



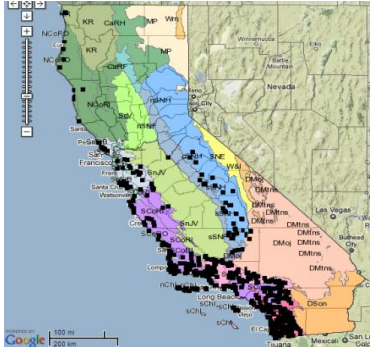


SPECIES	<i>Corethrogyne filaginifolia</i> (Hook. & Arn.) Nutt.	
NRCS CODE: COFI2  <p>A. Montalvo 2010, July C. f. var. c., Monterey Co. coast</p>	Family: Asteraceae Order: Asterales Subclass: Asteridae Class: Magnoliopsida  <p>Riverside Co., C. f. var. f.</p> <p>achene</p>	 <p>A. Montalvo 2009, Sept.</p>  <p>bolting shoots, early Aug.</p>
Subspecific taxa 1. COFIF 2. COFIC	1. <i>C. f. var. filaginifolia</i> 2. <i>C. f. (Hook. & Arn.) var. californica</i> (DC.) J.P. Saroyan	
Synonyms (taxa numbered as above)	The main synonyms are within <i>Lessingia filaginifolia</i> (Hook. & Arn.) M. A. Lane and <i>Corethrogyne</i> . 1. <i>Lessingia filaginifolia</i> (Hook. & Arn.) M.A. var. <i>filaginifolia</i> , <i>Corethrogyne f.</i> (Hook. & Arn) Nutt. var. <i>bernardina</i> (Abrams) Hall; and <i>C. f. var. virgata</i> (Benth.) A. Gray 2. <i>Lessingia filaginifolia</i> (Hook. & Arn.) M.A. Lane var. <i>californica</i> (DC.) M.A. Lane <i>C. leucophylla</i> and <i>Aster filaginifolius</i> Hook. & Arn. (basionym) (GRIN) are among the many other synonyms that have been listed (see Munz 1974, FNA 2010, CalFlora).	
Common name	1. common sand aster 2. California aster (Calflora), California-aster (Hickman 1993)	
Taxonomic issues	This plant has been moved among genera, split into multiple species, multiple varieties, or treated as a single, highly variable species of <i>Corethrogyne</i> (Munz 1974, Lane 1992, Saroyan et al. 2000). The 2nd edition of the Jepson Manual recognizes a single taxon of <i>Corethrogyne</i> , <i>C. filaginifolia</i> with no subspecific taxa (JepsonOnline 2nd Ed. 2010), but eliminating subspecific taxa may ignore some strong differences among plants from different habitats. Eleven varieties were included for southern CA in Munz (1974), who, along with the Flora of North America project (FNA 2010), and USDA PLANTS (2010) recognize this plant as a species of <i>Corethrogyne</i> (rather than as a <i>Lessingia</i>) based on its perennial, often subshrub, life form. The many varieties in Munz have since been rearranged into two highly polymorphic varieties within <i>Corethrogyne filaginifolia</i> by Saroyan et al. (2000) and within <i>Lessingia filaginifolia</i> by Lane (1992). Hickman (1993) recognized <i>L. f.</i> (Hook. & Arn.) M.A. Lane var. <i>californica</i> (DC.) M.A. Lane and <i>L. f. var. filaginifolia</i> ; Roberts et al. (2004) recognized <i>Corethrogyne f.</i> (Hook. & Arn) Nutt. var. <i>bernardina</i> (Abrams) Hall and <i>C. f. var. virgata</i> (Benth.) A. Gray for Riverside Co. These appear to intergrade within sites in Riverside and San Bernardino Counties (Montalvo pers. obs.). USDA PLANTS recognizes <i>C. f.</i> (Hook. & Arn.) var. <i>californica</i> (DC.) J.P. Saroyan and <i>C. f. var. f.</i> (Hook. & Arn.) Nutt., and lists six and 24 synonyms for these two taxa, respectively. The varieties are reported to intergrade (Hickman 1993), including in southern California.	
