

Water Quality Standards Academy

Designated Uses & Revising Uses





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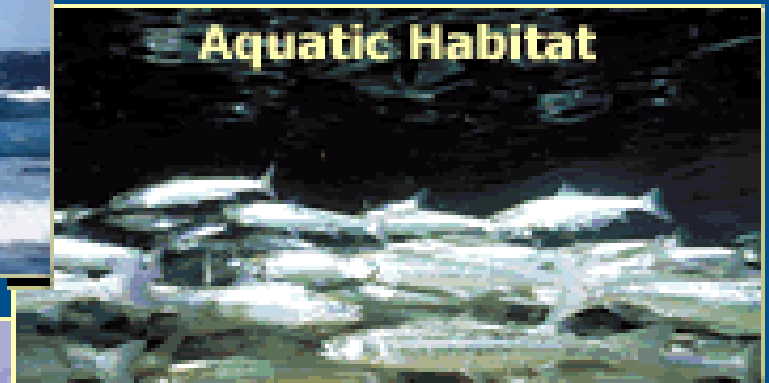
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Part 1 of 2 – Designated Uses

Set Goals and Water Quality Standards

WQS: Designated Use Categories



CWA

EPA

WQS

DU

UAA



CFR

101(a)(2)

NPDES

TMDL



OUTLINE

- What are Designated Uses
- Why are they Important
- Designated Use Identification
- CWA Sections 303(c)(2)(A) & 101(a)(2)
- Terminology
- EPA's Reg Requirements
- Rebutting the Presumption of Attainability



What are Designated Uses?

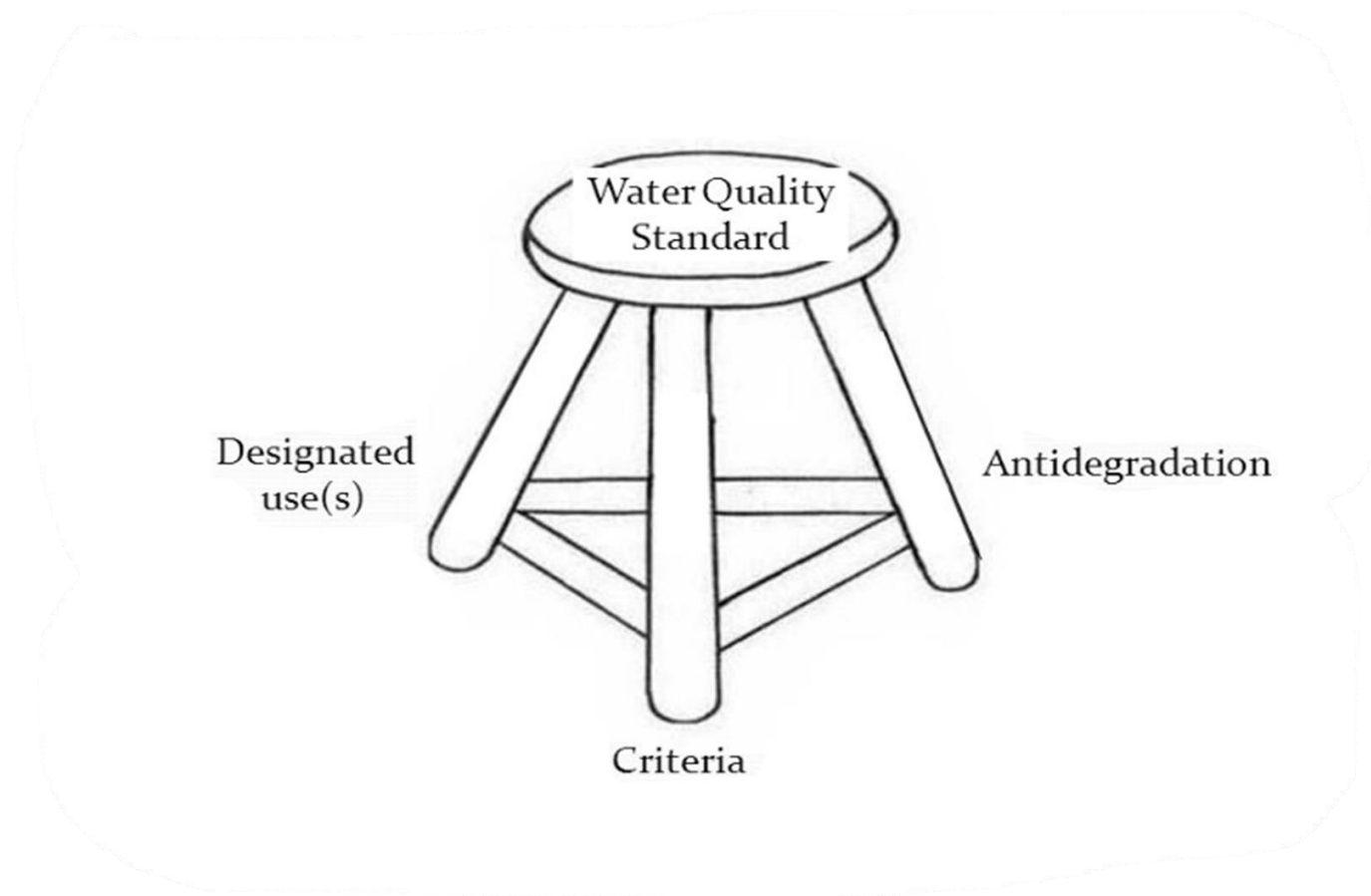
- Designated uses are “those uses specified in the WQS regulations for each water body or segment **whether or not they are being attained.**” (40 CFR § 131.3(f))
- Designated uses may be thought of as:
 - Goals/Objectives/Desired conditions of a waterbody
 - Function of, or activity in, a water that is supported by level of water quality



