Department of Environmental Quality
Water Quality Standards, 58.01.02
Docket No. 58-0102-1201

Negotiated Rulemaking Summary
Idaho Code § 67-5220(3)(f)

This rulemaking was initiated to evaluate local and regional fish consumption information and to update Idaho's human health criteria.

Key information considered by DEQ was gathered by DEQ and provided by the public during the negotiated rulemaking process. Members of the public participated in the negotiated rulemaking process by attending the meetings and by submitting written comments. All comments received during the negotiated rulemaking process were considered by DEQ when making decisions that resulted in drafting the rule.

The negotiated rule drafts contain revisions made based on meeting discussions and written comments submitted. At the conclusion of the negotiated rulemaking process, DEQ formatted the final rule draft for publication as a proposed rule in the Idaho Administrative Bulletin. The negotiated rulemaking record, which includes the negotiated rule drafts, written public comments received, and documents distributed during the negotiated rulemaking process, is available at www.deq.idaho.gov/58-0102-1201.

This rulemaking is a response to EPA disapproval of Idaho's 2006 update of its human health criteria. EPA took issue with Idaho's use of EPA's recommended national default fish consumption rate, stating in their May 10, 2012 action letter that *"EPA is unable to ensure that the use of a fish consumption rate of 17.5 g/day in deriving statewide criteria is consistent with 40 CFR 131.11(a)."* They further stated that *"EPA identified several sources of information on local and regional fish consumption, which Idaho did not consider before using the national default fish consumption rate."* To remedy the disapproval, EPA stated DEQ must evaluate local and regional fish consumption information. EPA also suggested DEQ undertake a fish consumption survey.

In the initial meeting on Oct. 4, 2012 DEQ presented an evaluation of 19 fish consumption surveys as to their applicability to Idaho. We also introduced 5 policy questions related to selection of a fish consumption rate to be used in criteria calculation: fish consumers vs non-consumers; population to be protected; handling of consumption of market fish; handling of consumption of anadromous fish; and level of protection to be provided. We solicited input on two overarching questions: should we proceed with the rulemaking; and, does Idaho have adequate fish consumption data? It was decided that we should proceed with rulemaking and that Idaho needed to obtain current, Idaho specific data on fish consumption to support new criteria.

Over a period of six meetings and eight months we engaged the committee in discussion of fish consumption survey design considerations. We contracted with the Boise State Public Policy Center for survey design assistance and approached the Idaho legislature for funds to conduct a survey. We hired Northwest Research Group (NWRG) in December 2013. NWRG held focus group meetings in three locations around the state in spring 2014, and refined our survey questionnaire. They then pilot tested the survey and refined it further for implementation as a computer aided telephone survey. Survey implementation began in April 2014 and by design extended for one year so as to address seasonality in availability, harvest and thus consumption of fish.

While the survey was underway DEQ engaged the committee in a series of eight policy discussions. These discussions covered the 5 policy issues initially identified in October 2012, plus discussion of the following: using probabilistic risk assessment versus traditional point estimates for exposure inputs;

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suppression of fish consumption rates from historic values by some consumers; and implementation tools – ways to ease the transition to compliance with new, likely lower, criteria. This series of eight meetings carried us to March 12, 2015 and provided the basis for policy recommendations further discussed internally and then presented to the committee on April 21, 2015.

In May 2014, shortly after our survey began, EPA proposed new national 304(a) recommendations for human health criteria, which they finalized on June 29, 2015. This introduced some new considerations into Idaho's ongoing rulemaking: an updated body weight value; an updated drinking water intake value; availability of nationally recommended bioaccumulation factors rather than bioconcentration factors, for three trophic levels of fish consumption; some new relative source contribution factors for non-carcinogens; and new toxicity data. Instead of just the updated fish consumption rate we were considering at the onset of this rulemaking, we were now looking at revisions to all 7 inputs to the criteria calculations, and applying them in a probabilistic risk assessment (PRA), a method not previously used in formulating human health criteria.

That brings us to at least 12 policy issues or choices of inputs that factor in to Idaho's current update of its human health criteria. These are as follows:

Fish Consumers and non-consumers: Idaho has based its proposed rule on fish consumption rates for consumers of fish only. A fish consumer is anyone who reported eating fish in the 12 months preceding inquiry. About 88% of Idahoans report they are consumers of fish.

