

Clean Water Act Module: Part I

History of the Clean Water Act and
Establishing Water Quality Standards



Clean Water Act Module: Part 1

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Establishing Water Quality Standards

About this Course

- Welcome to the U.S. Environmental Protection Agency's Clean Water Act (CWA) Part 1 module on the History of the CWA and Establishing Water Quality Standards (WQS).
- This training module is intended to increase your understanding of the CWA; provide an overview of WQS; and describe the role of states, territories and authorized tribes, the public, and EPA in the WQS process.



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- The general descriptions provided here may not apply to a particular situation based upon the circumstances. Interested parties are free to raise questions and objections about the substance of this content and the appropriateness of their application to a particular situation. EPA retains the discretion to adopt approaches on a case-by-case basis that differ from those described in this module where appropriate. This module is a living resource and may be revised periodically without public notice.
- States, authorized tribes and territories are referred to throughout as “states and authorized tribes.” “State” in the CWA and this document refers to a state, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. “Authorized tribes” refers to those federally recognized Indian tribes with authority to administer a CWA WQS program.
- Unless otherwise noted, all photos used in the module are copyright-free.



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Instructions for Navigating the Module



- Please click the next button on the bottom of the course window to advance to the next slide, and back button to go back.

[Link](#)

- You can click on links which will open in a new tab.

Hover over

- To facilitate use of this module, we have provided a plain language explanation of certain terms as they are used in this module. Hover over underlined words to see a pop up box with the plain language explanation the first time the term is used.

Button

- Clickable boxes on slides provide additional information and context about a slide. Click on these boxes using your cursor to learn more. To make the information disappear, you just need to click the "X" with your cursor.

[40 CFR](#)

- References to the [Code of Federal Regulations \(CFR\)](#) - The Code of Federal Regulations is a set of documents containing all regulations issued by federal agencies. Environmental regulations, including those issued by EPA pertaining to the CWA, are found in Chapter 40 of the Code.

While this course is intended to be completed from start to finish, it can also be used as reference material. If you need a refresher on one or more parts of the course, click on the topic you would like to view from the Table of Contents on the left.



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Code of Federal Regulations (CFR) Rollover: The codification of the general and permanent regulations published in the Federal Register by the executive departments and agencies of the federal government of the United States.

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History of the Clean Water Act

CLEAN WATER ACT AMENDMENTS

Click on dates for more information

Year	Amendment Name	Description
1948	FEDERAL WATER POLLUTION CONTROL ACT (FWPCA)	Enacted in 1948, FWPCA was the basis of the modern Clean Water Act. Previous statutes had provided protections for surface water that focused primarily on navigation.
1972	CLEAN WATER ACT	1972 amendments to FWPCA significantly reorganized and expanded the statute. It became known as the "Clean Water Act (CWA)."
1981	STREAMLINED CONSTRUCTION GRANTS	
1987	CLEAN WATER STATE REVOLVING FUND (CWSRF)	Replaced EPA's Construction Grants program.
2000	"BEACH ACT" AMENDMENTS	Established a grant program to support monitoring and advanced programs at marine coasts. Great Lakes beaches required research and development of recreation criteria by EPA.
TODAY	THE MODERN CWA	

EPA
United States Environmental Protection Agency

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Clean Water Act Amendments

Click on dates for more information

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Clean Water Act Rollover: Establishes the basic structure of regulating discharges of the pollutants into the water of the United States and regulating quality standards for surface waters.

1972: "CLEAN WATER ACT." The 1972 amendments to the FWPCA significantly reorganized and expanded the statute. It became known as the "Clean Water Act (CWA)."

1981: STREAMLINED CONSTRUCTION GRANTS.

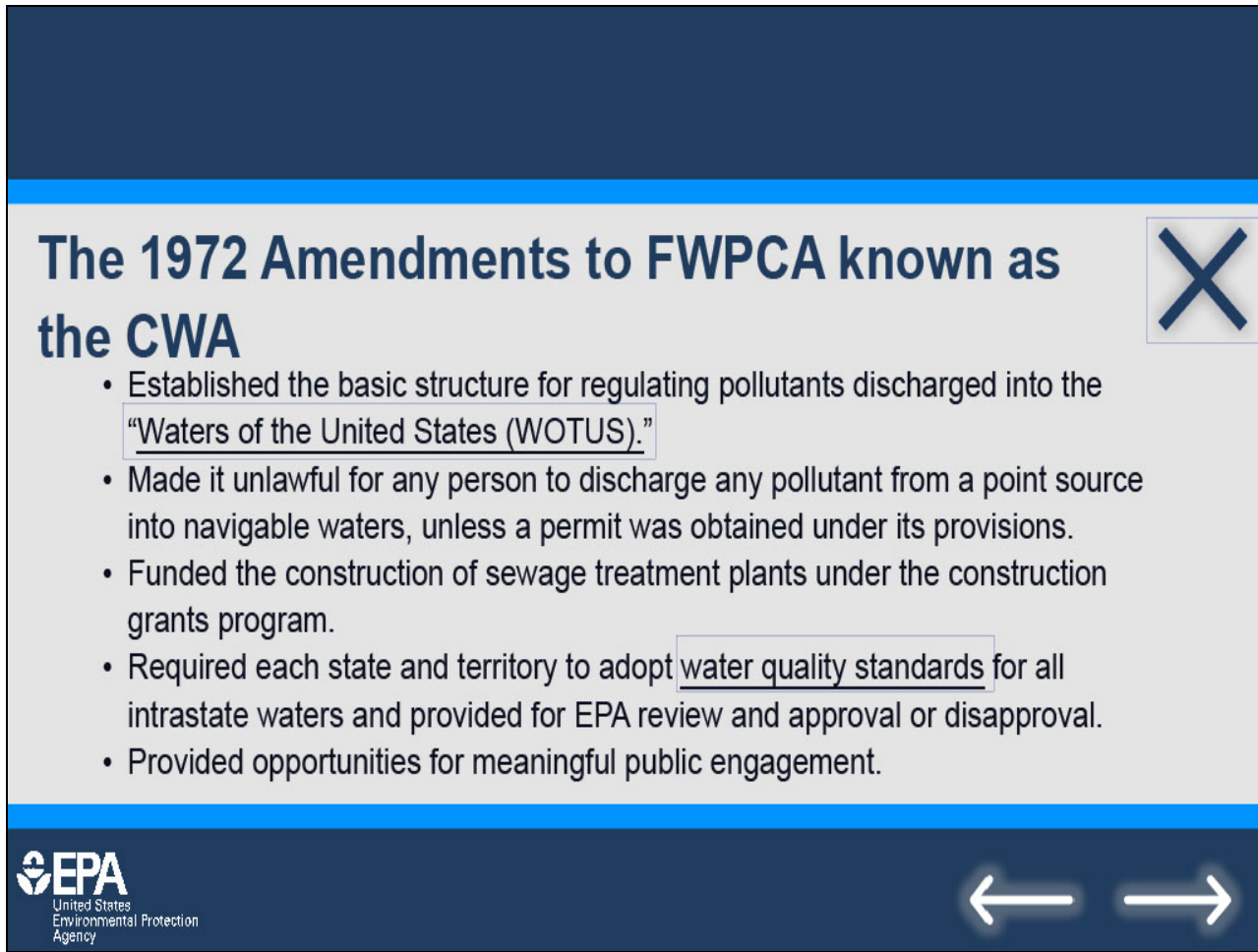
1987: CLEAN WATER STATE REVOLVING FUND (CWSRF).

CLEAN WATER STATE REVOLVING FUND (CWSRF) Rollover: A financial assistance program for a wide range of water infrastructure projects that was created by the 1987 amendments to the Clean Water Act (CWA). The program is a powerful partnership between EPA and the states that replaced EPA's Construction Grants program.

Replaced EPA's Construction Grants Program. Construction Grants Program Rollover: During the 1970s and 1980s, the Construction Grants program was a major source of Federal funds, providing more than \$60 billion for the construction of public wastewater treatment projects. Eventually, the program was replaced by the Clean Water State Revolving Fund.


2000: "BEACH ACT" AMENDMENTS. Established a grant program to support monitoring and advisory programs at marine coastal and Great Lakes beaches, and required research and development of recreational criteria by EPA.



Today: The Modern CWA.



The 1972 Amendments to FWPCA known as the CWA

- Established the basic structure for regulating pollutants discharged into the “Waters of the United States (WOTUS).”
- Made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.
- Funded the construction of sewage treatment plants under the construction grants program.
- Required each state and territory to adopt water quality standards for all intrastate waters and provided for EPA review and approval or disapproval.
- Provided opportunities for meaningful public engagement.

 United States Environmental Protection Agency

The 1972 Amendments to FWPCA known as the CWA

Established the basic structure for regulating pollutants discharged into the “Waters of the United States (WOTUS).”

Waters of the United States (WOTUS) Rollover: A threshold term in the Clean Water Act (CWA) that establishes the scope of federal geographic jurisdiction under the Act. CWA programs, including Water Quality Standards (WQS), total maximum daily loads (TMDLs), and sections 311, 402, and 404 address “navigable waters,” defined in the statute as “the waters of the United States, including the territorial seas.”

Made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.

Funded the construction of sewage treatment plants under the construction grants program.

Required each state and territory to adopt water quality standards for all intrastate waters and provided for EPA review and approval or disapproval.

Water Quality Standards Rollover: Provisions of state or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses. (40 CFR 131.3(i))

Provided opportunities for meaningful public engagement.

Why does the Clean Water Act matter?

CASE STUDY

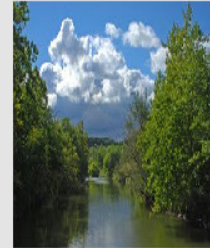
The Cuyahoga River, "the river that caught fire," located in Northeast Ohio reflects the effects of implementing the requirements of the CWA. At one time, the Cuyahoga River was one of the most polluted rivers in the United States, and the reach from Akron to Cleveland was completely devoid of fish.

At least 13 fires were reported on the Cuyahoga River. In 1969, a river fire captured the attention of Time Magazine. The impairment of this river helped spur the environmental movement in the late 1960s.

