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What Does Fish Consumption Have to Do With Water Quality Standards?

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Summary

Controversies have arisen in several states over establishment of ambient water quality standards. At issue is whether states are setting standards at levels that adequately protect public health from pollutants in waterways. Some groups argue that states are adopting overly stringent standards that are unattainable and unaffordable and are being pressured to do so by the U.S. Environmental Protection Agency (EPA). Others contend that the states are failing to protect population groups that consume large amounts of fish, such as members of Indian tribes that have treaty fishing rights. The issue involves complex scientific and technical questions about cancer risk levels and fish consumption rates, among others. States where these controversies have occurred recently include Maine and several in the Pacific Northwest (Washington, Oregon, and Idaho).

Water quality standards are the fundamental building blocks of the Clean Water Act (CWA). Established by states and approved by EPA, they define a state's water quality goals, and they result in direct requirements for dischargers when states issue enforceable permits. In support of standard setting by states, EPA develops recommended risk-based water quality criteria that set a concentration for contaminants in water to ensure that public health and aquatic life will not be harmed. Most states use the EPA national criteria as the starting point for developing criteria as part of their water quality standards. Human health criteria are set so that fish in a waterbody have levels of targeted pollutants low enough such that when they are consumed by people, or are consumed by people who also are drinking water, they do not pose unacceptable health risks to individuals.

Fish consumption rates are among the important exposure factors in determining human health risk level in a criterion, because the more fish that people consume that contain toxic pollutants, the more individuals are at risk for developing cancer and other illnesses. Also important is the assumed cancer risk level in a criterion.

The CWA requires states and authorized tribes to review their water quality standards and revise them, if appropriate, at least once every three years. Increasingly, during the triennial review process, EPA has been encouraging states with populations known to consume large amounts of fish to develop criteria to protect highly exposed population groups and, in doing so, to use local or regional data on fish consumption rates that are more representative of their target population group, in place of a default national value. In addition, the agency encourages states to adopt a cancer risk level of 10^{-6} (i.e., one in 1 million incremental lifetime risk of developing cancer) both for the general population and highly exposed groups.

Recent controversies have involved disputes over both the appropriate fish consumption rate and cancer risk level used by states in developing their human health water quality criteria, and the stringency of the resulting ambient water quality standards. Stringent standards, in turn, can result in states issuing permits with highly restrictive discharge limits that create compliance issues for industrial and municipal facilities. The challenge raised by these controversies is to develop achievable water quality criteria that are protective for the general population and for high-consuming subpopulations, whose risk will be greater, but still acceptable.

Criticism of EPA's actions regarding state water quality standards has increased recently. Critics include affected states and organizations representing major dischargers that are directly affected by adoption of stringent water quality criteria, who challenge what they view as EPA overreach of its CWA authority to oversee state water quality standards. EPA responds that it has a duty under the CWA to ensure that water quality standards adequately protect designated uses of water and are consistent with the law. Other stakeholders, including environmental advocates and tribal organizations, have a different view from industry's. They argue that water quality criteria and

standards are underprotective, especially in terms of protecting the health of highly exposed populations. States' interests reflect a range of concerns—desiring to ensure that public health of all populations is protected, while providing flexibility for business and also preserving the appropriate role for states under the CWA.

Congress has so far not directly addressed the recent controversies discussed in this report, but many in Congress have for some time been generally critical about perceived EPA overreach in a number of regulatory and policy areas.

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Water Quality Standards and Criteria

In many respects, water quality standards are the fundamental building blocks of the Clean Water Act (CWA; 33 U.S.C. 1253 et seq.). Established by states and approved by EPA, they define a state's water quality goals,[1] and they result in direct requirements for dischargers because states issue enforceable discharge permits based on criteria limits in the standards. They also provide the benchmark against which states identify impaired waters and then develop plans that establish Total Maximum Daily Loads (TMDLs) to attain the standards.[2] Water quality standards consist of narrative and numeric limits on pollutants, designated uses or goals for protection of the waterbody (such as fishing, swimming, or public water supply), and antidegradation policy to maintain and protect existing uses and high-quality waters.