Target population: Idaho has followed EPA's 2000 guidance and looked at both the general population and three populations with higher exposure in Idaho, by virtue of expected higher fish consumption: Idaho anglers, Shoshone-Bannock Tribes, and the Nez Perce Tribe.

Criteria calculation: Idaho has based its human health criteria on probabilistic risk assessment, using distributions for Idaho specific fish consumption rate and body weight, and a national distribution for drinking water intake.

Fish Included: Idaho has based its fish consumption rate on 'Idaho Fish'. Idaho Fish is a subset of all fish that consists of Idaho resident freshwater species.. Because of their life history steelhead and kokanee are considered resident freshwater species. Other varieties of salmon, e.g. Chinook and Coho, based on their life history, are excluded as being largely marine species.

Target Risk: Idaho's risk management decision is to apply an incremental cancer risk level of 10^{-6} for carcinogens and a hazard quotient of one for non-carcinogens. To accommodate the inherent range in risk, we applied these risk levels at the 95th %tile for the general population and at the mean for the three higher fish consuming populations.

Relative source contribution: Idaho used EPA's recommended 2015 relative source contribution (RSC) values; most equaled their default value of 0.2.

Bioaccumulation: Idaho used EPA's 2015 recommended BAF values, where available. Where new BAFs were not available from EPA, EPA's older BCF values were used. Because BAFs are available for trophic levels 2, 3, and 4, DEQ created an average BAF for each chemical for purposes of criteria calculation. Our average BAFs are weighted by the trophic level proportions evident in the local fish consumption data we used.

Body Weight: Idaho used the body weight distribution from its Idaho general population survey. The mean of this distribution is 80 kg.

Drinking Water Intake: For exposure from drinking water Idaho used data provided in EPA's 2011 Exposure Factors Handbook for per capita adult intake of water from community water supplies. The 90th percentile of this distribution is 2.4 L/day.

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Toxicity values: For the most part Idaho has used EPA's 2015 recommended values for toxicity. However, EPA did not update criteria for some chemicals in 2015 and so did not provide updated toxicity values. In these cases Idaho used current IRIS toxicity values. For one chemical, thallium, Idaho used an EPA Provisional Peer Reviewed Toxicity Value (PPRTV). PPRTVs are one of eight sources in addition to IRIS that EPA utilizes in developing AWQC. For benzene, where EPA provided a high and a low toxicity value, Idaho calculated criteria using both values and then averaged the resulting criteria for its proposal.

Fish consumption / exposure: Based on Idaho's survey and NCI analysis of dietary recall results, the 95th %tile Idaho Fish consumption rate for the general population was 11.2 g/day. The estimated mean Idaho Fish consumption rate for the three higher exposure populations – Idaho angler, Shoshone-Bannock Tribes and the Nez Perce Tribe – are 4.5, 5.6 and 16.1 g/day respectively. Thus, the Nez Perce Tribe was the targeted higher exposure population.

Comparison of target populations / risk: Idaho has proposed the lower of the criteria derived based on protecting the Idaho general population or the Nez Perce Tribe. Because of their greater risk through higher fish consumption, the population driving all the fish only criteria is the Nez Perce Tribe. Because of the interplay of target risk with different fractions of the two target populations, for the fish plus water exposure the general population risk drives 62 of the104 fish plus water criteria values proposed that were derived using PRA[1].

In addition, DEQ had decided that it would not allow its criteria going forward to be any less stringent than current criteria we were replacing. We called this no-backsliding. It was a proposal intended to ensure criteria were not weakened even if nominal risk targets were held the same. In response to comments on our preliminary draft rule we have revaluated and are allowing criteria to go up or down as the inputs dictate.

Unresolved issues

Perhaps the most controversial issue in Idaho's current proposal is its choice of what fish to include in the fish consumption rate. We settled on Idaho Fish, a group of fish that can perhaps best be described as resident freshwater fish, including steelhead and kokanee. Like EPA's national decision to exclude marine fish from their national default fish consumption rate, we see this focus on Idaho Fish as a jurisdictional / CWA reach issue – we have excluded fish we don't expect Idaho's water quality criteria to be able to affect. This is more fully laid out in our discussion paper "Considerations for inclusion of fish in Idaho's regulatory FCR." Because the two tribal surveys –the Shoshone-Bannock Tribes and Nez Perce Tribe – of current fish consumption rates reported different groupings of fish than Idaho's survey, it was necessary to translate their fish consumption for 'Group 2' fish to an equivalent rate for Idaho Fish.

