

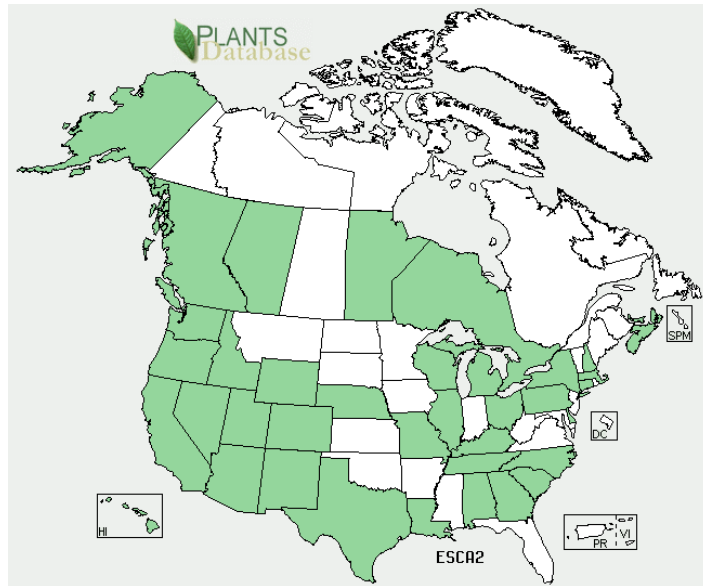
Plant Propagation Protocol for *Eschscholzia californica*
ESRM 412 – Native Plant Production



Source: Edward Step and William Watson



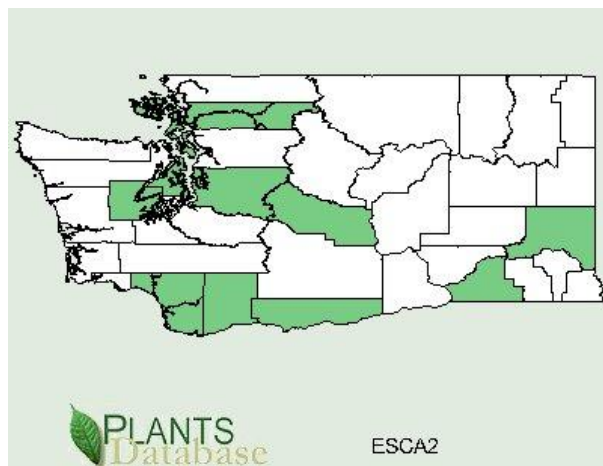
Source: Henriette Kress



Map of North America Distribution
Source: USDA Plants Database



Map of California Distribution



Map of Washington Distribution

Source: USDA Plants Database

TAXONOMY

Family Names	
Family Scientific Name:	Papaveraceae
Family Common Name:	Poppy
Scientific Names	
Genus:	<i>Eschscholzia</i>
Species:	<i>Eschscholzia californica</i>
Species Authority:	Cham.
Variety:	
Sub-species:	californica mexicana
Cultivar:	

