



NEVADA NATIVE PLANT SOCIETY



Grindelia fraxinipratensis

SUMMER IS A SEASON FOR WILDFLOWERS AT ASH MEADOWS NATIONAL WILDLIFE REFUGE

Story and photographs by Larry Lodwick

Typically, one does not think about summer in the Mojave Desert as a season for wildflowers. The hot, dry summer is not the most conducive conditions for flowering - but add sufficient groundwater and many species will thrive under these conditions. **Ash Meadows National Wildlife Refuge**, just east of Death Valley National Park, in Nye County, is the largest remaining oasis in the Mojave Desert. The refuge has approximately 50 springs and seeps, which maintains ground and surface water year-round.

Add to that sixteen plant communities on approximately 24,000 acres and you get quite a diversity of species. With twenty-six rare and endemic plants and animals (mostly endemic to the refuge, but a few specimens have been found scattered in the nearby

region), you have what has been called “the Galapagos of the continental United States.” The wetlands of Ash Meadows are listed as being of international importance under the **Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat**, more conveniently referred to as the Convention on Wetlands.

Approximately 240 species of plants have recently been observed on Ash Meadows, with ten species of plants considered rare or endemic (at least to the region, if not the refuge). Of those ten, six species produce flowers during the period from June through August. At least eleven more common species reach their peak flowering season during the summer months, although some begin flowering earlier or continue later than

just the summer months, with one species apparently flowering year-round.

Incidentally, there are herbarium specimens for just over 100 more species on the refuge. Many of these were agricultural crops or weed species mixed in with the crops' seeds, which didn't survive when not irrigated; non-native invasive species eliminated by refuge staff; were early successional species which were eliminated by competition; or occur in the desert mountains, where recent surveys have not occurred. Few, if any visitors to Ash Meadows would likely ever encounter these species.

SUMMER FLOWERING SPECIES AT ASH MEADOWS

Spiranthes infernalis (above right) The Ash Meadows lady's tresses orchid is an endemic and the range is limited to a small area on the refuge. This species flowers almost exclusively in the second and third weeks of June, growing in emergent wetlands with Baltic rush, *Juncus balticus* and clustered field sedge, *Carex praegracilis*. Unlike most species of *Spiranthes*, the Ash Meadows lady's tresses grows both as individuals and in dense clumps of plants. The inflorescences are a tightly packed spiral of white flowers with a light orange edge on the lower lip. This species has been considered for listing under the **Endangered Species Act**, but is not currently listed.

Mentzelia leucophylla (right) The Ash Meadows blazingstar is the rarest of the endemics on the refuge. It flowers from mid-June through July, with the flowers being nocturnal, having the buds opening around 6:30 p.m. and the flower closing around 9:00 a.m. This is one of the few arid-land species on the refuge flowering during the summer. The foliage on this blazingstar is a grayish-green color, almost looking like it's a dead plant, then producing bright yellow flowers. This species is listed as threatened under the Endangered Species Act.



Zeltnera namophila (right) The spring-loving centaury, as the name implies, occurs near springs and groundwater seeps. Not strictly an endemic to the refuge, there are a few, relatively recent records from near Bishop and Tecopa, California. There are much older records - mainly 70+ years old - from various springs throughout California and Utah, although the habitat at these locations may no longer be available. The flowers are 2.5 cm in diameter, have five pink petals, four to five bright yellow, corkscrew-shaped stamens, and a long white to opaque pistil. This plant is abundant around most wetlands and springs on the refuge. This species is also listed as threatened.



Grindelia fraxinipratensis (photo on page 1) The Ash Meadows gumplant is a member of the aster family which begins flowering in June but is more abundant in July and August. The yellow inflorescences are highly visible in alkaline wetlands and along roadsides adjacent to wetlands. The species has been collected in California at one or two locations, but is mostly restricted to Ash Meadows. Listed as threatened, the plants are found with Baltic rush and in clustered meadow sedge emergent wetlands.



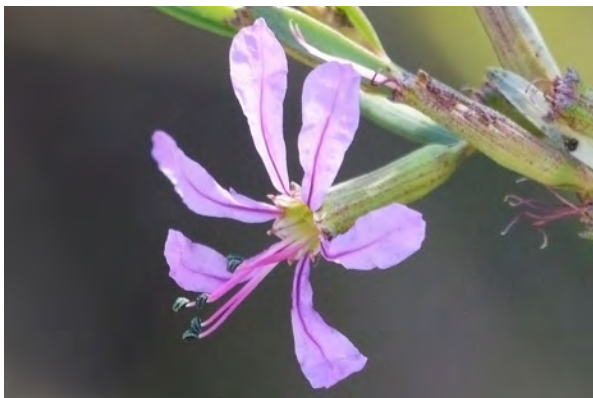
Ivesia kingii* var. *eremica (left) The Ash Meadows ivesia is a member of the rose family, characterized as a small, herbaceous plant with the compound leaves adpressed to the stem, making the stem appear segmented. This *Ivesia* is found in and adjacent to ephemeral streams and seeps on the refuge. Flowering begins in July and may extend into early September. These plants are found in areas with little vegetation cover, associated with depauperate Baltic rushes, blue-eyed grass (*Sisyrinchium* sp.), and black rush (*Schoenus nigricans*). This species is listed as threatened.



Chloropyron tecopense (above) Tecopa birdsbeak is a member of the broomrape family and is a small plant, with grayish-green leaves resembling dead plants, although the gray overshadows the green pigment of the leaves. The balloon-shaped flowers are small (6-10 mm long). There are a few records of these plants from Tecopa, California, in Carson Slough downstream from the refuge where the slough crosses into California, and in Esmeralda County, Nevada just northwest of Ash Meadows. The plants occur in clay or clayey-silty, alkaline soils with at least a high-water table, and little to moderate vegetation cover.



