

Family: *Papaveraceae***Taxon:** *Papaver rhoeas***Synonym:****Common Name:** common poppy
corn poppy
field poppy
red poppy

Questionnaire :	current 20090513	Assessor:	Assessor	Designation:	H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Assessor	WRA Score	11
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)		Low
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		n
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)		
303	Agricultural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)		y
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)		n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)		y
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		y
405	Toxic to animals		y=1, n=0		y
406	Host for recognized pests and pathogens		y=1, n=0		
407	Causes allergies or is otherwise toxic to humans		y=1, n=0		
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		y

411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	y
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	
604	Self-compatible or apomictic	y=1, n=-1	n
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	
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	y
704	Propagules adapted to wind dispersal	y=1, n=-1	
705	Propagules water dispersed	y=1, n=-1	
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m2)	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
803	Well controlled by herbicides	y=-1, n=1	y
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: H(HPWRA)

WRA Score 11

Supporting Data:

101	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Is the species highly domesticated? No evidence] "Corn poppy was grown in Egypt, where it was used medicinally and as a condiment as early as 1500 BC. In Greece, it was a popular love charm, but Greek physician Hippocrates (ca. 460-377 BC), father of medicine, employed it as a medicinal." ... "It was with the Roman legions that the poppy spread across Europe, springing up wherever grain fields were planted. It moved northward, its minute seeds always mingled with seed grain, through the Rhineland to Flanders, and so across the Channel to England (Haughton 1978)."
102	2013. WRA Specialist. Personal Communication.	NA
103	2013. WRA Specialist. Personal Communication.	NA
201	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Species suited to tropical or subtropical climate(s) 0-Low] "Although probably native to the Near East, corn poppy is now widely found in fields and in waste places throughout Europe, Asia, North America, and the majority of temperate countries of the world. However, it is most abundant in Europe (Holm et al. 1997; le Strange 1977)."
202	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Quality of climate match data 2-High]
203	2013. Backyard Gardener. <i>Papaver rhoeas</i> . http://www.backyardgardener.com/plantname/pda_6d62.html [Accessed 11 Dec 2013]	[Broad climate suitability (environmental versatility)? Yes, but restricted to temperate and Mediterranean climates] "USDA Hardiness Zone: 2 to 10"
204	2013. Kew Royal Botanic Gardens. <i>Plants & Fungi - Papaver rhoeas</i> (common poppy). http://www.kew.org/plants-fungi/Papaver-rhoeas.htm [Accessed 11 Dec 2013]	[Native or naturalized in regions with tropical or subtropical climates? No] "The common poppy is thought to be native to southern Europe, North Africa and temperate Asia. It has become naturalised outside of this range and is now widespread throughout much of Europe, Asia and North America."
205	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Does the species have a history of repeated introductions outside its natural range? Yes] "Corn poppy is distributed throughout the British Isles, excepting the north of Scotland; in Europe except in the far north; and in North America from Nova Scotia to North Dakota, south to New England, Virginia, Missouri, and Kansas (Allan 1978)"
301	1988. Webb, C. J./Sykes, W.R./Garnock-Jones, P.J.. <i>Flora of New Zealand</i> , Volume IV: Naturalised pteridophytes, gymnosperms, dicotyledons. Botany Division, DSIR, Christchurch, New Zealand http://FloraSeries.LandcareResearch.co.nz	[Naturalized beyond native range? Yes] "N.: Auckland, Taranaki, Bay of Plenty, Gisborne, Hawke's Bay; S.: Marlborough, Canterbury, Otago, Southland. "
301	2012. Imada, C.. Hawaiian Native and Naturalized Vascular Plants Checklist (December 2012 update). Bishop Museum Technical Report 60. Bishop Museum, Honolulu, HI	[Naturalized beyond native range? No evidence in Hawaiian Islands]
301	2012. Wagner, W.L./Herbst, D.R./Khan, N./Flynn, T.. Hawaiian Vascular Plant Updates: A Supplement to the Manual of the Flowering Plants of Hawai'i & Hawai'i's Ferns & Fern Allies. http://botany.si.edu/pacificislandbiodiversity/hawaii/anflora/supplement.htm	[Naturalized beyond native range? No evidence in Hawaiian Islands]
301	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Naturalized beyond native range? Yes] "Naturalized: AFRICA Macaronesia: Portugal - AzoresAUSTRALASIA Australia: Australia New Zealand: New Zealand NORTHERN AMERICA Mexico North America United States SOUTHERN AMERICA Caribbean: Hispaniola Southern South America: Chile"
302	2013. Plants for a Future Database. <i>Papaver rhoeas</i> . http://www.pfaf.org/user/Plant.aspx?LatinName=Papaver+rhoeas [Accessed 11 Dec 2013]	[Garden/amenity/disturbance weed? A weed of agriculture adapted to disturbance] "A common weed of cultivated land and waste places, avoiding acid soils[17]. Becoming far less frequent on cultivated land due to modern agricultural practices."