Why are Designated Uses Important?

- Establish water quality goals for a specific water body and communicate these goals to the public.
- Identifying designated uses leads to identification of the right water quality criteria to protect those uses.
 - Criteria are the primary regulatory basis for TMDLs, NPDES permit limits, etc.

Foundation of a Water Quality Standard



Examples of Designated Use Categories



Examples of Designated Use Categories



Designated Uses Example: Virginia

- * Recreation

- * Propagation and growth of a balanced, indigenous population of aquatic life, including game fish...

- * Wildlife; and the production of edible and marketable natural resources, e.g., fish/shellfish



Designated Uses Example: Vermont

- ❑ Class A(1) Ecological waters:
 - ❑ Aquatic biota, wildlife and aquatic habitat
 - ❑ Aesthetics
 - ❑ Swimming and other PCR
 - ❑ Boating, fishing and other recreation use
- ❑ Class A(2) Public Water Supply:
Class A(1) waters and public water supplies
- ❑ Class B: Class A1 and class A2
and irrigation of crops and other
agricultural uses





Knowledge Check 1

- Designated uses are what a state or authorized tribe sets as a goal for a waterbody even if that goal has not yet been attained.
 - True
 - False



Knowledge Check 2

Sunny State has designated Lake Adventure for fishing; Sunny State would like to protect the same waterbody for additional uses such as public water supply and swimming. Can Sunny designate more than one use for Lake Adventure?

- Yes
- No



Knowledge Check 3

States and authorized tribes are required to adopt criteria that reflect current ambient conditions

- True
- False



OUTLINE

- What are designated uses
- Why are they important
- Designated Use Identification
- **CWA Sections 303(c)(2)(A) & 101(a)(2)**
- **Terminology**
- EPA's Reg Requirements
- Rebutting the Presumption of Attainability

CWA section 303(c)(2)(A): water quality standards “shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and...navigation.”



Clean Water Act

CWA section 101(a)(2): national goal that, wherever attainable, water quality provides for the protection and propagation of fish, shellfish and wildlife, and recreation in and on the water.

