

Hydrologic Alteration



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Key Points

The Clean Water Act defines water quality as the chemical, physical and biological quality of a waterbody.

Hydrologic alteration can affect all three components of the water quality of streams, wetlands, and other waterbodies.

Hydrologic alteration includes significant changes in the magnitude, duration, timing, frequency or rate-of-change of natural stream flows.

EPA's 2015 guidance clarified how states and tribes should classify waters that are impaired due to low and/or high flow alterations.

The intent is that hydrologically impaired waters will be identified in Category 4C as part as the State's water quality status update commonly known as the 305(b) report that is prepared every two years.

Anyone can submit documentation of waters impaired by hydrologic alteration to state and tribal agencies for listing in biennial reports.

Hydrologic Alteration and the Clean Water Act

The Environmental Protection Agency (EPA) has clarified its Clean Water Act (CWA) guidance for waters impaired by hydrologic alteration (HA). This is a positive step forward that can lead to flow restoration or avoiding new flow alteration impacts such as dewatering of streams and habitat destruction.



*Catawba River, SC with no flow
Courtesy of Ron Ahle*

The Basics

The CWA serves to protect the chemical, biological and physical quality of a waterbody. HA directly affects the physical quality of streams, wetlands, and other waterbodies. Historically, rivers that have been impaired due to hydrologic alteration were not recognized as such by water quality agencies. In order to fully address and implement effective restoration and conservation efforts of these waterbodies, it is essential to identify rivers and streams impaired by HA.

In addition, HA can affect the chemical and biological quality of the waterbody and prevent waters from meeting water quality standards. HA can also impair the Designated Uses, another cornerstone of the CWA, including aquatic life, recreation, drinking water and cultural uses.

Common Causes of Hydrologic Alteration

- Low head dams
- Surface and ground water withdrawals
- Hydropower dams and operations
- Diversions
- Water storage reservoirs
- Impervious surfaces and stormwater
- Channelization
- Interbasin transfers

EPA Clarified Guidance on Hydrologic Alteration

In August 2015, EPA provided clarification to states and tribes on “waters impaired due to pollution not caused by a pollutant” under Category 4C of their Integrated Reporting Guidance. According to the CWA, “pollution” is defined as a human activity that causes water quality impacts.

Both low flow and high flow alterations are covered. The guidance states – *“Examples of hydrologic alteration include: a perennial water is dry; no longer has flow; has low flow; has stand-alone pools; has extreme high flows; or has other significant alteration of the frequency, magnitude, duration or rate-of-change of natural flows in a water; or a water is characterized by entrenchment, bank destabilization, or channelization.”*



Stormwater runoff impacting an urban stream
Courtesy of NRCS

EPA’s 2015 memo explaining the guidance can be found at: http://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8_13_2015.pdf (Category 4C discussion begins on page 13).

Documenting Hydrologic Alteration through 2015 Guidance

EPA’s guidance states that if a state or tribe has data or information showing that a waterbody is impaired due to hydrological alteration “....*those causes should be identified and that water should be assigned to Category 4C.*”

States and tribes are required to submit a report every two years on the status of its waters - the *Integrated Reporting Document* or “305(b) report”. This is also where states list their 303(d) waters that are impaired due to pollutants. Unlike Section 303(d) waters, TMDLs are not required for Category 4C waters, rather states are encouraged to “....*employ a variety of watershed restoration tools and approaches to address the source(s) of the impairment.*” A collaborative effort began in fall 2016 for developing the procedures and identifying hydrologically impaired waters for inclusion in state and tribal 2018 Integrated Reporting Documents.

In support of the new guidance, EPA and the US Geological Survey issued a technical report in December 2016, *Final EPA-USGS Technical Report: Protecting Aquatic Life from the Effects of Hydrologic Alteration* which provides extensive information on HA, impacts to aquatic life and authorities under the CWA to protect flows.

<https://www.epa.gov/sites/production/files/2016-03/documents/aquatic-life-hydrologic-alteration-report.pdf>

Take Action!

Anyone can submit documentation of waters impaired by HA to state and tribal agencies for their 2018 biennial reports. Important information to include in submittals is evidence of HA through USGS gage or other flow records, photographs, personal testimony and demonstration of impaired designated uses. Documentation for listing HA waters should be submitted to state or tribal water quality agencies, and EPA regional offices.

Contact information and submission deadlines can be found at www.americanrivers.org/2018irstatedeadlines.

A template for submitting HA documentation is found at www.americanrivers.org/HAsubmissiontemplate