Kept the ranks of 13 taxa and changed the ranks of 6 taxa in the CNPS Inventory on February 1, 2013

Rare Plant Status Review: Multiple Taxa
Proposed retention at current rank in Inventory, contrary to their exclusion from *The Jepson Manual, Second Edition*

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Changes made to the original document appear in blue text.

Background

The following twenty plant taxa listed below were either not included, or treated as taxonomic synonyms of more common taxa in *The Jepson Manual* (*TJM* 1993) and/or *The Jepson Manual, Second Edition* (*TJM 2*), but are all currently recognized in the CNPS Inventory. Some of these taxa are currently included on California Rare Plant Rank (CRPR) 3 of the CNPS Inventory, as there are questions surrounding their taxonomic status. For ~~most~~ many of the taxa below, there has not been any known research done on them since the publication of *TJM* (1993). Taxonomic work has been done on some of the taxa listed below, and in such cases they are expected to be recognized in upcoming publications. CNPS and CNDDB propose to retain some of these taxa under their current ranks, while changing others to CRPR 3 until further research occurs and/or additional information is obtained. We briefly describe our justification for the retention or changes in the following paragraphs below. If you are familiar with any past or current research performed on any of the following taxa, and/or know of any additional information that might be of assistance in determining their taxonomic status or rarity, please submit your data to CNPS and CNDDB. If additional information is received on any of the following taxa, CNPS and CNDDB will re-evaluate their status at that time.

Subset of Taxa included in the CNPS Inventory, but either not included, or treated as taxonomic synonyms of more common taxa in *The Jepson Manual* (*First and Second Edition*), followed by Review Region(s):

Antennaria lanata (Rank 2.2); NW
Calamagrostis crassiglumis (Rank 2.1); CW and NW
Cymopterus ripleyi var. *saniculoides* (Rank 1B.2); ES/D
Dendromecon harfordii var. *harfordii* (Rank 4.2); SW
Dendromecon harfordii var. *rhamnoides* (Rank 1B.1); SW
Enceliopsis nudicaulis var. *corrugata* (Rank 3.3); ES/D
Erythronium howellii (Rank 1B.3); NW
Eschscholzia minutiflora ssp. *twisselmannii* (1B.2); ES/D
Eschscholzia procera (Rank 3); SN
Gentiana affinis var. *parvidentata* (Rank 3); MP
Lathyrus sulphureus var. *argillaceus* (Rank 3); NW and SN
Leptodactylon californicum ssp. *tomentosum* (Rank 4.2); CW
Myosurus minimus ssp. *apus* (Rank 3.1); CW, ES/D, GV, and SW

Sent to CW, ES/D, GV, MP, NW, SN, SW, L. Alice, G. Allen, E. Alverson, C. Clark, C. Clennett, L. Garrison, L. Gehrung, D. Hansen, G. Hannan, N. Holmgren, R. Olmstead, J. Pringle, L. Rabin, G. Walden on 11/19/2012

Penstemon cinereus (Rank 4.3); MP
Phacelia ciliata var. *opaca* (Rank 1B.2); GV
Ribes amarum var. *hoffmannii* (Rank 3); SW
Rubus glaucifolius var. *ganderi* (Rank 1B.1); SW
Scutellaria holmgreniorum (Rank 4.3); MP
Sedum pinetorum (Rank 3); SN
Vaccinium coccineum (Rank 3.3); NW, SN

***Antennaria lanata* – Rank 2.2** (Element Code: PDAST0H0B0) **Changed from CRPR 2.2 to 3.2**
Antennaria lanata was not included in *TJM* (1993) or *TJM 2*, but was included in *FNA* as a plant that occurs in California. It occurs throughout the Pacific Northwest and east to the Rockies (Abrams and Ferris 1960), and is only known in California from ~~a single~~ two occurrences in ~~the Trinity Alps,~~ Trinity County, one from the Trinity Alps and one on peridotite of the Trinity Terrane, which is not on serpentine (D. Taylor pers. comm. 2013; CCH 2013). The California occurrences ~~is~~ are highly disjunct form all other known occurrences; the nearest voucher collection in the Consortium of Pacific Northwest Herbaria (CPNWH 2012) is from southeastern Oregon, in Harney County. Treatment author R. Bayer did not feel that the California plants belonged in *A. lanata*, and therefore did not include the name in *TJM 2*. Bayer (pers. comm. 2012) and P. Figura plan to treat the California plants as a previously-undescribed taxon; publication is expected sometime in summer 2013. The California plants are distinct from *A. lanata* in both morphology and potentially habitat~~, as they occur on serpentine, whereas *A. lanata* does not~~ (R. Bayer pers. comm. 2012).

