Designated Uses & Classifications

WATER QUALITY STANDARDS

Introduction

Water Quality Standards & Classifications

Designated Uses & Classification

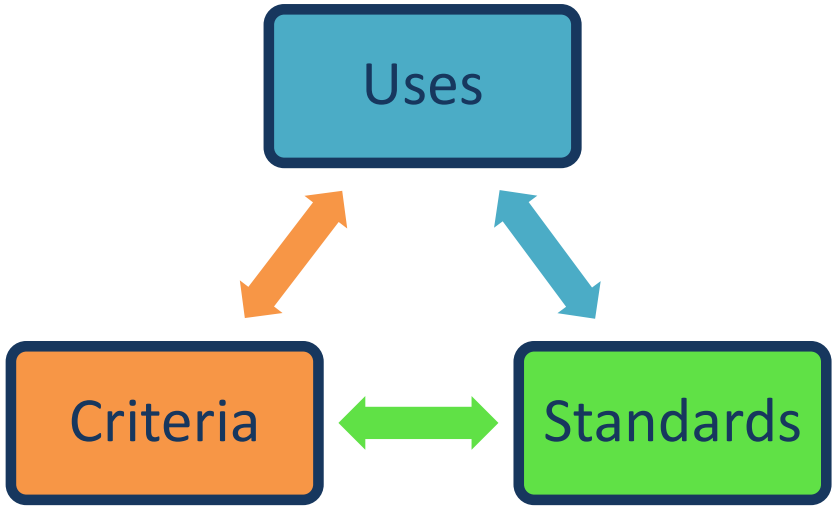
- Establishes existing and designated uses by class
- Assignment of designated uses to specific waters

Standards

- Overall Goals & Policies

Criteria

- Narrative & numeric criteria to sustain the use



Designated Uses: Clean Water Act

CWA requires states to adopt WQS which “Serve the purposes of the Act”:

- Provide, wherever attainable, water quality for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water ("fishable/swimmable") (CWA 101(a)(2))
- Consider the use and value of State waters for public water supplies, propagation of fish and wildlife, recreation, agriculture and industrial purposes, and navigation (CWA 303(c))

Designated Uses: Federal Regulations

Addressed in 40 CFR 131 – Water Quality Standards

- Defined in 40 CFR 131.3
  - Designated Uses are those uses specified in WQS for each water body or segment whether or not they are being attained
  - Existing Uses are those uses actually attained in the water body on or after November 28, 1975 whether or not they are included in the water quality standards

Designated Uses: Practical Application

Designated uses may be thought of as:

- How people within your state wish to use their water resources
- Function of activities associated with water resources
- Management Goals / Objectives/ Desired Conditions for a water body
- Uses may be designated but not achieved

If Designated Use is not being achieved, the water body is identified as impaired for that use. The Designated Use does not automatically go away.

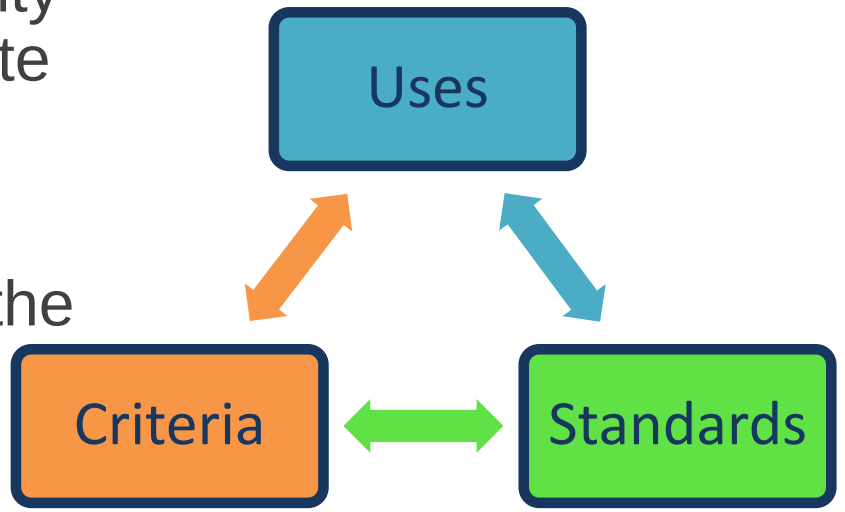
Designated Uses: Vocabulary

Terms to Know:

