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## Research poster: Biotic responses to climate change in the Mojave Desert: Floristics

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# "Biotic Responses to Climate Change in the Mojave Desert: Floristics"

Patrick Leary and David Charlet, College of Southern Nevada

## ABSTRACT

The objective of this study is to establish baseline plant distribution data in Clark County, Nevada, with particular emphasis on the Spring Mountains and Sheep Range. Precise location data and photographic records were collected for each sample. Future researchers can relocate the sample points, reconstruct the species lists, and compare these lists to the baseline data. We predict that if a warming trend occurs, the upper and lower limits of a species will be higher than what we have recorded. If a cooling trend occurs, the upper and lower limits will decline.



*Cirsium eatonii clokeyi*



*Ivesia jaegeri*



*Arctomecon merriamii*

## METHODS.

Samples ( $n = 1425$ ) are located in the middle of a recognizable vegetation and landform unit. Samples in 2008 ( $n = 300$ ) were plots by the methods the National Vegetation Classification system. Plots are typically 20 m x 20 m (400 m<sup>2</sup>), but for narrow features such as riparian areas, we varied the dimensions but never the area to capture the formation of interest. In 2009, larger sample areas were employed we call "waypoints." Waypoints are likewise located in a recognizable vegetation and landform unit. Their maximum size is a circle with a radius of 100 m from the point. The vegetation was described and data compiled for use in Charlet and Leary (2010) using the same sample points. For the floristic portion of the project (this work), the presence of each species was recorded and compiled into a separate spreadsheet.



*Ivesia jaegeri*



*Sphaeromeria compacta*



*Astragalus oophorus clokeyi*

## RESULTS

**New Additions to the Flora.** Six species new to the Spring Mountain Range were added to the known flora of approximately 1015 taxa. These are:

*Achnatherum webberi* (Thurber) Barkworth. Weber needle grass.  
*Eleocharis palustris* (L.) Roemer & Schultes. Common spikerush.  
*Elymus glaucus* Buckley. Blue wildrye.  
*Hedeoma drummondii* Briq. Drummond's false pennyroyal.  
*Isocoma acradenia* (Greene) Greene var. *acradenia* Alkali jimmyweed.  
*Phacelia palmeri* Torrey ex S. Wats. Palmer's phacelia.

**Sensitive Species.** One of the important outcomes of this study is to provide precise location data of special status species. Of the 68 special status species in Clark County, we documented 468 occurrences of 29 of these in 2008-2009. These occurrence data are tied to the vegetation data collected in Charlet and Leary (2010), and so each record comes with precise location, elevation, slope, plant community, associated species, exposure, and substrate.



*Ionactis caelestis*

**70.6% of The Spring Mountains Flora Identified within Samples.**  
720 vascular plant species were found at the samples.



*Epilobium nevadense*



*Penstemon leiophyllus keckii*

**References:** Niles, W.E. and P.J. Leary. 2007. Annotated Checklist of the Vascular Plants of the Spring Mountains, Clark and Nye Counties, Nevada. *Mentzelia*, The Journal of the Nevada Native Plant Society. 8:1-72.

Charlet, D.A. and P. Leary. 2010. Biotic Responses to Climate Change in the Great Basin and Mojave Desert: Vegetation. Nevada NSF EPSCoR Climate Change Conference, University of Nevada, Las Vegas.