Taxon: Acacia karroo Hayne

Family: Fabaceae

Common Name(s): karroothorn
sweet thorn

Synonym(s): Acacia dekindtiana A. Chev.
Acacia hirtella E. Mey.
Acacia horrida var. transvaalensis Burtt Davy
Acacia inconflagrabilis Gerstner
Acacia natalitia E. Mey.
Vachellia karroo (Hayne) Banfi & Galasso

Assessor: Chuck Chimera **Status:** Approved **End Date:** 19 Jun 2025

WRA Score: 20.0 **Designation:** H(HPWRA) **Rating:** High Risk

Keywords: Invasive Tree, Spiny, N-Fixing, Thicket-forming, Mammal dispersed

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y = -3, n = 0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	0 = low, 1 = intermediate, 2 = high (see Appendix 2)	High
202	Quality of climate match data	0 = low, 1 = intermediate, 2 = high (see Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y = 1, n = 0	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	y = 1*multiplier (see Appendix 2), n = 0	n
303	Agricultural/forestry/horticultural weed	y = 2*multiplier (see Appendix 2), n = 0	y
304	Environmental weed	y = 2*multiplier (see Appendix 2), n = 0	y
305	Congeneric weed	y = 1*multiplier (see Appendix 2), n = 0	y
401	Produces spines, thorns or burrs	y = 1, n = 0	y
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		
407	Causes allergies or is otherwise toxic to humans	y = 1, n = 0	n
408	Creates a fire hazard in natural ecosystems		

Qsn #	Question	Answer Option	Answer
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	y
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		
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	2
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	y
705	Propagules water dispersed	y = 1, n = -1	y
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		
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)		

Supporting Data:

Qsn #	Question	Answer
101	**Is the species highly domesticated?**	**n**
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"In is unknown whether any systematic selection or genetic improvement work has been undertaken on A. karroo, but noting the widespread appreciation of its many valued products in its native range, it is likely there has been some traditional selection of improved material."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	No evidence

102	**Has the species become naturalized where grown?**	
	Source(s)	**Notes**
	WRA Specialist. (2025). Personal Communication	NA

103	**Does the species have weedy races?**	
	Source(s)	**Notes**
	WRA Specialist. (2025). Personal Communication	NA

201	**Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"**	**High**
	Source(s)	**Notes**
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 19 Jun 2025]	"Native: Angola, Botswana, Kenya, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe"

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 19 Jun 2025]	

203	**Broad climate suitability (environmental versatility)**	**y**
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"- Altitude range: 0 - 1800 m - Mean annual rainfall: 200 - 1500 mm - Rainfall regime: summer; winter; uniform - Dry season duration: 3 - 9 months - Mean annual temperature: 12 - 24ºC - Mean maximum temperature of hottest month: 30 - 40ºC - Mean minimum temperature of coldest month: -2 - 12ºC - Absolute minimum temperature: > -13ºC" [Elevation range exceeds 1000 m in tropical climates, demonstrating environmental versatility]

Qsn #	Question	Answer
204	**Native or naturalized in regions with tropical or subtropical climates**	**y**
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"A. karroo is the most widespread acacia in southern Africa. It occurs naturally in Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, between 15°S and 34°S."
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence to date

205	**Does the species have a history of repeated introductions outside its natural range?**	**y**
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"A. karroo has been planted experimentally in Australia, India, Israel, South Africa and Zimbabwe."

