy

The state’s antidegradation policy (15A NCAC 2B .0201) applies to wetlands along with other waters. It is general and not specific to wetlands. It provides, in part: “It is the policy of the Environmental Management Commission to maintain, protect, and enhance water quality within the State of North Carolina.” Existing uses are protected. Protection is also afforded high quality waters and outstanding resource waters.

OHIO

Ohio has adopted detailed criteria and standards for the protection of wetlands as part of its water quality program.

Wetland Definition

Wetlands are defined in Ohio Administrative Code 3745-1-02:

- (90) “Wetlands” means those areas that are inundated or saturated by surface or ground water at a frequency and duration that are sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. “Wetlands” includes swamps, marshes, bogs, and similar areas that are

delineated in accordance with the 1987 United States Army Corps of Engineers wetland delineation manual and any other procedures and requirements adopted by the United States Army Corps of Engineers for delineating wetlands.”

Wetland Water Quality Standards

Wetland water quality standards were developed by Ohio EPA and placed in Ohio Administrative Code, Sections 3745-1-50 through 1-54. The Code provides that the following narrative criteria shall apply to wetlands:

“(A) The hydrology necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on:

- (1) Water currents, erosion or sedimentation patterns;
- (2) Natural water temperature variations;
- (3) Chemical, nutrient and dissolved oxygen regimes of the wetland;
- (4) The movement of aquatic fauna;
- (5) The pH of the wetland; and
- (6) Water levels or elevations, including those resulting from ground water recharge and discharge.”

“(B) (1) Water quality necessary to support existing habitats and the populations of wetland flora and fauna shall be protected to prevent significant adverse impacts on:

- (a) Food supplies for fish and wildlife;
- (b) Reproductive and nursery areas; and
- (c) Dispersal corridors, as that term is defined in rule 3745-1-50 of the Administrative Code.

(2) Water quality shall be protected to prevent conditions conducive to the establishment or proliferation of nuisance organisms, as that term is defined in rule 3745-1-50 of the Administrative Code.

(C) Conditions shall not occur that will have a significant adverse impact on the ability of the wetland to be used for wetland-dependent recreational opportunities in or on the water.”

In addition, Section 3745-1-52 provides numeric chemical criteria for waste water discharges into wetlands.

Designated Uses

Wetlands are assigned a designated “wetland use”. More specific categorization is undertaken on a permit by permit basis as provided in the Wetland Rules, Ohio Administrative Code, Sections 3745-1-53:

“(C) Wetland categories.

(1) Wetlands assigned to category 1.

(a) Wetlands assigned to category 1 support minimal wildlife habitat, and minimal hydrological and recreational functions as determined by an appropriate wetland evaluation methodology acceptable to the director. Wetlands assigned to category 1 do not provide critical habitat for threatened or endangered species or contain rare, threatened or endangered species.

(b) Wetlands assigned to category 1 may be typified by some or all of the following characteristics: hydrologic isolation, low species diversity, a predominance of non-native species (greater than fifty per cent areal cover for vegetative species), no significant habitat or wildlife use, and limited potential to achieve beneficial wetland functions.

(c) Wetlands assigned to category 1 may include, but are not limited to, wetlands that are acidic ponds created or excavated on mined lands without a connection to other surface waters throughout the year and that have little or no vegetation and wetlands that are hydrologically isolated and comprised of vegetation that is dominated (greater than eighty per cent areal cover) by species including, but not limited to: *Lythrum salicaria*; *Phalaris arundinacea*; and *Phragmites australis*.

(2) Wetlands assigned to category 2.

(a) Wetlands assigned to category 2 support moderate wildlife habitat, or hydrological or recreational functions as determined by an appropriate wetland evaluation methodology acceptable to the director or his authorized representative.

(b) Wetlands assigned to category 2 may include, but are not limited to: wetlands dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions.

(3) Wetlands assigned to category 3.

(a) Wetlands assigned to category 3 support superior habitat, or hydrological or recreational functions as determined by an appropriate wetland evaluation methodology acceptable to the director or his authorized representative.

(b) Wetlands assigned to category 3 may be typified by some or all of the following characteristics: high levels of diversity, a high proportion of native species, or high functional values.

(c) Wetlands assigned to category 3 may include, but are not limited to: wetlands which contain or provide habitat for threatened or endangered species; high quality forested wetlands, including old growth forested wetlands, and mature forested riparian wetlands; vernal pools; and wetlands which are scarce regionally and/or statewide including, but not limited to, bogs and fens.

(4) In addition to assigning a wetland a category pursuant to this rule, the director may designate a wetland which has national ecological or recreational significance as an outstanding national resource water pursuant to rule 3745-1-05 of the Administrative Code. Requests to undertake activities which will result in short-term disturbances to water quality in wetlands which are designated as outstanding national resource waters shall be evaluated in accordance with rule 3745-1-05 of the Administrative Code.”

Narrative and/or Numeric Criteria

Wetlands in all three classes are subject to avoidance, impact minimization and compensation requirements. See Section 3745-1-54 (antidegradation policy).

Wetland narrative criteria are included in Ohio Administrative Code, Sections AC 3745-1-51. This section provides, in part:

“(B) (1) The wetland designated use shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions in accordance with paragraphs (D) and (E) of this rule.”

See listing of functions in the antidegradation policy below.

Section 3745-1-54 (antidegradation policy) provides that the functions of a wetland which are to be protected may include, but are not limited to, the following:

- “(i) Ground water exchange, including the discharge and recharge of ground water;
- (ii) Nutrient removal and/or transformation;
- (iii) Sediment and/or contaminant retention;
- (iv) Water storage;
- (v) Sediment stabilization;
- (vi) Shoreline stabilization;
- (vii) Maintenance of biodiversity, as that term is defined in rule 3745-1-50 of the Administrative Code;
- (viii) Recreation;
- (ix) Education and research; and

(x) Habitat for threatened or endangered species.

(3) The director may consider the regional significance of the function(s) a wetland performs (e.g., wetlands recognized as providing important hydrological functions in watershed management plans) when determining whether degradation of the wetland can be authorized.

(4) Threatened or endangered species.”

Antidegradation Policy

A wetland-specific antidegradation policy is set forth in Ohio Administrative Code, Section 3745-1-54. In addition, wetlands are subject to the general antidegradation policy contained in Section 3745-1-5. Section 3745-1-54. provides, in part:

Section 3745-1-54 Wetland antidegradation.

“(A) The provisions in this rule apply in addition to the provisions in rule 3745-1-05 of the Administrative Code.

(B) (1) The wetland designated use shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions in accordance with paragraphs (D) and (E) of this rule.

(2) (a) Each wetland shall be assigned a category by Ohio EPA for the purposes of reviews of projects pursuant to this rule.

(i) A category will be assigned based on the wetland’s relative functions and values, sensitivity to disturbance, rarity, and potential to be adequately compensated for by wetland mitigation.”

WASHINGTON

Wetland Definition

Washington Administrative Code 173-201A-020 Water Quality Standards for Surface Waters of the State of Washington provides in part:

“Surface waters of the state" includes lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands and all other surface waters and water courses within the jurisdiction of the state of Washington.

This section further provides that:

“Wetlands" means areas that are inundated or saturated by surface water 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. Wetlands do not

include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands. (Water bodies not included in the definition of wetlands as well as those mentioned in the definition are still waters of the state.)”

Wetland Water Quality Standards

Washington has adopted water quality standards for the state as a whole and guidelines (not actual regulations) for wetland water quality. The state has established a 401 program; established narrative water quality standards for wetlands; and applies a broad antidegradation policy to wetlands. The state also has an outstanding resource waters program. Although the state has not formally adopted water quality standards, it has prepared quite detailed guidance on such standards. See Department of Ecology, Water Quality Guidelines for Wetlands, Using the Surface Water Quality Standards for Activities Involving Wetlands (1996) <http://www.ecy.wa.gov/pubs/9606.pdf>

Designated Uses

Washington water quality guidelines designate a number of beneficial uses of wetlands that must be protected including water supply, fish and shellfish habitat, wildlife habitat, recreation, commerce and navigation, aesthetics, ground water exchange, shoreline stabilization and storm water attenuation. See Department of Ecology, Water Quality Guidelines for Wetlands, Using the Surface Water Quality Standards for Activities Involving Wetlands, above.

Narrative and/or Numeric Criteria

Wetlands are protected by the antidegradation policy and a narrative statement that, “water quality in wetlands is (to be) maintained and protected by maintaining the hydrologic conditions, hydrophytic vegetation, and substrate characteristics necessary to support existing and designated uses.” See also restoration as part of the antidegradation policy below.

Antidegradation Policy

The antidegradation policy is the primary means of protecting wetlands under the water quality law. It provides, in part,

“WAC 173-201A-300 (1) The antidegradation policy is guided by Chapter 90.48 RCW, Water Pollution Control Act, Chapter 90.54 RCW, Water Resources Act of 1971, and 40 CFR 131.12.

(2) The purpose of the antidegradation policy is to:

(a) Restore and maintain the highest possible quality of the surface waters of Washington;

- (b) Describe situations under which water quality may be lowered from its current condition;
- (c) Apply to human activities that are likely to have an impact on the water quality of a surface water;
- (d) Ensure that all human activities that are likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART); and
- (e) Apply three levels of protection for surface waters of the state, as generally described below:
 - (i) Tier I is used to ensure existing and designated uses are maintained and protected and applies to all waters and all sources of pollution.
 - (ii) Tier II is used to ensure that waters of a higher quality than the criteria assigned in this Chapter are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities.
 - (iii) Tier III is used to prevent the degradation of waters formally listed in this Chapter as "outstanding resource waters," and applies to all sources of pollution.
- (3) Habitat restoration. Both temporary harm and permanent loss of existing uses may be allowed by the department where determined necessary to secure greater ecological benefits through major habitat restoration projects designed to return the natural physical structure and associated uses to a water body where the structure has been altered through human action."

WISCONSIN

Wetland Definition

Wisconsin regulations, Chapter NR 103, provide that: "Wetlands" means an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions."

Wetland Water Quality Standards

Wisconsin was the first state to adopt explicit water quality standards for wetlands. These standards set forward goals, wetland definition, designated uses, criteria of designated uses and an antidegradation policy. Regulations were adopted, in part, to facilitate Section 401 review. Regulations provide that: "It is the policy of the department (DNR) to review, consistent with the requirements of section 1341 of the federal water pollution control act, 33 U.S.C. ss 1251, et. seq., all activities which require a federal license or permit which may result in any discharge to waters of the state...."

Designated Uses

Wisconsin law requires that the Department of Natural Resources (DNR) protect water quality related functions and values of wetlands including sediment and pollutant attenuation, storm and flood water retention, hydrologic cycle maintenance, shoreline protection against erosion, biological diversity and production and human uses such as recreation.

Narrative and/or Numeric Criteria

DNR uses narrative standards to protect the designated uses listed above. These include sequencing requirements. DNR must make a finding that the project proponent has shown that no practicable alternative exists which would avoid adverse impacts to wetlands, that all practicable measures to minimize adverse impacts to the functional values of the affected wetlands have been taken and that the activity will not result in significant adverse impacts to wetland functional values, significant adverse impacts to water quality or other significant adverse environmental consequences.

A variety of additional criteria must be used to assure the maintenance or enhancement of functional values: a) Liquids, fill or other solids or gas may not be present in amounts which may cause significant adverse impacts to wetlands; b) Floating or submerged debris, oil or other material may not be present in amounts which may interfere with public rights or interest or which may cause significant adverse impacts to wetlands; c) Materials producing color, odor, taste or unsightliness may not be present in amounts which may cause significant adverse impacts to wetlands; d) Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause significant adverse impacts to wetlands; e) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on water currents, erosion or sedimentation patterns; water temperature variations, the chemical, nutrient and dissolved oxygen regime of the wetland, the movement of aquatic fauna, the pH of the wetland and water levels or elevations; and f) Existing habitats and the populations of wetland animals and vegetation shall be maintained by protecting food supplies for fish and wildlife, protecting reproductive and nursery areas, and preventing conditions conducive to the establishment or proliferation of nuisance organisms.

Antidegradation Policy

Wisconsin has adopted an overall antidegradation policy that applies to all waters including wetlands. The antidegradation rule is set forth in Chapter NR 102.05(1)(a) and implemented in Chapter NR 207 of the Wisconsin Administrative Code. NR 102.05 provides, in part, that:

“No waters of the state shall be lowered in quality unless it has been affirmatively demonstrated to the department that such a change is justified as a result of necessary economic and social development, provided that no new or increased effluent interferes with or become injurious to any assigned uses made of or presently possible in such waters.”

The antidegradation rule addresses new or increased discharges to surface waters (river, lakes, drainageways, wetlands, etc.). The way in which new or increased discharges are addressed

depends on “the type, or use designation, of the water body.” In general, the antidegradation rule requires a justification of the reasons for new or increased discharges before such discharges are allowed under Wisconsin’s discharge permit program. In Chapter NR 207, new discharges are defined as point sources which did not have a discharge permit as of March 1, 1989. Increased discharges are more pollutant-specific, referring to changes in concentrations, levels, or loadings (mass) of a particular pollutant that exceeds a limit that is already in a discharge permit. For some higher quality waters:

“New or increased discharges are either prohibited or allowed only in extreme and unique situations. In Outstanding Resource Waters (listed in Chapter NR 102 of the Wis. Adm. Code), new or increased discharges are allowed only if they maintain the existing water quality. New discharges to Exceptional Resource Waters (also listed in ch. NR 102) are treated similar to Outstanding Resource Waters if the discharge is not needed to prevent or correct an existing surface or groundwater contamination problem. If the new discharge is needed to prevent or correct any of those problems, or for any increased discharge, it is addressed similar to a more typical fish and aquatic life protection situation.”

