

## ***Interactive comment on “Reconstructing the natural hydrology of the San Francisco Bay-Delta watershed” by P. Fox et al.***

**Anonymous Referee #1**

Received and published: 9 May 2015

Comments 1) The decline of aquatic species has been attributed to reduced volume and altered timing of freshwater flows to the Bay. The authors state that among these stressors, only the volume of Delta outflow has been regulated in an effort to address the decline in aquatic species. These volumes are regulated on a temporal basis according to the seasons and to the requirements of aquatic species. Analysis conducted in this paper in terms of long term average annual flows is not sufficient to assess volumes requirements on a seasonal basis. 2) The authors assume the long term average annual ground water flows is unchanged. One condition is for the groundwater catchment to be the same as the surface water catchment. The authors should provide this. 3) With the many assumptions the authors make, the analysis has been reduce to a simple mass balance evaluation (see Fig 6). In effect the flow to the

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bay is the rim inflows plus precipitation on the catchment valley floor less evaporation/evapotranspiration, and groundwater (and basin imports/transfers). Rim inflows and groundwater are assumed unchanged. Catchment precipitation is unchanged. Basin imports/transfers are comparatively small to the other components. Therefore the analysis has been reduced to a comparison of evaporation/evapotranspiration of the valley floor catchment cover under various vegetation cover. Calculations are made in terms of long term average annual flows. Under these conditions it is unsurprising that the authors conclude delta outflows are unchanged. The extent of assumptions made and time scale used does not make the analysis useful to addressing the questions posed and the concerns in this watershed. 4) The study has been useful and helpful in clarifying and quantifying unimpaired flows and natural Delta outflows.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 3847, 2015.

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