

Family: *Papaveraceae*

Taxon: *Hunnemannia fumariifolia*

Synonym: **Common Name** goldencup
Mexican tulip poppy
tulip-poppy

| | | | | |
|------------------------|---|---------------------------|--|-----------------------|
| Questionnaire : | current 20090513 | Assessor: | Chuck Chimera | Designation: L |
| Status: | Assessor Approved | Data Entry Person: | Chuck Chimera | WRA Score 3 |
| 101 | Is the species highly domesticated? | | y=-3, n=0 | n |
| 102 | Has the species become naturalized where grown? | | y=1, n=-1 | |
| 103 | Does the species have weedy races? | | y=1, n=-1 | |
| 201 | Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical" | | (0-low; 1-intermediate; 2-high) (See Appendix 2) | High |
| 202 | Quality of climate match data | | (0-low; 1-intermediate; 2-high) (See Appendix 2) | High |
| 203 | Broad climate suitability (environmental versatility) | | y=1, n=0 | n |
| 204 | Native or naturalized in regions with tropical or subtropical climates | | y=1, n=0 | y |
| 205 | Does the species have a history of repeated introductions outside its natural range? | | y=-2, ?=-1, n=0 | y |
| 301 | Naturalized beyond native range | | y = 1*multiplier (see Appendix 2), n= question 205 | y |
| 302 | Garden/amenity/disturbance weed | | n=0, y = 1*multiplier (see Appendix 2) | y |
| 303 | Agricultural/forestry/horticultural weed | | n=0, y = 2*multiplier (see Appendix 2) | n |
| 304 | Environmental weed | | n=0, y = 2*multiplier (see Appendix 2) | n |
| 305 | Congeneric weed | | n=0, y = 1*multiplier (see Appendix 2) | n |
| 401 | Produces spines, thorns or burrs | | y=1, n=0 | n |
| 402 | Allelopathic | | y=1, n=0 | n |
| 403 | Parasitic | | y=1, n=0 | n |
| 404 | Unpalatable to grazing animals | | y=1, n=-1 | |
| 405 | Toxic to animals | | y=1, n=0 | |
| 406 | Host for recognized pests and pathogens | | y=1, n=0 | n |
| 407 | Causes allergies or is otherwise toxic to humans | | y=1, n=0 | n |
| 408 | Creates a fire hazard in natural ecosystems | | y=1, n=0 | n |
| 409 | Is a shade tolerant plant at some stage of its life cycle | | y=1, n=0 | n |
| 410 | Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island) | | y=1, n=0 | n |

| | | | |
|-----|--|--|---|
| 411 | Climbing or smothering growth habit | y=1, n=0 | n |
| 412 | Forms dense thickets | y=1, n=0 | n |
| 501 | Aquatic | y=5, n=0 | n |
| 502 | Grass | y=1, n=0 | n |
| 503 | Nitrogen fixing woody plant | y=1, n=0 | n |
| 504 | Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers) | y=1, n=0 | n |
| 601 | Evidence of substantial reproductive failure in native habitat | y=1, n=0 | n |
| 602 | Produces viable seed | y=1, n=-1 | y |
| 603 | Hybridizes naturally | y=1, n=-1 | n |
| 604 | Self-compatible or apomictic | y=1, n=-1 | |
| 605 | Requires specialist pollinators | y=-1, n=0 | n |
| 606 | Reproduction by vegetative fragmentation | y=1, n=-1 | n |
| 607 | Minimum generative time (years) | 1 year = 1, 2 or 3 years = 0, 4+ years = -1 | 1 |
| 701 | Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas) | y=1, n=-1 | y |
| 702 | Propagules dispersed intentionally by people | y=1, n=-1 | y |
| 703 | Propagules likely to disperse as a produce contaminant | y=1, n=-1 | n |
| 704 | Propagules adapted to wind dispersal | y=1, n=-1 | n |
| 705 | Propagules water dispersed | y=1, n=-1 | |
| 706 | Propagules bird dispersed | y=1, n=-1 | n |
| 707 | Propagules dispersed by other animals (externally) | y=1, n=-1 | n |
| 708 | Propagules survive passage through the gut | y=1, n=-1 | |
| 801 | Prolific seed production (>1000/m2) | y=1, n=-1 | |
| 802 | Evidence that a persistent propagule bank is formed (>1 yr) | y=1, n=-1 | |
| 803 | Well controlled by herbicides | y=-1, n=1 | |
| 804 | Tolerates, or benefits from, mutilation, cultivation, or fire | y=1, n=-1 | |
| 805 | Effective natural enemies present locally (e.g. introduced biocontrol agents) | y=-1, n=1 | |

