

**Family:** Asteraceae

**Taxon:** Achillea millefolium

**Synonym:** Achillea lanulosa Nutt.  
A. lanulosa Nutt.  
A. borealis Bong.

**Common Name:** yarrow  
milfoil  
bloodwort carpenter's weed

<b>Questionnaire :</b>	current 20090513	<b>Assessor:</b>	Chuck Chimera	<b>Designation:</b> H(HPWRA)
<b>Status:</b>	Assessor Approved	<b>Data Entry Person:</b>	Chuck Chimera	<b>WRA Score</b> 19
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)	Intermediate
203	Broad climate suitability (environmental versatility)		y=1, n=0	y
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)	y
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)	
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	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	
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	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	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	y
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	y
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	y
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	y
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed	y=1, n=-1	n
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	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	
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: H(HPWRA)

WRA Score 19

## Supporting Data:

101	2011. Floridata. <i>Achillea millefolium</i> . <a href="http://www.floridata.com/ref/a/achi_mil.cfm">http://www.floridata.com/ref/a/achi_mil.cfm</a>	[Is the species highly domesticated? No] "Although wild yarrow is a troublesome weed in fields and gardens, horticulturists have created, selected and hybridized many outstanding cultivars which are beautiful flowering perennials...Even the horticultural selections of yarrow are vigorous and strong growers, adaptable to a wide variety of soils and growing conditions, and likely to spread."
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Species suited to tropical or subtropical climate(s) 0-low] "Data on the distribution of <i>A. millefolium</i> was used to develop a CLIMEX model of its distribution worldwide and in Australia under current and changing climatic conditions. The models indicate that cool, temperate and Mediterranean climates are suitable for this species, while deserts and tropics are unsuitable."
201	2011. Floridata. <i>Achillea millefolium</i> . <a href="http://www.floridata.com/ref/a/achi_mil.cfm">http://www.floridata.com/ref/a/achi_mil.cfm</a>	[Species suited to tropical or subtropical climate(s) 0-low] "Common yarrow is a cosmopolitan weed originally native to Europe and western Asia. Today it grows in temperate regions worldwide."
202	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.	[Quality of climate match data 1-intermediate] "in Hawaii, naturalized from 1200 to 3000 m on the island of Hawaii". [naturalized at higher elevations, lower elevation limit marginally subtropical]
203	1984. Bourdot, G.W.. Regeneration of yarrow ( <i>Achillea millefolium</i> L.) rhizome fragments of different length from various depths in the soil. <i>Weed Research</i> . 24: 421-429.	[Broad climate suitability (environmental versatility)? Yes] " <i>Achillea millefolium</i> has a wide tolerance to environmental conditions and is adaptable to a broad range of soil types and climates"
203	2005. Gardner, J.A./Dougherty, H.S.. Herbs in Bloom: A Guide to Growing Herbs as Ornamental Plants. Timber Press, Portland, OR	[Broad climate suitability (environmental versatility)? Yes] "Hardiness: Zones 3-10"
203	2011. Floridata. <i>Achillea millefolium</i> . <a href="http://www.floridata.com/ref/a/achi_mil.cfm">http://www.floridata.com/ref/a/achi_mil.cfm</a>	[Broad climate suitability (environmental versatility)? Yes] "Hardiness: USDA Zones 3 - 9. Many of the cultivars are listed as useful only in zones 4-8. Flower colors often fade and stems tend to be weaker when temperatures are above 80°F (26.7°C)."
204	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.	[Native or naturalized in regions with tropical or subtropical climates? Yes] "in Hawaii, naturalized from 1200 to 3000 m on the island of Hawaii." [naturalized at higher elevations, lower elevation limits marginally subtropical]
205	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Does the species have a history of repeated introductions outside its natural range? Yes] "Cultivated in many countries, including Australia."
301	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.	[Naturalized beyond native range? Yes] "in Hawaii, naturalized from 1200 to 3000 m on the island of Hawaii."
301	2003. Sanecki, G.M./Sanecki, K.L./Wright, G.T./Johnston, F.M.. The control of <i>Achillea millefolium</i> in the Snowy Mountains of Australia. <i>Weed Research</i> . 439(5): 357-361.	[Naturalized beyond native range? Yes] " <i>Achillea millefolium</i> L. is a perennial rhizomatous herb native to Europe and Asia that was initially introduced into Australia for its ornamental and herbal qualities. Little is known about this species as a weed in Australia, but in New Zealand it has become a major problem in some arable crops grown in Canterbury and on the Otago high plains (Bourdot, 1984; Field & Jayaweera, 1985)."
302	2003. Eastman, J./Hansen, A.. The Book of Field and Roadside: Open-country Weeds, Trees, and Wildflowers of Eastern North America. Stackpole Books, Mechanicsburg, PA	[Garden/amenity/disturbance weed? Yes] "yarrow can at times invade and compete with other plants, especially in gardens * cropland. Generally the plant's presence indicates poor soil, overgrazing, or land abuse & disturbance."
302	2003. Heiser, C.B.. Weeds in My Garden: Observations on Some Misunderstood Plants. Timber Press, Portland, OR	[Garden/amenity/disturbance weed? Yes] "Yarrow can be an obnoxious weed, but is found only sparingly in my garden."
302	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Garden/amenity/disturbance weed? Yes] "Field surveys and published records of <i>A. millefolium</i> indicate that <i>A. millefolium</i> populations are primarily associated with disturbance, with some limited spread into native vegetation."