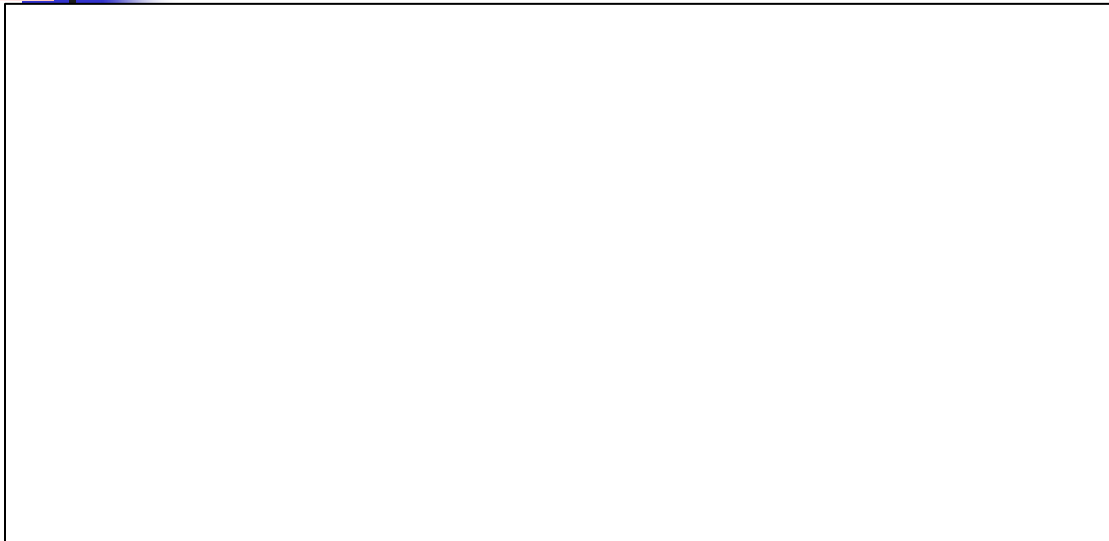




Terminology

- “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, shellfish and wildlife or for recreational purposes. Uses in section 303 (c)(2)(A) but not in section 101(a)(2).

Non 101(a)(2) uses (=303(c)(2)(A) uses – 101(a)(2) uses)





Knowledge Check 4

What are examples of 101(a)(2) uses and sub-categories of 101(a)(2) uses (check all that apply):

- A. Swimming
- B. Limited aquatic life uses
- C. Public water supplies
- D. Irrigation and livestock watering
- E. Arsenic-limited fishery



OUTLINE

- What are designated uses
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- Designated Use Identification
- CWA Sections 303(c)(2)(A) & 101(a)(2)
- Terminology
- **EPA's Reg Requirements**
- Rebutting the Presumption of Attainability

EPA's Regulatory Requirements for Designated Uses

- Specify appropriate uses to be achieved and protected...
..in no case shall a state adopt waste transport/assimilation as a designated use for any waters of the US.(131.10(a));
- **Allow for subcategories of uses (e.g. cold and warm water fisheries) (131.10(c)) and seasonal uses (131.10(f));**
- **Lists 6 factors of which at least 1 must be satisfied to justify removal of 101(a)(2) uses and requires states to adopt the highest attainable use when revising uses based on a required UAA (131.10(g))**
- **Establishes when a state or authorized tribe is or is not required to conduct a use attainability analysis (UAA) (131.10(j) and (k)).**





EPA's Regulatory Requirements for Designated Uses?

- **Specify that States/authorized tribes may not remove designated uses if they are existing uses, unless a use requiring more stringent criteria is added (131.10(h)(1));**
- **Uses can be attained by the imposition of effluent limits required under sections 301(b) and 306 of the Act and cost-effective and reasonable best management practices for nonpoint source control (131.10(d)), and such uses may not be removed (131.10(h)(2));**
- **Require states and authorized tribes to revise WQS to reflect uses that are presently being attained but not designated (131.10(i));**
- **Requires that WQS ensure attainment and maintenance of WQS of downstream waters (131.10(b));**



Knowledge Check 5

What is **NOT** a regulatory requirement for designated uses:

- A. Waste transport cannot be a designated use for any waterbody.
- B. Must ensure that the attainment of downstream water quality standards are protected.
- C. States must adopt designated uses via a Class system.
- D. States are required to conduct a public hearing when adopting designated uses.



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- **Rebutting the Presumption of Attainability**

Rebutting the Presumption of Attainability

101(a)(2) uses are presumed attainable unless demonstrated otherwise through a use attainability analysis (UAA).





Knowledge Check 6

Recreation uses and aquatic life uses must be designated for all waters of the U.S., unless it is demonstrated that such uses are not feasible to attain:

- ☐ True
- ☐ False



Key Messages - Uses

- Designated uses are an important component of water quality standards as they lead to decisions of what water quality criteria level is required for the water.
- They express a state or authorized tribe's desired condition for the water body whether or not that condition is currently attained.
- CWA established a goal that all waters provide for the “protection and propagation of fish, shellfish and wildlife and recreation in and on the water”. Such uses are presumed attainable and must be designated unless demonstrated otherwise.
- When adopting uses, states and authorized tribes must take into consideration the use and value of waters for public water supply, industrial, agricultural, navigation and other uses in addition to the uses specified in section 101(a)(2) of the CWA.



