**Talk Title**:

Defending the Rarest of the Rare: Habitat Restoration and Research in support of *Chorizanthe orcuttiana* at Naval Base Point Loma

**Presenter Bio**:

Michelle Cloud-Hughes is a botanist and restoration ecologist who began working at the Soil Ecology and Restoration Group (SERG) at San Diego State University as an undergraduate in 1997. She began working with *Chorizanthe orcuttiana* as a member of Dr. Ellen Bauder’s lab in 1998 and through SERG when the group’s *Chorizanthe orcuttiana* habitat enhancement began at Naval Base Point Loma in 2000. She has been the SERG Project Manager for the NBPL *Chorizanthe orcuttiana* projects since 2006. Her true love is the desert, especially cacti, and she owns the company Desert Solitaire Botany and Ecological Restoration. She is currently in the publication process for a new, narrowly-endemic, hexaploid, gynodioecious *Cylindropuntia* species in Riverside and Imperial Counties.

**Abstract**:

*Chorizanthe orcuttiana* (Orcutt’s spineflower) is a very small, inconspicuous annual in the Polygonaceae. *Chorizanthe orcuttiana* is endemic to extreme coastal San Diego County, with all historical and current occurrences within 5km of the coastline. The species is restricted to loose, sandy soils in clearings within chaparral. The species is distinguished from most other California Chorizanthe species by the three retrorsely-hooked awns on the involucre. *Chorizanthe orcuttiana* was presumed extinct for many years until a small population was re-discovered in Encinitas in the early 1990s, although the species has not been relocated at that site for several years. Another small population exists in the extension area of Torrey Pines State Reserve.

Between 1997 and 2003, three populations of *Chorizanthe orcuttiana* were located on Naval Base Point Loma (NBPL). SERG habitat enhancement projects began in 2000 and have continued to the present. These projects have mainly been concerned with the removal of non-native species, including iceplant (*Carpobrotus edulis*), acacia (*Acacia sp*.), and natal grass (*Melinis repens*). Removal of iceplant at the second population in 2003 resulted in over 200 *Chorizanthe orcuttiana* individuals in 2005, and the site has continued to support the species since.

Other SERG activities in support of *Chorizanthe orcuttiana* have included annual monitoring, both of the *Chorizanthe orcuttiana* and its habitat, installation of erosion control materials and native shrubs, and site maintenance. In recent years, SERG research efforts have focused on mapping the populations, using GIS layers to determine other potential population sites on NBPL and Cabrillo National Monument (CNM), surveying these potential sites for *Chorizanthe orcuttiana*, and pollination biology.