

**Vascular plants of**

**Thomes Creek  
Ecological Reserve**

California Department of Fish and Game

# **VASCULAR PLANTS OF THOMES CREEK ECOLOGICAL RESERVE**

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# CONTENTS

INTRODUCTION.....	1
Figure 1. Location of Thomes Creek Ecological Reserve.....	facing page 1
Table 1. Numerical analysis of the vascular flora of Thomes Creek Ecological Reserve.....	1
Table 2. Rare plants growing at Thomes Creek Ecological Reserve.....	2
PRINCIPAL REFERENCES.....	2
ACKNOWLEDGMENTS.....	2
Figure 2. Topography of Thomes Creek Ecological Reserve, with the distribution of some CNPS-listed plants.....	3
ANNOTATED PLANT LIST.....	4
Fern allies.....	4
Dicot flowering plants.....	4
Monocot flowering plants.....	12
INDEX.....	15

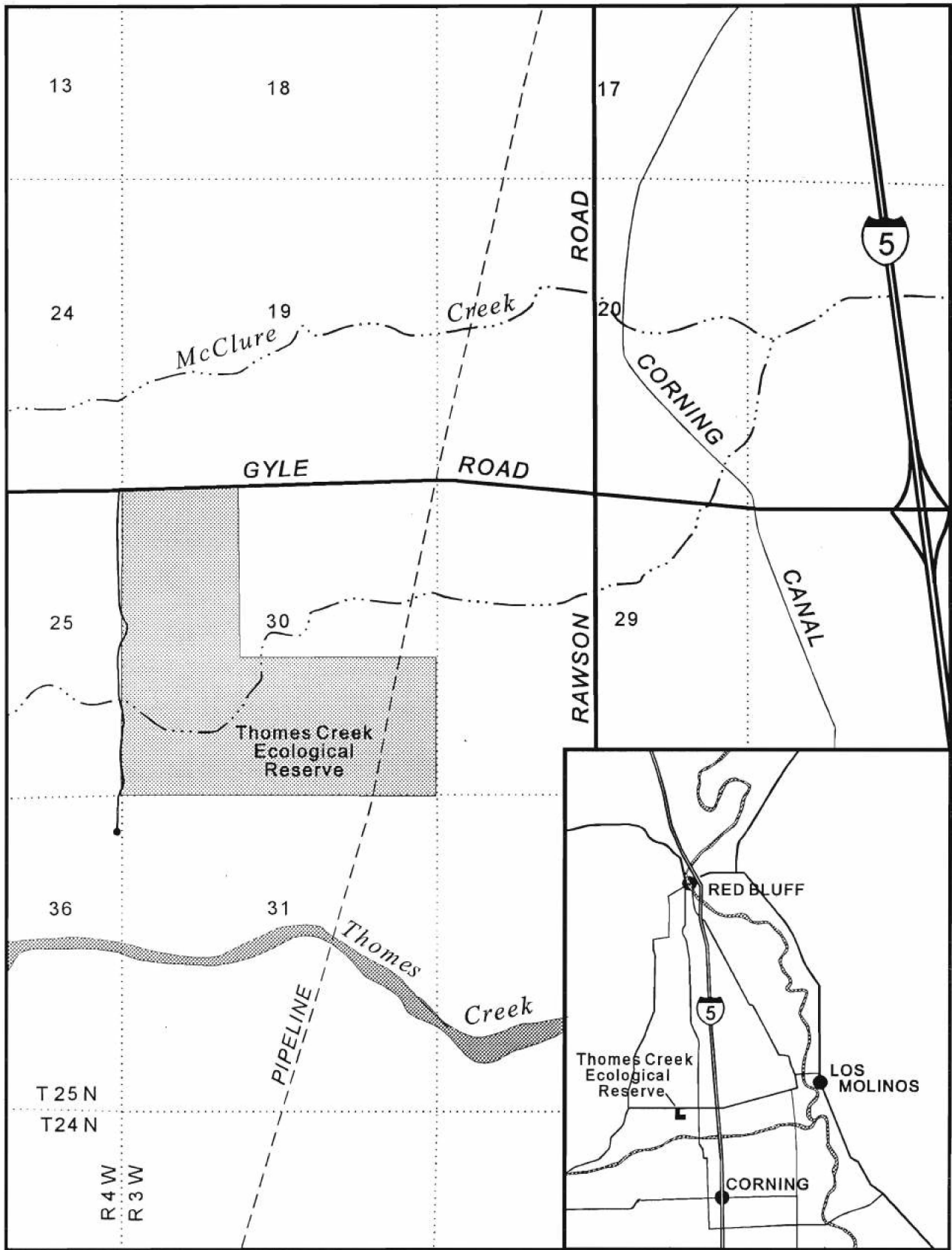


FIGURE 1. Location of Thomes Creek Ecological Reserve.

# INTRODUCTION

Thomes Creek Ecological Reserve is located on the west side of the Sacramento Valley in Tehama County seven miles northwest of Corning, California (Figure 1). The property lies on the south side of Gyle Road 2.5 miles west of Interstate 5. A private dirt lane parallels the property on the west. The 436 acre reserve consists of the south and west portions of Section 30 in T25N R3W. The Thomes Creek property was purchased by Pacific Gas Transmission–Pacific Gas and Electric Company and transferred to the California Department of Fish and Game as partial mitigation for vernal pool destruction along a gas pipeline construction right of way passing through the region. Thomes Creek Ecological Reserve is being managed by the Northern California–North Coast Regional Office of the California Department of Fish and Game in Redding.

The topography of the reserve is gently sloping land with a hummocky, or hogwallow, microrelief. Elevation ranges between 322 and 355 feet. The land consists of stratified deposits of alluvium derived from sedimentary and metamorphic rocks of the North Coast Ranges. Soils are classified as Corning-Redding gravelly loams. Because of the hummocky microrelief and a clay subsoil, water accumulates in depressions during the rainy season, forming a series of shallow pools and wetlands (Figure 2). These vernal pools and the vegetation they support were of primary importance in designating the area as an ecological reserve. Another interesting feature is an unnamed tributary of McClure Creek, which crosses the property from west to east. Cutbanks and old meander scars along the creek indicate that a substantial flow of water crosses the property during winter storms, but only scattered pools remain between storms. The creek dries completely during the summer. The tip of a farm pond, located on the south boundary of the reserve, provides additional plant habitat.

The climate of the area is “Mediterranean, warm summer,” which applies to all of the Sacramento Valley and adjacent foothills. Dry hot summers are followed by cool, wet winters. Rainfall (based upon records at Red Bluff) averages 22 inches per year, the rainy season usually running from October to April.

Vegetation is correlated to topography, soils, and climate, and consists entirely of grasses and forbs. The low water holding capacity of the soil is apparently responsible for excluding trees, shrubs, and woody vines.

The survey forming the basis for this report was conducted from late March into the middle of September, 1996 (nine visits). During the study, 213 species and varieties of vascular plants distributed among 139 genera in 44 families were documented (Table 1). No study of this type is ever complete—additional plants are undoubtedly still to be found on the reserve.

TABLE 1. Numerical analysis of the vascular flora of Thomes Creek Ecological Reserve.

FAMILIES	GENERA	SPECIES	VARIETIES	TOTAL TAXA	NON-NATIVE	CNPS LISTED
44	139	210	3	213	73 (34%)	8

Non-native species (indicated by a *non-serif typeface* in the plant list) make up 34 percent of the reserve flora. These aliens are typically weedy and many are restricted to disturbed sites along Gyle Road, the lane bordering the west boundary of the reserve, the edge of the farm pond, and the pipeline right of way. Non-native grasses account for more than one-third of these alien species.

Seven plants found during the survey are listed in the *CNPS Inventory of Rare and Endangered Vascular Plants of California* (Table 2). An eighth plant, *Astragalus pauperculus*, was reported in an earlier row survey at the Thomes Creek property, but it was not relocated during 1996. Boggs Lake hedge-hyssop (*Gratiola heterosepala*) and Ahart’s nailwort (*Paronychia ahartii*) are in CNPS List 1B, plants that are rare, threatened, or endangered in California and elsewhere. Boggs Lake hedge-hyssop is also State listed endangered. However, recent data indicates that Boggs Lake hedge-hyssop is more common than originally thought, and it is being considered for down-grading to List 4 in the 6<sup>th</sup> edition of the CNPS Inventory.

The flowering interval is indicated for most plants. Each month is divided into three parts: early (day 1 through 10), mid (day 11 through 20) and late (day 21 onward), and the onset of flowering is indicated accordingly. The end of the flowering period is indicated only by the last month in which flowers were noted. In a few groups, e.g., grasses, sedges, and rushes where anthesis is not always obvious, the date indicates the presence of a well-developed inflorescence. Flowering intervals are based upon limited observations and should be considered to be positive but not necessarily inclusive statements, i.e., additional field work would certainly show that some plants bloom earlier or later than indicated. Variations can also be expected from year to year, depending upon the amount and distribution of rainfall during the growing season. Many of the plants flowering in September on our last visit will probably continue to bloom until the first killing frost of autumn (indicated Sep... in the annotated plant list).

TABLE 2. Rare plants growing at Thomes Creek Ecological Reserve.

<i>Agrostis hendersonii</i> Hitchc., List 3.	CNPS LISTS
<i>Astragalus pauperculus</i> Greene, List 4 (not relocated in 1996).	1B Rare, threatened, or endangered in California and elsewhere.
<i>Chamaesyce ocellata</i> (Durand & Hilg.) Millsp. ssp. <i>rattanii</i> (S. Watson) Koutnik, List 4.	2 Rare, threatened, or endangered in California, but more common elsewhere.
<i>Downingia pusilla</i> (G. Don) Torr., List 2.	3 Plants about which we need more information—a review list.
<i>Gratiola heterosepala</i> Mason & Bacig., List 1B, CE.	4 Plants of limited distribution—a watch list.
<i>Navarretia heterandra</i> H. Mason, List 4.	
<i>Paronychia ahartii</i> Ertter, List 1B.	STATE LISTS
<i>Psilocarphus tenellus</i> Nutt. var. <i>globiferus</i> (Bertero ex DC.) Morefield, List 4.	CE State listed, endangered.

Nomenclature is based upon *The Jepson Manual* (Hickman 1993). Some synonyms used in older floras are indicated in brackets. Author abbreviations follow Brummitt and Powell (1992) and may deviate from those in *The Jepson Manual*. There are no accepted standards for common plant names. When available, common names correspond to those in *The Jepson Manual* and in the 5th edition of the *CNPS Inventory* (Skinner and Pavlik 1994). The remaining common names are mostly those of Abrams (1923-60). Words describing the abundance of a plant such as rare, common, abundant, etc. are entirely subjective.

Voucher specimens of most of the plants found during this study are deposited in the herbarium of California State University, Chico (CHSC) and/or in the herbarium of the Redding Office of the California Department of Fish and Game. Vouchers are indicated by collector(s) and collection number (e.g., *Oswald & Ahart 7279*) in the annotated plant list.

