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A NEW SPECIES OF *ERIGERON* (ASTERACEAE: ASTEREAE) FROM CIBOLA COUNTY, NEW MEXICO

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ABSTRACT

One of the two populations recognized previously as *Erigeron acomanus* Spellenb. & Knight is segregated taxonomically as a distinct species and given the name **Erigeron spellenbergii** G.L. Nesom ex Z.S. Rogers, **sp. nov.** The binomial is validated here via a diagnosis and type designation. As a result of the segregation, both species would benefit from conservation assessments considering the now narrower geographic distribution of each and their apparent preferences for coarse alkaline sandy soils derived from different sandstones that occur sporadically in the west-central region of New Mexico.

Erigeron acomanus Spellenb. & Knight, first described in 1989, was based on two populations in west-central New Mexico near Acoma tribal lands (Spellenberg & Knight 1989). Eight of the 10 specimens cited in the protologue, including the type, were gathered from the northern population just N of Prewitt in McKinley County. The remaining two paratypes were collected from the southern population, located in Blue Water Canyon (BWC) in Cibola County, ca. 100 air-kilometers south-southwest of the Prewitt population. Richard Spellenberg collected both BWC paratypes on the same day in September 1977 during surveys for threatened and endangered plant species on public lands that were conducted by the Bureau of Land Management in response to the Endangered Species Act of 1973.

In the protologue of *Erigeron acomanus*, Spellenberg & Knight (1989, Fig. 2D) illustrated significant variation in leaf size and shape between plants growing in the northern and southern populations. The authors also discussed the two different kinds of sandstones present at each locality. Reed (1996) found considerable genetic dissimilarity between the two allopatric populations based on isozyme analysis. A few additional morphological differences in the BWC plants were reported in NMRPTC (1999).

Nesom (2025) authored a floristic treatment of 49 species of *Erigeron* in a recent flora of New Mexico, providing a key to species and abbreviated descriptions for each one. An *Erigeron* species attributed solely to BWC was included by mistake (G. Nesom, pers. comm.) in the flora under the invalidly published "*Erigeron spellenbergii* G.L. Nesom" (no type indicated — Art. 40.1, Turland et al. 2018). No specimens of any kind were cited in that species entry in the flora, but it is clear that the binomial corresponded to the two original BWC paratypes of *E. acomanus*. The allopatric BWC plants have several distinct morphological features that warrant recognition of the morphotype as a distinct species. The original diagnosis and description of *E. spellenbergii* provided in Nesom (2025, and with his agreement and encouragement) has been modified to better reflect the morphological variation in the species and in its close relative *E. acomanus*.

ERIGERON SPELLENBERGII G.L. Nesom ex Z.S. Rogers, **sp. nov. TYPE: USA. New Mexico**. Cibola Co.: Just E of Laguna Indian Reservation in Blue Water Canyon, ca. 13 air miles SE of Acoma Pueblo, 6500–7000 ft [1981–2134 m], T6N R7W boundary of sections 25 & 36, [34.710828° N, 107.524403° W (assigned post-facto)], 24 Sep 1977, *R. Spellenberg & M. Spellenberg 4912* (holotype: NMC 032636, stamped 48420!; isotype: NY 02076538!). Figures 1, 2.

Erigeron spellenbergii differs from *E. acomanus* by its larger basal leaves (largest ca. 2–3.8 × 0.5–0.7 vs. 0.8–2.3 × 0.15–0.4 cm), differently-shaped cauline leaves (oblanceolate with an obtuse-rounded apex vs. more narrowly oblanceolate with an acute-cuspidate apex), and in several phyllary features (oblong-elliptic, drying greenish-orange with a broad, medial line, and with the adaxial surfaces ±glabrate except for minute glandularity vs. elliptic-lanceolate, drying purplish at least distally, and with the adaxial surfaces covered with a mixture of strigose trichomes and much shorter glandular trichomes — Fig. 2).

Plants taprooted perennials with lignescent rhizomes and caudex branches, colonial. **Stems** reaching 8–15 cm in length, strigillose with stiff, whitish, eglandular trichomes. **Leaves** basal and cauline; basal leaves in rosettes, broadly oblanceolate to obovate or spatulate, entire, 1-nerved, ca. 2–3.8 x 0.5–0.7 cm, similarly sized, base attenuate to a narrow petiole ca. 1/2 the leaf length, strigillose; cauline leaves oblanceolate, similarly sized and evenly distributed along the stems, much smaller than the basal leaves. **Inflorescences** usually 1-headed; phyllaries oblong-elliptic, drying greenish-orange, with a broad, medial line, adaxial surfaces ±glabrate except for minute glandularity. **Flowers** with ray floret ligules white, not coiling or reflexing.