WYOMING

Wetland Definition

“Waters of the state” are defined by Wyoming regulations (Definitions ENV-WAT-1 § 2.) to include:

“Waters of the state” means all surface and groundwater, including waters associated with wetlands, within Wyoming.”

“Surface waters of the state” are defined to include:

““Surface waters of the state” means all perennial, intermittent and ephemeral defined drainages, lakes, reservoirs, and wetlands which are not man-made retention ponds used for the treatment of municipal, agricultural or industrial waste; and all other bodies of surface water, either public or private which are wholly or partially within the boundaries of the state....”

“Adjacent wetlands” are defined to include:

(W)etlands that are connected by a defined channel to a surface tributary system or are within the 100 year flood plain of a river or stream, or occupy the fringe of any still water body which is connected by a defined channel to a surface tributary system.

“Wetlands” are defined to include:

“Wetlands” means those areas in Wyoming having all three (3) essential characteristics:
(A) Hydrophytic vegetation;
(B) Hydric soils; and
(C) Wetland hydrology. “

Wetland Water Quality Standards

Wyoming provides some measure of protection for wetlands by several statutes including the water quality protection program and a wetland act requiring state notification for certain drainage activities and authorizing mitigation banks. See <http://soswy.state.wy.us/Rules/RULES/6547.pdf>

See WS 35-11-301 to WS 35-11-313. There is also a state notification program for draining wetlands over 5 acres.

Designated Uses

Wyoming surface water quality standards (ENV-WAT-1 § 3. Water Uses) establish a number of designated uses which apply to wetlands and other waters including agriculture, fisheries, industry, drinking water, recreation, scenic value, aquatic life other than fish, wildlife, and fish consumption.

Narrative and/or Numeric Criteria

Damage to wetlands must be mitigated. See antidegradation policy below.

Wyoming regulations establish four classes of waters with a combination of numeric and general narrative standards for each class. Wetlands are included in all four classes because regulations provide that (see Appendix B, Wyoming Surface Water Classifications):

“(iii) Wetlands. All adjacent wetlands shall have the same classification as the water to which they are adjacent.”

Antidegradation Policy

Wyoming establishes an antidegradation policy for all waters which includes (in part) wetlands. Wyoming Surface Water Quality Standards, Section 8 provides:

(a) Water uses in existence on or after November 28, 1975 and the level of water quality necessary to protect those uses shall be maintained and protected. Those surface waters not designated as Class 1, but whose quality is better than the standards contained in these regulations, shall be maintained at higher quality. However, after full intergovernmental coordination and public participation, the Wyoming Department of Environmental Quality may issue a permit for or allow any project or development which would constitute a new source of pollution or an increased source of pollution to these waters as long as the following conditions are met....”

Section 12 of the Wyoming Surface Water Quality Standards (ENV-WAT-1 § 12. Protection of Wetlands.) provides, more specifically, in part:

“Section 12. Protection of Wetlands. Point or nonpoint sources of pollution shall not cause the destruction, damage or impairment of naturally occurring wetlands except when mitigation through an authorized wetland mitigation process. When approving mitigation,

the department may consider both the ecological functions and the wetland value of the disturbed wetland.

This section does not apply to wetlands created by point or nonpoint sources; nor are such wetlands required to be maintained through continuation of such discharges. Similarly, any man-made wetlands or enhancements which have been credited in the state wetland banking program are not required to be maintained under the credit is used for mitigation purposes. These areas will, however, be protected from discharges of wastes, toxic substances or chemical pollutants as are any other waters of the state.”

APPENDIX B. EPA RECOMMENDATIONS FOR STATE REGULATIONS; EXAMPLES OF COMPONENTS OF STATE WATER QUALITY REGULATIONS FOR WETLANDS

Appendix B sets forth portions of EPA’s guidelines for state water quality standards for wetlands along with examples of state wetland water quality regulations. The goal is to provide the reader with alternative approaches to key components of state wetland and water quality standards. We hope that these are useful. For each topic, EPA guidance is presented first and then state examples.

DEFINITION OF “WETLAND”

All states with wetland water quality standards either define state waters to include wetlands or expressly apply water quality standards to wetlands. Examples include:

EPA National Guidance, Water Quality Standards for Wetlands.⁵²

“The first, and most important, step in applying water quality standards to wetlands is ensuring that wetlands are legally included in the scope of States' water quality standards programs. EPA expects States' water quality standards to include wetlands in the definition of "State waters" by the end of FY 1993. States may accomplish this by adopting a regulatory definition of "State waters" at least as inclusive as the Federal definition of "waters of the U.S." and adopting an appropriate definition for "wetlands.”

Wis. Admin. Code, NR 103.03 (1)

(4) ““Waters of the state" includes those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface or ground water, natural or artificial, public or private, within the state or its jurisdiction.

(5) "Wetlands" means an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.

⁵²<http://www.epa.gov/owow/wetlands/regs/quality.html>

Maine Department of Environmental Protection Regulations, Chapter 310, Wetlands and Water Bodies Protection.

“The terms “wetland”, “wetlands”, “waterbody, and waterbodies” are used interchangeably and collectively in this rule to refer to freshwater wetlands, great ponds, rivers, streams, brooks, coastal wetlands, and the areas adjacent to them.”

Minnesota Administrative Rules 1a. Definitions.7050.0186 Wetland Standards and Mitigation

“B. "Wetlands" are those areas that are inundated or saturated by surface water or groundwater 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. Constructed wetlands designed for wastewater treatment are not waters of the state. Wetlands must have the following attributes:

- (1) a predominance of hydric soils;
- (2) inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition; and
- (3) under normal circumstances, support a prevalence of such vegetation.”

Hawaii Administrative Code 11-54-1

“As used in this chapter:

“Coastal wetlands” means natural or man-made ponds and marshes having variable salinity, basin limits, and permanence. These wetlands usually adjoin the coastline and may be subject to tidal, seasonal, or perennial flooding. Coastal wetlands are generally maintained by surface and subterranean sources of fresh and salt water. Many natural coastal wetlands have been modified significantly by man and are characterized by introduced aquatic life. Coastal wetlands include, but are not limited to, salt marshes, open ponds, mudflats, man-made or natural waterbird refuges, isolated seasonal lakes and mangrove flats.

"Elevated wetlands" means natural freshwater wetlands located above 100 m (330 ft) elevation. They are generally found in undisturbed areas, mainly in remote uplands and forest reserves with high rainfall. Elevated wetlands include upland bogs, marshes, swamps, and associated ponds and pools.

"Low wetlands" means freshwater wetlands located below 100 m (330 ft) elevation that may be natural or artificial in origin and are usually found near coasts or in valley termini. Low wetlands are maintained by either stream, well, or ditch influent water, or by exposure of the natural water table. Low wetlands include, but are not limited to, natural lowland marshes, riparian wetlands, littoral zones of standing waters (including lakes, reservoirs, ponds and fishponds) and agricultural wetlands such as taro lo'i.

"State waters", as defined by section 342D-1, HRS, means all waters, fresh, brackish, or salt around and within the State, including, but not limited to, coastal waters, streams, rivers, drainage ditches, ponds, reservoirs, canals, ground waters, and lakes; provided that drainage ditches, ponds, and reservoirs required as part of a water pollution control system are excluded. This chapter applies to all state waters, including wetlands, subject to the following exceptions: (1) this chapter does not apply to groundwater; (2) this chapter does not apply to ditches, flumes, ponds and reservoirs that are required as part of a water pollution control system; and (3) this chapter does not apply to ditches, flumes, ponds, and reservoirs that are used solely for irrigation and do not overflow into any other state waters, unless such ditches, flumes, ponds, and reservoirs are waters of the United States as defined at 40 C.F.R. 122.2. The State of Hawai'i has those boundaries stated in Hawai's Constitution, art. XV, § 1.

"Wetlands" means land that is transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water. A wetland shall have one or more of the following attributes: 1) at least periodically the land supports predominantly hydrophytic vegetation; 2) the substratum is predominantly undrained hydric soil; or 3) the substratum is nonsoil (gravel or rocks) and is at least periodically saturated with water or covered by shallow water. Wetlands may be fresh, brackish, or saline and generally include swamps, marshes, bogs, and associated ponds and pools, mud flats, isolated seasonal ponds, littoral zones of standing water bodies, and alluvial floodplains. For the purpose of applying for water quality certifications under Clean Water Act Section 401, and for National Pollutant Discharge Elimination System (NPDES) permit purposes, the identification and delineation of wetland boundaries shall be done following the procedures described in the U.S. of Engineers' Wetlands Delineation Manual (USACE 1987)."

Wyoming Administrative Code, ENV-WAT-1 § 2. Definitions.

“(xiii) "Wetlands" means those areas in Wyoming having all three (3) essential characteristics:

- (A) Hydrophytic vegetation;
- (B) Hydric soils; and
- (C) Wetland hydrology.”

ANTIDegradation POLICY

States with water quality standards for wetlands have all adopted overall antidegradation policies with varying levels of specificity. Most of these policies apply broadly to surface waters and are not limited to wetlands. EPA guidelines for state water quality regulations and state examples include:

EPA National Guidance, Water Quality Standards for Wetlands.⁵³

“The antidegradation policies contained in all State standards provide a powerful tool for the protection of wetlands and can be used by States to regulate point and nonpoint source discharges to wetlands in the same way as other surface waters. In conjunction with beneficial uses and narrative criteria, antidegradation can be used to address impacts to wetlands that cannot be fully addressed by chemical criteria, such as physical and hydrologic modifications....”

“State antidegradation policies should provide for the protection of existing uses in wetlands and the level of water quality necessary to protect those uses in the same manner as for other surface waters; see Section 131.12(a)(1) of the WQS regulation. The existing use can be determined by demonstrating that the use or uses have actually occurred since November 28, 1975, or that the water quality is suitable to allow the use to be attained. This is the basis of EPA's antidegradation policy and is important in the wetland protection effort. States, especially those that adopt less detailed use classifications for wetlands, will need to use the existing use protection in their antidegradation policies to ensure protection of wetland values and functions.”

“In the case of wetland fills, EPA allows a slightly different interpretation of existing uses under the antidegradation policy. This interpretation has been addressed in the answer to question #13 in "Questions and Answers on: Antidegradation", (USEPA 1985a) and is presented below:

Since a literal interpretation of the antidegradation policy could result in preventing the issuance of any wetland fill permit under Section 404 of the Clean Water Act, and it is logical to assume that Congress intended some such permits to be granted within the framework of the Act, EPA interprets 40 CFR 131.12(a)(1) of the antidegradation policy to be satisfied with regard to fills in wetlands if the discharge did not result in "significant degradation" to the aquatic ecosystem as defined under Section 230.10(c) of the Section 404(b)(1) guidelines. If any wetlands were found to have better water quality than "fishable/ swimmable," the State would be allowed to lower water quality to the no significant degradation level as long as the requirements of Section 131.12(a)(2) were followed. As for the ONRW provision of antidegradation (131.12(a)(3)), there is no difference in the way it applies to wetlands and other waterbodies.”

The Section 404(b)(1) Guidelines state that the following effects contribute to significant degradation, either individually or collectively including “significant adverse effects on (1) human health or welfare, including effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites (e.g., wetlands); (2) on the life stages of aquatic life and other wildlife dependant on aquatic ecosystems, including the transfer, concentration or spread of pollutants or their byproducts beyond the site through biological, physical, or chemical process; (3) on ecosystem diversity, productivity and stability, including loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water or reduce wave energy; or (4) on recreational, aesthetic, and economic values.”

⁵³<http://www.epa.gov/owow/wetlands/regs/quality.html>

“These Guidelines may be used by States to determine "significant degradation" for wetland fills. Of course, the States are free to adopt stricter requirements for wetland fills in their own antidegradation policies, just as they may adopt any other requirements more stringent than Federal law requires.”

Ohio Admin. Code. 3745-1-54 Wetland Antidegradation.

“(1) The wetland designated use shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions in accordance with paragraphs (D) and (E) of this rule.”

Antidegradation Implementation Methods for the Commonwealth of Puerto Rico. (2) Title 40 CFR 131.42 Activities Regulated by CWA Section 404 or Rivers and Harbors Action Section 10 Permits (Discharge of Dredged or Fill Material)

“(i) EQB will only allow the discharge of dredged or fill material into a wetland if it can be demonstrated that such discharge will not have an unacceptable adverse impact either individually or in combination with other activities affecting the wetland of concern. The impacts to the water quality or the aquatic or other life in the wetland due to the discharge of dredged or fill material should be avoided, minimized and mitigated.

(ii) The discharge of dredged or fill material shall not be certified if there is a practicable alternative to the proposed discharge which would have less adverse impact on the recipient ecosystem, so long as the alternative does not have other more significant adverse environmental consequences. Activities which are not water dependent are presumed to have practicable alternatives, unless the applicant clearly demonstrates otherwise. No discharge of dredged and fill material shall be certified unless appropriate and practicable steps have been taken which minimize potential adverse impacts of the discharge on the recipient ecosystem. The discharge of dredged or fill material to ONRWs, however, shall be governed by paragraph (d)(1)(iii) of this section.”