Since that time, the river's water quality has substantially improved due to the modern CWA and EPA's implementing regulations, as well as the creation of the federal EPA and the Ohio EPA. The river today does not catch fire, contains fish and other aquatic life, and attracts kayakers. It still faces environmental challenges, but it has been restored in many respects.



...ction at Cleveland
)



©D.J. Reiser via National
Park Service

d's Cuyahoga River, then and now
Downstream, Right - Upstream)

Case Study



Why does the Clean Water Act matter?

The CWA provides the basic structure for regulating the discharge of pollutants into waters of the United States.

CWA requirements lead to restoration and maintenance of water quality in our nation's waters.

The CWA provides opportunities for meaningful public engagement.

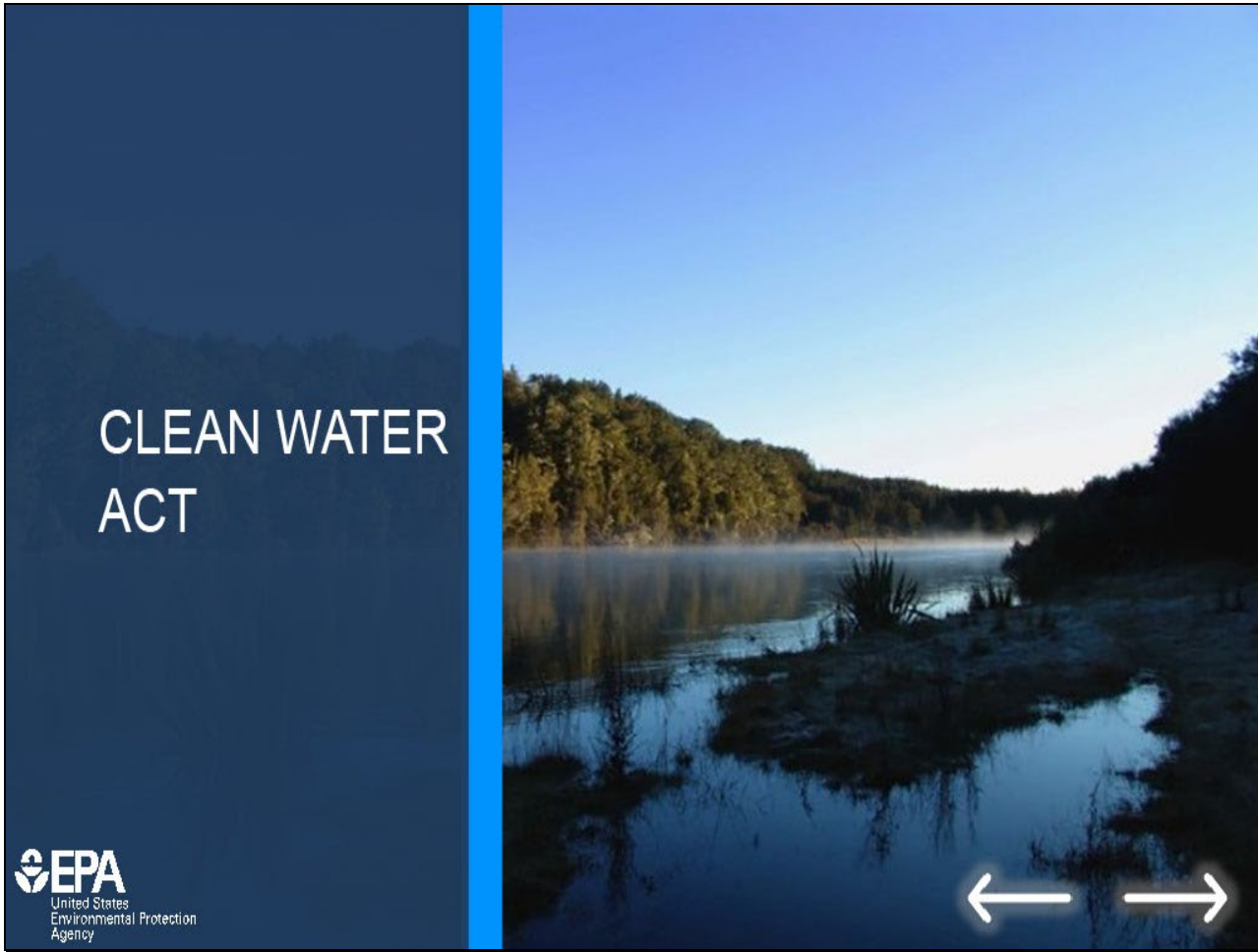
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Image of Cleveland's Cuyahoga River then and now. Copyright Cleveland Press Collection at Cleveland State University Library. Copyright D.L Reiser via National Park Service.




Clean Water Act

Law: CWA

Objective and Interim Goal	Waters Under CWA Jurisdiction	Key Sections
<p>The following are key sections that outline a portion of the major implementation programs:</p> <ul style="list-style-type: none"> Section 101 – outlines major goals. Sections 301 and 302 – related to developing effluent limits for NPDES permits. Section 303 – outlines the requirements for WQS and provides the basis for EPA's WQS regulations at 40 CFR Part 131. Section 319 – covers management for nonpoint source pollution (pollution not managed under CWA permits). It tasks states and authorized tribes to develop management plans and EPA to award grants for that management. Sections 401, 510, and 518 – outlines roles of states and tribes with regards to certification and authority. Section 402 – outlines requirements for point source permitting under the National Pollutant Discharge Elimination System (NPDES). Section 502 – definitions that apply throughout the Act such as “navigable” and “pollutant.” 		

The first number of the section indicates the title of the Act in which that section is located.



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Law: CWA

Objective and Interim Goal

Objective

“Restore and maintain the chemical, physical and biological integrity of the Nation’s waters” (CWA section 101(a)).

Interim Goal

“It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water be achieved by July 1, 1983” (CWA section 101(a)(2)).

EPA’s Water Quality Standards (WQS) regulations expand on this Interim Goal.

Waters Under CWA Jurisdiction

The agencies are currently implementing their programs consistent with the pre-2015 regulatory regime defining “waters of the United States” (WOTUS), which includes:

Traditional navigable waters.

Interstate waters.

All other waters...used in interstate commerce (see more information).

Impoundments of jurisdictional waters.

Tributaries of the above waters.

Territorial seas.

Adjacent wetlands.

Under this regime, “waters of the United States” do not include prior converted cropland or waste treatment systems.

Note: Though litigation now prevents the agencies from implementing the 2020 definition (not shown), that definition remains “on the books” (i.e., in the Code of Federal Regulations). The EPA and the U.S. Army Corps of Engineers are currently working on a proposed rule to revise the regulations defining “waters of the United States.”

More Information:

WATERS OF THE UNITED STATES. The scope of geographic jurisdiction has changed from time to time as new court rulings are handed down and new regulations are issued. Agency implementation has also changed at times; For example, in practice the agencies have generally not asserted jurisdiction using the “other waters” category since a Supreme Court case in 2001. (For more information on waters of the United States, visit www.epa.gov/wotus)

Key Sections

The first number of the section indicates the title of the Act in which that section is located.

The following are key sections that outline a portion of the major implementation programs:

Section 101 – outlines major goals.

Sections 301 and 302 – related to developing effluent limits for NPDES permits.

NPDES Rollover: (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA. The term includes an “approved program.”

Section 303 – outlines the requirements for WQS and provides the basis for EPA’s WQS regulations at 40 CFR Part 131 (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131?toc=1>).

Section 319 – covers management for nonpoint source pollution (pollution not managed under CWA permits). It tasks states and authorized tribes to develop management plans and EPA to award grants for that management.


Sections 401, 510, and 518 – outlines roles of states and tribes with regards to certification and authority.

Section 402 – outlines requirements for point source permitting under the National Pollutant Discharge Elimination System (NPDES).


Section 502 – definitions that apply throughout the Act such as “navigable” and “pollutant.”

Waters Under CWA Jurisdiction

What activities are regulated under CWA?

'Point source' <i>Regulated under CWA</i>	'Nonpoint source' <i>NOT regulated or defined under CWA</i>
 <p style="font-size: small; margin-top: 5px;"><i>Livestock manure runoff contributes to nonpoint source pollution.</i></p>	<ul style="list-style-type: none"> A nonpoint source (NPS) is any source of water pollution that does not meet the legal definition of "point source" at CWA section 502(14). NPS pollution is caused by polluted runoff from rain or snowmelt carrying natural and anthropogenic pollutants to waters. Examples include runoff from agricultural lands, stream erosion, unregulated urban runoff, and atmospheric deposition. NPS are not regulated under the CWA.

More Information on Nonpoint Source Pollution



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What activities are regulated under CWA?

'Point source' Regulated under CWA

CWA section 502(14) defines a point source as "any discernable, confined and discrete conveyance including... any pipe, ditch, channel...[etc] from which pollutants are or may be discharged."

Point source discharges include discharges from publicly owned treatment works (POTWs), industrial wastewater, storm sewer system runoff, construction activities, and concentrated animal feeding operations (CAFOs).

publicly owned treatment works (POTWs) Rollover: A sewage treatment plant that is owned, and usually operated, by a state or municipality.

concentrated animal feeding operations (CAFOs) Rollover: Agricultural operations where animals are kept and raised in confined situations.

Point source discharges must generally be regulated in a manner consistent with state or tribal WQS.

Image of pipe discharging into local water body (i.e. point source)

More Information on Point Source Pollution

POINT SOURCE POLLUTION

Section 404 of the CWA discusses the permitting process for discharges of dredged or fill material into waters of the US. Section 401 of the CWA discusses certification of federal permits or licenses that may result in a discharge to waters of the US.

'Nonpoint source' NOT regulated or defined under CWA

A nonpoint source (NPS) is any source of water pollution that does not meet the legal definition of "point source" at CWA section 502(14).

NPS pollution is caused by polluted runoff from rain or snowmelt carrying natural and anthropogenic pollutants to waters.

Anthropogenic Rollover: Relating to human-caused conditions or sources of pollution.

Examples include runoff from agricultural lands, stream erosion, unregulated urban runoff, and atmospheric deposition.

NPS are not regulated under the CWA.

