

**TWO NEW IDAHO PYRROCOMA PREVIOUSLY INCLUDED IN *P. CARTHAMOIDES*
(ASTERACEAE: ASTEREAE)**

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ABSTRACT

Anomalous populations from southwestern Idaho and adjacent Oregon that have been previously treated as *Pyrrocoma carthamoides* var. *carthamoides*, but with smaller and more numerous heads and more evident ray flowers, are described as ***Pyrrocoma boiseana* Ertter, sp. nov.**, extending from the Boise foothills in Ada Co., Idaho, west to Malheur and Baker cos., Oregon, and ***Pyrrocoma ponderosana* Ertter, sp. nov.**, currently known from scattered basaltic outcrops and scablands in Valley, Gem, and Washington cos., Idaho. Variants of the *P. cusickii* complex in central and western Idaho are also addressed.

Ongoing work on a flora of the Boise Front (<https://boisefrontnature.com/>) triggered a closer look at populations from southwestern Idaho and adjacent Oregon that had previously been identified as *P. carthamoides* Hook. var. *carthamoides*, on the basis of involucre size and shape, phyllary shape and orientation, and general plant size (Giblin et al. 2018, Mancuso & Moseley 1993); or, alternatively, tossed back and forth between var. *carthamoides* (now *P. carthamoides* sensu stricto) and var. *cusickii* (A. Gray) Kartesz & Gandhi (now *P. cusickii* (A. Gray) Greene). The results presented here are based primarily on two years of focused fieldwork, mostly in the Boise Front, and repeated hands-on examination of specimens at SRP and CIC, combined with a loan from ID to SRP. Additional information was derived from brief visits to IDS, UTC, and WIS, as well as examination of digital images from numerous other herbaria. The current paper complements an overview of the *P. carthamoides* complex in this same issue (Nesom 2025c), which is one in a series of papers recently produced by Nesom (starting with Nesom 2025a).

As clarification up front, my taxonomic philosophy is to limit the circumscription of a newly described species to a morphologically coherent and ecogeographically meaningful core subset, while at the same time calling attention to potential areas of intergradation or other anomalies (Ertter 1997). This approach is tied to my inclination to accept zones of apparent intergradation between otherwise good species, admittedly influenced by my specialization on *Potentilla* (Rosaceae), without invoking a particular mechanism. As a result, existing specimens that share some features with the species described here, but which I deem too intermediate or otherwise anomalous to represent the core concept, are left unplaced for future study.

1. PYRROCOMA BOISEANA Ertter, **sp. nov.** **TYPE: Idaho.** Ada Co.: Boise foothills ca. 3.5 air mi NE of downtown Boise, SE end of Corrals Trail, crest of N-facing ridge above trail, relatively good quality shrub-steppe with intact cryptogamic crust, mixed bunchgrasses (native and non-native), scattered bitterbrush and mountain big sagebrush, miscellaneous forbs (e.g., *Crepis*, *Lupinus*, *Achillea*), 43.656° N, 116.150° W, ca. 1120 m elev, 4 Aug 2024, *B. Ertter 25588* (holotype: UC; isotypes: ID, IDS, K, NY, MO, OSC, RM, SRP, TEX, US, UTC, WTU).

Differing from other members of the *Pyrrcoma carthamoides* complex in the combination of relatively tall [(11–)15–50(–70) cm] ascending-erect stems, roughly scabrous vestiture, relatively large and broad inflorescence bracts that generally exceed the subtended internode, greater number [(1–)2–6(–9)] of relatively large hemispheric-campanulate heads [apical involucre (15–)20–25 mm high, (10–)15–30(–35) mm wide (pressed)] that are often clustered and/or sessile, unequal series of phyllaries at least on lateral heads, and ray flowers (8–)10–15(–17) long with linear-oblong ligules exceeding involucre by up to 7 mm.

Stems 1–several, (9–)15–50(–70) cm (including inflorescence), erect to ascending-erect, sparsely to densely puberulent-scabrous, eglandular. **Leaves:** basal 7–23(–35) cm long, ca. (1/4–)1/3–1/2(–3/4) as long as stems, petiole 2–9(–15) cm long, blade elliptic-oblong, 5–14(–20) cm long, 1.3–3.5(–4.5) cm wide, old petiole bases not persistently fibrous, faces scabrous, margins usually entire, sometimes irregularly serrulate; cauline 4–7, often paired at the proximalmost node, oblong to lanceolate-oblong, broadly petiolate on proximal leaves, (4–)5–11(–15) cm long, only slightly reduced in length distally, faces scabrous, eglandular. **Inflorescence:** heads (1–)2–6(–9) total, 1–2(–3) heads clustered apically, usually with additional lateral heads spaced out on 3–6 cm of stem axis, these often sessile, sometimes on peduncles to 5 cm long, or 2–3 heads on proximal inflorescence branches to 11 cm long; involucre bracts relatively broad and leafy, generally exceeding the subtended internodes. **Involucre:** apical involucre hemispheric-campanulate, (15–)20–25 mm high, (10–)15–30(–35) mm wide (pressed), phyllaries in 3–4 series, ± subequal to relatively unequal, outer series ± elliptic-lanceolate to narrowly lanceolate-triangular, 7–20 mm long, 2.5–6 mm wide, apically acute, spine-tipped, not recurved, green-herbaceous except at the very base, margins entire or occasionally irregularly short-serrulate with a narrow, scarious rim; lateral involucre usually smaller, 10–20 mm wide (pressed), phyllaries more likely in series of unequal length, often more ovate. **Ray flowers** several to many (not always evident in all heads), sterile, (8–)10–15(–17) mm long, ligules pale to medium yellow, linear-oblong, 5–8(–10) mm long, 0.7–1.5 mm wide, up to 7 mm longer than the involucre (inner phyllaries). **Disc corollas** 9–11 mm long. **Achenes** 6–9 mm long, glabrous, 4-ribbed; pappus bristles tawny, 11–15 mm long, slightly thickened apically. Figs. 1, 3c.