303	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Agricultural/forestry/horticultural weed? Yes] "Corn poppy is found in annual crops (especially winter cereals), gardens, meadows, nurseries, roadsides, wasteland, and disturbed sites. Pastures that have not been disturbed for years may become a sea of red corn poppy flowers when tilled. It occurs as a weed of 23 crops in 43 countries and is frequently reported as a weed of winter wheat (<i>Triticum sativum</i> L.) and other cereals. It is a principal weed of barley (<i>Hordeum vulgare</i> L.) in Greece, Iran, Russia, and Spain; cereals in Germany, Scotland, Russia, Spain, Sweden, and Yugoslavia; oat (<i>Avena sativa</i> L.) in Greece; rye (<i>Secale cereale</i> L.) in Poland; and wheat or winter wheat in England, France, Germany, Greece, Hungary, Iran, Italy, Morocco, Poland, and Spain. It is also a serious or principal weed problem of alfalfa (<i>Medicago sativa</i> L.), oil seed rape (<i>Brassica napus</i> L.), lentil (<i>Lens culinaris</i> L.), pea (<i>Pisum sativum</i> L.), and sugarbeet (<i>Beta vulgaris</i> L.) in various countries. It is a common weed of oat and wheat in the United States."
303	2008. Torra, J./Recasens, J.. Demography of Corn Poppy (<i>Papaver rhoeas</i>) in Relation to Emergence Time and Crop Competition. <i>Weed Science</i> . 56(6): 826-833.	[Agricultural/forestry/horticultural weed? Yes] "Corn poppy is the most important dicot weed in winter cereals in areas of southern Europe that have a Mediterranean climate (Chancellor 1986; Rapparini 2001; Riba et al. 1990). Corn poppy is a competitive weed that is well known for its ability to reduce cereal yield (Lintell-Smith et al. 1992; Wilson et al. 1995; Wright et al. 1997)."
304	2012. Randall, R.P.. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No. An agricultural weed]
304	2013. Learn 2 Grow. <i>Papaver rhoeas</i> . http://www.learn2grow.com/plants/papaver-rhoeas/ [Accessed 11 Dec 2013]	[Environmental weed? No] "Corn poppy has become naturalized across much of North America. It is generally not added to lists of noxious weed plants because it poses little to no ecological threat to native plant populations."
305	2001. Parsons, W.T./Cuthbertson, E.G.. <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	[Congeneric weed? Yes] <i>Papaver somniferum</i> is listed as a noxious weed of Australia
305	2012. Randall, R.P.. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? Yes. Several species listed as weeds]
401	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Produces spines, thorns or burrs? No] "Corn poppy is an annual herbaceous plant 10 to 90 cm tall with a branched taproot, erect, stiffly branched hairy stems, and milky sap. The light green leaves initially form in a rosette and are deeply pinnately lobed. The stem leaves are few, alternate, and pubescent."
402	1964. McNaughton, I.H./Harper, J.L.. <i>Papaver</i> L.. <i>Journal of Ecology</i> . 52,(3): 767-793.	[Allelopathic? No evidence] "Communities. <i>Papaver</i> species are frequently associated with other weedy species of disturbed ground both annuals and perennials capable of efficient establishment from seed. The sixty species most commonly associated with <i>P. rhoeas</i> are listed in order of frequency in Table 2."
402	2006. Topal, S./Kocaçalışkan, I.. Allelopathic effects of DOPA against four weed species. <i>DPÜ Fen Bil Enst Dergisi</i> . 11: 27-32.	[Allelopathic? No evidence. Several studies, including this one, investigate allelopathic effects against <i>Papaver rhoeas</i>] "Dopa is a natural product of some plants such as velvetbean. Its herbicidal effects on weed species; wild mustard (<i>Sinapis arvensis</i>), creeping thistle (<i>Cirsium arvense</i>), field poppy (<i>Papaver rhoeas</i>) and henbit (<i>Lamium amplexicaule</i>) were investigated using wheat (<i>Triticum vulgare</i>) and barley (<i>Hordeum vulgare</i>) species as control plants. Dopa showed suppressive herbicidal effect at 1500 and 3000 mg/l concentrations on the weeds without significantly affecting wheat and barley growth. The most affected weed species was found field poppy. Comparing growth of all weeds, inhibition in the growth of roots was more prominent compared to the growth of shoots."