302	2006. USDA NRCS. Plant Fact Sheet - Common Yarrow - <i>Achillea millefolium</i> . USDA NRCS National Plant Data Center, <a href="http://www.plants.usda.gov/factsheet/pdf/fs_acmi2.pdf">http://www.plants.usda.gov/factsheet/pdf/fs_acmi2.pdf</a>	[Garden/amenity/disturbance weed? Yes] "Habitat: The plant is frequently found in the mildly disturbed soil of grasslands and open forests...Common yarrow is a weedy species and can become invasive. Proper care should be used to control the spread of the plant from its desired growing location."
302	2008. Long, H.C.. Common Weeds of the Farm & Garden. Read Books, Alcester, UK	[Garden/amenity/disturbance weed? Yes] "Yarrow or Milfoil ( <i>Achillea millefolium</i> L.), although readily eaten by sheep, is inclined to overrun grass land on poor soils, and must therefore be included here as a weed."
302	2011. Floridata. <i>Achillea millefolium</i> . <a href="http://www.floridata.com/ref/a/achi_mil.cfm">http://www.floridata.com/ref/a/achi_mil.cfm</a>	[Garden/amenity/disturbance weed? Yes] "In the U.S. it occurs in disturbed areas, road shoulders, meadows and fields from Texas to Florida and north to southern Canada. In Europe, yarrow is a ubiquitous weed in hedgerows, pastures and fields, and seldom allowed near respectable gardens."
303	1984. Bourdot, G.W.. Regeneration of yarrow ( <i>Achillea millefolium</i> L.) rhizome fragments of different length from various depths in the soil. <i>Weed Research</i> . 24: 421-429.	[Agricultural/forestry/horticultural weed? Yes] "in New Zealand it has become a major problem in some arable crops grown in Canterbury and on the Otago high plains"
303	1999. Royer, F./Dickinson, R.. Weeds of the Northern U.S. and Canada: A Guide for Identification. University of Alberta, Edmonton, Canada	[Agricultural/forestry/horticultural weed? Yes] "Dairy cattle that ingest yarrow are reported to produce off-flavoured milk."
304	2003. Sanecki, G.M./Sanecki, K.L./Wright, G.T./Johnston, F.M.. The control of <i>Achillea millefolium</i> in the Snowy Mountains of Australia. <i>Weed Research</i> . 439(5): 357-361.	[Environmental weed? See 3.02] "In the Snowy Mountains, <i>A. millefolium</i> is an environmental weed which primarily occurs along roadways and fire trails, at spoil sites, around buildings and historic sites from where it is able to invade adjacent native vegetation communities... <i>Achillea millefolium</i> poses a serious threat to the vegetation communities of the high altitude areas for a number of reasons. It has a wide tolerance to environmental conditions and once established, if allowed to spread unchecked, has been observed to form a monoculture, inhibiting growth of all other plant species...Although the current infestations of this species are generally confined to disturbed areas, isolated plants have been observed in adjacent natural vegetation" [primarily a weed of disturbed sites. Answer Yes to 3.02]