In support of standard setting by states, EPA develops risk-based water quality criteria that set a concentration for contaminants in water to ensure that public health and aquatic life will not be harmed.[3] For most pollutants, EPA develops water quality criteria to protect aquatic life and separate water quality criteria to protect human health. The latter are sometimes referred to as the potable water criteria, since they are intended to protect human health from water that is consumed directly or protect human health from exposure to contaminants that may occur as a result of consuming fish. The most recent EPA update of the human health water quality criteria was issued in 2015. It included revisions to 94 existing criteria; EPA now has recommended human health criteria for 122 pollutants.[4]

The EPA criteria are recommendations to states—they do not apply automatically, they are not binding on states, nor are they enforceable. Most states use the EPA national criteria as the starting point for developing criteria as part of their water quality standards. They usually are expressed as concentration limits for a pollutant. The states' criteria must protect the designated use of a waterbody and be based on "sound scientific rationale." If a state adopts criteria that

[1] CWA Section 303(c) (33 U.S.C. §1313(c)).

[2] CWA Section 303(d) (33 U.S.C. §1313(d)). For additional information, see CRS Report R42752, *Clean Water Act and Pollutant Total Maximum Daily Loads (TMDLs)*, by (name redacted) .

[3] CWA Section 304(a) (33 U.S.C. §1314(a)).

[4] U.S. Environmental Protection Agency, Office of Water, *Fact Sheet: Human Health Ambient Water Quality Criteria: 2015 Update*, EPA 820-F-15-001, June 2015, https://www.epa.gov/wqc/human-health-documents. For a full listing and description of these criteria, see https://www.epa.gov/wqc/nationalrecommended-water-quality-criteriahuman-health-criteria-table.

differ from EPA's recommended criteria, the state must explain its rationale for doing so, as part of developing enforceable water quality standards that are reviewed and approved by EPA.

Following EPA's approval of water quality standards, states establish discharge permit limits to ensure that industrial and municipal sources will not violate criteria in the standards. If EPA disapproves state criteria or determines that revised criteria are necessary, it can issue federal criteria for the state. When that occurs, the federal criteria are the state's water quality standards until such time as EPA approves the state's revised criteria. EPA then withdraws the federally promulgated water quality standards because they are no longer necessary. EPA has not often used its CWA authority to establish federal water quality standards—for example, it promulgated toxic pollutant standards in 14 states and territories in 1992[5] and toxics standards for waters of the Great Lakes system in 1995[6]—but doing so has been controversial.

Developing Human Health Criteria and Standards

An important function of ambient water quality criteria is to manage the risk associated with chemicals that are released into the environment through human activity in such a way that human health is protected. Human health criteria represent the highest concentration of a pollutant in water that is not expected to pose a significant risk to human health. They are set so that fish in a waterbody have levels of targeted pollutants low enough such that when they are consumed by people, or are consumed by people who also are drinking water from the same waterbody, they do not pose unacceptable health risks to individuals.

A water quality criterion is calculated as the product of risk-specific toxicity (i.e., the type of health effect—cancer or non-cancer) times exposure. Exposure encompasses multiple factors, such as body weight of individuals, daily intake of fish and water, and bioaccumulation of the pollutant.[7] Over time, the methodology and exposure inputs underlying EPA's national recommended human health criteria have evolved, based on better science, population data, and models. EPA's 2015 Update of Human Health Ambient Water Quality Criteria reflects several revised standard exposure inputs: (1) default body weight of 80 kilograms for adults ages 21 and older (about 176 pounds; previously, EPA's default body weight was 70 kilograms, or about 154 pounds), (2) default drinking water consumption rate of 2.4 liters per day for adults (previously, 2 liters per day), and (3) default fish consumption rate (FCR) for the general population of 22 grams per day (g/d) that is protective of 90% of adults (about ¾ of an ounce; previously, EPA's

[5] This promulgation is the National Toxics Rule (NTR). It established chemical-specific, numeric criteria for priority toxic pollutants. EPA's 1992 action was necessary to bring all states into compliance with requirements of CWA Section 303(c)(2)(B), enacted by Congress in 1987. Section 303(c)(2)(B) required states to adopt criteria for toxic pollutants identified under CWA Section 307(a)(1). States determined by EPA in 1992 to fully comply with Section 303(c)(2)(B) requirements were not affected by the NTR. Half of the original 14 states and territories remain covered for one or more criteria in the NTR.