Although *A. lanata* does not occur in California, we are using it as a placeholder for what will be considered a very rare taxon. Since its name does not apply to the California plants, we will change its current rank of 2.2 to 3.2~~, and~~. Its occurrence in a wilderness area~~,~~ should provide sufficient protection for the time being. When the Trinity Alps *Antennaria* is given a new name, CNPS and CNDDB will re-evaluate its status at that time.

***Calamagrostis crassiglumis* - Rank 2.1** (Element Code: PMPOA17070) **No change; needs to undergo full status review**
This plant was treated as a synonym of *C. stricta* ssp. *inexpansa* in *TJM* (1993), *TJM 2*, and the *Flora of North America*. *Calamagrostis crassiglumis* differs from its purported synonym in that its glumes are thick and rounded at the base, rather than keeled. Treatment authors for the *Flora of North America* (*FNA*), K. Marr and R. Hebda, reviewed herbarium specimens and could not separate it from *C. stricta* ssp. *inexpansa* based on those characters. However, specimens of *C. crassiglumis* were generally shorter and had broader culm leaves. The authors noted that further research into this taxon may be warranted (*FNA*). Marr et al. (2011) recently studied the genus *Calamagrostis* in British Columbia, where *C. crassiglumis* has previously been reported (J. Saarela pers. comm. 2012), but made no mention of *C. crassiglumis*. Until a taxonomic revision of *Calamagrostis* is completed, *C. crassiglumis* should be treated as a synonym of *C. stricta* ssp. *inexpansa* ~~continue to be (tentatively) recognized~~. Based

on the available information, CNPS and CNDDB recommend ~~retaining~~ treating *C. crassiglumis* as a synonym of *C. stricta* ssp. *inexpansa*, and change it to CRPR 4 or delete it from the Inventory after re-evaluating its distribution and abundance ~~at Rank 2.1~~.

***Cymopterus ripleyi* var. *saniculoides* - Rank 1B.2** (Element Code: PDAPI0U0X1)
Kept as CRPR 1B.2
The varieties of this plant were ~~not~~ recognized as synonyms of *C. ripleyi* in *TJM* (1993) and *TJM 2* because they were only differentiated by flower color in their original descriptions, and because several mixed populations had been found (D. Harlow pers. comm. 1994, L. Constance pers. comm. 1979). However, subsequent work has shown that the two varieties differ in their habitat, with var. *saniculoides* occurring at lower elevations on limestone shale and var. *ripleyi* occurring at higher elevations on sand dunes (R. Barneby pers. comm. 1979, D. Harlow pers. comm. 1994). Both varieties are known from Nevada, and *C. ripleyi* var. *saniculoides* is currently designated as a sensitive species by the Bureau of Land Management and on the Nevada Native Plant Society's watch list (Nevada Natural Heritage Program 2010). To our knowledge, no recent taxonomic work has been done on this taxon. Based on the available information, CNPS and CNDDB recommend maintaining *C. ripleyi* var. *saniculoides* (the only variety found in California) on Rank 1B.2 of the CNPS Inventory.

***Dendromecon harfordii* vars. *harfordii* and *rhamnoides* - Rank 4.2 and 1B.1**
(Element Codes: PDPAP08020 and PDPAP08012) **Changed var. *harfordii* from CRPR 4.2 to 3.2 and var. *rhamnoides* from CRPR 1B.1 to 3.1**
TJM 2 authors G. Hannan and C. Clark treated these varieties as a synonym of *D. harfordii*, but are not familiar with these taxa in the field, and performed no additional research on them since *TJM* (1993). Both were uncertain as to whether they should be recognized as varieties, or should be lumped into a single species (pers. comm. 2012). Botanist S. Junak (pers. comm. 2010) is familiar with the plants in the field, but noted that further study on their taxonomy is needed. Variety *rhamnoides* (Rank 1B.1), from the southern Channel Islands, is already extirpated on San Clemente Island (probably from overgrazing), and is very limited on Catalina Island, due to grazing by nonnative deer. Variety *harfordii* (Rank 4.2), from the northern Channel Islands, is common, at least on Santa Cruz Island (S. Junak pers. comm. 2010). Variety *rhamnoides* has paler green leaves that are longer and less crowded on the branch when compared to var. *harfordii*. While it is unclear whether or not these taxa merit distinction at the variety level, a conservative approach may be warranted, due to the very limited nature of var. *rhamnoides* on Catalina Island: only five occurrences are presumed extant on Catalina Island, and only one of those has been documented in the past 20 years. Based on the available information, CNPS and CNDDB recommend ~~retaining~~ changing *Dendromecon harfordii* vars. *harfordii* and *rhamnoides* ~~as~~ to Ranks ~~4.2~~ 3.2 and ~~1B.1~~ 3.1, respectively. If more information regarding the taxonomic distinctiveness of these varieties becomes available, CNPS and CNDDB will re-evaluate their status at that time.