Flowering July through August. Most commonly on loamy NE- to NW-facing slopes in shrub-steppe with relatively intact cryptogamic crust, best known on granitic substrates but also on basalt-derived clay in the western part of the range; with *Artemisia tridentata*, *Purshia tridentata*, *Ericameria nauseosa*, *Poa secunda*, *Pseudoroegneria spicata*, *Achnatherum thurberianum*, *Balsamorhiza sagittata*, *Achillea millefolium*, *Eriogonum strictum*, *Crepis* spp., *Lupinus* spp., *Lomatium simplex*, *Agoseris grandiflora*, *Calochortus macrocarpus*, *Phlox caespitosa*; lichens including *Cladonia fimbriata*, *Diploschistes muscorum*, *Lepraria* sp., and *Peltigera rufescens*; 900–1400 m elev. From the Boise foothills of Ada Co., Idaho, northwest to southwestern Baker and northeastern Malheur cos., Oregon.

The epithet is selected as reference to the portion of the range where the species is best known; Boise goldenweed is the obvious vernacular name.

Additional representative collections. Idaho. Ada Co.: Shaw Mtn Road E of Boise, dry foothills along road, 22 Jul 1973, *Ertter 378/3* (CIC); Polecat Loop Trail SSE of trailhead, foothills on N side of Boise, ca. 3400 ft, 24 Aug 2010, *Ertter 20555* (SRP, UC); Hillside to Hollow Reserve in

Boise foothills, N-facing slope on Who Now Loop, 43.6536° N 116.213° W, ca. 930 m, 17 Jul 2019, *Ertter & DiNicola 23456* (SRP); Crestline Trail in foothills ca. 2 air mi NE of downtown Boise, 43.6362° N 116.1686° W, ca. 1000 m, 3 Jul 2024, *Ertter 25578* (SRP); Old Pen Trail in Boise foothills due E of Idaho Botanical Garden, N-facing slope of heavy clay, burned in 2016 and now dominated by *Taeniatherum caput-medusae* and other non-natives, 43.60129° N 116.15575° W, ca. 900 m, 13 Jul 2024, *Ertter 25581* (SRP, TEX + 2); Peggy's Trail in foothills ca. 5 air mi N of downtown Boise, ± NE-facing slopes at N end of main ridge, ca. 1020 m, 14 Jul 2024, *Ertter & DeBolt 25583* (SRP); trail from Miller Gulch Trailhead ca. 4 air mi NNE of downtown Boise, N-facing slope above path, remnant patches of cryptogamic crust not yet completely taken over by non-natives, 43.6754° N 116.1783° W, ca. 1055 m, 17 Jul 2024, *Ertter 25585* (SRP); connecting trail between Quarry View Trail and Eastdale Drive, ca. 2 air mi E of downtown Boise, fairly intact shrub-steppe on N-facing slope, 43.606° N 116.160° W, ca. 930 m, 24 Jul 2025, *Ertter & Gardner 25797* (SRP + 1); 8th St Extension/Sunset Peak Road ca. 2 road mi beyond 8th St ATV/Hulls Gulch trailhead, foothills ca. 4.7 air mi NE of downtown Boise, good quality shrub-steppe with high forb diversity, 43.663° N, 116.1325° W, ca. 1365 m, 30 Oct 2025, *Ertter & Woodruff 25858* (SRP + 1); Cotton Wood [Creek?], Boise Natl. Forest, open gravelly hillside, 3000 ft, no date, *Grandjean 286* (UTC); Polecat Trail in NW Boise, 0.74 air mi 159 degrees SE of Cartwright Rd trailhead, sandy loam soil, N-facing slope dominated by *Artemisia tridentata*, 43.6795° N 116.2151° W, 3340 ft, 25 Jul 2025, *Mansfield & Daly 25210* (CIC +1); foothills N of Barber Valley, ca 4½ air mi ENE of downtown Boise, ridge top, clay loam with cobbles, 43.585 -116.120, ca. 3350 ft, 9 Sep 2025, *Pappani s.n.* (SRP + 2). Gem Co.: ½ mi N of jct Third Fork Rd and Sheep Creek/Dodson Pass road, ca 25 air mi N of Sweet, relatively intact sagebrush-steppe on S-facing slope, w/ *Balsamorhiza sagittata*, clay soil with scattered basalt rocks, 44.342° N 116.3169° W, ca. 1180 m, 12 Nov 2025, *Ertter & Mancuso 25861* (SRP). Washington Co.: Nutmeg Mt E of Weiser, steep rocky W-facing hillside near mine, 8 Sep 1974, *Ertter 130/4* (CIC); ca. 7 mi SE of Midvale, ca. 1 mi N of the W end of Crane Creek Reservoir, relatively undisturbed *Artemisia*, *Purshia*, *Agropyron*, 3380 ft, 1 Jul 1992, *Mancuso 680* (ID, OSC), same locality, 29 Oct 2025, *Ertter & Woodruff 25857* (SRP); just E of the NW end of Mann Reservoir, ca. 12 mi N of Weiser, scattered *Purshia* and *Artemisia*, 2920 ft, 11 Jul 1992, *Mancuso 704* (ID, OSC); Idaho Almaden Mine ("Nutmeg Mt") ca. 10 mi due E of Weiser, T11N R3W S33 SW, 3600 ft, 15 Jul 1986, *Packard & Ertter 86-186* (CIC, UC). **Oregon.** Baker Co.: 30 mi N of Ontario, SE of Durkee, *Artemisia tridentata* subsp. *tridentata* habitat, T11S R43E S26 N½, 3600 ft, 25 Aug 1989, *Rosentreter 6252* (CIC). Malheur Co.: Brogan Canyon, isolated pockets through Smith's seeding area [6.5 air miles NNW of Brogan, ca. 44.335 -117.558 fide A. Taylor, Dec 2025], 12 Jun 1988, *Findley JF88-88* (ValeBLM); Huntington Jct N of Willow Cr Cyn, T14S R42E S17, 26 Jun 1986 *Joyal 1215* (NY).

