

DEVELOPMENT of WETLAND WATER QUALITY STANDARDS

Jason Childress & Rebecca Veiga Nascimento

Oklahoma Water Resources Board

March 27, 2014

Beneficial Use Applicable to Wetlands

Currently in the Standards

- ❖ Aesthetics
- ❖ Recreation

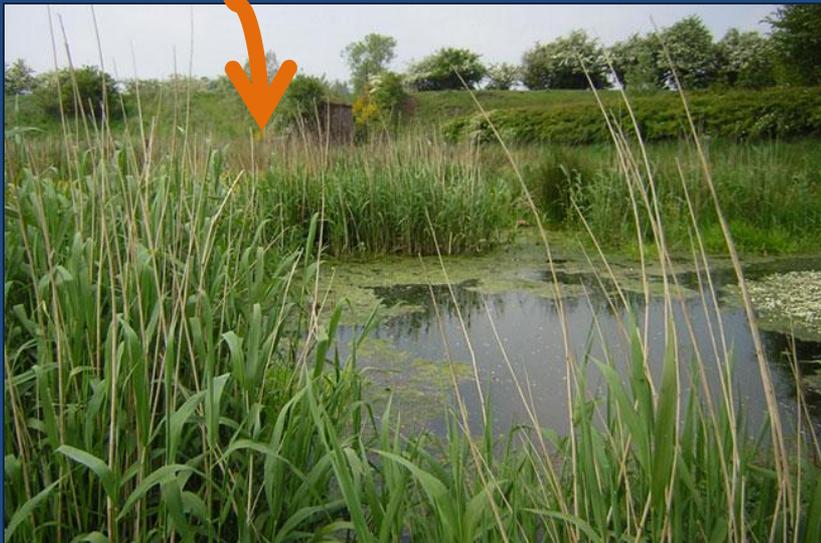
Potential additions to the Standards

- ❖ Habitat & Biota
- ❖ Water Quality Improvement
- ❖ Hydrology Support

Beneficial Uses

The Real Thing

Wetland Habitat



The Descriptor

- *Wetland Habitat* - Habitat for the propagation of wetland-dependent aquatic organisms including, but not limited to fish, crustaceans, 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

Beneficial Uses

- Beneficial Use descriptors characterize the resource, services, or qualities of a waterbody and expresses the *ultimate goals for protecting and achieving water quality*.
- *ultimate goals for protecting and achieving water quality*
- Without waterbody goals, there would be no progress toward the CWA goal to restore and maintain the Nation's water



Say What!

Exercise - Build a Beneficial Use

Word Scramble

or
Plants & animals
Habitat
dependent
fish
and

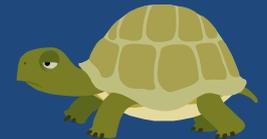
Wetland
amphibians
but not limited to
Including

the
birds
waterfowl
Biota
that supports
periodic basis

Life cycle
includes uses
fish
where
regular basis

live
utilize
an ecosystem
species

I Say Right On!



Preliminary Draft Language

- What informed the drafts?
 - Guiding principles
 - Rooted in science
 - Compatible with assessment protocols
 - Meaningful workable standard
 - Regulatory clarity
 - Direction from technical work group
 - Examples from other states

Preliminary Draft Language

□ Habitat & Biota

Wetland Habitat includes uses where the wetland ecosystem supports, on a regular or periodic basis, vegetation, aquatic life, and wildlife, that depend on a wetland environment for all or a portion of their life cycle.

Wetland Habitat and Biota includes uses where the water quality, hydrology, and habitat support a wetland-dependent flora and fauna community on a regular or periodic basis. Wetland-dependent species may permanently live in a wetland or utilize a wetland during their life cycle. Typical wetland-dependent species may include, but are not limited to, hydrophytic plants, fish, crustaceans, benthic invertebrates, amphibians, waterfowl, migratory birds, and reptiles.

Preliminary Draft Language

□ Water Quality Improvement

Water Quality Improvement is the use which addresses the ability of wetlands to assimilate and or transform pollutants thereby improving water quality in or downstream of the wetland waterbody. The intent of this beneficial use is to recognize the natural capacity of wetlands to remove pollutants; this use does not support natural wetlands being used for the purpose of removing pollutants from a wastewater discharge.

Water Quality Improvement addresses uses that include the transformation and or storage of sediment, nutrients, toxic substances, and other pollutants that would otherwise adversely impact water quality in or downstream of wetlands.

Water quality improvement does not mean the direct use of natural wetlands as treatment systems for contaminant or pollutant removal from wastewater and other point source discharges.

Preliminary Draft Language

□ Hydrology Support

Flood Protection and Erosion Control is the use which addresses the ability of wetlands to collect and temporarily store floodwaters and attenuate peak flow. This results in reduced flooding and minimizes flood damage protecting adjacent and downstream areas. For wetlands along the banks of lakes and rivers, plants and roots serve to stabilize the bank, absorb wave energy, and slow currents thereby reducing erosion and protecting property.

Hydrology Support addresses uses of a wetland ecosystems' natural storage and delivery of water including the role of wetlands for flood damage reduction by storing water to attenuate peak floods and decreasing runoff velocity; for increasing infiltration and groundwater recharge that maintains in-stream flows; for sustaining floodplain connectivity and hydrological equilibrium by stabilizing riverbanks and lake shorelines.

Criteria Overview

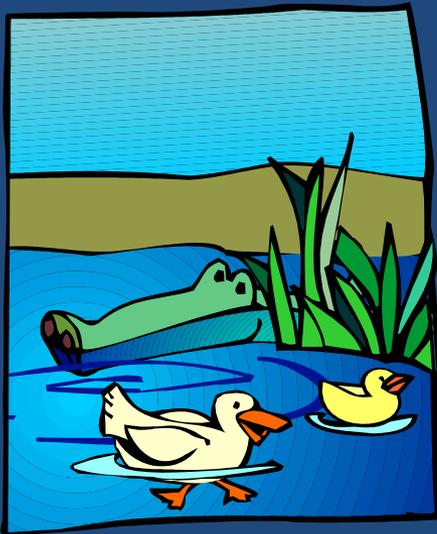
- Criteria to protect beneficial uses required
- 2 types of criteria
 - Numeric
 - Narrative

Criteria Overview - Numeric

- Specific numeric values
 - ▣ Values not to be exceeded address both short-term and long-term effects: example = toxics
 - ▣ Values must be exceeded: example = DO

Criteria Overview - Narrative

- ❑ Statement prohibiting action or condition – *free from*
- ❑ Positive statement about expected condition – *natural status*
- ❑ Can address physical and biological aspects of water quality
- ❑ Need to be interpreted or translated



Bio Criteria Example

- Beneficial Use: Fish & Wildlife Propagation
- Biological Criteria

Aquatic life in all waterbodies with beneficial use designation of Fish & Wildlife Propagation (excluding trout put and take) shall not exhibit degraded conditions

- Translation
 - Comparison with applicable regional reference data
 - Index of Biological Integrity (IBI)
 - Comparison with site historical data



Wetland Criteria

- Criteria associated with each beneficial use
- Narrative
 - ▣ *free from....*
 - ▣ *natural conditions that support....*
- Criteria Implementation & Translation
 - ▣ Condition assessment tools needed
 - ▣ Wetland Rapid Assessment Methods

Questions & Wrap-up

