Key Words: Evaluate, Possibly Naturalized, Ornamental Shrub, Puccinia Host, Bird-dispersed

Family: ***Myrtaceae***

Taxon: ***Myrtus communis***

Synonym: *Myrtus communis var. romana L.*
Myrtus communis var. tarentina L.

Common Name: myrtle

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** EVALUATE

Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score** 6

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)**	**Low**
203	**Broad climate suitability (environmental versatility)**	**y=1, n=0**	
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**	
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)**	**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**	**y**
403	**Parasitic**	**y=1, n=0**	**n**
404	**Unpalatable to grazing animals**	**y=1, n=-1**	**n**
405	**Toxic to animals**	**y=1, n=0**	**n**
406	**Host for recognized pests and pathogens**	**y=1, n=0**	**y**
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**	
409	**Is a shade tolerant plant at some stage of its life cycle**	**y=1, n=0**	**y**
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**	**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**	
604	**Self-compatible or apomictic**	**y=1, n=-1**	**y**
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**	**>3**
701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**y=1, n=-1**	**n**
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**	**n**
706	**Propagules bird dispersed**	**y=1, n=-1**	**y**
707	**Propagules dispersed by other animals (externally)**	**y=1, n=-1**	**y**
708	**Propagules survive passage through the gut**	**y=1, n=-1**	**y**
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**	**y**
803	**Well controlled by herbicides**	**y=-1, n=1**	
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	**y**
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: EVALUATE **WRA Score** **6**

Supporting Data:

101	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Is the species highly domesticated? Some cultivars may be highly domesticated, but this assessment addresses the wild type] "Because common myrtle has been cultivated since ancient times throughout the Mediterranean region, its wild origin is unclear." … "Today myrtle is grown more often as an ornamental than for its useful properties, and there are many cultivars with distinctive growth forms or foliage variegation patterns."
101	2012. Plants for a Future Database. Myrtus communis. http://www.pfaf.org/user/Plant.aspx?LatinName=Myrtus+communis	[Is the species highly domesticated? Some cultivars may be highly domesticated, but this assessment addresses the wild type] "There are a number of named varieties[183]. 'Tarentina' with narrow small leaves is hardier than the type and is especially wind resistant[182, 200], 'Microphylla' is a dwarf form and 'Leucocarpa' has white berries[182]. "
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) 2-High] "Native - AFRICA - Macaronesia: Portugal - Azores, Madeira Islands; Spain - Canary Islands. Northern Africa: Algeria; Libya; Morocco; Tunisia. Northeast Tropical Africa: Eritrea; Ethiopia. ASIA-TEMPERATE - Arabian Peninsula: Yemen. Western Asia: Afghanistan; Cyprus; Iran; Iraq; Israel; Jordan; Lebanon; Syria; Turkey. ASIA-TROPICAL - Indian Subcontinent: Pakistan. EUROPE - Southeastern Europe: Albania; Former Yugoslavia; Greece [incl. Crete]; Italy [incl. Sardinia, Sicily]; Malta. Southwestern Europe: France [incl. Corsica]; Portugal; Spain [incl. Baleares]"
202	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Quality of climate match data 0 - Low] "Because common myrtle has been cultivated since ancient times throughout the Mediterranean region, its wild origin is unclear."
203	2012. Backyard Gardener. Myrtus communis. http://www.backyardgardener.com/plantname/pd_d0b3.html	[Broad climate suitability (environmental versatility)? Not based on hardiness zones] "USDA Hardiness Zone: 8 to 9"
203	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Broad climate suitability (environmental versatility)? Possibly Yes. Broad distribution] "Native - AFRICA - Macaronesia: Portugal - Azores, Madeira Islands; Spain - Canary Islands. Northern Africa: Algeria; Libya; Morocco; Tunisia. Northeast Tropical Africa: Eritrea; Ethiopia. ASIA-TEMPERATE - Arabian Peninsula: Yemen. Western Asia: Afghanistan; Cyprus; Iran; Iraq; Israel; Jordan; Lebanon; Syria; Turkey. ASIA-TROPICAL - Indian Subcontinent: Pakistan. EUROPE - Southeastern Europe: Albania; Former Yugoslavia; Greece [incl. Crete]; Italy [incl. Sardinia, Sicily]; Malta. Southwestern Europe: France [incl. Corsica]; Portugal; Spain [incl. Baleares]"
204	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Native - AFRICA - Macaronesia: Portugal - Azores, Madeira Islands; Spain - Canary Islands. Northern Africa: Algeria; Libya; Morocco; Tunisia. Northeast Tropical Africa: Eritrea; Ethiopia. ASIA-TEMPERATE - Arabian Peninsula: Yemen. Western Asia: Afghanistan; Cyprus; Iran; Iraq; Israel; Jordan; Lebanon; Syria; Turkey. ASIA-TROPICAL - Indian Subcontinent: Pakistan. EUROPE - Southeastern Europe: Albania; Former Yugoslavia; Greece [incl. Crete]; Italy [incl. Sardinia, Sicily]; Malta. Southwestern Europe:France [incl. Corsica]; Portugal; Spain [incl. Baleares]"
205	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Does the species have a history of repeated introductions outside its natural range? Hawaiian Islands] "Today myrtle is grown more often as an ornamental than for its useful properties, and there are many cultivars with distinctive growth forms or foliage variegation patterns. Myrtle was present in Honolulu by the early decades of the twentieth century."
205	2011. Sumbul, S./Ahmad, M.A./Asif, M./Akhtar, M.. Myrtus communis Linn. - A review. Indian Journal of Natural Products and Resources. 2(4): 395-402.	[Does the species have a history of repeated introductions outside its natural range? Yes] "It is native to Southern Europe, North Africa and West Asia. It is distributed in South America, North western Himalaya and Australia and widespread in the Mediterranean region. It is also cultivated in gardens especially North-west Indian region for its fragrant flowers1,2."
301	2007. Randall, R.P.. Global Compendium of Weeds - Myrtus communis. http://www.hear.org/gcw/species/myrtus_communis/	[Naturalized beyond native range? Listed as naturalized in Australia]