Additional significant locations are documented by iNaturalist observations:

- Ada Co.: on the SE side of Lucky Peak Reservoir E of Boise, 43.52118, -116.03237, 10 Jul 2022, <https://www.inaturalist.org/observations/125700232> (accessed 5 Dec 2025)
- Ada Co.: Watchman Trail in Boise Front, 43.643, -116.11, 19 Aug 2018, <https://www.inaturalist.org/observations/330182279> (accessed 11 Dec 2025)
- Gem Co.: Freezeout Hill SE of Emmett, 43.84401, -116.45658, 5 Sep 2025, <https://www.inaturalist.org/observations/312220998> (accessed 5 Dec 2025)

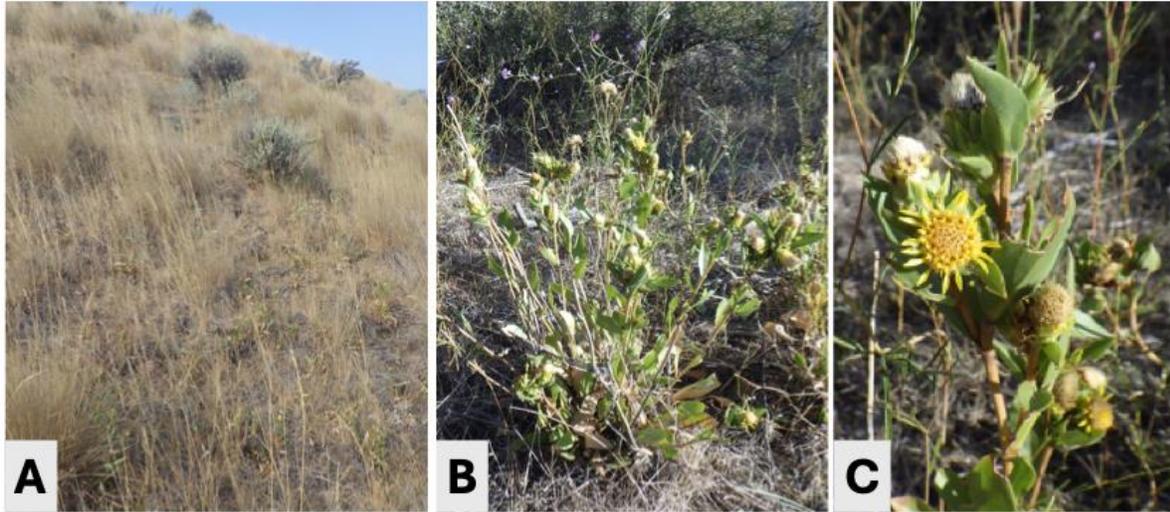


Figure 1. *Potentilla boiseana* in the Boise foothills. A. Typical habitat with numerous plants, at type locality. B. Particularly vigorous plant showing peak habit, in Polecat Gulch Reserve. C. Inflorescence of plant in same population as B, showing relatively large clustered heads, large stiff bracts, and particularly prominent ray flowers. Photos by B. Ertter.

Most previous collections of *Pyrrocoma boiseana* were identified as *P. carthamoides* var. *carthamoides* but differ in the relatively smaller, more numerous heads and more conspicuous ray flowers, as well as range and habitat. As now circumscribed, the new species consists primarily of ascending to erect sturdy plants with relatively large, stiff bracts obscuring portions of the heads and subtended inflorescences. At least some plants in healthy populations have several heads that tend to be sessile and congested. Although ray flowers can be relatively conspicuous, this character is only sporadically expressed within a population, or even within the same plant, suggesting that environmental conditions can affect the full expression of ray size and color saturation. Given the frequency that grasshoppers are observed on heads, predation probably also impacts ray flower development and persistence.

The new species is best known from the Boise foothills in Ada Co., Idaho, on which the preceding description is primarily based. Scattered populations in this area occur mostly on loamy sediments derived from the Idaho Batholith, from 900 to 1400 meters elevation, in relatively good shrub-steppe with intact cryptogamic crust, primarily on northwest- to northeast-facing slopes near secondary ridge lines. Populations here accepted within the circumscription of *P. boiseana* are scattered to the northwest in Gem and Washington counties, on similar habitats but with more clayey soils derived from Columbia River basalts. Several from adjacent Baker and Malheur counties in Oregon are also provisionally accepted here, though the size of ray flowers and substrate overlap that of sympatric *P. radiata* Nutt. This distribution coincides with the loamy shrub-steppe zone on the northwestern margin of Miocene-Pliocene Lake Idaho, which also harbors several other regional endemics; i.e., *Abronia mellifera* var. *pahoveorum* Ertter, *Allium aaseae* Ownbey, and *Astragalus mulfordiae* M.E. Jones.