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## ACKNOWLEDGMENTS

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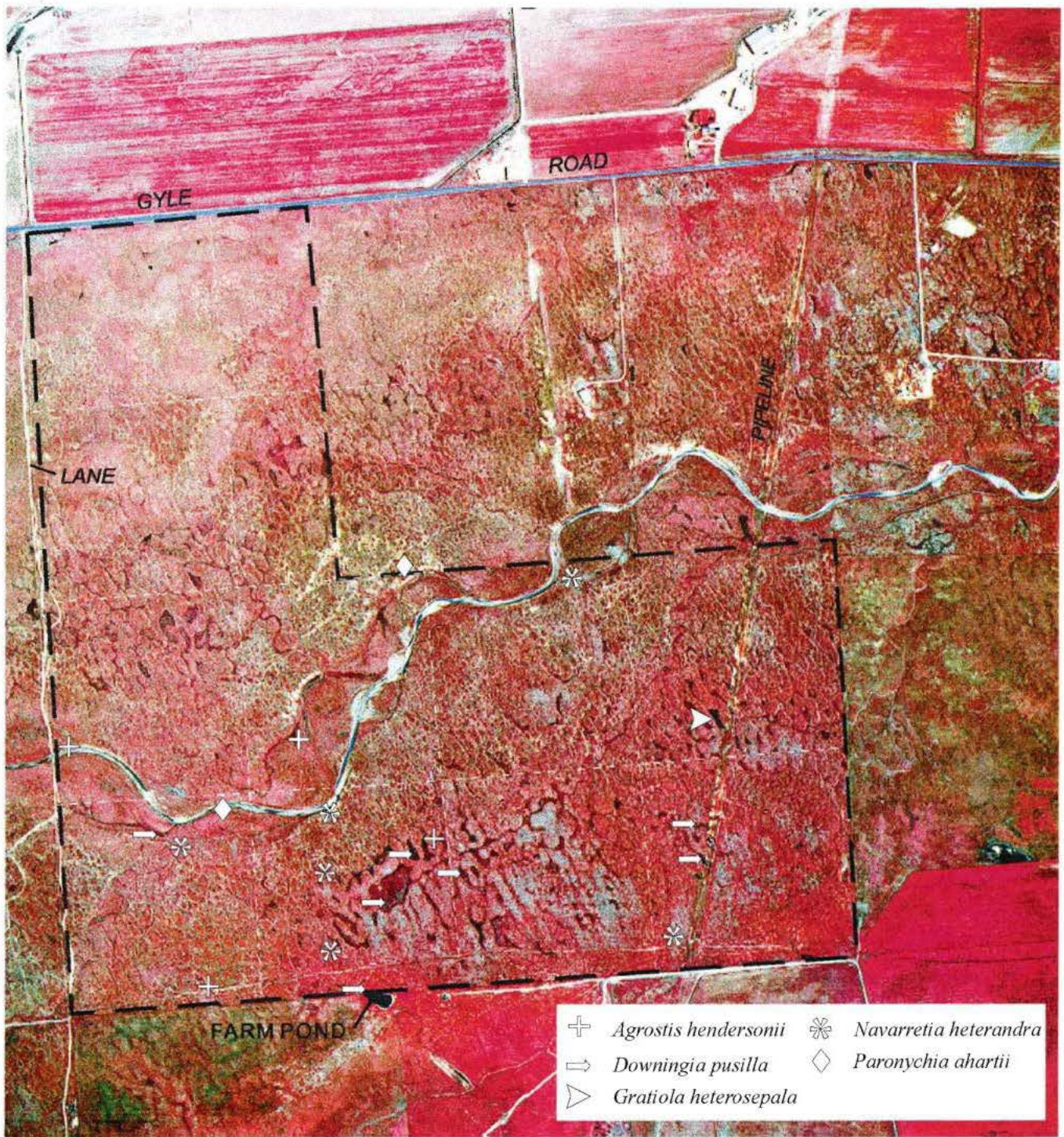


FIGURE 2. Topography of Thomes Creek Ecological Reserve, with the distribution of some CNPS-listed plants. The grid consists of 0.25 mile squares ( $\frac{1}{4}$  section of  $\frac{1}{4}$  section).

# ANNOTATED PLANT LIST<sup>1</sup>

## FERN ALLIES

### ISOETACEAE – QUILLWORT FAMILY

*Isoetes howellii* Engelm. – HOWELL'S QUILLWORT. Uncommon but forming large populations in a few locations along the creek (*Oswald & Ahart 7377.1*: NW¼ SE¼ Sect. 30. Intermittent stream ca. 0.6 mi east of the lane. 15 April). Active during the wet season.

*Isoetes nuttallii* A. Braun ex Engelm. – NUTTALL'S QUILLWORT. Inconspicuous plant in upland soils (*Oswald & Ahart 7284*: NW¼ SW¼ Sect. 30. North side of the creek just east of the lane. 03 April). Active during the wet season.

*Isoetes orcuttii* A. A. Eaton – ORCUTT'S QUILLWORT. Shallow water and later on the drying beds of pools (*Oswald & Ahart 7369*: SE¼ SW¼ Sect. 30. Pools on the south side of the creek ca. 0.4 mi east of the lane. 15 April). Active during the wet season.

### MARSILEACEAE – MARSILEA FAMILY

*Marsilea vestita* Hook. & Grev. ssp. *vestita* – HAIRY PEPPERWORT. Common in pools and on the dry bed of the intermittent stream (*Oswald & Ahart 7500*: NE¼ SW¼ Sect. 30. Bed of the creek ca. 0.3 mi east of the lane. 29 April). Active during the wet season but continuing to grow into summer. [*M. mucronata* A. Braun]

*Pilularia americana* A. Braun – AMERICAN PILLWORT. Locally abundant on the drying beds of vernal pools and drainages (*Oswald & Ahart 7360*: SW¼ SW¼ Sect. 30. Drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Active during the wet season.

## DICOT FLOWERING PLANTS

### AMARANTHACEAE – AMARANTH FAMILY

*Amaranthus albus* L. – TUMBLEWEED. Scattered plants on the dry bed of the creek, on the drying margin of the farm pond, and in the ditch along Gyle Rd. (*Oswald 7899*: SE¼ SW¼ Sect. 30. Farm pond. 27 June). Early Jun–Sep...

### APIACEAE – CARROT FAMILY

#### [*Umbelliferae*]

*Eryngium castrense* Jeps. – COYOTE-THISTLE. Common to locally abundant in drainages, on the bed of the creek, in wetlands, and in vernal wet upland soils (*Oswald & Ahart 7646*: SE¼ SE¼, Sect. 30. Pool

along the pipeline ca. 0.1 mi north of the south boundary. 27 May). Late May–Jul. [*E. castrense* Jeps. var. *vallicola* Jeps., *E. vaseyi* var. *castrense* (Jeps.) Hoover ex Mathias and Constance, *E. vaseyi* var. *vallicola* (Jeps.) Munz]

*Lomatium caruifolium* (Hook. & Arn.) J.M. Coult. & Rose var. *denticulatum* Jeps. – Foothill Lomatium. Scattered plants in grassy upland (*Oswald & Ahart 7286*: NW¼ SW¼ Sect. 30. Near the creek just east of the lane. 03 April). Mid Mar–Apr. [*L. humile* (J.M. Coult. & Rose) Hoover ex Mathias & Constance]

### ASCLEPIADACEAE – MILKWEED FAMILY

*Asclepias eriocarpa* Benth. – INDIAN MILKWEED. Common on gravel bars and on the dry bed of the creek (*Oswald 7893*: NW¼ SW¼ Sect. 30. Near the lane. 27 June). Late May–Jul.

### ASTERACEAE – SUNFLOWER FAMILY

#### [*Compositae*]

*Achyraea mollis* Schauer – BLOW-WIVES. Locally common in deeper soils in grassy upland (*Oswald & Ahart 7368*: SW¼ SW¼ Sect. 30. Near the drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Early Apr.

*Blennosperma nanum* (Hook.) S.F. Blake var. *nanum* – YELLOW-CARPET. Common in grassy upland throughout the reserve (*Oswald 7247*: Bank of the creek near the lane. 20 March). Mid Mar–Apr.

*Centaurea solstitialis* L. – YELLOW STAR-THISTLE. Common and widespread weed in deeper soils (not collected). Native to southern Eur. Late May–Sep...

*Chamomilla suaveolens* (Pursh) Rydb. – COMMON PINEAPPLE-WEED. Locally common in disturbed soil along the lane (*Oswald & Ahart 7387*: NW¼ NW¼ Sect. 30. Just south of Gyle Rd. 15 April). Mid Apr. [*Matricaria matricarioides* (Less.) Porter]

*Cichorium intybus* L. – CHICORY. Weed along Gyle Rd. (not collected). Native to Eur. Mid Jun–Jul.

*Conyza canadensis* (L.) Cronquist – CANADIAN HORSEWEED. Scattered plants to localized populations in dry upland (not collected). Mid Aug–Sep...

*Conyza floribunda* Humb., Bonpl. & Kunth – MANY-FLOWERED HORSEWEED. Locally common in the ditch along Gyle Rd. (not collected). Native to tropical Amer. Mid Aug–Sep...

*Filago gallica* L. – NARROW-LEAVED FILAGO. Scattered in gravelly upland (*Oswald & Ahart 7377.2*: NW¼ SE¼ Sect. 30. High bank of the creek ca. 0.6 mi east of the lane. 15 April). Native to the Medit. Early Apr–May. [*Logfia gallica* (L.) Coss. & Germ.]

*Gnaphalium luteo-album* L. – WEEDY CUDWEED. Moist weedy and grassy places (*Oswald & Ahart 7651*:

<sup>1</sup> Non-native plants are indicated by an italic, non-serif typeface (*Filago gallica*); plant names that appear in non-italic boldface (*Paronychia ahartii*) are listed in the 5th edition of the CNPS Inventory (Skinner and Pavlik, 1994).



NW¼ SW¼ Sect. 30. Bed of a vernal flooded excavation on the north side of the creek ca. 0.1 mi east of the lane. 27 May). Mid Apr–Jun.

*Gnaphalium palustre* Nutt. – WESTERN MARSH CUDWEED. Locally common in wet soil along the edge of the creek (not collected). Late May–Jun.

*Hemizonia fitchii* A. Gray – FITCH'S SPIKEWEED. Common and widespread in dry upland (Oswald 8240: NW¼ SW¼ Sect. 30. Lane near the creek. 22 August). Mid Jun–Sep...

*Hesperevax acaulis* (Kellogg) Greene var. *acaulis* – DWARF EVAX. Locally abundant along drainages, in vernal moist upland, and on the flood plain of the creek (Oswald & Ahart 7311: Drying bed of a shallow, vernal wet drainage ca. 100 ft south of the creek. 03 April). Plants growing on bare soil of gopher mounds are strikingly robust, with many prostrate stems and multiple flowering heads (Oswald & Ahart 7371: SE¼ SW¼ Sect. 30. Near the cluster of pools south of the creek ca. 0.4 mi east of the lane. 15 April). Mid Mar–Apr. [*Evax acaulis* (Kellogg) Greene]

*Hypochoeris glabra* L. – SMOOTH CAT'S-EAR. Gravelly soils of uplands and stream margins (Oswald & Ahart 7485: SE¼ SW¼ Sect. 30. Near the farm pond. 29 April). Native to Eur. Early Apr–Jun.

*Lactuca serriola* L. – PRICKLY LETTUCE. Common and widespread in upland (Oswald 7898: SW¼ SE¼ Sect. 30. Near the south boundary ca. 0.7 mi east of the lane. 27 June). Both the typical variety with pinnately lobed leaves and the var. *integrata* Gren. & Godr. (= forma *integrifolia* Bogenli.) with strap-shaped leaves are present, the latter the more numerous form. Native to Eur. Early May–Sep...

*Lagophylla glandulosa* A. Gray – GLANDULAR HARELEAF. Common and widespread in dry upland (Oswald 7555: NE¼ SW¼ Sect. 30. On the large meander plain of the creek ca. 0.3 mi east of the lane. 13 May). Early May–Sep... [Includes the spring-flowering ecotype ssp. *serrata* (Greene) D.D. Keck]

*Lasthenia californica* DC. ex Lindl. – CALIFORNIA GOLDFIELDS. Scattered populations in upland but not common (not collected). Early Apr. [*Baeria chryso-stoma* Fisch. & C.A. Mey.]

*Lasthenia fremontii* (Torr. ex A. Gray) Greene – FREMONT'S GOLDFIELDS. Locally abundant on margins of vernal pools, drainages, and wet depressions (Oswald & Ahart 7479: SE¼ SW¼ Sect. 30. Small pool at the south fence ca. 0.2 mi west of the farm pond. 29 April). Early Apr–Jun. [*Baeria fremontii* (Torr. ex A. Gray) A. Gray]

*Lasthenia glaberrima* DC. – SMOOTH GOLDFIELDS. Locally abundant in deeper pools near the pipeline and at the farm pond on the south boundary (Oswald & Ahart 7375: NE¼ SE¼ Sect. 30. Pool along the pipeline ca. 0.3 mi north of the south boundary. 15 April). Mid Apr–Jun.