More Information on Nonpoint Source Pollution

NONPOINT SOURCE POLLUTION

It is well documented that pollutants from nonpoint sources can have harmful effects on drinking water supplies, recreation, fisheries, and wildlife. Though the relative impact from a few nonpoint sources might be small, the cumulative impact from many nonpoint sources can significantly degrade water quality. To address non-point sources, the CWA 1987 amendments established the Section 319 Nonpoint Source Management Program. For more information, check out the NPS Module on the Watershed Academy website.

Image of livestock manure runoff contributes to nonpoint source pollution.

CWA Section 303: Basis for WQS

- WQS define the water quality goals for a water body.
- WQS provide a regulatory basis for many actions, e.g.,
 - Reporting on water quality conditions and status.
 - Developing water quality-based effluent limits (WQBEL) in NPDES permits for point sources.
 - Setting targets for Total Maximum Daily Loads (TMDLs).
- An important function of WQS is to provide the regulatory basis for the water quality management activities authorized under the CWA.



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Developing water quality-based effluent limits (WQBEL) in NPDES permits for point sources.

Water quality-based effluent limits (WQBEL) Rollover: Calculated permit limits for discharges to waters of the US designed to ensure that water quality standards are met in the receiving water.

Setting targets for Total Maximum Daily Loads (TMDLs).

Total Maximum Daily Loads (TMDLs) Rollover: The calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

An important function of WQS is to provide the regulatory basis for the water quality management activities authorized under the CWA.

What is the connection between the CWA and WQS?

- The CWA is a law, or statute, passed by Congress.
- The CWA gave EPA the authority to promulgate regulations, including the WQS regulations.
- Regulations implement the statute.
- EPA also publishes guidance to assist states and authorized tribes in implementing their WQS programs; however, these are recommendations rather than requirements.



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WATER QUALITY STANDARDS TIMELINE

Click on dates for more information



WATER QUALITY STANDARDS TIMELINE

Click on dates for more information

1965: WATER QUALITY ACT OF 1965

1972: AMENDMENTS TO THE CWA EXPANDED THE 1965 WATER QUALITY ACT

1983: FIRST FEDERAL WATER QUALITY STANDARDS REGULATION WAS PUBLISHED

1990: GREAT LAKES INITIATIVE (GLI). Resulted from a 1978 agreement with Canada to reduce toxics. Relates to WQS, permitting, and only applies to the Great Lakes.

Great Lakes Initiative (GLI) Rollover: Published in 1995, formally known as the Water Quality Guidance for the Great Lakes System. The guidance consists of water quality criteria for 29 pollutants, detailed methodologies to develop criteria for additional pollutants, implementation procedures, and antidegradation policies and procedures.

2000: ADDED REQUIREMENT THAT STATE WQS ONLY GO INTO EFFECT FOR CWA PURPOSES AFTER EPA APPROVAL ("THE ALASKA RULE")

2015: REVISIONS TO THE WATER QUALITY STANDARDS REGULATION

Regulation: Water Quality Standards

- WQS are the core of water quality management programs.
- WQS protect public health or welfare, enhance the quality of the water, and serve the purposes of the CWA including sections 101(a) and 101(a)(2).
- State and authorized tribal WQS establish water quality goals for a water body and provide a regulatory basis for controls.
- EPA-approved state and authorized tribal WQS can be supplemented by other state or authorized tribal programs.



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EPA-approved state and authorized tribal WQS can be supplemented by other state or authorized tribal programs.

Regulation: Water Quality Standards

- The current federal regulation implementing the CWA requirement to establish WQS is codified in Title 40 of the Code of Federal Regulations (CFR), [Part 131](#), as well as [Part 132](#) (for the Great Lakes area).
- [Part 131](#) was most recently updated in October 2015.
- The federal WQS regulations contain procedures for developing, revising, and approving state and authorized tribal-adopted WQS, and for EPA's promulgation of state and authorized tribal WQS.



Regulation: Water Quality Standards

The current federal regulation implementing the CWA requirement to establish WQS is codified in Title 40 of the Code of Federal Regulations (CFR), [Part 131 \(https://www.ecfr.gov/current/title-40/chapter-l/subchapter-D/part-131?toc=1\)](https://www.ecfr.gov/current/title-40/chapter-l/subchapter-D/part-131?toc=1), as well as [Part 132 \(https://www.ecfr.gov/current/title-40/chapter-l/subchapter-D/part-132?toc=1\)](https://www.ecfr.gov/current/title-40/chapter-l/subchapter-D/part-132?toc=1) (for the Great Lakes area).

[Part 131 \(https://www.ecfr.gov/current/title-40/chapter-l/subchapter-D/part-131?toc=1\)](https://www.ecfr.gov/current/title-40/chapter-l/subchapter-D/part-131?toc=1) was most recently updated in October 2015.

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Components of Water Quality Standards

Components of Water Quality Standards

- Three core components:
 1. Designated Uses (sometimes known as “beneficial uses”).
 2. Criteria to protect those uses.
 3. Antidegradation requirements.
- Additional components include general policies (e.g., [low flow provisions](#), [mixing zone policies](#)) ([40 CFR 131.13](#)), [WQS variances](#) ([40 CFR 131.14](#)), and [compliance schedule authorizing provisions](#) ([40 CFR 131.15](#)).



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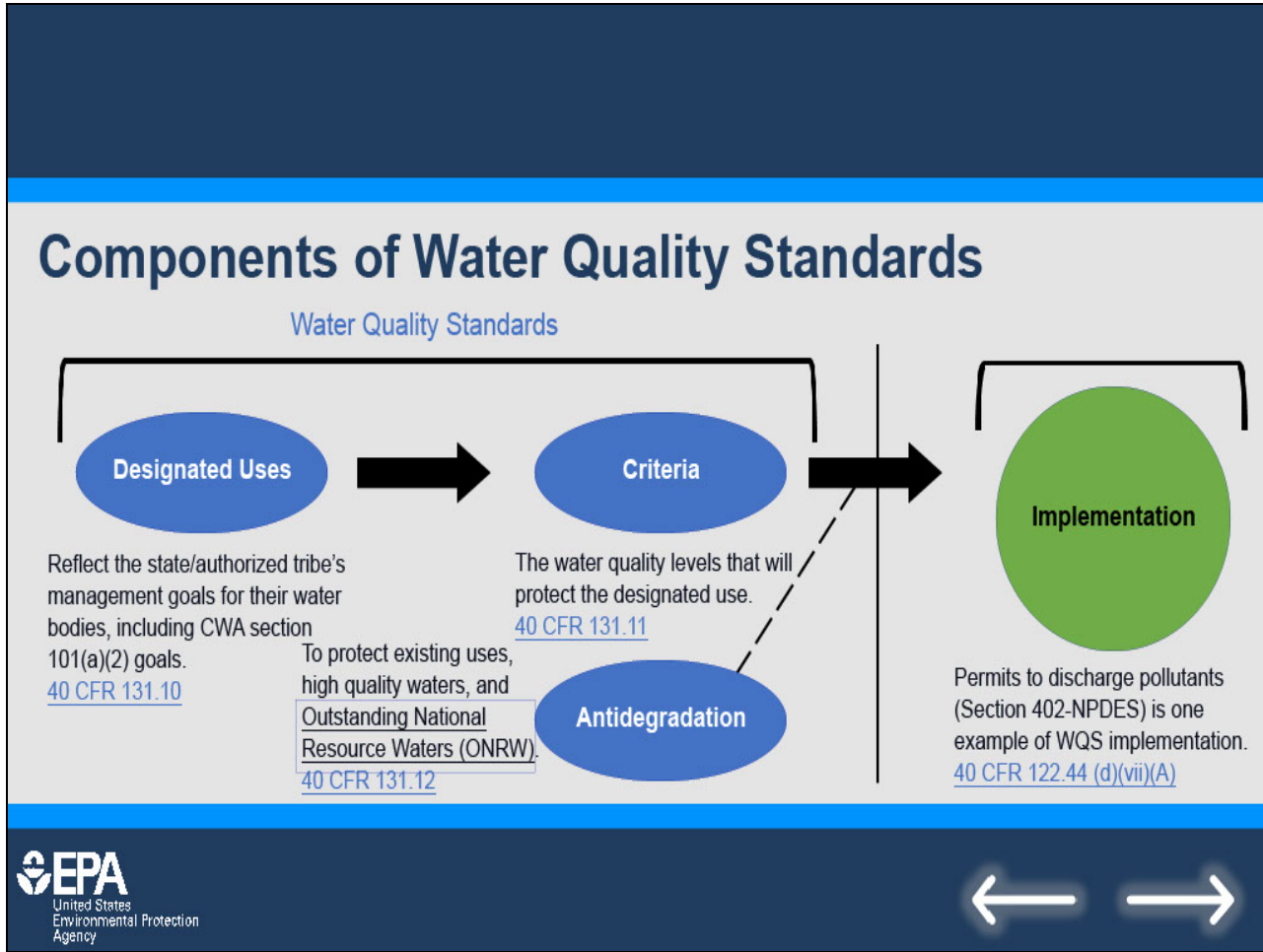
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Low Flow Provisions Rollover: Provisions/policies regarding the flow of water in a stream that allows the least dilution. Meeting criteria at these “critical” low flows should ensure protection when flows are higher, as well. Low flow is typically a seasonal phenomenon (e.g., the "dry season") and is an important component of the flow regime in any river or stream.

Mixing Zone Policies Rollover: A mixing zone policy is a legally binding state or tribal policy that is adopted into WQS and describes the general characteristics of and requirements associated with mixing zones.

WQS Variances Rollover: A time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the WQS variance. (40 CFR 131.3(o))

Compliance Schedule Authorizing Provisions Rollover: Provisions that specifically authorize the use of compliance schedules in NPDES permits.



Components of Water Quality Standards

Figure illustrates the three components of water quality standards (i.e., designated uses, criteria and antidegradation). These water quality standards are then implemented.

Designated Uses

Reflect the state/authorized tribe's management goals for their water bodies, including CWA section 101(a)(2) goals.

[40 CFR 131.10](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10) (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10>)

To protect existing uses, high quality waters, and Outstanding National Resource Waters (ONRW).

