

**Changed to *Crepis runcinata* and from 2B.1 to 2B.2 in the CNPS Inventory on
October 26, 2015**

**Rare Plant Status Review: *Crepis runcinata* subsp. *hallii*
Proposed change to *C. runcinata*, and rank change from CRPR 2B.1, G5T2 / S2 to
CRPR 2B.2 3, G5 / S2 S3**

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Changes made to the original document are in blue text.

Background

Crepis runcinata subsp. *hallii* is a member of the Asteraceae that has been included on California Rare Plant Rank (CRPR) 2B of the *CNPS Inventory* since the 5th Edition (Skinner and Pavlik 1994). This status review was initially undertaken as a new addition for a conspecific, *C. runcinata* subsp. *andersonii*, but further investigation revealed serious taxonomic problems in this group. As a result, we are proposing to re-rank the entire species *C. runcinata* as a CRPR 2B 3 plant.

In California, *C. runcinata* subsp. *hallii* is restricted to the eastern side of the Sierra Nevada. A second infrataxon within the species, subsp. *andersonii*, has also been proposed for rare plant status. Both Stebbins (1993) and Bogler (2012) recognized subsp. *hallii* and subsp. *andersonii* as occurring in California, and the Jepson Flora Project (2015) treats a third taxon, subsp. *imbricata*, as unresolved in California. In the *Flora of North America (FNA)*, Bogler (2006) recognized seven subspecies within *C. runcinata*, including subspp. *andersonii* and *hallii*, but not *imbricata*, for California. The FNA treatment closely follows Babcock and Stebbins' (1938, 1947) monographs of the genus. Although his *Jepson Manual* (2012) and *FNA* (2006) treatments are quite recent, Bogler (pers. comm. 2012) had only limited time and funding to complete the treatments, and therefore employed a conservative approach of tentatively recognizing all of Babcock and Stebbins' (1938, 1947) subspecies. Bogler (pers. comm. 2012), noted that the subspecies of *C. runcinata* probably do not merit taxonomic recognition, but more research on the group is needed.

A brief review of past work on the *C. runcinata* group is warranted. Many forms of *C. runcinata* have been described in the past, and after careful study Babcock and Stebbins (1938) chose to only recognize seven of them at the subspecies level. Although the subspecies show some degree of geographic separation, there is considerable overlap in many cases. Despite the high degree of morphological variation, all *Crepis runcinata* subspecies are strikingly similar in terms of habitat, climatic and edaphic preferences, and most floral characters. These common features among the subspecies suggest a relatively recent origin of the species (Babcock and Stebbins 1938). Although Babcock and Stebbins (1938) originally treated *C. runcinata* as a "Rassenkreis", with many different intergrading, sexually-reproducing forms throughout its range, D. Bogler (pers. comm. 2012) now feels that many of the

subspecies of *C. runcinata* may actually be apomictic hybrids or trihybrids. If Bogler is correct, these entities would be on separate evolutionary trajectories and would have lost the capability for sexual reproduction.

Subspecies *andersonii* is the most extreme morphological variant within the species, and is most similar to subsp. *imbricata* (Babcock and Stebbins 1938). It is separated from subsp. *imbricata* by its longer involucre, differently-shaped phyllaries and phyllary apices, and its beaked (vs. beakless) cypselae (fruits) (Bogler 2006). However, the character of the beaked cypselae is not consistent, as it can sometimes be found in other subsp. and is sometimes absent or nearly so in subsp. *andersonii* (Babcock and Stebbins 1938). Plants from Sierra County in northeastern California were treated as subsp. *andersonii* (Babcock and Stebbins 1938), but some collections from Mono and Inyo Counties have also been treated as subsp. *andersonii* (see *Goeden 798-06*, *Hall 12752*, and *Raven 7007* in the Consortium of California Herbaria, CCH, 2015). Even at Sierra Valley, near the center of subsp. *andersonii*'s range, plants are atypical for the taxon, due to their strongly hispidulose stems and leaves, and their deeply pinnatifid leaves (Babcock and Stebbins 1938). The Sierra Valley plants have also been called subsp. *imbricata* (CCH 2015).