***Enceliopsis nudicaulis* var. *corrugata* - Rank 3.3** (Element Code: PDAST3G031)
Kept as CRPR 3.3

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Enceliopsis nudicaulis var. *corrugata* is treated as a synonym of *E. nudicaulis* by D. Keil and C. Clark in *TJM 2*, with no infraspecific taxa recognized. This plant occurs in the Ash Meadows area of Nevada, and is federally threatened in that state. The taxonomic status of some California plants has long been in question (J. Morefield pers. comm. 1995, *FNA*). Cronquist believed that true var. *corrugata* only occurred at Ash Meadows, Nevada, and that corrugated leaves from other locations resulted from dying in a plant press. However, D.L. Sanders confirmed that live plants had some corrugation, which dropped off with distance from Ash Meadows (*FNA*, C. Clark pers. comm. 2012). This gradual cline in morphology could make identification of California material extremely difficult (A. Sanders pers. comm. 2012).

There are also habitat differences amongst *E. nudicaulis* occurrences in Nevada compared to those from California. The habitat of the Ash Meadows populations is strongly alkaline and unlike any of the *E. nudicaulis* populations in Death Valley NP, which are typically on limestone outcrops (D. York pers. comm. 2012). Although *TJM 2* indicates that *E. nudicaulis* occurs on stony hillsides and canyons, J. Andre (pers. comm. 2012) has found that *E. nudicaulis* (along with var. *corrugata*) has a strong association with clayey or fine gravelly (sometimes crusty) gypsum/calcareous soils.

More detailed taxonomic studies are needed to determine if any California material belongs to var. *corrugata*, and possibly to confirm the taxonomic status of the variety as a whole (*FNA*; C. Clark pers. comm. 2012). Based on the available information, CNPS and CNDDB recommend retaining *E. nudicaulis* var. *corrugata* at Rank 3.3 in the CNPS Inventory.

***Erythronium howellii* – Rank 1B.3** (Element Code: PMLIL0U080) **Kept as CRPR 1B.3**
Erythronium howellii was treated as a synonym of *Erythronium citrinum* in *TJM* (1993), *TJM 2*, and *FNA*, but was recognized as a good taxon by Clennett (2006). Treatment author G. Allen (pers. comm. 2012) chose to not recognize *E. howellii*, as the only trait used to differentiate the two taxa is the absence of auricles on the inner tepals of *E. howellii*; this trait has proven to vary within other species of *Erythronium*. A genetic study, apparently unpublished, showed no genetic basis for separating *E. howellii* and *E. citrinum* (G. Allen pers. comm. 2012). Allen et al. (2003) produced a molecular phylogeny of the genus *Erythronium*, but it did not include *E. howellii*. Allen (pers. comm. 2012) has performed no field studies on these taxa, and was unaware of whether they co-occur. Alverson (pers. comm. 2012) suggested that the two taxa are allopatric (do not co-occur), but Young (2010) observed both taxa growing in relatively close proximity. Young's (2010) observations showed *E. citrinum* growing on the lower slopes of a hillside, near a river, while *E. howellii* was found higher up on the hillside; *E. howellii* also emerged from the ground later than *E. citrinum*. Young (2010) grew both plants in a common garden, and they maintained their distinctive features of the presence/absence of auricles. Also, *E. citrinum* flowers opened more fully than *E. howellii* in the common garden. Although Young's (2010) observations on the two taxa are anecdotal and do not constitute a formal study, they suggest that the two taxa could be separated by habitat preferences and phenology, and that the morphological features separating them are not strictly environmental responses.

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The validity of the use of the presence/absence of auricles as a distinguishing taxonomic feature within the genus has also been a topic of debate. In a similar debate taking place in Idaho, *E. nudipetalum*, a plant of very local distribution that lacks auricles, but is otherwise similar to the more common *E. grandiflorum*, was not recognized in *FNA* (E. Alverson pers. comm. 2012). A recent phylogenetic systematic analysis of the genus *Erythronium* by Clennett et al. (2012), however, supported *E. howellii* as a valid species, separate from *E. citrinum*. According to C. Clennett (pers. comm. 2012), there are morphological characters that separate *E. howellii* from *E. citrinum*, and the molecular data also shows a small, but valid, separation.