305	1979. Holm, L. G./Pancho, J.V./Herberger, J.P./Plucknett, D.L.. A Geographical Atlas of World Weeds. John Wiley and Sons, New York, NY	[Congeneric weed? Yes] " <i>Achillea borealis</i> , <i>A. lanulosa</i> , <i>A. micrantha</i> , <i>A. nobilis</i> , <i>A. ptarmica</i> and <i>A. santolina</i> listed as weeds"
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	[Congeneric weed? Yes] <i>Achillea ageratum</i> , <i>Achillea alpina</i> , <i>Achillea asplenifolia</i> , <i>Achillea biebersteinii</i> , <i>Achillea borealis</i> , <i>Achillea cartilaginea</i> , <i>Achillea collina</i> , <i>Achillea conyzoides</i> , <i>Achillea cretica</i> , <i>Achillea crithmifolia</i> , <i>Achillea decolorans</i> , <i>Achillea distans</i> , <i>Achillea filipendulina</i> , <i>Achillea fragrantissima</i> , <i>Achillea grandifolia</i> , <i>Achillea lanulosa</i> , <i>Achillea ligustica</i> , <i>Achillea micrantha</i> , <i>Achillea nobilis</i> , <i>Achillea ochroleuca</i> , <i>Achillea pannonica</i> , <i>Achillea ptarmica</i> , <i>Achillea salicifolia</i> , <i>Achillea santolina</i> , <i>Achillea setacea</i> , <i>Achillea sibirica</i> , <i>Achillea</i> spp., <i>Achillea stricta</i> , <i>Achillea tomentosa</i> [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.	[Produces spines, thorns or burrs? No] "Rhizomatous perennial herbs 2-5 (-10) dm tall. Leaves lanceolate to linear, blades 3-15 cm long, 0.5-2.5 cm wide, only the lowermost petiolate. Involucre 3.5-5 mm high, 2-4 mm in diameter; ray florets usually 3-5 per head, rays white to pink, 2-3 mm long; disk florets 10-20 per head"
402	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Allelopathic? No] "In a glasshouse competition experiment between <i>A. millefolium</i> and the dominant native snowgrass <i>Poa fawcettiae</i> , the weed produced four times as much biomass as the native grass at the end of the 12 week experiment...Root interaction from the weed on the grass appeared to be the primary source of competition." [no evidence of allelopathy]
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.	[Parasitic? No] "Rhizomatous perennial herbs 2-5 (-10) dm tall." [Asteraceae]
404	2003. Stubbendieck, J.L./Hatch, S.L./Landholt, L.M.. North American wildland plants: a field guide. U of Nebraska Press, Lincoln, NE	[Unpalatable to grazing animals? No] "Forage Value: poor to fair for cattle and fair to good for sheep; usually grazed only when green; heads may be eaten by pronghorn, deer and sheep."
405	2003. Stubbendieck, J.L./Hatch, S.L./Landholt, L.M.. North American wildland plants: a field guide. U of Nebraska Press, Lincoln, NE	[Toxic to animals? No] "Not generally considered to be poisonous, but may contain toxic alkaloids and glycosides."