Authority for Variety/Sub-species:	
Common Synonym(s) (include full scientific names (e.g., <i>Elymus glaucus</i> Buckley), including variety or subspecies information)	<i>Eschscholzia californica</i> var. <i>crocea</i> (Benth) <i>Eschscholzia californica</i> var. <i>douglasii</i> <i>Eschscholzia californica</i> var. <i>maritime</i> (E.L. Greene) <i>Eschscholzia californica</i> var. <i>peninsularis</i> (E.L. Greene) <i>Eschscholzia californica procera</i> <i>Eschscholzia shastensis</i>
Common Name(s):	California poppy, copa de ora or “cup of gold”, Mexican gold poppy.
Species Code (as per USDA Plants database):	ESCA2
GENERAL INFORMATION	
Geographical range (distribution maps for North America and Washington state)	Extends from southwestern Washington to Baja California, and south into western Texas, and as far as the coast. (See map above for distribution maps for North America and Washington State).
Ecological distribution (ecosystems it occurs in, etc):	Grassy and open areas, also grows in disturbed areas (such as along roadsides).
Climate and elevation range	Lower, warmer to full sun, often rocky elevations from sea level to no higher than about 2,000 ft.).
Local habitat and abundance; may include commonly associated species	Most of Cismontane CA, w. Mojave Desert & coastal OR. Also WA, NV, and N. MX; escaped freely elsewhere.
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Stress tolerator; tolerates dry, arid climates, likes low nutrient soils. Drought and full sun tolerant. Tolerates seaside conditions.
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	Short-live perennials. Also found as herbs, annuals, and biennials. Herbaceous. Glabrous sometimes glaucous. Leaves are basal and occasionally cauline. Plants grow about 12-18 in. tall with a deep taproot. Tapered buds open into long-lasting flowers with 4 satin like petals reaching to about 2-3 in. in diameter each. Pollinated by beetles, but also taken over by European honey bee in other areas. After pollination, the leaves fall away leaving a ribbed seed pods, which then dry out, split, shooting out tiny black seeds. Cylindric fruit, dehiscent from base.
PROPAGATION DETAILS	
Ecotype (this is meant primarily for	Fort Funston, California (Young).

experimentally derived protocols, and is a description of where the seed that was tested came from):	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants; Somatic Embryos
Propagation Method (Options: Seed or Vegetative):	Seed; gathering ripe pods just as they are beginning to split.
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	Container (plug). (Young)
Stock Type:	Leach tube
Time to Grow (from seeding until plants are ready to be outplanted):	15-30 days
Target Specifications (size or characteristics of target plants to be produced):	12-18 inches tall. Root system: Firm plug in container. (Young).
Propagule Collection (how, when, etc):	Collected during mid summer when pods are beginning to split open; placed in open container to dry out. Mature capsules are brown; seed is dark grey at maturity. (Young)
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	Propagule 8 lbs. per acre at a depth of 1/8 to 1/4 inch. 250,000 seeds per pound. Seed cleaning: Shake seeds out of pods or rub pods to extract seeds. Place the pods in an open container to dry them out before removing/collecting the seeds. Bareroot grown, once seeds have been accumulated Seeds kept at room temperature.
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	Seeds germinate without pre-treatment.
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	Seeds placed in larger, open containers in a fully controlled greenhouse. (Young). Planted 6-8 inches apart.
Establishment Phase (from seeding to germination):	September or early fall Seeds are sown where plants are to stand, as they don't transplant well due to their deep taproot. Seeds are watered but not excessively; do relatively well on their own as they are significantly tolerant of disturbance climates. Do appreciate consistent moisture during germination.

Length of Establishment Phase:	28 days (Young)
Active Growth Phase (from germination until plants are no longer actively growing):	September to April Plants need to maintain sufficient moisture level, getting full sun.
Length of Active Growth Phase:	31 weeks
Hardening Phase (from end of active growth phase to end of growing season; primarily related to the development of cold-hardiness and preparation for winter):	They often will withstand cold climates and will continue to bloom after the first frost. However, as autumn approaches, the plants should be cut from the ground and dried before the possibility of wilting approaches.
Length of Hardening Phase:	2-4 weeks
Harvesting, Storage and Shipping (of seedlings):	
Length of Storage (of seedlings, between nursery and outplanting):	
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	Outplanting at an earlier age, for they do well on their own, re-seeding themselves. Outplanted into a well-drained soil.
Other Comments (including collection restrictions or guidelines, if available):	
INFORMATION SOURCES	
References (full citations):	See Below
Other Sources Consulted (but that contained no pertinent information) (full citations):	
Protocol Author (First and last name):	Kelsey Gaynor Middleton
Date Protocol Created or Updated (MM/DD/YY):	4/24/11

References:

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California Native Plant Link Exchange:

<<http://www.cnplx.info/nplx/species?taxon=Eschscholzia+californica>>

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<http://www.nativeplantnetwork.org> (accessed 25 May 2011). Moscow (ID): University of Idaho,
College of Natural Resources, Forest Research Nursery.

See Appendix below.

