

Daily News

FWS Again Hampers EPA Bid To Adopt Novel Fish-Tissue Limit For Selenium

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The Interior Department's Fish and Wildlife Service (FWS) is hampering EPA's latest efforts to adopt novel fish-tissue based measures for setting water quality limits for selenium, a ubiquitous substance associated with releases from mining, power plants and other sources, much as the service did when the agency proposed a similar approach in 2004.

In its most recent attack, FWS officials told the agency in [July 28 comments](#) on its draft water quality criteria that while the agency's latest approach is an improvement over its failed 2004 plan, the latest proposal may not adequately protect some fish and non-fish species, may be difficult to implement and the agency may lack critical data.

The service's concerns are bolstering environmentalists' efforts to kill -- or at least substantially strengthen -- the agency's novel approach. In Kentucky, for example, a federal court last week backed environmentalists' request to expand litigation challenging EPA's approval of the Bluegrass State's fish-tissue standard -- based in part on FWS' strong opposition to the agency's approval.

And the debate over how to craft selenium criteria will soon expand to California, where a federal court this week [approved a consent decree](#) between environmentalists and EPA that sets deadlines for the agency to propose and finalize selenium and mercury criteria for the state.

FWS' opposition to the agency's latest effort is not new. During the Bush administration, when EPA first proposed a fish-tissue based standard for selenium, FWS was one of a number of agencies that helped scuttle the proposal. An FWS scientist was one of several federal scientists who authored a 2005 white paper that charged the proposal was insufficiently protective and recommended that the new limit be as much as twice as protective as what EPA proposed.

Selenium is a nonmetal that occurs naturally in many ores and continues to be used in glassmaking and pigments. But it causes mortality, growth impediments and reproductive harms in fish and other aquatic life and also causes dermal and other harms in humans.

Under the Clean Water Act (CWA), EPA adopts risk-based water quality criteria that set a safe concentration level for contaminants in water to protect human health and aquatic life. States then craft their own enforceable water quality standards and other regulatory limits based on the criteria, though regulators can, with EPA approval, modify the criteria or adopt other measures using scientifically defensive methods.

Water Criteria

The agency's current criteria, first adopted in 1987, set traditional water column concentration values of 5 micrograms per liter (ug/L) for chronic exposures and 20 ug/L for acute exposures. But dischargers have long struggled to meet standards and limits based on the 1987 criteria, resulting in scores of citizen suits.

To address the concern, dischargers and state regulators have long urged EPA to adopt fish-tissue based measures, arguing they better account for site-specific conditions. They noted that the agency had adopted a similar approach for mercury in 2001, although the agency struggled to craft guidance for how to implement and enforce the fish-tissue criterion in permits, standards and other regulatory limits.

But environmentalists have strongly opposed such fish-tissue measures, charging they are difficult to enforce -- and may not be adequately protective.

In 2004, the agency proposed a new approach, setting a criteria based on fish-tissue levels of 7.91 micrograms per gram dry weight (ug/g/dw).

Environmentalists -- along with FWS and other federal agencies -- roundly criticized the draft criteria, saying they were weaker than the 1987 water quality-based levels. Their opposition led the Bush administration to shelve its plan.

Now the Obama administration is seeking to adopt a fish-tissue based approach, though the draft standard [EPA recently floated for peer review](#) includes both a fish-tissue measure as well as water column screening values, although the agency says the tissue element should be "given precedence" when both types of data are available.

The draft criteria includes a 15.2 milligram per kilogram (mg/kg) concentration limit for fish eggs or ovaries -- which would override any other standards in EPA's draft and two other tissue-based limits, 8.1 mg/kg "whole body" of a fish; 11.8 mg/kg for the muscle tissue, which would override the draft water column values of 1.3 micrograms per liter (ug/L) over a 30-day average for standing waters and a 4.8 ug/L limit for flowing waters.

Industry and state groups have mostly welcomed the draft selenium criteria, having long pushed for the use of fish-tissue concentrations to assess threats to aquatic life. In their recent comments, industry and state groups

have generally applauded EPA's use of fish-tissue measures but have urged the agency to weaken some proposed concentration values.

But environmentalists like Appalachian Mountain Voices says these limits are not strict enough to protect the aquatic life for which the criteria were developed. They noted in [recent comments](#) that the draft criteria is "slightly less protective" than the failed 2004 plan.