Reports based apparently on field observations suggest that plants of *Erigeron spellenbergii* are taller than those of *E. acomanus* and form smaller mats (NMRPTC 1999; Nesom 2025). Variation in stem length in both species overlaps throughout their entire size ranges as evidenced in the herbarium specimens examined at NMC. Additional quantified field observations would help to determine the degree to which the two species form mats.

PARATYPE. New Mexico. Cibola Co.: Just E of Laguna Indian Reservation in Blue Water Canyon, ca. 13 air mi SE of Acoma Pueblo, 6500–7000 ft [1981–2134 m], T6N R7W boundary of sections 25 & 36, [34.710828° N, 107.524403° W (assigned post-facto)], 24 Sep 1977, *Spellenberg & Spellenberg 4911* (NMC 032635, stamped 49278!).

Etymology. The species is named in honor of retired professor Dr. Richard W. Spellenberg (NMC), who collected the type and paratype material in 1977.

Distribution and ecology. *Erigeron spellenbergii* is only known to occur in Blue Water Canyon between 1980 and 2135 meters elevation. The species forms clonal mats in partial shade at the base of steep N-facing, shaded cliff slopes of Zuni Sandstone derived from eolian dunes in the upper Jurassic age (Spellenberg & Knight 1989; Maxwell 1990). The cliffs run along the eastern limit of the Acoma Pueblo lands. In 1977, *E. spellenbergii* was found growing near several woody and herbaceous plant species including *Pinus edulis*, *Juniperus* sp., *Cercocarpus* sp., *Artemisia ludoviciana*, *Bouteloua gracilis*, and *Gutierrezia* sp. The sole phenological observations of *E. spellenbergii* were made in late September when the plants were flowering and fruiting.

Presumably due to the remoteness of the BWC site and its proximity to Native American tribal lands, no new herbarium collections or iNaturalist observations have been made of *Erigeron spellenbergii* since Richard Spellenberg gathered the original specimens nearly 50 years ago.

It should also be noted that Nesom (2025) reported that *Erigeron acomanus* occurred in two counties (Cibola and McKinley). No populations of *E. acomanus* have been found outside of the vicinity of Prewitt and Thoreau in McKinley County, so the ascription of that species to Cibola County in Nesom's treatment of the genus is probably an error and was actually in reference to the southern population now referred to as *E. spellenbergii*.

Conservation status. *Erigeron spellenbergii* is a species of conservation concern given that it occurs at a single locality and most of the plants appear to be clones spread over a relatively small area. Reed (1996: 7) reported ca. 1,500 plants growing in an area of 2 square kilometers and determined that the individual "mats," which ranged in size from ca. 10–70 cm in diameter, were vegetative clones, with each mat generating 10–100 stems.

No human-made structures or improved roads were seen in recent satellite photos of the rugged, remote terrain in the area, suggesting a relatively low amount of habitat disturbance since the late 1970s (Google Earth imagery dated March 2025). Nevertheless, field surveys could help to identify the current extent and health of the population and permit further searches for additional populations that may be growing on similar sandy substrates in the vicinity.

The segregation of *Erigeron spellenbergii* from the allopatric *E. acomanus* results in a significant contraction of the latter's geographic range, now only known to occur in a relatively narrow swath of land to the north of Prewitt and Thoreau, New Mexico. Reed (1996: 7) reported ca. 2,200 plants in 11 "distinct subpopulations" covering an area of ca. 3 square kilometers. Twenty-five years ago, the New Mexico Rare Plant Technical Council assigned *E. acomanus* a "threat severity" score of moderate and considered it "effectively conserved" but included a remark regarding the impacts of mining and quarrying operations on the habitat (NMRPTC 1999). Recent satellite imagery of the Prewitt-Thoreau region shows evidence of significant disturbance in the area. *Erigeron acomanus* should be reevaluated with the appropriate conservation-related metrics to ascertain the current level of threat to the species.