Taxonomic relationships	<i>C. filaginifolia</i> is currently recognized as the only species within <i>Corethrogyne</i> , plants are related to the annual <i>Lessingia</i> species.	
Related taxa in region	<i>Lessingia glandulifera</i> A. Gray is a tiny annual species with yellow flowers of sandy habitats such as dunes and stream benches (Roberts et al. 2004, Clarke et al. 2007); <i>L. lemmonii</i> var <i>piersonii</i> occurs in chaparral of n. Los Angeles Co. (Munz 1974).	
Other	Two formerly recognized varieties of <i>C. filaginifolia</i> are currently on CNPS list 1B.1 (seriously endangered, CNPS 2009): the San Diego sand aster (<i>Corethrogyne f. var. incana</i>) and the Del Mar Mesa sand aster (<i>C. f. var. linifolia</i>). These southern CA varieties from the immediate coast were recognized in Munz (1974) as distinct, the former of sandy areas and having long-stalked glands and larger heads with a 0.8-1 cm tall and nearly round involucre; the later of open bluffs and shrubby areas and having a long, soft hairy involucre. These coastal variants harbor distinct genetic variation and may need further study. Canby (1927) provides detailed descriptions and mentions that var. <i>incana</i> intergrades with other forms. The lumping of varieties was based on morphological studies reported in Saroyan et al. (2000) and was adopted by Lane (1992) and Hickman (1993).	

GENERAL	
Map	Data provided by the participants of the Consortium of California Herbaria represent 739 records with coordinate data out of 1814 records retrieved for <i>C. filaginifolia</i> in the broad sense; data are not available for varieties; accessed 9/23/10; Berkeley Mapper: http://ucjeps.berkeley.edu/consortium 
Geographic range	<i>C. f.</i> var. <i>c.</i> : widespread in CA sw OR (Hickman 1993) <i>C. f.</i> var. <i>f.</i> : CA, n Baja CA
Distribution in California; Ecological section and subsection	<i>C. f.</i> var. <i>c.</i> : North coast, Klamath Ranges, Outer North Coast Ranges, Central Western CA. Ecological Sections/Subsections: 263A, M261A, B, C, 261A. <i>C. f.</i> var. <i>f.</i> : s Sierra Nevada, San Joaquin Valley, Central Western CA, SW CA (Hickman 1993). Ecological Sections/Subsections: M261E, 262A, 261Ba-j, M262Ba-p.
Life history, life form	Suffrutescent perennial to subshrub. Fast growing from seed to maturity, generally reaching maturity after first year. Most active vegetative growth from late winter through fall and flowering mostly in summer and fall.
Distinguishing traits	Plants are low, suffrutescent subshrubs or perennials, 0.2 to 0.8 m tall (occasionally to 1 m) with silvery, soft-hairy, simple, linear to obovate leaves on several to many slender erect to decumbent stems. Each slender stem produces numerous short inflorescences with one to several heads toward their tips in late summer to fall. Heads are about 1 cm across with an outer ring of many lavender (sometimes whitish) ray flowers and a central cluster of yellow disk flowers. Involucres have several series of bracts, often with reflexed tips that are sometimes glandular. Plants send up new silvery, soft-hairy leaves on short stems in the spring. The first leaves of the season have petioles, but leaves that grow on the stems that elongate in the summer are sessile and increasingly small and linear toward the upper branches. The stems are generally whitish with appressed hairs and die back in winter. In dry sites, leaves become dormant by late summer after the flowers are produced. Fruits are produced late summer into the fall. The body of the purplish-tan achene is elongate with longitudinal ribs and short appressed hairs. Each achene supports a plume of long, often reddish-brown, pappus bristles. <i>C. f.</i> var. <i>filaginifolia</i> stems are generally erect to ascending and wand like with short branches producing short inflorescence with several heads (sometimes many); <i>C. f.</i> var. <i>californica</i> is generally decumbent with inflorescence branches ending in a single to few heads.
