Chapter 1: Cosumnes River Flood Regime

Flood Regime Summaries

Characterizing Hydrologic Variability of the Cosumnes River Floodplain

This study characterizes the hydrologic variability of the lower Cosumnes River by analyzing a 98-year streamflow record (1908 – 2005). We develop a flood regime classification methodology by separating similar water year types and similar flood types based on magnitude, duration, and timing.

[.html version of complete summary](http://baydelta.ucdavis.edu/reports/final/?q=reports/final/chapter1/variability)  
[.pdf version of complete summary](http://baydelta.ucdavis.edu/files/crg/reports/FloodRegime_Booth_Summary.pdf)

Nutrient and food resource fluxing through the river floodplain system: An analysis of flood pulse phases as a control on patch dynamics across a restored floodplain.

The objectives are to quantify the flux of nutrients and food resources across the channel-floodplain boundary while delineating the chemical and hydrological signature of different stages of the flood pulse, and to study the influence of the flood pulse on the spatial distribution of suspended algal biomass across the surface of a restored floodplain.

[.html version of complete summary](http://baydelta.ucdavis.edu/reports/final/?q=reports/final/chapter1/water_chemistry)  
[.pdf version of complete summary](http://baydelta.ucdavis.edu/files/crg/reports/FloodRegime_Ahearn_Summary.pdf)

Documents

* [Hydrologic Variability of the Cosumnes River Floodplain, Booth, E.G., Mount, J.F., Viers, J.H., *San Francisco Estuary & Watershed Science* (2006)](http://baydelta.ucdavis.edu/files/crg/reports/Booth_et_al_2006.pdf)
* [Flood Data (floods.xls)](http://baydelta.ucdavis.edu/files/crg/reports/pubs/floods.xls)
* [Priming the productivity pump: Flood pulse driven trends in suspended algal biomass distribution across a restored floodplain, Ahearn, D.S., Viers, J.H., Mount, J.F., Dahlgren, R.A., *Freshwater Biology* (2006).](http://baydelta.ucdavis.edu/files/crg/reports/FloodRegime_Ahearn_etal2006a.pdf)
* [Partitioning the flood pulse: The biogeochemistry of floodwaters in a restored free-flowing river-floodplain system, Ahearn, D.S., Jeffres, C.A., Mount, J.F., Dahlgren, R.A., *Freshwater Biology* (2006).](http://baydelta.ucdavis.edu/files/crg/reports/FloodRegime_Ahearnetal2006b.pdf)
* Land use and land cover influence on water quality in the last free-flowing river draining the western Sierra Nevada, California.  
  Ahearn D. S., Sheibley R. W., Dahlgren R. A., Anderson M., Johnson J. & Tate K. W. (Journal of Hydrology, In Press)
* Temporal dynamics of stream water chemistry in the last free-flowing river draining the western Sierra Nevada, California  
  Ahearn, Sheibley, Dahlgren, Keller (Journal of Hydrology 2004)
* Ahearn, Sheibley, Dahlgren. Effects of River Regulation on Water Quality in the Lower Mokelumne River, California (River Research & Applications 2005).
* Ahearn, Viers, Mount, and Dahlgren, Flood pulse driven trends in suspended algal biomass distribution across a restored floodplain: Priming the productivity pump (Freshwater Biology, In Review)