Although recent fieldwork has shown that *Pyrrocoma boiseana* can be regularly encountered in appropriate habitats in at least the central Boise foothills, only a handful of collections were known from Ada County prior to 2010. The paucity of other early collections from near the largest city in Idaho probably can be explained by the late bloom time, primarily July to August, when the Boise foothills are in summer semi-dormancy, and local botanists have turned their attention to the brief peak bloom at higher elevations around the state and beyond. In addition to Ertter 378/3 in 1978, the other known even earlier collections are two by Emile Grandjean (121 [SRP] and 286 [UTC]), the first

supervisor of Boise National Forest, and probably one by W[illiam]. N. S[parhawk] (15 [SRP 10804]), who worked for the same forest in the early 1900's. Label data for both of Grandjean's collections indicate Cottonwood, open gravelly hillside, elev. 3000 ft., suggesting the same locality; 121 further adds Boise River, granitic, 1913, while 286 lacks a date of collection. The reference to the Boise River, granitic substrate, and 3000 ft. elevation indicate that Cottonwood does not refer to the town on the western margin of the Camas Prairie in Idaho Co., but more likely to Cottonwood Creek/Rocky Canyon in the Boise Front, possibly not far from where *Erter* 378/3 was collected. One complicating factor with this interpretation is that *Grandjean* 121 is actually suspiciously similar to typical *P. carthamoides* s.s. in its large terminal head and obovate phyllaries, opening the possibility of mixed labels. As for *Sparhawk* 15, which does fit well within *P. boiseana*, no label data is provided other than 1915, and most of Sparhawk's other collections are from his study sites in Boise and Valley counties (Sparhawk 1918). It is nevertheless quite possible that Sparhawk would also have made a few collections from near the home office for the Boise National Forest in the Boise area.

The easternmost population currently known is documented only by an iNaturalist observation (125700232), but appropriate habit continues to the southeast in the foothills of the Danskin Mountains of Elmore County. Given that this area is decidedly under-botanized, and that *P. boiseana* was scarcely documented from the Boise foothills prior to recent focused studies on the area, it would not be surprising if this late-blooming species turns out to be as well represented in the Danskin foothills as it is in the Boise foothills. If so, this might also help explain the anomalous population of *Pyrrcoma* at the southeast end of the Danskin Mountains, documented by *Baker* 10398 (ID, WTU) and *Erter & Smith* 25804 (SRP), which combines the prominent ray flowers and subglabrous leaves of *P. insecticruris* A. Heller with the more spiciform inflorescences, large bracts, and glabrous achenes of *P. boiseana*.

In the Boise foothills proper, where no other species of *Pyrrcoma* are present, *P. boiseana* forms reasonably uniform populations. The situation is very different in Washington County and adjacent Oregon, where specimens accepted here as *P. boiseana* overlap the range of *P. radiata*; populations of aff. *P. glomerata* Torr. & A. Gray and representatives of the *cusickii* complex are also documented in the same area. The distinction between *P. boiseana* and *P. radiata* becomes particularly challenging in this area, with numerous collections combining features from both species. Mancuso and Moseley (1993) noted this in their conservation assessment of *P. radiata* in Idaho; in the following quote, the species are treated in an inclusive *Haplopappus*, and references to var. *carthamoides* now apply to *P. boiseana*:

[*Haplopappus carthamoides*] is comprised of two varieties; var. *cusickii* has a range overlapping that of *H. radiatus*, but it is readily distinguishable and presents no identification problems. The other taxon is var. *carthamoides*, and until recently discovered in west-central Idaho, was unknown from the range of *H. radiatus*, occurring mainly to its north and northwest. This becomes problematic because several identifying characters such as stem color and pubescence of the involucre bracts overlap between *H. radiatus* and *H. carthamoides* var. *carthamoides*. In fact, it appears there may be a morphological continuum between the two taxa for characters previously used to differentiate them. . . . Collections of var. *carthamoides* within the range of *H. radiatus* have blurred relationships and reopen some taxonomic uncertainties in the radiatus-carthamoides group, but as presently understood *H. radiatus* is a distinct species and is treated as such in this report. Additional studies will be necessary to fully address any taxonomic uncertainty.

In accordance with the taxonomic philosophy outlined at the beginning of this paper, I agree with Mancuso and Moseley's observation of a "morphological continuum" between *P. boiseana* and *P. radiata* where the species overlap in Washington County. In addition to those collections that I deem

too intermediate to place in one species or another (i.e., *Mancuso* 682 [OSC], *Mancuso* 683 [OSC], *Mancuso* 684 [ID], *Mancuso* 1564 [ID], *Tuason* 478 [CIC, ID]). even some specimens placed here in *P. boiseana* can be interpreted as having some influence from *P. radiata*, and vice versa. This is particularly noticeable when populations, rather than just isolated specimens, are examined. As a key example, plants in the small, isolated population near Crane Creek Reservoir (vouchered by *Mancuso* 680 and *Ertter & Woodruff* 25857) fit into *P. boiseana* in most regards, but plants are nearly twice as large as the average size in the Boise foothills, providing the upper leaf size extreme in the preceding description.

Collections from around the Idaho Almaden Mine on Nutmeg Mountain (recently targeted for an open-pit heap-leach gold mine) are particularly intriguing. The original collection (*Ertter* 130/4 [CIC]) was initially identified as *Haplopappus carthamoides*, later sequentially annotated as *P. radiata* and “intermediate to *P. carthamoides* var. *carthamoides*”. It is treated as *P. boiseana* in the current circumscription, but with *radiata* influence comparable to the Crane Creek Reservoir population. A follow-up visit to the same general area in 1986 resulted in the paired collections of *Packard* [*& Ertter*] 86-186 (CIC, UC), which is reasonably good *P. boiseana*, and *Ertter & Packard* 6558 (CIC), which documents an anomalous significantly larger plant within the population. An annotation affixed to the latter specimen consists of a quote by Tom Kaye in 1994: “The material from Almaden mine, a site I have also collected from, appears to have the proper number of chromosomes ($2n=36$) to qualify as [Haplopappus] radiates [sic], but many individual plants (and even whole populations) from that area are small and morphologically resemble [H.] carthamoides ssp. carthamoides [meaning *P. boiseana* in this context]. The group needs more work.”