Designation: L

WRA Score 3

Supporting Data:

| | | |
|-----|--|--|
| 101 | 2009. Sosa, V./Ruiz-Sanchez, E./Rodriguez-Gomez, F.C.. Hidden phylogeographic complexity in the Sierra Madre Oriental: the case of the Mexican tulip poppy <i>Hunnemannia fumariifolia</i> (Papaveraceae). <i>Journal of Biogeography</i> . 36: 18–27. | <i>Hunnemannia fumariifolia</i> has a variable morphology, varying mainly in the size of the plants and the depth of the indentation of leaves. Small plants with deeply incised leaves have been considered a different species (<i>H. hintoniorum</i> , Nesom, 1992); however, these traits are variable at the population level and are not limited to a geographic area. [no evidence that this species is highly domesticated] |
| 201 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. <i>Manual of the flowering plants of Hawaii</i> . Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | A monotypic genus of Mexico |
| 202 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. <i>Manual of the flowering plants of Hawaii</i> . Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | Highly suited to subtropical climates [a monotypic genus of Mexico] |
| 203 | 2010. Dave's Garden. <i>PlantFiles: Goldencup, Mexican Tulip Poppy</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/1302/ | Hardiness: USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F) |
| 204 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. <i>Manual of the flowering plants of Hawaii</i> . Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | "Naturalized and relatively common along Pi'ilani Highway in remnant dry woodland, 550-575 m, Maui." |
| 204 | 2000. Grey-Wilson, C.. <i>Poppies: a guide to the poppy family in the wild and in cultivation</i> . Timber Press, Portland, OR | "native to the highlands of Mexico, where it inhabits rocky and stony habitats and roadsides, mainly at altitudes of 1500-2000 m (4900-6600 ft)." |
| 205 | 1995. Spencer, R.. <i>Horticultural Flora of South Eastern Australia Volume 2: Flowering Plants</i> . UNSW Press, Sydney, Australia | Introduced and cultivated in Australia |
| 205 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. <i>Manual of the flowering plants of Hawaii</i> . Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | Introduced and cultivated in Hawaii |
| 205 | 2000. Grey-Wilson, C.. <i>Poppies: a guide to the poppy family in the wild and in cultivation</i> . Timber Press, Portland, OR | Introduced and cultivated in California |
| 205 | 2003. Pienaar, K.. <i>South African 'What Flower Is That?'</i> . Struik, Cape Town, South Africa | Introduced and cultivated in South Africa |
| 301 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. <i>Manual of the flowering plants of Hawaii</i> . Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | "Naturalized and relatively common along Pi'ilani Highway in remnant dry woodland, 550-575 m, Maui." |
| 301 | 2000. Grey-Wilson, C.. <i>Poppies: a guide to the poppy family in the wild and in cultivation</i> . Timber Press, Portland, OR | "In California, where <i>H. fumariifolia</i> is commonly cultivated, the species has become locally naturalized." |
| 302 | 1995. Spencer, R.. <i>Horticultural Flora of South Eastern Australia Volume 2: Flowering Plants</i> . UNSW Press, Sydney, Australia | "This plant has some weed potential." |
| 302 | 2008. Benitez, D.M./Belfield, T./Loh, R./Pratt, L./Christie, A.D.. <i>Inventory of Vascular Plants of the Kahuku Addition, Hawaii Volcanoes National Park</i> . Technical Report 157. Pacific Cooperative Studies Unit, Honolulu, HI | Appendix C. Invasive Alien Plants Encroaching on Kahuku [Hawaii Volcanoes National Park, includes <i>H. fumariifolia</i> , but with description of impacts] |
| 303 | 2007. Randall, R.P.. <i>Global Compendium of Weeds - <i>Hunnemannia fumariifolia</i></i> . Hawaii Ecosystems at Risk Project (HEAR), http://www.hear.org/gcw/species/hunnemannia_fumariifolia/ | No evidence that <i>H. fumariifolia</i> is a weed of agriculture, forestry, or horticulture. |
| 304 | 2007. Randall, R.P.. <i>Global Compendium of Weeds - <i>Hunnemannia fumariifolia</i></i> . Hawaii Ecosystems at Risk Project (HEAR), http://www.hear.org/gcw/species/hunnemannia_fumariifolia/ | Naturalized in Hawaii and California, but no evidence for or description of adverse environmental impacts |