Root system, rhizomes, stolons, etc.	Taproot (Clarke et al. 2007).
Rooting depth	Shallow root system, with most roots less than 1 m and maximum depth expected <2m (A. Montalvo pers. obs.).
HABITAT	
Plant association groups	Coastal sage scrub, chaparral, grasslands, and oak woodlands (both varieties); Coniferous forests, serpentine (<i>C. f.</i> var. <i>californica</i>) (FNA, JepsonOnline). May occur as co-dominant with <i>Eriogonum wrightii</i> , <i>Lotus scoparius</i> , or <i>Deinandra fasciculata</i> (Sawyer et al. 2009).
Habitat affinity and breadth of habitat	Plants occupy a wide range of open, well drained sites. Kirpatrick & Hutchinson (1980) found that plants occurred most often between 1000 to 2000 ft, on north rather than south facing aspects, and on slopes between 6 and 15 degrees.
Elevation range	1. <i>C. f.</i> var. <i>f.</i> below 2600 m; 2. <i>C. f.</i> var. <i>c.</i> below 1000 m (Hickman 1993).
Soil: texture, chemicals, depth	Plants were partial to granitic soil in one study in coast sage scrub vegetation (Kirpatrick & Hutchinson 1980). <i>C. f.</i> var. <i>filaginifolia</i> grows in a variety of dry soils with low organic matter content, including decomposed granite, sandy, and clay loam (Wazowski & Wazowski 1995). Plants occur on a variety of sandy and fine-sandy loam soils in Riverside Co., including those derived from granite and gabbro (A. Montalvo pers. obs.). <i>C. f.</i> var. <i>californica</i> [as <i>C. californica</i> in Munz & Keck (1968)], often occurs in serpentine soil in scattered colonies in northern CA. A horticultural selection from the Monterey coast tolerates a range of soils from sandy to heavy clay (Santa Barbara Botanic Garden http://www.sbbg.org/_ccLib/image/plants/PDF-21.pdf).

Drought tolerance	Plants from inland locations are very drought tolerant, but they can also withstand dry season moisture (Newton & Claassen 2003).
Precipitation	Plants occur in Mediterranean climate regions of California that are typically dry in summer, wet in the cool winter, becoming dry mid to late spring, depending on location. Total annual precipitation ranges from about 10 in at dry, interior sites to 25 in at coastal sites. Some north coastal forms of variety <i>californica</i> (such as the prostrate forms on coastal bluffs) may receive higher annual precipitation.
Flooding or high water tolerance	Generally an upland plant of dry habitats, but variety <i>filaginifolia</i> also occurs on alluvial fans and terraces in alluvial scrub vegetation where flooding is infrequent (Montalvo, pers. obs.).
Wetland indicator status for California	not available
Shade tolerance	Plants do best in full sun but can withstand partial shade, especially at inland locations. Keator (1990) and Wasowski and Wasowski (1995) recommend full sun for selections from the north and central coast.
GROWTH AND REPRODUCTION	
Seedling emergence relevant to general ecology	Seedlings emerge in the cool wet season. Seedlings likely emerge primarily in the first rainy season after seed dispersal. No data were found on the actual timing of seedling emergence, but seedlings have been detected in spring surveys (Keeley et al. 2006).
Growth pattern (phenology)	Most new shoots develop in the spring. Flowers can be found year round (FNA 2010) in some locations such as along the humid coast, but most flowering occurs late summer to early fall in southern CA, with seed dispersal concentrated in late August to October (A. Montalvo, pers. obs.). Old flowering stems senesce in late fall to winter.
Vegetative propagation	Can be started from rooted sections (Keator 1990). The native cultivar is propagated from cuttings.