The currently available data suggest that *E. howellii* ~~may be sufficiently~~ is only marginally morphologically distinct from *E. citrinum,* but since new molecular data are consistent with its distinctiveness we are further inclined to accept the recognition of this this taxon at this time. ~~to merit taxonomic recognition, but~~ More detailed field and genetic studies could be helpful to further assess this taxonomy ~~are needed for confirmation of this idea~~. Based on the available information, CNPS and CNDDB recommend retaining *E. howellii* on Rank 1B.3 of the CNPS Inventory. If more information on its taxonomy becomes available in the future, CNPS and CNDDB will re-evaluate its status at that time.

***Eschscholzia minutiflora* ssp. *twisselmannii* – Rank 1B.2** (Element Code: PDPAP0A093) **Kept as CRPR 1B.2**
Eschscholzia minutiflora ssp. *twisselmannii* is separated from the other subspecies (*covillei* and *minutiflora*) by its relatively long petals (10 – 26 mm vs. 3-6 mm in ssp. *minutiflora* and 6-18 mm in ssp. *covillei*) and fewer number of chromosomes (2n=12 vs. 24 in ssp. *covillei* and 36 in ssp. *minutiflora*) (*TJM 2*). The subspecies were not included in *TJM* (1993) because the editorial policy at the time favored taxa that could clearly be keyed out based on their morphology. The policy of *TJM 2* has been to include distinct taxa, even when identification is very difficult (C. Clark. pers. comm. 2012). *Eschscholzia minutiflora* ssp. *twisselmannii* should have been included in *The Jepson Manual, Second Edition*, as it is clearly differentiated based on chromosome number and petal size, although with some overlap in petal size (C. Clark, pers. comm. 2012). *Eschscholzia minutiflora* ssp. *twisselmannii* will be elevated to the rank of species in an upcoming publication (S. Still pers. comm. 2012), and is expected to be included in a revision of the Jepson eFlora (B. Baldwin pers. comm. 2013). ~~but~~ Until it is published under the new name, it will be maintained in the CNPS Inventory as *E. minutiflora* ssp. *twisselmannii.* CNPS and CNDDB recommend retaining *E. minutiflora* ssp. *twisselmannii* on Rank 1B.2 of the CNPS Inventory.

***Eschscholzia procera* - Rank 3** (Element Code: PDPAP0A0B0) **Kept as CRPR 3**
This plant has been treated as a synonym of *E. californica*, a widespread, highly variable species (*FNA*). In *TJM 2, E. procera* is indicated in a note under *E. californica* as warranting further study to determine if it should be taxonomically recognized (B. Baldwin pers. comm. 2013). CNPS Rare Plant Treasure Hunt volunteer C. Golden is expected to make collections of this plant in 2013 and send them to S. Still for molecular

work (pers. comms. 2012). Until this taxonomic work is completed, CNPS and CNDDB recommend retaining *Eschscholzia procera* on Rank 3 of the CNPS Inventory.

***Gentiana affinis* var. *parvidentata* - Rank 3** (Element Code: PDGEN06013) **Kept as CRPR 3**
In preparation for *The Jepson Manual* (1993) treatment of Gentianaceae, J. Pringle (pers. comm. 2012) examined many specimens of *G. affinis*. He concluded that individuals of var. *parvidentata* occurred sporadically throughout the range of the entire species, and did not displace other forms in any part of the range. As a result, J. Pringle treated var. *parvidentata* as possibly being indistinct from *G. affinis* var. *ovata* in *TJM* (1993), and treated it as a full synonym of this taxon in *TJM 2* (B. Baldwin pers. comm. 2013). The *Intermountain Flora* (Vol. 4, 1984) noted the complex morphological variation within the *C. affinis* group, and proposed that more thorough study would aid in making further taxonomic subdivisions. Pringle (pers. comm. 2012) agrees with the statements from the *Intermountain Flora*, and added that molecular techniques, morphological analyses, long-term studies, and the use of principal components analysis (PCA) could all be useful in elucidating subspecific variation. However, if this should happen, J. Pringle (pers. comm. 2013) does not expect that any evidence warranting recognition of an infraspecific taxon or taxa will be correlated with the "parvidentata" morphology. Based on the available information, CNPS and CNDDB recommend retaining *Gentiana affinis* var. *parvidentata* at Rank 3 in the CNPS Inventory.