[40 CFR 131.12](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12) (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12>)

Outstanding National Resource Waters (ONRW) Rollover: Waters that are provided the highest level of protection under an antidegradation policy. ONRWs are waters either with extremely high water quality (sometimes viewed as pristine) or are recreationally or ecologically important or unique. The federal regulation prohibits lowering of water quality in ONRWs, except on a short-term or temporary basis.

Criteria

The water quality levels that will protect the designated use.

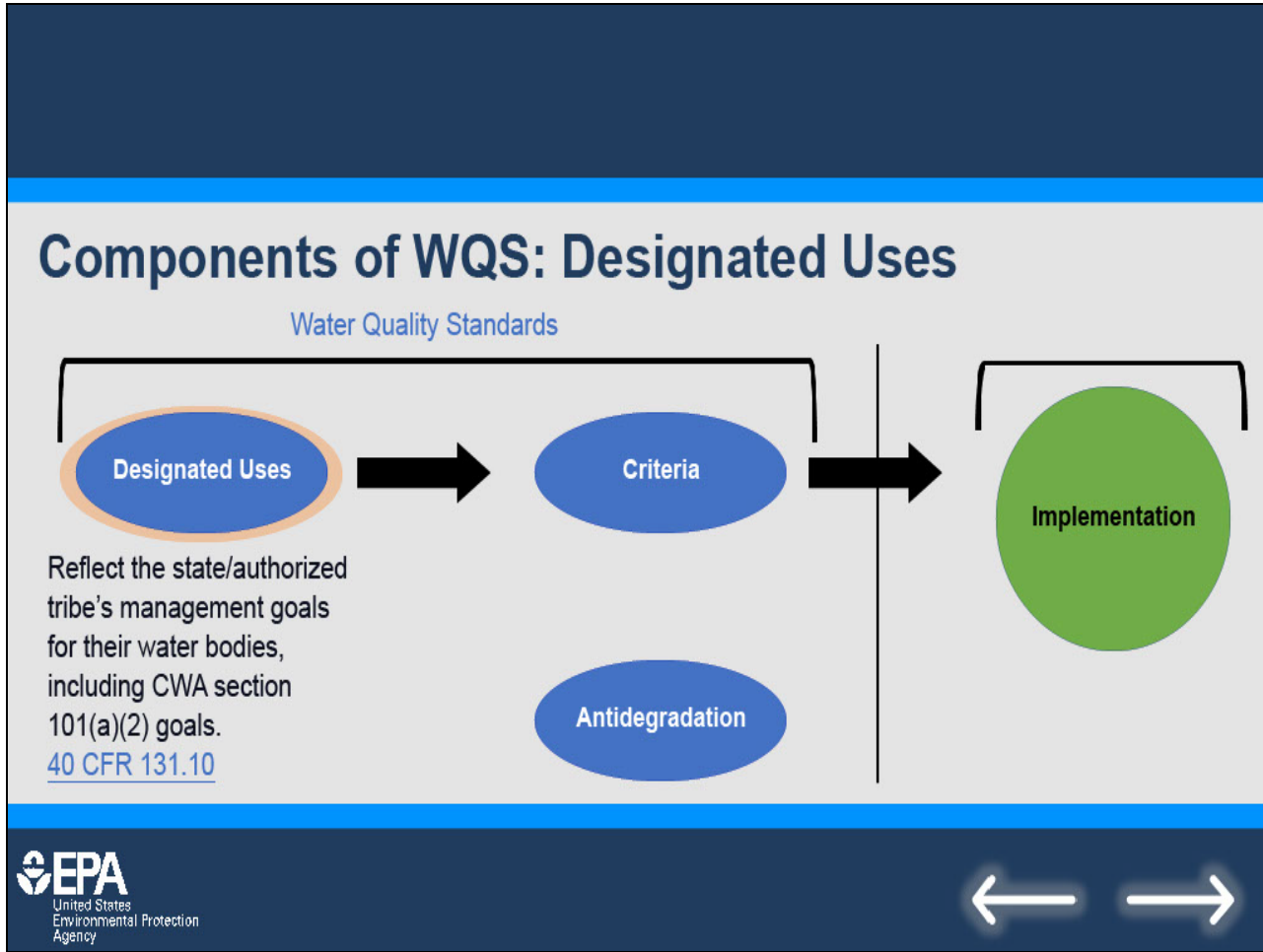
[40 CFR 131.11 \(https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11)

Antidegradation

Implementation

Permits to discharge pollutants (Section 402-NPDES) is one example of WQS implementation.

[40 CFR 122.44 \(d\)\(vii\)\(A\) \(https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-122/subpart-C/section-122.44#p-122.44\(d\)\(1\)\(vii\)\(A\)\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-122/subpart-C/section-122.44#p-122.44(d)(1)(vii)(A))



Components of WQS: Designated Uses
 Water Quality Standards

Designated Uses

Reflect the state/authorized tribe's management goals for their water bodies, including CWA section 101(a)(2) goals.
[40 CFR 131.10 \(https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10)

Criteria

Antidegradation

Implementation

Component 1: Designated Uses (40 CFR 131.10)

Definition (40 CFR 131.3(f)): “Designated uses are those uses specified in water quality standards for each water body or segment whether or not they are being attained.”

- Designated uses describe the water quality goals or desired condition for a specific water body, as well as the functions or activities supported by the level of water quality.
- They can be useful tools to communicate water quality goals to the public.
- CWA section 101(a)(2) sets a national goal that, “wherever attainable...water quality which provides for the protection and propagation of fish, shellfish and wildlife, and...recreation in and on the water...”
 - States and authorized tribes may choose to adopt more refined uses, called subcategories, to reflect the specific desired condition (e.g., cold water aquatic life uses).
 - Designated uses that protect those uses specified in CWA section 101(a)(2) are referred to as “101(a)(2) uses.”
- “Non-101(a)(2) use”: Any use unrelated to the protection and propagation of fish, shellfish, wildlife or recreation in and on the water (40 CFR 131.3(q)).
- 101(a)(2) uses are generally presumed attainable and must be designated. If a state or authorized tribe disagrees, they may demonstrate that such uses are not attainable through a [Use Attainability Analysis \(UAA\)](#).
- States and authorized tribes are not required to designate non-101(a)(2) uses, but they must consider their use and value.

Types of Designated Uses



Component 1: Designated Uses (40 CFR 131.10) (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10>)

Definition (40 CFR 131.3(f)) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-A/section-131.3#p-131.3\(f\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-A/section-131.3#p-131.3(f))): “Designated uses are those uses specified in water quality standards for each water body or segment whether or not they are being attained.”

Designated uses describe the water quality goals or desired condition for a specific water body, as well as the functions or activities supported by the level of water quality.

They can be useful tools to communicate water quality goals to the public.

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

States and authorized tribes may choose to adopt more refined uses, called subcategories, to reflect the specific desired condition (e.g., cold water aquatic life uses).

Designated uses that protect those uses specified in CWA section 101(a)(2) are referred to as “101(a)(2) uses.”

“Non-101(a)(2) use”: Any use unrelated to the protection and propagation of fish, shellfish, wildlife or recreation in and on the water (40 CFR 131.3(g)) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-A/section-131.3#p-131.3\(g\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-A/section-131.3#p-131.3(g))).

101(a)(2) uses are generally presumed attainable and must be designated. If a state or authorized tribe disagrees, they may demonstrate that such uses are not attainable through a Use Attainability Analysis (UAA).

Use Attainability Analysis (UAA) Rollover: A structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in 40 CFR 131.10(g). ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10#p-131.10\(g\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10#p-131.10(g)))

States and authorized tribes are not required to designate non-101(a)(2) uses, but they must consider their use and value.

Types of Designated Uses

101(a)(2) uses:

Protection and propagation of fish, shellfish, wildlife.

Recreation in and on the water.

Non-101(a)(2) uses:

Public water supply.


Agriculture.

Others.

Designated Uses – Roles of States and Authorized Tribes ([40 CFR 131.10](#))

- States and authorized tribes must specifically identify their water quality goals.
- There are no federal “default” designated uses.
- States and authorized tribes can designate multiple uses for each water body.
- States and authorized tribes must take into account downstream water quality standards when designating uses and appropriate criteria to protect those uses.

For more information on the protection of downstream waters in WQS see: <https://www.epa.gov/wqs-tech/protection-downstream-waters-water-quality-standards>

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Designated Uses – Roles of States and Authorized Tribes ([40 CFR 131.10](#)
(<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10>))

States and authorized tribes must specifically identify designated uses to express their water quality goals.

There are no federal “default” designated uses.

States and authorized tribes can designate multiple uses for each water body.

States and authorized tribes must take into account downstream water quality standards when designating uses and appropriate criteria to protect those uses.

Additional Information on the Protection of Downstream Waters in WQS

For more information on the protection of downstream waters in WQS see: <https://www.epa.gov/wqs-tech/protection-downstream-waters-water-quality-standards>

Designated
Use
Approaches


Approaches

State Example A

State Example B

- States and authorized tribes specifically designate multiple uses to each water.
- For example, a state may designate one water body for:
 - Warm water aquatic life use,
 - Public water supply use,
 - Agricultural use, and
 - Primary contact recreation use.





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Designated Use Approaches

Approaches

States and authorized tribes have discretion in designating uses and how to articulate them as long as the established system allows protection of waters consistent with the CWA and regulations.

Not all states or authorized tribes have the same designated use categories.

For example, some may say “recreation” or “water contact recreation” or “whole body contact recreation” while others may say “Class 1 waters” or “Class A waters.”

State Example A

States and authorized tribes specifically designate multiple uses to each water.

For example, a state may designate one water body for:

Warm water aquatic life use,

Public water supply use,

Agricultural use, and

Primary contact recreation use.

Primary Contact Recreation Use Rollover: Primary contact recreation means recreational activities where the ingestion of small quantities of water is likely to occur. Such activities include but are not limited to swimming, rafting, kayaking, tubing, windsurfing, water-skiing, and water play by children.

State Example B

States and authorized tribes designate a “class,” but that class contains multiple different uses.

For example, designations for a state may be for:

Class A(1)

Aquatic biota, wildlife and aquatic habitat use,

Aesthetics,

Swimming and other primary contact recreation use, or

Boating, fishing and other recreation use.

Class A(2)

Includes Class A(1) + Public water supply use.