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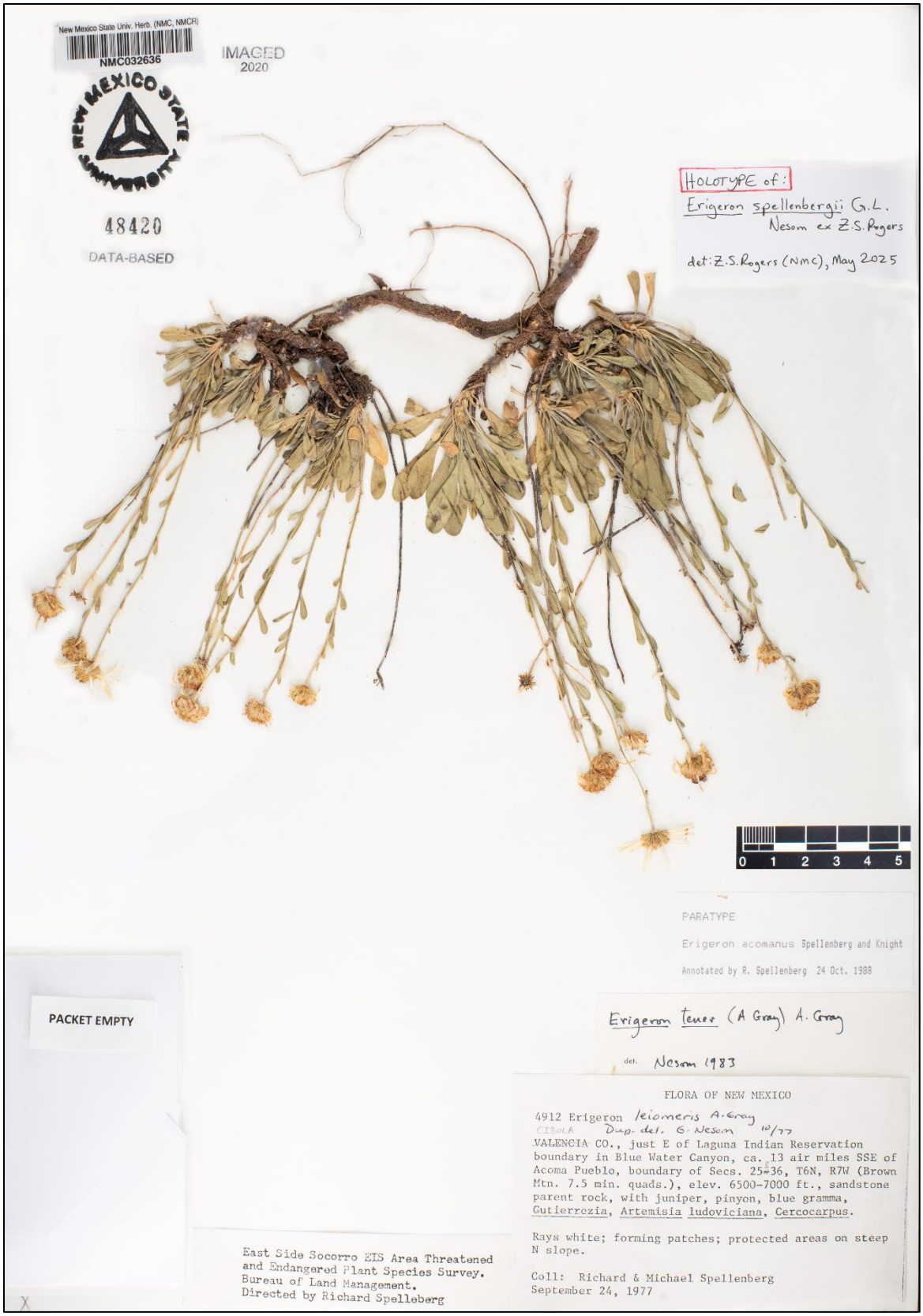

Figure 1. Holotype of *Erigeron spellenbergii* G.L. Nesom ex Z.S. Rogers, sp. nov. *R. Spellenberg & M. Spellenberg 4912* (NMC 032636).

Figure 2. Involucres and phyllaries. **A–B**, *Erigeron spellenbergii*. Holotype: *R. Spellenberg & M. Spellenberg 4912* (NMC 032636). **C–D**, *Erigeron acomanus*. Paratype: *R. Spellenberg 8497* (NMC 032638). Magnification: A & C, ×10; B & D at ×40.