Minnesota Administrative Rules 1a. Definitions.7050.0186 Wetland Standards and Mitigation.

“Subpart 1. Policy and wetland beneficial uses. It is the policy of the state to protect wetlands and prevent significant adverse impacts on wetland beneficial uses caused by chemical, physical, biological, or radiological changes. The quality of wetlands shall be maintained to permit the propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, preserve wildlife habitat, and support biological diversity of the landscape. In addition, these waters shall be suitable for boating and other forms of aquatic recreation as specified in part 7050.0222, subpart 6; general industrial use as specified in part 7050.0223, subpart 5; irrigation, use by wildlife and livestock, erosion control, groundwater recharge, low flow augmentation, stormwater retention, and stream sedimentation as specified in part 7050.0224, subpart 4; and aesthetic enjoyment as specified in part 7050.0225, subpart 2.”

Wis. Admin. Code NR 103.03 (1).

“[T]o protect, preserve, restore and enhance the quality of waters in wetlands and other waters of the state influenced by wetlands, the following water quality related functional values or uses, within the natural range of natural variation of the affected, shall be protected...”

Wyoming Administrative Code. ENV-WAT-1 § 12. Protection of Wetlands.

“Point or nonpoint sources of pollution shall not cause the destruction, damage, or impairment of naturally occurring wetlands except when mitigated through an authorized wetlands mitigation process. When approving mitigation, the department may consider both the ecological functions and the wetland value of the disturbed wetland.

This section does not apply to wetlands created by point or nonpoint sources; nor are such wetlands required to be maintained through continuation of such discharges. Similarly, any man-made wetlands or enhancements which have been credited in the state wetland banking program are not required to be maintained until the credit is used for mitigation purposes. These areas will, however, be protected from discharges of wastes, toxic substances or chemical pollutants as are any other waters of the state.”

Minnesota Administrative Code: 7050.0186 Wetland Standards and Mitigation.

“Subpart 1. “Policy and wetland beneficial uses.

It is the policy of the state to protect wetlands and prevent significant adverse impacts on wetland beneficial uses caused by chemical, physical, biological, or radiological changes.”

:Subp. 1b. Wetland pollution prohibited.

“Wetland conditions shall be protected from chemical, physical, biological, or radiological changes to prevent significant adverse impacts to the designated beneficial uses listed in subpart 1. The nondegradation provisions in this chapter are applicable to wetlands.”

North Carolina Code 15A NCAC 02B .0201 Antidegradation Policy

“(a) It is the policy of the Environmental Management Commission to maintain, protect, and enhance water quality within the State of North Carolina. Pursuant to this policy, the requirements of 40 CFR 131.12 are hereby incorporated by reference including any subsequent amendments and editions....

(b) Existing uses, as defined by Rule .0202 of this Section, and the water quality to protect such uses shall be protected by properly classifying surface waters and having standards sufficient to protect these uses. In cases where the Commission or its designee determines that an existing use is not included in the classification of waters, a project

which shall affect these waters shall not be permitted unless the existing uses are protected.

c) The Commission shall consider the present and anticipated usage of waters with quality higher than the standards, including any uses not specified by the assigned classification (such as outstanding national resource waters or waters of exceptional water quality) and shall not allow degradation of the quality of waters with quality higher than the standards below the water quality necessary to maintain existing and anticipated uses of those waters. Waters with quality higher than the standards are defined by Rule .0202 of this Section. The following procedures shall be implemented in order to meet these requirements.”

Washington State, Department of Ecology, Water Quality Guidelines for Wetlands, Using the Surface Water Quality Standards for Activities Involving Wetlands Publication #96-06, April, 1996

These guidelines cite the antidegradation policy contained in Washington Administrative Code 173-201A-070:

“(1) existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses shall be allowed.

(2) Whenever the natural conditions of said waters are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria.

(3) Water quality shall be maintained and protected in waters designated as outstanding resource waters in WAC 173-201A-080.

(4) Whenever waters are of a higher quality than the criteria assigned for said waters, the existing water quality shall be protected and waste and other materials and substances which will reduce the existing quality shall not be allowed to enter such waters, except those instances where:

(a) It is clear, after satisfactory public participation and intergovernmental coordination, that overriding considerations of public interest will be served;

(b) All wastes and other materials and substances discharged into said waters shall be provided with all known, available, and reasonable methods of prevention, control, and treatment by new and existing point sources before discharge. All wastes and other materials and substances discharged into said waters from nonpoint sources shall be provided with all known, available, and reasonable best management practices; and

(c) When the lowering of water quality in high quality waters is authorized, the lower water quality shall still be of high enough quality to fully support all existing beneficial uses.

(5) Short-term modification of water quality may be permitted as conditioned by WAC 173-201A-110.”

PROTECTION OF HIGH QUALITY WETLANDS

EPA National Guidance, Water Quality Standards for Wetlands.

“State antidegradation policies should provide for water quality in "high quality wetlands" to be maintained and protected, as prescribed in Section 131.12(a)(2) of the

WQS regulation. State implementation method requiring alternatives analyses, social and economic justifications, point and nonpoint source control and public participation are to be applied to wetlands in the same manner as other surface waters.”

EPA National Guidance, Water Quality Standards for Wetlands. EPA Suggested Protection of Outstanding Wetlands.

“Outstanding National Resource Waters (ONRW) designation offer special protection (i.e., no degradation) for designated waters, including wetlands. These are areas of exceptional water quality or recreational/ecological significance. State antidegradation policies should provide special protection to wetlands designated as outstanding national resource waters in the same manner as other surface waters; see Section 131.12(a)(3) of the WQS regulation and EPA guidance (Water Quality Standards Handbook (USEPA 1983b), and Questions and Answers on: Antidegradation (USEPA 1985a)). Activities that might trigger a State analysis of a wetland for possible designation as an ONRW are no different for wetlands than for other waters.

The following list provides general information on wetlands which are likely candidates for protection as ONRWs. It also may be used to identify specific wetlands for use designation under the State's wetland classification system; see Section 4.0. Some of these information sources are discussed in greater detail in EPA's guidance entitled Wetlands and Section 401 Certification: Opportunities and Guidelines for States and Eligible Indian Tribes (USEPA 1989f); see Section 6.1.

- Parks, wildlife management areas, refuges, wild and scenic rivers, and estuarine sanctuaries;
- Wetlands adjacent to ONRWs or other high quality waters (e.g., lakes, estuaries shellfish beds, etc.);
- Priority wetlands identified under the Emergency Wetlands Resources Act of 1986 through Statewide Outdoor Recreation Plans (SORP) and Wetland Priority Conservation Plans;
- Sites within joint venture project areas under the North American Waterfowl Management Plan;
- Sites under the Ramsar (Iran) Treaty on Wetlands of International Importance;
- Biosphere reserve sites identified as part of the "Man and the Biosphere" Program sponsored by the United Nations;
- Natural heritage areas and other similar designations established by the State or private organizations (e.g., Nature Conservancy);
- Priority wetlands identified as part of comprehensive planning efforts conducted at the local, State, Regional or Federal levels of government; e.g., Advance Identification (ADID) program under Section 404 and Special Area Management Plans (SAMPs) under the 1980 Coastal Zone Management Act.

The Wetland Evaluation Technique; Volume II: Methodology (Adamus et al. 1987) provides additional guidance on the identification of wetlands with high ecological and social value; see Section 3.2.”

North Carolina Administrative Code 15A NCAC 02B .0201 Antidegradation Policy

“(d) The Commission shall consider the present and anticipated usage of High Quality Waters (HQW), including any uses not specified by the assigned classification (such as outstanding national resource waters or waters of exceptional water quality) and shall not allow degradation of the quality of High Quality Waters below the water quality necessary to maintain existing and anticipated uses of those waters. High Quality Waters are a subset of waters with quality higher than the standards and are as described by 15A NCAC 2B .0101(e)(5). The procedures described in Rule .0224 of this Section shall be implemented in order to meet the requirements of this part.

(e) Outstanding Resource Waters (ORW) are a special subset of High Quality Waters with unique and special characteristics as described in Rule .0225 of this Section. The water quality of waters classified as ORW shall be maintained such that existing uses, including the outstanding resource values of said Outstanding Resource Waters, shall be maintained and protected.”

Wisconsin Administrative Code, NR 103.04 Wetlands in Areas of Special Natural Resource Interest.

“Wetlands in areas of special natural resource interest includes those wetlands both within the boundary of designated areas of special natural resource interest and those wetlands which are in proximity to or have a direct hydrologic connection to such designated areas. For purposes of this chapter, the following are designated as areas of special natural resource interest:

(1) Cold water communities as defined in s. NR 102.04(3)(a), including all trout streams and their tributaries and trout lakes;

(2) Lakes Michigan and Superior and the Mississippi River;

(3) State and federal designated wild and scenic rivers, designated state riverways and state designated scenic urban waterways, s. 30.26, Stats., ch. NR 302, 16 USC 1271 to 1287, ss. 30.40 to 30.49, Stats., and s. 30.275, Stats.;

(4) Unique and significant wetlands identified in special area management plans (SAMP), special wetland inventory studies (SWIS), advanced delineation and identification studies (ADID) and areas designated by the United States environmental protection agency under section 404(c), 33 USC 1344(c);

(5) Calcareous fens;

(6) Habitat used by state or federally designated threatened or endangered species, s. 29.604, Stats., ch. NR 27 and 16 USC 1531 to 1543;

- (7) State parks, forests, trails and recreation areas;
- (8) State and federal fish and wildlife refuges and fish and wildlife management areas;
- (9) State and federal designated wilderness areas (16 USC 1131 to 1135 and s. NR 1.415);
- (10) Designated or dedicated state natural areas established under ss. 23.27 to 23.29, Stats.;
- (11) Wild rice waters; and
- (12) Any other surface waters identified as outstanding or exceptional resource waters in ch. NR 102.”

Maine Code of Rules, Chapter 310: Wetlands and Waterbodies Protection

“4. Wetlands of Special Significance. All coastal wetlands and great ponds are considered wetlands of special significance. In addition, certain freshwater wetlands are considered wetlands of special significance.

A. Freshwater Wetlands of Special Significance. A freshwater wetland of special significance has one or more of the following characteristics.

- (1) Critically imperiled or imperiled community. The freshwater wetland contains a natural community that is critically imperiled (S1) or imperiled (S2) as defined by the Natural Areas Program.
- (2) Significant wildlife habitat. The freshwater wetland contains significant wildlife habitat as defined by 38 M.R.S.A. § 480-B(10).
- (3) Location near coastal wetland. The freshwater wetland area is located within 250 feet of a coastal wetland.
- (4) Location near GPA great pond. The freshwater wetland area is located within 250 feet of the normal high water line, and within the same watershed, of any lake or pond classified as GPA under 38 M.R.S.A. § 465-A.
- (5) Aquatic vegetation, emergent marsh vegetation or open water. The freshwater wetland contains under normal circumstances at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, unless the 20,000 or more square foot area is the result of an artificial ponds or impoundment.
- (6) Wetlands subject to flooding. The freshwater wetland area is inundated with floodwater during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Management Agency or other site-specific information.

(7) Peatlands. The freshwater wetland is or contains peatlands, except that the department may determine that a previously mined peatland, or portion thereof, is not a wetland of special significance.

(8) River, stream or brook. The freshwater wetland area is located within 25 feet of a river, stream or brook.

B. Permit Process. Alterations of wetlands of special significance usually require an individual permit. However, some alterations of freshwater wetlands of special significance may be eligible for Tier 1 or 2 review if the department determines, at the applicant's request, that the activity will not negatively affect the freshwater wetlands or other protected natural resources present. In making this determination, the department considers such factors as the size of the alteration, functions of the impacted area, existing development or character of the area in and around the alteration site, elevation differences and hydrological connection to surface water or other protected natural resources, among other things.”

Florida Administrative Code. 62-611.110 Applicability.

“(1) Requirements in this rule shall apply only to domestic wastewater facilities.

(2) The use of wetlands as treatment wetlands shall not be permitted where the:

(a) Wetlands are within Outstanding Florida Waters as listed in Section 62-302.700, F.A.C.;

(b) Wetlands are within Class I or Class II waters (Section 62-302.400, F.A.C.);

(c) Wetlands are within areas designated as areas of critical state concern as of October 1, 1985;

(d) Wetland is a herbaceous wetland, unless the herbaceous groundcover of the entire wetland is composed of greater than 50% *Typha* spp.(cattail). This prohibition shall not apply in hydrologically altered wetlands.

(3) The use of wetlands as receiving wetlands shall not be permitted where the:

(a) Wetlands are within Class I or II waters;

(b) Wetland is an herbaceous wetland, unless the herbaceous groundcover of the entire wetland is composed of greater than 50% *Typha* spp. (cattail). This prohibition shall not apply in hydrologically altered wetlands.”

Florida Administrative Code, 62-312.080 Standards for Issuance or Denial of a Dredge and Fill Permit.

“(1) In accordance with Section 403.918(1), F.S. (Supp. 1992), no permit shall be issued unless the applicant has provided the Department with reasonable assurance based on

plans, test results or other information that the proposed dredging or filling will not violate water quality standards.

(2) No permit shall be issued unless the applicant provides the Department with reasonable assurance based on plans, test results or other information that the project is not contrary to the public interest in accordance with Section 403.918(2), F.S. (Supp. 1992).

(3) No permit shall be issued for dredging or filling which significantly degrades or is within an outstanding Florida Water unless the applicant complies with Section 403.918(2), F.S. (Supp. 1992), and Rule 62-4.242, F.A.C.