*Lasthenia platycarpa* (A. Gray) Greene – ALKALI GOLDFIELDS. Abundant and widespread in upland throughout the reserve (Oswald & Ahart 7299: Grassy flats near the creek. 03 April). Mid Mar–Apr. [*Baeria platycarpa* (A. Gray) A. Gray]

*Layia fremontii* (Torr. & A. Gray) A. Gray – FREMONT'S TIDYTIPS. Scattered in grassy upland (not collected). Early Apr.

*Leontodon taraxacoides* (Vill.) MÉRAT ssp. *longirostris* Finch & P.D. Sell – LONG-BEAKED HAWKBIT. Scattered in grassy upland (Oswald & Ahart 7370: SE¼ SW¼ Sect. 30. Near the cluster of pools on the south side of the creek ca. 0.4 mi east of the lane. 15 April). Mid Apr–Jul. [*L. leysseri* (Wallr.) Beck, in part; *L. nudicaulis* (L.) MÉRAT ssp. *taraxacoides* (Vill.) Schinz & Tell.]

*Lessingia nana* A. Gray – DWARF LESSINGIA. Common in localized populations in gravelly, sparsely vegetated places in upland (Oswald 8241: SE¼ SW¼ Sect. 30. High bank of the creek ca. 0.3 mi east of the lane. 22 August). The rose-colored pappus bristles make this a conspicuous plant even into autumn long after the plants have dried up. Late Jun–Jul.

*Micropus californicus* Fisch. & C.A. Mey. var. *californicus* – SLENDER COTTONWEED. Common and widespread in upland (Oswald & Ahart 7480: SE¼ SW¼ Sect. 30. Near the south fence ca. 0.2 mi west of the farm pond. 29 April). Late Mar–Apr.

*Microseris acuminata* Greene – SIERRA FOOTHILL MICROSERIS. Locally common in thin soils of grassy upland (not collected). Mid Apr (plants with both flowers and fruits).

*Microseris douglasii* (DC.) Sch. Bip. ssp. *douglasii* – DOUGLAS' MICROSERIS. Locally common in clay soils on the drying beds of shallow pools and drainages (Oswald & Ahart 7481: SE¼ SW¼ Sect. 30. Drainage near the south fence just west of the farm pond. 29 April). Mid Apr.

*Psilocarphus brevissimus* Nutt. var. *brevissimus* – DWARF WOOLLY-MARBLES. Common on the drying beds of vernal pools and wet drainages (not collected). Early Apr–Jun.

*Psilocarphus oregonus* Nutt. – OREGON WOOLLY-MARBLES. Scattered colonies on drying beds of vernal pools and wetlands (Oswald & Ahart 7365: SW¼ SW¼ Sect. 30. Drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Mid Apr–Jun.

*Psilocarphus tenellus* var. *globiferus* (Bertero ex DC.) Morefield – ROUND WOOLLY-MARBLES. On the drying beds of pools and drainages (Oswald & Ahart 7372: SE¼ SW¼ Sect. 30. Pool in the cluster of pools on the south side of the creek ca. 0.4 mi east of the lane. 15 April). Mid Apr–Jun. CNPS List 4, proposed for deletion from the 6<sup>th</sup> Edition of the Inventory.

*Senecio vulgaris* L. – OLD-MAN-IN-THE-SPRING. Locally common in grassland and along the margins

of the creek (*Oswald & Ahart 7297*: NE¼ SW¼ Sect. 30. Along the creek 0.4 mi east of the lane. 03 April). Native to Eurasia. Mid Mar–Apr.

*Soliva sessilis* Ruiz & Pav. – LAWN BURWEED. Uncommon in grassy upland (*Oswald & Ahart 7374*: SE¼ SE¼ Sect. 30. Pipeline ca. 0.1 mi north of the south boundary. 15 April). Native to S. Amer. Early Apr. [*S. pterosperma* (A.Juss.) Less., *S. daucifolia* Nutt.]

*Sonchus asper* (L.) Hill ssp. *asper* – SPINY-LEAVED SOW-THISTLE. Weed in grassy upland and along the creek (*Oswald & Ahart 7642*: NE¼ SW¼ Sect. 30. Edge of the creek ca. 0.4 mi east of the lane. 27 May). Native to Eur. Mid Apr–Jul.

*Xanthium strumarium* L. – COCKLEBUR. Seedlings were common along the creek in 1996, but all dried up without flowering. A few plants were able to flower along the farm pond (not collected). Mid Sep. [Includes var. *canadense* (Mill.) Torr. & A.Gray & var. *glabratum* (DC.) Cronquist]

#### BORAGINACEAE – BORAGE FAMILY

*Amsinckia lycopsoides* Lelun. – BUGLOSS FIDDLENECK. Scattered plants along roads and in grassy upland (*Oswald & Ahart 7314*: NW¼ NW¼ Sect. 30. Edge of Gyle Rd. 03 April). Late Mar–Apr.

*Amsinckia menziesii* (Lehm.) A.Nelson & J.F. Macbr. var. *menziesii* – MENZIES' FIDDLENECK. Uncommon along the creek (*Oswald & Ahart 7378*: NW¼ SE¼ Sect. 30. Bank of the creek ca. 0.6 mi east of the lane. 15 April). Mid Apr.

*Cryptantha flaccida* (Douglas ex Lehm.) Greene – WEAK-STEMMED CRYPTANTHA. Locally common on gravel bars (*Oswald & Ahart 7495*: NE¼ SW¼ Sect. 30. Creek ca. 0.3 mi east of the lane. 29 April). Late Apr.

*Heliotropium europaeum* L. – EUROPEAN HELIOTROPE. Scattered plants in disturbed soil along the lane, on gravel bars in the creek, and at the farm pond (*Oswald 7900*: NW corner Sect. 30. Edge of Gyle Rd. at the lane. 27 June). Native to southern and eastern Eur., N. Afr. Late Jun–Sep...

*Pectocarya pusilla* (A.DC.) A.Gray – LITTLE PECTOCARYA. Localized populations in gravelly upland soils (*Oswald & Ahart 7291*: NE¼ SW¼ Sect. 30. Bank of the creek ca. 0.4 mi east of the lane. 03 April). Late Mar–Apr.

*Plagiobothrys austinae* (Greene) I.M.Johnst. – AUSTIN'S POPCORN-FLOWER. Common and widespread in vernal moist upland (*Oswald & Ahart 7282*: NW¼ SW¼ Sect. 30. Along the edge of the creek at the lane. 03 April). Mid Mar–Apr. [*Allocarya austinae* Greene]

*Plagiobothrys fulvus* (Hook. & Arn.) I.M.Johnst. – FULVOUS POPCORN-FLOWER. Locally abundant in deeper soils on mounds in grassy upland and on the

banks of creek (*Oswald & Ahart 7366*: SW¼ SW¼ Sect. 30. Near a flooded drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Mid Mar–Apr. [*P. fulvus* var. *campestris* (Greene) I.M. Johnst., *P. campestris* Greene]

*Plagiobothrys greenei* (A.Gray) I.M.Johnst. – Locally abundant in vernal moist upland (*Oswald & Ahart 7283*: NW¼ SW¼ Sect. 30. Along the creek near the lane. 03 April). Late Mar–Apr. [*Allocarya greenei* (A.Gray) Greene]

*Plagiobothrys leptocladus* (Greene) I.M.Johnst. – ALKALI POPCORN-FLOWER. On the drying beds of vernal wet pools and drainages (not collected). Mid Apr.

*Plagiobothrys scriptus* (Greene) I.M.Johnst. – SCRIBE'S POPCORN-FLOWER. Grassy upland; the first popcorn-flower to bloom in the spring. (*Oswald & Ahart 7292.2*: NE¼ SW¼ Sect. 30. Edge of a small, vernal flooded depression on the north side of the creek ca. 0.4 mi east of the lane. 03 April). Early Mar–Apr. [*Allocarya leptoclada* Greene]

*Plagiobothrys shastensis* Greene ex A.Gray – SHASTA POPCORN-FLOWER. Localized populations in grassy upland (*Oswald & Ahart 7381*: NE¼ SW¼ Sect. 30. North side of the creek ca. 0.3 mi east of the lane. 15 April). Late Mar–Apr.

*Plagiobothrys stipitatus* (Greene) I.M.Johnst. var. *micranthus* (Piper) I.M.Johnst. – SMALL-FLOWERED STALKED POPCORN-FLOWER. Common on the drying beds of pools and drainages (*Oswald & Ahart 7505*: NW¼ SW¼ Sect. 30. Along the creek ca. 0.1 mi east of the lane. 29 April). Mid Mar–May. [*Allocarya stipitata* Greene ssp. *micrantha* Piper]

#### BRASSICACEAE – MUSTARD FAMILY [Cruciferae]

*Athysanus pusillus* (Hook.) Greene – PETTY ATHYSANUS. Uncommon on the bank of creek (not collected). In fruit early Apr.

*Capsella bursa-pastoris* (L.) Medik. – SHEPHERD'S-PURSE. Scattered plants in vernal wet upland (not collected). Native to Eur. Mid Mar–Jun.

*Cardamine oligosperma* Nutt. – WESTERN BITTER-CRESS. Locally abundant in vernal wet drainages (*Oswald 7236*: SE¼ SE¼ Sect. 30. Drainage in the southeast corner of the reserve. 20 March). Mid Mar–Apr.

*Lepidium nitidum* Nutt. var. *nitidum* – SHINING PEPPER-GRASS. Locally abundant in grassy and gravelly places (*Oswald 7239*: Bank of the creek ca. 0.5 mi east of the lane. 20 March). Mid Mar. (flowering and fruiting).

*Lepidium strictum* (S. Watson) Rattan – UPRIGHT PEPPER-GRASS. Hard-packed soil on the lane along the west side of the parcel (*Oswald & Ahart 7386*: NW¼

NW¼ Sect. 31. Just south of Gyle Rd. 15 April). Mid Apr (with fruits).

*Raphanus raphanistrum* L. – JOINTED CHARLOCK. Scattered plants in grassy and disturbed places (*Oswald & Ahart* 7385: NW¼ NW¼ Sect. 31. Lane ca. 0.1 mi south of Gyle Rd. 15 April). Native to Medit. Eur. Mid Mar–Sep...

*Thysanocarpus radicans* Benth. – SPOKEPOD. Localized populations on the upper banks and flats along the creek (*Oswald* 7240: center SW¼ Sec. 30. Bank of creek 0.25 mi east of the lane. 20 March). Mid Mar (flowering and fruiting).

#### CALLITRICHACEAE – WATER-STARWORT FAMILY

*Callitriche hermaphroditica* L. – NORTHERN WATER-STARWORT. Locally abundant in the farm pond on the south boundary (*Oswald & Ahart* 7484: SE¼ SW¼ Sect. 30. 29 April). Late Apr. (flowering and fruiting). [*C. autumnalis* L.]

*Callitriche marginata* Torr. – WINGED WATER-STARWORT. Common in water and later on the drying beds of pools and drainages (*Oswald & Ahart* 7363: SW¼ SW¼ Sect. 30. Drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Mid Mar–Jun. [*C. longipedunculata* Morong, *C. marginata* var. *longipedunculata* (Morong) Jeps.]

#### CAMPANULACEAE – BELLFLOWER FAMILY

*Downingia ornatissima* Greene var. *ornatissima* – FOLDED DOWNINGIA. Locally abundant on the drying beds of pools and drainages (*Oswald & Ahart* 7466: NW¼ SW¼ Sect. 30. Gravel on the bed of the creek. 29 April). Mid Apr–Jun.