Regeneration after fire or other disturbance	The wind-dispersed seeds do not appear to survive fire, but they readily colonize open, disturbed sites. In an extensive study of 90 post-fire shrubland sites in southern CA, Keeley et al. (2006) found <i>C. filaginifolia</i> to be a facultative seeder that sometimes resprouts after fire. Resprouted plants flower in the first year and disperse seeds in the fall. The seeds colonize the site and germinate in the second year. Seedlings were found at 14 sites (4 chaparral and 10 coastal sage scrub), starting in the second spring after the fall 1993 fires; 41% of seedlings were found in year two followed by 18%, 12% and 29% in years three to five, respectively. In a post-fire study in chaparral, J. Beyers (pers. obs.), found that plants seemed to survive at edges of fires, where severity was lower, but otherwise were not typical right after fire. Plants occurred on 13 of 320 sample lines two years after fire at North Mountain. Fire response may depend on severity and plant community.
Pollination	Insects. Many of the pollen and nectar foraging visitors are likely pollinators. Flowers are visited frequently by butterflies (especially lycaenids), bee-flies, and syrphids (A. Montalvo pers obs.). The genus <i>Lessingia</i> is reported to be visited primarily by butterflies, bombyliid flies, and a guild of diverse species of bees that utilize flowers in the Asteraceae, with lesser visits by halictid bees and syrphid flies (Moldenke 1976). Pollen is dispersed by a variety of insects, most of which are weak fliers and generalist pollinators.
Seed dispersal	The plumose achenes are wind dispersed. Anderson (1993) found that the plumes on the achenes play an important role in decreasing the speed at which achenes settle to the ground. Secondary seed dispersal may be achieved by kangaroo rats during seed caching.
Breeding system, mating system	Saroyan et al. (2000) found flowers to be self-incompatible for all 20 populations examined. Fifty-nine of sixty annual <i>Lessingia</i> reported to be self-compatible (Spence 1963).
Hybridization potential	Crosses among individuals from different populations originating from Monterey, Marin, and San Mateo Counties each produced hybrid progeny in the greenhouse with no obvious signs of infertility (Saroyan et al. 2000). No studies were found for crossing success among populations from widely divergent habitats such as coastal prostrate populations with inland populations. Given the long flowering season, it is likely that plants from very different populations would have the opportunity to hybridize if planted in the same location.
Inbreeding and outbreeding effects	No data found.
BIOLOGICAL INTERACTIONS	
Competitiveness	
Herbivory, seed predation, disease	Roots parasitized by coastal plant, <i>Pholisma depressum</i> (Kuijt 1966). Larvae of <i>Chlosyne gabbi</i> (Baer), a Nymphalidae butterfly, feed on plants (Howe 1975). Insect galls are common on flowers (A. Montalvo, pers. obs.). Seeds eaten by Kangaroo rats near Morro Bay (Stewart and Roest 1960).

Palatability, attractiveness to animals; response to grazing	Flowers in CA are commonly eaten by rodents (Meserve 1976). Plants resprout after mowing or clipping and are likely to do so after being grazed (Montalvo, pers. obs.).
Mycorrhizal?	The annual <i>Lessingia ramulosa</i> reported as mycorrhizal at Jasper Ridge (Hopkins 1987).
ECOLOGICAL GENETICS	
Ploidy	2n=10 (DeJong & Montgomery 1963 in Munz and Keck 1969); n=5 for four varieties examined (Raven et al. 1960); 2n=10 for multiple populations of the two current varieties and interpopulation hybrids (Saroyan et al. 2000). Raven et al. (1960) list: <i>C. californica</i> var. <i>obovata</i> (Benth) Ktze. n=5 (Humboldt Co.) <i>C. f.</i> var. <i>bernardina</i> n=5 (San Bernardino Co.) <i>C. f.</i> var. <i>brevicula</i> n=5 (San Bernardino Co.) <i>C. f.</i> var. <i>pinetorum</i> n=5 (LA Co.) <i>C. f.</i> var. <i>virgata</i> n=5 (Riverside Co.)