QUESTIONS??



QUESTIONS

Part 2 of 2 - Revising Uses





OUTLINE

- What is a UAA
- When is a UAA Required
- When is a UAA Not Required
- How to Revise a 101(a)(2) Use
 - The Six 131.10(g) Factors
 - Highest Attainable Use (HAU)
- How to Revise a non-101(a)(2) Use
 - Use/Value Demonstration
- Existing Uses

DARN, WE MIGHT AS
WELL GO HOME

WARNING
FISH IN THIS
LAKE CONTAIN
MERCURY



May 2023

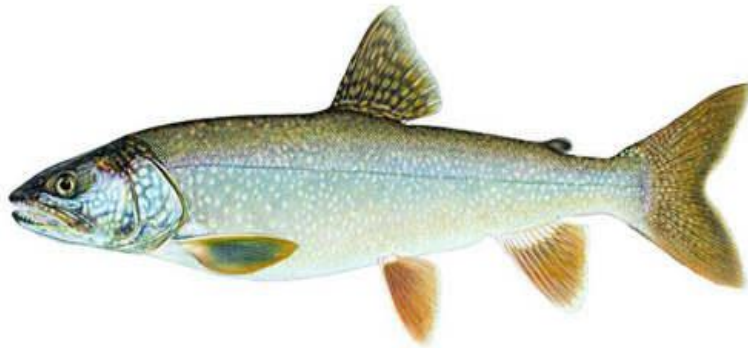


Can Designated Uses be Revised?

- Yes! Uses can be revised to reflect:
 - **More specific** desired condition (e.g., aquatic life use to cold water- or warm water-aquatic life use).
 - Clearer articulation of the **attainable** use (e.g., primary vs secondary- contact recreation use).
- Revising designated uses can lead to more effective criteria, permits, TMDLs.

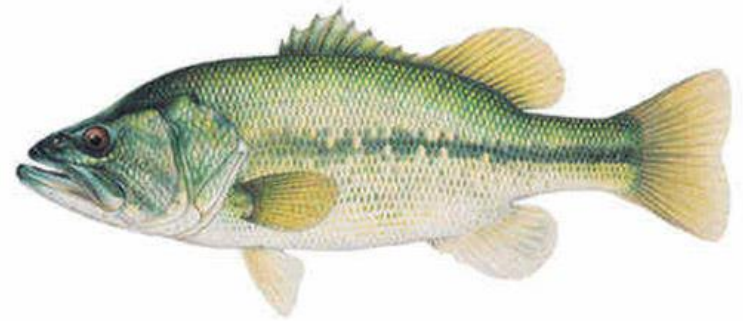
Aquatic Life Use (ALU)

- Cold water ALU



Lake Trout

- Warm water ALU



Bass

Primary/Secondary Recreation Uses





Required Rationale to Revise a Use?

This depends on the use type:

- 101(a)(2) uses, and subcategories of such uses are held to a higher bar such that a use attainability analysis (UAA) is required before removing the use.
- Non 101(a)(2) uses - use/value demonstration, but a UAA would also be acceptable.

UAAs and use/value demonstration provide the required rationale when adopting revised WQS

Knowledge Check 1

Hg is impacting the water quality of the lake. Since the use is not being attained then the use will have to be changed.

- True
- False





OUTLINE

- **What is a UAA**
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What is a UAA?

What is a UAA?

“Structured scientific assessment of the physical, chemical, biological, and economic factors affecting the attainment of the use.



OUTLINE

- What is a UAA
- **When is a UAA Required**
- **When is a UAA Not Required**
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When is a UAA Required (131.10(j))

- Designating uses for the first time that do NOT include uses specified in CWA 101(a)(2).
- Removing a 101(a)(2) use, or subcategory of such a use, or adopting a subcategory of such a use with less stringent criteria.



