Water Management

**Approaches:**

* Get a paper out for the "Water secure world 3 'I's": Infrastructure, Institutions and Information
* Water secure regions tend to have more storage (natural or constructed infrastructure)
* Snow pack, accurate prediction of snow melt: fluxes of what is coming to stream a few days ahead; Flood managers need to know storms as well. Hydropower operators occasionally need to know the storms, but day-to-day need to know snow feed to streams
* Monthly down to weekly = GOOD. Daily could not be used effectively by most of the dams; at least not yet. Rating curves for storage currently based on historical monthly records & Rules based on Laws from Congress that were constructed for flood protection. Need an act of Congress to change to management by data.

**Gaps, Resources, Opportunities**

* How do you put dollar amounts for forest managers to use for water/ecosystem services management, especially when they don't see the money?
* Bren - group projects for a professional masters, so they could do a project on payment for ecosystem services. How do Sierran water managers account or apply ecosystem services. Combines research & economic aspects
* Berkeley - likely not going to cover this question at this point but a possibility
* Sensing networks in infrastructure: could we get at the money for infrastructure with geobonds or other monies? Condition of the whole basin. May not be cost-effective to recover costs for study and verification
* Real money is with hydropower = beneficial economically
* $300 / acre to do understory control. ESTIMATE - ask Edison what they roughly pay per acre per year
* Forecasting water supply using spatial data and appropriate modeling could reduce key uncertainties by ~50%
* Even a few % improvement in operating high-elevation (Courtwright, Wishon, Huntington, Edison, even Shaver) hydropower ($1.5 billion per year) would provide significant gains
* Every inch or meter above the dam is worth $$$$; Biggest differences for low-elevation dams
* **Conceptual paper here**
* Continue outreach to water managers from ALL PIs

**Cross-CZO Opportunities**