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Date: October 11, 2017

re: BCUC Terms of Reference #3a.1 and .3, and #3b.3

I believe it is important to identify and incorporate the costs of environmental impacts of flooding thousands of acres of prime farmland, and wildlife habitat in the area.

Itemizing all environmental costs should be part of any balanced assessment of the cost/benefits of a project of this scale. Doing so sheds light on the true costs of completing vs terminating the project, as well as identifying potential financial mechanisms to recover the costs of cancellation, as specified in the BCUC Terms of Reference #3a.1 and .3, and #3b.3.

We have now learned that the ecological values of the Peace River watershed may be conservatively valued at \$8 billion a year, according to a recent report by the David Suzuki Foundation (2017).

These estimates need to be confirmed by further, independent research, of course, but the point is, there exist multiple economic benefits in maintaining the Peace River as it is, especially in a climatologically-changing world, and these benefits can and should be quantified. Though not simple to do, this is not a new science* – and for any given watershed, minimum estimates can be reasonably derived for the economic value of the ecological services of rivers**, such as watershed and air-shed quality control, habitat maintenance, and carbon sequestration — the benefits of which extend beyond regional & national levels (Wilson et al. 1999).

Even if we set aside the significant and urgent climatological benefits of carbon storage (valued at \$7 billion per year), the total value for other ecosystem services in the Peace River system has been estimated at about \$1.2 billion annually (David Suzuki Foundation 2017).

Subsequently, we have all learned that cancelling Site C would cost about \$3 billion according to BC Hydro, or \$1.2 billion according to independent accountants. As others have pointed out before me, the value of ecosystem services of about \$1.2 billion per year, if properly accounted for, neatly offsets the latter cancellation cost in 1-2 years, and addresses BC Hydro's inflated estimate in just 3-4 years.

These numbers suggest to me that cancelling Site C at this stage will still yield a net economic and ecological benefit to British Columbians.

Thank you for considering a full environmental cost/benefit analysis in the evaluation of the total costs of completion vs cancellation/remediation of the Site C Dam project.

Howard

FOOTNOTES

* The science of ecological services valuation dates back to at least to the 1990s. See Postel & Carpenter 1997; Wilson & Carpenter 1999; Arthington et al. 2009; etc.

** The three types of ecological services provided by rivers, include:

- 1) Water Supply, for domestic and industrial use (((manufacturing, irrigation, aquaculture, some power generation)));
- 2) Goods Other Than Water (i.e., from hunting and fishing); and
- 3) Non-extractive Instream Benefits, including Ecosystem Services (which include: transportation, flood control, hydro power, recreation, ecosystem services, erosion control, agricultural pollination, etc).

LITERATURE CITED

Arthington, A. H., Naiman, R. J., McClain, M. E. And Nilsson, C. 2010. Preserving the biodiversity and ecological services of rivers: new challenges and research opportunities. *Freshwater Biology*, 55: 1–16. <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2427.2009.02340.x/full>

Cassells, R. 2016. Wildlife endangered by Site C Dam in Peace River Valley in B.C. The Media Co-op, June 17, 2016. <http://www.mediacoop.ca/newsrelease/36060>

Postel, S. and S. Carpenter. 1997. Freshwater Ecosystem Services. In: Gretchen, D. (ed). *Nature's Services: Societal Dependence on Natural Ecosystems*. Island Press. Pp. 195-214.

Wilson, M.A. and S.R. Carpenter. 1999. Economic valuation of freshwater ecosystem services in the United States. *Ecological Applications* 9(3): 772-783. [http://onlinelibrary.wiley.com/doi/10.1890/1051-0761\(1999\)009%5B0772:EVOFES%5D2.0.CO;2/full](http://onlinelibrary.wiley.com/doi/10.1890/1051-0761(1999)009%5B0772:EVOFES%5D2.0.CO;2/full)