

May 8, 2011

Mr. Chandler Peter  
US Army Corps of Engineers  
Denver Regulatory Office  
9307 South Wadsworth Blvd.  
Littleton, CO 80123

RE: Recommended flow regime for the Cache la Poudre River and NISP permit

Dear Mr. Peter, Mr. Martin, and Mr. Kehmeier,

The Corps received numerous public comments in response to the Northern Integrated Supply Project (NISP) DEIS regarding the already degraded state of the flow regime and water quality in the Cache La Poudre River through Fort Collins. The Corps also received strident comments from the EPA in their 2008 letter to Colonel Press<sup>1</sup>, noting that they believe that the Poudre and South Platte Rivers are Aquatic Resources of National Importance (ARNIs). The EPA stated (page 16), "Changes in water quality and stream morphology due to diversion of spring snowmelt flows and reduced baseflows in the remainder of the year may substantially influence the aquatic communities in this segment [of the Cache La Poudre River]." The EPA continued by discussing the impacts of highly altered flow regimes on fish populations, non-native species, riparian areas, floodplain and adjacent wetlands, recreation, natural areas and state wildlife areas, parks, trails, and the associated economic and societal benefits of these interrelated ecosystem goods and services. In a subsequent letter<sup>2</sup>, the EPA more clearly stated (page 2) that, "the Poudre and South Platte River corridors represent ARNIs, in part, due to the critical habitat functions they provide for fish and wildlife species in a semiarid region, as well as their educational and recreational values".

NISP would divert a large portion of flows remaining in the Poudre, especially high snowmelt runoff flows that periodically rejuvenate what is left of this degraded riverine ecosystem. When I ask myself the question, "Can a project constructed and operated in a manner similar to that described in the DEIS be permitted at all?" my professional answer is "No."

When I sent in my comments on the NISP Draft Environmental Impact Statement, I included a "white paper" with a preliminary environmental flow recommendation for the Cache La Poudre River through Ft. Collins. I'm writing to tell you that white paper has now been published with but few substantive modifications as a peer reviewed article in the *Journal of the American Water Resources Association*. It was first published online last August and subsequently released in print last October. The six-month comment period on this article is now closed and, to the best of my knowledge, the Journal has received no unfavorable comments.

This article is a direct response to the critical question you asked so many years ago now: how much water do you need to have in the Poudre River through Ft. Collins? The flow recommendation was developed from

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<sup>1</sup> <http://savethepoudre.org/docs/epa-comments-on-nisp.pdf>

<sup>2</sup> [http://savethepoudre.org/docs/epa\\_nisp\\_letter\\_to\\_colonel\\_press.pdf](http://savethepoudre.org/docs/epa_nisp_letter_to_colonel_press.pdf)

published, scientifically-supportable information with the specific goal of maintaining the delivery of goods and services from this “working river” indefinitely. It covers all the critical hydro-ecological bases – flow magnitude, frequency, duration, timing, and rate of change – yet deliberately opts for choices that recognize today’s valuable out-of-stream uses. The complete flow recommendation is for a range of monthly flows (representative of dry, average, and wet conditions) supplemented with additional event-based flow recommendations. Though this article does not directly address water quality issues other than water temperature, it is clear that the flow regime itself directly influences, and in some cases governs, water quality in the river.

The most relevant message here from this article is that flows in the Poudre River are currently well below even a minimal, ecologically-sound environmental flow recommendation for this river. In other words, the river is greatly over-appropriated from an ecological point of view; withdrawing additional water will further erode and harm the sustainability of this Aquatic Resource of National Importance. Given the longstanding array of assaults on the Poudre and S. Platte Rivers<sup>3</sup>, it would seem imprudent to allow yet more water diversions.

The reference to this published article is:

Bartholow, J.M. 2010. Constructing an interdisciplinary flow regime recommendation. J. Am. Water Resources Association 1-15. DOI: 10.1111/j.1752-1688.2010.00461.x.

The article is available online<sup>4</sup>, but attached for your convenience; a preprint using English units is also available<sup>5</sup>. You may also be interested in a companion piece<sup>6</sup>.