Class B

Includes Class A(1), Class A(2), + irrigation of crops and other agricultural uses.

Revising Designated Uses

Revising Designated Uses UAA

Six Factors at [40 CFR 131.10\(g\)](#)

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.

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Revising Designated Uses

Revising Designated Uses

Sometimes the designated uses and criteria must be adjusted to reflect that the underlying WQS is not attainable.

Except in certain circumstances, designated 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, and TMDLs.

Evaluation of the use and value for a designated use is generally required by a state or authorized tribe wishing to make a revision, but Congress intended more prescriptive requirements for revising uses related to CWA section 101(a)(2).

For 101(a)(2) uses, and subcategories of such uses, revisions must be accompanied by a Use Attainability Analysis (UAA).

UAA

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

A UAA must identify a factor precluding the attainment of the use. EPA specifies six factors that can be used to demonstrate that a use is not attainable – “Factors listed at 40 CFR 131.10(g).”

([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10#p-131.10\(g\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10#p-131.10(g)))

EPA does not act on UAAs, but can and should work closely with states and authorized tribes prior to submission to provide input.

After completing a required UAA, a state or authorized tribe must adopt the highest attainable use (HAU) and the criteria to protect the HAU.

Six Factors at 40 CFR 131.10(g)

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
Ephemeral Rollover: Waters that only flow in direct reaction to rainfall, and whose channel is always above the water table.
Intermittent Rollover: Waters that occur seasonally when it receives ample water from springs or other ground sources such as rainfall runoff or snow melt.
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.

When do you need a UAA? 40 CFR 131.10(j) and 40 CFR 131.10(k)

A UAA is required:

Before removing CWA section 101(a)(2) uses, and subcategories of such uses; and

When designating for the first time, uses that do NOT include CWA section 101(a) (2) uses or when adopting subcategories of such uses with less stringent criteria.

A UAA is not required:

When designating a CWA section 101(a)(2) use for the first time;

When designating a subcategory of a CWA section 101(a)(2) use that requires criteria at least as stringent as previously applicable; and

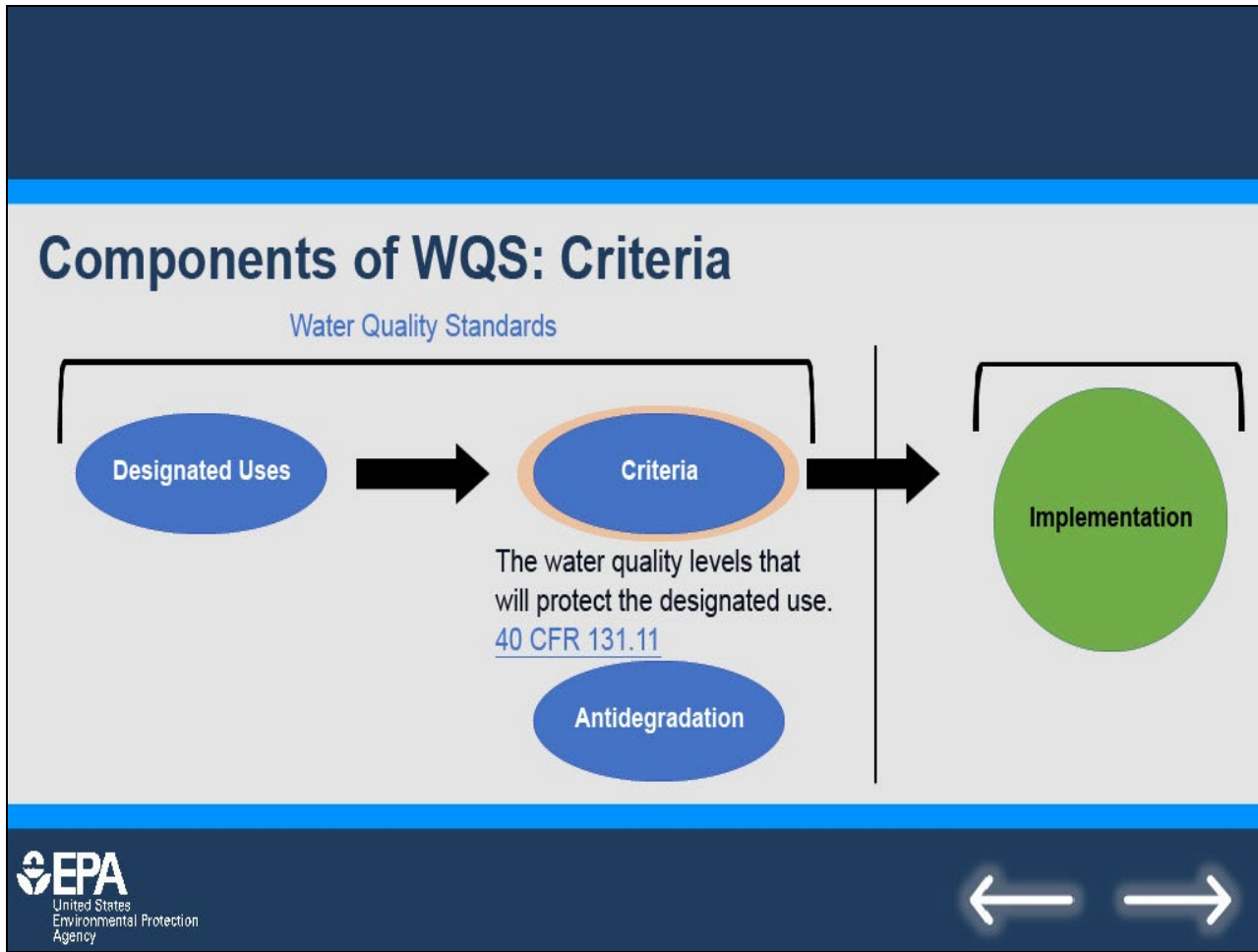
Before removing or revising non-101(a)(2) uses.

However, must justify how consideration of the use and value of such uses supports the action (i.e., "Use and Value" Demonstration).

More Information on HAU

HIGHEST ATTAINABLE USE (40 CFR 131.3(m)) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-A/section-131.3#p-131.3\(m\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-A/section-131.3#p-131.3(m)))

HAU is the "modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in section 101(a)(2) of the Act and attainable, based on the evaluation of the factor(s) in 40 CFR 131.10(g) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10#p-131.10\(g\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.10#p-131.10(g))) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability."



Components of WQS: Criteria

Water Quality Standards

Designated Uses

Criteria

The water quality levels that will protect the designated use.

40 CFR 131.11 (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11>)

Antidegradation

Implementation

Component 2: Water Quality Criteria

([40 CFR 131.11](#))

CWA Requirements:

CWA section 303(c)(1): “State shall from time to time...hold public hearings for the purpose of reviewing applicable water quality standards, and as appropriate, modifying and adopting standards...”

CWA section 303(c)(2)(b): “..such State shall adopt criteria for all toxic pollutants listed pursuant to section 307(a)(1) of this Act for which criteria have been published under section 304(a)...”



Component 2: Water Quality Criteria ([40 CFR 131.11](#)) (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11>)

CWA Requirements:

CWA section 303(c)(1): “State shall from time to time...hold public hearings for the purpose of reviewing applicable water quality standards, and as appropriate, modifying and adopting standards...”

CWA section 303(c)(2)(b): “..such State shall adopt criteria for all toxic pollutants listed pursuant to section 307(a)(1) of this Act for which criteria have been published under section 304(a)...”

Component 2: Water Quality Criteria (40 CFR 131.11)

Definition (40 CFR 131.3(b)): “Elements of State water quality standards, expressed as constituent concentrations, levels or narrative statements, representing water quality that supports a particular designated use. When criteria are met, water quality will generally protect the designated use.”

- Criteria are the water quality levels that will protect the designated use.
- States and authorized tribes consider which criteria are needed to protect the designated uses and then adopt these criteria into their WQS.



Component 2: Water Quality Criteria (40 CFR 131.11) (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11>)

Definition (40 CFR 131.3(b)) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-A/section-131.3#p-131.3\(b\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-A/section-131.3#p-131.3(b))): “Elements of State water quality standards, expressed as constituent concentrations, levels or narrative statements, representing water quality that supports a particular designated use. When criteria are met, water quality will generally protect the designated use.”

Criteria are the water quality levels that will protect the designated use.

States and authorized tribes consider which criteria are needed to protect the designated uses and then adopt these criteria into their WQS.

Regulatory Requirements: Water Quality Criteria

- Criteria must be based on sound scientific rationale.
 - EPA produces national water quality criteria recommendations under section 304(a) of the CWA (these are not Federal standards).
 - Factors such as technological feasibility, social and economic costs, and the benefits of achieving criteria levels, are not considered in criteria development.
 - Criteria may be revised as new scientific data or methodologies are developed.
- Criteria must contain sufficient parameters or constituents to protect the designated use.
- For waters with multiple use designations, the criteria support the most sensitive use.
 - EPA encourages states and tribes to reach out to the local communities to learn how they use particular water bodies. This information will help make more informed decisions on how to support the most sensitive use.



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Forms of Criteria

Numeric Narrative

NUMERIC CRITERIA

Recreational (Bacteria) Numeric Criteria - For marine waters:
A 30 day geometric mean of 30 colony forming units (cfu) enterococci /100 mL water, not to be exceeded, and a statistical threshold value of 110 cfu/100 mL for marine waters may not be exceeded in more than 10% of samples in a 30 day interval.

Aquatic Life Numeric Criteria - Dissolved Zinc Aquatic Life Criteria: For all of the below, concentrations shall not exceed the specified number as a 1-hour average (for acute) or a 4-day average (chronic) more than once every 3 years.

- Saltwater acute: 90 ug/L as a 1-hour average.
- Saltwater chronic: 81 ug/L as a 4-day average.
- Freshwater acute: 120 ug/L as a 1-hour average.
- Freshwater chronic: 120 ug/L as a 4-day average.

3 Components of Aquatic Life Criteria

Biological Numeric Criteria - Class I: Cool Water Aquatic Life, Taxa Richness: 5, EPT Index: 3.

Examples of Narrative Criteria

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Forms of Criteria

Numeric

40 CFR 131.11(b) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11#p-131.11\(b\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11#p-131.11(b))) states that states and authorized tribes should establish numeric values based on one of the methods below.