406	1999. Royer, F./Dickinson, R.. Weeds of the Northern U.S. and Canada: A Guide for Identification. University of Alberta, Edmonton, Canada	[Host for recognized pests and pathogens? Yes] "Yarrow is an alternate host for chrysanthemum stunt virus."
407	2011. Floridata. Achillea millefolium. <a href="http://www.floridata.com/ref/a/achi_mil.cfm">http://www.floridata.com/ref/a/achi_mil.cfm</a>	[Causes allergies or is otherwise toxic to humans? Possibly] "Some people may develop an allergic reaction from contact with the foliage or sap of yarrow. Prolonged use is said to make the skin sensitive to light. Floridata does not advocate the use of any herb or medicine without your doctor's knowledge and supervision. In the garden, common yarrow can be invasive and out compete other less aggressive plants." [certain people may be susceptible]
408	2006. MacKenzie, D.S.. Timber Press pocket guide to ground covers. Timber Press, Portland, OR	[Creates a fire hazard in natural ecosystems? No] "Fire-Retardant Ground Covers: includes Achillea millefolium"
409	2003. Eastman, J./Hansen, A.. The Book of Field and Roadside: Open-country Weeds, Trees, and Wildflowers of Eastern North America. Stackpole Books, Mechanicsburg, PA	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Favoring open land (high or low) and abundant sunlight, it also tolerates shade"
409	2011. Floridata. Achillea millefolium. <a href="http://www.floridata.com/ref/a/achi_mil.cfm">http://www.floridata.com/ref/a/achi_mil.cfm</a>	[Is a shade tolerant plant at some stage of its life cycle? Possibly Not] "Light: Full sun"
410	2003. Eastman, J./Hansen, A.. The Book of Field and Roadside: Open-country Weeds, Trees, and Wildflowers of Eastern North America. Stackpole Books, Mechanicsburg, PA	[Tolerates a wide range of soil conditions? Yes] "can persist on many soil types, including sandy and unfertile sites."
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.	[Climbing or smothering growth habit? No] "Rhizomatous perennial herbs"
412	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of Achillea millefolium, in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Forms dense thickets? Yes] "It has a wide tolerance to environmental conditions and once established, if allowed to spread unchecked, has been observed to form a monoculture, inhibiting growth of all other plant species."
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.	[Aquatic? No] Terrestrial
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.	[Grass? No] Asteraceae
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.	[Nitrogen fixing woody plant? No] Asteraceae
504	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of Achillea millefolium, in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? Yes] "It has many survival features also found in Australian native alpine plants such as drought resistance, underground storage organ, frost resistance and a herbaceous perennial life form."
601	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of Achillea millefolium, in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	2003. Stubbendieck, J.L./Hatch, S.L./Landholt, L.M.. North American wildland plants: a field guide. U of Nebraska Press, Lincoln, NE	[Produces viable seed? Yes] "reproduces from seeds and rhizomes"
603	2003. Eastman, J./Hansen, A.. The Book of Field and Roadside: Open-country Weeds, Trees, and Wildflowers of Eastern North America. Stackpole Books, Mechanicsburg, PA	[Hybridizes naturally? Yes] "The entire species consists of many hybrid variations of both native and alien forms."
603	2011. Floridata. Achillea millefolium. <a href="http://www.floridata.com/ref/a/achi_mil.cfm">http://www.floridata.com/ref/a/achi_mil.cfm</a>	[Hybridizes naturally? Yes] "There are hundreds of cultivars that have been created by crossing and backcrossing among a dozen or so species of Achillea."