*Downingia pusilla* (G. Don) Torr. – DWARF DOWNINGIA. Locally abundant on the drying beds of vernal pools, vernal wet drainages, and the receding edge of the farm pond (*Oswald & Ahart* 7310: SW¼ SW¼ Sect. 30. Shallow, vernal wet drainage ca. 100 ft south of the creek near the lane. 03 April). Early Apr–Jun. CNPS List 2. [*D. humilis* Greene]

*Githopsis specularioides* Nutt. – COMMON BLUE-CUP. Uncommon in vernal moist places (*Oswald & Ahart* 7379: NE¼ SW¼ Sect. 30. Gravel on the large meander plain of the creek ca. 0.3 mi east of the lane. 15 April). Mid Apr–May.

#### CARYOPHYLLACEAE – PINK FAMILY

*Cerastium glomeratum* Thuill. – STICKY MOUSE-EARED CHICKWEED. Grassy and gravelly slopes and flats (*Oswald & Ahart* 7300: NE¼ SW¼ Sect. 30. In gravel on the meander plain ca. 0.4 mi east of the lane. 03 April). Native to Eur. Late Mar–Apr. [*C. viscosum* L., misapplied]

*Minuartia californica* (A. Gray) Mattf. – CALIFORNIA SANDWORT. Common in grassy upland throughout the reserve. Mid Mar–Apr. (*Oswald* 7246: NW¼ SW¼ Sect. 30. Near the junction of the creek

and the lane. 20 March). [*Arenaria californica* (A. Gray) W.H. Brewer]

*Minuartia douglasii* (Fenzl ex Torr. & A. Gray) Mattf. – DOUGLAS' SANDWORT. Locally abundant on a gravel bar along the creek (*Oswald & Ahart* 7382.1: NE¼ SW¼ Sect. 30. Large meander plain of the creek ca. 0.3 mi east of the lane. 15 April). Mid Apr. [*Arenaria douglasii* Fenzl ex Torr. & A. Gray]

*Paronychia ahartii* Ertter – AHART'S NAILWORT. Uncommon on thinly vegetated patches of gravel in upland (*Oswald & Ahart* 7305: SE¼ SW¼ Sect. 30. Just south of the creek ca. 0.2 mi east of the lane. 03 April). Observed but not collected on a high bluff on the north side of the creek near the center of Sect. 30. 15 April). Early Apr. CNPS List 1B.

*Petrohagia dubia* (Raf.) G. López & Romo – GRASS-PINK. Common and widespread in grassy upland and on gravel bars (*Oswald & Ahart* 7494: NE¼ SW¼ Sect. 30. Large meander plain on the north side of the creek ca. 0.3 mi east of the lane. 29 April). Native to southern Eur. Mid Apr. [*Kohlruschia velutina* (Guss.) Reichenb., *Tunica prolifera* (L.) Scop., misapplied]

*Sagina decumbens* (Elliott) Torr. & A. Gray ssp. *occidentalis* (S. Watson) G.E. Crow – WESTERN PEARLWORT. Scattered plants on the bare, gravelly edges of the dirt lane. (*Oswald & Ahart* 7313: Just north of the creek. 03 April). Early Apr. [*S. occidentalis* S. Watson]

*Silene gallica* L. – WINDMILL-PINK. Scatterer to locally common on banks and gravel bars of the creek and in grassy upland (*Oswald & Ahart* 7482: SE¼ SW¼ Sect. 30. Near the farm pond. 29 April). Native to Eur. Early Apr–Jun.

*Spergularia bocconeii* (Scheele) Foucaud ex Merino – BOCCONE'S SANDSPURRY. Locally abundant on the bare, gravelly edges of the lane (*Oswald & Ahart* 7312: Just north of the creek. 03 April). Native to southwest Eur. Early Apr–May.

*Spergularia rubra* (L.) J. & C. Presl – RUBY SANDSPURRY. Common in hard, dry soil along the edges of the lane (not collected). Native to Eur. Late Apr–May.

*Stellaria media* (L.) Vill. – COMMON CHICKWEED. Uncommon in grassy upland and in moist disturbed places (*Oswald & Ahart* 7308: SE¼ SW¼ Sect. 30. Along the high bank of the creek ca. 0.3 mi east of the lane. 03 April). Native to coastal Eur. Mid Mar–Apr.

*Stellaria nitens* Nutt. – SHINY STARWORT. Uncommon on grassy banks (*Oswald & Ahart* 7307: SE¼ SW¼ Sect. 30. High bank of creek at the meander ca. 0.3 mi east of the lane. 03 April). Late Mar–Apr.

#### CONVOLVULACEAE – MORNING-GLORY FAMILY

*Convolvulus arvensis* L. – BINDWEED. Roadsides, grassy upland, at the farm pond (not collected). Native to Eur. Early May–Jul.

## CRASSULACEAE – STONECROP FAMILY

*Crassula aquatica* (L.) Schönl. – WATER PYGMY-WEED. Locally abundant on the drying beds of vernal pools, vernal wetlands, and at the farm pond (Oswald & Ahart 7362: SW¼ SW¼ Sect. 30. Drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Early Apr–Jun. [*Tillaea aquatica* L., in part]

*Crassula connata* (Ruiz & Pav.) A. Berger – PIGMYWEED. Gravelly spots in upland (not collected). Early Apr. [*Tillaea erecta* Hook. & Arn.]

*Crassula tillaea* Lest.-Garl. – MOSSY PIGMYWEED. Gravelly upland (not collected). Native to Medit. Early Apr. [*Tillaea muscosa* L.]

## CUSCUTACEAE – DODDER FAMILY

*Cuscuta howelliana* P. Rubtzov – BOGGS LAKE DODDER. Locally abundant on *Navarretia leucocephala* and *Eryngium castrense* in drying vernal pools and wetlands (Oswald & Ahart 7645: SE¼ SE¼ Sect. 30. Pool along the pipeline ca. 0.1 mi north of the south boundary. 27 May). Late May–Jun.

## ELATINACEAE – WATERWORT FAMILY

*Elatine californica* A. Gray – CALIFORNIA WATERWORT. Common on wet mud along the receding margin of the farm pond (Oswald 7554: SE¼ SW¼ Sect. 30. 13 May). Early May–Jun.

## EUPHORBIACEAE – SPURGE FAMILY

*Chamaesyce maculata* (L.) Small – SPOTTED SPURGE. Weed in disturbed places (Oswald 7901: NW corner Sect. 30. Edge of Gyle Rd. at the lane. 27 June). Native to eastern US. Mid Jun–Sep... [*Euphorbia maculata* L., *E. supina* Raf.]

*Chamaesyce ocellata* (Durand & Hilg.) Millsp. ssp. *rattanii* (S. Watson) Koutnik – STONY CREEK SPURGE. *C. ocellata* ssp. *rattanii* was described from specimens collected along Stony Creek in Glenn County and is apparently restricted to the west edge of the valley in Glenn and Tehama counties. It differs from the completely glabrous ssp. *ocellata* in being pubescent on its leaves, stems, and involucre. The glands of the involucre often have well-developed petaloid appendages, which are never found in ssp. *ocellata*.

On the reserve, a spurge is common and widespread in dry upland and on gravel bars along the creek. These plants usually exhibit sparse to moderate pubescence (Oswald 7896: NE¼ SW¼ Sect. 30. Gravel bar bordering the creek ca. 0.3 mi east of the lane. 27 June), but a few plants are completely glabrous (Oswald 8242: SW¼ SW¼ Sect. 30. Edge of the lane between the creek and the south boundary. 22 August). The latter plant, however, bears vestigial gland appendages, which seem to be lacking on other specimens examined on the reserve. Either ssp. *rat-*

*tanii* is not as constant in its traits as floras would indicate, or else the plants on the reserve are intermediates between ssp. *ocellata* and ssp. *rattanii*. Late May–Sep... CNPS List 4 (candidate for upgrade to List 1B in the 6<sup>th</sup> edition of the Inventory).

*Eremocarpus setigerus* (Hook.) Benth. – TURKEY-MULLEIN. Common and widespread summer and fall annual in dry upland, on gravel bars along the creek, and on the dry beds of vernal pools (Oswald 7894: NW¼ SW¼ Sect. 30. Along the creek near the lane. 27 June). Late May–Sep...

## FABACEAE – LEGUME FAMILY

### [Leguminosae]

*Astragalus gambelianus* E. Sheld. – GAMBEL'S MILK-VETCH. Known only from a localized population on the north bank of the creek at the large meander (Oswald & Ahart 7496: NE¼ SW¼ Sect. 30). Late Apr (in fruit).

*Astragalus pauperculus* Greene – DEPAUPERATE MILK-VETCH. Reported in an earlier row survey at the Thomes Creek site (Department of Fish & Game document) but not encountered during the 1996 survey. CNPS List 4.

*Lotus humistratus* Greene – FOOTHILL LOTUS. Dry banks and gravel bars (Oswald & Ahart 7502: NE¼ SW¼ Sect. 30. North side of the creek ca. 0.3 mi east of the lane. 29 April). Late Apr.

*Lotus purshianus* (Benth.) Clem. & E. G. Clem. var. *purshianus* – SPANISH LOTUS. Locally common in grassy upland along Gyle Rd. (not collected). Late Jun–Sep...

*Lotus wrangelianus* Fisch. & C. A. Mey. – WRANGEL LOTUS. Uncommon on the bank of creek (not collected). Early Apr. [*L. subpinnatus* Lag. misapplied, *Hosackia subpinnata* (Lag.) Torr. & A. Gray, misapplied]

*Lupinus bicolor* Lindl. var. *tridentatus* Eastw. ex C. P. Sm. – BICOLORED LUPINE. Grassy upland (not collected). Mid Mar–May. [Varieties not recognized by Riggins in The Jepson Manual]

*Lupinus nanus* Douglas ex Benth. var. *apricus* (Greene) C. P. Sm. – SKY LUPINE. Localized populations in well-drained upland (not collected). Late Mar–Apr. [Varieties not recognized by Riggins in The Jepson Manual]

*Lupinus pachylobus* Greene – BIG-PODDED LUPINE. Grassy and gravelly slopes and flats. (Oswald & Ahart 7298: NE¼ SW¼ Sect. 30. Gravelly flat at the meander of the creek ca. 0.3 mi east of the lane. 03 April). Mid Mar–Apr.

*Lupinus polycarpus* Greene – SMALL-FLOWERED LUPINE. Common and widespread in grassy upland (Oswald & Ahart 7279: SE¼ SW¼ Sect. 30. Near the creek at the lane. 03 April). Mid Mar–Apr. [*L. micranthus* Douglas. Included in *L. bicolor* by Riggins in

The Jepson Manual but distinct and easily separated in our area.]

*Medicago polymorpha* L. – COMMON BUR-CLOVER. Common in upland and along the creek. (Oswald & Ahart 7304: NE¼ SW¼ Sect. 30. Edge of the creek ca. 0.4 mi east of the lane. 03 April). Plants in which the fruits lack spines are common; they are sometimes recognized as the var. *brevispina* (Benth.) Heyn. Native to Medit. Late Mar–Apr.

*Medicago praecox* DC. – MEDITERRANEAN BUR-CLOVER. Localized population in gravel along the edge of the creek (Oswald & Ahart 7303: NE¼ SW¼ Sect. 30. Ca. 0.4 mi east of the lane. 03 April). Native to Medit. Late Mar–Apr.

*Trifolium albopurpureum* Torr. & A.Gray var. *albopurpureum* – INDIAN CLOVER. Localized populations in upland soils (Oswald & Ahart 7497: NE¼ SW¼ Sect. 30. Large meander plain of the creek ca. 0.3 mi east of the lane. 29 April). Late Apr–May.

*Trifolium campestre* Schreb. – HOP CLOVER. Found in gravel along the creek ca. 0.1 mi east of the lane (Oswald & Ahart 7504: NW¼ SW¼ Sect. 30. 29 April). Native to Eur. Late Apr–May. [*T. procumbens* L., misapplied]

*Trifolium ciliolatum* Benth. – FOOTHILL CLOVER. Scattered plants in grassy upland (Oswald & Ahart 7476: NW¼ SW¼ Sect. 30. Upland just south of the creek and east of the lane. 29 April). Late Apr–May.