When is a UAA Not Required (131.10(k))

- Designating the uses specified in CWA 101(a)(2) for the first time.
- Designating a subcategory of a 101(a)(2) use that requires criteria at least as stringent as previously applicable.
- Removing or revising non 101(a)(2) uses. However, must justify how consideration of the use and value of such uses supports the action (i.e., “Use and Value” Demonstration)



Knowledge Check 2

- State Adventure currently has designated an aquatic life use. It would like to adopt uses that provide a more accurate reflection of the attainable uses in the waterbody. The current zinc criterion to protect the aquatic life use is 2 mg/L.
 - If the state wishes to adopt a “zinc-limited aquatic life use” with a criterion of 5 mg/L for Lake A-**Is a UAA required?**
 - If the state wishes to adopt a “high quality zinc aquatic life use” for Lake B with a criterion of 1 mg/L-**Is a UAA required?**



Knowledge Check 3

- Peachy State wants to change its swimming use for Lake C to be a boating use-**Is a UAA required?**
- Lake D was designated for a public water supply use and State A wants to remove this use-**Is a UAA required?**



OUTLINE

- What is a UAA
- When is a UAA Required
- When is a UAA Not Required
- **How to Remove a 101(a)(2) Use**
 - **The Six 131.10(g) Factors**
 - **Highest Attainable Use (HAU)**
- How to Remove a non-101(a)(2) Use
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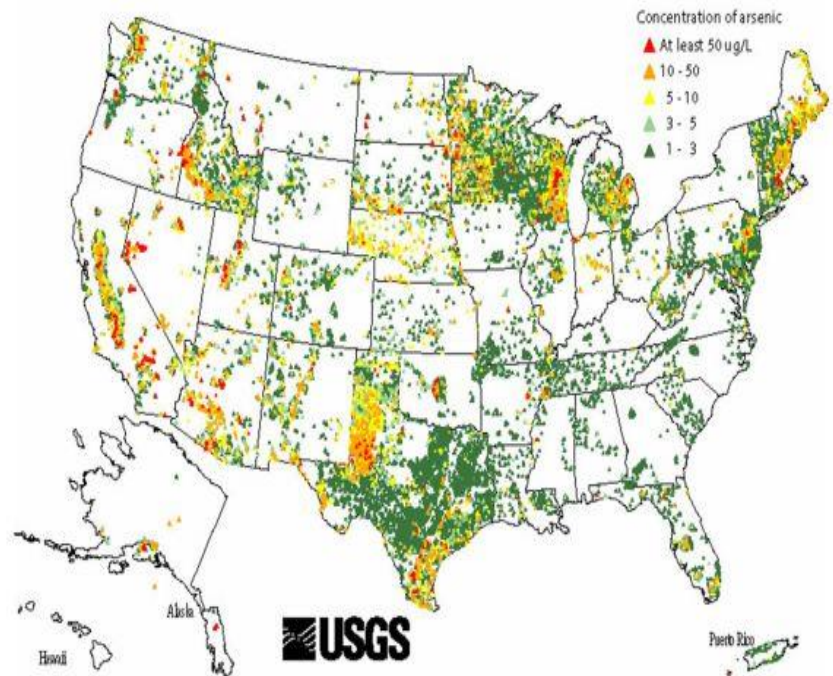


UAA Requirements

- EPA specifies 6 factors to demonstrate that a use is not attainable.
 - “131.10(g) factors.”
- A UAA must demonstrate that one of these factors precludes attainment of the use.

The “131.10(g) Factors”

1. **Naturally occurring** pollutant concentrations prevent the attainment of the use.



The “131.10(g) Factors” (cont’d)

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.



The “131.10(g) Factors” (cont’d)

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.



“The 131.10(g) Factors” (cont’d)

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.



The “131.10(g) Factors” (cont’d)

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.**



The “131.10(g) Factors” (cont’d)

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.**





QUESTIONS??



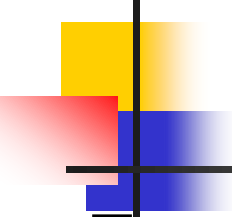
QUESTIONS



Highest Attainable Use (HAU)

After completing a required UAA a state/authorized tribe must adopt the HAU and the criteria to protect the HAU.

- HAU: The **modified** aquatic life, wildlife, or recreation use that is **both closest to the 101(a)(2) use and attainable**, based on the evaluation of the factor(s) in § 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability.”



HAU is the attainable use that results from the process of determining what is not attainable

Example:

- State or authorized tribe demonstrates that a use cannot be attained due to natural background Se concentrations (§131.10(g)(1));
- State or authorized tribe determines the HAU by considering the “**best use**” that can be attained despite the impact of natural background Se concentrations. One option would be to describe the HAU as a “Se-limited aquatic life use”.