[6] The Water Quality Guidance for the Great Lakes System, issued in 1995, establishes required minimum standards, antidegradation policies, and implementation procedures for waters of the Great Lakes system. EPA's action was necessary in order to meet requirements of CWA Section 118(c)(2), which Congress enacted in 1987. It required EPA to publish chemical-specific, numeric criteria for pollutants in Great Lakes waters to protect human health, aquatic life, and wildlife and directed the Great Lakes states to adopt water quality standards consistent with EPA's guidance. Although the Great Lakes states subsequently adopted standards for some of the pollutants covered by the EPA rule, other federal requirements under the 1995 rule continue to apply in all of these states. See 40 C.F.R. § 132.6.

[7] Bioaccumulation refers to the uptake and retention of a chemical by an aquatic organism from all surrounding media, such as water, food, and sediment. Bioaccumulative contaminants persist in the environment, accumulate in living organisms, and tend to increase up the food chain, with greatest concentrations in high-end predators. Biomagnification, also called the "food chain effect," is the process whereby the tissue concentrations of a chemical contaminant increase as it passes up the food chain.

national default rate was 17.5 g/d, or 0.6 ounce).[8] EPA's national default subsistence FCR is 142 g/d, representing subsistence fishers whose daily consumption is greater than the general population.

Fish consumption rates are among the important exposure factors in determining risk level in a criterion, because the more fish that people consume that contain toxic pollutants, the more individuals are at risk for developing cancer and other illnesses. What is considered safe for someone who eats fish once per month might be harmful to someone who eats fish every day. This is important to Indian tribes, who generally eat more fish than average consumers because fish consumption has important cultural and religious significance for tribal members. Consequently, some have long argued that water quality standards should give greater weight to considerations that include FCRs of certain subpopulations, such as Native Americans.

Also important is the assumed cancer risk level in a criterion. EPA and other regulatory agencies consider that there is some risk with even the lowest exposure to carcinogens (i.e., there is no threshold exposure below which risk is zero). To establish regulatory criteria for carcinogens, the level of acceptable risk must be determined. Chronic (lifetime) exposure to carcinogenic chemicals is associated with an increased likelihood of developing cancer at some point in an individual's lifetime. This likelihood is sometimes referred to as the incremental excess lifetime cancer risk. That increased likelihood is sometimes referred to as a probability, such as one in 1,000 (expressed as 1×10^{-3}) risk above the "background" risk of developing cancer. EPA calculates CWA human health criteria for carcinogenic effects as pollutant concentrations corresponding to lifetime increases in the risk of developing cancer.

Because exposure to surface water or other environmental media cannot be risk-free, the challenge is to find some level of risk that most people will find acceptable. For exposure to carcinogens, the risk-based point of departure for many environmental rules has been a risk management decision of selecting a threshold probability of cancer, typically an excess risk of one in 1 million, or 1×10^{-6}. Risks at this level or lower (e.g., 10^{-8}) are regarded as acceptable, while higher risks (e.g., 10^{-3}) may or may not be considered acceptable, depending on the regulatory program involved. EPA's methodology for developing ambient water quality criteria to protect human health recommends cancer risk levels of 10^{-5} (one in 100,000) or 10^{-6} as generally acceptable risk management levels to protect the general population and notes that states and authorized tribes[9] can choose a more stringent risk level, such as 10^{-7} (one in 10 million), when deriving human health criteria.[10] EPA's methodology also states that the risk to more highly exposed populations (sports fishers or subsistence fishers)—who inherently face greater risk by consuming more fish—should not exceed a 10^{-4} risk level (one in 10,000). EPA believes that states have flexibility under the CWA to determine appropriate risk levels in their water quality standards, subject to EPA review and approval or disapproval, but requires that the state has

[8] This report focuses on water quality criteria and standards for carcinogenic pollutants, which have been the focus of most recent controversies. States also develop water quality standards that include criteria for non-carcinogenic substances; these criteria typically involve consideration of additional input parameters such as relative source contribution, which takes into account exposure from sources that are not within the scope of the CWA.

[9] A tribe may administer a water quality standards program if it applies and EPA finds that it qualifies under CWA Section 518(e) to be treated in a manner similar to a state ("TAS"). According to EPA, 53 tribes have been found eligible to administer such a program, and EPA has approved at least initial water quality standards for 42 of these tribes.