(4) A permit may contain specific conditions reasonably necessary to assure compliance with Section 403.918, F.S. (Supp. 1992).”

BENEFICIAL (DESIGNATED) USES

EPA makes overall recommendations for beneficial uses. States typically provide similar general descriptions for beneficial (designated) uses in their wetland water quality standards.

EPA National Guidance, Water Quality Standards for Wetlands

“3.0 USE CLASSIFICATION

At a minimum, EPA expects States by the end of FY 1993 to designate uses for all wetlands, and to meet the same minimum requirements of the WQS regulation (40 CFR 131.10) that are applied to other waters. Uses for wetlands must meet the goals of Section 101(a)(2) of the CWA by providing for the protection and propagation of fish, shellfish, and wildlife and for recreation in and on the water, unless the results of a use attainability analysis (UAA) show that the CWA Section 101(a)(2) goals cannot be achieved. The Water Quality Standards Regulation (40 CFR 131.10(c)) allows for the designation of sub-categories of a use, an activity that may be appropriate for wetlands. Pursuant to the WQS Regulation (40 CFR 131.10(i)), States must designate any uses that are presently being attained in the wetland. A technical support document is currently being developed by the Office of Water Regulations and Standards for conducting use attainability analyses for wetlands.

The propagation of aquatic life and wildlife is an attainable use in virtually all wetlands. Aquatic life protection need not refer only to year-round fish and aquatic life. Wetlands often provide valuable seasonal habitat for fish and other aquatic life, amphibians, and migratory bird reproduction and migration. States should ensure that aquatic life and wildlife uses are designated for wetlands even if a limited habitat is available or the use is attained only seasonally.

Recreation in and on the water, on the other hand, may not be attainable in certain wetlands that do not have sufficient water, at least seasonally. However, States are also encouraged to recognize and protect recreational uses that do not directly involve contact with water; e.g., hiking, camping, bird watching, etc.

The WQS regulation requires a UAA wherever a State designates a use that does not include the uses specified in Section 101(a)(2) of the CWA; see 40 CFR Part 131.10(j). This need not be an onerous task for States when deciding whether certain recreational uses are attainable. States may conduct generic UAAs for entire classes or types of wetlands based on the demonstrations in 40 CFR Part 131.10(g)(2). States must, however, designate CWA goal uses wherever these are attainable even where attainment may be seasonal.

When designating uses for wetlands, States may choose to use their existing general and water specific classification systems or they may set up an entirely different system for wetlands. Each of these approaches has advantages and disadvantages, as discussed below.”

Wisconsin Administrative Code, NR 103.01 Purpose.

“(1) The purpose of this chapter is to establish water quality standards for wetlands. Chapters NR 102, 104 and 105 and this subchapter provide water quality standards for waters of the state pursuant to s. 281.15(2)(b), Stats.

(2) Water quality standards are intended to protect public rights and interest, public health and welfare and the present and prospective uses of all waters of the state for public and private water supplies, propagation of fish and other aquatic life and wild and domestic animals, preservation of natural flora and fauna, domestic and recreational uses, and agricultural, commercial, industrial and other uses. In all cases where the potential uses are in conflict, these water quality standards for wetlands shall be administered to protect the general public interest.

(3) This subchapter sets forth the conditions necessary to protect water quality related functions and values of wetlands including sediment and pollutant attenuation, storm and flood water retention, hydrologic cycle maintenance, shoreline protection against erosion, biological diversity and production and human uses such as recreation.”

Minnesota Administrative Rules 1a. Definitions.7050.0186 Wetland Standards and Mitigation.

“Subpart 1. Policy and wetland beneficial uses. It is the policy of the state to protect wetlands and prevent significant adverse impacts on wetland beneficial uses caused by chemical, physical, biological, or radiological changes. The quality of wetlands shall be maintained to permit the propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, preserve wildlife habitat, and support biological diversity of the landscape. In addition, these waters shall be suitable for boating and other forms of aquatic recreation as specified in part 7050.0222, subpart 6; general industrial use as specified in part 7050.0223, subpart 5; irrigation, use by wildlife and livestock, erosion control, groundwater recharge, low flow augmentation, stormwater retention, and stream sedimentation as specified in part 7050.0224, subpart 4; and aesthetic enjoyment as specified in part 7050.0225, subpart 2.

Washington State, Department of Ecology, Water Quality Guidelines for Wetlands, Using the Surface Water Quality Standards for Activities Involving Wetlands Publication #96-06, April, 1996

Washington guidelines cite and discuss several sets of beneficial uses:

- “(i) Water supply.
- (ii) Fish and shellfish: Salmonid migration, rearing, spawning, and harvesting.
Other fish migration, rearing, spawning, and harvesting.
Clam, oyster, and mussel rearing, spawning, and harvesting.
Crustaceans and other shellfish (crabs, shrimps, crayfish, scallops, etc.) rearing, spawning, and harvesting.
- (iii) Wildlife habitat.
- (iv) Recreation (primary contract recreation, sport fishing, boating, and aesthetic enjoyment).
- (v) Commerce and navigation.
- (vi) Aesthetics.”

The guidance further provides that:

“The characteristic uses listed in the water quality standards for Class AA and Class A waters apply to wetlands because wetlands are generally classified waters...However, the protective umbrella of water quality standards is not limited to only those uses listed; the antidegradation policy extends to all existing beneficial uses, whether or not they are listed.”

“Water quality protection for wetlands, or any waterbody, is not limited to these uses. The Water Pollution Control Act extends protection to all beneficial uses of a waterbody (RCW 90.48.020), and the antidegradation policy (WAC 173-201A-070) prohibits any degradation of existing beneficial uses of waters of the state.”

Beneficial uses discussed in greater depth in the Washington State guidelines include the following. See the guidelines for more detailed discussion.

“Water Supply (domestic, industrial, agricultural)
Stock Watering
Fish and Shellfish
Wildlife Habitat
Recreation
Commerce and Navigation
Groundwater Exchange
Stormwater Attenuation
Shoreline Stabilization”

Another part of the guidance lists the following beneficial uses:

- “1. Storm/flood water storage and retention and moderation of water level fluctuation extremes,
2. Hydrologic functions,

3. Filtration and storage of pollutants,
4. Shoreline protection,
5. Habitat for aquatic organisms.”

Nebraska Administrative Code, 117 NAC 7-002.

117 NAC 7-004 Beneficial Uses

“Beneficial uses are assigned to wetlands within or bordering upon the State of Nebraska. Assigned beneficial uses are protected by the narrative and numerical water quality criteria listed or referenced in this chapter. Additionally, assigned and existing beneficial uses are protected by the Antidegradation Clause in Chapter 3. Some uses require higher quality water than others. When multiple uses are assigned to the same wetland, all assigned uses will be protected.

Beneficial uses assigned to all wetlands are:

Aquatic Life
Wildlife
Agricultural Water Supply
Aesthetics

These uses are not intended in any way to conflict with the quantitative beneficial uses provided for in Neb. Rev. Stat., Ch 46, regulating irrigation or the authority of the Nebraska Department of Natural Resources.

117 NAC 7-004.01 Aquatic Life

Wetlands assigned this beneficial use provide, or could provide, habitat capable of supporting aquatic biota on a regular or periodic basis. Aquatic biota are life forms which require water to fulfill basic life functions such as reproduction, growth, and development. Examples of aquatic biota include, but are not limited to, fish, macroinvertebrates, amphibians, and hydrophytic vegetation.”

Standards for other wetland beneficial uses are set forth in NAC.

WETLAND CLASSIFICATIONS

EPA suggests that state classify their wetlands for the purpose of water quality standards. A number of states have done so.

EPA National Guidance, Water Quality Standards for Wetlands, 3.1 Wetland Types

“A detailed understanding of the various wetland types within the State provides the basis for a comprehensive classification system. The classification system most often cited and used by Federal and State wetland permit programs was developed by Cowardin et al. (1979) for the U.S. Fish and Wildlife Service (FWS); see Figure 1. This system provides the basis for wetland related activities within the FWS. The Cowardin system is hierarchical and thus can provide several levels of detail in classifying wetlands. The

"System" and "Subsystem" levels of detail appear to be the most promising for water quality standards. The "Class" level may be useful for designating uses for specific wetlands or wetland types. Section 3.3 gives an example of how one State uses the Cowardin system to generate designated uses for wetlands."

Nebraska Administrative Code 117 NAC 7-003, Wetland Classifications

"Wetlands are classified into two categories based on hydrological characteristics which affect the attainable beneficial uses. For purposes of these standards, the two general classifications are surface-water overflow wetlands and isolated wetlands. Within each classification, specific wetland complexes and individual wetlands may be identified by their physical, chemical, and biological characteristics and functional values. Wetlands are defined in Chapter 1. Wetlands are identified and delineated using methods contained in the "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterway Experiment Station, Vicksburg, MS."

Wetlands are placed in two categories: "surface water overflow" and "isolated wetlands".

"117 NAC 7-003.01 Surface-Water Overflow Wetlands.

These are wetlands which exhibit a surface water connection to an adjacent stream or lake on a regular or periodic basis. These wetlands have the potential to provide beneficial uses identical to those of the adjacent stream or lake in addition to the beneficial uses recognized for wetlands (paragraph 004). These wetlands shall be protected for the beneficial uses of the adjacent stream or lake as assigned in Chapters 5 or 6 in addition to those identified for wetlands. Water quality criteria associated with assigned beneficial uses of adjacent waterbodies (Chapter 4) shall apply to surface-water overflow wetlands in addition to criteria associated with wetland beneficial uses. When numerical criteria associated with wetland aquatic life beneficial uses differ with aquatic life criteria associated with the adjacent stream or lake, the more stringent criteria shall apply.

117 NAC 7-003.02 Isolated Wetlands.

These are wetlands which have no regular or periodic surface water connection to an adjacent stream or lake. The source of water for these wetlands may be either ground water or surface runoff. These wetlands shall be protected for the beneficial uses recognized for wetlands (paragraph 004). Water quality criteria associated with wetland beneficial uses shall apply to isolated wetlands."

Ohio Administrative Code, 3745-1-54 Wetland Categories

"(1) The wetland designated use shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions in accordance with paragraphs (D) and (E) of this rule.

(2) (a) Each wetland shall be assigned a category by Ohio EPA for the purposes of reviews of projects pursuant to this rule.

(i) A category will be assigned based on the wetland's relative functions and values, sensitivity to disturbance, rarity, and potential to be adequately compensated for by wetland mitigation.

(ii) In assigning a wetland category, the director will consider the results of an appropriate wetland evaluation method(s) acceptable to the director, and other information necessary in order to fully assess the wetland's functions and values.

(iii) Wetland antidegradation categories, and the requirements for an antidegradation review for wetlands in each category, are outlined in paragraphs (C), (D) and (E) of this rule.

b) The functions of a wetland may include, but are not limited to, the following:

- (i) Ground water exchange, including the discharge and recharge of ground water;
- (ii) Nutrient removal and/or transformation;
- (iii) Sediment and/or contaminant retention;
- (iv) Water storage;
- (v) Sediment stabilization;
- (vi) Shoreline stabilization;
- (vii) Maintenance of biodiversity, as that term is defined in rule 3745-1-50 of the Administrative Code;
- (viii) Recreation;
- (ix) Education and research; and
- (x) Habitat for threatened or endangered species.

(3) The director may consider the regional significance of the function(s) a wetland performs (e.g., wetlands recognized as providing important hydrological functions in watershed management plans) when determining whether degradation of the wetland can be authorized.

(1) Wetlands assigned to category 1.

(a) Wetlands assigned to category 1 support minimal wildlife habitat, and minimal hydrological and recreational functions as determined by an appropriate wetland evaluation methodology acceptable to the director. Wetlands assigned to category 1 do not provide critical habitat for threatened or endangered species or contain rare, threatened or endangered species.

(b) Wetlands assigned to category 1 may be typified by some or all of the following characteristics: hydrologic isolation, low species diversity, a predominance of non-native species (greater than fifty per cent areal cover for vegetative species), no significant habitat or wildlife use, and limited potential to achieve beneficial wetland functions.

(c) Wetlands assigned to category 1 may include, but are not limited to, wetlands that are acidic ponds created or excavated on mined lands without a connection to other surface waters throughout the year and that have little or no vegetation and wetlands that are hydrologically isolated and comprised of vegetation that is dominated (greater than

eighty per cent areal cover) by species including, but not limited to: *Lythrum salicaria*; *Phalaris arundinacea*; and *Phragmites australis*.

(2) Wetlands assigned to category 2.

(a) Wetlands assigned to category 2 support moderate wildlife habitat, or hydrological or recreational functions as determined by an appropriate wetland evaluation methodology acceptable to the director or his authorized representative.

(b) Wetlands assigned to category 2 may include, but are not limited to: wetlands dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions.

(3) Wetlands assigned to category 3.

(a) Wetlands assigned to category 3 support superior habitat, or hydrological or recreational functions as determined by an appropriate wetland evaluation methodology acceptable to the director or his authorized representative.

(b) Wetlands assigned to category 3 may be typified by some or all of the following characteristics: high levels of diversity, a high proportion of native species, or high functional values.

(c) Wetlands assigned to category 3 may include, but are not limited to: wetlands which contain or provide habitat for threatened or endangered species; high quality forested wetlands, including old growth forested wetlands, and mature forested riparian wetlands; vernal pools; and wetlands which are scarce regionally and/or statewide including, but not limited to, bogs and fens.