- "101(a)(2) uses" – uses that provide for the protection and propagation of fish, shellfish and wildlife, and recreation in and on the water
- Subcategories of 101(a)(2) uses – any use that reflects the subdivision of 101(a)(2) uses for the purpose of reducing variability
- "Non-101(a)(2) uses" – uses that are NOT related to the protection and propagation of fish and wildlife or for recreational purposes. Uses in section 303 (c)(2)(A) but not in section 101(a)(2)

Importance of Designated Uses

- Establish a state's/authorized tribe's water quality goals for a specific water body and communicate these goals to the public Function of activities associated with water resources
- Identifying water quality goals helps to identify the right criteria necessary to meet those goals
- Criteria are the regulatory basis for attainment decisions, TMDLs, NPDES permit limits, etc.



Designating Uses

State Implementation

States can develop / adopt any appropriate use classification system

- Applicable federal regulation: 40 CFR 131.10
- Uses must include those specified in the CWA
- Take WQS of downstream waters into consideration
- May adopt sub-categories of uses
- May adopt seasonal uses
- No hierarchy among uses
- Exception: Waste Assimilation is NOT a use

Determining Existing Uses

Existing Uses are those uses actually attained in the water body on or after November 28, 1975 whether or not they are included in the water quality standards

- Site-specific evaluation
- Clear data showing the extent to which water quality since 1975 has been attained to support a use that actually occurred in the water May adopt sub-categories of uses
- Where data on uses attained and/or water quality are limited, insufficient or inconclusive, evaluate the quantity, quality, and reliability of the available data

Existing uses serve as a baseline or "floor" of water quality, below which we don't want to drop

Designated Use Examples

Drinking Water

- Surface waters that are the source for drinking water supply
- Could include waters used for food processing
- Could include waters upstream of drinking water sources
- Note: water may require treatment prior to distribution as drinking water

Designated Use Examples

Protection & Propagation of Fish, Shellfish & Wildlife

- This use recognizes that a water body serves as habitat or a resource for aquatic and wildlife communities, necessary for their health and survival

Example Subcategories:

- Cold or warm water fish
- Shellfishing
- Oyster Propagation
- Self-supporting vs stocked fisheries

Designated Use Examples

Recreation

- Focuses on Activities in and on the water
  - Primary Contact: includes activities that involve immersion in water
  - Secondary Contact: includes activities where immersion is unlikely, but you may get wet
- May include other activities that don’t involve getting wet

Example Subcategories:

- Primary Contact
  - Swimming, Water skiing, surfing
- Secondary Contact
  - Boating, wading, rowing
- Other Activities
  - Bird watching, hiking, camping

Designated Use Examples

Agriculture and Industry

- Focuses on various water-dependent activities

Example Subcategories:

- Agriculture
  - Irrigation of crops, Consumption by livestock, Support of vegetation or grazing
- Industrial
  - Cooling and process water supplies

Changing Designated Uses

Reclassifying Waters

Can Designated Uses be Changed?

Important Considerations:

- Designated Uses are those uses specified in WQS for each water body or segment whether or not they are being attained
- Existing Uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards
- Attainable Uses are those uses that can be achieve with appropriate effluent limits for point sources and cost-effective & reasonable Best Management Practices for nonpoint source discharges
- CWA Uses are those that provide for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water ("fishable/swimmable") (CWA 101(a)(2))