***Lathyrus sulphureus* var. *argillaceus* - Rank 3** (Element Code: PDFAB25101) **Kept as CRPR 3**
Although *L. sulphureus* var. *argillaceus* was put into synonymy with the typical variety in *TJM* (1993) and *TJM 2*, it is expected to be included in the *Flora of North America* treatment (in review) (S. Broich pers. comm. 2001). The taxonomy of var. *argillaceus* has never been well-understood. Variety *argillaceus* differs from the typical variety in that it is pubescent throughout, whereas the typical variety is mostly glabrous (Munz and Keck 1959). While some variants of western *Lathyrus* spp. differ in their pubescence, sometimes the variation is only local and not worthy of taxonomic recognition. For example, two specimens of *L. sulphureus*, one glabrous and one pubescent, were collected from the same population (*Hanes 297* and *299*; B. Ertter pers. comm. 2001). While the validity of this taxon is still uncertain, S. Broich (pers. comm. 2001) plans to include it in the *FNA* treatment, as it may be a rare stabilized taxon. Until a more detailed study of this group is conducted, CNPS and CNDDB recommend retaining *L. sulphureus* var. *argillaceus* at Rank 3 in the CNPS Inventory.

***Leptodactylon californicum* ssp. *tomentosum* – Rank 4.2** (Element Code: PDPLM08021) **Kept as CRPR 4.2**
Leptodactylon californicum ssp. *tomentosum* was not recognized in *The Jepson Manual* (*TJM* 1993); in *The Jepson Manual, Second Edition* (*TJM 2*), the group was moved to the genus *Linanthus*, but the subspecies were still not recognized. The *Flora of North America* (*FNA*) treatment for Polemoniaceae is not yet available, but it will include *Linanthus californicus* ssp. *tomentosus* (J.M. Porter pers. comm. 2012; Porter and

Patterson In Draft). In the past, five different subspecies within *Leptodactylon californicum* have been recognized, including sspp. *brevitrichomum, californicum, glandulosum, leptotrichomum,* and *tomentosum* (Gordon-Reedy 1990, Schultz and Soltis 2001). The species as a whole is endemic to southwestern California, but exhibits considerable morphological variation throughout its limited range (*TJM 2*, Schultz and Soltis 2001). Delineation of species and especially infraspecific taxa within the genus has historically been very challenging, so Schultz (1992) studied the morphological variation within *L. californicum*, while Schultz and Soltis (2001) studied its genetic variation (both ribosomal DNA and allozymes) in order to resolve its infraspecific variation. These studies showed no variation in rDNA restriction sites, but the variation in allozymes, morphology, and habitat supported the recognition of three infraspecific taxa: sspp. *californicum, leptotrichomum*, and *tomentosum* (note: ssp. *leptotrichomum* will be replaced with ssp. *glandulosum* by Porter and Patterson In Draft, as the latter name supersedes the former). While the loss of sspp. *brevitrichomum* and *leptotrichomum* altered the circumscriptions of sspp. *californicum* and *glandulosum*, the taxonomic revision did not change the circumscription of ssp. *tomentosum* (Schultz and Soltis 2001). Treatment author J.M. Porter (pers. comm. 2012) noted that the exclusion of the subspecies of *Linanthus californicus* from *TJM 2* was an oversight, and that the subspecies will be treated in an upcoming publication, after formal publication of the new subspecific combinations (Porter and Patterson In Draft).

Porter and Johnson (2000) performed a phylogenetic classification of the entire Polemoniaceae family. They concluded that both morphological and molecular data supported, “without question”, the inclusion of the former genus *Leptodactylon* within the genus *Linanthus*. However, this taxonomy was not adopted by Schultz and Soltis (2001), and the combination *Linanthus californicus* ssp. *tomentosus* has never been validly published. Therefore, CNPS and CNDDB must continue to recognize the name *Leptodactylon californicum* ssp. *tomentosum* for the time being. When Porter and Patterson (In Draft) publish their manuscript, CNPS and CNDDB will evaluate this taxon for a name change. Based on the distinctiveness of *Leptodactylon californicum* ssp. *tomentosum* in terms of morphology, habitat, and molecular data, CNPS and CNDDB recommend retaining it at Rank 4.2.

***Myosurus minimus* ssp. *apus* - Rank 3.1** (Element Code: PDRAN0H031) **Kept as CRPR 3.1**

This plant is apparently impossible to differentiate from *M. minimus* x *sessilis*, which occurs in hybrid swarms where the two parent species grow together in parts of the Central Valley. However, *Myosurus minimus* ssp. *apus*, which differs from typical *M. minimus* in having shorter scapes, occurs at a few sites in southern California, northern Baja California, and immediately west of Riley, Oregon. All of these locations are outside the current range of *M. sessilis* (*FNA*). It is unknown whether the plants from these locations occur in populations mixed with typical *M. minimus* plants or not (A. Whittemore pers. comm. 2012). No genetic work has been done on this group, and there are very few morphological features that can be used to differentiate these plants. Based on the available information, CNPS and CNDDB recommend retaining *Myosurus minimus* at Rank 3.1 in the CNPS Inventory.