*Trifolium depauperatum* Desv. var. *depauperatum* – DWARF COWBAG CLOVER. Locally common in grassy upland (Oswald & Ahart 7281: NW¼ SW¼ Sect. 30. North side of the creek just east of the lane. 03 April). Mid Mar–Apr.

*Trifolium depauperatum* var. *amplectens* (Torr. & A.Gray) McDermott – INVOLUCRATE COWBAG CLOVER. Locally common in grassy upland (Oswald & Ahart 7280: North side of the creek near the lane. 03 April). Late Mar–Apr. [*T. amplectens* Torr. & A.Gray]

*Trifolium dubium* Sibth. – LITTLE HOP CLOVER. Localized populations in grassy upland (Oswald & Ahart 7373: SE¼ SE¼ Sect. 30. Near the pipeline ca. 0.1 mi north of the south boundary. 15 April). Native to Eur. Mid Apr–Jun.

*Trifolium hirtum* All. – ROSE CLOVER. Found in grassy upland and along the creek (Oswald & Ahart 7503: NE¼ SW¼ Sect. 30. Large meander plain of the creek ca. 0.3 mi east of the lane. 29 April). Native to Eurasia, N. Afr. Mid Apr–May.

*Trifolium microcephalum* Pursh – SMALL-HEADED CLOVER. Common in grassy upland (Oswald & Ahart 7477: NW¼ SW¼ Sect. 30. Just south of the creek and east of the lane. 29 April). Mid Apr–May.

*Trifolium variegatum* Nutt. – WHITE-TIPPED CLOVER. Locally abundant in wet drainages, margins of the creek, and at the farm pond (Oswald & Ahart

7285: NW¼ SW¼ Sect. 30. Along the creek near the lane. 03 April). Early Apr.

*Vicia villosa* ssp. *varia* (Host) Corb. – WINTER VETCH. Scattered in upland and along the creek. (Oswald & Ahart 7487: SE¼ SW¼ Sect. 30. Near the farm pond. 29 April). Native to Eur. Late Mar–Jun. [*V. villosa* var. *glabrescens* W.D.J.Koch, *V. dasycarpa* Ten.]

#### GENTIANACEAE – GENTIAN FAMILY

*Centaurium muehlenbergii* (Griseb.) W.Wight ex Piper – JUNE CENTAURY. Depauperate plants were found in upland near the large vernal pool north of the farm pond on 29 April (Oswald & Ahart 7488: SE¼ SW¼ Sect. 30). [*C. floribundum* (Benth.) B.L.Rob.]

*Cicendia quadrangularis* (Lam.) Griseb. – TIMWORT. Locally common in vernal moist places (Oswald & Ahart 7290: NE¼ SW¼ Sect. 30. Gravel along the creek ca. 0.4 mi east of the lane. 03 April). Late Mar–Apr. [*Microcala quadrangularis* (Lam.) Griseb.]

#### GERANIACEAE – GERANIUM FAMILY

*Erodium botrys* (Cav.) Bertol. – LONG-BEAKED STORK'S-BILL. Common in grassy upland throughout the reserve (Oswald & Ahart 7288: NW¼ SW¼ Sect. 30. North side of creek ca. 0.2 mi east of the lane. 03 April). Native to southern Eur. Mid Mar–Sep...

*Erodium brachycarpum* (Godr.) Thellung – SHORT-FRUITED STORK'S-BILL. Grassy upland but less common than *E. botrys* (Oswald & Ahart 7289: NW¼ SW¼ Sect. 30. North side of creek ca. 0.2 mi east of the lane. 03 April). Mid Mar–Apr. [*E. obtusiplicatum* (Maire, Weiller & Wilczek) J.T.Howell]

*Erodium cicutarium* (L.) L'Hér. – RED-STEMMED FILAREE. Scattered in grassy upland but not as common as the preceding two species (not collected). Native to Eurasia. Mid Mar–Jun.

#### HYDROPHYLLACEAE – WATERLEAF FAMILY

*Nemophila pedunculata* Douglas ex Benth. – MEADOW NEMOPHILA. Localized populations in vernal moist places (Oswald & Ahart 7287: NW¼ SW¼ Sect. 30. Gravel on edge of creek ca. 0.2 mi east of the lane. 03 April). Late Mar–Apr.

#### HYPERICACEAE – ST. JOHN'S-WORT FAMILY

*Hypericum perforatum* L. – KLAMATHWEED. Several colonies are located along Gyle Rd. (not collected). Native to Eur. Early May–Jul.

#### LAMIACEAE – MINT FAMILY

[*Labiatae*]

*Pogogyne zizyphoroides* Benth. – SACRAMENTO VALLEY POGOGYNE. Common on drying beds and margins of vernal pools and in other vernal wet places (Oswald & Ahart 7472: NW¼ SW¼ Sect. 30.

Edge of the creek at the lane. 29 April). Early Apr–Jun.

*Trichostema lanceolatum* Benth. – VINEGAR-WEED. Apparently uncommon on the reserve—one small group of plants was found on the track along the south boundary between the farm pond and the lane (not collected). Mid Aug–Sep...

#### LYTHRACEAE – LOOSESTRIFE FAMILY

*Lythrum hyssopifolium* L. – HYSSOP LOOSESTRIFE. Common on margins of ponds and along the creek (*Oswald & Ahart 7648.1*: SE¼ SW¼ Sect. 30. Edge of the farm pond. 27 May). Native to Eur. Early May–Jul.

#### MALVACEAE – MALLOW FAMILY

*Sidalcea hirsuta* A.Gray – HAIRY CHECKERBLOOM. Localized populations along vernal wet drainages (*Oswald 7553*: SW¼ SW¼ Sect. 30. Drainage south side of the creek ca. 0.1 mi east of the lane. 13 May). Early May.

#### MOLLUGINACEAE – CARPET-WEED FAMILY

[*Aizoaceae* of some floras, in part]

*Mollugo verticillata* L. – INDIAN-CHICKWEED. Locally common in sandy gravel along the creek and in disturbed soil along the lane (*Oswald & Ahart 7640*: SE¼ SW¼ Sect. 30. Gravel bar of creek ca. 0.3 mi east of the lane. 27 May). Native to tropical Amer. Early May–Sep...

#### ONAGRACEAE – EVENING-PRIMROSE FAMILY

*Camissonia graciliflora* (Hook. & Arn.) Raven – HILL EVENING-PRIMROSE. Localized population on a sandy gravel bar along the creek at the meander ca. 0.4 mi east of the lane (*Oswald & Ahart 7302*: NE¼ SW¼ Sect. 30. 03 April). Late Mar–May. [*Oenothera graciliflora* Hook. & Arn.]

*Clarkia purpurea* (Curtis) A.Nelson & J.F. Macbr. ssp. *quadrivulnera* (Douglas) F.H.Lewis & M.R. Lewis – PURPLE CLARKIA. Common and widespread in grassy upland (*Oswald & Ahart 7491*: SE¼ SW¼ Sect. 30. Near the cluster of vernal pools at this location. 29 April). Mid Apr–Jun. [*C. quadrivulnera* (Douglas) A.Nelson & J.F.Macbr.]

*Epilobium brachycarpum* C.Presl – TALL ANNUAL WILLOWHERB. Scattered plants to locally common in dry upland and along Gyle Rd. (not collected). Late Aug–Sep.... [*E. paniculatum* Nutt. ex Torr. & A.Gray including var. *jucundum* (A.Gray) Trel. & var. *laevicaule* (Rydb.) Munz]

*Epilobium cleistogamum* (Curran) P.Hoch & Raven – CLEISTOGAMOUS SPIKE-PRIMROSE. In clay soil on the dry bed of the largest of the vernal pools in the cluster north of the farm pond (*Oswald & Ahart 7649*: SE¼ SW¼ Sect. 30. 27 May). Early May–Jun. [*Boisduvalia cleistogama* Curran]

*Epilobium torreyi* (S.Watson) P.Hoch & Raven – TORREY'S SPIKE-PRIMROSE. Common on drying margins of vernal pools, margins of the creek, and in vernal moist upland (*Oswald 7557*: NE¼ SW¼ Sect. 30. Drainage on the large meander plain of the creek ca. 0.4 mi east of the lane. 13 May). Late Apr–Jul. [*Boisduvalia stricta* (A. Gray) Greene]

#### PAPAVERACEAE – POPPY FAMILY

*Eschscholzia lobbii* Greene – FRYINGPANS. Common and widespread in grassy upland throughout the reserve (*Oswald 7243*: Along the lane near the creek. 20 March). Mid Mar–Apr.

#### PLANTAGINACEAE – PLANTAIN FAMILY

*Plantago coronopus* L. – CUT-LEAVED PLANTAIN. Occasional populations along the lane and on gravel bars along the creek (*Oswald & Ahart 7473*: NW¼ SW¼ Sect. 30. Edge of the creek at the lane. 29 April). Native to Eur. Late Apr–Jun.

*Plantago elongata* Pursh – ELONGATE PLANTAIN. Locally abundant on the drying beds of shallow vernal wetlands (*Oswald & Ahart 7294*: NE¼ SW¼ Sect. 30. Depression on the north side of the creek ca. 0.4 mi east of the lane. 03 April). Mid Mar–Jun. [Includes ssp. *pentasperma* Bassett & var. *californica* (Greene) B.Boivin; *P. bigelovii* A.Gray ssp. *californica* (Greene) Bassett; *P. heterophylla* Nutt., misapplied]

*Plantago erecta* E.Morris – ERECT PLANTAIN. Common and widespread in grassy upland (*Oswald & Ahart 7293*: NE¼ SW¼ Sect. 30. Flood plain of creek at the meander ca. 0.4 mi east of the lane. 03 April). Mid Mar–Apr. [*P. hookeriana* Fisch. & C.A.Mey. var. *californica* (Greene) Poe]

*Plantago lanceolata* L. – ENGLISH PLANTAIN. One plant was found in the ditch along Gyle Rd. on 16 September (not collected). Native to Eur.

#### POLEMONIACEAE – PHLOX FAMILY

*Gilia tricolor* Benth. ssp. *tricolor* – BIRD'S-EYE GILIA. Scattered plants in grassy upland (not collected). Late Mar–Apr.

*Linanthus bicolor* (Nutt.) Greene – BICOLORED LINANTHUS. Locally abundant on grassy slopes and flats (*Oswald & Ahart 7309*: SW¼ SW¼ Sect. 30. Shallow wetland on the south side of the creek ca. 0.2 mi east of the lane. Grayish plants (densely hairy) and greenish plants (moderately hairy) grow in dense stands side by side. 03 April). Late Mar–Apr.

*Navarretia heterandra* H.Mason – TEHAMA NAVARRETIA. Localized populations in dry grassy upland (*Oswald 7554.1*: SE¼ SW¼ Sect. 30. South side of the creek ca. 0.3 mi east of the lane. 13 May). Early May–Jun. CNPS List 4.

*Navarretia leucocephala* Benth. ssp. *leucocephala* – WHITE-FLOWERED NAVARRETIA. Locally abundant on drying margins of pools, drainages, and in gravel on

the bed of the creek (*Oswald & Ahart 7490*: SE¼ SW¼ Sect. 30. Pool in the cluster of pools at this location. 29 April). Early Apr–Jun.

*Navarretia pubescens* (Benth.) Hook. & Arn. – DOWNY NAVARRETIA. Localized populations in grassy upland. (*Oswald 7556*: NE¼ SW¼ Sect. 30. On the large meander plain of the creek ca. 0.4 mi east of the lane. 13 May). Early May–Jun.

*Navarretia tagetina* Greene – MARIGOLD NAVARRETIA. Common and widespread in dry upland. (*Oswald 7560*: NW¼ SW¼ Sect. 30. North bank of the creek just east of the lane. 13 May). Late Apr–Jun.