301	**Naturalized beyond native range**	**y**
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"It is uncertain when A. karroo was introduced to Australia, but it has since spread to become an invasive weed. It has also been introduced to northern Africa and elsewhere, presumably for its noted multipurpose value. A. karroo is a notifiable weed (W1) in New South Wales, the presence of which must be notified to the Local Control Authority within three days of detection, and which must be destroyed (NWSEC, 1998). It is listed as a P1/P2 noxious weed in the Agriculture and Related Resources Protection Act in Western Australia, meaning that it is not yet widely established in the state, and should be eradicated and should not be traded, sold or moved (NWSEC, 1998). Similarly it is listed as a P1/P2 weed in Queensland where its introduction is illegal, and where any plants present in the state must be destroyed (NWSEC, 1998). It has recently been declared a State Prohibited Weed in Victoria, i.e. a species posing a serious threat to state environmental, economic and social values and not present, or occurring in sufficiently small numbers that eradication can be achieved. A. karroo is believed to have been eradicated from New South Wales and Queensland (FNCW, 2001)."
	Queensland Government. 2011. Weeds of Australia. Karroo thorn - Acacia karroo. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508 8300-0b0a06060e01/media/Html/Acacia_karroo.htm. [Accessed 23 Jan 2015]	"Karroo thorn (Acacia karroo) has not yet become widely naturalised in Australia. It has been recorded as being naturalised in several sites near Perth in south-western Western Australia and has spread from plantings in the Western Plains Zoo at Dubbo, in western New South Wales. There are also reports of it being present in the Northern Territory and the ACT, however these may refer to cultivated specimens and not naturalised individuals. All of these known naturalised populations have been 'eradicated', and most of the known cultivated individuals have been destroyed. Karroo thorn (Acacia karroo) has also become naturalised in other parts of the world, including northern Africa (i.e. Libya and Morocco), southern Europe (i.e. Spain, Portugal, Corsica and Sicily), South America (i.e. Bolivia and Chile), Iraq and Mauritius."
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence to date

302	**Garden/amenity/disturbance weed**	**n**

Qsn #	Question	Answer
	Source(s)	**Notes**
	Randall, R.P. (2012). A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	Agricultural and environmental weed

303	Agricultural/forestry/horticultural weed	y
	Source(s)	**Notes**
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"A. karroo is included in the national weed list in South Africa. It competes for space, water and nutrients with pasture grasses, thus replacing them."
	CRC Weed Management. 2003. Weed Management Guide. Karroo thorn (Acacia karroo). http://www.environment.gov.au/biodiversity/invasive/weeds/publications/guidelines/alert/pubs/a-karroo.pdf.. [Accessed 23 Jan 2015]	"Karroo thorn is one of southern Africa's most widespread trees but in many parts of this region it is considered a weed. A vigorous competitor, it can invade rangelands and open grasslands, particularly when land is overgrazed. Because it forms dense, thorny thickets, it can reduce agricultural productivity by suppressing the growth of grasses and adding to the costs of mustering, preventing stock movement and restricting watering."

304	Environmental weed	y
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"A. karroo is able to produce seeds prolifically, from an early age, is resistant to fire and forms dense thorny thickets that out compete native flora and are a source of potential injury to people and animals. The species can behave invasively in its native range and Aubrey and Reynolds (2002) claim that this can occur as a consequence of overgrazing and it is described as a weed of pasture land (ILDIS, 2004). A. karroo has been declared a noxious weed in several states of Australia and was previously a problem in New South Wales where it was the subject of an eradication programme. Binggeli (1999) classes it as a potentially invasive species. "

Qsn #	Question	Answer
305	Congeneric weed	y
	Source(s)	Notes
	CABI. 2014. Acacia cyclops In: Invasive Species Compendium. www.cabi.org/isc	"A. cyclops produces large quantities of litter which leads to increased soil nitrogen content (Weber, 2003), and Witkowski, (1991) concluded that the nitrogen status of the fynbos and strandveld ecosystems is elevated by the invasion of alien Acacia species. A. cyclops is also reported to use high volumes of water, ranking highest in its water consumption among the top twenty-five invader plant species in South Africa (Anon., 2003), and Working for Water (2003) suggest that the loss of native plants to A. cyclops thickets leaves the soil bare and vulnerable to wind and water erosion."
	Le Maitre, D. C., Gaertner, M., Marchante, E., Ens, E. J., Holmes, P. M., Pauchard, A., O'Farrell, P. J., Rogers, A. M., Blanchard, R., Blignaut, J. & Richardson, D. M. (2011). Impacts of invasive Australian acacias: implications for management and restoration. Diversity and Distributions, 17(5): 1015-1029	"Case studies are used to identify similarities and differences between three regions severely affected by invasions of Australian acacias: Acacia dealbata in Chile, Acacia longifolia in Portugal and Acacia saligna in South Africa." ... "Australian acacias have a wide range of impacts on ecosystems that increase with time and disturbance, transform ecosystems and alter and reduce ecosystem service delivery. A shared trait is the accumulation of massive seed banks, which enables them to become dominant after disturbances. Ecosystem trajectories and recovery potential suggest that there are important thresholds in ecosystem state and resilience. When these are crossed, options for restoration are radically altered; in many cases, autogenic (self-driven and self-sustaining) recovery to a preinvasion condition is inhibited, necessitating active intervention to restore composition and function."