Intertwined with how much fish people eat, and the exposure to potential toxins consumption entails, is the level of protection, or allowable risk, built into the criteria. EPA's 2000 Human Health Criteria Methodology clearly speaks to an allowable range of risk across segments of a population, recognizing that risks are inherently heterogeneous. Individual risk is directly tied to how much fish you eat, all else being equal. While specific to carcinogens, EPA says *"With AWQC derived for carcinogens based on a linear low-dose extrapolation, the Agency will publish recommended criteria values at a 10^{-6} risk level. States and authorized Tribes can always choose a more stringent risk level, such as 10^{-7}. EPA also believes that criteria based on a 10^{-5} risk level are acceptable for the general population as long as States and authorized Tribes ensure that the risk to more highly exposed subgroups (sportfishers or subsistence fishers) does not exceed the 10^{-4} level."* Idaho's proposal is within these guidelines, yet EPA region 10 and Idaho Indian Tribes have made it clear that only a 10^{-6} risk at an upper percentile of tribal exposure is acceptable to them. On the other hand, because we have elected to provide 10^{-6} level of risk at the mean for the Nez Perce Tribe, a level much more protective than EPA's guidance suggests, there is concern from industrial groups that DEQ is being overly protective. These views are in turn colored by what fish are included, as well any consideration of suppression of fish consumption and tribal treaty rights.

[1] The copper criterion appears as a fish plus water criterion but it is based on the drinking water MCL.

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Not listed among the 12 issues above are suppression of fish consumption and tribal treaty rights. Suppression is the notion that because current fish consumption rates are depressed from their historic levels, water quality criteria must reflect the higher historic rate in order to be protective. This is tied to tribal treaties with regard to whether or not those treaties guaranteed a certain quantity and/ or quality of fish. Idaho's use designation of recreation, to which Idaho's human health criteria are linked, does not speak to subsistence fishing rights or any specific harvest of fish.

Part of the discussion around suppression involves environmental justice and whether there is a *"downward spiral"* whereby lax criteria lead to lower fish consumption that disproportionately affects those with a culture of higher fish consumption. DEQ examined this and found no evidence of a downward spiral; in fact the record shows an increase in the regulatory fish consumption rate and generally more stringent criteria over the 20+ years of human health toxics criteria in Idaho. Although a meeting was devoted to suppression, no discussion paper was developed. The impact of suppression and tribal treaty fishing rights remain unresolved.

Idaho's use of PRA to derive its criteria remains an issue. While PRA is nothing new, arguably better science, and used for all manner of risk assessment, its use in water quality criteria is novel. While not outright objecting, EPA has been cautious about it, saying they are going to convene a Scientific Advisory Board (SAB) to consider its use for water quality criteria and that will take a couple years. So they have cautioned that they likely would not be able to pass judgment on Idaho's use of PRA until their national SAB review has ran its course.

Also not mentioned above is downstream protection. This is a requirement of the federal regulations (40 CFR 131.10(b)) for water quality standards, and EPA has recently clarified its view on what it expects in state WQS to meet this longstanding requirement (http://water.epa.gov/scitech/swguidance/standards/library/upload/downstream-faqs.pdf). DEQ has added language to our rule based on EPA's template narrative language.

RSC is EPA's means to assure that water quality criteria account for other sources of exposure to non-carcinogenic toxins so that expected overall exposure does not exceed the safe reference dose. For a while DEQ was headed down a path of adjusting EPA default recommended RSC values to account for increased exposure brought into criteria now versus exposures used circa 2000 when EPA's default RSC of 0.2 was established by policy. Idaho's approach was viewed unfavorably by EPA because it did not exactly follow their recommended approach and so DEQ used EPA's RSC values in developing the proposed criteria. But DEQ has received input from industry groups providing some revised RSC values, building on work done by Florida (still in draft) using EPA's decision tree approach, but tailored where possible using Idaho data. Therefore, the RSC remains unresolved.

There were also groups involved in the negotiated rulemaking that favored DEQ's original "no backsliding" proposal and so there is not agreement on DEQ's draft decision to allow the criteria to go up or down as dictated by the inputs.