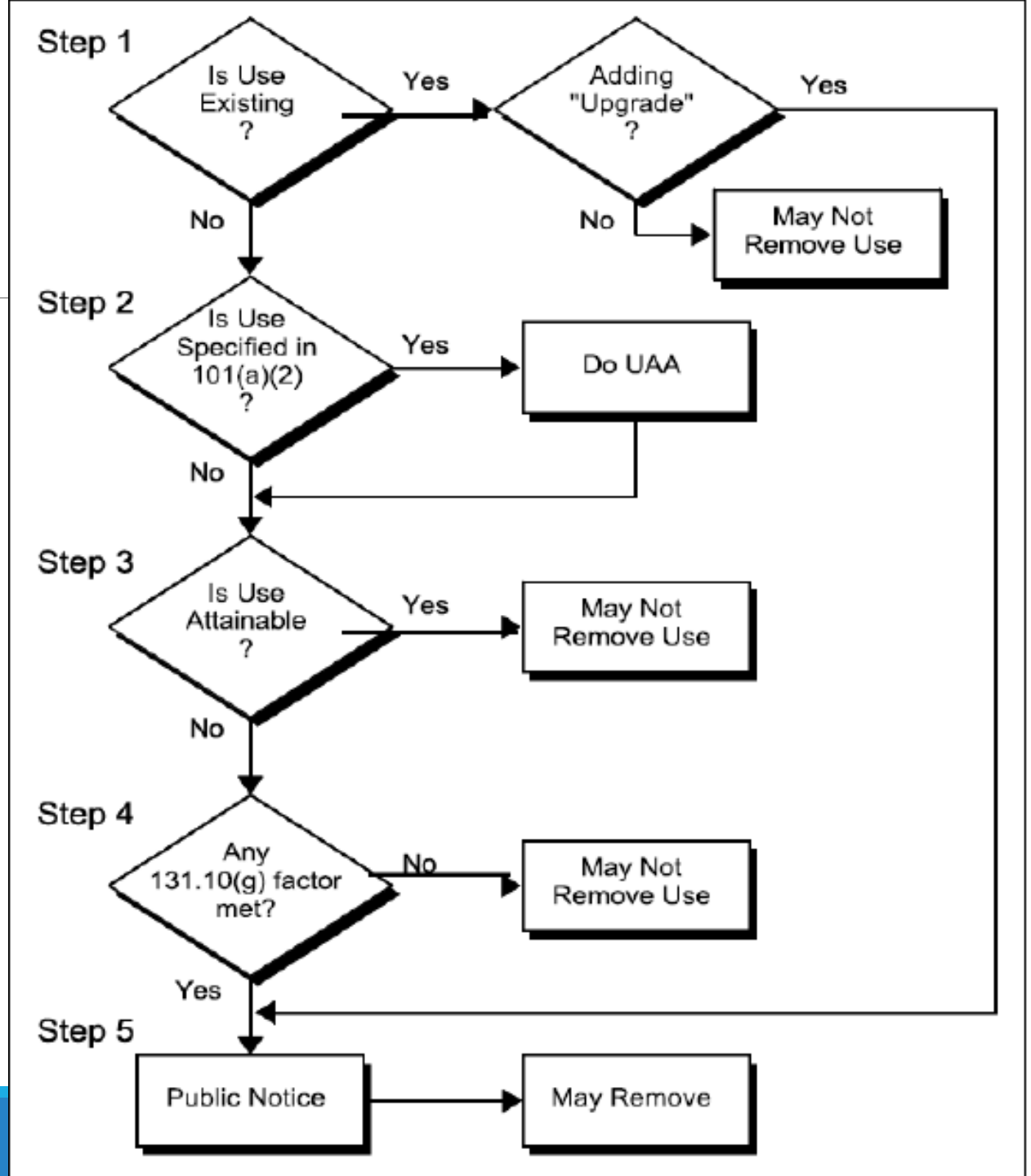
Designated Uses Can Be:

- Refined
- Added
- Removed

…but not in all cases

EPA UAA Process

Diagram from EPA
Water Quality
Standards Handbook
Chapter 2



Adding Uses

CWA Uses:

- Can be added for the first time
- Can designate a subcategory for a CWA Use provided it requires supporting criteria at least as stringent as previously applicable

Non-CWA Uses:

- Can be added
- Check to make sure new use doesn’t impact other existing uses

Prohibitions on Removing Uses

Uses CANNOT be removed if:

- They are existing uses…unless a use requiring more stringent criteria is added
- Such uses will be attained by implementing effluent limits…and by implementing cost-effective and reasonable best management practices for non point source control

Revising or Removing Uses

CWA Uses and Subcategories:

- Use Attainability Analysis

Non-CWA Uses and Subcategories:

- Use and Value Demonstration or Use Attainability Analysis (optional)

Use & Value Demonstration:

- Relevant descriptive information
- Attainability information
- Value / benefits associated with retaining or removing use
- Impacts of use removal on other designated uses

Use Attainability Analysis (UAA)

- UAA requirements are addressed at 40 CFR 131.10(g)
- EPA specifies 6 factors to demonstrate that a use is not attainable
- The UAA must identify the factor that precludes attainment of the use
- Existing uses cannot be removed
- If a use is adopted or revised via UAA, the State must also adopt the highest attainable use

Use Attainability Analysis:

- A structured scientific assessment of the physical, chemical, biological, and economic factors affecting the attainment of the use

