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Nevada Native Plant Society

Calochortus panamintensis
Photo by Jan Nachlinger

Society News

Northern Nevada Events

February 6 – Kris Kuyper, biology program manager for EM Strategies, will present her recent work on ***Eriogonum tiehmii***.

March 5 – Aramee Diethelm, a UNR PhD candidate, will discuss her research on monarch butterflies and the propagataion and culture of ***Asclepias cordifolia*** and ***A. cryptoceras***.

April 2 – Devon Picklum, another UNR PhD candidate, will describe her research into plant and pollinator interactions in the Carson Range meadows.

Meetings are held in room 300G of the Fleischmann Agriculture Building on the UNR campus, north of 9th Street and Evans Avenue. Enter the building under the breezeway on the west side near the street. There's an elevator at the east end of the building. Meet on the third floor and down the hall from the **UNR herbarium**.

Social time at 7:00 PM; program at 7:30. The outside doors are locked at 7:30.

No Southern Nevada events were scheduled at print time.

Events subject to change.
Visit nvnps.org for updates.

High Elevation Five-Needle Pine Conference

The Whitebark Pine Ecosystem Foundation (WPEF) announces an upcoming international conference on the Research and Management of High Elevation Five-Needle Pines in Western North American to be held on September 15-17, 2020 in Missoula, Montana.

Forest managers, researchers, advocates and the public are invited to attend this important event. For details on presenting your paper or poster, becoming a sponsor, volunteering, or attending, visit **highfivepines.org**. Registration and presentation submissions will begin in February 2020.

Why an international conference? Many high-elevation, five-needle pine forests are rapidly declining throughout North America. In particular, the six species the conference will focus on are of great ecological and symbolic importance to both the U.S. and Canada. These species are Whitebark pine (***Pinus albicaulis***), Limber pine (***P. flexilis***), Southwestern white pine (***P. strobiformis***), Great Basin bristlecone pine (***P. longaeva***), and Rocky Mountain bristlecone pine (***P. aristata***).

This conference is intended to bring together scientists, managers, and concerned citizens to exchange information on the ecology, threats, and management of these important pines. Attendees will learn about the threats and current status of pine populations and efforts to mitigate those threats through restoration techniques and action plans. The goal is to build a foundation for the synthesis of research efforts and management approaches.

Pinus albicaulis
Photo by E. Shaw

Close-up of *Calochortus kennedyi* var. *munzii* flower with a beefly pollinator. Note the stained petals from its pollen after recent rainfall.

Calochortus (Liliaceae) in Nevada

Story by Arnold Tiehm and Jan Nachlinger
Photography by Jan Nachlinger

Calochortus is a diverse New World genus that occurs from British Columbia, Canada to the Dakotas and south to Guatemala (Reveal, 1977). It is comprised of about 67 species and is most represented in California where at least 45 species occur (Fielder, 2012). The diversity of flower shapes has led to many often-used common names such as sego lily, mariposa lily, star-tulip, pussy ears, fairy-lantern, globe lily, Diogenes' lantern, beavertail-grass, and cat's ear.

The name of the genus comes from Greek: ***kalo***, meaning beautiful, and ***chortos***, meaning grass. All of them have narrow, grass-like leaves and very showy flowers. ***Calochortus*** is also interesting in that it has sepals and petals. If you think of the group historically known as ***Liliaceae*** (but now dispersed through 14 or so families), the perianth consists of two rows of similar looking "petals." When the two rows look the same, we call them tepals. Think of Easter lilies or onions (***Allium***).

Nevada is home to nine species of *Calochortus*, one of which has two varieties. The most common is ***C. bruneaunis***, found every county. Two species that are closely related to *bruneaunis* are ***C. leichtlinii***, which is known from the western counties of Douglas, Mineral, and Washoe, and ***C. nuttallii***, which can be found in the southern and eastern portion of the state in Clark, Lander, Lincoln, Nye, and White Pine counties. *Calochortus nuttallii*, sego lily, is the cherished state flower of Utah. All three species have white to lilac colored petals.

The Mojave Desert in southern Nevada is home to four more species - *flexuosus*, *panamintensis*, *striatus*, and *kennedyi* with two varieties, var. *kennedyi* and var. *munzii*. To our knowledge the white flowering, sometimes lilac-tinged, ***C. panamintensis*** is restricted in Nevada to Nye County.

This page, left column: *C. bruneaunis* made great displays one year after the Martin Fire near Paradise Valley.
Right column: *C. leichtlinii*

Next page, left column: *C. flexuosus*
Right: Developing fruit of *C. panamintensis*.

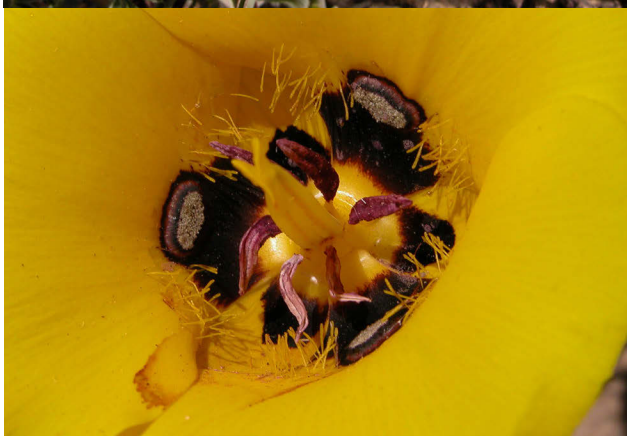
Calochortus flexuosus is well named as the flexible, twisting stems often twine up through shrubs. It is reliably documented to grow in Clark, Lincoln, and Nye counties. It was also reported for Esmeralda County in Ownbey (1940), which is probably why it is listed for Esmeralda County in Reveal (1977). The Ownbey (1940) specimen was collected by Coville and Funston, number 978, from Big Horn Canyon in the Grapevine Mountains. According to the map in Coville (1893), the expedition was close to the

Esmeralda County line in the Grapevine Mountains, but they never got quite that far north. Consequently, we treat this specimen as being collected in Nye County.