403	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Parasitic? No] "Corn poppy is an annual herbaceous plant 10 to 90 cm tall with a branched taproot, erect, stiffly branched hairy stems, and milky sap." [<i>Papaveraceae</i>]
404	1964. McNaughton, I.H./Harper, J.L.. <i>Papaver</i> L.. <i>Journal of Ecology</i> . 52,(3): 767-793.	[Unpalatable to grazing animals? Yes, but sometimes eaten accidentally] "Papaver species are unpalatable to grazing animals. The common poppies are actively toxic or narcotic. <i>P. rhoeas</i> is stated by Cornevin to be poisonous in all its parts. The toxicity is caused by the alkaloids morphine and rhoeadine. Animals are safe since the unpleasant odour and taste of the plants render them obnoxious (Long 1910), but there are reports of cattle and horses being poisoned by <i>P. rhoeas</i> . 'Poisoning of domestic animals may occur if they are fed with fodder crops infested with poppies, and also when they ingest the capsules and seeds, especially in hay or waste matter from the winnowing or grading of seed' (Gardner & Bennetts 1956). Hakim, Mijovic & Walker (1961) record the presence of the iso-quinoline alkaloids coptisine and sanguinarine in various parts of <i>P. rhoeas</i> and state that insidious sanguinarine poisoning, producing glaucoma, could occur should the seeds be eaten."

404	2008. Pratesi, V./Ghiselli, L./Pardini, A./Buccioni, A./Vecchio, V.. Pasture plants of central Italy and possible traceable compounds in sheep cheese. Options Méditerranéennes, Series A. 79: 109-112.	[Unpalatable to grazing animals? Unknown. Possibly grazed unintentionally] "Many good forage plants are present, some of the most frequent species are also effectively grazed by livestock and some of the grazed species contain compounds that might be useful traceable for milk and cheese. However many of the species found that contain traceable (<i>Plantago</i> spp., <i>Taraxacum officinalis</i> , <i>Trifolium</i> spp., including some of those not very much grazed like <i>Latyrus montanus</i> , <i>Medicago arabica</i> , <i>Papaver rhoeas</i> , <i>Potentilla erecta</i>) are short plants, consequently it is possible that excessive fertilization or too little animal stocking rate favour their replacement by more vigorous and competitive grasses that are more productive (like <i>Avena sativa</i> , <i>Bromus erectus</i> , <i>Lolium multiflorum</i>) but have little or none utility for traceability."
404	2013. Kew Royal Botanic Gardens. Plants & Fungi - <i>Papaver rhoeas</i> (common poppy). http://www.kew.org/plants-fungi/Papaver-rhoeas.htm [Accessed 11 Dec 2013]	[Unpalatable to grazing animals? No. Not eaten intentionally] "Known hazards: Various alkaloids are present in all parts of the plant; potentially poisonous to horses, cattle and sheep if eaten in large quantities, but unlikely to cause human poisoning. "
405	1993. Wink, M./Hofer, A./Bilfinger, M./Englert, E./Martin, M./Schneider, D.. Geese and dietary allelochemicals—food palatability and geophagy. Chemoecology. 4(2): 93-107.	[Toxic to animals? Yes] "Table 5 Secondary compounds of foodplants and their toxicological effects in animals, especially humans. A selection of plants is considered for which phytochemical, toxicological and pharmacological information is available" [<i>Papaver rhoeas</i> - Class of compounds present = isoquinoline alkaloids; Effects = cause spasms; Comments = toxic]
405	2013. Kew Royal Botanic Gardens. Plants & Fungi - <i>Papaver rhoeas</i> (common poppy). http://www.kew.org/plants-fungi/Papaver-rhoeas.htm [Accessed 11 Dec 2013]	[Toxic to animals? Yes] "Known hazards: Various alkaloids are present in all parts of the plant; potentially poisonous to horses, cattle and sheep if eaten in large quantities, but unlikely to cause human poisoning. "
405	2013. Plants for a Future Database. <i>Papaver rhoeas</i> . http://www.pfaf.org/user/Plant.aspx?LatinName=Papaver+rhoeas [Accessed 11 Dec 2013]	[Toxic to animals? Yes] "This plant is toxic to mammals, though the toxicity is low[76]."