301	2012. 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? Possibly Yes] "Naturalized: AFRICA. Southern Africa: South Africa - Western Cape" [Could not corroborate this record with subsequent literature searches]
302	2007. Randall, R.P.. Global Compendium of Weeds - Myrtus communis. http://www.hear.org/gcw/species/myrtus_communis/	[Garden/amenity/disturbance weed? Listed as a weed, but impacts unspecified]
303	2007. Randall, R.P.. Global Compendium of Weeds - Myrtus communis. http://www.hear.org/gcw/species/myrtus_communis/	[Agricultural/forestry/horticultural weed? No evidence]
304	2007. Randall, R.P.. Global Compendium of Weeds - Myrtus communis. http://www.hear.org/gcw/species/myrtus_communis/	[Environmental weed? No evidence]
305	2007. Randall, R.P.. Global Compendium of Weeds - Index. http://www.hear.org/gcw/	[Congeneric weed? No evidence]
401	2011. Sumbul, S./Ahmad, M.A./Asif, M./Akhtar, M.. Myrtus communis Linn. - A review. Indian Journal of Natural Products and Resources. 2(4): 395-402.	[Produces spines, thorns or burrs? No] "The common myrtle has upright stem, 2.4-3 m high, its branches form a close full head, thickly covered with evergreen leaves. The stem of the plant is branched and dark green leaves are glossy, glabrous, coriaceous, opposite, paired or whorled, ovate to lanceolate with stiff structure, aromatic, entire margined, acuminate and 2.5 3.8 cm long, glands absent in the lamina."
402	1979. Khosh-Khui, M./Bassiri, A.. Inhibition of seedling growth by wild myrtle (Myrtus communis L.). Weed Research. 19: 45-50.	[Allelopathic? Yes] "Plants of wild myrtle (Myrtus communis L.) collected at full bloom contained substances inhibitory to the germination and seedling growth of perennial ryegrass (Lolium perenne L., cv Hollandi)…These results suggest that the possible use of wild myrtle as an evergreen hedge plant needs to be examined further because of possible interference with the growth of nearby lawns and flowers."
402	2012. Bapeer, U.H.K.. Allelopathic potential of Myrtle, Myrtus communis L. Upon some crops. J. Baghdad for Sci.. 9(1): 104-112.	[Allelopathic? Demonstrates some allelopathic properties in controlled experiments]
403	2011. Sumbul, S./Ahmad, M.A./Asif, M./Akhtar, M.. Myrtus communis Linn. - A review. Indian Journal of Natural Products and Resources. 2(4): 395-402.	[Parasitic? No] "The common myrtle has upright stem, 2.4-3 m high, its branches form a close full head, thickly covered with evergreen leaves." [Myrtaceae]
404	1980. Le Houerou, H.N. (ed.). Browse in Africa. The Current State of Knowledge. International Livestock Centre for Africa, Addis Ababa, Ethiopia	[Unpalatable to grazing animals? No] "Table 7. Palatability Rating" "Myrtus communis" … "Parts Consumed - F R" [F R = Leaves & Twigs] … "Palatability - PP" [Poorly palatable or occasionally palatable] … "Species of livestock - Bov Ov (Cap)" [Bov = usually browsed by bovines, cattle, Ov = usually browsed by ovines, sheep, (Cap) occasionally browsed by capines]
405	1980. Le Houerou, H.N. (ed.). Browse in Africa. The Current State of Knowledge. International Livestock Centre for Africa, Addis Ababa, Ethiopia	[Toxic to animals? No evidence]
405	2011. Sumbul, S./Ahmad, M.A./Asif, M./Akhtar, M.. Myrtus communis Linn. - A review. Indian Journal of Natural Products and Resources. 2(4): 395-402.	[Toxic to animals? Insecticidal properties] "The insecticidal activities of essential oil from leaves and flowers of M. communis against fourth instar larvae of the mosquito Culex pipiens molestus Forskal were determined and oils were found to be toxic54."
406	2008. Loope, L./La Rosa, A.M.. An Analysis of the Risk of Introduction of Additional Strains of the Rust Puccinia psidii Winter (`Ohi`a Rust) to Hawai`i. U.S. Geological Survey Open File Report 2008-1008. http://pubs.usgs.gov/of/2008/1008	[Host for recognized pests and pathogens? Yes] "The identity of the strain or strains in California is unclear, but one of them is known to infect myrtle, Myrtus communis, a species commonly imported into Hawai`i." … "Puccinia psidii is widely distributed in south Florida and has been established on myrtle (Myrtus communis) in San Diego County, California, since November 2005 (Mellano, 2006). Shipments of myrtle commonly come to Hawai`i from California (Janice Uchida, former flower shop owner, pers. comm., 2007); therefore this is a likely source of infection. Maui inspectors intercepted the rust on myrtle from a small town California shipper in December 2006."