"Because this current draft standard is even weaker, comments from the previous draft are still applicable and should be considered by the EPA when evaluating this current draft," the group stated in its July 22 comments.

The environmentalists note in their comments that FWS determined that an acute aquatic life criterion of 185 ug/L in the water column and a chronic aquatic life criterion of 8.9 ug/g (dry weight in fish tissue) from the 2004 proposed standards -- levels that were stricter than the agency's current proposal -- as evidence that the new values will not protect "federally listed fish and wildlife species."

FWS' Concerns

In the July 28 comments, FWS echoes many of environmentalists concerns. For example, the service says EPA's plan may not adequately protect listed fish and non-fish species. It estimated that even in waters achieving the agency's newly proposed criteria, about 5 percent of listed species would experience a 10 percent or greater level of reproductive toxicity, while additional populations would experience less than 10 percent toxicity. "It's possible that a toxic standard more protective . . . might be required for waters that host untested ESA-listed species," the service's comments say, adding that the two agencies should work together "to address and resolve this issue" prior to finalizing the plan.

The service also cautioned that because the fish may not be protected, other listed species that rely on fish may also face toxicity risks. "To the extent that EPA's proposed fish-tissue criteria might result in components of aquatic food webs posing a toxic exposure pathway for aquatic-dependent birds, migratory birds may be effected," FWS writes. "There are many species of [Endangered Species Act]-listed aquatic dependent wildlife (in addition to birds) that the [Draft Selenium Criteria] has not addressed."

The service welcomed EPA's commitment to craft a separate criteria for wildlife, urging the agency to craft the measure "as soon as possible, preferably as a collaborative effort with the Service" as the Government Accountability Office recommended in a 1987 report.

On other issues, the service generally backed EPA's approach but called for additional strengthening. For example, the service said it supported EPA's "intermittent exposure" approach for sampling selenium, where EPA allowed for the 30-day concentration in both flowing and standing waters could not exceed certain levels in this concentration more than once in three years, on average.

FWS says it overall supports the "intermittent exposure" approach but it questions the justification for focusing on "monthly mean selenium concentrations" as opposed to "alternative time frames."

"Generally, we support EPA's new 'intermittent-exposure' approach, although it is not clear to us whether limiting the monthly mean is the appropriate temporal window to effectively safeguard against hazardous bioaccumulative loading of selenium into aquatic food webs during short-term acute spikes of waterborne selenium concentrations," FWS writes. "It would be helpful if EPA could provide the scientific basis for focusing on monthly mean selenium concentrations."

Data 'Paucity'

FWS also raised concerns about the data EPA had available to develop the fish egg and ovary tissue criteria, noting a "paucity of data available" for quantifying this part of the tissue in particular.

"All uncertainty about the true numeric value of this desired [egg/ovary] tissue criterion would be removed if reproductive toxicity data were available for all 891 species of freshwater fish in the United States," FWS writes. "EPA appears to assume that the 11 species tested for reproductive sensitivity to selenium exposure include one or more species representative of the sensitive tail of the species." FWS recommends EPA reconsider and better explain the statistical models and scientific studies it used to reach that conclusion.

FWS' concerns are also bolstering environmentalists' suit challenging EPA's approval of Kentucky's fish-tissue based selenium standard, a test case for the agency's pending national standard. A federal judge in Kentucky Aug. 12 approved environmentalists' motion in *Kentucky Waterways Alliance et al., v. Gina McCarthy* requesting leave to add new Endangered Species Act (ESA) claims to the pending challenge.

The environmentalists' motion was based in part on FWS charges that EPA had only consulted with the service after it had approved the state's standard. The service also charged that EPA's biological evaluation (BE) of the approval was inadequate, a move that forced the agency to redo the evaluation.

An FWS source says that EPA is "actively revising" its draft BE after feedback provided at an Aug. 5 meeting between EPA and the service. The source says EPA will need to further revise the BE, but "does a better job" than previous drafts of addressing the service's concerns.

"At this point, I am not sure if we will be able to concur with the BE or if EPA would need to enter into formal ESA consultation to account for any adverse effects on federally listed species. Either approach would make EPA compliant with the ESA, which is our overall goal," the source says. -- *Amanda Palleschi* (apalleschi@iwnews.com) & *Chris Cotelesse* (ccotelesse@iwnews.com)