Highest Attainable Use:

- Use that is closest to CWA use and is attainable

EPA Actions to Support Use of UAAs

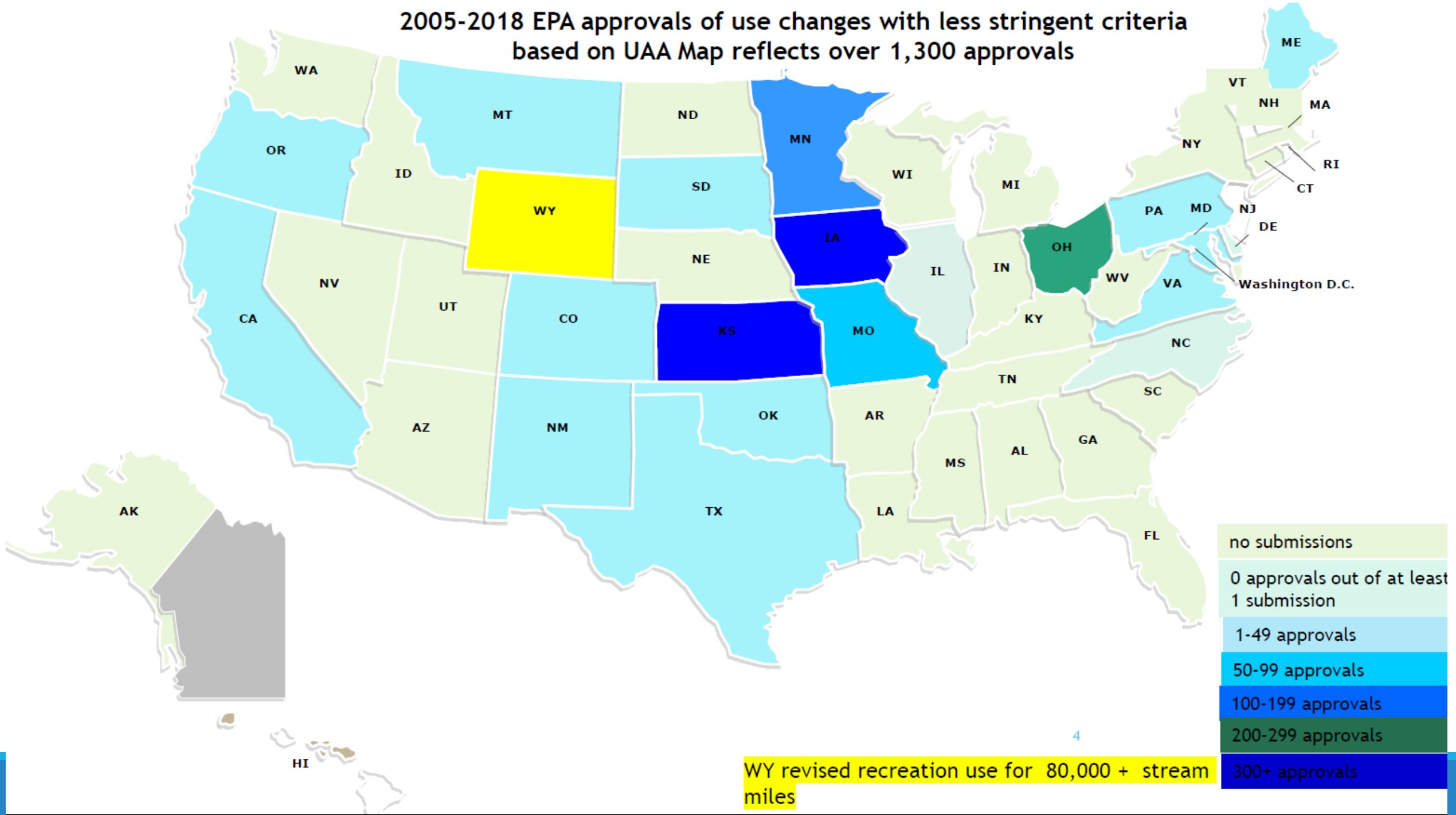
- 2003 – EPA Strategy for WQS and Criteria: UAAs = priority area
- 2004: EPA and States developed Designated Use Plan to provide technical support on UAAs
- 2005: Memo to Oregon on UAAs for federal dams: regional approach and template
- 2006: “UAAs are OK” Memo
- 2008: Letter to Oklahoma to answer foundational questions to help move past barriers on existing uses