604	1982. Warwick, S.I./Black, L.. The biology of Canadian weeds 52. <i>Achillea millefolium</i> L.. Canadian Journal of Plant Science. 62: 163-182.	[Self-compatible or apomictic? No] "self-incompatible"
605	1982. Warwick, S.I./Black, L.. The biology of Canadian weeds 52. <i>Achillea millefolium</i> L.. Canadian Journal of Plant Science. 62: 163-182.	[Requires specialist pollinators? No] "A range of insects have been found to act as pollinators for <i>A. millefolium</i> in Canada including species from Diptera, Coleoptera, Hymenoptera, Lepidoptera and Hemiptera "
606	1999. Royer, F./Dickinson, R.. Weeds of the Northern U.S. and Canada: A Guide for Identification. University of Alberta, Edmonton, Canada	[Reproduction by vegetative fragmentation? Yes] "An extensively branched rhizome allows the plant to form large colonies."
606	2005. Gardner, J.A./Dougherty, H.S.. Herbs in Bloom: A Guide to Growing Herbs as Ornamental Plants. Timber Press, Portland, OR	[Reproduction by vegetative fragmentation? Yes] "It can be invasive for it increases rapidly by creeping roots, establishing colonies of attractive, ferny foliage 8 in. (20.3 cm) long and flat-topped flower clusters that bloom on straight stems into the fall."
607	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Minimum generative time (years) 1] "Can flower within 1 year"
701	2003. Sanecki, G.M./Sanecki, K.L./Wright, G.T./Johnston, F.M.. The control of <i>Achillea millefolium</i> in the Snowy Mountains of Australia. Weed Research. 439(5): 357-361.	[Propagules likely to be dispersed unintentionally? Yes] "During the 1990s, populations seem to have increased dramatically, possibly as a result of the use of gravel from weed contaminated dumps (Johnston & Pickering, 2001) or contaminated hay used for rehabilitation works (GT Wright, pers. comm.)."
702	2001. Hanelt, P. (ed.). Mansfeld's encyclopedia of agricultural & horticultural crops: (except ornamentals). Algae, Fungi, Pteridophyta, Gymnospermae, Angiospermae-Dicotyledones: Magnoliaceae-Chrysobalanaceae. Springer, Berlin	[Propagules dispersed intentionally by people? Yes] "Cultivated as a medicinal plant in Central Europe, England and Australia (New South Wales)."
702	2005. Gardner, J.A./Dougherty, H.S.. Herbs in Bloom: A Guide to Growing Herbs as Ornamental Plants. Timber Press, Portland, OR	[Propagules dispersed intentionally by people? Yes] "Ornamental"
703	2003. Sanecki, G.M./Sanecki, K.L./Wright, G.T./Johnston, F.M.. The control of <i>Achillea millefolium</i> in the Snowy Mountains of Australia. Weed Research. 439(5): 357-361.	[Propagules likely to disperse as a produce contaminant?]
704	1979. Bourdot, G.W./White, J.G.H./Field, R.J.. Seasonality of growth and development in yarrow. Proceedings of the New Zealand Weed and Pest Control Conference. 32: 49-54.	[Propagules adapted to wind dispersal? Yes] "Dispersal of the seed is primarily by wind with the small seed (~0.158 mg) having limited aerodynamic efficiency with the average dispersal distance of 2 to 3 m from the parent."
705	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Propagules water dispersed? No] No evidence
706	1979. Bourdot, G.W./White, J.G.H./Field, R.J.. Seasonality of growth and development in yarrow. Proceedings of the New Zealand Weed and Pest Control Conference. 32: 49-54.	[Propagules bird dispersed? No] "Dispersal of the seed is primarily by wind with the small seed (~0.158 mg) having limited aerodynamic efficiency with the average dispersal distance of 2 to 3 m from the parent." [not fleshy fruited]
707	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Propagules dispersed by other animals (externally)? No] "Seeds (achenes) are described as oblong 1.5-2.0 mm long with thick wing-margins, without a pappus and are grey-white." [no means of external attachment]
708	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Propagules survive passage through the gut? Yes] "Viable seed dispersed in animal feces"
801	1999. Royer, F./Dickinson, R.. Weeds of the Northern U.S. and Canada: A Guide for Identification. University of Alberta, Edmonton, Canada	[Prolific seed production (>1000/m <sup>2</sup> )? Yes] "Each plant is capable of producing 4000 seeds."