Several collections from Baker (*Rosentreter* 6252) and Malheur (*Findley* JF88-88, *Joyal* 1215) counties, Oregon, are provisionally accepted as outliers of *P. boiseana* on the basis of head size and number, short peduncles, and leaf size and shape. Several other collections from these two counties are more problematic; although stems are larger and more erect than phases of *P. cusickii* that occur elsewhere in the two counties, with more evident ray flowers, they share an affinity with the *P. cusickii* complex and differ from *P. boiseana* in their more open inflorescence with fewer and smaller heads, subequal phyllaries, and narrower leaves that are usually more than half as long as the stems. Specimens that fit this description include *Button* V-230 (ValeBLM), *Button* V-566 (ValeBLM), *Cusick* 1399 (ORE in OSC), and *Smith & Smith s.n./SOS OR-030-330* (OSC) from Baker County, along with *Mansfield* 97-34 (CIC) and *Smithman et al. LS-2358* (ValeBLM) from Malheur County. These specimens are excluded from *P. boiseana* and relegated instead to the *P. cusickii* complex, with further study needed.

As a preliminary conservation assessment, limited to the Boise Front, *Pyrocoma boiseana* is known from about 25 population clusters, some with several hundred plants in all age categories. More populations undoubtedly exist in appropriate habitats away from popular trails, especially at mid-elevations. Unfortunately, relatively high quality shrub-steppe with intact cryptogamic crust is a habitat in decline, being susceptible to conversion to grasslands particularly after fires (especially if seeded with non-native grasses and ecotypes as post-fire remediation). Populations of *P. boiseana* commonly occur on isolated pockets of remnant habitat and seldom extend into surrounding disturbed areas, particularly those now dominated by *Thinopyrum intermedium*. Cattle grazing is also an apparent threat, and although *Grandjean* 286 indicates that plants are “injurious to live stock,” most inflorescences had evidently been grazed in the single population surveyed in 2024 in which cattle were present (*Ertter & DeBolt* 25583). In addition, ovule and seed predation by a variety of insects can significantly reduce reproductive capacity, as Kaye (2002) already noted for *P. radiata*.

2. PYRROCOMA PONDEROSANA Ertter, **sp. nov.** **TYPE:** Idaho. Valley Co.: Osprey Overlook at N end of peninsula in Payette Lake, Ponderosa State Park ca 4 air mi N of downtown McCall, open conifer forest on isolated summit of fused basalt, scattered subpopulations on various aspects and habitats, all on shallow soil with limited competition or shade, 44.962°N 116.081°W, ca 1600 m, 26 Jul 2025, *Ertter & Grant 25586* (holotype: UC; isotypes: ID, NY, OSC, RM, SRP, TEX, WTU).

Resembling *Pyrocoma boiseana* in its tendency to produce relatively tall, ascending to erect multi-headed stems, but differing in its narrower heads that are seldom clustered, phyllaries that are more commonly subequal, narrower basal leaves that are usually half or more as long as the stem, and narrower cauline leaves and inflorescence bracts. Habitat and range also differ, with *P. ponderosana* associated with sparsely vegetated basalt outcrops and scabland in the mountains of west-central Idaho.

Stems 1–several, (11–)15–45 cm (including inflorescence), (decumbent) ascending to erect, ± puberulent-scabrous to nearly glabrous, eglandular. **Leaves:** basal (8–)10–25(–30) cm long, ca $\frac{1}{2}$ – $\frac{3}{4}$ (–1 ×) as long as stems, petiole (3–)4–8(–10) cm long, blade narrowly elliptic-oblongate, (5–)8–15(–20) cm long, (1.3–)1.5–2.5(–3) cm wide, old petiole bases not persistently fibrous, faces ± scabrous, margins sometimes irregularly serrulate; cauline 3–5(–6), sometimes paired at the proximalmost node, linear-elliptic to narrowly oblanceolate, sometimes broadly petiolate on proximal leaves, (3–)5–8(–13) cm long, gradually reduced in length distally, faces ± scabrous, eglandular, margins often serrulate. **Inflorescence:** heads 1–4(–8), usually solitary apically and (if more than 1) at well-spaced nodes on 3–7(–15) cm of stem axis, subsessile or on peduncles to 2 cm long, rarely branched; involucre bracts relatively long and narrow, commonly exceeding the subtended internodes. **Involucres:** apical involucre ± turbinate-campanulate, 18–25 mm high, 18–25 mm wide (pressed), phyllaries in 3–4 series, usually subequal, outer series narrowly elliptic, 7–18 mm long, 2–6 mm wide, apically acute or apiculate, slightly recurved, green-herbaceous except at the very base, margins entire or occasionally irregularly short-serrulate with a narrow, scarious rim; lateral involucre similar, phyllaries occasionally in series of unequal length. **Ray flowers** usually several to many (not always evident in all heads), sterile, 9–15 mm long, ligules pale yellow, ± linear, 4–6 mm long, 0.5–1.2 mm wide, sometimes apically bifid, ± equaling or up to 4 mm longer than the involucre (inner phyllaries). **Disc corollas** 10–13 mm long. **Achenes** 8–9 mm long, glabrous, 4 primary ribs with additional secondary ribs in between; pappus bristles pale tawny, 8–13 mm long, sometimes slightly thickened apically. Figs. 2, 3a & b.

Flowering late June to August. Shallow soil or crevices of basalt outcrops and scablands, various aspects, openings in conifer forest or shrub-steppe; (1070–)1490–1600 m. Currently known from scattered locations in Gem, Valley, and Washington cos., Idaho.

Named for Ponderosa State Park, on the isolated basaltic peninsula in Payette Lake north of McCall, Idaho. Ponderosa goldenweed is the recommended vernacular name.