406	2012. Loope, L.L./Uchida, J.Y.. The Challenge of Retarding Erosion of Island Biodiversity through Phytosanitary Measures: An Update on the Case of Puccinia psidii in Hawai'i. Pacific Science. 66(2): 127-139.	[Host for recognized pests and pathogens? Yes] "Much attention has been given to the likely source of the initial establishment of a strain of P. psidii in Hawai'i. The source is in fact uncertain but is likely to have been either imported nursery stock or decorative foliage of common myrtle (Myrtus communis) from the mainland United States (Loope and La Rosa 2008). Transmission of P. psidii on imported nursery stock is a plausible pathway, but no interceptions have been reported by HDOA. However, since 2006, HDOA inspectors have repeatedly intercepted P. psidii in infected shipments of incoming cut (decorative) myrtle foliage (Loope and La Rosa 2008, Loope 2010). An outbreak of P. psidii on cultivated myrtle in southern California in 2005 was reported (Mellano 2006); most of Hawai'i's imported cut foliage and flowers are shipped from California. Another candidate vehicle for establishment of Hawai'i's initial rust strain is waxflower (Chamelaucium uncinatum), a species native to Western Australia and an important filler species in the international flower trade, first noted as a host of P. psidii in Hawai'i (Loope 2010)."
407	2006. Tardio, J./Pardo-deSantayana, M./Morales, R.. Ethnobotanical review of wild edible plants in Spain. Botanical Journal of the Linnean Society. 152: 27-71.	[Causes allergies or is otherwise toxic to humans? No evidence] "Fruits, eaten raw (AU); branches with leaves as a condiment for olives (AU)"
407	2012. Plants for a Future Database. Myrtus communis. http://www.pfaf.org/user/Plant.aspx?LatinName=Myrtus+communis	[Causes allergies or is otherwise toxic to humans? No evidence] "Known Hazards: None known" … "The leaves are aromatic, balsamic, haemostatic and tonic[7, 46]. Recent research has revealed a substance in the plant that has an antibiotic action[7]. The active ingredients in myrtle are rapidly absorbed and give a violet-like scent to the urine within 15 minutes[238]. The plant is taken internally in the treatment of urinary infections, digestive problems, vaginal discharge, bronchial congestion, sinusitis and dry coughs[238, 254]. In India it is considered to be useful in the treatment of cerebral affections, especially epilepsy[240]. Externally, it is used in the treatment of acne (the essential oil is normally used here), wounds, gum infections and haemorrhoids[238]. The leaves are picked as required and used fresh or dried[238]. An essential oil obtained from the plant is antiseptic[240]. It contains the substance myrtol - this is used as a remedy for gingivitis[7]. The oil is used as a local application in the treatment of rheumatism[240]. The fruit is carminative[240]. It is used in the treatment of dysentery, diarrhoea, haemorrhoids, internal ulceration and rheumatism[240]."
408	2006. Petriccione, M./Moro, C./Rutigliano, F.A.. Preliminary studies on litter flammability in Mediterranean region. Forest Ecology and Management. 234S: S128.	[Creates a fire hazard in natural ecosystems? Possibly] "First data suggest the following classification of litter flammability: (1) Quercus pubescens, Fraxinus ornus, Pinus pinaster and Genista aetnensis, the most flammable litters (2) Myrtus communis, Quercus ilex, Pinus halepensis, Cupressus sempervirens and Olea eu. Sylvestris litters with intermediate values, (3) Cistus salvifolius litter, with a very low flammability and, finally, (4) Robinia pseudoacacia, Ulmus minor, Pistacia lentiscus and Cistus incanus litters, with null flammability."
408	2011. Hachmi, M./Sesbou, A./Benjelloun, H./El Handouz, N./Bouanane, F.. A Simple Technique to Estimate the Flammability Index of Moroccan Forest Fuels. Journal of Combustion. doi:10.1155/2011/263531: .	[Creates a fire hazard in natural ecosystems? Possibly No] "Table 6: Moroccan species classification using their flammability index" … "Myrtus communis" … "Less flammable species"
409	2001. Mendes, M.M./Gazarini, L.C./Rodrigues, M.L.. Acclimation of Myrtus communis to contrasting Mediterranean light environments — effects on structure and chemical composition of foliage and plant water relations. Environmental and Experimental Botany.	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Myrtus communis is an evergreen sclerophyll shrub which grows naturally in the Mediterranean area under different conditions of light availability from open clearing (full sunlight) to understory (canopy shading)."
409	2012. Backyard Gardener. Myrtus communis. http://www.backyardgardener.com/plantname/pd_d0b3.html	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Part Sun to Full Sun"
410	2005. Burke, D.. The complete Burke's backyard: the ultimate book of fact sheets. Murdoch Books, Millers Point, Australia	[Tolerates a wide range of soil conditions? Yes] "Myrtle is adaptable to most soil and positions."
410	2012. Plants for a Future Database. Myrtus communis. http://www.pfaf.org/user/Plant.aspx?LatinName=Myrtus+communis	[Tolerates a wide range of soil conditions? Yes] "Succeeds in any reasonably good soil so long as it is well-drained[1]. Prefers a moderately fertile well-drained neutral to alkaline loam in a sunny position[11, 200, 238]. Succeeds in dry soils."
410	2012. Shoot Gardening. Myrtus communis (Common myrtle). http://www.shootgardening.co.uk/plant/myrtus-communis	[Tolerates a wide range of soil conditions? Yes] "Soil types: Chalky, Clay, Loamy, Sandy (will tolerate most soil types)"

