Background The Tidal Linkage salt marsh in Tijuana Estuary, CA was created in 1997 and planted with a range of species richness (number of species) to test a popular ecological hypothesis: that diversity increases functioning (rates of ecosystem processes). Early assessments revealed that species richness did increase functioning at the Tidal Linkage (Keer and Zedler 2002, Callaway et al. 2003), but my September 2008 re-sample of the site showed no positive effects of species richness on functioning.

Assessing Recovery In July 2009, I measured cover within 45 0.25-m² plots where I removed aboveground plant biomass during my 2008 sampling. I found that the recovery of cover increased with 2008 species richness at the plot-scale ($R^2=0.1521$, $P=0.0081$). If this preliminary, positive effect of species richness also applies to the recovery of aboveground plant biomass in those 45 plots (which I will sample in September 2009 for year-to-year consistency), I’ll likely conclude that the disturbance caused by my 2008 biomass sampling revealed a positive functional effect of species richness.

Establishing Suaeda Esteroa This experiment will provide information on how to effectively establish Suaeda esteroa, a native halophyte that dropped in frequency of occurrence at Tijuana Estuary following a 1984 estuary mouth-closure event (frequency was 31% in 1974, 0% in 1984, 1994 & 2004, Zedler and West 2008). In the past three months, I have germinated, grown, and salt-hardened Suaeda seedlings from Tijuana Estuary seed. In September 2009, I will transplant seedlings into plots that have been prepared with a combination of clearing, mulch, and fertilizer treatments. Based on a July 2009 survey of Suaeda populations in Tijuana Estuary, I got a better idea of the elevation and density that is favorable to Suaeda and have adjusted my experiment accordingly.