

Prieto, F. G. 1998. Selenium and water quality in three wetland types along the lower Colorado River - Imperial National Wildlife Refuge, Arizona. M.S. Thesis. University of Arizona. 109 pp.

Wetlands along the Lower Colorado River are divided into three types based on degree of connectivity to the river mainstem: connected lakes, pseudo seeps, and true seeps. In general, water quality and selenium levels in biota decrease with decreased connectivity to the river, i.e., true seeps have the poorest water quality and lowest selenium burdens, connected lakes have water quality equal to the river and the highest selenium levels, and pseudo seeps have water quality slightly improved over that in connected lakes and lower selenium levels. Based on selenium standards developed by Lemly (1995), selenium concentrations in fish but not crayfish were sufficiently elevated to pose bioaccumulation problems, though none were apparent in our study. Of the three wetland types, pseudo seeps have the most desirable combination of high water quality and modest selenium levels. Additionally, pseudo seeps may harbor the highest biodiversity of the three wetland types present in the LCR. The lack of apparent problems from elevated selenium levels raises many questions concerning selenium dynamics and cycling in the LCR. Management requires knowledge of selenium levels in individual wetland types and an understanding of selenium cycling.