Appendix:
Original Protocol submitted by Maddie Schweitzer in 2005:

Plant Data Sheet for *Eschscholzia californica*, California poppy



Species

Eschscholzia californica, California poppy

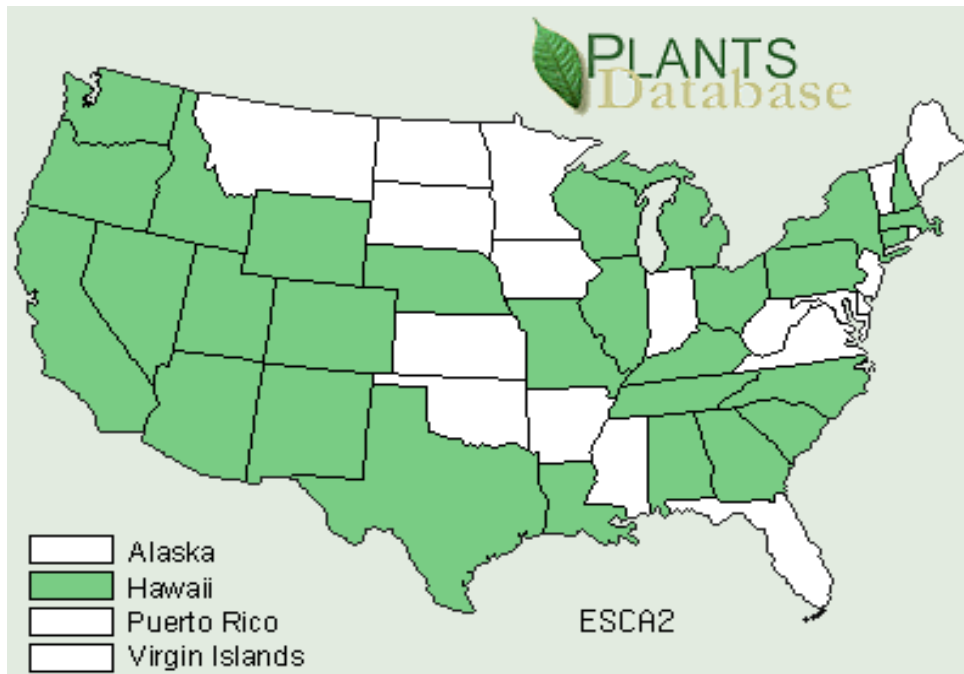
Range

USDA range 8 to 10

Climate, elevation

0-6561 ft. elevation in drier soils

Local occurrence (where, how common)



Habitat preferences

Full sun, grows excellent on slopes and roadsides

Plant strategy type/successional stage (stress tolerator, competitor, weedy/colonizer, seral, late successional)

Tolerates full sun, seaside conditions, and sand

Associated species

?

May be collected as: (seed, layered, divisions, etc.)

seed

Collection restrictions or guidelines

Flowers spring and throughout the summer and fall;
allow seedheads to dry on plant and then remove and collect seeds

Seed germination (needs dormancy breaking?)

Seed dormancy generally absent in plants of cultivated heritage

Seed life (can be stored, short shelf-life, long shelf life)

?

Recommended seed storage conditions

?

Propagation recommendations (plant seeds, vegetative parts, cuttings, etc.)

Sow seeds in fall or early spring directly into site as it is not easy to transplant

Soil or medium requirements (inoculum necessary?)

Well drained, drier soils; will tolerate poor soil; fertilizing is not necessary and over-fertilization will cause abundance of foliage that lacks flowers

Installation form (form, potential for successful outcomes, cost)

seed at approximately \$1.59 per 2.5 grams, or \$21.95 per pound

Recommended planting density

Space about 6-9" apart at a depth of 1/8" to 1/4"

Care requirements after installed (water weekly, water once etc.)

Water regularly to establish, and only an occasional deep watering is required thereafter; plants are drought-tolerant and over watering will cause the roots to rot

Normal rate of growth or spread; lifespan

One plant will grow up 12-20 inches and spread up to 20 inches; plant is stress deciduous and annual

Sources cited

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Data compiled by

Maddi Schweitzer on April 20, 2005