| | | |
|-----|---|---|
| 305 | 1992. Nesom, G.L.. A second species of <i>Hunnemannia</i> (Papaveraceae) and synopsis of the genus. <i>Phytologia</i> . 73 (4): 330-337. | Abstract: A second species of the previously monotypic genus <i>Hunnemannia</i> is described: <i>H. hintoniolum</i> . The new species apparently is a rare gypsophile restricted to a small area of Nuevo Leon, Mexico. <i>Hunnemannia fumariifolia</i> is much more common and ranges from Nuevo Leon and Coahuila south to Oaxaca. A synopsis of the genus is presented, including a species key and distribution map. <i>Hunnemannia</i> apparently is the sister taxon of <i>Eschscholzia</i> , which has its native range primarily restricted to California and areas immediately adjacent to it. [new species of <i>Hunnemannia</i> with restricted range and no evidence of invasiveness] |
| 305 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | A monotypic genus of Mexico [no congeneric weeds] |
| 401 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | "Erect perennial herbs 5-6 dm tall, becoming somewhat woody at base. Leaves glaucous, ca. 6-17 cm long, the lobes 2-5 mm wide." [no spines, thorns or burrs] |
| 402 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | No evidence of allelopathic effects |
| 403 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | "Erect perennial herbs 5-6 dm tall, becoming somewhat woody at base." [not parasitic] |
| 404 | 2004. Atascadero Mutual Water Company. Water-Conserving Plants for North County Landscapes. http://www.slobg.org/WaterConservingPlants/AMWCPlantListWeb.pdf | Listed as having Deer Resistance [but unknown if plant is unpalatable to other animals] |
| 405 | 1986. Brossi, A./Helmuth, R./Manske, F.. The Alkaloids: Chemistry and pharmacology. Academic Press, Orlando, FL | Unknown [<i>H. fumariifolia</i> contains a number of alkaloids but no documentation of toxicity to animals reported] |
| 406 | 2003. Tenenbaum, F.. Taylor's encyclopedia of garden plants. Houghton Mifflin Harcourt, New York, NY | No evidence that <i>H. fumariifolia</i> is an important host of pests or pathogens |
| 407 | 2000. Grey-Wilson, C.. Poppies: a guide to the poppy family in the wild and in cultivation. Timber Press, Portland, OR | No evidence of toxicity [although a poppy with alkaloids, so effects of accidental or intentional ingestion are unknown] |
| 407 | 2003. Tenenbaum, F.. Taylor's encyclopedia of garden plants. Houghton Mifflin Harcourt, New York, NY | Popular ornamental with no evidence of allergenic properties or accidental poisonings |
| 408 | 2000. Grey-Wilson, C.. Poppies: a guide to the poppy family in the wild and in cultivation. Timber Press, Portland, OR | No evidence that this plant increase fire hazards |
| 409 | 2000. Grey-Wilson, C.. Poppies: a guide to the poppy family in the wild and in cultivation. Timber Press, Portland, OR | "Plants thrive best in a well-drained, rather light, soil in a sunny position" |
| 409 | 2003. Pienaar, K.. South African 'What Flower Is That?'. Struik, Cape Town, South Africa | "These plant require a warm position in full sun." |
| 410 | 2010. Dave's Garden. PlantFiles: Goldencup, Mexican Tulip Poppy. Dave's Garden, http://davesgarden.com/guides/pf/go/1302/ | Soil pH requirements: 6.6 to 7.5 (neutral) |
| 411 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | "Erect perennial herbs 5-6 dm tall, becoming somewhat woody at base." [No climbing or smothering growth habit] |
| 412 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | No evidence that <i>H. fumariifolia</i> forms dense thickets that impede movement or exclude other vegetation [an erect perennial herb] |

