

*Delta Science Program, Ecosystem Restoration Program and
Surface Water Ambient Monitoring Program Jointly Present*

Using reservoir operations to address ecosystem impacts at Shasta Lake



Laurel Saito
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**Tuesday, January 21, 2014,
12:00 – 1:00 p.m.**

**Location: Capitol Park Tower,
980 Ninth Street
2nd Floor Conference Room**

Can altered dam operations positively affect aquatic ecosystems?

The regulation of rivers by reservoirs, often transforming 'lotic' (rapidly flowing) systems into fragmented networks of regulated flows and artificial 'lentic' (standing or fairly still) bodies, can produce large impacts to physical, chemical and biological aspects of freshwater ecosystems. This presentation will describe modeling research, coupling ecological or stochastic models with the two-dimensional hydrodynamic model CE-QUAL-W2, to investigate how altered dam operations at Shasta Lake – i.e. the timing and quantity of water releases – could reduce impacts to downstream aquatic ecosystems.

Two areas of research will be covered - past research to understand potential benefits of altered operation scenarios on upstream water quality, and current research on how water management actions can alleviate the negative effects of extreme climate events on downstream water temperatures. The current project obtained operating guidelines and decision-making criteria from reservoir managers. This information was then used to characterize and analyze scenarios potentially useful to managers when making operational decisions at Shasta Lake. Investigations like this demonstrate the importance of collaborations between ecosystem research and water operations to support resilient aquatic ecosystems and a more reliable water supply.

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for WebEx access information or other questions.**