

State Water Quality Criteria for Protecting Instream Flows, USA

From US EPA Region 4 November 19, 2012 comments on the 2012 “Water Management Issues in Alabama” report and Alabama’s development of a comprehensive statewide management plan.

Under the Clean Water Act (CWA), water quality standards include the designated use of a waterbody, narrative and/or numeric criteria to protect those designated uses, and the state’s antidegradation requirements. A state can use all three of these water quality standard components to protect and restore healthy hydrology.

Many states have considered that the CWA is only concerned with water *quality* and does not regulate water *quantity*. However, the U.S. Supreme Court specifically addressed this in PUD No. 1 of Jefferson County v. Washington Department of Ecology (“PUD”), 511 U.S. 700 (1994). In that case, the Court found that the distinction between water quality and quantity as “an artificial distinction” and that “[i]n many cases, water quantity is closely related to water quality” (PUD at 1912-13).

As of November 2012, eight states and three tribes have adopted explicit narrative water quality criteria for protection of instream flows into their state water quality standards under the CWA. Many more states are in the process of developing hydrologic standards under the CWA. The table below provides narrative language in water quality standards of these states and tribes relating to hydrologic criteria. For complete text of specific criteria, see <http://water.epa.gov/scitech/swguidance/standards/wqslibrary/index.cfm>.

State/Tribe	Language in Water Quality Standard
NH	“surface water quantity shall be maintained at levels adequate to protect existing and designated uses”
RI	“quantity for protection of...fish and wildlife....adequate to protect designated uses” “For activities that will likely cause or contribute to flow alterations, streamflow conditions must be adequate to support existing and designated uses.”
VT	Class A(1) Waters – Changes from natural flow regime shall not cause the natural flow regime to be diminished, in aggregate, by more than 5% 7Q10 at any time; Class B WMT 1 Waters – Changes from the natural flow regime, in aggregate, shall not result in natural flows being diminished by more than a minimal amount provided that all uses are fully supported; and when flows are equal to or less than 7Q10, by not more than 5% of 7Q10. Class A(2) Waters and Class B Waters other than WMT1 – Any change from the natural flow regime shall provide for maintenance of flow characteristics that ensure the full support of uses and comply with the applicable water quality criteria.
NY	For both Class N fresh surface waters and Class AA(S) fresh surface waters ... “There shall be no alteration to flow that will impair the waters for their best usages.”
VA	“Man-made alterations in stream flow shall not contravene designated uses, including protection of the propagation and growth of aquatic life.”

State/Tribe	Language in Water Quality Standard
KY	"Aquatic Life. (1) Warm water aquatic habitat. The following parameters and associated criteria shall apply for the protection of productive warm water aquatic communities, fowl, animal wildlife, arboreous growth, agricultural, and industrial uses:... (c) Flow shall not be altered to a degree which will adversely affect the aquatic community."
TN	Criteria for Water Uses "(3) Fish and Aquatic Life (n) Habitat – The quality of stream habitat shall provide for the development of a diverse aquatic community that meets regionally-based biological integrity goals. Types of habitat loss include, but are not limited to: channel and substrate alterations....stream flow changes...For wadeable streams, the instream habitat within each subcoregion shall be generally similar to that found at reference streams. However, streams shall not be assessed as impacted by habitat loss if it has been demonstrated that the biological integrity goal has been met. (o) Flow – Stream or other water body flows shall support the fish and aquatic life criteria." "(4) Recreational. (m) Flow – Stream flows shall support recreational uses."
MO	"Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community."
Seminole Tribe of Florida	"Class 2-A waters shall be free from activities ...that ...impair the biological community as it naturally occurs... due to ...hydrologic changes"
Mole Lake Band of the Lake Superior Tribe of Chippewa Indians	"prohibited ...human induced changes toarea hydrology that alter natural ambient conditions ...such as ...flow, stage Natural daily fluctuations of flow, stage... shall be maintained."
Bad River Band of the Lake Superior Tribe of Chippewa Indians	"Water quantity and quality that may limit the growth and propagation of, or otherwise cause or contribute to an adverse effect to wild rice, wildlife, and other flora and fauna of cultural importance to the Tribe shall be prohibited." "Natural hydrological conditions supportive of the natural biological community, including all flora and fauna, and physical characteristics naturally present in the waterbody shall be protected to prevent any adverse effects." "Pollutants or human-induced changes to waters, the sediments of waters, or area hydrology that results in changes to the natural biological communities and wildlife habitat shall be prohibited. The migration of fish and other aquatic biota normally present shall not be hindered. Natural daily and seasonal fluctuations of flow (including naturally occurring seiche), level, stage, dissolved oxygen, pH, and temperature shall be maintained."

Instream flow standards that are implemented through provisions other than the state water quality standards – for example through water management programs -- should be consistent with the state water quality standards. That is, states should not set conditions less stringent than or in conflict with the state water quality standards under the CWA. The EPA recommends setting instream flow standards through existing CWA provisions in order to avoid that confusion. The concept of supporting a “natural flow paradigm” as an important ecological objective fits the structure of the CWA water quality standard, as it can be explicitly stated as a narrative or numeric criterion with frequency, duration and magnitude, utilized to protect designated uses and evaluated during antidegradation reviews.