406	1964. McNaughton, I.H./Harper, J.L.. <i>Papaver</i> L.. Journal of Ecology. 52,(3): 767-793.	[Host for recognized pests and pathogens?] "Parasites on <i>P. rhoeas</i> include the gall midge, <i>Dasyneura papaveris</i> (Barnes 1949) and nematodes, <i>Pratylenchus vulnus</i> , <i>Heterodera</i> spp. (Gain 1894) and <i>Meloidogyne</i> spp. (Tarnani 1898). <i>Papaver rhoeas</i> is listed as one of the summer hosts of <i>Aphisfabae</i> Scop. but there is no indication of biological races specifically adapted to this species (Jones 1942). Fungal pathogens are listed by Moore (1959). <i>Botrytis cinerea</i> Fr. occurs on <i>Papaver</i> (unspecified) causing flower rot. Downy mildew (<i>Peronospora arborescens</i> (Berk) de Bary) and <i>Entylomafuscum</i> Schroet have been found on <i>Papaver rhoeas</i> . <i>Papaver</i> species appear to be little affected by viruses. <i>P. rhoeas</i> occurs within the experimental host range of the Cabbage Black Ringspot virus (Smith 1957);"
406	1984. Ullasa, B.A./Rawal, R.D.. <i>Papaver rhoeas</i> and <i>Moringa oleifera</i> , two new hosts of papaya powdery mildew. Current Science. 53(14): 754-755.	[Host for recognized pests and pathogens?] "These plants were shown to be collateral hosts of <i>Leveillula taurica</i> ; they were infected when growing close to mildewed papaw nursery beds in the Bangalore area and symptoms developed on all 3 hosts in cross inoculation experiments."
406	2011. The Royal Horticultural Society. <i>Papaver rhoeas</i> . http://apps.rhs.org.uk/plantselector/plant?plantid=1378 [Accessed 11 Dec 2013]	[Host for recognized pests and pathogens? Common pests & diseases] "May be attacked by aphids" ... "May be subject to a downy mildew"
407	1993. Wink, M./Hofer, A./Bilfinger, M./Englert, E./Martin, M./Schneider, D.. Geese and dietary allelochemicals—food palatability and geophagy. Chemoecology. 4(2): 93-107.	[Causes allergies or is otherwise toxic to humans? Possibly if consumed] "Table 5 Secondary compounds of foodplants and their toxicological effects in animals, especially humans. A selection of plants is considered for which phytochemical, toxicological and pharmacological information is available" [<i>Papaver rhoeas</i> - Class of compounds present = isoquinoline alkaloids; Effects = cause spasms; Comments = toxic]
407	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). Weed Technology. 14,(4): 826-829.	[Causes allergies or is otherwise toxic to humans? Medicinal] "Although it has been used for centuries as a medicinal plant, in the western world corn poppy now has few reported uses. The genus <i>Papaver</i> contains rhoedine alkaloids, but corn poppy has very low levels and none in the seeds (Holm et al. 1997). Corn poppy flowers are used in China to treat jaundice. Seeds contain over 21% protein and 47% oil and are used as a tonic for horses. The fresh petals were formerly made into syrup and used to alleviate pain. They are still used today for coughs, colds, bronchial complaints, whooping cough, asthma, and insomnia. And the petals are a source of red ink (de Bray 1978; Earle and Jones 1962; Renfrew 1973)."

407	2013. Plants for a Future Database. Papaver rhoeas. http://www.pfaf.org/user/Plant.aspx?LatinName=Papaver+rhoeas [Accessed 11 Dec 2013]	[Causes allergies or is otherwise toxic to humans? Potentially] "Seed - raw or cooked. Much used as a flavouring in cakes, bread, fruit salads etc[4, 5, 21, 183], it imparts a very nice nutty flavour[K]. The seeds are rather small, but they are contained in fairly large seed pods and so are easy to harvest. The seeds are perfectly safe to eat, containing none of the alkaloids associated with other parts of the plant[238]. Leaves - raw or cooked[7, 52]. Used like spinach or as a flavouring in soups and salads[132, 183]. The leaves should not be used after the flower buds have formed[7]. Some caution is advised, see the notes above on toxicity. An edible oil is obtained from the seed[2, 4]. Said to be an excellent substitute for olive oil[4, 183], it can be used in salad dressings or for cooking[2]. A syrup can be prepared from the scarlet flower petals, it is used in soups, gruels etc[4, 183]. A red dye from the petals is used as a food flavouring, especially in wine[183]."