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***Penstemon cinereus* - Rank 4.3** (Element Code: PDSCR1L7F0) **Kept as CRPR 4.3**
This plant was treated as a synonym of *P. humilis* var. *humilis* in both editions of *The Jepson Manual*. According to the Jepson Interchange, it was treated as an unresolved variant of *Penstemon humilis* var. *humilis* that fully intergrades with *P. humilis*, and its taxonomic recognition or lack thereof requires further study, and therefore remains unresolved; "if the two taxa intergrade fully, only one taxon is represented, according to usual biological principles". However, N. Holmgren (pers. comm. 2012) intends to recognize this taxon under a new name, *Penstemon humilis* var. *cinereus*, in the *Flora of Oregon*, which will be pursued by the Editorial Board for inclusion in the Jepson eFlora (B. Baldwin pers. comm. 2013). For the time being, CNPS and CNDDB will continue to recognize *P. cinereus* as a Rank 4.3 taxon; when the new combination is published, it will be evaluated and potentially adopted in the CNPS Inventory.

***Phacelia ciliata* var. *opaca* – Rank 1B.2** (Element Code: PDHYD0C0S2) **Changed from CRPR 1B.2 to 3.2**
The varieties of *Phacelia ciliata* (vars. *opaca* and *ciliata*; var. *thermalis* has been treated as *P. thermalis* and var. *mexicana* occurs in Mexico) were not recognized in *TJM* (1993) and *TJM 2*; the *FNA* treatment for Boraginaceae is not yet available. *Phacelia ciliata* var. *opaca* only differs from the typical variety in calyx morphology (lanceolate, opaque calyx lobes in var. *opaca* vs. ovate and translucent in var. *ciliata*) and substrate (clay soils in var. *opaca* vs. clay to gravel in var. *ciliata*) (*TJM 2*). The limited herbarium collections (23 specimens in the Consortium of California Herbaria, CCH, 2012), many of which are historical (all seven CNDDB occurrences are historical), and the occurrence of many populations on private land make the study of this variety especially difficult (G. Walden pers. comm. 2011). Other characters could potentially be used to differentiate the varieties, but determining them is a difficult task (G. Walden pers. comm. 2011). Walden (pers. comm. 2011) is currently researching the variation within *Phacelia ciliata* to determine if vars. *opaca* and *mexicana* merit taxonomic recognition; publication is expected within a few years. CNPS and CNDDB propose to continue recognizing *P. ciliata* var. *opaca*, but as a CRPR 3.2 instead of Rank 1B.2 taxon since its taxonomic recognition or lack thereof is currently unresolved. If more information on its taxonomic status becomes available, CNPS and CNDDB will re-evaluate its status at that time.

***Ribes amarum* var. *hoffmannii* - Rank 3** (Element Code: PDGRO02012) **Kept as CRPR 3**
This plant was treated as a synonym of *R. amarum* in both editions of *The Jepson Manual*. *Ribes amarum* ssp. *hoffmannii* is expected to only occurs in the Santa Ynez Mountains of Santa Barbara County and is distinguished from the typical variety only by its hairy fruits; however, judging from many specimens at the Santa Barbara Botanic Garden, the form with densely bristly fruits (var. *hoffmannii*) occurs in the Santa Ynez Range (including at least one record from Ventura County), and was also collected throughout the San Rafael Range as well (D. Wilken pers. comm. 2013). No recent taxonomic or field work has been done on this variety, although future work could show

it to be a valid taxon (M. Mesler pers. comm. 2012), and Based on the available information, CNPS and CNDDB recommend retaining *R. amarum* ssp. *hoffmannii* at Rank 3 in the CNPS Inventory.

***Rubus glaucifolius* var. *ganderi* - Rank 1B.1** (Element Code: PDROS1K2N1) **Changed from CRPR 1B.1 to 3.1**
This plant is restricted to North and Middle Peaks in the Cuyamaca Mountains in San Diego County. It is distinguished form the typical variety in that it is wholly prostrate, roots at the nodes, has more acute leaves, is completely winter-deciduous, and is barely glandular only on the sepals (J. Hirshberg pers. comm. 2004, Munz and Keck 1959). The population on Middle Peak was burned in the Cedar Fire of 2003 and was not found in 2004, so it may be extirpated. Some plants on North Peak may have been able to persist in areas not affected by the fire, and it is probably still extant at the Bailey Resort (J. Hirshberg pers. comm. 2004). More recent surveys should be conducted to confirm that some plants are still alive. No recent taxonomic work has been done on this variety (L. Alice pers. comm. 2012).