Subspecies *hallii* occurs south of the range of subsp. *andersonii* and west of subsp. *glauca*, and is morphologically intermediate between the two (Babcock and Stebbins 1938). It is separated from subsp. *andersonii* by its leaf teeth that are not prominently white-tipped (vs. white-tipped), and its lanceolate (vs. broadly lanceolate) phyllaries (Bogler 2006). Babcock and Stebbins (1938) state that subsp. *hallii* usually has beaked cypselae, while Bogler (2006) claims that they are not beaked. Subspecies *hallii* is separated from subsp. *glauca* by its glandular (vs. eglandular) phyllaries (Bogler 2006). It is noteworthy that a specimen from Mono County is treated as subsp. *glauca* although this infrataxon is not currently recognized for California (see *Ferris and Lorraine 11059* in CCH 2015; Bogler 2006, 2012). Also of note is a specimen labeled as subsp. *hallii* from Modoc County, disjunct from the rest of the plants in this subspecies (see *Bruce 2482* in CCH 2015).

There are currently 21 occurrences of *Crepis runcinata* subsp. *hallii* in the CNDDDB. Several more may have been discovered in recent years, as recent collections from 2014 are not yet included in the CNDDDB (CCH 2015). Of the documented occurrences in the CNDDDB, eleven have an unknown landowner, five are on BLM land, two are on LADWP land, one is on the Inyo NF, one is on CDFW land, and one is on State Parks land. Twelve of the occurrences are historically-documented (not seen in 20+ years), and generally have somewhat vague location data and lack occurrence quality data. Only one occurrence is ranked "good", and one occurrence is ranked "fair"; the remaining occurrences all have an unknown rank.

With all of the subspecies combined, *C. runcinata* is currently known from approximately 31 occurrences in California. All of the forms of *Crepis runcinata* that occur in California occupy similar habitat. They are found in wet alkaline meadows that are located within

desert scrub or pinyon and juniper woodland communities. Some of the places where *C. runcinata* subsp. *hallii* occurs are home to many other rare plants. Fish Slough (EO#s 4, 5, and 15), for example, is home to twelve other CRPR 1B and 2B plants. Although some of the areas where this plant grows face a multitude of threats from grazing, off-road vehicles, and groundwater drawdown (CNPS Inventory 2015), the presence of other rare plants will still afford these areas some protection.

If it continues to be recognized morphologically, *C. runcinata* subsp. *andersonii* may be of conservation concern in California. If indeed this plant is restricted in California to just Sierra County, it would only be known from three occurrences in the state (CCH 2015, Babcock and Stebbins 1938). If specimens from outside of its historical range are accepted as subsp. *andersonii*, the plant would be known from an additional five occurrences in California (CCH 2015). Both subsp. *glauca* and subsp. *imbricata* could potentially have rare plant status in California also, if they continue to be recognized taxonomically and their occurrence in California is confirmed.

Clearly, additional specimen review is needed to sort out all of the California specimens of *Crepis runcinata* to the infrataxon level. However, even D. Bogler (pers. comm. 2012), *Crepis* author for *The Jepson Manual, Second Edition*, had great difficulty in assigning many specimens to subspecies. More importantly, genetic, cytological, and morphological research on this group is needed to determine which infrataxa in *C. runcinata*, if any, merit taxonomic recognition. Both B. Baldwin and D. Keil (pers. comms. 2012) strongly recommended against adding additional infrataxa within *C. runcinata* to the CNPS Inventory, except for possibly CRPR 3, due to ongoing taxonomic confusion in this group. CRPR 3 status would emphasize the need for additional research as well as the conservation concern associated with these plants. Additional research on this group could result in a number of different scenarios, such as including all subspecies as a highly variable *C. runcinata*; a narrower concept of *C. runcinata*, with the different subspecies treated as apomictic hybrids; or substantiation of the subspecies described by Babcock and Stebbins (1938).

Although two subspecies within *Crepis runcinata* have been recognized as occurring in California in recent treatments (Stebbins 1993, Bogler 2006, 2012), several Asteraceae experts (B. Baldwin, D. Bogler, and D. Keil pers. comms. 2012) agree that the subspecies are poorly defined and may not merit taxonomic recognition. The need for additional research, combined with the inability of experts to clearly determine many specimens to infrataxon, lead CNPS and CNDDB to recommend including *C. runcinata* at the species level on CRPR 2B 3. Subspecies *hallii* would in turn be removed from CRPR 2B and included in the broader species concept. If more information on the infrataxa of *C. runcinata* becomes available in the future, CNPS and CNDDB will re-evaluate their status at that time.

Recommended Actions

CNPS: Remove *Crepis runcinata* subsp. *hallii* from CRPR 2B.1;

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Element Codes: PDAST2R0K0 (*C. runcinata*), PDAST2R0K8 (subsp. *andersonii*),
PDAST2R0KB (subsp. *hallii*)

add *Crepis runcinata* at the species level to CRPR 2B.2 3
CNDDDB: Remove *Crepis runcinata* subsp. *hallii* from G5T2 / S2;
add *Crepis runcinata* at the species level to G5 / S2 S3

Current CNPS Inventory Record

Crepis runcinata T. & G. subsp. *hallii* Bab. & Steb.