408	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Creates a fire hazard in natural ecosystems? No evidence] "Corn poppy is an annual herbaceous plant 10 to 90 cm tall..." [Unlikely to become a fire hazard as a herbaceous annual]
408	2010. Lorensen, L./Callahan, K.. Firewise Plants for Western Nevada County. Fire Safe Council of Nevada County, Grass Valley, CA	[Creates a fire hazard in natural ecosystems? No. Recommended as a fire wise plant to reduce fire hazards around structures]
409	2013. Plants for a Future Database. Papaver rhoeas. http://www.pfaf.org/user/Plant.aspx?LatinName=Papaver+rhoeas [Accessed 11 Dec 2013]	[Is a shade tolerant plant at some stage of its life cycle? No] " It cannot grow in the shade."
410	1964. McNaughton, I.H./Harper., J.L.. Papaver L.. Journal of Ecology. 52,(3): 767-793.	[Tolerates a wide range of soil conditions? Yes] "It was observed as a dominant on every kind of soils except clay and peat, but there seems to be no justification for the statement by Buckman (1855) that the species was 'a most exact indication of sandy soil'."
410	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Tolerates a wide range of soil conditions ?] "Factors distressing poppy growth are poor soil fertility, shade, waterlogged soils, and competition from other species; however, plants tolerate fairly dry conditions. Seed size remains constant over a wide range of conditions (McNaughton and Harper 1964)."
410	2013. Learn 2 Grow. Papaver rhoeas. http://www.learn2grow.com/plants/papaver-rhoeas/ [Accessed 11 Dec 2013]	[Tolerates a wide range of soil conditions? Possibly] "Grow corn poppy in full sun and fertile soil with average moisture and good drainage." ... "Soil pH; Neutral; Soil Drainage: Well Drained; Soil type: Loam, Sand"
411	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Climbing or smothering growth habit? No] "Corn poppy is an annual herbaceous plant 10 to 90 cm tall with a branched taproot, erect, stiffly branched hairy stems, and milky sap. The light green leaves initially form in a rosette and are deeply pinnately lobed. The stem leaves are few, alternate, and pubescent."
412	1964. McNaughton, I.H./Harper., J.L.. Papaver L.. Journal of Ecology. 52,(3): 767-793.	[Forms dense thickets? Yes, but requires disturbance to become established] Gregariousness. P. rhoeas is frequently found in dense stands, in some areas turning the fields to scarlet during summer months. It may become dominant on waste ground or freshly turned soil. Seed is shed within a relatively narrow range of the parent plant (see VIII (c)) and highly localized patches of seedlings result. Self-thinning commonly reduces population size to about seventy to eighty mature plants per square foot (Harper & McNaughton 1962)."
501	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Aquatic? No] "An annual herbaceous plant 10 to 90 cm tall with a branched taproot..." [Terrestrial]
502	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Grass? No] Papaveraceae
503	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Nitrogen fixing woody plant? No] "Corn poppy is an annual herbaceous plant 10 to 90 cm tall with a branched taproot..." Papaveraceae
504	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Corn poppy is an annual herbaceous plant 10 to 90 cm tall with a branched taproot, erect, stiffly branched hairy stems, and milky sap."
601	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Evidence of substantial reproductive failure in native habitat? No evidence] "Corn poppy is highly responsive to growing conditions. When growing without competition, individual plants become quite large and produce many capsules. Densities of 270 plants/M ² support six capsules per plant. With wheat as a competitor, the poppy plants are greatly suppressed, but they all flower and produce at least one capsule with seeds. Individual plants have been encountered with 400 capsules containing 2,000 seeds each and as many as 4,300 capsules/M ² (Holm et al. 1997)."
602	2000. Mitich, L.W.. Corn Poppy (Papaver rhoeas L.). Weed Technology. 14,(4): 826-829.	[Produces viable seed? Yes] "Corn poppy is a prolific seed producer. A single plant may produce 65,000 to a maximum of 450,000 seeds."