411	2001. Traveset, A./Riera, N./Mas, R.E.. Ecology of Fruit-Colour Polymorphism in Myrtus communis and Differential Effects of Birds and Mammals on Seed Germination and Seedling Growth. Journal of Ecology. 89(5): 749-760.	[Climbing or smothering growth habit? No] "Myrtus communis (myrtle) is an evergreen shrub that can reach up to 5 m in height. It occurs in Mediterranean woodlands, maquis and garrigues, and it is the only species of the genus found in the Northern Hemisphere (Bonafe 1979)."
412	2001. Traveset, A./Riera, N./Mas, R.E.. Ecology of Fruit-Colour Polymorphism in Myrtus communis and Differential Effects of Birds and Mammals on Seed Germination and Seedling Growth. Journal of Ecology. 89(5): 749-760.	[Forms dense thickets? No evidence]
412	2005. Fernandez, N.. Spatial patterns in European rabbit abundance after a population collapse. Landscape Ecology. 20: 897-910.	[Forms dense thickets? A component of thicket vegetation] "Mean cover of bushy vegetation, referring solely to the more sheltering tall shrubs and thickets (>1.5 m, mainly Myrtus communis, Pistacia lentiscus, Erica spp. and Juniperus phoenicea),"
501	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Aquatic? No] Terrestrial
502	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Grass? No] Myrtaceae
503	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Nitrogen fixing woody plant? No] Myrtaceae
504	2001. Traveset, A./Riera, N./Mas, R.E.. Ecology of Fruit-Colour Polymorphism in Myrtus communis and Differential Effects of Birds and Mammals on Seed Germination and Seedling Growth. Journal of Ecology. 89(5): 749-760.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Myrtus communis (myrtle) is an evergreen shrub that can reach up to 5 m in height. It occurs in Mediterranean woodlands, maquis and garrigues, and it is the only species of the genus found in the Northern Hemisphere (Bonafe 1979)."
601	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Evidence of substantial reproductive failure in native habitat? No evidence]
602	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Produces viable seed? Yes] "Germination of myrtle seeds is rapid in Petri dishes, and germination rates are very high (Traveset et al. 2001)."
603	2011. Kubitzki, K. (ed.). The Families and Genera of Vascular Plants. Vol. X. Flowering Plants. Eudicots: Sapindales, Cucurbitales, Myrtaceae. Springer, New York	[Hybridizes naturally? Unknown] "Myrtus L. … A genus of 2 species: Mediterranean, Middle East and north Africa."
604	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Self-compatible or apomictic? Yes] "Myrtle is a self-compatible, hermaphroditic and insect-pollinated Mediterranean shrub."
604	2009. González-Varo, J.P./Arroyo, J./Aparicio, A.. Effects of fragmentation on pollinator assemblage, pollen limitation and seed production of Mediterranean myrtle (Myrtus communis). Biological Conservation. 142: 1058-1065.	[Self-compatible or apomictic? Yes] "The breeding system in Myrtus communis was self compatible, but compared with natural pollination, fruit set increased with pollen addition (quantity limited), and seed set (brood size) increased with outcross pollen addition (quality limited)."
605	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Requires specialist pollinators? No]"Myrtle is a self-compatible, hermaphroditic and insect-pollinated Mediterranean shrub." … "The flowers are white, have one style and multiple stamens ([50), open in June–July, and are mainly pollinated by bees and flies (Gonza´lez-Varo et al. unpublished)."