Calochortus striatus occurs in Clark and Nye counties. This species is most unusual in that it grows in moist, saline soils. This is very evident when we consider that it occurs in the well-known Ash Meadows area. It has distinctive pink- to purple-striped markings on its petals, thus its descriptive epithet.

The remaining Mojave Desert species is ***kennedyi***. The typical variety *kennedyi* has very striking orange to red petals that draw a lot of attention when flowering in abundance. Variety *kennedyi* only occurs in Nevada in southern-most Clark County. In contrast, the variety ***munzii*** has bright yellow petals with dark purple-brown anthers. If it rains while the flowers are open the purple-brown pollen will stain the petals. Variety *munzii* is found in Nevada further north in Clark and Esmeralda counties.

This leaves us with the two northern species, ***eurycarpus*** and ***macrocarpus*** **var**. ***macrocarpus***. The latter is known



from Humboldt and Elko counties and is quite distinctive in that the sepals are conspicuously longer than the showy purple petals. Reveal (1977) lists it as occurring in Washoe County, but we have been unable to find a Washoe County record.

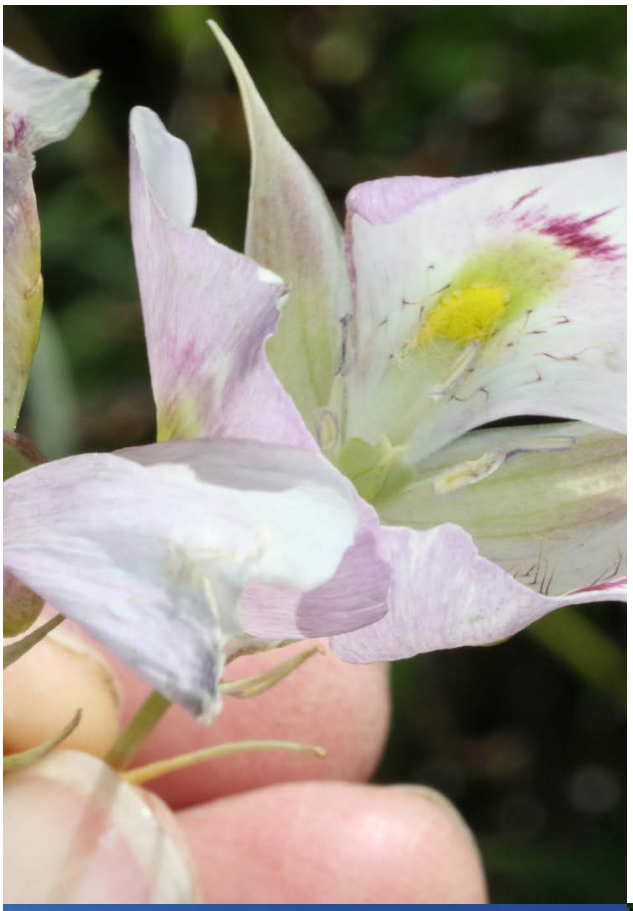
Lastly, we have the species that prompted this article: ***C. eurycarpus***. Last summer we were botanizing in the eastern Ruby Mountains in the areas around Robinson and Soldier Lakes. These lakes are in the northern part of the range and getting there requires a rather arduous hike, which we did by going up a steep eastside basin (twice!).

On our second trip, we spent most of our time botanizing the wet areas and had collected several species of ***Carex*** as well as other wet meadow species. We circled Robinson Lake and when we emerged from a stand of a diminutive ***Salix*** near the southwest end of the lake, we walked into a large population of *C. eurycarpus* on a gentle knoll. Surprised? You bet! First off, it was the 16th of August and we were at 9,100 feet elevation. Yes, it was a heavy snow year and things were a month behind, however a showy *Calochortus* was not on our radar.

The most distinctive character of this species is that the ovary, and especially the fruit, are 3-winged (***eury*** means wing and ***carpus*** refers to fruit). Our field description is as follows: petals pink outside with a green stripe, cream inside with a maroon spot above a yellow gland. Experiencing this *Calochortus* population in its remote subalpine setting after an energy-intensive hike was a late season highlight not soon to be forgotten.

This page, top: *C. striatus* flower with a visiting pollinator.
Middle: Flowers and developing fruit on a robust *C. kennedyi* var. *munzii* plant.
Bottom: *C. kennedyi* var. *munzii.*

Next page, top: Petal detail on *C. eurycarpus* flower.
Bottom left: Collection of *C. eurycarpus* destined for Jerry Tiehm's plant press.
Bottom right: Four flowering individuals of *C. eurycarpus* among mountain brush plants.



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