

26 October, 2020

US Army Corps of Engineers

RE: comment on Proposed Rules, Federal Register Vol 85, No. 179, Sept 15, 2020

This letter is a comment on the Proposed Rules Federal Register Vol 85, No. 179, Sept 15, 2020. In the proposed rule, the US Army Corps of Engineers (“USACE”) (page 57316, Part II(A)(2)) state in section subtitled More accurate quantification of losses authorized by NWP that, “*Using linear feet to quantify stream impacts and compensatory mitigation credits does not take into account the scale of the stream reach being impacted by an authorized activity or restored for compensatory mitigation (Doyle et al. 2015, Lave 2014).*” [references contained in original quote]. In the subsequent section (page 57318, Part II(A)(2) cont.), the USACE states “*In developing this proposal, we have also drawn upon information that has appeared in the scientific literature. A linear foot metric for quantifying stream impacts or stream compensatory mitigation does not take into account the scale or size of the affected stream reach (Lave et al. 2010) or act as an effective surrogate for the amount of stream functions performed within that stream reach. In situations where it is not practicable or feasible to assess or measure stream functions, using square feet to quantify the ability of a stream to perform ecological functions has a sounder scientific basis than using linear feet (Doyle et al. 2015).*”

For reference, we are the lead authors of the scientific research which, according to the USACE, provides the rationale for at least a portion of the proposed regulatory changes. However, the proposed rule, as currently written, does not accurately interpret our science, and also has several misinterpretations of aquatic science generally that appear to be used to support this proposed rule.

With respect to our own work, the primary finding of our research on compensatory stream mitigation was that **social processes** influenced the practice of stream design, and thus, stream restoration under auspices of compensatory mitigation. By social forces, we are including elements such as the particular educational training of practitioners, the history of regulations (state and federal), as well as the particular practices used to implement compensatory mitigation. The central finding of our research was that stream ‘markets’ and the participants in those markets are not ‘rational’ in the economic sense; rather, they are responding to a range of social contexts, including but not limited to profit.

With regard to how the USACE interpreted our specific research, we note that regulators and scientists must at some point determine how to measure and account for streams, and that they have typically done so using linear measures (e.g., linear feet of streams). We note that this is in many ways subjective from an economic or scientific perspective, and that regulators could just as easily use area of restored stream rather than length, but that they could also use most any other measure, such stream water temperature or benthic invertebrate habitat, among many others (e.g., Doyle et al. 2015, pg 5618-5619). The overarching finding from our years of

research was not that stream bed area was the most appropriate metric for compensatory mitigation accounting; rather, our finding was that stream bed area was one of many metrics that could be chosen, and that that the regulatory, market-participant (i.e., bankers), and scientific community has, over time, settled on stream length as a metric for accounting of compensatory stream mitigation—which is understandable for linear features. Further, we found that any metric chosen is a social construct, not some objective scientific truth, and that once that measure is (socially) chosen, the practice of stream restoration design will follow the measure (i.e., stream restoration design is not objective science/engineering; it is socially constructed as well).

To put it more precisely and bluntly, our research does not support the use of stream bed area as being a superior or preferred metric for compensatory stream mitigation, nor does it offer a scientific rationale for replacing 300 LF with a 0.5-acre limit for stream impacts.

Briefly, we should note that the USACE relies on a highly spurious, if not fundamentally incorrect interpretation of basic aquatic science in this proposed rule. They note (page 57318, Part II(A)(2)) in justifying the use of stream area rather than stream length, that “*The larger wetland or stream will have higher functional capacity than the smaller wetland or stream, if both the larger and smaller wetland or stream perform functions at the same level. For rivers and streams, a larger amount of stream bed provides more physical space for aquatic habitat, more substrate for biogeochemical cycling functions, and greater capacity for hydrologic functions.*” These two sentences belie the past two decades of aquatic science, which, if anything, have documented (with all manner of studies across many disparate geographic settings) the vast difference in community, structure, and function between stream sizes.¹ Quite simply, the assumption and assertion that larger and smaller streams perform functions at comparable levels is largely unsupported by science, as the proposed rule itself acknowledges on pp. 57317 and 57319.