Plasticity	The plants grown from seeds in the greenhouse were similar to those observed in the source populations for all flower, seed and vegetative traits measured suggesting important variation is under genetic control rather than being plastic (Saroyan et al. 2000).
Geographic variation (morphological and physiological traits)	Saroyan et al. (2000) collected seeds from 20 source populations ranging from northern to southern CA and from a variety of habitats and grew them together in a greenhouse. Many flower, seed, and vegetative traits were measured. Distinct differences were found between the five northern populations and the southern populations, primarily in number of heads and head size. These differences were used to delineate the two currently-recognized varieties. There are populations along the coastal bluffs of central and northern California that have a distinct prostrate growth form. Cultivar selections have been made from such coastal plants. Other selections have been made from coastal plants with a mounding form and larger heads. The fact that such traits are retained under cultivation away from the coast shows that there is genetic variation in plant stature and flower size associated with habitat.
Genetic variation and population structure	No data found.
Phenotypic or genotypic variation in interactions with other organisms	No data found.
Local adaptation	The prostrate growth form that occurs along the coastal bluffs of California is likely an adaptive trait. Many other plant species have genetic variation in stature and have prostrate growth forms more prevalent in wind-swept coastal areas or mountain ridges.
Translocation risks	Studies about the effects of hybridization between cultivars such as 'Silver Carpet' and native populations have not been published. It is likely that the genes that control short stature and successful growth in cool, moist, wind-swept conditions would be maladaptive in native populations of drier, inland environments.
SEEDS	
	Seed image (pappus removed): http://hazmac.biz/071001/071001LessingiaFilaginifolia.html
General	Achenes are small, light, and plumose. Wildland collected seeds are sold by native seed companies (NSN 2010).
Seed longevity	
Seed dormancy	For <i>C. f.</i> var. <i>robusta</i> , no treatment necessary for germination (Emery 1988).
Seed maturation	Seeds ripen in late summer to early fall over a long season.
Seed collecting	Shake ends of the wand-like branches with mature fruits into open container (A. Montalvo, pers. obs.).
Seed processing	Process as for other Asteraceae with plumose achenes.
Seed storage	Cool dry storage, especially refrigeration, is expected to increase storage life.
Seed germination	No treatment required (Emery 1988).
Seeds/lb	860,000 seeds/lb (S&S Seeds 2010) 940,000 seeds/lb (Stover Seed Company 2010)
Planting	Seeds can be sown with shallow dry broadcasting (e.g., seed imprinting) or wet broadcasting (e.g., hydroseeding) methods.

Seed increase activities or potential	Plants are very drought tolerant and are candidates for dry-land farming or farming with minimal supplemental water. Plants tolerate summer water and could be irrigated occasionally to ensure good seed set.
USES	
Revegetation and erosion control	A fast growing plant that provides quick cover.
Habitat restoration	Seeds are used in restoration and erosion control within a variety of lowland, shrubland habitats, including coastal sage scrub, alluvial scrub, and the edges of water quality basins and ephemeral stream channels (Newton & Claassen 2003, A. Montalvo, pers. obs.). The plants will grow on steep slopes and can withstand some summer water if irrigation is necessary.
Horticulture or agriculture	Wasowski and Wasowski (1995) recommend <i>L. f.</i> var. <i>f.</i> The native cultivar, <i>Lessingia filaginifolia</i> 'Silver Capet' was developed for gardens from plants with a prostrate growth from the coastal bluffs of Monterey County, CA (Santa Barbara Botanic Garden: http://www.sbbg.org/_ccLib/image/plants/PDF-21.pdf). The plants are low growing, mounding, and used for ground cover. Another recent selection by the Santa Ana Botanic Garden is <i>L. f.</i> 'Smart Aster', a two to four ft. high mounding plant with silvery leaves and one-inch wide heads. Both selections are drought tolerant in coastal locations but require added water in inland locations, especially from San Bernardino County southward. Horticultural selections can be started from seeds or cuttings (Keator 1990). These cultivars are appropriate for gardens, not habitat restoration.