EPA Actions on Use Revisions Since 2005

EPA approved more than 1,300 aquatic life / recreation use revisions resulting in less stringent criteria based on UAAs

- Most use revisions in:
  - States with UAA protocols (IA, KS, TX, MO, NM, CO)
  - States with Biocriteria and Tiered Aquatic Life Uses (OH, MN)
- Wyoming (R8) – In 2017 EPA approved WY's revisions from primary contact recreation to secondary contact recreation for more than 80,000 stream miles (GIS-based Categorical UAA)
- States have also used UAAs to update uses or reaffirm current designated uses during triennial reviews (NY)

2005-2018 EPA approvals of use changes with less stringent criteria based on UAA Map reflects over 1,300 approvals

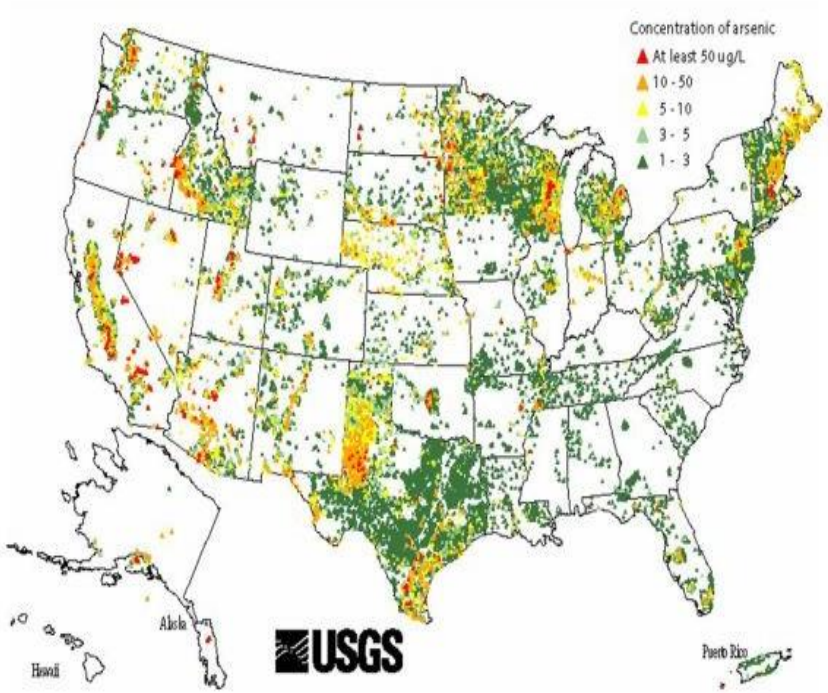


WY revised recreation use for 80,000 + stream miles

UAA Factor 1

Naturally Occurring Pollutants:

- Naturally occurring pollutant concentrations prevent the attainment of the use



UAA Factor 2

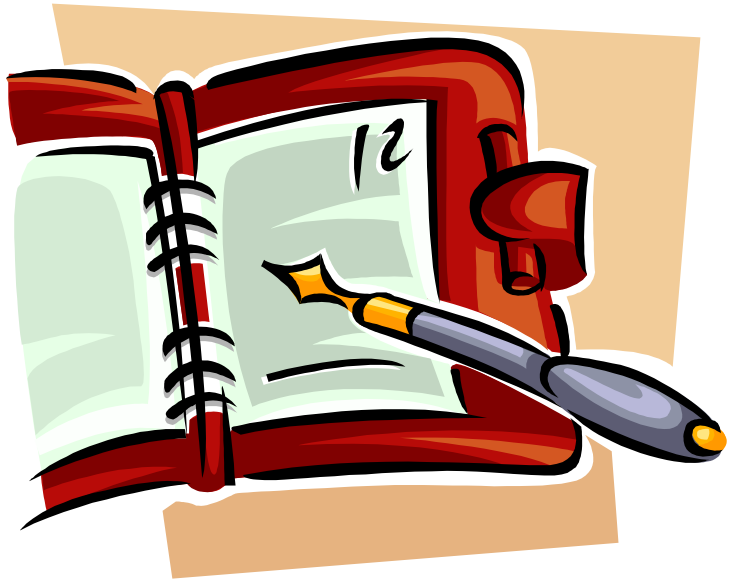
Flow Conditions:

- Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use
- UNLESS, these conditions may be compensated for by effluent discharges without violating State water conservation requirements

UAA Factor 3

Anthropogenic Impacts that can't be remedied:

- 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



UAA Factor 4

Hydrologic Modification:

- 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 operate such modification in a way that results in attainment of use

UAA Factor 5

Natural Physical Conditions:

- Physical conditions related to natural features of water body preclude attainment of aquatic life uses
  - Lack of proper substrate, cover, flow depth, pools, riffles, etc.