401	Produces spines, thorns or burrs	y
	Source(s)	Notes
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"It is difficult to handle due to its thorns, and it is an aggressive colonizer, easily taking over grasslands. Its invasive root system means that it is unsuitable for planting near buildings or paved pathways."
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	[stipules spinescent] "Acacia karroo is an evergreen tree 3-15 m tall, rarely shrubby; bark on trunk dark red-brown to blackish; young branchlets glabrous or rarely sparsely and inconspicuously puberulous, also with small inconspicuous pale to reddish sessile glands; epidermis flaking off to expose a dark rusty red, not powdery under bark, sometimes grey to brown and persistent; stipules spinescent, up to 7 (max. 17) cm long, rather robust, whitish, often deflexed, sometimes fusiform-inflated, up to 1 cm or more."

402	Allelopathic	n
	Source(s)	Notes
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	[No evidence] "Soil improver: It stimulates the development of an understorey of perennials, palatable and nutritious grasses (Cenchrus ciliaris, Panicum maximum) through providing them shade, fixing nitrogen and improving soil structure and infiltration. A. karroo is considered to be a good indicator of fertile soils for crops and an indicator of surface or underground water."

Qsn #	Question	Answer
403	Parasitic	n
	Source(s)	Notes
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"Acacia karroo is an evergreen tree 3-15 m tall, rarely shrubby" [Fabaceae]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"Fodder: Foliage, flowers and green pods are important browse for livestock. Cattle do not browse it as much as do goats, when it is the only green forage in the woodland at the end of the dry season. Green foliage and pods contain 14- 15% proteins (as percentage of dry matter)."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"The leaves, flowers and pods are good fodder, although it has a high tannin content that may impair accessibility of protein in livestock rumens."

405	Toxic to animals	n
	Source(s)	Notes
	South African National Biodiversity Institute. 2002. PlantzAfrica.com - Acacia karroo. http://www.plantzafrica.com/plantab/acaciakar.htm. [Accessed]	"It is a particularly good fodder tree, stock and game feed on the leaves, flowers and pods. Seed dispersal takes place this way. There is no danger of hydrocyanic poisoning which is a self protection mechanism used by many trees."
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	[No evidence] "Uses" ... "Fodder/animal feed, Forage"

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed]	"Many species of the Bruchidae family parasitize seeds of acacias, including A. karroo. Psychid wattle bagworm (Kotochalia junodi Heylaerts) defoliates even large trees. Parasitic plants include Loranthus dregei, Moquinella rubra, Viscum capense and V. rotundifolium. Fungi include rust fungi like Ravenelia macowaniana."

Qsn #	Question	Answer
407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	[No evidence] "The leaves, flowers and pods are good fodder, although it has a high tannin content that may impair accessibility of protein in livestock rumens. It yields clear gum of high quality, although the only country in which it is collected and used as a substitute for gum arabic (gum from A. senegal) is Zimbabwe (Barnes et al., 1996). It is a good tree for bees (Carr, 1976; Timberlake, 1980), providing large quantities of pollen and nectar and can flower three or four times a year. The bark can be used for tanning leather and the inner bark makes good cord, twine and rope. A. karroo roots are prescribed as an aphrodisiac in Zimbabwe and for treating pain in the digestive tract, rheumatism, convulsions and gonorrhea (Gelfand et al., 1993). Thorns were used as needles for stitching cloth, and even by insect collectors to 'fix' their specimens."
	South African National Biodiversity Institute. 2002. PlantzAfrica.com - Acacia karroo. http://www.plantzafrica.com/plantab/acaciakar.htm. [Accessed]	[No evidence] "The sweet thorn has many medicinal uses ranging from wound poultices to eye treatments and cold remedies. The bark, leaves and gum are usually used. It is also used to treat cattle which have tulp poisoning (Homeria spp - bulbous plants which are poisonous to stock)."