[10] U.S. Environmental Protection Agency, Office of Water, Office of Science and Technology, *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000)*, EPA-822-B-00-004, September 2000, pp. 2-6–2-7.

identified the most highly exposed subpopulation and has demonstrated that the chosen risk level is adequately protective of that population.

Clean Water Act Requirements and State Responses

The CWA requires states and authorized tribes to review their water quality standards and revise them, if appropriate, at least once every three years. Increasingly, during the triennial review process, EPA has been encouraging states with populations known to consume large amounts of fish to develop criteria to protect highly exposed population groups and, in doing so, to use local or regional data on FCRs that are more representative of their target population group, in place of a default national value. In addition, the agency encourages states to adopt a cancer risk level of 10^{-6} both for the general population and highly exposed groups.

Stringency of Criteria and Standards

Modifying the various parameters in a water quality criterion—e.g., the FCR or the cancer risk level—can change the standard. For example, a FCR of 175 g/d and a cancer risk level of 10^{-5} is functionally equivalent to a FCR of 17.5 g/d and a cancer risk level of 10^{-6}. A FCR of 175 g/d and risk level of 10^{-6}, which EPA has recommended in Oregon, Washington, and Idaho, is more protective of those who are high consumers of fish. Critics who object to EPA asserting its position in this manner argue that there is no measurable improvement in public health in adopting 10^{-6} as the cancer risk level compared with 10^{-5}. Further, they contend that, despite improvements in the ability to detect pollutants in ambient water at very low levels (e.g., thousandths of a microgram per liter), corresponding technologic capability to remove contaminants from wastewater at the parts per quadrillion or parts per quintillion level does not exist. The more stringent cancer risk levels, fish consumption rates, and numeric water quality criteria potentially result in much higher compliance costs for industries and municipalities, critics say. Others, including environmental advocates and tribal representatives, counter that individuals who consume more fish should not be subject to higher or unacceptable risk.

Recent controversies between EPA and several states have involved disputes over both the appropriate FCR and cancer risk level used by states in developing their water quality criteria, and the stringency of the resulting ambient water quality standards. Stringent water quality standards, in turn, can result in states issuing permits containing highly restrictive discharge limits that create compliance issues for industrial and municipal facilities. The challenge raised by these controversies is to develop achievable water quality criteria that are protective for the general population and for high-consuming subpopulations, whose risk will be greater, but still acceptable.

- In 2011, following its triennial review, Oregon adopted revisions to its water quality standards. Initially, Oregon's criteria were based on a fish consumption rate of 17.5 grams per day and 10^{-6} lifetime cancer risk level. But EPA argued that information was available in the record that showed that more fish was being consumed than was accounted for in the 17.5 g/d standard. As a result, Oregon revised its criteria based on the new data and submitted its standards to include a 175 g/d FCR (about 6.2 ounces) and a lifetime cancer rate level of 10^{-6}. EPA approved the revised standards in 2011. Evidence of how the state's stringent water quality standards may affect discharge permit limits is not available, because, according to available information, Oregon has issued few major permits based on the revised criteria.[11]

[11] "Dialogue: Key Issues in Setting Water Quality Standards," *Environmental Law Reporter*, vol. 45 (March 2015), p. 10200.