603	1964. McNaughton, I.H./Harper, J.L.. <i>Papaver L.</i> <i>Journal of Ecology</i> . 52,(3): 767-793.	[Hybridizes naturally? Possibly no, although artificial hybrids are possible] "Hybrids (Fig. 2). Although <i>Papaver</i> species are frequently found together in the same habitat and normally flower over the same period very few putative hybrids have been reported. <i>P. rhoeas</i> var. <i>strigosum</i> Boenn. (see taxonomic description), has been erroneously reported as a hybrid by some authors (Salmon 1931). Plants regarded as hybrids between <i>P. dubium</i> and <i>P. rhoeas</i> by Woodruffe-Peacock (1913), principally on the basis of stigmatic ray numbers, were most probably extreme forms of <i>P. rhoeas</i> . Specimens of <i>P. dubium</i> with insect-galled capsules have been reported as hybrids with <i>P. rhoeas</i> because the deformed capsule is more globose than is normal for <i>P. dubium</i> ." ... "Artificial inter-specific crosses were made involving all possible cross pollinations of <i>P. rhoeas</i> , <i>P. dubium</i> , <i>P. lecoqii</i> , <i>P. argemone</i> and <i>P. hybridum</i> and the non-British <i>P. apulum</i> (McNaughton & Harper 1960b, c; McNaughton 1960). Hybrids between <i>P. rhoeas</i> and <i>P. dubium</i> were not only 100% sterile but many were inviable; a full range of forms including those suffering apical degeneration and death at the seedling stage (40%), bushy, stunted individuals which failed to flower, and more or less normal plants which flowered yet were completely sterile, was obtained (McNaughton & Harper 1960b). Some hybrids bore spreading and others appressed hairs on the peduncle. A characteristic virus-like syndrome was commonly found amongst the progeny, the plants bearing chlorotic asymmetric leaves on shortened intensely branched shoots. When such individuals flowered they often lacked stamens. Three plants resembling the artificially produced hybrids were later found showing the same syndrome amongst mixed populations of <i>P. rhoeas</i> and <i>P. dubium</i> in the wild. The putative hybrids reported from the field by Salmon (1919) closely resemble those produced artificially."
604	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Self-compatible or apomictic? No] "As corn poppy flowers open, the sepals drop, letting the crumpled petals expand. They have no nectar, but pollen is produced in abundant quantities. The species is self-incompatible."
605	1964. McNaughton, I.H./Harper, J.L.. <i>Papaver L.</i> <i>Journal of Ecology</i> . 52,(3): 767-793.	[Requires specialist pollinators? No] "Insect pollinators are numerous, bees being particularly frequent visitors"
605	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Requires specialist pollinators? No] "Honey and bumble bees are the chief pollinators of its flowers (McNaughton and Harper 1960)."
606	1964. McNaughton, I.H./Harper, J.L.. <i>Papaver L.</i> <i>Journal of Ecology</i> . 52,(3): 767-793.	[Reproduction by vegetative fragmentation? No] " <i>P. rhoeas</i> is a spring- or winter-annual reproducing entirely by seed."
606	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Reproduction by vegetative fragmentation? No. An annual that reproduces by seed] "Corn poppy is an annual herbaceous plant 10 to 90 cm tall..."
607	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Minimum generative time (years)? 1] "Corn poppy is an annual herbaceous plant 10 to 90 cm tall..."
701	2009. Heijting, S.S./Van Der Werf, W.W./Kropff, M.J.. Seed dispersal by forage harvester and rigid-tine cultivator in maize. <i>Weed Research</i> . 49: 153-163.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Possibly No] "...observations on the dispersal of light seeds like those of <i>Diotaxis muralis</i> (L.) DC. and <i>Papaver rhoeas</i> L. (S. Heijting, unpubl. obs.) showed that these seeds, when placed on the soil, do not travel very far under the influence of cultivation."
702	2013. Kew Royal Botanic Gardens. Plants & Fungi - <i>Papaver rhoeas</i> (common poppy). http://www.kew.org/plants-fungi/Papaver-rhoeas.htm [Accessed 11 Dec 2013]	[Propagules dispersed intentionally by people? Yes] "Common poppies are sometimes added to wildflower seed mixtures for habitat restoration and to create colourful annual displays of previously common cornfield flowers."
703	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Propagules likely to disperse as a produce contaminant? Yes] "Georgia (1942) states that corn poppy became established in the United States where seed wheat from southern Europe had been sown. At that time, it was infrequent elsewhere but not troublesome as a weed."
704	1964. McNaughton, I.H./Harper, J.L.. <i>Papaver L.</i> <i>Journal of Ecology</i> . 52,(3): 767-793.	[Propagules adapted to wind dispersal? Wind may facilitate shaking of capsule and release of seeds] "Seed is disseminated through pores in the capsule which open when the seed becomes ripe." ... "The pores of <i>P. rhoeas</i> , <i>P. dubium</i> and <i>P. lecoqii</i> are larger than those of <i>P. argemone</i> and <i>P. hybridum</i> and permit the seeds to escape more readily"
704	2000. Oberrath, R.. Seed dispersal by ants and its consequences for the phenology of plants: a study system for mutualistic animal-plant interactions. PhD Dissertation. RWTH Aachen University, Aachen, Germany	[Propagules adapted to wind dispersal? Short distances] "In addition, non-wind dispersed herbs had larger seeds than wind dispersed ones (examples for small seeded wind dispersed plants are common poppy, <i>Papaver rhoeas</i> , or mugwort, <i>Agrimonia vulgare</i>)."