The article did not directly address hydrologic impacts from any future water development proposal, instead focusing on the historical and current flows, as well as the proposed ecological flow regime. It is instructive to look at how the NISP flows would fit into that perspective. In spite of multiple requests, I never received a copy of the MODSIM database containing post-NISP flow projections. So, I developed my own simplified model using daily flow data and an algorithm that trimmed 43,000 AF (projected average firm yield plus estimated evaporation) from current river flows in a logical manner, focusing first on peak flows when available and secondarily on “available” lower flows. The result of this simplified model (Figure 1) clearly shows the obvious: diverting more flow from the river is a move in the wrong direction for the sustainability of this important resource. Whereas Figure 1 follows the presentation style in the journal article, Figure 2 simplifies that perspective by showing only the median monthly flows, but still illustrates the same phenomenon. Neither graph portrays the additional event-based flow guidance provided by the journal article.

I request that the Supplemental DEIS contain an analysis similar to this to fully comply with the Clean Water Act and NEPA to protect the integrity and sustainability of the Poudre River, an Aquatic Resource of National Importance.

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<sup>3</sup> <http://savethepoudre.org/when-where-map.html>

<sup>4</sup> <http://onlinelibrary.wiley.com/doi/10.1111/j.1752-1688.2010.00461.x/abstract>

<sup>5</sup> <http://sites.google.com/site/fossilcreeksoft2/poudreriverflowrecommendation>

<sup>6</sup> Milhous, Robert T. and John M. Bartholow. 2010. Environmental Flow Issues in the Poudre River, Colorado, USA. In Proceedings, ISE 2010, 8th International Symposium on Ecohydraulics 2010. September 12-16, 2010 COEX, Seoul, Korea. Korea Water Resources Association (KWRA). pp 1469-1476. (CD- paper S7B-1). Available on the Internet at <http://fossilcreeksoft.com/S7B-1.pdf>.

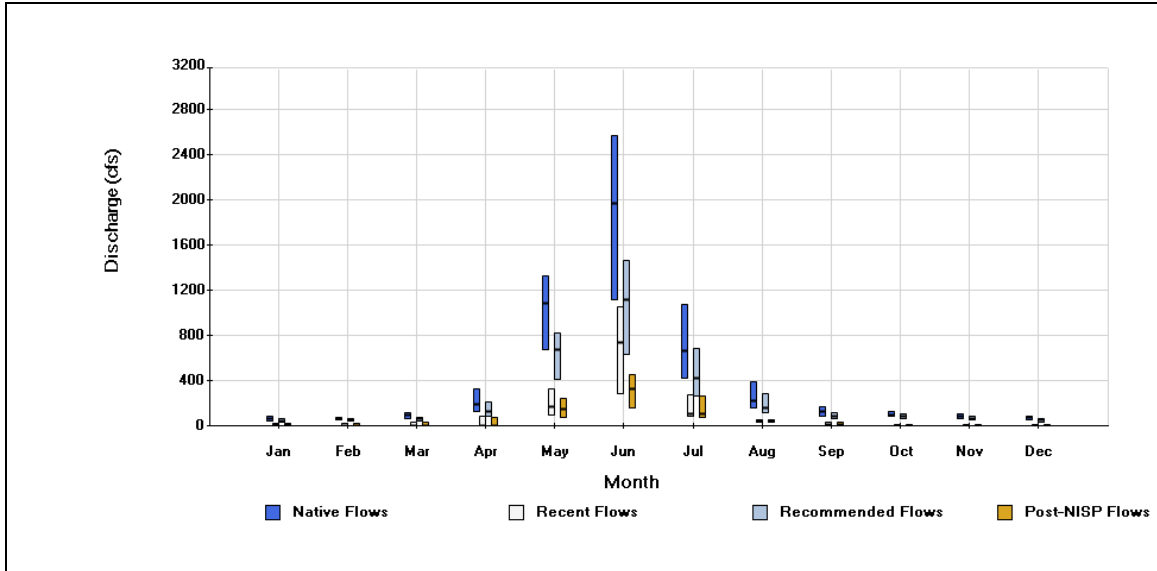


Figure 1. Comparison of native flows, recently measured flows at the Lincoln Avenue USGS gage (#06752260), the recommended flow regime, and estimated post-NISP flows at the same location, left to right respectively for each month. The bottom and top of each vertical bar delimit the 25 and 75th percentile range of monthly flows; the black horizontal bars indicate the monthly median.