408	Creates a fire hazard in natural ecosystems	
	Source(s)	**Notes**
	Barnes, R.D., Filer, D.L. & Milton, S.J. 1996. Acacia karroo. Monograph and Annotated Bibliography. Tropical Forestry Papers No. 32. University of Oxford, Oxford, UK	[Formation of thickets could increase fuel load and fire risk in dry areas] "Acacia karroo is well adapted to establishing itself with no shade, shelter or protection from grass fires (Bews, 1917). However, all seedlings less than eight weeks old, about 10 cm high can be killed by fire. By twelve months, when the seedlings are 35 cm high, there is die-back following a burn but they re sprout from the base and each gives rise to 3-4 stems (Story, 1952). Later, A. karroo will respond favourably to a very severe burn producing a dense multi stemmed thicket within a season or two (Henderson, 1987; Guilloteau, 1958)."

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	**Notes**
	South African National Biodiversity Institute. 2002. PlantzAfrica.com - Acacia karroo. http://www.plantzafrica.com/plantab/acaciakar.htm. [Accessed 23 Jan 2015]	"Acacia karroo has a life span of 30-40 years and is an adaptable pioneer, able to establishing itself without shade, shelter or protection from grass fires."
	O'Connor, T. G. 1995. Acacia karroo invasion of grassland: environmental and biotic effects influencing seedling emergence and establishment. Oecologia, 103(2): 214-223	[Seedlings do well in shaded environments] "It was noteworthy that A. karroo seedlings emerged as well or better under the conditions of lowest irradiance and greatest competition from grass (an undefoliated sward under shadecloth) than under any other conditions, and achieved densities far greater than under comparable high irradiance conditions, albeit individuals had etiolated growth forms."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	**Notes**
	CRC Weed Management. 2003. Weed Management Guide. Karroo thorn (Acacia karroo). http://www.environment.gov.au/biodiversity/invasive/weeds/publications/guidelines/alert/pubs/a-karroo.pdf.. [Accessed 23 Jan 2015]	"In southern Africa Karroo thorn is the most widespread acacia. It is very adaptable, growing under many different soil, climate and altitude conditions. Its limiting factors appear to be intense cold and lack of moisture."

Qsn #	Question	Answer
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"Soil descriptors - Soil texture: heavy - Soil drainage: free; impeded; seasonally waterlogged - Soil reaction: acid; neutral; alkaline - Special soil tolerances: shallow; saline"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"Acacia karroo is an evergreen tree 3-15 m tall, rarely shrubby"

412	Forms dense thickets	y
	Source(s)	Notes
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"A. karroo is able to produce seeds prolifically, from an early age, is resistant to fire and forms dense thorny thickets that out compete native flora and are a source of potential injury to people and animals."

501	Aquatic	n
	Source(s)	Notes
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"A pioneer species with a climax of 40 years, it occupies a successional position between the tropical forest and the bushveld. It grows in riverine communities and even in arid environments, where it can do well provided there is an assured supply of groundwater. Large specimens are an indicator of underground water."

502	Grass	n
	Source(s)	Notes
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"Acacia karroo is an evergreen tree 3-15 m tall" [Fabaceae]

503	Nitrogen fixing woody plant	y
	Source(s)	Notes
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"It fixes nitrogen, provides shade, stabilizes sand dunes and disturbed areas and is resistant to fire, drought, frost, termites and salinity."

Qsn #	Question	Answer
504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**n**
	Source(s)	**Notes**
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"Acacia karroo is an evergreen tree 3-15 m tall, rarely shrubby; bark on trunk dark red-brown to blackish; young branchlets glabrous or rarely sparsely and inconspicuously puberulous, also with small inconspicuous pale to reddish sessile glands; epidermis flaking off to expose a dark rusty red, not powdery under bark, sometimes grey to brown and persistent; stipules spinescent, up to 7 (max. 17) cm long, rather robust, whitish, often deflexed, sometimes fusiform-inflated, up to 1 cm or more."