EPA's 304(a) national recommended water quality criteria.

304(a) criteria are recommendations developed by EPA based on the latest scientific knowledge, issued periodically as guidance to states and authorized tribes for use in developing their own criteria. The number "304(a)" indicates the section of the CWA that directed EPA to develop these recommendations.

NOTE: EPA may use these as a basis for promulgation as appropriate.

304(a) recommendations modified to reflect site-specific conditions.

Other scientifically defensible methods.

Examples of Numeric Criteria

Recreational (Bacteria) Numeric Criteria - For marine waters:

A 30 day geometric mean of 30 colony forming units (cfu) enterococci /100 mL water, not to be exceeded, and a statistical threshold value of 110 cfu/100 mL for marine waters may not be exceeded in more than 10% of samples in a 30 day interval. Geometric mean rollover: A special type of average where you multiply a set of numbers together, and then take the nth root of that total where “n” is the total number of values in the set (e.g., Square root for two numbers, cube root for three numbers, etc.). This is different than the average, sometimes called the “arithmetic mean”. The geometric mean is sometimes calculated when the set of numbers contains some extreme values.

Aquatic Life Numeric Criteria - Dissolved Zinc Aquatic Life Criteria: For all of the below, concentrations shall not exceed the specified number as a 1 hour average (for acute) or a 4 day average (chronic) more than once every 3 years.

Saltwater acute: 90 ug/L as a 1-hour average.

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Freshwater chronic: 120 ug/L as a 4 day average.

Biological Numeric Criteria - Class I: Cool Water Aquatic Life, Taxa Richness: 5, EPT Index: 3.

3 Components of Aquatic Life Criteria

An aquatic life criterion typically contains three components:

Magnitude (or concentration) - how much of a parameter

Duration - period of time over which the instream concentration is averaged

Frequency - how often the magnitude can be exceeded

Narrative

States and authorized tribes should establish narrative criteria:

1. Where numeric criteria cannot be established, or
2. To supplement numeric criteria.

For CWA section 307(a) toxics, a state/authorized tribe must provide a method of translating a narrative criterion into something numeric from which a permit writer can derive effluent limits (40 CFR 131.11(a)(2)) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11#p-131.11\(a\)\(2\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.11#p-131.11(a)(2))) .

Examples of Narrative Criteria


Biological Narrative Criteria - “Waters shall be free from substances in concentrations or combinations that would adversely alter the structure and function of aquatic communities, as defined by the reference condition.” Reference Condition rollover: The range of chemical, physical, and biological characteristics of waters minimally affected by human influences. Where necessary to perform evaluations of water quality, the reference condition establishes the baseline chemical, physical, and biological conditions against which waters of similar water body type are evaluated.

Types of Criteria

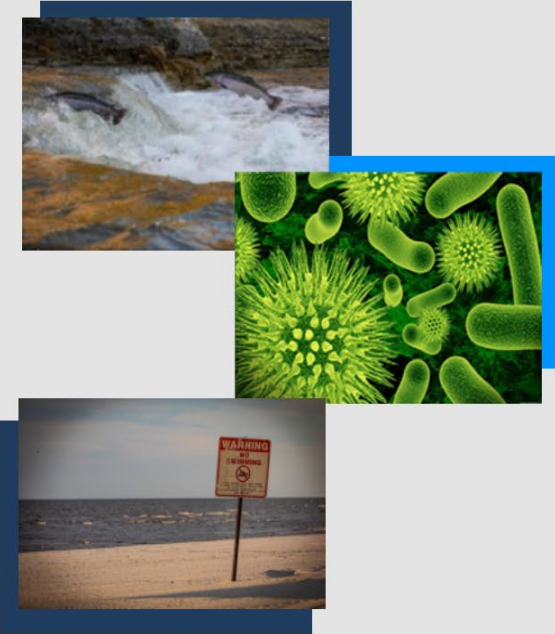
EPA's water quality recommendations under CWA section 304(a) include various types of water quality criteria:

- Aquatic life.
- Biological.
- Human health.
- Recreational.
- Nutrient.
- Other (e.g., hydrologic, sediment).

Additional Information About Types of Criteria



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Types of Criteria

EPA's water quality recommendations under CWA section 304(a) include various types of water quality criteria:

- Aquatic life.
- Biological.
- Human health.
- Recreational.
- Nutrient.
- Other (e.g., hydrologic, sediment).

Additional Information About Types of Criteria

TYPES OF CRITERIA UNDER EPA'S WATER QUALITY RECOMMENDATIONS

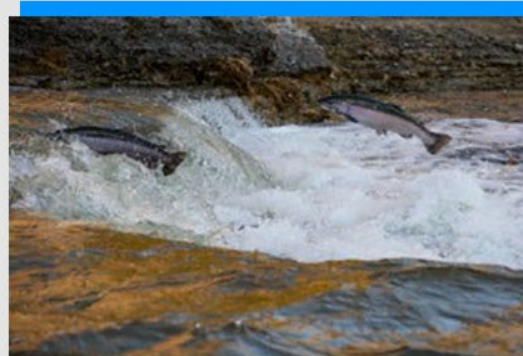
Different types of water quality criteria are complementary. There is no one type of criteria that will guarantee protection of all designated uses. Ideally all types of water quality criteria are considered when setting standards and evaluating the condition of a water body.

Different types of water quality criteria collectively provide a valuable tool for setting standards and making water quality management decisions that help protect the broad diversity of life affected by water pollutants.

Aquatic Life Criteria

- Aquatic life criteria protect aquatic life from specific pollutants in the water column.
- In addition to typical surface waters, EPA recommendations are largely applicable to wetlands, but some may need adjustments, for example, because of natural factors (e.g., pH).

[EPA has published national CWA section 304\(a\) recommendations for aquatic life criteria.](#)



Aquatic Life Criteria

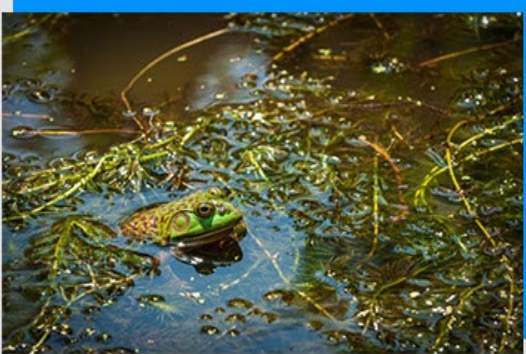

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Biological Criteria

- Biological criteria protect aquatic life uses by describing the desired biological condition of a water (for example, using a fish index, macroinvertebrate index, or diatom index).

[EPA has published guidance and technical documents on biological criteria.](#)



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Biological Criteria

Biological criteria protect aquatic life uses by describing the desired biological condition of a water (for example, using a fish index, macroinvertebrate index, or diatom index).

Fish Index, Macroinvertebrate Index, Or Diatom Index Rollover: Related to the presence, condition, and numbers of types of fish; types of insects, worms, snails, or other animals without a backbone, large enough to be seen with the naked eye; and diatoms, respectively, that provide important information about the health of aquatic ecosystems.

EPA has published guidance and technical documents on biological criteria.
(<https://www.epa.gov/wqc/biological-water-quality-criteria>)

Human Health Criteria

- Human health criteria protect humans from specific chemical pollutants in both water and fish tissue that humans might ingest.



[EPA has published national CWA section 304\(a\) recommendations for human health criteria.](https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table)



Human Health Criteria

Human health criteria protect humans from specific chemical pollutants in both water and fish tissue that humans might ingest.

[EPA has published national CWA section 304\(a\) recommendations for human health criteria. \(https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table\)](https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table)

Recreational Criteria

- Recreational criteria protect people from illnesses when using the water for recreation (e.g., swimming, surfing).



[EPA has published national CWA section 304\(a\) recommendations for recreational criteria.](#)



Recreational Criteria





Recreational criteria protect people from illnesses when using the water for recreation (e.g., swimming, surfing).

[EPA has published national CWA section 304\(a\) recommendations for recreational criteria. \(https://www.epa.gov/wqc/recreational-water-quality-criteria-and-methods\)](https://www.epa.gov/wqc/recreational-water-quality-criteria-and-methods)

Nutrient Criteria

- Nutrient criteria are numeric limits of total nitrogen and total phosphorus that protect designated uses from the effects of eutrophication.
- Nutrient criteria are developed for different water body types using field data of nutrient concentrations (stressors) and different ecological effects symptomatic of eutrophication (responses).

[EPA has program information and technical support available for nutrient criteria.](#)



Nutrient Criteria

Nutrient criteria are numeric limits of total nitrogen and total phosphorus that protect designated uses from the effects of eutrophication.

Eutrophication Rollover: Excess nitrogen and phosphorus in aquatic systems that can stimulate production of plant (including algae and vascular plants) and microbial biomass, which leads to depletion of dissolved oxygen, reduced transparency, and changes in biotic community composition.

Nutrient criteria are developed for different water body types using field data of nutrient concentrations (stressors) and different ecological effects symptomatic of eutrophication (responses).