(4) In addition to assigning a wetland a category pursuant to this rule, the director may designate a wetland which has national ecological or recreational significance as an outstanding national resource water pursuant to rule 3745-1-05 of the Administrative Code. Requests to undertake activities which will result in short-term disturbances to water quality in wetlands which are designated as outstanding national resource waters shall be evaluated in accordance with rule 3745-1-05 of the Administrative Code.”

Wyoming Administrative Regulations, Chapter 1. Appendix A — Wyoming Surface Water Classifications.

Wetlands adjacent to other waters are given the classification of the other waters. See, for example (examples could be provided for other classes as well):

“All surface waters in Wyoming are classified as follows:

(a) Class 1 Waters. The following waters are designated Class 1:

(i) All surface waters located within the boundaries of national parks and congressionally designated wilderness areas as of January 1, 1999;

(xvii) *Wetlands adjacent to the above listed Class 1 waters.* (Emphasis added)”

NARRATIVE AND NUMERIC CRITERIA TO SUPPORT VARIOUS BENEFICIAL USES

Examples of Narrative Criteria

EPA National Guidance, Water Quality Standards for Wetlands EPA Suggested General Narrative Criteria

“Narrative criteria are general statements designed to protect a specific designated use or set of uses. They can be statements prohibiting certain actions or conditions (e.g., "free from substances that produce undesirable or nuisance aquatic life") or positive statements about what is expected to occur in the water (e.g., "water quality and aquatic life shall be as it naturally occurs").

Examples of General Narrative Criteria cited by EPA include:

“All waters [shall be] free from substances attributable to wastewater or other discharge that:

- (1) settle to form objectionable deposits;
- (2) float as debris, scum, oil, or other matter to form nuisances;
- (3) produce objectionable color, odor, taste, or turbidity;
- (4) injure or are toxic or produce adverse physiological responses in humans, animals or plants; and
- (5) produce undesirable or nuisance aquatic life.”

Washington State, Department of Ecology, Water Quality Guidelines for Wetlands, Using the Surface Water Quality Standards for Activities Involving Wetlands Publication #96-06, April, 1996.

This publication sets forth lengthy narrative standards applying to beneficial uses including antidegradation requirements, wetland mitigation needs, and sequencing requirements. Quite detailed antidegradation decision-making processes are also set forth.

Wisconsin Administrative Code. NR 103.03 Wetland Water Quality Standards.

“(1) To protect, preserve, restore and enhance the quality of waters in wetlands and other waters of the state influenced by wetlands, the following water quality related functional values or uses of wetlands, within the range of natural variation of the affected wetland, shall be protected:

- (a) Storm and flood water storage and retention and the moderation of water level fluctuation extremes;
- (b) Hydrologic functions including the maintenance of dry season streamflow, the discharge of groundwater to a wetland, the recharge of groundwater from a wetland to another area and the flow of groundwater through a wetland;
- (c) Filtration or storage of sediments, nutrients or toxic substances that would otherwise adversely impact the quality of other waters of the state;

(d) Shoreline protection against erosion through the dissipation of wave energy and water velocity and anchoring of sediments;

(e) Habitat for aquatic organisms in the food web including, but not limited to fish, crustaceans, mollusks, insects, annelids, planktonic organisms and the plants and animals upon which these aquatic organisms feed and depend upon for their needs in all life stages;

(f) Habitat for resident and transient wildlife species, including mammals, birds, reptiles and amphibians for breeding, resting, nesting, escape cover, travel corridors and food; and

(g) Recreational, cultural, educational, scientific and natural scenic beauty values and uses.

(2) The following criteria shall be used to assure the maintenance or enhancement of the functional values identified in sub. (1):

(a) Liquids, fill or other solids or gas may not be present in amounts, which may cause significant adverse impacts to wetlands;

(b) Floating or submerged debris, oil or other material may not be present in amounts which may interfere with public rights or interest or which may cause significant adverse impacts to wetlands;

(c) Materials producing color, odor, taste or unsightliness may not be present in amounts which may cause significant adverse impacts to wetlands;

(d) Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause significant adverse impacts to wetlands;

(e) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on:

1. Water currents, erosion or sedimentation patterns;
2. Water temperature variations;
3. The chemical, nutrient and dissolved oxygen regime of the wetland;
4. The movement of aquatic fauna;
5. The pH of the wetland; and
6. Water levels or elevations.

(f) Existing habitats and the populations of wetland animals and vegetation shall be maintained by:

1. Protecting food supplies for fish and wildlife,
2. Protecting reproductive and nursery areas, and

3. Preventing conditions conducive to the establishment or proliferation of nuisance organisms.”

Colorado Administrative Code 5 CCR 1002-31 Basic Standards and Methodologies for Surface Water Regulation

“(A) Tributary wetlands to which the interim classifications referenced in section 31.13(1)(e)(iv) apply, shall be subject to the following interim standard:

(1) Until such time as the Commission adopts site-specific standards for the tributary wetland, water quality in the wetland shall be maintained for each parameter at whichever of the following levels is less restrictive:

(a) ambient quality, or

(b) that quality which meets the numeric standards (except for numeric standards for pH, dissolved oxygen, and any standard established for the protection of a domestic water supply use) of the tributaries of the surface water segment to which the wetland is most directly hydrologically connected. Where the applicable numeric standard is based on section 31.16, table III, of this regulation, the numeric standard applicable to the wetland may be implemented taking into account the water effect ratio of the pollutant.

(2) Ambient quality shall be determined in accordance with section 31.7(1)(b)(ii) and shall take into account the location, sampling date, and quality of all available data. Ambient quality shall be determined as of the time the first regulatory action is undertaken which requires the identification of water quality standards for wetlands. If available information is not adequate to otherwise determine or estimate ambient quality, the interim standard set forth in section 31.7(1)(b)(iv)(A)(1)(b) shall apply.

(B) Wetlands for which the Commission has adopted a site-specific "wetlands" classification described in section 31.13(1)(e)(v), shall be subject to numeric standards and designations adopted by the Commission. The Commission shall adopt any numeric standards and designations determined to be appropriate in view of the functions and values to be protected for the wetlands in question.

(C) Created wetlands, shall be subject only to the narrative standards set forth in section 31.11, unless the Commission has adopted the wetlands classification and appropriate numeric standards. All created wetlands will have a use-protected designation unless determined otherwise as a result of a site-specific hearing.

(D) Compensatory wetlands shall be subject to the standards of the segment in which they are located, unless the Commission adopts a wetlands classification and appropriate numeric standards.

(E) All other wetlands which are state waters shall be subject only to the narrative standards set forth in section 31.11, unless the Commission has adopted the wetlands classification and appropriate numeric standards.

(F) The issuance and use of site-specific or individual permits under section 404 of the Clean Water Act, is not precluded by the provisions of sections 31.7, 31.11 or 31.13, except as provided in the 401 certification process under section **25-8-302**, C.R.S.

(G) Wetlands water quality standards and classifications shall not be interpreted or applied in a manner that is inconsistent with sections **25-8-102(5)** and **25-8-104**, C.R.S.”

North Carolina Administrative Code. 15A NCAC 02B .0231 Wetland Standards.

“(a) General. The water quality standards for all wetlands are designed to protect, preserve, restore and enhance the quality and uses of wetlands and other waters of the state influenced by wetlands. The following are wetland uses:

- (1) Storm and flood water storage and retention and the moderation of extreme water level fluctuations;
- (2) Hydrologic functions including groundwater discharge that contributes to maintain dry weather streamflow and, at other locations or times, groundwater recharge that replenishes the groundwater system;
- (3) Filtration or storage of sediments, nutrients, toxic substances, or other pollutants that would otherwise adversely impact the quality of other waters of the state;
- (4) Shoreline protection against erosion through the dissipation of wave energy and water velocity and stabilization of sediments;
- (5) Habitat for the propagation of resident wetland-dependent aquatic organisms including, but not limited to fish, crustaceans, mollusks, insects, annelids, planktonic organisms and the plants and animals upon which these aquatic organisms feed and depend upon for their needs in all life stages; and
- (6) Habitat for the propagation of resident wetland-dependent wildlife species, including mammals, birds, reptiles and amphibians for breeding, nesting, cover, travel corridors and food.

(b) The following standards shall be used to assure the maintenance or enhancement of the existing uses of wetlands identified in Paragraph (a) of this Rule:

- (1) Liquids, fill or other solids or dissolved gases may not be present in amounts which may cause adverse impacts on existing wetland uses;
- (2) Floating or submerged debris, oil, deleterious substances, or other material may not be present in amounts which may cause adverse impacts on existing wetland uses;
- (3) Materials producing color, odor, taste or unsightliness may not be present in amounts which may cause adverse impacts on existing wetland uses;
- (4) Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause adverse impacts on existing wetland uses;
- (5) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent adverse impacts on:

- (A) Water currents, erosion or sedimentation patterns;
- (B) Natural water temperature variations;
- (C) The chemical, nutrient and dissolved oxygen regime of the wetland;
- (D) The movement of aquatic fauna;
- (E) The pH of the wetland; and
- (F) Water levels or elevations.

(6) The populations of wetland flora and fauna shall be maintained to protect biological integrity as defined at 15A NCAC 2B .0202.”

Ohio Administrative Code, 3745-1-54 Wetland Antidegradation.

“(1) The wetland designated use shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions in accordance with paragraphs (D) and (E) of this rule.

(2)(a) Each wetland shall be assigned a category by Ohio EPA for the purposes of reviews of projects pursuant to this rule.

(i) A category will be assigned based on the wetland’s relative functions and values, sensitivity to disturbance, rarity, and potential to be adequately compensated for by wetland mitigation.

(ii) In assigning a wetland category, the director will consider the results of an appropriate wetland evaluation method(s) acceptable to the director and other information necessary in order to fully assess the wetland’s functions and values.

(iii) Wetland antidegradation categories, and the requirements for an antidegradation review for wetlands in each category, are outlined in paragraphs (C), (D) and (E) of this rule.

(b) The functions of a wetland may include, but are not limited to, the following:

- (i) Ground water exchange, including the discharge and recharge of ground water;
- (ii) Nutrient removal and/or transformation;
- (iii) Sediment and/or contaminant retention;
- (iv) Water storage;
- (v) Sediment stabilization;
- (vi) Shoreline stabilization;
- (vii) Maintenance of biodiversity, as that term is defined in rule 3745-1-50 of the Administrative Code;
- (viii) Recreation;
- (ix) Education and research; and
- (x) Habitat for threatened or endangered species.

(3) The director may consider the regional significance of the function(s) a wetland performs (e.g., wetlands recognized as providing important hydrological functions in watershed management plans) when determining whether degradation of the wetland can be authorized.

(4) Threatened or endangered species.

(a) The applicant shall provide Ohio EPA with written comments from both the Ohio department of natural resources and the United States fish and wildlife service,

regarding threatened and endangered species, including the presence or absence of critical habitat, for all wetlands under review.

(b) In making determinations regarding the lowering of water quality in wetlands which contain critical habitat for threatened or endangered species, or either the permanent or seasonal presence of a threatened or endangered species, the director shall consider the anticipated impact of the proposed lowering of water quality on the threatened or endangered species.

(5) Indirect impacts. In making determinations regarding the lowering of water quality in a wetland, the director may take into consideration other environmental impacts that may be a consequence of approving the request.

(6) Wetlands impacted without prior authorization.

(a) Where a wetland has been degraded or destroyed without prior authorization, the wetland will be considered a category 3 wetland, unless the applicant demonstrates that a lower category is appropriate based on other information including, but not limited to, adjacent vegetation, aerial photographs, U.S. fish and wildlife service national wetland inventory maps, Ohio wetland inventory maps, public information, on-site inspections, previous site descriptions, and soil maps.

(b) The director may consider other information in determining whether a lower category is appropriate.

(c) When reviewing applications for discharges to wetlands which have occurred without prior authorization, the fact that the discharge has already occurred shall have no bearing on the decision of whether to allow lower water quality. Ohio EPA shall review the impacts based on pre-discharge conditions.

(d) The director may require compensatory mitigation, if approved in accordance with other provisions of this rule, at the same mitigation ratios as required for impacts to category 3 wetlands, as indicated in paragraph (F)(1) of this rule.

(e) Nothing in paragraph (B)(6) of this rule relieves any person from liability for degrading or destroying a wetland without prior authorization or in violation of any applicable laws.”

**Minnesota Administrative Code: 7050.0186 Wetland Standards and Mitigation.
Subp. 2.**

“Subp. 2 Wetland mitigation principles. The wetland mitigative sequence incorporates the principles in items A to C in descending order of priority. Wetland mitigation maintains nondegradation of wetland designated uses:

- A. avoid the impact altogether by not taking a certain action or parts of an action;
- B. minimize the impact by limiting the degree or magnitude of the action and its implementation, and by taking affirmative actions to rectify the impact and reduce or eliminate the impact over time; and

C. mitigate the unavoidable impact to the designated uses of a wetland by compensation. Compensatory mitigation shall be accomplished in the following descending order of priority of replacement:

- (1) restoration of a previously diminished wetland; and
- (2) creation of a wetland.

Subp. 3. Determination of wetland dependency.

A project is wetland dependent if wetland designated uses are essential to fulfill the basic purpose of the project. A wetland dependent project is exempt from subpart 4, but will follow the remainder of the mitigation sequence. Where the proposed project is not wetland dependent, the wetland mitigation sequence in subpart 2 must be followed.