*Phlox gracilis* (Hook.) Greene – SLENDER PHLOX. Locally abundant on the flood plain of the creek and in moist places in grassy upland. (*Oswald 7241*: Center SW¼ Sect. 30. Flood plain of the creek 0.25 mi east of the lane. 20 March) Mid Mar–Apr. [*Microsteris gracilis* (Hook.) Greene]

#### POLYGONACEAE – BUCKWHEAT FAMILY

*Polygonum arenastrum* Jord. ex Boreau – COMMON KNOTWEED. Moist places along the farm pond and along the creek (not collected). Early May–Sep... [*P. aviculare* L. of Calif. authors is closely related but apparently undocumented in California according to Hickman in *The Jepson Manual*, p. 888.]

*Polygonum californicum* Meisn. – CALIFORNIA KNOTWEED. Scattered plants in dry upland (not collected). Late May–Jun.

*Polygonum persicaria* L. – LADY'S-THUMB. Wet places along the creek (*Oswald 7897*: NE¼ SW¼ Sect. 30. Bed of the creek ca. 0.5 mi east of the lane. 27 June). Native to Eur. Mid Jun–Jul.

*Rumex crispus* L. – CURLY DOCK. Vernal wet places in grassland (not collected). Native to Eurasia. Early May–Jun.

*Rumex pulcher* L. – FIDDLE DOCK. Scattered plants in upland fronting Gyle Rd. (*Oswald 7561*: NW¼ NW¼ Sect. 30. Gyle Rd. near the lane. 13 May). Native to Medit. Early May–Jun.

#### PORTULACACEAE – PURSLANE FAMILY

*Calandrinia ciliata* (Ruiz & Pav.) DC. – RED-MAIDS. Common in gravel on the edge of the creek (*Oswald & Ahart 7295*: NE¼ SW¼ Sect. 30. Creek ca. 0.4 mi east of the lane. 03 April). Mid Mar–Apr. [Includes var. *menziesii* (Hook.) J.F. Macbr.]

*Montia fontana* L. ssp. *chondrosperma* (Fenzl) Walters – WATER MONTIA. Locally abundant in shallow water and later on wet soil of drainages and wetlands (*Oswald 7237*: SE¼ SE¼ Sect. 30. Shallow drainage in the SE corner of the reserve. 20 March). Mid Mar–Apr. [*M. verna* Neck.; *M. minor* C.C. Gmel.]

#### PRIMULACEAE – PRIMROSE FAMILY

*Centunculus minimus* L. – CHAFFWEED. Localized population on the drying bed of a vernal flooded

drainage on the south side of the creek ca. 0.1 mi east of the lane (*Oswald & Ahart 7358*: SW¼ SW¼ Sect. 30. Collected 15 April). [*Anagallis minima* (L.) Krause]

*Dodecatheon clevelandii* Greene ssp. *patulum* (Greene) H.J. Thomps. – LOWLAND SHOOTINGSTAR. Common and widespread in grassy upland throughout the reserve (*Oswald 7245*: NW¼ SW¼ Sect. 30. Near the junction of the creek and the lane. 20 March). Mid Mar–Apr. [*D. patulum* Greene]

#### RANUNCULACEAE – BUTTERCUP FAMILY

*Delphinium variegatum* Torr. & A. Gray ssp. *variegatum* – ROYAL LARKSPUR. Scattered in grassy upland (not collected). Mid Apr.

*Myosurus minimus* L. – COMMON MOUSETAIL. Localized populations on drying beds of pools and drainages (*Oswald & Ahart 7364*: SW¼ SW¼ Sect. 30. Drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Mid Mar–Apr.

*Ranunculus aquatilis* var. *hispidulus* Drew – WATER BUTTERCUP. In standing water and later on wet soil of a deep pool near the pipeline; also in the farm pond (not collected). Mid Apr.

#### ROSACEAE – ROSE FAMILY

*Aphanes occidentalis* (Nutt.) Rydb. – WESTERN LADY'S-MANTLE. Inconspicuous plant in grassy upland (*Oswald & Ahart 7306*: NE¼ SW¼ Sect. 30. High bank of creek at the meander ca. 0.3 mi east of the lane. 03 April). Late Mar–Apr. [*Alchemilla arvensis* (L.) Scop., *Alchemilla occidentalis* Nutt.]

#### RUBIACEAE – MADDER FAMILY

*Galium parisiense* L. – WALL BEDSTRAW. Localized populations in dry upland (*Oswald 7558*: NW¼ SW¼ Sect. 30. North bank of the creek ca. 0.1 mi east of the lane. 13 May). Native to Medit. Early May–Jun.

#### SAXIFRAGACEAE – SAXIFRAGE FAMILY

*Saxifraga californica* Greene – CALIFORNIA SAXIFRAGE. Grassy slopes near the creek (*Oswald 7238*: NW¼ SE¼ Sect. 30. South side of the creek ca. 0.7 mi east of the lane. 20 March). Mid Mar–Apr.

#### SCROPHULARIACEAE – FIGWORT FAMILY

*Antirrhinum cornutum* Benth. – SPURRED SNAP-DRAGON. Scattered plants on gravel bars along the creek (*Oswald 7895*: NE¼ SW¼ Sect. 30. West end of the large meander plain ca. 0.3 mi east of the lane. 27 June). Late May–Jul.

*Castilleja attenuata* (A. Gray) T.I. Chuang & Heckard – VALLEY-TASSELS. Scattered to locally common in grassy upland (*Oswald & Ahart 7361*: SW¼ SW¼ Sect. 30. Near a vernal flooded drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Early Apr. [*Orthocarpus attenuatus* A. Gray]

*Gratiola ebracteata* Benth. – BRACKETLESS HEDGE-HYSSOP. In moist soil on the drying beds of pools and drainages and along the edge of the creek (*Oswald & Ahart 7470*: NW¼ SW¼ Sect. 30. Edge of the creek at the lane. 29 April). Early Apr–May.

*Gratiola heterosepala* Mason & Bacig. – BOGGS LAKE HEDGE-HYSSOP. Large population on wet mud on the drying edge of a deep pool along the pipeline ca. 0.3 mi north of the south boundary (*Oswald & Ahart 7376*: NE¼ SE¼ Sect. 30). Mid Apr. CNPS List IB, CE. This plant is more common than previously thought. It is being considered for down-grading to List 4 in the 6<sup>th</sup> edition of the Inventory.

*Triphysaria eriantha* (Benth.) T.I. Chuang & Heckard ssp. *eriantha* – JOHNNYTUCK. Common and widespread in grassy upland and on the margins of creek (*Oswald 7242*: Near the junction of the creek and the lane. 20 March). Mid Mar–Apr. [*Orthocarpus erianthus* Benth. var. *erianthus*]

*Verbascum blattaria* L. – MOTH MULLEIN. One plant in flower was found in the ditch along Gyle Rd. on 16 September (not collected). Native to Eurasia.

*Veronica peregrina* L. ssp. *xalapensis* (Humb., Bonpl. & Kunth) Pennell – PURSLANE SPEEDWELL. Locally abundant on the drying beds of vernal flooded pools and drainages (*Oswald & Ahart 7292.1*: NE¼ SW¼ Sect. 30. Vernal flooded depression on the meander plain of the creek ca. 0.4 mi east of the lane. 03 April). Late Mar–Apr.

#### SOLANACEAE – NIGHTSHADE FAMILY

*Physalis lanceifolia* Nees – LANCE-LEAVED GROUND-CHERRY. Common in the ditch along Gyle Rd. (not collected). Native to S. Amer. In flower and fruit on 16 Sep.

#### ZYGOPHYLLACEAE – CALTROP FAMILY

*Tribulus terrestris* – Common on the edge of Gyle Rd. (not collected). Native to Medit. Late Jun–Sep...

### MONOCOT FLOWERING PLANTS

#### CYPERACEAE – SEDGE FAMILY

*Eleocharis acicularis* (L.) Roem. & Schult. var. *acicularis* – NEEDLE SPIKE-RUSH. Drying beds of vernal pools and vernal wet drainages (not collected). Mid Apr.

*Eleocharis macrostachya* Britton ex Small – PALE SPIKE-RUSH. Locally common emergent in pools, ditches, and drainages, becoming terrestrial after dry-down (*Oswald & Ahart 7644*: NE¼ SE¼ Sect. 30. Bed of a deeper pool along the pipeline ca. 0.3 mi north of the south boundary. 27 May). Mid Mar. [*E. palustris* (L.) Roem. & Schult.]

#### JUNCACEAE – RUSH FAMILY

*Juncus bufonius* L. var. *bufonius* – COMMON TOAD RUSH. Common in vernal moist upland (*Oswald & Ahart 7643*: NE¼ SW¼ Sect. 30. Edge of the creek ca. 0.4 mi east of the lane. 27 May). Late Mar.

*Juncus capitatus* Weigel – LEAFY-BRACTED DWARF RUSH. Occasional to locally common in upland (*Oswald & Ahart 7359*: SW¼ SW¼ Sect. 30. Margins of a vernal flooded drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Native to Eurasia, N. Afr. Early Apr.

*Juncus oxymeres* Engelm. – POINTED RUSH. Locally abundant in ditches along Gyle Rd. (*Oswald 7562*: NW¼ NW¼ Sect. 30. 13 May). Mid May.

*Juncus uncialis* Greene – INCH-HIGH RUSH. Common on the drying beds of vernal flooded pools and drainages (*Oswald & Ahart 7296*: Pool on the meander plain of the creek ca. 0.4 mi east of the lane. 03 April). Late Apr.

#### LILIACEAE – LILY FAMILY

[Includes *Amarylloidaceae*]

*Allium amplexans* Torr. – CLASPING ONION. Common in grassy upland (*Oswald & Ahart 7489*: SE¼ SW¼ Sect. 30. Near the large vernal pool in the cluster of pools north of the farm pond. 29 April). Mid Apr–May.

*Brodiaea californica* Lindl. var. *californica* – CALIFORNIA BRODIAEA. Locally common in dry upland (not collected). The corollas of these plants are purplish rather than pinkish to whitish as are often found in Northern California. Early May–Jun.

*Brodiaea coronaria* (Salisb.) Engl. ssp. *coronaria* – HARVEST BRODIAEA. Locally abundant on the dry beds of larger vernal pools and on the dry bed of the creek (*Oswald & Ahart 7650*: SE¼ SW¼ Sect. 30. Bed of the largest pool in the cluster of pools north of the farm pond. 27 May). Early May–Jun.

*Brodiaea elegans* Hoover ssp. *elegans* – ELEGANT BRODIAEA. Scattered to locally abundant in dry upland (not collected). Early May–Jun.

*Brodiaea minor* (Benth.) S. Watson – BLUESTARS. Common in dry upland and on gravel bars (*Oswald & Ahart 7493*: SE¼ SW¼ Sect. 30. Upland at the cluster of vernal pools north of the farm pond. 29 April). Mid Apr–Jun. [Includes var. *nana* (Hoover) Hoover]

*Calochortus luteus* Douglas ex Lindl. – YELLOW MARIPOSA-LILY. Scattered in grassy upland (*Oswald & Ahart 7492*: SE¼ SW¼ Sect. 30. At the cluster of vernal pools north of the farm pond. 29 April). Occasional plants with cream-colored petals similar to *C. superbus* are found, but the glands correspond to those of *C. luteus*. Mid Apr–May.

*Chlorogalum angustifolium* Kellogg – NARROW-LEAVED SOAP-PLANT. Common in grassy upland (*Oswald & Ahart 7647*: SE¼ SE¼ Sect. 30. Along the pipeline ca. 0.1 mi north of the south boundary. 27 May). Early May–Jun.



