

# Fact Sheet-- Final EPA-USGS Technical Report: Protecting Aquatic Life from Effects of Hydrologic Alteration

## Summary

EPA and U.S. Geological Survey (USGS) have released a report, *Final EPA-USGS Technical Report: Protecting Aquatic Life from Effects of Hydrologic Alteration*. This report presents:

- a literature review of the natural flow system and a description of the potential effects of flow alteration on aquatic life;
- examples of narrative water quality criteria that some states have developed to support natural flow and maintain healthy aquatic biota; and
- a flexible framework that can be used by states, tribes, and territories to quantify targets for flow regime components that are protective of aquatic life.

## Background

EPA and USGS partnered in developing this technical report on hydrologic alteration, which can be an important contributor of impairment for water bodies that are designated to support aquatic life. Stresses on aquatic life associated with hydrologic alteration may be further intensified through climate change. Recent climate trends have included the change in frequency and duration of extreme weather events, such as droughts and floods, which can have an impact on flow and affect aquatic life.

## Technical Report Development

This document has undergone internal and external peer reviews and was released in the Federal Register for a 105-day public comment period. EPA and USGS considered the comments, revised the document, as appropriate, and then published a final document to serve as a source of information for states, tribes, territories, and other stakeholders.

## Hydrologic Alteration

Hydrologic alteration is a change to an aquatic system and can include an increase or decrease in water volume, seasonal pulse flow disruption, dramatic variation in water temperature, and other factors.

## Effects of Hydrologic Alteration

The ability of a water body to support aquatic life is tied to the maintenance of key flow components. Changes in the natural flow conditions can cause some of the following effects:

- **Physical Changes:** altered flood-plain connectivity; and altered channel properties, such as widening
- **Water Quality:** increases in salinity, sedimentation, and water temperature fluctuations
- **Seasonal Flows:** decrease in cues for species spawning; can also encourage establishment of non-native species

## **Why this Report is Important**

Healthy aquatic ecosystems provide an array of services to individuals and society, including clean drinking water, irrigation supplies, and recreational opportunities. Sound and sustainable management of aquatic ecosystems is an integral part of managing water resources to meet the needs of society and the goals of the Clean Water Act.

This report provides a scientific and technical framework that can be used to quantify targets for flow components that are protective of aquatic life and their habitats. Flow targets can help states, tribes, and territories prepare for changes in historic flow patterns that can result from climate change. Maintaining flow targets may help increase a stream's resilience to climate change by reducing or avoiding intensification of existing stresses.

## **How to View the Report and Supporting Information**

EPA has established an official public docket for this action under Docket ID No. EPA-HQ-OW-2015-0335, accessed at <https://www.regulations.gov/>. You may also download the report and supporting information from EPA's aquatic life criteria website at: <https://www.epa.gov/wqc/aquatic-life-ambient-water-quality-criteria>.

## **Where to Find More Information**

For more information, please contact EPA's Diana Eignor by phone at (202)566-1143 or by email at [eignor.diana@epa.gov](mailto:eignor.diana@epa.gov); or contact USGS' Jonathan Kennen by phone at (609)771-3948 or by email at [jgkennen@usgs.gov](mailto:jgkennen@usgs.gov)

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