Subp. 4. Impact avoidance. No person may cause or allow a physical alteration which has the potential for a significant adverse impact on one or more designated uses of a wetland, unless there is not a prudent and feasible alternative that would avoid impacts to the designated uses of the wetland.

A. Prudent and feasible alternatives that do not involve wetlands are presumed to be available unless clearly demonstrated otherwise by the permit or certification applicant.

B. If no prudent and feasible alternative is available for avoidance, potential significant adverse impacts to the designated uses of the wetland shall be minimized in compliance with subpart 5.

Subp. 5. Impact minimization.

A. The permit or certification applicant shall implement actions to minimize potential significant adverse impacts of the physical alteration.

B. In evaluating the applicant's actions to minimize impacts, the agency shall consider:

- (1) the spatial requirements of the project;
- (2) the location of existing structural or natural features that may dictate the placement or configuration of the project;
- (3) the purpose of the project and how the purpose relates to placement, configuration, or density;
- (4) the sensitivity of the site design to the natural features of the site, including topography, hydrology, and existing vegetation;
- (5) the designated uses and spatial distribution of the wetlands on the site;
- (6) individual and cumulative impacts; and
- (7) the applicable minimization activities identified in Code of Federal Regulations, title 40, part 230, subpart H, as amended.

C. If the potential for significant adverse impacts on designated uses remains after all actions to minimize the impacts have been incorporated into the proposed project, unavoidable impacts shall be compensated for in compliance with subpart 6.

Subp. 6. Impact compensation.

The permit or certification applicant shall provide compensatory mitigation for unavoidable impacts on the designated uses of the wetland in accordance with this subpart.

A. Compensatory mitigation must be sufficient to ensure replacement of the diminished or lost designated uses of the wetland that was physically altered.

B. Compensatory mitigation shall be accomplished in the following descending order of priority of replacement:

- (1) restoration of a previously diminished wetland; and
- (2) creation of a wetland.

C. If compensatory mitigation is accomplished by restoration or creation, the replacement wetland shall be of the same type and in the same watershed as the impacted wetland, to the extent prudent and feasible.

D. Compensatory mitigation shall be completed before or concurrent with the actual physical alteration of the wetland affected by the proposed project to the extent prudent and feasible.

Washington Administrative Code 173-201A-300 Antidegradation policy.

“Such a policy is to:

(e) Apply three levels of protection for surface waters of the state, as generally described below:

(i) Tier I is used to ensure existing and designated uses are maintained and protected and applies to all waters and all sources of pollution.

(ii) Tier II is used to ensure that waters of a higher quality than the criteria assigned in this Chapter are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities.

(iii) Tier III is used to prevent the degradation of waters formally listed in this Chapter as "outstanding resource waters," and applies to all sources of pollution.

(3) Habitat restoration. Both temporary harm and permanent loss of existing uses may be allowed by the department where determined necessary to secure greater ecological benefits through major habitat restoration projects designed to return the natural physical structure and associated uses to a water body where the structure has been altered through human action.”

Colorado Administrative Code 5 CCR 1002-31 Basic Standards and Methodologies for Surface Water.

“(e) Wetlands

(i) The provisions of this section do not apply to constructed wetlands.

(ii) Compensatory wetlands shall have, as a minimum, the classifications of the segment in which they are located.

(iii) Created wetlands shall be considered to be initially unclassified, and shall be subject only to the narrative standards set forth in section 31.11, unless and until the Commission adopts the “wetlands” classification described below and appropriate numeric standards for such wetlands.

(iv) Tributary wetlands shall be considered tributaries of the surface water segment to which they are most directly connected and shall be subject to interim classifications as follows: such wetlands shall be considered to have the same classifications, except for drinking water supply classifications, as the segment of which they are a part, unless the "wetlands" classification and appropriate site-specific standards have been adopted to protect the water quality dependent functions of the wetlands. Interim numeric standards for these wetlands are described in section 31.7(1)(b)(iv).

(v) The Commission may adopt a "wetlands" classification based on the functions of the wetlands in question. Wetland functions that may warrant site-specific protection include ground water recharge or discharge, flood flow alteration, sediment stabilization, sediment or other pollutant retention, nutrient removal or transformation, biological diversity or uniqueness, wildlife diversity or abundance, aquatic life diversity or abundance, and recreation. Because some wetland functions may be mutually exclusive (e.g., wildlife abundance, recreation), the functions to be protected or restored will be determined on a wetland-by-wetland basis, considering natural wetland characteristics and overall benefits to the watershed. The initial adoption of a site-specific wetlands classification and related standards to replace the interim classifications and standards described above shall not be considered a downgrading."

Wyoming Administrative Regulations, Chapter 23-- Minimum Standards for Subdivision Applications.

Wyoming has adopted a number of specific standards for wetlands. For example,

"ENV-WAT-23 § 7. Standards for Sewage Systems

(iii) Topographic slope, or grade, for sufficient area within each lot within the proposed subdivision will meet or exceed the applicable minimum standards established in Chapter 11, Part D of Water Quality Rules and Regulations, and will not result in a direct or indirect discharge of pollution at the surface, into a surface water body, or into a wetland.

(iv) A 1:24,000 scale U.S.G.S. topographic map illustrating and identifying watersheds located on, or draining into, under, or over the proposed subdivision, including all ephemeral, intermittent, and perennial streams, surface waters, wetlands, and watershed boundaries within one-quarter (1/4) mile of the proposed subdivision shall be included in the application."

Wyoming Administrative Regulations. Solid Waste Management Sanitary Landfill Regulations

"ENV-SWM-2 § 3. Location Standards.

(vii) Floodplains: Facilities shall not be located within the boundaries of a 100-year floodplain.

(viii) Wetlands: Facilities shall not be located in wetlands.”

Iowa Code Chapter 455B, division 111, part 1. Amendment to paragraph 61.2(2) “h”.

State water quality conditions provide a number of numeric and narrative criteria for wetlands and related areas including:

“(1) Side slopes of a newly constructed channel will be no steeper than 2:1 and planted to permanent, perennial, native vegetation if not armored.

....

(4) For discharges of dredged or fill material resulting in permanent loss of more than 1/10 acre of waters of the United States (including jurisdictional wetlands), a compensatory mitigation plan to offset those losses will be required. In addition, a preconstruction notice to the Corps of Engineers in accordance with general condition 27 will be required.

(5) For newly constructed channels through areas that are unvegetated, native grass filter strips, or a riparian buffer with native trees or shrubs a minimum of 35 feet wide from the top of bank must be planted along both sides of the new channel. A survival rate of 80 percent of desirable species shall be achieved within three years of establishment of the buffer strip.

(6) For single-family residences authorized under nationwide permit 29, the permanent loss of waters of the United States (including jurisdictional wetlands) must not exceed ¼ acre.

(7) For nationwide permit 46, the discharge of dredged or fill material into ditches that would sever the jurisdiction of an upstream water of the United States from a downstream water of the United States is not allowed.

(8) For projects that impact fens, bogs, seeps, or sedge meadows, an individual Section 401 Water Quality Certification will be required (Iowa Section 401 Water Quality Certification condition.”

Hawaii Administrative Rules § 11-54-5.2 Inland water criteria.

“pH requirements for elevated wetlands:

(c) Specific criteria for elevated wetlands: pH units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 4.5 nor higher than 7.0.”

North Carolina Administrative Code, 15A NCAC 2B .0231 Wetland Standards.

“(a) General. The water quality standards for all wetlands are designed to protect, preserve, restore and enhance the quality and uses of wetlands and other waters of the state influenced by wetlands. The following are wetland uses:

- (1) Storm and flood water storage and retention and the moderation of extreme water level fluctuations;
 - (2) Hydrologic functions including groundwater discharge that contributes to maintain dry weather streamflow and, at other locations or times, groundwater recharge that replenishes the groundwater system;
 - (3) Filtration or storage of sediments, nutrients, toxic substances, or other pollutants that would otherwise adversely impact the quality of other waters of the state;
 - (4) Shoreline protection against erosion through the dissipation of water energy and water velocity and stabilization of sediments;
 - (5) Habitat for the propagation of resident wetland-dependent aquatic organisms including, but not limited to fish, crustaceans, mollusks, insects, annelids, planktonic organisms and the plants and animals upon which these aquatic organisms feed and depend upon for their needs in all life stages; and
 - (6) Habitat for the propagation of resident wetland-dependent wildlife species, including mammals, birds, reptiles and amphibians for breeding, nesting, cover, travel corridors and food.
- (b) The following standards shall be used to assure the maintenance or enhancement of the existing uses of wetlands identified in Paragraph (a) of this Rule:
- (1) Liquids, fill or other solids or dissolved gases may not be present in amounts which may cause adverse impacts on existing wetland uses;
 - (2) Floating or submerged debris, oil, deleterious substances, or other material may not be present in amounts which may cause adverse impacts on existing wetland uses;
 - (3) Materials producing color, odor, taste or unsightliness may not be present in amounts which may cause adverse impacts on existing wetland uses;
 - (4) Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause adverse impacts on existing wetland uses;
 - (5) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent adverse impacts on;
 - (A) Water currents, erosion or sedimentation patterns;
 - (B) Natural water temperature variations;
 - (C) The chemical, nutrient and dissolved oxygen regime of the wetland;
 - (D) The movement of aquatic fauna;

(E) The pH of the wetland; and

(F) Water levels or elevations.

(6) The populations of wetland flora and fauna shall be maintained to protect biological integrity as defined at **15A NCAC 2B .0202.**”

Nebraska Administrative Code 117 NAC 7-002.

“Application of Standards to Wetlands.

117 NAC 7-002.01. These standards shall apply to all natural wetlands and all artificial wetlands except as provided in paragraph 002.02. Numerical criteria which rely on water in order to be measured, shall not be deemed applicable during periods when water is not present.

117 NAC 7-002.02. These standards shall not apply to artificial wetlands constructed for the purpose of wastewater treatment, wastewater retention, or irrigation reuse. However, any discharge to surface waters from artificial wetlands constructed for these purposes shall meet the applicable standards for the receiving water.

117 NAC 7-002.03. Wastewater from domestic, municipal, or industrial sources authorized by NPDES permits to discharge to wetlands shall meet all applicable standards for the wetland. No mixing zones shall be allowed within wetlands.

117 NAC 7-004.01A. General Criteria

Water quality criteria are established to protect assigned beneficial uses. However, traditional water quality parameters in wetlands such as pH, temperature, dissolved oxygen, ammonia, chloride, and conductivity may naturally vary outside accepted ranges for other surface waters. Water quality criteria for specific wetlands or wetland complexes, except numerical criteria for toxic substances (paragraph 004.01C1), petroleum oil (paragraph 004.01D), and residual chlorine (paragraph 004.01F), shall be based on natural background values for traditional water quality parameters. However, these criteria shall be no more stringent than those associated with the Class B Warmwater Aquatic Life classification or the General Criteria for Aquatic Life of Chapter 4, Paragraphs 003.01 A, 003.01B, 003.01G, and 003.04B.

117 NAC 7-004.01B. Biological Criteria

The biological integrity of wetlands shall be maintained and protected. Any human activity causing water pollution which would significantly degrade the biological integrity of wetlands is a violation of these Standards. Upland soil and water conservation practices or normal farming, silviculture, and ranching activities involving tilling, seeding, cultivating, harvesting, and grazing for the production of food, fiber, and forest products, shall not be considered to cause significant degradation of biological integrity in wetlands. However, the criteria in section 004.01C for toxic substances are applicable to wetlands where such toxic substances are the result of activities listed within this subsection.

117 NAC 7-004.01B1. Any human activity causing water pollution which would cause a significant adverse impact to an identified "key species" is a violation of these Standards.

117 NAC 7-004.01B1a. Key Species

Key aquatic species are identified endangered or threatened species. The following list defines the aquatic species considered by the Department to be key species. In addition to this list, any key species listed in Chapter 5 for a waterbody adjacent to a surface-water overflow wetland will be considered a key species for the wetland.

| COMMON NAME | SCIENTIFIC NAME |
|--------------------------------|--------------------------------|
| Endangered Species: | |
| Saltwort | Salicornia rubra |
| Colorado Butterfly Plant | Gaura neomexicana coloradensis |
| Threatened Species: | |
| Western Prairie Fringed Orchid | Platanthera praeclara |
| Ute Lady Tresses | Spiranthes diluvialis |
| Small White Lady's Slipper | Cypripedium candidum |

EXAMPLES OF NUMERIC CRITERIA

Nebraska Administrative Code 117 NAC 7-002.

Numeric standards for toxic materials in wetlands include:

“117 NAC 7-004.01C Toxic Substances

Wetlands shall be free from toxic substances, alone or in combination with other substances, in concentrations that result in acute or chronic toxicity to aquatic life, except as specified in Chapter 2. Toxic substances shall not be present in concentrations that result in bioaccumulation or biomagnification in aquatic organisms which renders them unsuitable or unsafe for consumption.

117 NAC 7-004.01C1. The following numerical criteria for the protection of aquatic life and their uses shall not be exceeded. Unless otherwise noted, criteria are based on total concentrations. (Note, numeric criteria for chemicals have been omitted here for the sake of brevity.)

117 NAC 7-004.03. Agricultural Water Supply

Wetlands assigned this beneficial use are used or have the potential to be used for general agricultural purposes (e.g., irrigation and livestock watering) without treatment. In some cases, however, natural background water quality may limit their use for agricultural purposes.