606	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Reproduction by vegetative fragmentation? No evidence] Reproduces by seed
607	2012. Shoot Gardening. Myrtus communis (Common myrtle). http://www.shootgardening.co.uk/plant/myrtus-communis	[Minimum generative time (years)? 10+] "10-20 years to maturity"
701	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No evidence] "The myrtle fruit is a multi-seeded berry that is dark-blue when fully matures in November. In the study area, berries contain an average (±SD) of 5.6 (±3.2) seeds (n = 620 fruits from 31 plants)."
702	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Propagules dispersed intentionally by people? Yes] "Today myrtle is grown more often as an ornamental than for its useful properties, and there are many cultivars with distinctive growth forms or foliage variegation patterns. Myrtle was present in Honolulu by the early decades of the twentieth century."
703	2012. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No evidence] Propagules unlikely to come into contact with produce
704	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Propagules adapted to wind dispersal? No] "The myrtle fruit is a multi-seeded berry that is dark-blue when fully matures in November. In the study area, berries contain an average (±SD) of 5.6 (±3.2) seeds (n = 620 fruits from 31 plants). Frugivorous passerine birds and some mammals (belonging to Order Carnivora) are the most important seed dispersal vectors (Traveset et al. 2001)."
705	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Propagules water dispersed? No] "The myrtle fruit is a multi-seeded berry that is dark-blue when fully matures in November. In the study area, berries contain an average (±SD) of 5.6 (±3.2) seeds (n = 620 fruits from 31 plants)." [Bird and mammal dispersed]
706	2008. Traveset, A./Rodríguez-Pérez, J./Pías, B.. Seed Trait Changes in Dispersers' Guts and Consequences for Germination and Seedling Growth. Ecology. 89(1): 95-106.	[Propagules bird dispersed? Yes] "Myrtus communis (hereafter Myrtus) is a hermaphrodite evergreen shrub that can reach up to 5 m in height. There are two color morphs of the berries (blue and white/yellowish), but they show no significant differences in seed removal, seed germination patterns, or seedling growth (Traveset et al. 200lb). Berries of either morph contain an average of 9.8 seeds and are available from November to February. Both fruit and seed traits also vary considerably among individual plants (Table 1). The main dispersers of both species are birds, although carnivorous mammals such as foxes, martens, and weasels, as well as reptiles (lizards in the case of Phillyrea), consume the fruits in nature and disperse the seeds intact (Aronne and Russo 1997, Traveset et al. 2001b)."
707	1994. Aronne, G./Wilcock, C.C.. First Evidence of Myrmecochory in Fleshy-Fruited Shrubs of the Mediterranean Region. New Phytologist,. 127(4): 781-788.	[Propagules dispersed by other animals (externally)? Yes] "Examination of the structure of the fruits and seeds of R. alaternus and M. communis, and summer fruiting phenology of R. alaternus, provided further evidence of specific adaptation to ant dispersal." … "The discovery of an elaiosome on the seeds of M. communis and R. alaternus suggests that bothspecies, although fleshy-fruited, have a morphological adaptation to ant dispersal."
708	2008. Traveset, A./Rodríguez-Pérez, J./Pías, B.. Seed Trait Changes in Dispersers' Guts and Consequences for Germination and Seedling Growth. Ecology. 89(1): 95-106.	[Propagules survive passage through the gut? Yes] "Seed passage through birds' guts sped up germination in both species, especially in Myrtus."
801	2009. Gonzalez-Varo, J.P./Albaladejo, R.G./Aparicio, A.. Mating patterns and spatial distribution of conspecific neighbours in the Mediterranean shrub Myrtus communis (Myrtaceae). Plant Ecology. 203: 207-215.	[Prolific seed production (>1000/m2)? Unknown] "The myrtle fruit is a multi-seeded berry that is dark-blue when fully matures in November. In the study area, berries contain an average (±SD) of 5.6 (±3.2) seeds (n = 620 fruits from 31 plants)."
802	2001. Traveset, A./Riera, N./Mas, R.E.. Ecology of Fruit-Colour Polymorphism in Myrtus communis and Differential Effects of Birds and Mammals on Seed Germination and Seedling Growth. Journal of Ecology. 89(5): 749-760.	[Evidence that a persistent propagule bank is formed (>1 yr)?] "Myrtus communis seeds have no apparent dormancy, and we could thus predict that fast germination and high germinability are advantageous, in order to maximize reproductive success and seedling recruitment (Harper 1977; Jones et al. 1997)."
802	2004. Clemente, A./Rego, F./Correia, O.. Patterns of seed survival within fire response groups. Revista de Biologia Lisboa. 22: 123-132.	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "One year after burial, 28% of M. communis seeds were viable"