Wildlife value	Butterflies, flies, and bees forage on the flowers in the late summer months and into the early fall when food resources are low.
Plant material releases by NRCS and cooperators	None.
Ethnobotanical	Leaves and stems used to treat colds (http://herb.umd.umich.edu/herb/search.pl).
ACKNOWLEDGMENTS	Partial funding for production of this plant profile was provided by the U.S. Department of Agriculture, Forest Service, Pacific Southwest Region Native Plant Materials Program.
CITATION	Montalvo, A. M., L. K. Goode, and J. L. Beyers. 2010. Plant Profile for <i>Corethrogyne filaginifolia</i> . Native Plant Recommendations for Southern California Ecoregions. Riverside-Corona Resource Conservation District and U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Riverside, CA. Online: http://www.rrcrd.com/index.php?option=com_content&view=article&id=88&Itemid=190 .
LINKS TO REVIEWED DATABASES & PLANT PROFILES (last accessed September 2010)	
Fire Effects Information System (FEIS)	No matches: http://www.fs.fed.us/database/feis/
Jepson Flora, Herbarium (JepsonOnline)	http://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?609,1530,1532
Jepson Flora, Herbarium, 2nd Edition Review (JepsonOnline 2nd Ed.)	http://ucjeps.berkeley.edu/tjm2/review/treatments/compositae.html#2375
USDA PLANTS	http://plants.usda.gov/java/profile?symbol=COFI2
Native Plant Network Propagation Protocol Database (NPNPP)	No matches: http://nativeplants.for.uidaho.edu/network/
Native Seed Network (NSN)	http://www.nativeseednetwork.org/
GRIN (provides links to many resources)	http://www.ars-grin.gov/cgi-bin/npgs/html/tax_search.pl
Flora of North America (FNA) (online version)	http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250066436
Calflora	http://www.calflora.org/
Rancho Santa Ana Botanic Garden Seed Program, seed photos	http://www.hazmac.biz/rsabghome.html

Bibliography for *Corethrogyne filaginifolia*

- Andersen, M. C. 1993. Diaspore morphology and seed dispersal in several wind-dispersed Asteraceae. *American Journal of Botany* **80**:487-492.
- Canby, M. L. 1927. The genus *Corethrogyne* in southern California. *Bulletin of the Southern California Academy of Sciences* **26**:8-16.
- Clarke, O. F., D. Svehla, G. Ballmer, and A. Montalvo. 2007. *Flora of the Santa Ana River and Environs with References to World Botany*. Heyday Books, Berkeley, CA.
- CNPS. 2009. Inventory of Rare and Endangered Plants (online edition, v7-09a). California Native Plant Society, Sacramento, CA. <http://www.cnps.org/inventory>.
- Emery, D. E. 1988. *Seed Propagation of Native California Plants*. Santa Barbara Botanical Garden, Santa Barbara, California.
- FNA. 2010. Editorial Committee. 1993+. *Flora of North America North of Mexico*. 10+ volumes. New York and Oxford. Available online: <http://hua.huh.harvard.edu/FNA/volumes.shtml>.
- Hickman, J. C., editor. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, CA.
- Hopkins, N. A. 1987. Mycorrhizae in a California serpentine grassland community. *Canadian Journal of Botany* **65**:484-487.
- Howe, W. H. 1975. *The Butterflies of North America*. Doubleday and Company, Inc., Garden City, NY.
- JepsonOnline. 2010. The Jepson Manual Higher Plants of California; Online Version with 2nd edition notes. <http://ucjeps.berkeley.edu/jepman.html>.