Additional collections. **Idaho.** Gem Co.: Sweet, in the lava rock, 3500 ft, 14 Aug 1911, *Macbride 1635* (ASC, ID, MO, MONT, NY, US, UTC, WS). Valley Co.: Ponderosa State Park, North Loop Road, T19N R3E S27 NW $\frac{1}{4}$, 5240 ft, basalt outcrop soils, 14 Aug 1982, *Duft 1268* (CIC); Ponderosa State Park N of McCall, at summit of Osprey Cliff Overlook, basaltic outcrops, 1615 m, 14 Sep 2010, *Ertter 20614* (CIC); Osprey Overlook at N end of peninsula in Payette Lake, Ponderosa State Park ca 4 air mi N of downtown McCall, 8 Jul 2024, *Ertter 25579* (SRP); E shore of Cascade Reservoir on Sugarloaf Peninsula, 8 km N and 1 km W of Cascade, T15N R3E S34 E $\frac{1}{4}$, 4900 ft, 9 Jul 2004, *Yensen 04163* (CIC). Washington Co.: 18 air mi W of Cambridge, $\frac{1}{2}$ mile S of Monroe Butte, 5400 ft, T14N R06W S35 SENW, shallow, coarse stony basalt scab with scant vegetation, 8 Sep 1993, *Riley 2706a* (CIC-PYNF, OSC). In addition to these herbarium specimens, pre-anthesis specimens were observed and photographed by Ertter and Grant on a basaltic opening at the S end Lily Marsh Trail, Ponderosa State Park, 44.942°N 116.077°W, 11 Jun 2025.

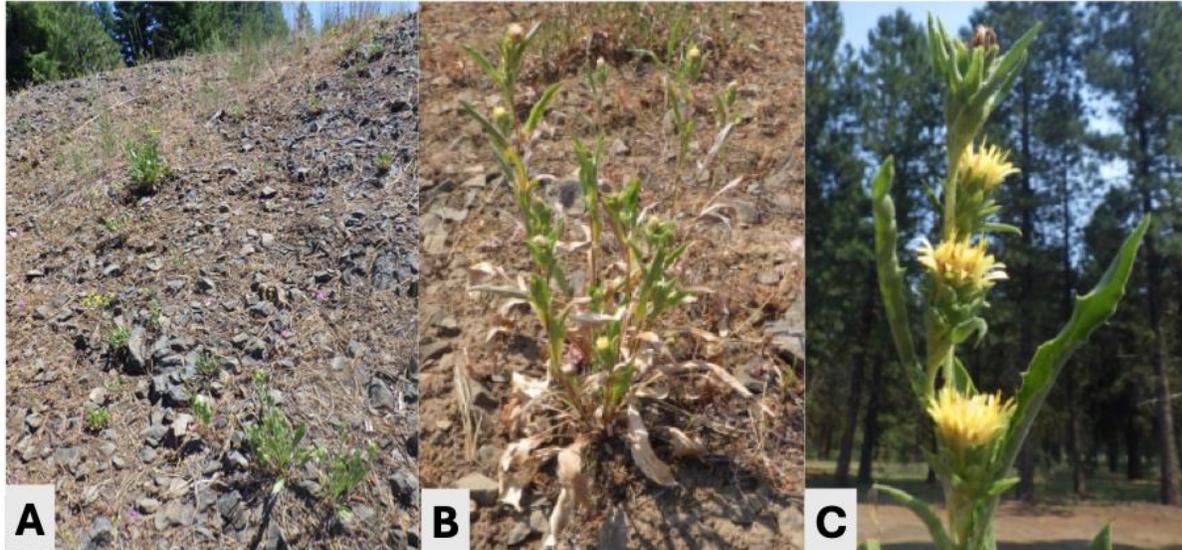


Figure 2. *Pyrocoma ponderosana* at Osprey Point, Ponderosa State Park (type locality). A. Several plants in typical habitat. B. Habit of particularly well-developed plant. C. Multi-headed inflorescence showing typical arrangement, head size, and pale yellow ray flowers. Photos by B. Ertter.

As with *Pyrocoma boiseana*, previous collections of *P. ponderosana* have commonly been categorized as *P. carthamoides* var. *carthamoides*, but they are readily distinguished from *P. carthamoides* sensu stricto in their smaller, more numerous heads and short but evident ray flowers, in addition to different ranges and habitats. In early stages of the current paper, most of the specimens now comprising *P. ponderosana* were provisionally included in *P. boiseana*. However, the McCall plants differ from *P. boiseana* and approach members of the *P. cusickii* complex in being less sturdy plants overall, with narrower heads that are seldom clustered and narrower leaves that are longer in comparison to the stems than is the norm in *P. boiseana* (see key at end of this paper). The fewer phyllaries and disk flowers are most easily seen after the heads have dried and shed their achenes (Fig. 3), leaving a conspicuous phyllary disk that makes late fall an opportune time for field surveys.

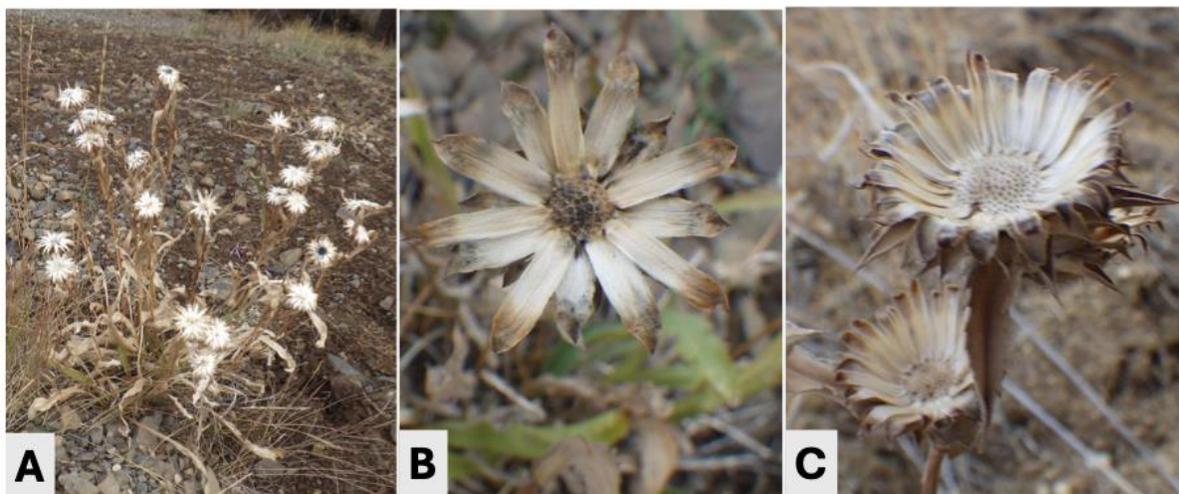


Figure 3. Dried post-dispersal plants showing conspicuous phyllary disks. A. Habit of *P. ponderosana* at type locality. B. Phyllary disk of *P. ponderosana* at type locality. C. Phyllary disk of *P. boiseana* in Boise foothills, showing more numerous phyllaries and receptacle pits corresponding to disk flowers. Photos by B. Ertter.