803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	1995. Sheat, B./Schofield, G.. Complete Gardening in Southern Africa. Struik Publishers, Cape Town, South Africa	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Because this evergreen will accept any amount of clipping, it is used extensively as a tub specimen and pruned into topiary."
804	2009. Catalanotti, A.E.. Effects of prescribed burning on soil and vegetation. PhD Dissertation. University of Naples Federico II, Naple, Italy	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes. Resprouts after fire] "Active pyrophytes have evolved two different response strategies: vegetative (respouters) and from seed (seeders). In the first case (Figure 1.1a), fire, removing leaves or the whole stem, stimulated surviving buds to produce new shoots (Barro and Conard, 1991). Vegetative resprouting is typical among sclerophyllous evergreen species of the Mediterranean maquis such as Pistacia lentiscus, Quercus ilex (Figure 1.2), Myrtus communis and Spartium junceum (Mazzoleni, 1993)."
805	2006. Uchida, J./Zhong, S.. First Report of a Rust Disease on Ohia Caused by Puccinia psidii in Hawaii. Plant Disease. 90(4): 524.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Possibly] Puccinia psidii established in the Hawaiian Islands
805	2008. Loope, L./La Rosa, A.M.. An Analysis of the Risk of Introduction of Additional Strains of the Rust Puccinia psidii Winter (`Ohi`a Rust) to Hawai`i. U.S. Geological Survey Open File Report 2008-1008. http://pubs.usgs.gov/of/2008/1008	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Possibly]

Summary of Risk Traits

High Risk / Undesirable Traits

- Possibly naturalized in South Africa and Australia
- Allelopathic properties
- Shade tolerant
- Tolerates many soil conditions (and potentially able to exploit many different habitat types)
- Host of *Puccinia psidii*
- Self-compatible
- Fleshy fruited, with seeds dispersed by birds and mammals
- Can form a persistent seed bank
- Resprouts after fire

Low Risk / Desirable Traits

- Despite ability to spread, no negative impacts have been documented
- Unarmed (no spines, thorns or burrs)
- Palatable to animals
- Non-toxic
- Landscaping and ornamental value
- Timber tree
- Long time to maturity (10-20 years)