117 NAC 7-004.03A. General Criteria

Wastes or toxic substances introduced directly or indirectly by human activity in concentrations that would degrade the use (i.e., would produce undesirable physiological effects in crops or livestock) shall not be allowed. Where natural background water quality limits the use of a wetland for agricultural purposes, water quality criteria for conductivity and selenium shall be based on the natural background condition.

117 NAC 7-004.03B. Conductivity.

Not to exceed 2,000 umhos/cm between April 1 and September 30.

117 NAC 7-004.03C. Nitrate and Nitrite as Nitrogen.

Not to exceed 100 mg/l.

117 NAC 7-004.03D. Selenium.

Not to exceed 0.02mg/l.

117 NAC 7-004.04. Aesthetics.

This use applies to all wetlands of the state. To be aesthetically acceptable, wetlands shall be free from human-induced pollution which causes: 1) noxious odors; 2) floating, suspended colloidal, or settleable materials that produce objectionable films, colors, turbidity or deposits; and 3) the occurrence of undesirable or nuisance aquatic life (e.g., algal blooms). Wetlands shall also be free of junk, refuse, and discarded dead animals.”

Wyoming Administrative Regulations, Chapter 15 Standards for the Use of Surface Disposal of Biosolids

“General Statewide Permit For Land Application of Domestic Septage in Remote Areas, Department of Environmental Quality/Water Quality, Division Septage Land Application Worksheet To qualify for the land application of domestic septage (domestic septage being defined as either liquid or solid material removed from a septic tank result from normal household wastes) in remote areas the following requirements must be met.

Definitions

* “Permanent waterbody” means perennial streams, lakes, wetlands, etc. that have water throughout the year.

* "Intermittent stream" means a stream or part of a stream that is below the local water table for some part of the year but is not a perennial stream.

* "Ephemeral stream" means a stream which flows only in direct response to precipitation in the immediate watershed or in response to snow melt, and has a channel bottom that is always above the prevailing water table.

* "Wetland" means those areas having all three essential characteristics:

- (A) Hydrophytic vegetation;
- (B) Hydric soils;
- (C) Wetlands hydrology.

Location Restrictions

A minimum distance of at least 1,000 feet must be maintained from all adjacent properties.

Only domestic septage generated on the property owner's location may be land applied on the same property owner's location.

No land application of domestic septage may occur within 300 feet of a permanent waterbody, intermittent stream, ephemeral stream or wetland.”

Examples of Biological Standards

North Carolina Administrative Code. 15A NCAC 02B .0231.

“(6) The populations of wetland flora and fauna shall be maintained to protect biological integrity as defined at 15A NCAC 2B.0202. Section 15A NCAC 2B.0202 provides, in part:

“Biological integrity means the ability of an aquatic organism to support and maintain a balanced and indigenous community of organisms having species composition, diversity, population densities and functional organization similar to that of reference conditions.”

Wisconsin Administrative Code NR 103(f).

“Existing habitats and the populations of wetland animals and vegetation shall be maintained by:

1. Protecting food supplies for fish and wildlife,
2. Protecting reproductive and nursery areas, and
3. Preventing conditions conducive to the establishment or proliferation of nuisance organisms.”

Nebraska Administrative Code, 117 NAC 7-004.02.

“Wildlife

Wetlands assigned this beneficial use provide, or could provide, habitat capable of supporting wildlife on a regular or periodic basis. Wildlife are undomesticated terrestrial or avian life forms which may utilize wetlands to support life functions such as watering, feeding, loafing, predator protection, and nesting. Examples of wildlife include, but are not limited to, furbearers, waterfowl, shorebirds, migratory birds, and reptiles.

117 NAC 7-004.02A. General Criteria

Because wildlife utilizing wetlands rely on aquatic biota in many cases for food and habitat, general criteria and toxic criteria listed for the protection of aquatic life (paragraphs 004.01 A and 004.01C) shall also apply for the protection of wildlife. (Note,

004.01A deals with background values; 004.01C sets forth quite detailed criteria for toxics.)

117 NAC 7-004.02B. Biological Criteria

Any human activity causing water pollution which would cause a significant adverse impact to an identified "key species" is a violation of these Standards.

117 NAC 7-004.02B1. Key Species

Key wildlife species are identified endangered or threatened species. The following list defines the wildlife species considered by the Department to be key species.

| COMMON NAME | SCIENTIFIC NAME |
|-------------------------|--|
| Endangered Species: | |
| Eskimo Curlew | <i>Numenius borealis</i> |
| Whooping Crane | <i>Grus americana</i> |
| Interior Least Tern | <i>Sterna antillarum athalassos</i> |
| River Otter | <i>Lutra canadensis</i> |
| American Burying Beetle | <i>Nicrophorus americanus</i> |
| Salt Creek Tiger Beetle | <i>Cincindela nevadica lincolniana</i> |
| Threatened Species: | |
| Bald Eagle | <i>Haliaeetus leucocephalus</i> |
| Piping Plover | <i>Charadrius melodus</i> |

Examples of Hydrologic Criteria

EPA National Guidance, Water Quality Standards for Wetlands, Suggested Hydrologic Criteria.

“(H)ydrologic criteria are one particularly important but often overlooked component to include in water quality standards to help maintain wetlands quality. Hydrology is the primary factor influencing the type and location of wetlands. Maintaining appropriate hydrologic conditions in wetlands is critical to the maintenance of wetland functions and values. Hydrologic manipulations to wetlands have occurred nationwide in the form of flow alterations and diversions, disposal of dredged or fill material, dredging of canals through wetlands, and construction of levees or dikes. Changes in base flow or flow regime can severely alter the plant and animal species composition of a wetland, and destroy the entire wetland system if the change is great enough. States should consider the establishment of criteria to regulate hydrologic alterations to wetlands. One State has adopted the following language and criteria to maintain and protect the natural hydrologic conditions and values of wetlands:

Natural hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on:

- (1) Water currents, erosion or sedimentation patterns;
- (2) Natural water temperature variations;
- (3) The chemical, nutrient and dissolved oxygen regime of the wetland;
- (4) The normal movement of aquatic fauna;
- (5) The pH of the wetland....”

Wisconsin Administrative Code, NR 103.

“(e) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on:

1. Water currents, erosion or sedimentation patterns;
2. Water temperature variations;
3. The chemical, nutrient and dissolved oxygen regime of the wetland;
4. The movement of aquatic fauna;
5. The pH of the wetland; and
6. Water levels or elevations.”

North Carolina Administrative Code. 15a ncac 02b .0231.

“(5) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent adverse impacts on:

- (A) Water currents, erosion or sedimentation patterns;
- (B) Natural water temperature variations;
- (C) The chemical, nutrient and dissolved oxygen regime of the wetland;
- (D) The movement of aquatic fauna;
- (E) The pH of the wetland; and`
- (F) Water levels or elevations.”

Iowa Code Chapter 455B, division 111, part 1. Amendment to paragraph 61.2(2) “h”.

State water quality conditions provide a number of numeric and narrative criteria for wetlands and related areas including:

“(1) Side slopes of a newly constructed channel will be no steeper than 2:1 and planted to permanent, perennial, native vegetation if not armored.

....

(5) For newly constructed channels through areas that are unvegetated, native grass filter strips, or a riparian buffer with native trees or shrubs a minimum of 35 feet wide from the top of bank must be planted along both sides of the new channel. A survival rate of 80 percent of desirable species shall be achieved within three years of establishment of the buffer strip.

(6) For single-family residences authorized under nationwide permit 29, the permanent loss of waters of the United States (including jurisdictional wetlands) must not exceed ¼ acre.

(7) For nationwide permit 46, the discharge of dredged or fill material into ditches that would sever the jurisdiction of an upstream water of the United States from a downstream water of the United States is not allowed.

(8) For projects that impact fens, bogs, seeps, or sedge meadows, an individual Section 401 Water Quality Certification will be required (Iowa Section 401 Water Quality Certification condition.”

MITIGATION REQUIREMENTS

Many statutes set forth mitigation requirements for wetland activities. For example:

Iowa Code Chapter 455B, division 111, part 1. Amendment to paragraph 61.2(2) “h”.

State water quality standards provide a number of numeric and narrative criteria for wetlands and related areas including:

“(4) For discharges of dredged or fill material resulting in permanent loss of more than 1/10 acre of waters of the United States (including jurisdictional wetlands), a compensatory mitigation plan to offset those losses will be required. In addition, a preconstruction notice to the Corps of Engineers in accordance with general condition 27 will be required.”

Wisconsin Administrative Code, NR 103 Wetland Standards and Mitigation.

“(3) To protect all present and prospective future uses of wetlands, the following factors shall be considered by the department in making determinations under this section:

(a) Wetland dependency of the proposal;

(b) Practicable alternatives to the proposal which will avoid and minimize adverse impacts to wetlands and will not result in other significant adverse environmental consequences;

(c) Impacts which may result from the activity on the maintenance, protection, restoration or enhancement of standards under s. NR 103.03;

(d) Cumulative impacts attributable to the proposed activity which may occur, based upon past or reasonably anticipated impacts on wetland functional values of similar activities in the affected area;

(e) Potential secondary impacts on wetland functional values from the proposed activity; and

(f) Any potential adverse impacts to wetlands in areas of special natural resource interest as listed in s. NR 103.04.

(g) Any potential adverse impact to wetlands in environmentally sensitive areas and environmental corridors identified in area wide water quality management plans.

(4) (a) Except as provided in par. (b), (c) or (d), the department shall make a finding that the requirements of this chapter are satisfied if it determines that the project proponent has shown all of the following:

1. No practicable alternative exists which would avoid adverse impacts to wetlands.
2. If subd. 1. is met, all practicable measures to minimize adverse impacts to the functional values of the affected wetlands have been taken.
3. If subds. 1. and 2. are met, utilizing the factors in sub. (3)(b) to (g) and considering potential wetland functional values provided by any mitigation project that is part of the subject application, that the activity will not result in significant adverse impacts to wetland functional values, significant adverse impacts to water quality or other significant adverse environmental consequences.

(b) For all activities that will adversely affect a wetland in an area of special natural resource interest as listed in s. NR 103.04 or that will adversely affect an area of special natural resource interest, the department may not consider potential functional values provided by any mitigation project that is part of the subject application.

(c) For all activities which meet one or more of subd. 1., 2. or 3., the department, utilizing the factors in sub. (3) and considering potential wetland functional values provided by any mitigation project that is part of the subject application, shall make a finding that the requirements of this chapter are satisfied if it determines that the project proponent has shown that the activity will not result in significant adverse impacts to wetland functional values, significant adverse impacts to water quality or other significant adverse environmental consequences. The department may limit the scope of the analysis of alternatives under sub. (3)(b), as determined at the preliminary assessment meeting under sub. (1).

1. The activity is wetland dependent.
2. The surface area of the wetland impact, which includes impacts noted in s. NR 103.08(3), is 0.10 acres or less.
3. All wetlands that may be affected by an activity are less than one acre in size, located outside a 100-year floodplain, and not any of the following types:
 - a. Deep marsh.

- b. Ridge and swale complex.
- c. Wet prairie not dominated by reed canary grass (*Phalaris arundinacea*) to the exclusion of a significant population of native species.
- d. Ephemeral pond in a wooded setting.
- e. Sedge meadow or fresh wet meadow not dominated by reed canary grass (*Phalaris arundinacea*) to the exclusion of a significant population of native species and located south of highway 10.
- f. Bog located south of highway 10.
- g. Hardwood swamp located south of highway 10.
- h. Conifer swamp located south of highway 10.
- i. Cedar swamp located north of highway 10.

(d) For cranberry operations, the department, utilizing the factors in sub. (3)(b) to (g), shall make a finding that the requirements of this chapter are satisfied if it determines that the project proponent has shown that the activity will not result in significant adverse impacts to wetland functional values, significant adverse impacts to water quality or other significant adverse environmental consequences. For the purposes of determining whether there is a practicable alternative to a proposed expansion of an existing cranberry operation, the analysis shall be limited to alternatives within the boundaries of the property where the existing cranberry operation is located and on property immediately adjacent to the existing cranberry operation. For new cranberry operations, a practicable alternatives analysis shall be conducted which includes off-site alternatives.

(e) Mitigation projects and the use of wetland mitigation banks shall be carried out in accordance with ch. NR 350 and any memorandum of agreement between the department and the United States Army Corps of Engineers that establishes guidelines for mitigation projects and wetland mitigation banks.

Note: Examples of wetland ecological evaluation methods include, but are not limited to, "Wetland Evaluation Technique" (FHWA/COE), "Wisconsin Wetland Evaluation Methodology", "Hollands-Magee" (IEP/Normandeau), "Minnesota Wetland Evaluation Methodology for the North Central United States" and the "Wisconsin Department of Natural Resources Rapid Assessment Method".

Note: Examples of available land use studies include Special Area Management Plans (SAMP), Special Wetland Inventory Studies (SWIS) and Advanced Delineation and Identification Studies (ADID)."

Minnesota Administrative Code: 7050.0186 Wetland Standards and Mitigation.

Subp. 2. "Wetland mitigation principles.

The wetland mitigative sequence incorporates the principles in items A to C in descending order of priority. Wetland mitigation maintains nondegradation of wetland designated uses:

A. avoid the impact altogether by not taking a certain action or parts of an action;
B. minimize the impact by limiting the degree or magnitude of the action and its implementation, and by taking affirmative action's to rectify the impact and reduce or eliminate the impact over time; and

C. mitigate the unavoidable impact to the designated uses of a wetland by compensation. Compensatory mitigation shall be accomplished in the following descending order of priority of replacement:

- (1) restoration of a previously diminished wetland; and
- (2) creation of a wetland.