UAA Factor 6

Widespread Economic & Social Impact:

- Controls that are more stringent than those required by CWA (301(b) & 306) would result in substantial and widespread economic and social impact

Highest Attainable Use

Concurrent with UAA, State must adopt Highest Attainable Use (HAU)

- Highest Attainable Use is the use that is closest to the CWA use and is attainable
- State is not required to adopt a use that is not naturally expected to occur

- EPA promotes the use of UAAs to reflect more accurate depictions of uses for a waterbody and allow for a clearer articulation of the attainable use with more effective criteria
- Engage with EPA early and often if planning to change designated uses

UAA Example: Aquatic Life Use

Upper Valley Creek, Alabama

- "Fish and wildlife" use not met year-round basis due to high degree of urbanization
- "Limited warm water fishery" use proposed
- UAA needed since this is a subcategory of a CWA use that has less stringent criteria
- Supporting information: physical, chemical, biological condtions of creek, WQ sampling data, discharge montoring & WQ modeling

Outcome:

- Determined that use was precluded by
  - Factor 3 (human caused conditions): Leaking sewer lines, domestic animals, wildlife populations, leading septic tanks, sewer overflows, etc.
  - Factor 5 (physical conditions): high water table

EPA approved use revision

UAA Example: Recreational Uses

Los Angeles Channels

- "Recreational" uses including activities involving contact or incidental water contact are not met during high flows during and following storm events due to life-threatening conditions
- State conducted a study that determined rainfall amount to be associated with temporary suspension of uses
- UAA needed since CWA uses are being temporarily removed

Outcome:

- Determined that use was precluded during & after high flow periods by
  - Factor 2 (flow conditions): Flow and velocity prevent attainment of use
  - Factor 4 (hydrologic modifications): Concrete lined channels preclude attainment of use

EPA approved use revision

Case Study: MN Aquatic Life Use UAA

- MN previously had most waters assigned to default "General Use" and wanted to revise its system. Goals included:
  - Better integrate uses and biological assessment data
  - More accurate and representative use designations
  - Allow for documentation of incremental improvement to prevent backsliding
  - Provide the public with better defined management options to promote public involvement
  - Better balance requirement to protect and restore whole balancing socio-economic needs
- State adopted Tiered Aquatic Life Uses
- Extensive coordination with EPA

Outcome:

- State revised ALU for 141 water bodies:
  - 29 Waters "exceptional" ALU and 112 "modified" ALU
- Despite coordination/common sense agreement , debate over which factors to use. In end:
  - Factor 4 (hydrologic modifications): Concrete lined channels preclude attainment of use
  - Factor 5 (Natural Conditions): Physical conditional related to natural features preclude attainment of use

EPA approved use revision

Highest Attainable Use

Concurrent with UAA, State must adopt Highest Attainable Use (HAU)