We do recognize the reality that large streams/rivers are different than small streams, and that measures for small streams may need to be different. Area may or may not be a better metric for larger systems than linear feet (but, again, we do not have research that directly addresses this issue). However, our research does document that the overwhelming majority of impacts and compensating mitigation are on small streams (in fact, the smallest of systems, Doyle et al. 2015); because of this, ***it seems inappropriate for the USACE to push toward a measure that is intended to better represent larger systems than smaller ones, especially in light of the USACE’s statutory obligation to permit only “minimal adverse environmental effects”*** (Clean Water Act §404(e)).

¹ See, for example, Alexander et al. 2007, JAWRA 43(1): 41-59. Benz and Collins (eds), 1997. Southeast Aquatic Research Institute Publication 1. Benz Design and Communications, Decatur, GA. Bernhardt and others, 2005. BioScience 55: 219-230. Doyle et al., 2003, Water Resources Research 36(6), 1147, doi: 10.1029/2003WR002038. Curry et al., 1997, Transactions of AFS 126: 77-83. Ensign and Doyle, 2006, JGR-Biogeoscience 111, doi:10.1029/FG000114. February 2007 issue of JAWRA. Gomi et al., 2002, BioScience 52: 905-916. Hansen 2001, Forest Ecology and Management, 143: 39-46. Labbe and Fausch, 2000, Ecological Applications 10:1774-1791. Meyer et al., 2007, JAWRA 43(1): 86-103. Meyer and Wallace 2001, pgs 295-317 in Huntly and Levin (eds), Ecology: achievement and Challenge, Blackwell Science. Roni, 2002, Transactions of AFS 131: 743-761. Waterhouse et al., 2002, Northwest Science 76: 335-346. Wipfli and Gregovich, 2002, Freshwater Biology, 47: 957-969.

While we sympathize with the goal of consistency across aquatic system types (57313 middle column), streams are fundamentally different from wetlands, lakes, and other aquatic systems. Homogenizing only across the broad range of streams, but also among vastly different aquatic ecosystem types, may make the NWP's more internally consistent, but it certainly does not make them more accurate (57318, right column), nor does this approach provide more equivalent protections (57318 middle column).

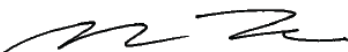
Finally, the proposed rule has the potential to dramatically reduce the protection provided to streams across the United States. As a simple example, the current numeric limits in the NWP's: 300 linear feet of streambed and a maximum 0.5 acre of stream and/or wetlands. The 300 linear feet can be waived by the District Engineer (DE), although the 0.5 acre limit cannot be waived, and requires an individual permit. The USACE has proposed to remove the 300 linear foot limit and instead rely on the 0.5-acre maximum and a new mitigation general condition requiring mitigation for impacts exceeding 0.1 acre. Thus, without regional conditions lowering the proposed 0.1-acre mitigation threshold, the proposed rule would greatly reduce compensatory mitigation requirements for stream impacts, potentially up to 0.5-acre equivalents. Given that most impacts are (a) relatively short in length and (b) of very small streams, the ***USACE has proposed a system through which the majority of impacts to streams will not require compensatory mitigation.***

In conclusion, the proposed rule is not based on an accurate interpretation of our science, which the USACE purports is a basis for their proposing this new rule. While we agree that streams should not have 'special status' compared to other aquatic ecosystems (57318 left column), we do not agree that they should have lesser status, which is the effect of this proposed rule. Further, because the USACE does not provide scientific support for their changes, we strongly recommend the 300 LF threshold be maintained in the final rule, as the proposed 0.1-acre threshold will likely result in a significantly greater number of unmitigated losses to the nation's stream ecosystems.

Best regards,



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