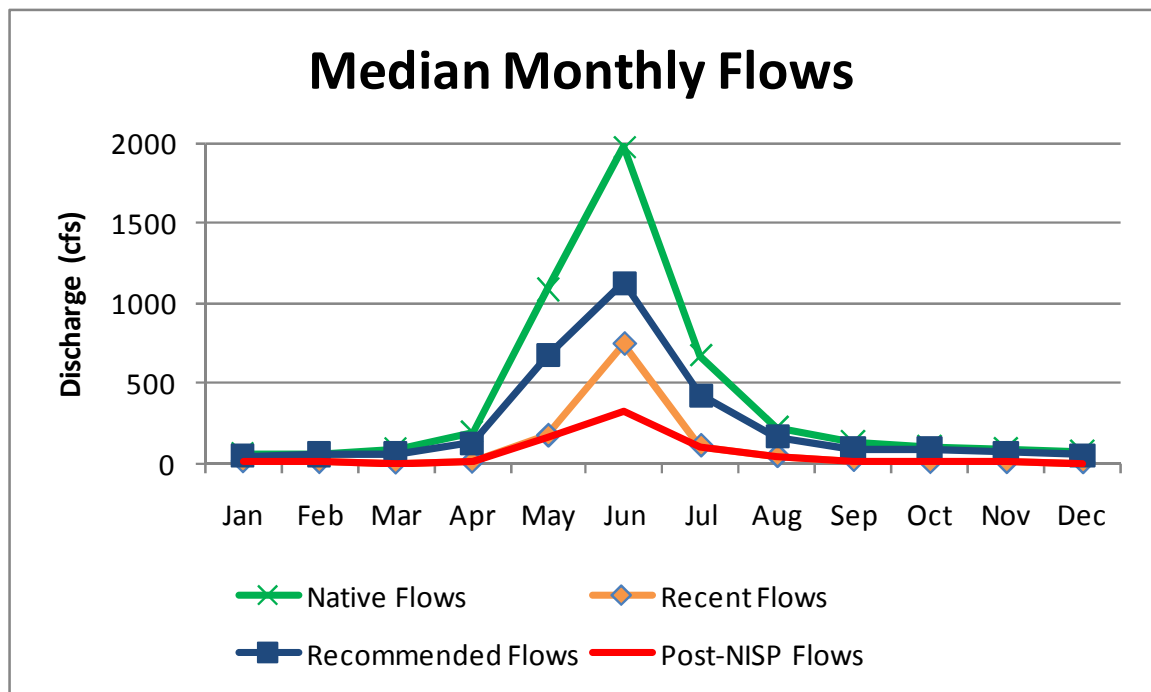


Figure 2. Comparison of median MONTHLY native flows, recently measured flows at the Lincoln Avenue USGS gage (#06752260), the recommended flow regime, and estimated post-NISP flows at the same location, left to right respectively for each month.

Thank you for the opportunity to provide input and make requests of your office regarding the environmental and economic impacts to northern Colorado of the proposed Northern Integrated Supply Project. Your organization and mine, Save The Poudre, mandate objective, scientifically valid information to thoroughly comply with the letter and spirit of all existing national and state laws.

Kindly acknowledge receipt of this letter.

Respectfully,

A handwritten signature in black ink, appearing to read "John M. Bartholow", with a long horizontal flourish extending to the right.

John M. Bartholow  
5402 Old Mill Rd.  
Fort Collins, CO 80528  
970-223-6488

Attachments: Bartholow (2010)

CC: Jim Martin, Director Region 8, U.S. Environmental Protection Agency  
Ken Kehmeier, Colorado Division of Wildlife