801	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Prolific seed production (>1000/m <sup>2</sup> )? Yes] "The seed ecology of <i>A. millefolium</i> was examined including estimating the potential maximum seed production (51400 seeds/m <sup>2</sup> )..."
802	1999. Royer, F./Dickinson, R.. Weeds of the Northern U.S. and Canada: A Guide for Identification. University of Alberta, Edmonton, Canada	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "Research has shown that after 9 years, 41% of all seeds still viable."
802	2005. Johnston, F.M.. Exotic plants in the Australian Alps including a case study of the ecology of <i>Achillea millefolium</i> , in Kosciuszko National Park. PhD Dissertation. Griffith University, Gold Coast, Australia	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "There was 60% viability of seed remaining after three years dry storage and 16% viability of seed remaining after three years of burial in the field. "
803	2003. Sanecki, G.M./Sanecki, K.L./Wright, G.T./Johnston, F.M.. The control of <i>Achillea millefolium</i> in the Snowy Mountains of Australia. Weed Research. 439(5): 357-361.	[Well controlled by herbicides? Possibly] "The response of <i>Achillea millefolium</i> L. to herbicides was measured to determine the effectiveness of the current recommendations and to test alternative herbicides. Five plots at each of the three replicate sites were selected and randomly treated with one of the four herbicides: dicamba/2,4-D, glyphosate, metsulfuron-methyl and triclopyr/picloram. After 12 months, the recommended treatment, dicamba/2,4-D, did not cause a significant reduction in aerial biomass compared with untreated controls and the number of flowering stems was significantly increased in treated plots. Metsulfuron-methyl and triclopyr/picloram caused a significant reduction in <i>A. millefolium</i> aerial biomass but did not affect the number of flowering stems. Glyphosate produced a significant reduction in aerial biomass and was less effective. These results suggest that the current recommendation for <i>A. millefolium</i> might be improved. Sitespecific effects such as aspect may also influence the effectiveness of herbicides on this species...In the absence of a proven alternative method, chemicals currently appear to be the only viable short term option for control. However, adopting an alternative to dicamba/2,4-D needs special consideration, as many chemical products currently available may have a more lethal effect on <i>A. millefolium</i> while having negative effects on native species, especially products designed for the control of woody weeds and/or those having some residual effect." [apparently able to be controlled by herbicides in certain situations, but effectiveness of some is limited]
804	1984. Bourdot, G.W.. Regeneration of yarrow ( <i>Achillea millefolium</i> L.) rhizome fragments of different length from various depths in the soil. Weed Research. 24: 421-429.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "The regenerative response of the rhizomes of <i>Achillea millefolium</i> L. to fragmentation and burial was studied in field experiments on three different soils. The percentage of buds producing shoots (estimated from surviving rhizome fragments) from 4 cm (1-6 nodes), 8 cm (3-8 nodes) and 16 cm (6-7 nodes) rhizome fragments was 63, 44 and 32 respectively averaged over all soils and depths of 5, 10 and 15 cm. The depth at which 50% of the fragments failed to produce an emerged shoot (LD50 depth) was 9.3, 12.4 and 17.9 cm for 4, 8- and 16-cm fragments respectively averaged over all soils. No fragments survived on the soil surface. The time of emergence of the first shoots was delayed and the rate of emergence and ultimate shoot population reduced with increasing depth of burial. Dry matter production by aerial shoots and new rhizomes decreased linearly with depth of burial of the rhizome fragments. Soil type had no effect on the regeneration of the fragments."
804	2011. Harrington, K.. New Zealand Weeds - Yarrow- <i>Achillea millefolium</i> . <a href="http://weeds.massey.ac.nz/weeds.asp?pid=46">http://weeds.massey.ac.nz/weeds.asp?pid=46</a>	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "However, yarrow becomes a problem when a paddock is cultivated and a crop sown. The rhizome system allows the yarrow to survive cultivation, so the re-establishing plants cause major competition problems with crop plants. Likewise, yarrow is commonly found in turf. Once established in a lawn, yarrow is very tolerant of frequent mowing. However, it is unable to form seed-heads under constant mowing, so instead relies on vegetative spread by rhizomes to produce new plants."
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]