Pyrocoma ponderosana is best known from the easily accessible basalt outcrops in Ponderosa State Park, which occupies the large peninsula in glacial Payette Lake north of McCall. The northern part of the peninsula is an isolated outlier of the Columbia River Basalt flows, in an area otherwise dominated by granitics of the Idaho Batholith. The preceding description is primarily based on specimens from this site, with additional collections added from ecogeographically appropriate areas if they shared most of the diagnostic characters that distinguish this new species not only from *P. boiseana*, but from members of the *P. cusickii* complex that also occur in the central Idaho mountains.

The southernmost specimen here included in *P. ponderosana* is *Macbride 1635*, an historical (1911) collection from somewhere near the small town of Sweet. This is in the portion of southern Gem County that was part of Boise County until 1915 (Boone 1988), which is why the latter county is indicated on the printed label. The location overlaps the range of *P. boiseana*, but the diagnostic characters and habitat (“in the lava rock”) are more comparable to those of *P. ponderosana*. Determining the exact location is a challenge, since collectors at this time usually only referenced the nearest named community, and Sweet lies in a valley that is now mostly farmland, with no obvious “lava rock”. Several miles northwest of Sweet, however, is a prominent basalt-capped block fault that was dubbed Squaw Butte by settlers, recently renamed *Sehewoki’l Newenewee’an Katete* but more often just called “the Butte” by locals. The elevation on Macbride’s label (3,500 feet) is somewhere between Sweet (at 2,550 feet) and the crest of the ridge (ca. 5,800 feet); more exploration of this relatively under-botanized butte (by whatever name) is definitely called for.

Riley 2706a, from the mountains west of Cambridge in Washington Co., is provisionally included here on the basis of its multiple well-spaced heads, relatively long narrow leaves, and short but evident ray flowers. However, given the distance from other collections of *P. ponderosana* and the proximity to several other species of *Pyrocoma* in the same county, it might alternatively represent a separate intergradation that has resulted in a comparable morphology. Taxonomic placement of this and other candidate collections may well change with further study.

Correlation with Nesom’s outline of the *Pyrocoma carthamoides* complex

In his overview of the *Pyrocoma carthamoides* complex, Nesom (2025c) aggregates most collections from western and central Idaho into two groups: a western one that he refers to as “*Pyrocoma* aff. *carthamoides-cusickii*” and an eastern one that he refers to as “*Pyrocoma* aff. *cusickii*”. Other than citing and mapping the specimens in each groups, no further information is provided beyond noting that the groups consists of specimens with rays more prominent than in typical *P. cusickii*, along with a reference to the current paper. Additional comments are accordingly provided here, in hopes that they will prove useful to future researchers on *Pyrocoma* in western and central Idaho.

In my understanding, Nesom’s western group consists primarily of those specimens assigned herein to *P. boiseana* and *P. ponderosana*, in combination with other collections that I prefer to treat as intermediates or simply leave unplaced pending further research. His eastern group consists of the core of specimens remaining from an earlier concept that we had initially planned on describing as a distinct species, prior to Nesom’s decision to treat the southern component as a separate species, *P. bennettensis* (Nesom 2025b). Although Nesom’s western and eastern groups are outlined on one of his maps as geographically separated, I would treat them as overlapping, with specimens assignable to the eastern group occurring as far west as Adams, Idaho, and Washington counties, Idaho, and possibly even extending into Oregon (or at least intergrading there with other members of the *carthamoides* complex). Collections from west of the Camas Prairie in Elmore County, Idaho, can also be placed here, though they are more prostrate-decumbent than typical (*Ertter & Seaborg 23873* [SRP], *Ertter & Smith 25805* [CIC], *Ertter & Smith 25806* [SRP]). Some of the variation in this group is shown in Figure 4.