*Dichelostemma capitatum* A.W. Wood ssp. *capitatum* – BLUE DICKS. Common in grassy upland throughout the reserve (*Oswald 7244*: Near the junction of the creek and the lane. 20 March). Mid Mar–Apr. [*D. pulchellum* (Salisb.) A. Heller, *D. lacunavernalis* L.W. Lenz, *Brodiaea capitata* Benth., *Brodiaea pulchella* (Salisb.) Greene]

*Dichelostemma multiflorum* (Benth.) A. Heller – ROUND-TOOTHED OOKOW. Locally abundant in deeper soils of mounds in upland (not collected). Mid Apr–May. [*Brodiaea multiflora* Benth.]

*Triteleia hyacinthina* (Lindl.) Greene (typical form) – WILD HYACINTH. Common along the creek, in vernal wet drainages and pools, and in deeper upland soils (not collected). Morphologically distinct from an earlier blooming upland form segregated below. Late Apr–May. [*Brodiaea hyacinthina* (Lindl.) Baker]

*Triteleia hyacinthina* (Lindl.) Greene (upland form) – WILD HYACINTH. In grassy upland, often more common on mounds (not collected). Late Mar–Apr. [This form is mentioned in Munz but not given taxonomic recognition.]

#### POACEAE – GRASS FAMILY [Gramineae]

*Agrostis hendersonii* Hitchc. – HENDERSON'S BENTGRASS. Localized populations in vernal wet drainages and in gravelly soil along the edge of the creek (*Oswald & Ahart 7468*: NW¼ SW¼ Sect. 30. Edge of the creek at the lane. 29 April). The identification of this grass is tentative—the lemmas are 2+ mm long and the awn is < 8 mm long, both measurements which could apply to *A. microphylla*. The lemmas are only minutely aristate rather than being conspicuously awned. Late Apr. CNPS List 3.

*Aira caryophyllea* L. – SILVER EUROPEAN HAIRGRASS. Common and widespread in upland (not collected). Native to Eur. Late Mar–Apr.

*Alopecurus saccatus* Vasey – VERNAL POOL FOX-TAIL. Common on drying beds of vernal pools (not collected). Mid Apr. [*A. howellii* Vasey]

*Aristida oligantha* Michx. – OLDFIELD THREE-AWN. Common and widespread in dry upland, along roads, on the dry beds of vernal wetlands and along the creek (*Oswald 8243*: NW¼ SW¼ Sect. 30. Bed of the creek at the lane. 22 August). Mid Jul.

*Avena barbata* Pott ex Link – SLENDER WILD OAT. Common in deeper soils in upland (not collected). Native to southern Eur. Mid Apr.

*Avena fatua* L. – WILD OAT. Common in weedy upland fronting Gyle Rd. (not collected). Native to Eur. Late Apr.

*Briza minor* L. – LESSER QUAKING-GRASS. Locally abundant in moist places in grassy upland (*Oswald & Ahart 7383*: NW¼ SW¼ Sect. 30. Near the lane just

north of the creek. 15 April). Native to southern & western Eur. Mid Mar.

*Bromus diandrus* Roth – RIPGUT BROME. Common in thicker soils in upland (*Oswald & Ahart 7486*: SE¼ SW¼ Sect. 30. Near the farm pond. 29 April). Native to Eur. Late Apr. [*B. rigidus* Roth including var. *gussonei* (Parl.) Coss. & Durieu, misapplied]

*Bromus hordeaceus* L. – SOFT CHESS. Common in upland (not collected). Native to Eurasia. Early Apr. [*B. mollis* L., *B. racemosus* L., *B. scoparius* L.]

*Bromus madritensis* ssp. *rubens* (L.) Husn. – RED BROME. Localized populations in grassy upland (*Oswald & Ahart 7501*: NE¼ SW¼ Sect. 30. On the meander plain of the creek ca. 0.3 mi east of the lane. 29 April). Native to Eur. Early Apr. [*B. rubens* L.]

*Crypsis schoenoides* (L.) Lam. – SWAMP PRICKLEGRASS. Dry beds of deeper vernal pools and ponds (*Oswald 8244*: SE¼ SW¼ Sect. 30. Dry bed of farm pond. 22 August). Native to Eur. Mid Aug. [*Heleochoa schoenoides* (L.) Host]

*Cynodon dactylon* (L.) Pers. – BERMUDA-GRASS. Localized populations on gravel bars along the creek and in the ditch along Gyle Rd. (*Oswald & Ahart 7638*: SW¼ SW¼ Sect. 30. Bed of creek ca. 0.2 mi east of the lane. 27 May). Native to Afr. Late Apr.

*Dactylis glomerata* L. – ORCHARDGRASS. Seeded along the pipeline (not collected). Native to Eurasia. Late May.

*Deschampsia danthonioides* (Trin.) Munro – ANNUAL HAIRGRASS. Drying beds of pools and drainages (*Oswald & Ahart 7469*: NW¼ SW¼ Sect. 30. Edge of the creek at the lane. 29 April). Mid Apr.

*Echinochloa crus-galli* (L.) P. Beauv. – BARNYARD GRASS. Growing in the ditch fronting Gyle Rd. and on the drying bed of the creek (not collected). Native to Eurasia, Afr. Late Jul. [Includes var. *zelayensis* (Humb., Bonpl. & Kunth) Hitchc.]

*Elymus multisetus* (J.G. Sm.) Burt Davy – BIG SQUIRRELTAIL. Uncommon tufted grass in upland on the south bank of the creek ca. 0.2 mi east of the lane (*Oswald & Ahart 7639*: SW¼ SW¼ Sect. 30. 27 May). Late Apr. [*Sitanion jubatum* J.G. Sm.]

*Gastridium ventricosum* (Gouan) Schinz & Thell. – NITGRASS. Occasional grass in upland (*Oswald & Ahart 7478*: SW¼ SW¼ Sect. 30. Along a drainage flowing in a northeasterly direction from the SW corner of the reserve. 29 April). Native to Eur. Late Apr.

*Hordeum marinum* Huds. ssp. *gussoneanum* (Parl.) Thell. – MEDITERRANEAN BARLEY. Localized populations in grassy upland and on the margins of vernal wetlands (*Oswald & Ahart 7648*: SE¼ SE¼ Sect. 30. Pool along the pipeline ca. 0.1 mi north of the south boundary. 27 May). Native to Eur. Mid Apr. [*H. geniculatum* All., *H. gussoneanum* Parl., *H. hystrix* Roth]

*Hordeum murinum* ssp. *leporinum* (Link) Ar-cang. – HARE WALL BARLEY. Found in grassy upland and in disturbed places (*Oswald & Ahart* 7499: NE¼ SW¼ Sect. 30. On the meander plain of the creek ca. 0.3 mi east of the creek. 29 April). Native to Eur. Early Apr. [*H. leporinum* Link, *H. murinum* L.]

*Koeleria phleoides* (Vill.) Pers. – BRISTLY KOELER'S-GRASS. Growing in vernal moist places (*Oswald & Ahart* 7474: NW¼ SW¼ Sect. 30. Edge of the creek at the lane. 29 April). Native to Medit. Late Apr. [*K. gerardii* (Vill.) Pers.]

*Lolium multiflorum* Lam. – ANNUAL RYEGRASS. Common in gravelly upland (*Oswald & Ahart* 7475: NW¼ SW¼ Sect. 30. Edge of the creek at the lane. 29 April). Native to Eur. Late Apr.

*Lolium temulentum* L. – DARNEL. Sometimes growing with *L. multiflorum* (*Oswald* 7559: NW¼ SW¼ Sect. 30. On the north bank of the creek just east of the lane. 13 May). Native to Medit. Late Apr.

*Nassella cernua* (Stebbins & Á.Löve) Barkworth – NODDING NEEDLEGRASS. Uncommon bunch grass growing on a high bank along the northwest side of the meander plain of the creek ca. 0.3 mi east of the lane (*Oswald & Ahart* 7641: NE¼ SW¼ Sect. 30. 27 May). Late Apr. [*Stipa cernua* Stebbins & Á.Löve]

*Panicum capillare* L. – WITCHGRASS. Scattered plants were found in the ditch along Gyle Rd. on 16 September (not collected).

*Panicum dichotomiflorum* Michx. – SMOOTH WITCHGRASS. Common in the ditch along Gyle Rd. on 16 September (not collected). Native to the eastern U.S.

*Paspalum dilatatum* Poir. – DALLISGRASS. One plant noted in the ditch along Gyle Rd. on 16 September (not collected). Native to S. Amer.

*Poa annua* L. – ANNUAL BLUEGRASS. Common in moist upland and on the margins of drainages and depressions (not collected). Native to Eur. Late Mar.

*Poa bulbosa* L. – BULBOUS BLUEGRASS. Localized populations in grassy upland and along the creek (*Oswald & Ahart* 7301: NE¼ SW¼ Sect. 30. Along the edge of the creek ca. 0.4 mi east of the lane. 03 April). Native to Eur. Mid Mar.

*Polypogon maritimus* Willd. – MEDITERRANEAN BEARDGRASS. Common in moist gravel along the creek (*Oswald & Ahart* 7498: NE¼ SW¼ Sect. 30. Meander plain of the creek ca. 0.3 mi east of the lane. 29 April). Native to Medit. Eur. and Afr. Mid Apr.

*Scribneria bolanderi* (Thurb.) Hack. – SCRIBNER'S-GRASS. Locally common in vernal moist upland (*Oswald & Ahart* 7384: NW¼ SW¼ Sect. 30. Near the lane just north of the creek. 15 April). Early Apr.

*Setaria sphacelata* (Schum.) Moss – AFRICAN BRISTLEGRASS. Extensive colonies grow in the ditch fronting Gyle Rd. (not collected). Native to Afr. Late Jun.

*Sorghum halepense* (L.) Pers. – JOHNSONGRASS. Locally abundant in the ditch fronting Gyle Rd. (not collected). Native to Medit. Mid Aug.

*Taeniatherum caput-medusae* (L.) Nevski – MEDUSA-HEAD. Widespread in upland (*Oswald & Ahart* 7471: NW¼ SW¼ Sect. 30. Near the creek at the lane. 29 April). Native to Eur. Late Apr. [*Elymus caput-medusae* L.]

*Vulpia microstachys* var. *ciliata* (Beal) Lonard & Gould – FRINGED FESCUE. Localized populations in upland (*Oswald & Ahart* 7382.2: NE¼ SW¼ Sect. 31. On the large meander plain of the creek ca. 0.3 mi east of the lane. 15 April). Mid Apr. [*Festuca eastwoodiae* Piper, *F. grayi* (Abrams) Piper]

*Vulpia microstachys* var. *confusa* (Piper) Lonard & Gould – HAIRY-LEAVED FESCUE. Common in upland (not collected). Late Mar. [*Festuca confusa* Piper, *F. tracyi* Hitchc.]

*Vulpia microstachys* var. *pauciflora* (Scribn. ex Beal) Lonard & Gould – FEW-FLOWERED FESCUE. Locally abundant in grassy upland (*Oswald & Ahart* 7367: SW¼ SW¼ Sect. 30. Near a vernal flooded drainage on the south side of the creek ca. 0.1 mi east of the lane. 15 April). Mid Apr. [*Festuca pacifica* Piper, *F. reflexa* Buckl.]

*Vulpia myuros* var. *hirsuta* (Hack.) Asch. & Graebn. – FOXTAIL FESCUE. Found in gravelly and grassy places (*Oswald & Ahart* 7380: NE¼ SW¼ Sect. 30. Meander plain of the creek ca. 0.3 mi east of the lane. 15 April). Native to Eur. Mid Apr. [*Festuca megalura* Nutt.]

#### POTAMOGETONACEAE – PONDWEED FAMILY

*Potamogeton diversifolius* Raf. – DIVERSE-LEAVED PONDWEED. Locally abundant in the farm pond on the south boundary (*Oswald & Ahart* 7483). In fruit late Apr.