| | | |
|-----|--|---|
| 501 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | Terrestrial poppy |
| 502 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | Papaveraceae [not a grass] |
| 503 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | Papaveraceae [not a nitrogen fixing woody plant] |
| 504 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | Not a geophyte |
| 601 | 2009. Sosa, V./Ruiz-Sanchez, E./Rodriguez-Gomez, F.C.. Hidden phylogeographic complexity in the Sierra Madre Oriental: the case of the Mexican tulip poppy <i>Hunnemannia fumariifolia</i> (Papaveraceae). <i>Journal of Biogeography</i> . 36: 18–27. | No evidence of substantial reproductive failure in native habitat |
| 602 | 2000. Grey-Wilson, C.. Poppies: a guide to the poppy family in the wild and in cultivation. Timber Press, Portland, OR | "plants are so readily raised from seed" |
| 603 | 1992. Nesom, G.L.. A second species of <i>Hunnemannia</i> (Papaveraceae) and synopsis of the genus. <i>Phytologia</i> . 73 (4): 330-337. | Abstract: A second species of the previously monotypic genus <i>Hunnemannia</i> is described: <i>H. hintoniiorum</i> . The new species apparently is a rare gypsophile restricted to a small area of Nuevo Leon, Mexico. <i>Hunnemannia fumariifolia</i> is much more common and ranges from Nuevo Leon and Coahuila south to Oaxaca. A synopsis of the genus is presented, including a species key and distribution map. <i>Hunnemannia</i> apparently is the sister taxon of <i>Eschscholzia</i> , which has its native range primarily restricted to California and areas immediately adjacent to it. [no evidence of hybridization between species] |
| 603 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | Monospecific genus |
| 603 | 2010. WRA Specialist. Personal Communication. | No evidence of intergeneric hybridization documented in literature |
| 604 | 2010. WRA Specialist. Personal Communication. | Unknown if plants are self-compatible or apomictic |
| 605 | 1979. Clark, C.. Ultraviolet absorption of flowers of the <i>Eschscholziaceae</i> (Papaveraceae). <i>Madrono</i> . 26 (1): 22-25. | "all the species studied seem to be generalists, being pollinated by a variety of insects, including bees, beetles, and flies." [list of species studied includes <i>H. fumariifolia</i>] |
| 606 | 2000. Grey-Wilson, C.. Poppies: a guide to the poppy family in the wild and in cultivation. Timber Press, Portland, OR | "plants are so readily raised from seed" [no evidence of reproduction by vegetative fragmentation] |
| 607 | 2000. Grey-Wilson, C.. Poppies: a guide to the poppy family in the wild and in cultivation. Timber Press, Portland, OR | "The Tulip poppy is a choice perennial commonly grown in gardens as a half-hardy annual. Plants flower readily from seed in their first year." |
| 701 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | "relatively common along Piilani Highway in remnant dry woodland...seed of this species was sown on a grave near the end of Ulupalakua Road in 1920 and by 1922 the plant had begun to spread" [suggests seeds are being moved in soil along roadway] |
| 702 | 2000. Grey-Wilson, C.. Poppies: a guide to the poppy family in the wild and in cultivation. Timber Press, Portland, OR | Grown ornamentally |
| 703 | 2010. WRA Specialist. Personal Communication. | No evidence that this species has become a produce contaminant |
| 704 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | No mechanisms for wind-dispersal [probably gravity dispersed, or dispersed short distances in strong winds] |

| | | |
|-----|---|--|
| 705 | 1978. Clark, C./Jernstedt, J.A.. Systematic Studies of <i>Eschscholzia</i> (Papaveraceae). II. Seed Coat Microsculpturing. Systematic Botany. 3 (4): 386-402. | seed morphology provides "evidence of seed flotation as an adaptation to runoff dispersal in some species" [description of <i>Eschscholzia</i> species, but same publication states that <i>Hunnemannia</i> "seeds are substantially larger than those of any of the <i>Eschscholzia</i> species"; possibly water dispersed, but no direct evidence found] |
| 706 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | "Fruit a capsule, dehiscent by 2 valves from base upward. Seeds numerous, subglobose, rugose." [not fleshy-fruited, no adaptation for bird dispersal] |
| 707 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | Seeds with no adaptations or means of external attachment [no evidence of external dispersal by animals] |
| 708 | 2010. WRA Specialist. Personal Communication. | Unknown if seeds survive passage through gut [although unlikely to be consumed by animals] |
| 801 | 1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI. | "Erect perennial herbs 5-6 dm tall" [seed production unknown] |
| 802 | 2008. Liu, K./Eastwood, R. J./Flynn, S./Turner, R. M./Stuppy, W. H.. Seed Information Database (release 7.1, May 2008). http://www.kew.org/data/sid | Storage Behaviour: Orthodox Storage Conditions: Seeds maintained for 2 years in commercial storage conditions (Priestley, 1986); long-term storage under IPGRI preferred conditions at RBG Kew, WP. Oldest collection 15 years; germination change 97 to 100%, 15 years, 1 collection [suggests persistent seed bank will form, but no evidence from field conditions] |
| 803 | 2010. WRA Specialist. Personal Communication. | Unknown [No information found on control of this species with herbicides] |
| 804 | 2010. WRA Specialist. Personal Communication. | Unknown [no information found on ability to tolerate or benefit from mutilation, cultivation, or fire] |