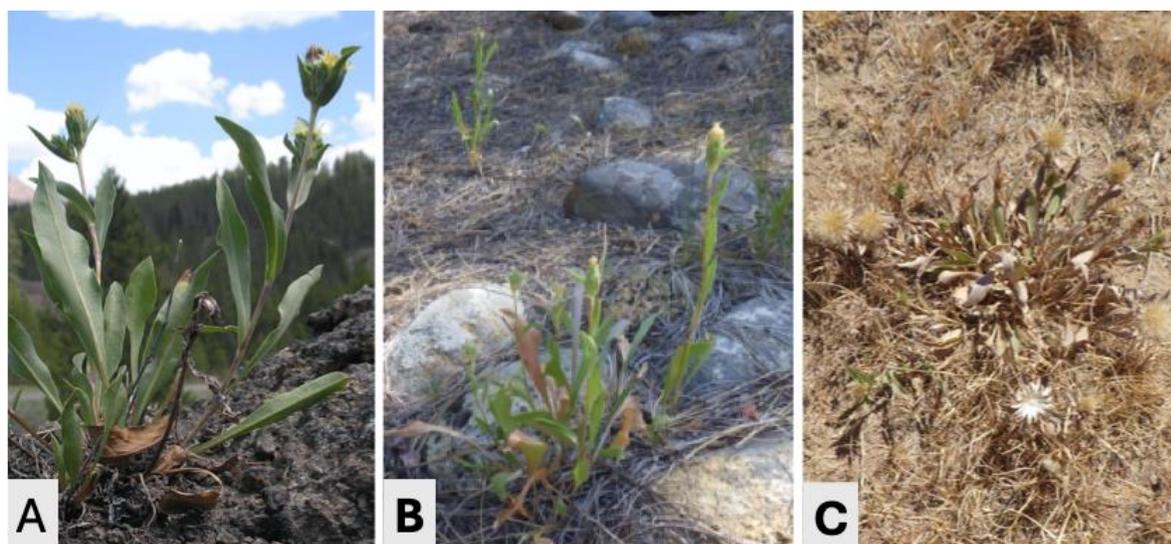


Figure 4. Variation in *Pyrocoma cusickii* sensu lato in central Idaho. A. On Galena Summit (photo by C. Bjork). B. In ponderosa pine forest near Idaho City (photo by B. Ertter). C. In rocky open flat near High Prairie, Elmore County (photo by B. Ertter).

On-going field work and examination of specimens has furthermore reduced my willingness to accept the relative conspicuousness of ray flowers as a reliable species-level defining character by itself. I accordingly argue that “*Pyrocoma* aff. *cusickii*” could easily be accommodated into *P. cusickii*, especially the northern phase (Nesom 2025c), except that ray flowers are more consistently present and usually at least slightly longer than the phyllaries. Stems are also more likely to be ascending rather than decumbent. I find a complete continuum, however, in most characters, especially but not limited to counties where both phases occur: i.e., Adams, Idaho, and Washington counties, Idaho. I accordingly now believe that “*Pyrocoma* aff. *cusickii*” is best interpreted as the eastern phase of *P. cusickii*, parallel to the northern and southern phases as per Nesom (2025c), with key distinctions summarized in Table 1.

	Northern Phase	Southern Phase	Eastern Phase
Stem Length (cm)	15–20(–25)	(2–)3–20(–25)	6–25(–35)
Stem Orientation	decumbent to ascending	prostrate to decumbent-ascending	decumbent to ascending-erect
Leaf margins	Usually entire	Usually at least somewhat serrate	Usually entire
Heads per stem	1–2(–3)	1(–3)	1–2(–3)
Ray flowers	Sporadic and usually inconspicuous, 7–10(–14) mm	Usually absent	Usually present and exceeding phyllaries, (8–)10–13(–15) mm
Ray Lamina	2–3(–5) mm	not present	3–5 mm

Table 1. Diagnostic characters distinguishing the phases of *Pyrocoma cusickii* recognized here, but not including subalpine extremes.

The presence and conspicuousness of ray flowers in particular present a quandary; although the patterns outlined in Table 1 hold true as a generality, the exceptions indicate that there are additional underlying factors. For example, *Hays 1693* (ID), although well with the range of the northern phase (Asotin Co., Washington), has evident ray flowers that are 14 mm long, while the ray flowers of *Irwin*

7643 (ID), on the far side of the eastern phase (Lemhi Co., Idaho), are only 8 mm long. The isolated population of *P. cusickii* at Blacks Creek Reserve south of Boise is an even greater conundrum; the initial collection in 2023 (Ertter & Corbin 25258 [SRP]) had sporadic rays 11–12 mm long, but a collection from the exact same locality two years later (Ertter 25734 [CIC]) had no rays at all. What this means as to the significance of ray flower development as a taxonomic character deserves further investigation.

The aforementioned isolated population at Blacks Creek Reserve is also intriguing not only in its disjunction from other populations of the *P. cusickii* complex, but in its unexpected proximity to *P. boiseana* (which in fact is what triggered the current study). As previously noted, the latter species is best known in the Boise foothills, where it is the only species of *Pyrocoma* present. Blacks Creek Reserve in the arid flats south of Boise, however, is only a scant seven miles from the closest known population of *P. boiseana*. Although this might seem to be an insignificant distance, not only is the habitat very different (cobble seasonal streambed), but the seven miles actually spans a significant floristic boundary. While the Boise Front is on the southern edge of the Pacific Northwest flora, the *P. cusickii* population is at the northern edge of the Snake River Plains section of the Intermountain Region, in a habitat similar to that of other populations of *P. cusickii* sensu lato that are relatively common in the adjacent Owyhee Desert section (Cronquist et al. 1972).

Key to distinguish *Pyrocoma boiseana*, *P. ponderosana*, and *P. cusickii* in west-central Idaho

1. Stems prostrate to ascending, (2–)3–20(–35) cm long; heads 1–2(–3) — basal leaves ca ½–1 times as long as stem, blade ± oblanceolate-elliptic, sometimes narrowly so; involucre ± turbinate, phyllaries commonly subequal; mostly on relatively shallow soils within or near the montane conifer zone, at least in central Idaho **Pyrocoma cusickii sensu lato**
1. Stems (decumbent) ascending to erect, (9–)15–50(–70) cm long; heads 1–6(–9)
 2. Heads often clustered, especially apically; involucre hemispheric-campanulate; phyllaries often unequal especially on lateral heads; involucral bracts relatively broad and leafy; basal leaves ca. (¼–)½–½(–¾) as long as stems, blade elliptic-oblanceolate; loamy soils in relatively intact shrub steppe, mostly on ± north-facing slopes on granitic substrates (at least in eastern part of range), foothills from Boise, ID, to Vale, OR; 900–1400 m elev. **Pyrocoma boiseana**
 2. Heads well-spaced; involucre ± turbinate-campanulate; phyllaries commonly subequal; involucral bracts relatively long and narrow; basal leaves ca. ½–¾(–1 ×) as long as stems, narrowly elliptic-oblanceolate; mostly on basaltic outcrops and scablands within or near montane conifer zone in Valley, Gem, and Idaho counties, ID; (1070–)1490–1600 m **Pyrocoma ponderosana**

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