[EPA has program information and technical support available for nutrient criteria. \(https://www.epa.gov/nutrient-policy-data\)](https://www.epa.gov/nutrient-policy-data)

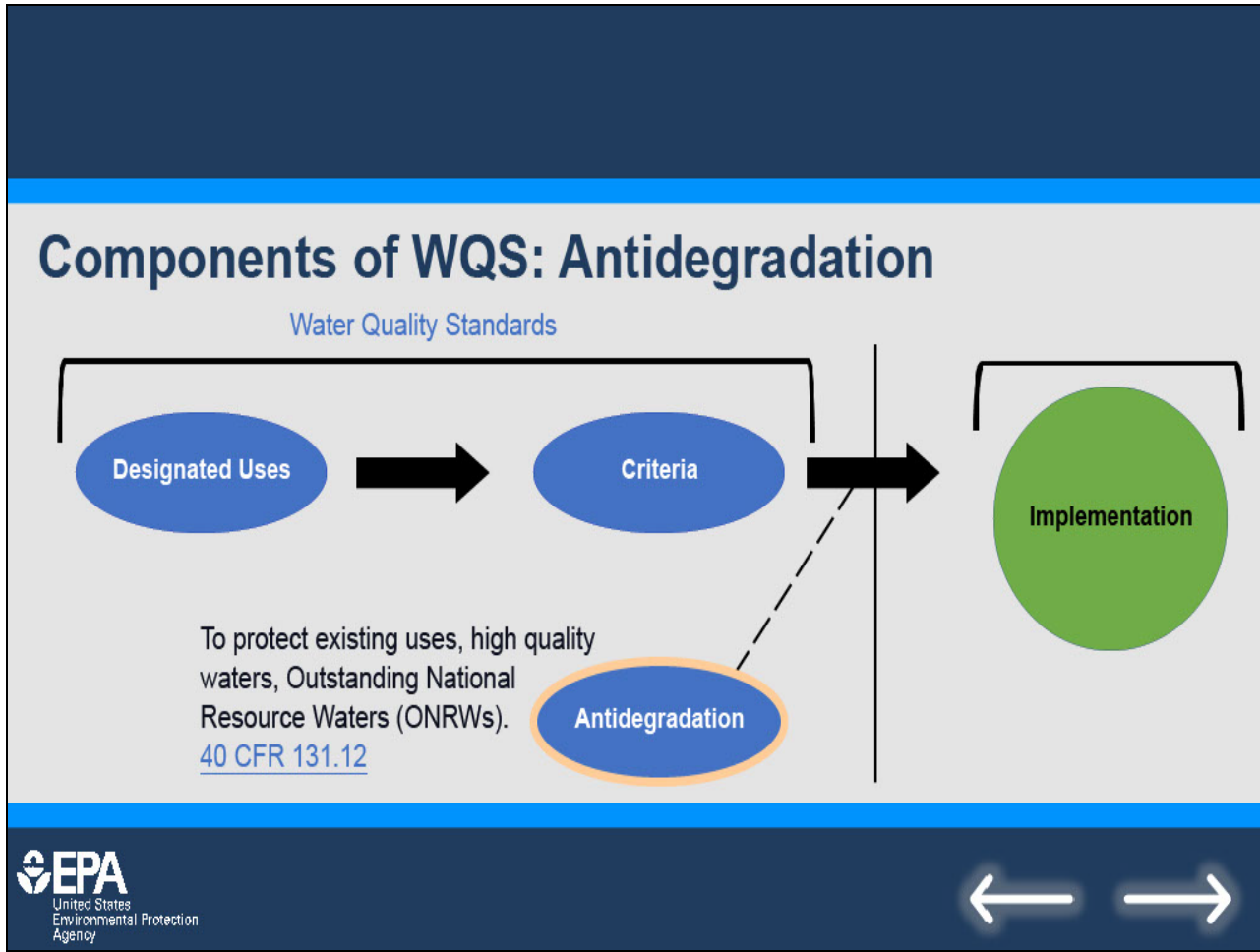
Other Criteria

- Other criteria may include hydrologic, sediment, or other types of criteria.



Other Criteria

Other criteria may include hydrologic, sediment, or other types of criteria.



Components of WQS: Antidegradation

Water Quality Standards

Designated Uses

To protect existing uses, high quality waters, Outstanding National Resource Waters (ONRWs).

40 CFR 131.12 ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12\(b\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12(b)))

Criteria

Antidegradation

Implementation

Component 3: Antidegradation ([40 CFR 131.12](#))

Antidegradation Policy

Regulatory Requirement ([40 CFR 131.12\(a\)](#)): “The State shall develop and adopt a statewide antidegradation policy.”

- Antidegradation adds additional protections for waters of the US above and beyond designated uses and criteria.
- States and authorized tribes must develop and adopt a legally binding statewide antidegradation policy that includes:
 - Protection of existing uses for all waters of the US.
 - Protection of high quality waters (water quality that exceeds the levels necessary to support protection and propagation of fish, shellfish, wildlife, and recreation in and on the waters).
 - Protection for Outstanding National Resource Waters (ONRWs) identified by the state/authorized tribe.
 - Compliance with CWA section 316 in regard to thermal discharge.

Additional
Information



Component 3: Antidegradation ([40 CFR 131.12](#))

Antidegradation Policy

Regulatory Requirement ([40 CFR 131.12\(a\)](#)) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12\(a\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12(a))): “The State shall develop and adopt a statewide antidegradation policy.”

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States and authorized tribes must develop and adopt a legally binding statewide antidegradation policy that includes:

Protection of existing uses for all waters of the US.

Protection of high quality waters (water quality that exceeds the levels necessary to support protection and propagation of fish, shellfish, wildlife, and recreation in and on the waters).

Protection for Outstanding National Resource Waters (ONRWs) identified by the state/authorized tribe.

Compliance with CWA section 316 in regard to thermal discharge.

Additional Information

The 3 “Tiers” of Protection

Stringency of Protection

“Tier 1”

Existing Uses

“Tier 2”

High Quality Waters

“Tier 3”

Outstanding National Resource Waters

Component 3: Antidegradation ([40 CFR 131.12](#))

Antidegradation Implementation Methods (AIMs)

Regulatory Requirement ([40 CFR 131.12\(b\)](#)): “The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State's policy and with paragraph (a) of this section. The State shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods, and shall make the methods available to the public.”

- States and authorized tribes may choose to adopt legally binding implementation methods or provide methods in guidance or policy documents.



Component 3: Antidegradation ([40 CFR 131.12](#)) (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12>)



Antidegradation Implementation Methods (AIMs)

Regulatory Requirement ([40 CFR 131.12\(b\)](#)) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12\(b\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12(b))): “The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State's policy and with paragraph (a) of this section. The State shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods, and shall make the methods available to the public.”

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Tiers of Protection

Tier 1: Existing Uses	Tier 2: High Quality Waters	Tier 3: ONRWs
<ul style="list-style-type: none"> • Tier 1: Protection for Existing Uses. <ul style="list-style-type: none"> ▪ 40 CFR 131.12(a)(1): "Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." ▪ Applies to all waters of the US. 		

Tiers of Protection

Tier 1: Existing Uses

Tier 1: Protection for Existing Uses.

[40 CFR 131.12\(a\)\(1\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12(a)(1)) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12\(a\)\(1\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12(a)(1))): "Existing instream water uses and the level of water quality

necessary to protect the existing uses shall be maintained and protected."

Applies to all waters of the US.

Tier 2: High Quality Waters

Tier 2: Protection for High Quality Waters.

Tier 2 provides protection for high quality waters (waters where water quality is better than the levels necessary to support protection and propagation of fish, shellfish, and wildlife and recreation in and on the water).

High water quality shall be maintained and protected UNLESS:

Use of the assimilative capacity is necessary to accommodate important economic or social development in the area in which the waters are located.

Assimilative Capacity Rollover: In the context of antidegradation, assimilative capacity is the difference in water quality between what level(s) is needed to protect the CWA Section 101(a)(2) uses and the actual, better water quality that is observed in the water body at the time an activity to lower water quality is proposed.

If this is the case, prior to allowing any lowering of water quality, there must be a Tier 2 Review, including an analysis of alternatives, a socio-economic analysis, and public participation, to demonstrate these circumstances are met.

Learn More about Tier 2 Protection

Tier 3: ONRWs

Tier 3: Protection of Outstanding National Resource Waters (ONRWs).

40 CFR 131.12(a)(3) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12\(a\)\(3\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.12#p-131.12(a)(3))) “Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.”

A state/authorized tribe can classify any water body as an ONRW.

ONRWs typically include: waters that are viewed as pristine, highly valued waters (important to recreation or tourism), and waters of exceptional ecological significance (important, unique, or sensitive ecologically).

Tier 3 protection is the most stringent protection. It allows no degradation, except on a short term or temporary basis (weeks or months, not years).

Tier 2 Review Example

HYPOTHETICAL EXAMPLE - DEMONSTRATION PURPOSES ONLY!

Tier 2 Review required to determine if degradation is necessary to accommodate important economic and social development...

4.

In this hypothetical circumstance, a proposed discharge would bring the concentration of zinc in this water body up to 50 µg/L, lowering the water quality. This means some of the “assimilative capacity” of the water (or high water quality) would be used up.

← →

Tier 2 Review Example

Image shows a hypothetical example of five points on a graph and what each area means. Click any number to learn more about each step. Press the X above to exit this graphic.

1. Water body with an aquatic life criterion of 120 µg/L (over a specified duration and frequency for zinc).
2. Current ambient level of zinc in this water body is 20 µg/L.
3. Since the current ambient water quality is better than the criterion, this water body has assimilative capacity for zinc and is considered a high quality water for zinc.
4. In this hypothetical circumstance, a proposed discharge would bring the concentration of zinc in this water body up to 50 µg/L, lowering the water quality. This means some of the “assimilative capacity” of the water (or high water quality) would be used up.
5. To determine if lowering of water quality is necessary, a Tier 2 review would be performed to determine that lowering the water quality is necessary to accommodate important economic or social development before the lowering could be authorized.

Other Parts of WQS - 40 CFR 131.13 - 131.15

- States and authorized tribes may adopt additional policies affecting the application and implementation of water quality standards in addition to WQS such as:
 - Mixing zone policies.
 - Low flow policies.
 - WQS variance policies (includes WQS variance policies, procedures and authorizing provisions).
 - WQS variances.
 - (More information on WQS variances can be found at: <https://www.epa.gov/wqs-tech/water-quality-standards-variances>).
 - Provisions authorizing use of compliance schedules for WQBELs in NPDES permits.
- If these additional policies are included in WQS, they are subject to EPA review and approval.



Other Parts of WQS - 40 CFR 131.13 (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.13>) - 131.15 (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-B/section-131.15>)

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ROLES OF DIFFERENT ENTITIES

The Roles of Different Entities:



The Roles of Different Entities:

States and Tribes, Communities and the Public, EPA

Image of the three entities (i.e., states and tribes, communities and the public, and EPA) each with double sided arrows between the entities.



Role: States and Authorized Tribes

- States and authorized tribes have the primary authority to adopt, review, and revise WQS and implementation procedures (CWA section 303(c)).
- They must:
 - Submit their WQS to EPA for review and approval or disapproval after adoption into their state or tribe's regulations,
 - Review their WQS triennially, and
 - Conduct a public hearing to involve the public.
- They may adopt WQS more stringent than recommended by EPA (CWA section 510).

