

The Impact of Salinity on Invasive Aquatic Weed Water Hyacinth (*Eichhornia crassipes*), and its Biological Control Agent *Neochetina bruchi*.

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South American invasive species water hyacinth (*Eichhornia crassipes*) is the world's most economically damaging aquatic weed species. In the Sacramento-San Joaquin Delta (the Delta), water hyacinth jeopardizes an estimated \$27 billion of agricultural production and 25 million people's drinking water through clogged waterways. Additionally, water hyacinths are associated with an increase in evapotranspiration, reduction in endemic aquatic species, loss of agricultural irrigation water, and increase in prevalence of the West Nile Virus mosquito vector. Control of water hyacinths is possible through the integration of mechanical, chemical and biological agents. Specifically, *Neochetina bruchi* can be used in conjunction with mechanical harvesting and select herbicide sprays to reduce and maintain water hyacinth populations. However, the Delta's complex and highly dynamic ecosystem, with tidal influence, urban pollution, erosion, and agricultural runoff have caused challenges for the success of implementing an integrated pest management strategy. Although successful elsewhere, *N. bruchi*, established in the Delta in 1926, has been unsuccessful at reducing the water hyacinth population. This study examines the impact of salinity on water hyacinths and *N. bruchi* as a contributing factor for the biological control's limited success in the Delta.