Hall's meadow hawksbeard

Asteraceae

CRPR 2B.1

Nevada

Alpine, Inyo, Lassen, Mono

Shoshone (276A) 35116H3, Devils Speedway (324C) 36116C8, Wildrose Peak (325D) 36117C1, Soldier Pass (411C) 37117C8, Deep Springs Lake (412D) 37118C1, Fish Slough (413B) 37118D4, Bishop (413C) 37118C4, Chidago Canyon (432C) 37118E4, Whitmore Hot Springs (434A) 37118F7, Benton (450C) 37118G4, River Spring (451A) 37118H5, Indian Meadows (451B) 37118H6, Benton Hot Springs (451D) 37118G5, Sulphur Pond (469C) 38118A8, Bodie (470A) 38119B1, Big Alkali (470B) 38119B2, Bridgeport (487C) 38119C2, Markleeville (506A) 38119F7, Observation Peak (656C) 40120G2

Mojavean desert scrub, pinyon and juniper woodland (mesic, alkaline); elevation 1250-1978 meters.

Perennial herb. Blooms May to July.

Threatened by grazing, vehicles and groundwater drawdown. See *Carnegie Institution of Washington Publication* 504:104 (1938) for original description.

Website <http://www.rareplants.cnps.org/detail/1638.html>.

Revised CNPS Inventory Record

Crepis runcinata (E. James) Torr. & A. Gray

fiddleleaf hawksbeard

Asteraceae

CRPR 2B.2 3

Nevada

Alpine, Inyo, Lassen, Modoc, Mono, Sierra

Shoshone (276A) 35116H3, Devils Speedway (324C) 36116C8, Wildrose Peak (325D) 36117C1, Soldier Pass (411C) 37117C8, Deep Springs Lake (412D) 37118C1, Fish Slough (413B) 37118D4, Bishop (413C) 37118C4, Mt. Barcroft (431C) 37118E2, Chidago Canyon (432C) 37118E4, Watterson Canyon (433B) 37118F6, Whitmore Hot Springs (434A) 37118F7, Benton (450C) 37118G4, River Spring (451A) 37118H5, Indian Meadows (451B) 37118H6, Benton Hot Springs (451D) 37118G5, Sulphur Pond (469C) 38118A8, Bodie (470A) 38119B1, Big Alkali (470B) 38119B2, Bridgeport (487C) 38119C2, Markleeville (506A) 38119F7, Evans Canyon (570A) 39120F1, Sierraville (571D) 39120E3, Sattley (571C) 39120E4, Antelope Valley (571A) 39120F3, Calpine (571B) 39120F4, Observation Peak (656C), Sugar Hill (725D) 41120G3, Mcginty Point (725C) 41120G4, Mcginty Reservoir (726D) 41120G5, Willow Ranch (725A) 41120H3, Pease Flat (726A) 41120H5

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Element Codes: PDAST2R0K0 (*C. runcinata*), PDAST2R0K8 (subsp. *andersonii*),
PDAST2R0KB (subsp. *hallii*)

Mojavean desert scrub, pinyon and juniper woodland (mesic, alkaline); elevation 1250-1978 meters.

Perennial herb. Blooms May to August.

Subspecies *hallii* previously CRPR 2B.1; taxonomic distinctiveness of *sspp.* is uncertain; needs genetic, cytological, and morphological study. ~~If taxonomically recognized, all *sspp.* in California are possibly rare.~~ Threatened by grazing, vehicles, and groundwater drawdown. See *An Account of an Expedition from Pittsburgh to the Rocky Mountains* 1:453 (1823) for original description, *Flora of North America: Exogenous or Dicotyledonous Plants* 2(3):487 (1843) for taxonomic treatment, and *Publications of the Carnegie Institute of Washington* 504:104-107 (1938) for original description of [all](#) *sspp.* documented in California.

Literature Cited

Babcock, E.B. and G.L. Stebbins, Jr. 1938. The American species of *Crepis*: their interrelationships and distribution as affected by polyploidy and apomixis. *Publications of the Carnegie Institute of Washington* 504: 104-107. (Original description of all *sspp.* mentioned in this document.)

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Stebbins, G.L. 1993. *Crepis*. Pp. 242-245 in Hickman, J.C. (ed.), *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley.

Torrey, J. and A. Gray. 1843. *Flora of North America: exogenous or dicotyledonous plants* 2(3): 487. (Taxonomic treatment of *Crepis runcinata*.)

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