705	2001. Hölzel, N./Otte, A.. The impact of flooding regime on the soil seed bank of flood-meadows. <i>Journal of Vegetation Science</i> . 12: 209–218.	[Propagules water dispersed? Possibly Yes] "App. 1. Frequency (percentage of samples per compartment in which the species occurred) in above-ground vegetation (V) and in the seed bank (D)." [<i>Papaver rhoeas</i> seeds found in a hybrid-flood plain seed bank. Seeds small enough that they may be moved by water]

706	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Propagules bird dispersed? Yes] "They shatter from the capsules, but a number of them are dispersed by birds, and some survive passage through their digestive tract (Ridley 1930; Salisbury 1964)."
706	2013. Czarnecka, J./Kitowski, I.. Rook Spring Seed Dispersal in the Agricultural Landscape—Frugivory, Granivory or Accidental Transport?. <i>Folia Geobotanica</i> . 48: 55–73.	[Propagules bird dispersed? Yes] "Seed dispersal seems to be extremely important in agrocoenoses where suitable habitats (patches) are surrounded by an unfavourable environment (matrix). The role of the rook <i>Corvus frugilegus</i> , an omnivorous bird, in seed dispersal was studied in the agricultural landscape of Eastern Poland." ... "Seeds were present in 18 % of pellets; 571 seeds were found, half of them belonging to dry-fruited species, without any obvious adaptations to endozoochory. These seeds could be an additional source of food, or they could have been accidentally swallowed during foraging for other food items." [Papaver rhoeas seeds in rook pellets]
707	2004. Couvreur, M./Vandenberghe, B./Verheyen, K./Herm, M.. An experimental assessment of seed adhesivity on animal furs. <i>Seed Science Research</i> . 14(2): 147-162.	[Propagules dispersed by other animals (externally)? Yes in experimental conditions. <i>Papaver rhoeas</i> demonstrates adhesiveness to all species studied] "Overview of the 66 study species, with a description of their diaspores (further referred to as seeds) (column 2), seed traits (columns 3–10), seed cluster number [1, seeds with unspecialized appendages (SUA); 2, seeds with specialized appendages (SSA); 3, seeds without appendages (SWA)] (column 11), adhesivity scores on the furs of seven animal species (columns 12–18) and global adhesivity score (the average adhesivity of the seven furs) (column 19). Botanical nomenclature follows Lambinon et al. (1998). At least 38 of the plant species have been observed to disperse epizoochorously, and at least five of the animal species have been reported as epizoochorous dispersal vectors (indicated by a reference number after the species name)"
708	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Propagules survive passage through the gut? Yes] "They shatter from the capsules, but a number of them are dispersed by birds, and some survive passage through their digestive tract (Ridley 1930; Salisbury 1964)."
708	2001. Gill, R.M.A./Beardall, V.. The impact of deer on woodlands: the effects of browsing and seed dispersal on vegetation structure and composition. <i>Forestry</i> . 74(3): 209-218.	[Propagules survive passage through the gut? Yes] "Table 3: Plant species (present in the British Isles) which have been shown to germinate from dung of red (<i>Cervus elaphus</i>) and fallow (<i>Dama dama</i>) deer (Malo and Suarez, 1995; Welch, 1985)" [Papaver rhoeas in dung of fallow deer]
801	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Prolific seed production (>1000/m ²)? Yes] "Corn poppy is a prolific seed producer. A single plant may produce 65,000 to a maximum of 450,000 seeds." ... "Seed banks can contain millions of corn poppy seeds. In former Czechoslovakia, 760,000 seeds/ha were reported in the top 30 cm of soil, whereas in England, half of the vegetable fields with corn poppy had more than 2.5 million seeds/ha and some had 20 million seeds (Holm et al. 1997; Roberts and Neilson 1982)."