# INDEX

## — A —

*Achyrachaena*, 4  
*Agrostis*, 13  
*Aira*, 13  
*Aizoaceae*, 10  
*Alchemilla occidentalis*, 11  
*Allium*, 12  
*Alopecurus*, 13  
 Amaranth Family, 4  
 Amaranthaceae, 4  
*Amaranthus*, 4  
*Amsinckia*, 6  
*Antirrhinum*, 11  
*Aphanes*, 11  
 Apiaceae, 4  
*Arenaria* spp., 7  
*Aristida*, 13  
 Asclepiadaceae, 4  
*Asclepias*, 4  
 Aster family, 4  
 Asteraceae, 4  
*Astragalus*, 8  
*Athysanus*, 6  
*Avena*, 13

## — B —

Barley, 13  
 Barnyard grass, 13  
 Beardgrass, 14  
 Bedstraw, 11  
 Bellflower family, 7  
 Bentgrass, 13  
 Bermuda-grass, 13  
 Bindweed, 7  
 Bittercress, 6  
*Blennosperma*, 4  
 Blow-wives, 4  
 Bluecup, 7  
 Blueicks, 13  
 Bluegrass, 14  
 Bluestars, 12  
*Boisduvalia* spp., 10  
 Borage family, 6  
 Boraginaceae, 6  
 Brassicaceae, 6  
 Bristlegrass, 14  
*Briza*, 13  
*Brodiaea*, 12, 13  
 Brome, 13  
*Bromus*, 13  
 Buckwheat family, 11  
 Bur-clover, 9  
 Burweed, 5  
 Buttercup, 11  
 Buttercup family, 11

## — C —

*Calandrinia*, 11  
 Callitrichaceae, 7  
*Callitriche*, 7  
*Calochortus*, 12  
 Caltrop family, 12  
*Camissonia*, 10  
 Campanulaceae, 7  
*Capsella*, 6  
*Cardamine*, 6  
 Carpet-weed family, 10  
 Carrot family, 4  
 Caryophyllaceae, 7  
*Castilleja*, 11  
 Cat's-ear, 5  
*Centaurea*, 4  
*Centaurium*, 9  
 Centaury, 9  
*Centunculus*, 11  
*Cerastium*, 7  
 Chaffweed, 11  
*Chamaesyce*, 8  
*Chamomilla*, 4  
 Charlock, Jointed, 6  
 Checkerbloom, 10  
 Chess, 13  
 Chickweed, 7  
 Chickweed, Indian, 10  
 Chicory, 4  
*Chlorogalum*, 12  
*Cicendia*, 9  
*Cichorium*, 4  
*Clarkia*, 10  
 Clover, 9  
 Cocklebur, 6  
*Compositae*, 4  
 Composite family, 4  
 Convolvulaceae, 7  
*Convolvulus*, 7  
*Conyza*, 4  
 Cottonweed, 5  
 Coyote-thistle, 4  
*Crassula*, 8  
 Crassulaceae, 8  
*Cruciferae*, 6  
*Crypsis*, 13  
*Cryptantha*, 6  
 Cudweed, 4  
*Cuscuta*, 8  
 Cuscutaceae, 8  
*Cynodon*, 13  
 Cyperaceae, 12

## — D —

*Dactylis*, 13  
 Dallisgrass, 14  
 Darnel, 13

*Delphinium*, 11  
*Deschampsia*, 13  
*Dichelostemma*, 13  
 Ditch-grass family, 14  
 Dock, 11  
 Dodder family, 8  
*Dodecatheon*, 11  
*Downingia*, 7

## — E —

*Echinochloa*, 13  
 Elatinaceae, 8  
*Elatine*, 8  
*Eleocharis*, 12  
*Elymus*, 13  
*Elymus caput-medusae*, 14  
*Epilobium*, 10  
*Eremocarpus*, 8  
*Erodium*, 9  
*Eryngium*, 4  
*Eschscholzia*, 10  
*Euphorbia* spp., 8  
 Euphorbiaceae, 8  
 Evax, 5  
*Evax acaulis*, 5  
 Evening-primrose, 10  
 Evening-primrose family, 10

## — F —

Fabaceae, 8  
 Fescue, 14  
 Fiddleneck, 6  
 Figwort family, 11  
*Filago*, 4  
 Filaree, 9  
 Foxtail, 13  
 Fryingpans, 10  
 Fumitory family, 10

## — G —

*Galium*, 11  
*Gastridium*, 13  
 Gentian Family, 9  
 Gentianaceae, 9  
 Geraniaceae, 9  
 Geranium family, 9  
*Gilia*, 10  
*Githopsis*, 7  
*Gnaphalium*, 4  
 Goldfields, 5  
 Gramineae, 13  
 Grass family, 13  
 Grass, Barnyard, 13  
 Grass, Bermuda, 13  
 Grass, Blue, 14  
 Grass, Hair, 13  
 Grass, Johnson, 14  
 Grass, Koeler's, 13

Grass, Needle, 14  
 Grass, Nit, 13  
 Grass, Orchard, 13  
 Grass, Prickle, 13  
 Grass, Rye, 13  
 Grass, Scribner's, 14  
 Grass-pink, 7  
*Gratiola*, 12  
 Ground-cherry, 12

## — H —

Hairgrass, 13  
 Hareleaf, 5  
 Hedge-hyssop, 12  
*Heleochoa schoenoides*, 13  
 Heliotrope, 6  
*Heliotropium*, 6  
*Hemizonia*, 5  
*Hesperexax*, 5  
*Hordeum*, 13  
 Horsetweed, 4  
 Hyacinth, Wild, 13  
 Hydrophyllaceae, 9  
 Hypericaceae, 9  
*Hypericum*, 9  
*Hypochoeris*, 5

## — I —

Indian-chickweed, 10  
 Isoetaceae, 4  
*Isoetes*, 4

## — J —

Johnnytuck, 12  
 Johnsongrass, 14  
 Juncaceae, 12  
*Juncus*, 12

## — K —

Klamathweed, 9  
 Knotweed, 11  
 Koeler's-grass, 14  
*Koeleria*, 14  
*Kohlruschia velutina*, 7

## — L —

Labiatae, 9  
*Lactuca*, 5  
 Lady's-mantle, 11  
 Lady's-thumb, 11  
*Lagophylla*, 5  
 Lamiaceae, 9  
 Larkspur, 11  
*Lasthenia*, 5  
*Layia*, 5  
 Legume family, 8  
*Leguminosae*, 8

*Leontodon*, 5  
*Lepidium*, 6  
*Lessingia*, 5  
 Lettuce, Wild, 5  
 Liliaceae, 12  
 Lily family, 12  
*Linanthus*, 10  
*Logfia gallica*, 4  
*Lolium*, 14  
*Lomatium*, 4  
 Loosestrife family, 10  
*Lotus*, 8  
 Lupine, 8  
*Lupinus*, 8  
 Lythraceae, 10  
*Lythrum*, 10  
 — M —  
 Madder family, 11  
 Mallow family, 10  
 Malvaceae, 10  
 Mariposa-lily, 12  
 Marsilea family, 4  
 Marsileaceae, 4  
*Matricaria matricarioides*, 4  
*Medicago*, 9  
 Medusa-head, 14  
*Micropus*, 5  
*Microseris*, 5  
*Microsteris gracilis*, 11  
 Milk-vetch, 8  
 Milkweed, 4  
 Milkweed family, 4  
 Mint family, 9  
*Minuartia*, 7  
 Molluginaceae, 10  
*Mollugo*, 10  
*Montia*, 11  
 Morning-glory family, 7  
 Mousetail, 11  
 Mustard family, 6  
*Myosurus*, 11  
 — N —  
 Nailwort, 7  
*Nassella*, 14  
*Navarretia*, 10  
 Needlegrass, 14  
*Nemophila*, 9  
 Nightshade family, 12  
 Nitgrass, 13  
 — O —  
 Oat, 13

Old-man-in-the-spring, 5  
 Onagraceae, 10  
 Onion, 12  
 Ookow, 12  
 Orchardgrass, 13  
*Orthocarpus attenuatus*, 11  
*Orthocarpus erianthus*, 12  
 — P —  
*Panicum*, 14  
 Papaveraceae, 10  
*Paronychia*, 7  
*Paspalum*, 14  
 Pearlwort, 7  
*Pectocarya*, 6  
 Pepper-grass, 6  
*Petrorragia*, 7  
*Phlox*, 11  
 Phlox family, 10  
*Physalis*, 12  
 Pigmyweed, 8  
 Pillwort, 4  
*Pilularia*, 4  
 Pineapple-weed, 4  
 Pink family, 7  
*Plagiobothrys*, 6  
 Plantaginaceae, 10  
*Plantago*, 10  
 Plantain, 10  
 Plantain family, 10  
*Poa*, 14  
 Poaceae, 13  
*Pogogyne*, 9  
 Polemoniaceae, 10  
 Polygonaceae, 11  
*Polygonum*, 11  
*Polypogon*, 14  
 Pondweed, 14  
 Pondweed family, 14  
 Popcorn-flower, 6  
 Poppy family, 10  
 Portulacaceae, 11  
*Potamogeton*, 14  
 Potamogetonaceae, 14  
 Pricklegrass, 13  
 Primrose family, 11  
 Primulaceae, 11  
*Psilocarphus*, 5  
 Purslane family, 11  
 — Q —  
 Quaking-grass, 13  
 Quillwort, 4  
 Quillwort family, 4

— R —  
 Ranunculaceae, 11  
*Ranunculus*, 11  
*Raphanus*, 7  
 Redmaids, 11  
 Rosaceae, 11  
 Rose family, 11  
 Rubiaceae, 11  
*Rumex*, 11  
 Ruppiceae, 14  
 Rush, 12  
 Rush family, 12  
 Ryegrass, 14  
 — S —  
*Sagina*, 7  
 Sandspurry, 7  
 Sandwort, 7  
*Saxifraga*, 11  
 Saxifragaceae, 11  
 Saxifrage family, 11  
 Scribner's-grass, 14  
*Scribneria*, 14  
 Scrophulariaceae, 11  
 Sedge family, 12  
*Senecio*, 5  
*Setaria*, 14  
 Shepherd's-purse, 6  
 Shootingstar, 11  
*Sidalcea*, 10  
*Silene*, 7  
*Sitanion jubatum*, 13  
 Snapdragon, 11  
 Soap-plant, 12  
 Solanaceae, 12  
*Soliva*, 6  
*Sonchus*, 6  
*Sorghum*, 14  
 Sow-thistle, 6  
 Speedwell, 12  
*Spergularia*, 7  
 Spike-primrose, 10  
 Spike-rush, 12  
 Spikeweed, 5  
 Spokepod, 7  
 Spurge, 8  
 Spurge family, 8  
 Squirreltail, 13  
 St. John's-wort family, 9  
 Star-thistle, 4  
 Starwort, 7  
*Stellaria*, 7  
*Stipa cernua*, 14  
 Stonecrop family, 8

Stork's-bill, 9  
 Sunflower family, 4  
 — T —  
*Taeniatherum*, 14  
 Thistle, Sow, 6  
 Thistle, Star, 4  
 Three-awn, 13  
*Thysanocarpus*, 7  
 Tidytops, 5  
*Tillaea* spp., 7  
 Timwort, 9  
*Tribulus*, 12  
*Trichostema*, 10  
*Trifolium*, 9  
*Triphysaria*, 12  
*Triteleia*, 13  
 Tumbleweed, 4  
*Tunica prolifera*, 7  
 Turkey-mullein, 8  
 — U —  
*Umbelliferae*, 4  
 — V —  
 Valley-tassels, 11  
*Veronica*, 12  
 Vetch, 9  
*Vicia*, 9  
 Vinegar-weed, 9  
*Vulpia*, 14  
 — W —  
 Waterleaf family, 9  
 Water-starwort, 7  
 Water-starwort family, 7  
 Waterwort, 8  
 Waterwort family, 8  
 Windmill-pink, 7  
 Witchgrass, 14  
 Woolly-marbles, 5  
 — X —  
*Xanthium*, 6  
 — Y —  
 Yellow-carpet, 4  
 — Z —  
 Zygophyllaceae, 12