- Washington State began work on revised water quality standards in 2013. Its then-existing human health criteria for toxic pollutants were promulgated by EPA in the 1992 National Toxics Rule (NTR), based on recommended exposure values considered appropriate at that time—including a default FCR of 6.5 g/d and a cancer risk level of 10^{-6}. Washington intended to adopt criteria that EPA would approve in lieu of federal standards, reflecting both updated science and policy. The standards that the state adopted and submitted for EPA review in January 2015 were based on an FCR of 175 g/d (EPA had urged the state to adopt the same FCR as Oregon, in part to achieve regional consistency since the two states share certain waters) and a cancer risk level of 10^{-5}. Washington State was attempting to develop human health criteria that would balance human health protection and achievability, but EPA indicated that it would disapprove Washington's standards, because of the less protective cancer risk level. When the state failed to adopt revised standards that EPA could approve, in September 2015 the agency proposed to promulgate federal water quality standards for Washington including more protective human health criteria that are consistent with EPA's position.[12] This rule proposes to change the criteria that EPA promulgated for Washington in the 1992 NTR and establish new human health criteria for 14 additional chemicals for which EPA now has recommended criteria. EPA has not yet finalized its 2015 proposal (despite the 90-day requirement in CWA Section 303(c)(3)),[13] preferring that Washington revise its standards, which the state did in August 2016. EPA is now reviewing the state's new standards. Washington's 2016 revisions incorporate criteria reflecting EPA's position regarding FCR and cancer risk level, but nevertheless reflect some differences in numeric criteria for specific pollutants.
- Idaho updated 167 human health criteria for 88 chemicals in 2006. In 2012, EPA disapproved the state's updated human health criteria and the use of 17.5 g/d as a fish consumption rate for calculating the criteria. This action was based on EPA's judgment that the FCR used in criteria derivation was not adequately protective of all Idahoans. Subsequently, Idaho notified EPA of its intention to initiate a negotiated rulemaking to revise the human health criteria for toxic pollutants; that rulemaking began in September 2012 and continues now. Based on a fish consumption survey of its general population and an EPA tribal survey, Idaho chose an FCR of 66.5 g/d and a 10^{-5} cancer risk level to derive revised criteria for toxic pollutants. The state has not yet officially submitted its standards package to EPA for approval, but in official comments to the state, EPA indicated concern about Idaho's actions. In May 2016, EPA announced that within one year it will propose human health criteria applicable to waters under Idaho's jurisdiction.[14]

[12] U.S. Environmental Protection Agency, "Revision of Certain Federal Water Quality Criteria Applicable to Washington," 80 *Federal Register* 55063-55077, September 14, 2015.

[13] CWA Section 303(c)(3) requires EPA to approve new or revised standards within 60 days of submission. If EPA determines that the standards do not comply with the CWA or its regulations, EPA is to notify the state. If the state fails to make changes specified by EPA within 90 days, EPA is required to propose standards to apply in the state and to promulgate the standards within 90 days of proposal, unless the state adopts a revised or new water quality standard in the meantime.

[14] U.S. Environmental Protection Agency, "May 2016 Action Initiation List," https://www.epa.gov/laws-regulations/actions-initiated-month#may16.

- In April 2016, EPA proposed federal water quality standards containing human health criteria for 96 pollutants in certain waters in Maine, mainly waters on Indian lands in the state and waters subject to sustenance fishing rights under the Maine Implementing Act.[15] EPA's proposal came after a federal court in 2014 had ordered EPA to act—through approval or disapproval—on a series of water quality standards that Maine had submitted to EPA for review over a period of years, but on which EPA had failed to act. In response to the court's order, EPA partially approved and partially disapproved Maine's pending standards in a series of letters early in 2015. The disapprovals were based in part on EPA's determination that the criteria do not adequately protect all designated uses, including sustenance fishing use in tribal waters. Maine believes that the standards were wrongly disapproved and has objected to revising its standards to adopt EPA's position. Maine's human health criteria are based on an FCR of 32.4 g/d, while EPA's April 2016 proposed federal criteria assume an FCR of 286 g/d. Both Maine's standards and EPA's proposed standards include a cancer risk level of 10^{-6}.

Within their overall water quality standards, states can incorporate a number of tools or mechanisms that can potentially provide implementation flexibility. For example, EPA rules allow states to establish a process for allowing time-limited variances and compliance schedules to allow permittees additional time to meet CWA and regulatory requirements. They also can grant intake credits or have processes that recognize naturally occurring or legacy sources of contaminants, air deposition, or pollutant releases from unregulated sources. States generally, but especially states that are developing or implementing stringent water quality criteria, view such implementation tools as necessary elements of their water quality standards. EPA's regulations acknowledge that intake credits, variances that allow more time for compliance, and other mechanisms are available to states, but the agency disapproves those that it determines do not meet requirements of the CWA. These actions, too, contribute to controversies between EPA and certain states.

Criticism of EPA and EPA's Response

In all cases, EPA indicates that it prefers to work collaboratively with states and prefers that states take necessary actions to adopt or revise water quality standards to meet CWA requirements without federal intervention. At the same time, EPA argues that it has a duty under the CWA to ensure that water quality standards adequately protect designated uses of waters and are consistent with the law.