- JepsonOnline 2nd Ed. 2010. S. Markos and J. L. Strother. 2011, in press. *Corethrogyne*. in B. G. Baldwin et al., editors. *The Jepson Manual: Vascular Plants of California, 2nd Edition*. University of California Press., Berkeley, CA. Online: <http://ucjeps.berkeley.edu/jepman.html>. Accessed: September 30, 2010.
- Keator, G. 1990. *Complete Garden Guide to the Native Perennials of California*. Chronicle Books, San Francisco, CA.
- Keeley, J. E., C. J. Fotheringham, and M. Baer-Keeley. 2006. Demographic patterns of postfire regeneration in Mediterranean-climate shrublands of California. *Ecological Monographs* **76**:235-255.
- Kirkpatrick, J. B., and C. F. Hutchinson. 1980. The environmental relationships of California coastal sage scrub and some of its component communities and species. *Journal of Biogeography* **7**:23-28.
- Kuijt, J. 1966. Parasitism in *Pholisma* (Lennoaceae). I. External morphology of subterranean organs. *American Journal of Botany* **53**:82-86.
- Lane, M. A. 1992. New combinations in Californian *Lessingia* (Compositae: Astereae). *Novon* **2**:213-214.
- Meserve, P. L. 1976. Habitat and resources utilization by rodents of a California coastal sage scrub community. *The Journal of Animal Ecology* **45**:647-666.
- Moldenke, A. R. 1976. California pollination ecology and vegetation types. *Phytologia* **34**:305-361.
- Munz, P. A. 1974. *A Flora of Southern California*. University of California Press, Berkeley, CA.
- Munz, P. A., and D. D. Keck. 1968. *A California Flora with Supplement*. University of California Press, Berkeley, CA.
- NSN. 2010. Native Seed Network: Home page <http://www.nativeseednetwork.org/> .
- Newton, G. A., and V. Claassen. 2003. *Rehabilitation of Disturbed Lands in California: A Manual for Decision-Making*. California Department of Conservation, California Geological Survey.

- Raven, P. H., O. T. Solbrig, D. W. Kyhos, and R. Snow. 1960. Chromosome numbers in Compositae. I. Astereae. *American Journal of Botany* **47**:124-132.
- Roberts, F. M., Jr., S. D. White, A. C. Sanders, D. E. Bramlet, and S. Boyd. 2004. *The Vascular Plants of Western Riverside County, California: An Annotated Checklist*. F. M. Roberts Publications, San Luis Rey, CA.
- S&S Seeds, Inc. 2010. S & S Seed Inc. plant database: <http://www.ssseeds.com/database/index.html>.
- Saroyan, J. P., D. R. Parnell, and J. L. Strother. 2000. Revision of *Corethrogyne* (Compositae: Astereae). *Madroño* **47**:89-96.
- Sawyer, J. O., T. Keeler-Wolf, and J. M. Evans. 2009. *A Manual of California Vegetation*, 2nd edition. California Native Plant Society Press, Sacramento, CA.
- Spence, W. L. 1963. Studies in the genus *Lessingia* (Compositae: Asteraceae). *American Journal of Botany* **50**(6) part 2:638.
- Stewart, G. R., and R. A. I. 1960. Distribution and habitats of kagaroo rats at Morro Bay. *Journal of Mammology* **41**:126-129.
- Stover Seed Company. 2010. Species List. Online database: <http://www.stoverseed.com/websearch/specieslist.cfm>.
- USDA PLANTS. 2010. The PLANTS Database (<http://plants.usda.gov>). National Data Center, Baton Rouge, LA 70874-4490 USA.
- Wasowski, S., and A. Wasowski. 1995. *Native Gardens for Dry Climates*, 1st Edition. Clarkson Potter/Publishers, New York, NY.
- Wright, R. D. 1979. Landscaping with natives in southern California. *Fremontia* **7**(2):20-24.