802	2000. Mitich, L.W.. Corn Poppy (<i>Papaver rhoeas</i> L.). <i>Weed Technology</i> . 14,(4): 826-829.	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "Corn poppy seeds can lie dormant for years before suddenly germinating to beautify the devastation often worked by man in the name of progress (de Bray 1978)." ... "The corn poppy seed reservoir has been reduced 72% in 5 yr by intensive vegetable production systems (Roberts 1962). Because corn poppy seeds have a half-life of 11 yr in undisturbed grass sods, they persist for decades in such sites (Chancellor 1986)."
802	2008. Torra, J./Recasens, J.. Demography of Corn Poppy (<i>Papaver rhoeas</i>) in Relation to Emergence Time and Crop Competition. <i>Weed Science</i> . 56(6): 826-833.	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "The ability of this species to invade, grow, and persist in cereal fields can be attributed to the formation of a persistent seed bank, an extended period of germination, and high seed production (Holm et al. 1997)."
802	2013. Kew Royal Botanic Gardens. Plants & Fungi - <i>Papaver rhoeas</i> (common poppy). http://www.kew.org/plants-fungi/Papaver-rhoeas.htm [Accessed 11 Dec 2013]	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "Seeds: The small seeds are released through pores that open at the top of the capsule. They can remain dormant in the soil for 80 years or more."
803	2008. Kaloumenos, N.S./Eleftherohorinos, I.G.. Corn Poppy (<i>Papaver rhoeas</i>) Resistance to ALS-Inhibiting Herbicides and Its Impact on Growth Rate. <i>Weed Science</i> . 56(6): 789-796.	[Well controlled by herbicides? Yes for some herbicides, No for others] "The results of this study indicated that 28 out of 40 populations sampled from winter cereal fields and located in northern Greece were found resistant to tribenuron. These findings show clearly that the reported unsatisfactory control of corn poppy with the use of sulfonylurea herbicides is mainly attributed to development of weed resistance and not to unsuitable environmental conditions, inappropriate growth stage at herbicide application, or improper herbicide application. Also, these results indicate that measures should be taken for rotational use of the ALS inhibiting herbicides in other areas of Greece. However, the susceptibility of the R populations to 2,4-D and bromoxynil shows that Greek farmers can rely on the rotational use of these two herbicides to effectively control corn poppy in their cereal fields."

803	2011. Torra, J./Esnaol, A.R./Guinjuan, J R.. Management of herbicide-resistant <i>Papaver rhoeas</i> in dry land cereal fields. <i>Agronomy for Sustainable Development</i> . 31(3): 483-490.	[Well controlled by herbicides? Herbicide resistance is developing] "Herbicide resistant biotypes (to sulfonylureas and synthetic auxines) of <i>P. rhoeas</i> are extending across Europe, i.e. Spain (Duran-Prado et al. 2004; Cirujeda et al. 2001), Italy (Scarabel et al. 2004), Greece (Kaloumenos et al. 2009), Denmark and UK (Heap 2009), threatening the profitability of cereal production systems. Moreover, <i>P. rhoeas</i> populations resistant to photosystem II inhibiting herbicides have recently been found in Poland (Kucharski and Rola 2007). The appearance of these resistant populations in North-Eastern Spain in winter cereals is related to reduction of cultural methods, a greater herbicide dependence and the implementation of monocrop systems (Taberner et al. 2001)."
804	1989. Thanos, C.A./Marcou, S./Christodoulakis, D./Yannitsaros, A.. Early post-fire regeneration in <i>Pinus hrtia</i> forest ecosystems of Samos island (Greece). <i>Acta Ecologica</i> . 10(1): 79-94.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Seed bank benefits from fire, but not plant itself] "TABLE X. - List of species regenerating from seeds and observed in burnt sites during spring 1984"
804	2010. Gordon, D.R./Mitterdorfer, B./Pheloung, P.C. et al.. Guidance for addressing the Australian Weed Risk Assessment questions. <i>Plant Protection Quarterly</i> . 25(2): 56-74.	[Tolerates, or benefits from, mutilation, cultivation, or fire?] "This question does not apply to seed banks."
805	2013. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Widely naturalized
- An agricultural weed
- Related Papaver species have become invasive
- Unpalatable
- Toxic to cattle and other animals if consumed in large quantities
- Potentially toxic to people
- Tolerates many soil types
- Can form dense monocultures
- Annual plant that reaches maturity in 1 growing season
- Prolific seeder
- Seeds dispersed by animals, people, as a contaminant
- Produces a persistent seed bank

Low Risk Traits

- Grows in temperate climates
- Requires full sun
- Ornamental and culinary uses
- Self-incompatible
- Does not spread vegetatively
- Certain herbicides may provide effective control