TRIBES

Tribes may or may not assume responsibility for administering the program at their option. They may apply for "Treatment in a Similar Manner as a State", or TAS, for the purposes of administering EPA programs under CWA section 518.

For more information on tribes and WQS:
<https://www.epa.gov/wqs-tech/tribes-and-water-quality-standards>

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Additional Information on Tribes

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Treatment in a Similar Manner as a State Rollover: Authorizes EPA to treat eligible federally recognized Indian tribes in a similar manner as a state (TAS) for implementing and managing certain environmental programs.

For more information on tribes and WQS: <https://www.epa.gov/wqs-tech/tribes-and-water-quality-standards>

Submitting WQS to EPA for Review Under CWA Section 303(c)

- A submittal to EPA must include the new or revised WQS provisions presented for review.
 - This includes designated uses, criteria, and/or antidegradation provisions/revisions applicable to all waters of the state at once, specific changes to specific water bodies, or provisions/revisions applicable to a specific basin in the state.
 - Identifying the specific state or tribal regulatory citations being added is helpful for EPA's review. If the WQS are being revised, providing a redline strikeout version can help expedite EPA's review.

 United States Environmental Protection Agency

← →

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Supporting Information

A submittal to EPA must include supporting information regarding the new or revised WQS provisions. For example, if a state or authorized tribe is revising a use specified in CWA section 101(a)(2) to require less stringent criteria, the state or authorized tribe would need to submit a UAA. While EPA does not approve or disapprove the UAA, EPA evaluates the UAA to determine if the use change is consistent with the CWA and EPA's implementing regulations.

Attorney General Certification

A submittal to EPA must include certification that the standards were duly adopted according to state or tribal law.

This certification must be provided either by the State Attorney General or appropriate legal authority within the state or authorized tribe.

This is often called “Attorney General Certification” or “AG Cert”.

Public Hearing

A submittal to EPA must include evidence of public hearing.

EPA’s regulation at 40 CFR 131.20(b) ([https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-C/section-131.20#p-131.20\(b\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131/subpart-C/section-131.20#p-131.20(b))), requires that states and authorized tribes must conduct a public hearing on all new and revised WQS consistent with 40 CFR 25.5 (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-A/part-25/section-25.5>), regardless of whether the revisions are connected to a triennial review or not. Triennial Review Rollover: States and authorized tribes must hold public hearings for the purpose of reviewing applicable standards at least once every three years to comply with the Clean Water Act and EPA's regulations

For information on options to modernize public hearings for WQS, consistent with 40 CFR 25.5: <https://www.epa.gov/wqs-tech/options-modernizing-public-hearings-water-quality-standard-decisions-consistent-40-cfr-255>

Role: Community and Public Involvement

- States and authorized tribes can reach out to local communities to learn how they use their water body and keep communities informed.
- By engaging community members early, often, and meaningfully, WQS decisions will best reflect the variables and needs of a local community, which will benefit the public and implementing agency.



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Role: Community and Public Involvement

- While any revision or review of a WQS must be subject to a public hearing, public involvement is not limited to that.
- Each community has unique considerations, and outreach should be tailored to meet those needs. Community outreach could involve public meetings, webinars, public hearings, other in-person events, and mailers or social media as necessary.
- When engaging the local community, states and authorized tribes can consider:
 - Language.
 - Age.
 - Rural population versus urban population.
 - Common work schedules (for planning meetings).
 - Income and education levels.
 - Literacy rates.
 - Community demographics.



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Role: EPA

- Facilitate development of regulations and policies that guide EPA's review of submitted WQS.
- Coordinate with and provide technical assistance to states and authorized tribes.
- Develop and publish CWA section 304(a) criteria recommendations (based on latest science).
- Approve/disapprove WQS submitted by states and authorized tribes (CWA section 303(c)). CWA requires EPA to approve within 60 days or disapprove within 90 days (CWA section 303(c)).
 - If EPA approves as consistent with the CWA and WQS regulations, the new/revised WQS becomes effective for CWA purposes.
 - If EPA disapproves, the state or authorized tribe has the chance to revise. Consistent with CWA 303(c)(4), if the state or authorized tribe does not adopt specified changes within 90 days, the EPA Administrator must promptly propose and promulgate replacement WQS.



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Implementing WQS

A state or authorized tribe has adopted WQS into their regulations and EPA has approved them under CWA section 303(c)...

Now what?



WQS:
Theory, Plans, and Process.

Implementation:
For example, permits to discharge or a water body assessment program.

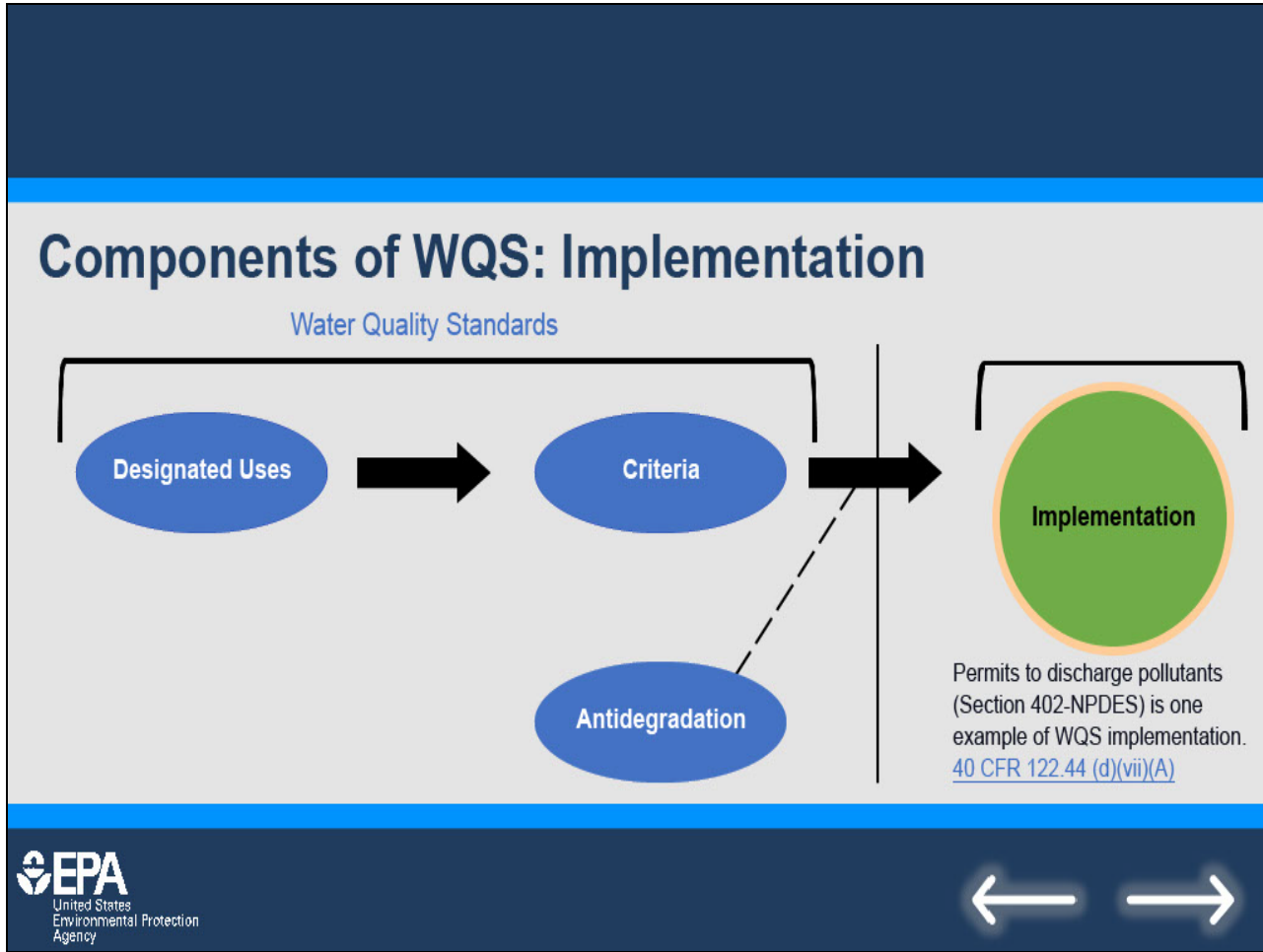
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Components of WQS: Implementation
Water Quality Standards

Designated Uses

Criteria

Antidegradation

Implementation

Permits to discharge pollutants (Section 402-NPDES) is one example of WQS implementation. [40 CFR 122.44 \(d\)\(vii\)\(A\)](https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-122/subpart-C/section-122.44#p-122.44(d)(1)(vii)(A)))

Implementation of WQS

- Monitoring, assessment, and CWA section 303(d) listing.
- TMDLs.
- NPDES program.
- CWA section 404 dredged and fill material permit program.
- CWA section 401 certification of federally licensed/permitted activities.

More information on implementation of WQS is presented in Part II of the Clean Water Act module.



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List of Acronyms Used in Module

FWPCA – Federal Water Pollution Control Act	NPS – Nonpoint Source
CWA – Clean Water Act	TMDL – Total Maximum Daily Load
CWSRF – Clean Water State Revolving Fund	GLI – Great Lakes Initiative
WQS – Water Quality Standards	UAA – Use Attainability Analysis
WOTUS – Waters of the United States	CFR – Code of Federal Regulations
NPDES – National Pollutant Discharge Elimination System	ONRW – Outstanding National Resource Waters
POTW – Publicly Owned Treatment Work	TAS – Treatment in a Similar Manner as a State
CAFO – Concentrated Animal Feeding Operation	



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Congratulations!

You have completed Part I of the Clean Water Act module covering the history of the Clean Water Act and water quality standards!

A quiz to test your knowledge will be made available at the end of the Clean Water Act Part II module. The Clean Water Act Part II module will cover the remaining sections of the Clean Water Act.

For more information on the Watershed Academy and on water quality standards, you can visit the following EPA websites:

Watershed Academy

<https://www.epa.gov/watershedacademy>

Standards for Water Body Health

<https://www.epa.gov/standards-water-body-health>

WQS Academy

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