

Salt Dynamics in Non-Riparian, Freshwater Wetlands

Principal Investigator:

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Executive Summary:

We propose to investigate the salt dynamics of seasonal wetlands through a combination of field observation, numerical modeling and laboratory experimentation. At a field site in the San Joaquin Valley, we will monitor salt distributions and currents throughout the inundation period to evaluate the important forcing mechanisms responsible for salt transport, dispersion and accumulation. We anticipate the dynamics to be dominated by wind-driven flow, a hypothesis that will be further evaluated through a numerical modeling approach that will allow us to consider a wider range of forcing. Finally, to focus on the critical flood-up and draw-down periods, and the potential for salt exchange between the sediment and water column, a series of microcosm experiments will be developed in the laboratory to examine the transfer of salt across the soil-water interface. Together, we intend to develop a complete understanding of the dynamics of seasonal wetlands that incorporates physical transport within the wetland.