Criticism of EPA's actions regarding state water quality standards has increased recently. Critics include affected states and organizations representing major dischargers that are directly affected by adoption of stringent water quality criteria. One such organization is the National Association of Clean Water Administrators (NACWA), whose members include public wastewater treatment agencies. In a December 2015 letter commenting on EPA's proposed federal water criteria for Washington State, NACWA criticized "EPA's tactics of influence and intimidation," which the organization said "are inconsistent with the CWA's cooperative federalism foundation and history that provides the states the responsibility for developing and approving water quality standards."[16]

[15] U.S. Environmental Protection Agency, "Revision of Certain Federal Water Quality Criteria Applicable to Maine," 81 *Federal Register* 23239-23267, April 20, 2016.

[16] Letter from Chris Hornback, Chief Technical Officer, National Association of Clean Water Agencies, to EPA Docket (continued...)

In a separate letter concerning Idaho's development of revised water quality criteria, NACWA observed that EPA's engagement with states before formal criteria are submitted is intended to influence the content of state proposals. "Whether due to a lack of resources or political will, states have often succumbed to this 'informal' pressure from EPA and made revisions to their rules, even if the changes were counter to the state's policy and risk choice positions."[17]

Other critics contend that EPA's recommended national human health criteria are based on extreme and unrealistic assumptions, reflecting compounded conservatism, and that the agency has gone beyond the national criteria in its discussions with Maine and the Pacific Northwest states. Critics say that compounded conservatism results because the inputs used by EPA to derive human health water quality criteria assume that the concentration of a pollutant in all waters is always equal to the criteria and that everyone in the United States is of a standard weight; drinks 2.4 liters of unfiltered and untreated water from rivers, lakes, and streams every day for a lifetime; and eats 22 grams of locally caught fish every day for a lifetime, all of which are contaminated at the criteria level. Critics estimate that less than 1% of the population has these characteristics, while the compounded conservatism underlying such analysis leads to adoption of extreme values in states' criteria.[18] EPA's recommended criteria in Maine and the Pacific Northwest are even more conservative, they say.

Other stakeholders, including environmental advocates and tribal organizations, have a different view. Rather than considering human health water quality criteria as overly conservative or overprotective (i.e., by overestimating risk), these groups are more likely to argue that water quality criteria and standards are underprotective (i.e., by underestimating risk), especially in terms of protecting the health of highly exposed populations. In addition, these groups are more likely to fault EPA for what they view as not intervening in a timely manner when states do not meet the substantive and procedural requirements of the CWA, sometimes bringing legal challenges to EPA's actions. For example, when EPA failed to promulgate federal water quality standards for Washington State within 90 days after the agency's September 2015 proposal (as required by CWA Section 303(c)(3)), a coalition of environmental and fisherman associations sued EPA, asking a federal court to set deadlines for EPA to act. On August 3, 2016, the court directed EPA to promulgate revised water quality standards for Washington State no later than September 15, 2016, or, if Washington submits its own standards by September 15, 2016 (which the state did, on August 1), to either approve the state's submission or promulgate federal standards by November 15, 2016.[19]

Because EPA's mission is to protect public health and the environment, its practice is to seek to adequately protect public and environmental health by ensuring that risk is not likely to be underestimated, a position that prompts EPA to take a more "protective" stance, given the

(...continued)

ID No. EPA-HQ-OW-2015-0174, December 22, 2015, https://www.nacwa.org/images/stories/public/2015-01-04wq-comments.pdf.

[17] Letter from Adam Krantz, Chief Executive Officer, National Association of Clean Water Agencies, to Paula Wilson, Idaho Department of Environmental Quality, November 5, 2015, https://www.nacwa.org/images/stories/public/2015-11-06idaho-letter.pdf.

[18] Jerry Schwartz, "BNA Insights: Human Health Criteria, Fish Consumption Rates—More Important Policy Implications Than Clean Water Rule?" *Bloomberg BNA Daily Environment Report*, May 18, 2016. Hereinafter, Schwartz, BNA Insights.

[19] Puget Soundkeeper Alliance, et al. v. U.S. Environmental Protection Agency, case no. 2:16-cv-00293-BJR (W.D. WA, August 3, 2016).

underlying uncertainty and variability of the factors and inputs that are being assessed.[20] The agency believes that its approach to developing human health criteria is based on science and policies that have been thoroughly vetted publicly.[21] Further, EPA believes that its responsibility is to ensure that state water quality standards meet the CWA's requirement "to protect the public health or welfare, enhance the quality of water and serve the purposes of this Act."[22]

In several of the recent controversies over water quality standards, EPA also has referenced concern over criteria that are not sufficiently protective of tribal treaty fishing rights. These issues arise because, when certain Native American tribes negotiated treaties with the U.S. government to cede or give up their lands, they insisted on maintaining their fishing rights, on and off reservation. Historically, and even today, these activities were important to Native American tribes as sources of food and trade, in addition to playing a central role in the spiritual and cultural framework of tribal life.