Subp. 3. Determination of wetland dependency. A project is wetland dependent if wetland designated uses are essential to fulfill the basic purpose of the project. A wetland dependent project is exempt from subpart 4, but will follow the remainder of the mitigation sequence. Where the proposed project is not wetland dependent, the wetland mitigation sequence in subpart 2 must be followed.

Subp. 4. Impact avoidance. No person may cause or allow a physical alteration which has the potential for a significant adverse impact on one or more designated uses of a wetland, unless there is not a prudent and feasible alternative that would avoid impacts to the designated uses of the wetland.

A. Prudent and feasible alternatives that do not involve wetlands are presumed to be available unless clearly demonstrated otherwise by the permit or certification applicant.

B. If no prudent and feasible alternative is available for avoidance, potential significant adverse impacts to the designated uses of the wetland shall be minimized in compliance with subpart 5.

Subp. 5. Impact minimization.

A. The permit or certification applicant shall implement actions to minimize potential significant adverse impacts of the physical alteration.

B. In evaluating the applicant's actions to minimize impacts, the agency shall consider:

- (1) the spatial requirements of the project;
- (2) the location of existing structural or natural features that may dictate the placement or configuration of the project;
- (3) the purpose of the project and how the purpose relates to placement, configuration, or density;
- (4) the sensitivity of the site design to the natural features of the site, including topography, hydrology, and existing vegetation;

(5) the designated uses and spatial distribution of the wetlands on the site;

(6) individual and cumulative impacts; and

(7) the applicable minimization activities identified in Code of Federal Regulations, title 40, part 230, subpart H, as amended.

C. If the potential for significant adverse impacts on designated uses remains after all actions to minimize the impacts have been incorporated into the proposed project, unavoidable impacts shall be compensated for in compliance with subpart 6.

Subp. 6. Impact compensation. The permit or certification applicant shall provide compensatory mitigation for unavoidable impacts on the designated uses of the wetland in accordance with this subpart.

A. Compensatory mitigation must be sufficient to ensure replacement of the diminished or lost designated uses of the wetland that was physically altered.

B. Compensatory mitigation shall be accomplished in the following descending order of priority of replacement:

(1) restoration of a previously diminished wetland; and

(2) creation of a wetland.

C. If compensatory mitigation is accomplished by restoration or creation, the replacement wetland shall be of the same type and in the same watershed as the impacted wetland, to the extent prudent and feasible.

D. Compensatory mitigation shall be completed before or concurrent with the actual physical alteration of the wetland affected by the proposed project to the extent prudent and feasible.”

Ohio Administrative Code, Chapter 3745-1, Water Quality Standards.

The Ohio Administrative Code requires, in part, compensatory mitigation:

“D) Wetland avoidance, minimization, and compensatory mitigation.

(1) Alternatives analysis.

(a) Category 1 wetlands. The wetland designated use shall be maintained and protected for wetlands assigned to category 1 unless the applicant demonstrates, to the satisfaction of the director the following:

(i) Avoidance. There is no practicable alternative which would have less adverse impact on the wetland ecosystem; and

(ii) Minimization. Storm water and water quality controls will be installed in accordance with paragraph (D)(3) of this rule; and

(iii) The impact would not result in significant degradation to the aquatic ecosystem, as determined consistent with 40 C.F.R. part 230.10(c) (45 FR 85336, December 24, 1980); and

(iv) Compensatory mitigation. The designated use is replaced by a category 2 or category 3 wetland in accordance with paragraph (E) of this rule.

(b) Category 2 wetlands. The wetland designated use shall be maintained and protected for wetlands assigned to category 2, and no lowering of water quality shall be allowed, unless the applicant demonstrates to the satisfaction of the director:

(i) Avoidance. There is no practicable alternative, based on technical, social and economic criteria, which would have less adverse impact on the wetland ecosystem, so long as the alternative does not have other significant adverse environmental impacts as determined through an off-site and on-site alternatives analysis. Less damaging upland alternatives are presumed to be available for category 2 wetlands, unless clearly demonstrated otherwise; and

(ii) Minimization. Appropriate and practicable steps have been taken to minimize potential adverse impacts on the wetland ecosystem. For category 2 wetlands, the applicant shall minimize all potential adverse impacts foreseeable caused by the project and each application shall include an evaluation of:

(a) The spatial requirements of the project;

(b) The location of existing structural or natural features that may dictate the placement or configuration of the proposed project;

(c) The overall and basic purpose of the project and how the purpose relates to the placement, configuration or density of the project;

(d) The sensitivity of the site design to the natural features of the site, including topography, hydrology, and existing flora and fauna;

(e) Direct and indirect impacts; and

(iii) The lowering of water quality is necessary to accommodate important social or economic development in the area in which the water body is located; and

(iv) Storm water and water quality controls will be installed in accordance with paragraph (D)(3) of this rule; and

(v) Compensatory mitigation. The designated use is replaced by a category 2 wetland, of equal or higher quality, or a category 3 wetland in accordance with paragraph (E) of this rule. For projects which are linear projects, the

designated use is replaced by a category 2 wetland, of equal or higher quality, or a category 3 wetland and the mitigation may take place in accordance with paragraph (D)(2) of this rule.

(c) Category 3 wetlands. The wetland designated use shall be maintained and protected in wetlands assigned to category 3, and no lowering of water quality shall be allowed, unless it is demonstrated to the satisfaction of the director that:

(i) Avoidance. There is no practicable alternative, based on technical, social and economic criteria, which would have less adverse impact on the wetland ecosystem, so long as the alternative does not have other significant adverse environmental impacts as determined through an off-site and on-site alternatives analysis. Less damaging upland alternatives are presumed to be available for category 3 wetlands, unless clearly demonstrated otherwise; and

(ii) Minimization. Appropriate and practicable steps have been taken to minimize potential adverse impacts on the wetland ecosystem. For category 3 wetlands, the applicant shall minimize all potential adverse impacts foreseeable caused by the project and each application shall include an evaluation of:

(a) The spatial requirements of the project;

(b) The location of existing structural or natural features that may dictate the placement or configuration of the proposed project;

(c) The overall and basic purpose of the project and how the purpose relates to the placement, configuration or density of the project;

(d) The sensitivity of the site design to the natural features of the site, including topography, hydrology, and existing flora and fauna;

(e) Direct and in-direct impacts; and

(iii) The proposed activity is necessary to meet a demonstrated public need, as defined in rule 3745-1-50 of the Administrative Code; and

(iv) The lowering of water quality is necessary to accommodate important social or economic development in the area in which the water body is located; and

(v) Storm water and water quality controls will be installed in accordance with paragraph (D)(3) of this rule; and

(vi) The wetland is not scarce regionally and/or statewide, or if the wetland is scarce, the project will cause only a short-term disturbance of water quality that will not cause long-term detrimental effects; and

(vii) Compensatory mitigation. The designated use is replaced by a category 3 wetland, of equal or higher quality, in accordance with paragraph (E) of this rule. For projects which are linear projects, the designated use is replaced by a category 3 wetland, of equal or higher quality, and the mitigation may take place in accordance with paragraph (D)(2) of this rule.

ANALYTICAL REQUIREMENTS

North Carolina Administrative Code, North Carolina. 15A NCAC 2B .0103.

“(a) Chemical/Physical Procedures. Tests or analytical procedures to determine conformity or non-conformity with standards shall, insofar as practicable and applicable, conform to the guidelines by the Environmental Protection Agency codified as 40 CFR, Part 136, which are hereby incorporated by reference including any subsequent amendments and editions or such other methods as may be approved by the Director. This material is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Environmental Management, Water Quality Planning Branch, 512 North Salisbury Street, Raleigh, North Carolina. Copies may be obtained from the U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402-9325 at a cost of thirteen dollars (\$13.00). Methods not codified by 40 CFR, Part 136 will, insofar as practicable and applicable, conform to the guidelines by the American Public Health Association, American Water Works Association, Water Environment Federation publication "Standard Methods for the Examination of Water and Wastewater, 19th edition" (1996) or subsequent editions which are hereby incorporated by reference. Copies may be obtained from the Water Environment Federation, 601 Wythe St., Alexandria, VA, 22314 at a cost of one hundred and eighty dollars (\$180.00).

(b) Biological Procedures. Biological tests to determine conformity or non-conformity with standards will be based on methods published by the U.S. Environmental Protection Agency as codified as 40 CFR, Part 136, which are hereby incorporated by reference including any subsequent amendments and editions. This material is available for inspection at the Department of Environment, Health and Natural Resources, Division of Water Quality, Water Quality Planning Branch....

(c) Wetland Evaluation Procedures. Evaluations of wetlands for the presence of existing uses shall be based on procedures approved by the Director. The Director shall approve wetland evaluation procedures that have been demonstrated to produce verifiable and repeatable results and that have widespread acceptance in the scientific community. Copies of approved methods or guidance may be obtained by submitting a written request to NCDWQEcological Assessment Group, P.O. Box 29535, Raleigh, NC 27626-0535.”

APPENDIX C: SELECTED WEBSITES AND BIBLIOGRAPHY

General References

EPA, National Guidance, Wetlands and Nonpoint Source Control Programs (1990)

<http://www.epa.gov/wetlands/guidance/wlnps.html>

EPA, Wetlands and 401 Certification: Opportunities and Guidelines for States and Eligible Indian Tribes (1989)

<http://yosemite.epa.gov/water/owrcCatalog.nsf/065ca07e299b464685256ce50075c11a/cd15cd29df94e01d85256d83004fd959!OpenDocument>

EPA, National Guidance Water Quality Standards for Wetlands (1990)

<http://www.epa.gov/wetlands/regs/quality.html>

EPA, Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, (1985)

EPA "Quality Criteria for Water," published by the U.S. Environmental Protection Agency (1977)

EPA, Strategy for Water Quality Standards and Criteria, Setting Priorities to Strengthen the Foundation for Protecting and Restoring the Nation's Waters (2003),

<http://www.epa.gov/waterscience/standards/strategy/final.pdf>

Overview of State Programs

ELI Study of State Wetland Programs, State Profiles

http://www.eli.org/Program_Areas/state_wetlands.cfm

ELI publication: State Wetland Protection, Status, Trends, Model Approaches

http://www.elistore.org/reports_detail.asp?ID=11279&topic=Wetlands

Association of State Wetland Manager summary of State Wetland Programs

<http://www.aswm.org/swp/statemainpage9.htm>

Stetson, L., Wetland Assessment Measuring the Quality of the Nation's Wetlands

http://www.aswm.org/news/wetland_assessment_0208.pdf

State Statutes and Regulations

Maryland Department of the Environment Water Quality Standards

<http://www.mde.state.md.us/Programs/WaterPrograms/TMDL/wqstandards/index.asp>

Chapter NR 103, Wisconsin Administrative Code, Water Quality Standards for Wetlands

<http://www.legis.state.wi.us/rsb/code/nr/nr103.pdf>

Ohio Administrative Code Ann.3745-1-54 Wetland Antidegradation
<http://codes.ohio.gov/oac/3745-1-54>

Minnesota Administrative Code, Wetland Water Quality Standards
<https://www.revisor.leg.state.mn.us/rules/?id=7050.0186>

Nebraska Administrative Code, Title 117-Nebraska Department of Environmental Quality,
Chapter 7, Water Quality Standards for Wetlands
[http://www.deq.state.ne.us/RuleAndR.nsf/23e5e39594c064ee852564ae004fa010/9f07eae313ae56d686256888005bc61e/\\$FILE/WQScont.pdf](http://www.deq.state.ne.us/RuleAndR.nsf/23e5e39594c064ee852564ae004fa010/9f07eae313ae56d686256888005bc61e/$FILE/WQScont.pdf)

North Carolina Wetland Water Quality Standards (See more specifically AC 02B .0231)
<http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environment%20and%20natural%20resources/chapter%2002%20-%20environmental%20management/subchapter%20b/subchapter%20b%20rules.html>

Washington State Water Quality Guidelines for Wetlands
<http://www.ecy.wa.gov/pubs/9606.pdf>

Colorado Administrative Code 5 CCR 1002-31 Colorado Basic Standards and Methodologies for
Surface Water

Colorado Water Quality Standards,
<http://www.cdphe.state.co.us/regulations/wqccregs/100231wqccbasicstandardsforsurfacewater.pdf>

Nebraska Water Quality Standards for Wetlands
<http://www.loislaw.com/snp/fpopwind.htm>

North Carolina Wetland Water Quality Standards
<http://www.loislaw.com/snp/fpopwind.htm>

Wyoming Water Quality Standards for Wetlands
<http://www.loislaw.com/pns/index.htm>

Iowa Water Quality Standards for Wetlands. Iowa Administrative Code, 567-61.2 (455B)
<http://www.iowadnr.gov/water/standards/files/chapter61.pdf>

Massachusetts Surface Water Quality Standards, 314 CMR 4:00
<http://www.mass.gov/dep/service/regulations/314cmr04.pdf>

Maine, Chapter 310 Wetlands and Waterbodies Protection,
http://www.maine.gov/dep/blwq/rules/NRPA/2008/310/096c310_as_amended_with_effective_date.pdf

Florida Water Quality Standards
<http://www.dep.state.fl.us/legal/Rules/shared/62-302/62-302.pdf>

California Water Quality Standards, Water Resources Board and Regional Water Control Boards
<http://www.dep.state.fl.us/legal/Rules/shared/62-302/62-302.pdf>