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- EPA promotes the use of UAAs to reflect more accurate depictions of uses for a waterbody and allow for a clearer articulation of the attainable use with more effective criteria
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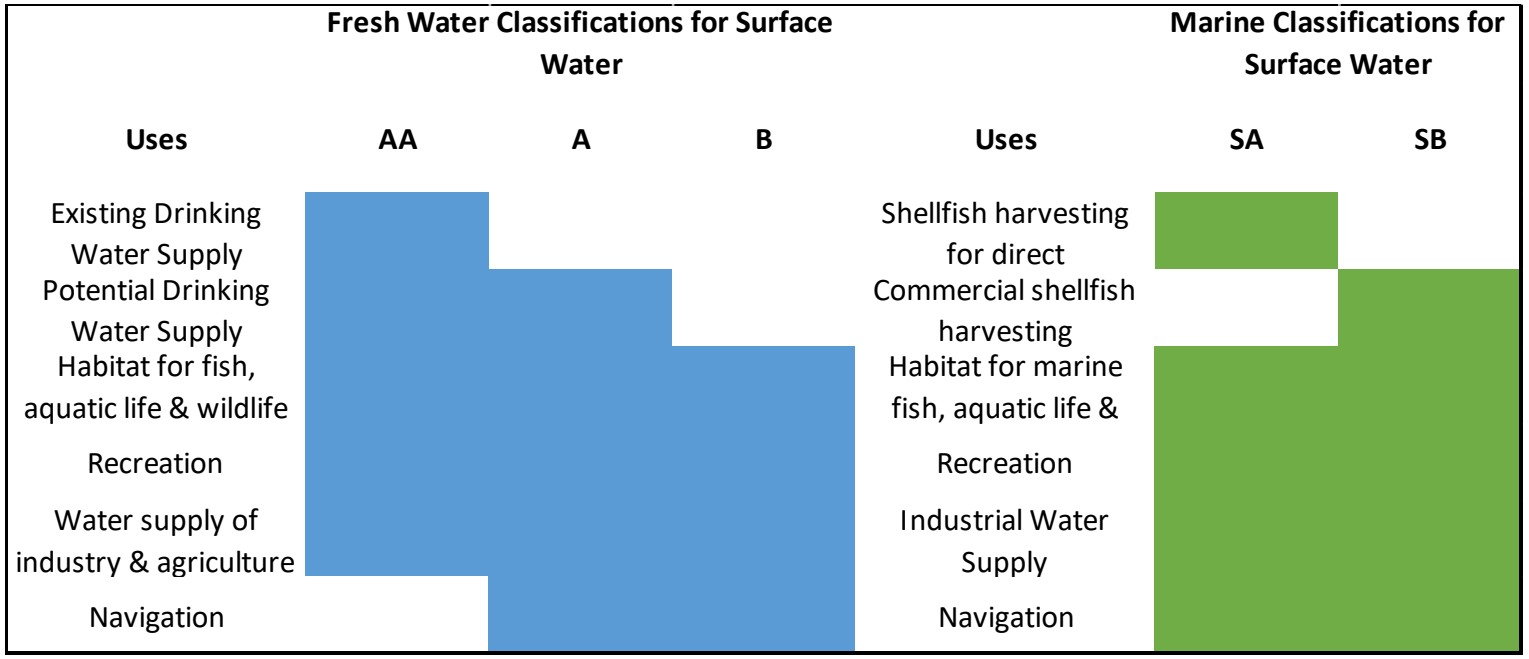
Summary

Overview

- Designated uses are foundational to the Water Quality Standards
- They provide the goals for water quality management and form the basis for water quality criteria, standards and policies
- Existing uses are based on historical uses from 1975
- Uses can be changed over time: Added, Revised or Removed
- Such changes must go through a public process and be reviewed/approved by EPA
- EPA recommends use of Use Attainability Analysis as a tool to refine waterbody-specific uses

How Does it Work in Your State?

Connecticut



- Classifications: Based on Use. All water bodies have been classified
- Changes to Classifications: Statutory Process. Routinely done for ground water but not surface water
- Challenge: Broad recreational category.

Massachusetts

CLASSIFICATION OF MASSACHUSETTS SURFACE WATERS – RIVERS, LAKES, ESTUARIES

INLAND WATER CLASSES

CLASS A *- These waters include waters designated as a source of public water supply and their tributaries. They are designated as excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation, even if not allowed. These waters shall have excellent aesthetic value. These waters are protected as Outstanding Resource Waters.*

CLASS B *- These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.*

CLASS C *- These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for secondary contact recreation. These waters shall be suitable for the irrigation of crops used for consumption after cooking and for compatible industrial cooling and process uses. These waters shall have good aesthetic value.*

COASTAL AND MARINE CLASSES

CLASS SA *- These waters are designated as an excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, sea grass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting without depuration (Approved and Conditionally Approved Shellfish Areas). These waters shall have excellent aesthetic value.*

CLASS SB *- These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.*

CLASS SC *- These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for secondary contact recreation. They shall also be suitable for certain industrial cooling and process uses. These waters shall have good aesthetic value.*

- Classifications: Based on Use. All water bodies classified: default to B (freshwater) and SA (coastal and marine). Classes A, SB, and qualified waters are listed in tables 1-27.
- Changes to Classifications: Regulatory Process. Triennial review updates.
- Challenges: No Special Resource Waters have been designated; no classification for reference waters; tracking/mapping of Outstanding Resource Waters (ORW).