

Interactive comment on “Potential impacts to freshwater ecosystems caused by flow regime alteration under changing climate conditions in Taiwan” by J.-P. Suen

J.-P. Suen

Received and published: 9 February 2009

I wish to thank the reviewer for his/her constructive and inspiring comments. The review puts forth several specific comments and technical corrections. All technical corrections suggested by the reviewer will be adopted for the revised manuscript. This is a short response to some of the specific comments.

Determination of the specific impacts to freshwater ecosystems caused by any type of flow alteration could be a very good research topic; experiments using different types of flow alteration could be conducted to examine these impacts. However, the focus of this article is intended to be the potential impacts caused by the flow regime alterations

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due to changing climate conditions in Taiwan. Measuring the multiple effects of changing climate conditions to freshwater ecosystems would be a highly involved task; the alternative is to measure the hydrological alterations and connect these alterations to identify the potential impacts to freshwater ecosystems. This article is an application of the IHA and RVA approaches to climate change-induced alteration; it differs from most other IHA and RVA applications, which predominately focus on hydrological alterations caused by construction or land use change. The revised article will put more emphasis on Section 3.3 to discuss the potential impacts to freshwater ecosystems.

The flow regime is the pattern of flow in a river that can be described in terms of quantity and variability of water flows. The "entire flow regime" term refers to all hydrological indicators that are used for the analysis. It contrasts with the focus of recent climate change research, which pays special attention to just the extreme flow conditions. The "characteristics of the entire regime" are magnitude, timing, frequency, duration, and rate of change.

I will revise the abstract and review additional relevant reference papers and reports to express how flow regime alterations under changing climate conditions may potentially affect freshwater ecosystems. I think it is an important issue but not many people pay attention on it.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 3005, 2008.

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