EPA must consider tribal fishing rights because treaties between Native American tribes and the government have the same legal force as federal statutes and are defined as part of the supreme law of the land under the U.S. Constitution. EPA recognizes the importance of respecting tribal treaty rights and its obligation to do so when it takes actions such as approving water quality standards.[23] The agency commented on this issue in the 2015 proposal for federal water quality standards in Washington State.

> A majority of waters under Washington's jurisdiction are covered by reserved rights, including tribal treaty-reserved rights.... In order to effectuate and harmonize these reserved rights, including treaty rights, with the CWA, EPA determined that such rights appropriately must be considered when determining which criteria are necessary to adequately protect Washington's fish and shellfish harvesting designated uses.... EPA proposes to consider the tribal population exercising their reserved fishing rights in Washington as the target general population for the purposes of deriving protective criteria that allow the tribes to harvest and consume fish consistent with their reserved rights.[24]

Tribal organizations have been among the most active and vocal supporters urging EPA to ensure that states develop water quality standards with stringent human health criteria. One analyst estimated that at least 10 states have tribes with treaties similar to those at issue in Washington State, and in total, 40 states are home to tribes with treaties, suggesting that similar water quality standards controversies could arise in other states, he said.[25]

Conclusion

At issue in these recent and ongoing controversies is finding the right balance in developing CWA human health criteria. One set of concerns about this balance has been expressed by industries

[20] U.S. Environmental Protection Agency, Office of the Science Advisor, *Risk Assessment Principles and Practices*, EPA-100-B-04-001, 2004, pp. 11-13.

[21] U.S. Environmental Protection Agency, "Questions for the Record—Administrator of the Environmental Protection Agency, following Budget Hearing, House Committee on Appropriations, Subcommittee on Interior, Environment, and Related Agencies, March 22, 2016," p. 38.

[22] CWA Section 303(c)(2)(A) (33 U.S.C. § 1313(c)(2)(A)).

[23] U.S. Environmental Protection Agency, *EPA Policy on Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights*, February 2016.

[24] 80 *Federal Register* 55067.

[25] Schwartz, BNA Insights.

and other regulated stakeholder groups, such as NACWA, who challenge what they view as EPA overreach of its CWA authority to oversee state water quality standards and ignoring flexibility that is provided in the agency's rules and guidance. For example, while EPA's methodology for developing water quality criteria states that a cancer risk level of either 10^{-5} (one in 100,000) or 10^{-6} (one in 1 million) is generally acceptable risk for the general population, the agency's strong recommendation is for states to use a 10^{-6} risk level both for the general population and highly exposed groups. As described in this report, EPA argues that it has a duty under the CWA to ensure that water quality standards adequately protect designated uses of waters—including tribal treaty rights—and are consistent with the law. Environmental advocates and Native American organizations express a set of concerns that differ from those of regulated industries, favoring and encouraging more intervention by EPA, rather than less, and advocating the need to ensure that standards are protective of highly exposed subpopulations. States' interests reflect a range of concerns—desiring to ensure that public health of all populations is protected while providing flexibility for business and also preserving the appropriate role for states under the CWA. State standards must, by law and regulation, reflect the best available science, but when states are developing standards, they seek to ensure that legitimate state policy decisions are acknowledged.

Congress has so far not directly addressed the recent controversies discussed in this report, but many in Congress have for some time been generally critical about perceived EPA overreach in a number of regulatory and policy areas.[26] Although legislation intended to limit EPA's involvement in state development of water quality standards was introduced in the past (H.R. 2018, which the House passed, and S. 3558 in the 112th Congress; and H.R. 1948 in the 113th Congress), similar bills have not been introduced in the 114th Congress.

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[26] For discussion, see CRS Report R41561, *EPA Regulations: Too Much, Too Little, or On Track?*, by (name red acted) and (name redacted) .