The decision to omit *R. glaucifolius* var. *ganderi* from *TJM 2* was based largely on the conservative approach to the genus adopted by treatment author L. Alice (pers. comm. 2012). The conservative approach is warranted, given that the genus *Rubus* is especially challenging taxonomically. For example, treatments of the genus in North America have recognized anywhere from 240 to 12 species (Alice and Campbell 1999). Frequent hybridization, morphological variability, and the extreme difficulty of acquiring good herbarium specimens confound attempts at species circumscription (Alice and Campbell 1999, L. Alice pers. comm. 2012). *Rubus glaucifolius* var. *ganderi* differs from the typical variety in that it is more prostrate, the leaves are more acute, and the pedicels do not have glands (Munz and Keck 1959). Hirshberg (pers. comm. 1998) observed var. *ganderi* in the field, and considered it distinct based on its prostrate habit and the fact that it roots at the nodes. Variety *glaucifolius*, on the other hand, is not known to root at the nodes (*TJM 2*). Alice (pers. comm. 2012) suggests that a thorough investigation into the whole species would be needed to determine if var. *ganderi* is a good taxon, especially since glandularity and leaf shape may not be taxonomically informative. Based on the available information, CNPS and CNDDB recommend retaining *R. glaucifolius* var. *ganderi* on Rank 1B.1 of the CNPS Inventory. If more taxonomic work is done on the group, or if surveys show that all known populations are extirpated, its status will be re-evaluated at that time.

***Scutellaria holmgreniorum* - Rank 4.3** (Element Code: PDLAM1U1C0) **Changed from CRPR 4.3 to 3.3**
Scutellaria holmgreniorum was first described by Cronquist (1981) and was shortly thereafter treated as a synonym of *S. nana* by Olmstead (1990a), as well as in *TJM* (1993) and *TJM 2*. In the original description, Cronquist (1981) distinguished *S. holmgreniorum* from *S. nana* in that it has spreading to upcurved stem hairs, vs. the downcurved to appressed stem hairs of *S. nana*. *Scutellaria holmgreniorum* was also described as having longer stems (1-2 dm) that are prostrate, compared to the shorter- and more erect-stemmed (0.5-1 dm tall) *S. nana*. Cronquist (1981) also noted that *S.*

holmgreniorum has gland-tipped hairs, with no mention of whether or not *S. nana* has gland-tipped hairs.

As part of the research for his review of the *Scutellaria angustifolia* complex (see Olmstead 1989, 1990a, 1990b), R. Olmstead examined the relationship of *S. holmgreniorum* and *S. nana* more closely (results referenced only as pers. comms. have not been published). Common garden experiments, in which *S. nana* was subjected to abundant water in a greenhouse setting, led those plants to grow longer stems and develop a prostrate habit, as seen in *S. holmgreniorum* (R. Olmstead pers. comm. 2012). The character of gland-tipped hairs was shown to not be reliable, as plants collected only a few meters apart varied in this character. In fact, seven of the nine species in the *S. angustifolia* complex have gland-tipped hairs only sometimes; the other two species never have gland-tipped hairs (R. Olmstead pers. comm. 2012, Olmstead 1990a). Isozyme studies, which included *S. nana* and plants from the type locality of *S. holmgreniorum*, showed very little differentiation between populations (R. Olmstead pers. comm. 2012). Finally, plants with gland-tipped hairs (as seen in *S. holmgreniorum*) were found to have short, downcurved hairs (as seen in *S. nana*) in addition to the spreading hairs (Olmstead 1990a).

In contrast to the findings of Olmstead (1990a), several experienced field botanists (G. Clifton, J. Jokerst) feel/felt that *S. holmgreniorum* merits taxonomic recognition. Despite the results of the common garden experiments, G. Clifton (pers. comm. 2012) observed *S. nana* growing in moister sites than sites with *S. holmgreniorum*. Field botanists from Biosystems Analysis, Inc. (1994) noticed that the larger *S. holmgreniorum* plants sometimes had gland-tipped hairs, but the smaller *S. nana* plants never had gland-tipped hairs. These field botanists did not comment on the orientation of the stem hairs as a distinguishing character, however, M. Dolan (pers. comm. 2012) has observed upcurved stem hairs for *S. holmgreniorum* and feels that it is a good character. These observations suggest that *S. holmgreniorum* and *S. nana* could be distinct taxa, but further study would likely be needed to confirm this. If formally recognized, it is also suggested that *S. holmgreniorum* is apparently rarer than previously thought and that a CRPR of 1B instead of 4.3 might be warranted (J. Andre pers. comm. 2012). The Nevada Natural Heritage Program (NNHP 2010) also recognizes *S. holmgreniorum* as a watch list species, although NNHP botanist J. Morefield (pers. comm. 2012) is not familiar with *S. holmgreniorum* in the field. According to B. Baldwin (pers. comm. 2013), given the extensive systematic work on these plants by Olmstead, a decision to include *S. holmgreniorum* in the Inventory would be difficult to defend at any rank other than CRPR 3 at this time. Based on the available information, CNPS and CNDDB propose to ~~retain~~ change *S. holmgreniorum* ~~on~~ from Rank 4.3 to 3.3 in the CNPS Inventory. If more information on these taxa becomes available in the future, CNPS and CNDDB will re-evaluate the status of *S. holmgreniorum* at that time.

