

## Rivers/Estuaries:

### What is needed?

1. Better models of land-to-water that include more biogeochemical parameters.
2. Integration of climate models that predict the effects of regional change (e.g. precipitation) on the release of nutrients, DOC, POC etc. in land-to water processes, which can then be coupled with fluxes at the coast.
3. More monitoring in the upper watershed that will help constrain transport and transformation rates of dissolved and particulate species in streams and rivers.

## Where to work and what questions to ask for best flux estimates in U.S.:

1. Use systems that have with existing data. East Coast (line-source input signal from well-studied estuaries, e.g., Hudson, Chesapeake, etc.), Gulf region (Mississippi-Atchafalaya); West Coast (Eel, Columbia); Arctic (MacKenzie).
2. Usual laundry list of processes that control flux (tidal effects, discharge, extreme flooding and drought events, in situ production, resuspension etc.).
3. Need to have good monitoring on discharge preferable as close to coast as possible, this will be difficult as we are losing USGS monitoring stations.