HAU is the **modified** aquatic life or recreation use

- **Example:**

- State or authorized tribe demonstrates through a UAA that the warm water aquatic life use is not attainable;
- HAU would be a modified version of the warm water aquatic life use that is attainable and closest to the 101(a)(2) uses, such as a “limited warm water aquatic life use.”



Knowledge Check 4

- The HAU is:
 - a) the currently attained designated use;
 - b) the use closest to the 101(a)(2) uses and attainable;
 - c) the best criteria for each parameter that can be attained;
 - d) no such thing.



Knowledge Check 5

- **True/False** States and authorized tribes are required to adopt the HAU when removing or revising any designated use.
- **True/False** The UAA process informs the HAU



QUESTIONS???



QUESTIONS



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- **How to Remove a non-101(a)(2) Use**
 - **Use/Value Demonstration**
- Existing Uses



Non 101(a)(2) Uses

- States/authorized tribes are required to take into consideration the “use and value” of water for public water supplies, propagation of fish, shellfish and wildlife, recreation, and agricultural, industrial and other purposes.
- UAAs required for uses related to protection/propagation of fish, shellfish, and wildlife, recreation in and on the water.
- A “use and value” demonstration is required for uses NOT related to protection/propagation of fish, shellfish, and wildlife, recreation in and on the water.



Use and Value Demonstration

- Examples of what to consider :
 - Relevant descriptive information.
 - Attainability information.
 - Value and/or benefits associated with either retaining or removing the use.
 - Impacts of the use removal on other designated uses.



When Can Uses **NOT** be Removed?

States or authorized tribes may not remove designated uses (40CFR 131.10(h)), if:

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



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- What is a UAA
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What are Existing Uses?

- Those uses actually attained in a waterbody on or after November 28, 1975, whether or not they are included in the WQS.
- Existing uses serve as a baseline or “floor” of water quality, below which we don’t want to drop.



How Do you Determine the Existing Use?

Existing uses are not typically identified in a state's WQS. *So, how do you determine if a use is existing?*

1. Site-specific determination.
2. Clear data showing the extent to which water quality since 1975 has been attained to support a use that actually occurred in the water.
3. Where data on uses attained and/or water quality are limited, insufficient or inconclusive, evaluate the quantity, quality, and reliability of the available data to determine EU.



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Difference Between Existing Uses and Designated Uses?

- Designated uses focus on the attainable goal/condition **that may not yet be attained.**
- Existing uses focus on the past or present condition **actually attained.**



Knowledge Check 6

- **True/False** Both designated uses and existing uses can be removed by citing at least 1 of the 6 factors in Section 131.10(g).



QUESTIONS???



QUESTIONS?



Key Messages–UAAs

- Use revisions can reflect more accurate depictions of uses for a waterbody and allow for a clearer articulation of the attainable use with more effective criteria.
- States/authorized tribes may not remove designated uses if:
 1. *They are existing uses...unless a use requiring more stringent criteria is added.*
 2. *Such uses will be attained by implementing effluent limits...and by implementing cost-effective and reasonable best management practices for non point source control.*



Key Messages–UAAs (cont'd)

- **101(a)(2)** uses or subcategories of such uses may be revised or removed once a UAA is conducted, and EPA approves the resulting use change.
- When adopting a new or revised WQS based on a UAA, states/authorized tribes shall adopt the **HAU**.
- **Non 101(a)(2)** uses may be revised or removed once a use/value demonstration or a UAA is conducted, and EPA approves the resulting use change.
- States/authorized tribes should engage early and often with EPA when developing a UAA.



Review Question #1

- True or False. A designated use must apply to an entire waterbody.



Review Question #2

- What uses do the CWA and EPA's implementing regulations expect states/authorized tribes to protect, at a minimum?
 - a. Protection & propagation of fish, shellfish, and wildlife
 - b. Recreation in & on the water
 - c. Both a and b



Review Question #3

- True or False. A use must be attained before the state or authorized tribe can designate it for a particular waterbody.



Review Question #4

- True or False. A UAA is required when revising a warm water aquatic life use with a dissolved oxygen criterion of 6 mg/l to a modified warm water aquatic life use with a dissolved oxygen concentration of 4 mg/l.



Review Question #5

- True or False. A state or authorized tribe is required to conduct a UAA when designating uses that include the uses specified in section 101(a)(2) of the CWA.



Questions?

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