Fimbristylis thermalis (above) Hot springs fimbristylis is a sedge, which doesn't have a pretty flower, but having inflorescences different from the other sedges on the refuge. Hot springs fimbristylis occurs in the Southwestern United States, and as one might guess, is seen near warm and hot springs and along channels downstream from the springs, as long as the warm water prevails. This species flowers all summer, with new flowers occurring at the apex of the inflorescence, with only white stamens indicating the plants are producing flowers.



Lythrum californicum (left) California loosestrife is a common species found near alkaline springs, streambanks, and ponds in the Southwest from California to Texas, and south into Mexico. The flowers range from blue to purple in color and about 13 mm in diameter. This species flowers all summer, but the flowers close up in the evening and open again in the morning. These plants are common adjacent to King's Pool, along the Point of Rocks boardwalk.

***Malvella leprosa* (right)** Alkali mallows are found in highly alkaline soils, which have subsurface moisture, in areas with full or partial sun. These mallows produce very milky yellow flowers in late May and go to seed in late July or early August in Ash Meadows. The interesting feature of these plants is their mostly triangular shaped leaves, having an asymmetrical base, wavy leaf texture, and being wider than their length. These plants require full sun and can be observed growing along the edges of the gravel roads in the refuge.



***Isocoma acradenia* (left)** Desert isocoma is native to the Southwest and is adapted to areas with alkaline soils with moderate amounts of groundwater. On the refuge this species is abundant in areas with soil moisture year-round and along several roadsides, where runoff allows for additional soil moistures. The clusters of bright yellow flowers in the inflorescence are present during most of the summer and fall.

***Castilleja linariifolia* (right)** Wyoming paintbrush is unique among the Indian paintbrushes in that the plants grow to be nearly one meter tall. Several large and beautiful stands of Wyoming paintbrush are present in Ash Meadows, including along Spring Meadows Road, east of the visitor center. This genus is known for being a hemiparasite, depending on other plants after germination, but before the plants begin producing chlorophyll. The likely host plant for this species is American licorice (*Glycyrrhiza lepidota*), which is abundant within each stand of the paintbrush on the refuge. Unlike its habitat farther north in Wyoming (rocky hillsides), this plant is found adjacent to groundwater seeps on the refuge.





Oxytenia acerosa (above) Copperweed also grows on alkaline soils, where sufficient soil moisture is present. The many stems of this perennial plant grow upright, are mostly unbranched, and generally can't support their own weight making the stems bend over almost to the ground. The inflorescences are yellowish composite heads with disk flowers, arranged in racemes along the upper stems. The leaves are a greenish-gray color, being linear and five to eight centimeters long. Copperweed has been increasing in numbers on the refuge for at least the last six years.

Thelypodium integrifolium ssp. affine (below) Entire-leaf thelypodium occurs in dry to moist alkaline soils, from eastern California to Utah. This member of the mustard family grows to nearly three meters tall, with a central stem with a few lateral branches ending in small inflorescences of tightly-packed, small, white flowers. Leaves are found at the base of the stem, but the upper stem may have smaller leaves which are shed as the weather warms and dries out.



Almutaster pauciflorus (above) Alkali marsh aster is a small aster with light purple ray flowers and yellow disk flowers in the inflorescence, about 45 cm tall, growing in slowly flowing water and adjacent saturated soils. This species has been observed flowering year-round, possible due to the nearly constant water temperature where it occurs. There is a look-alike flower, *Erigeron divergens*, growing on drier soils. However, the involucre of *E. divergens* differs from *Almutaster* in having only one row of bracts as opposed to several rows on *Almutaster*.

Asclepias erosa (following page) Desert milkweed is a large species of milkweed, with green flowers in a nearly spherical inflorescence. This common species is found in small desert washes in Ash Meadows. Desert milkweed begins flowering in May and where sufficient groundwater is present, continues through August.

Datura wrightii Sacred datura, another common wildflower throughout the Southwest, occurs on moist soils on the refuge. This night-blooming perennial is pollinated by and caterpillar host plant to a hawkmoth, *Manduca sexta*, whose caterpillars are known as tobacco hornworms.



Helianthus annuus Annual sunflower likely needs no introduction, as it occurs abundantly throughout the United States and is a highly visible wildflower. These sunflowers are abundant on the refuge in areas with sufficient soil moisture.

Each of these species have been observed on the refuge during each summer over the last six years. While spring and fall is the time most people visit Ash Meadows, which certainly has advantages temperature-wise, summer has its own reasons to pay a visit. Even without these wildflowers, Ash Meadows has unique scenery with its desert mountains, to its springs and Crystal Reservoir, with its crystal blue water and two species of pupfish, one of which can be easily observed in the spring waters. March to November on the refuge is wildflower season, and is well worth a visit.

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SOCIETY NEWS

UPCOMING ZOOM MEETINGS

Meetings for the fall have been moved to the 2nd Wednesday of September, October, and November. Zoom meetings begin with an open chat period at 6:30 pm. The business meeting opens at 7:00 pm and the program commonly begins around 7:15 pm. Prior registration is required to join the Zoom meeting. See the events section of our Facebook page for registration links:

<https://www.facebook.com/pg/NevadaNativePlantSociety/events/>

October 13 - Peter Weisberg: Pinyon-juniper woodlands of the Great Basin: Taking the long view on past and future vegetation changes

November 10 - Sierra Sampson: Ethnobotany in Nevada

February 9 - Lesley DeFalco: Restoration of Joshua Tree

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