***Sedum pinetorum* - Rank 3** (Element Code: PDCRA0A0Z0) **Kept as CRPR 3**
This plant is only known from the very fragmentary type collection near Mammoth Mountain, California. Many questions surround this taxon, as its description is very similar to that of *S. niveum*, a Mojave Desert species. This plant has never been

relocated in the eastern Sierra, despite its inclusion in the CNPS Inventory since 1974 (First Edition). Also, pieces of a plant in the genus *Clethra*, from Mexico, were found on the herbarium sheet with the type specimen, suggesting that the locality for *S. pinetorum* may have been in error (R. Bittman pers. comm.1995, S. Boyd pers. comm. 2012); however, there is also evidence to suggest the contrary (D. Taylor pers. comm. 2013), and by the early 1990s, Reid Moran may have changed his mind about the geographic origin of the specimen discussed in Leaflets of Western Botany (D. Wilken pers. comm. 2013). According to A. Howald (pers. comm. 2012), most of the plants collected by Katherine Brandegee in the vicinity of Old Mammoth in 1913 are still present, even though the area has been heavily developed for recreation in the last 40 years. A number of botanists have looked for *S. pinetorum* since the 1970s, but have been unable to find it despite potential available habitat (A. Howald, J. Nelson, pers. comms. 2012). CNPS and CNDDB recommend retaining *S. pinetorum* on Rank 3 of the CNPS Inventory, as it reflects our current uncertain knowledge of this taxon.

***Vaccinium coccineum* – Rank 3.3** (Element Code: PDERI181N0) **Kept as CRPR 3.3**
Vaccinium coccineum was treated as a synonym of *Vaccinium membranaceum* in *TJM* (1993), *TJM 2*, and *FNA*. *Vaccinium coccineum* is differentiated from *V. membranaceum* on the basis of having lighter colored (bright red) berries, fewer seeds per fruit, and reduced seedling vigor (Gehrung 2001). Vander Kloet (pers. comm. 1990) hypothesized that *V. coccineum* was merely a hybrid of *V. membranaceum* and *V. deliciosum*, which could explain the reduced seed set and seedling vigor.

Gehrung (2001) attempted to resolve the taxonomic issues surrounding *V. coccineum* through field study of morphology and genetic lab studies; the study focused on *V. coccineum* and several of its possible hybrid parents, including *V. membranaceum, V. deliciosum, V. caespitosum,* and *V. parvifolium*. Difficulties in performing the genetic work only allowed for the inclusion of *V. coccineum* and *V. membranaceum* in the genetic study. *Vaccinium coccineum* plants were observed and collected in both the northern Sierra Nevada and the Klamath Ranges. Field investigations showed that berry color was the only phenotypic character that could be used to separate *V. coccineum* and *V. membranaceum*; some plants from the Sierra Nevada were even shown to produce different-colored berries in different years (Gehrung 2001). The two taxa were too closely-related genetically, refuting the hybrid origin hypothesis (Gehrung 2001). Plants from the Klamath Ranges that consistently produced red berries showed a possible genetic difference from *V. coccineum*, but the difference was not very strong, and a larger sample size would be required to determine if it is statistically significant (Gehrung 2001). *Vaccinium coccineum* was first described from the Klamath Ranges in southern Oregon (Piper 1918)~~, so the name could be applied to the plants from the Klamath Ranges and not the Sierra Nevada~~.

Gehrung (2001, pers. comm. 2012) recommended that *V. coccineum* be removed from Rank 3 of the CNPS Inventory, based on taxonomic uncertainty and the difficulty of using berry color as a distinguishing morphological feature (Vader Kloet pers. comm. 1990). However, the available information suggests that *V. coccineum* could prove to be a valid taxon if it is studied in more detail in the future, and further study of this taxon

is also recommended in the *TJM 2* treatment of *V. membranaceum* (B. Baldwin pers. comm. 2013). The biggest threat to all *Vaccinium* in the Tahoe NF seems to be lack of fire (K. VanZuuk pers. comm. 2012). Based on the available information, CNPS and CNDDB recommend retaining *V. coccineum* at Rank 3 in the CNPS Inventory~~, but only recognizing plants from the Klamath Ranges~~. If more information becomes available, CNPS and CNDDB will re-evaluate its status at that time.

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