601	**Evidence of substantial reproductive failure in native habitat**	**n**
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	[No evidence] "A. karroo is the most widespread acacia in southern Africa and it occupies a diverse range of environments from acacia savannahs and woodlands on hills and rocky soils to the banks of dry watercourses. It varies from a shrub (up to 2 m) to a tree more than 20 m in heigh, with distinctive white thorns and attractive yellow flowers. It occurs naturally in Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe. It is quite variable morphologically and regional variations are described by Barnes et al. (1996)."

602	**Produces viable seed**	**y**
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"It is a moderately fast growing (0.6-1.0 m per year in South Africa) pioneer species and grows easily from seed."

603	**Hybridizes naturally**	
	Source(s)	**Notes**
	Barnes, R.D., Filer, D.L. & Milton, S.J. 1996. Acacia karroo. Monograph and Annotated Bibliography. Tropical Forestry Papers No. 32. University of Oxford, Oxford, UK	[Possibly] "On the Springbok Flats north of Pretoria small shrubby plants occur which can be distinguished from Acacia tenuispina only with difficulty. Some of the plants have a similar growth form to A. tenuispina but as they lack spinulose-mucronate leaflet apices and glandular pods they are referred to A. karroo. Some collectors have suggested that the plants may be hybrids between A. karroo and A. tenuispina. Burtt Davy 4075 and Codd 7040 are representative. (Ross, 1979)." ... "On the Umguza Valley Estates near Bulawayo in Zimbabwe, a tree has been found in a mixed population of Acacia karroo and A. rehmanniana that has taxonomic characteristics that are intermediate between the two species (Barnes et al., 1994)..."

604	**Self-compatible or apomictic**	**n**
	Source(s)	**Notes**
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"The species has a mixed mating system. It exhibits a tendency towards out-crossing, as evidenced by the existence of trees that are entirely male. It is zoomophilus, principally insect pollinated because the strong colour of inflorescence and the heavy pollen grains attract insects. Isolated plants bear no fruits."

Qsn #	Question	Answer
	Robbertse, P. J., du Toit, E. S., & Annandale, J. G. 2014. Phenology and Reproductive Biology of Acacia karroo Hayne (Leguminosae: Mimosoideae). American Journal of Plant Sciences, 5(13): 2074-2093	[Functionally self-incompatible] "Geitonogamy (same genet selfing) and xenogamy (different genet crossing) were studied by covering 10 flowering shoots (modules) on two different trees with muslin cloth bags to keep insects out. For geitonogamy inflorescences with open flowers from the same tree were used for brushing the inflorescences of five of the covered modules. For xenogamy, inflorescences from another tree were used for pollinating inflorescences of another five covered modules. Bags were removed after completion of the flowering cycle and 5 pollinated inflorescences from each covered module collected for determining fruit and seed set." ... "In the experiment where flowering modules were covered with muslin bags at the stage just before anthesis, it was found that where geitonogamy was applied, fruit set was only 1% compared to the 4% fruit set where xenogamy was applied which indicates that the trees are mostly out crossing."

605	Requires specialist pollinators	n
	Source(s)	**Notes**
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"Flowers deep or golden yellow, in axillary pedunculate heads 8-12 mm in diameter borne along shoots of the current season, sometimes aggregated into leaflets' terminal racemes. Calyx 1.25-2 mm long, subglabrous; corolla 2.5-3 mm long, glabrous or almost so." ... "It is zoomophilus, principally insect pollinated because the strong colour of inflorescence and the heavy pollen grains attract insects. Isolated plants bear no fruits. Pollinators include the Coleoptera, Diptera, Hymenoptera and Lepidoptera."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"It is a good tree for bees (Carr, 1976; Timberlake, 1980), providing large quantities of pollen and nectar and can flower three or four times a year. "

606	Reproduction by vegetative fragmentation	n
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"- Ability to sucker; fix nitrogen; regenerate rapidly"
	CRC Weed Management. 2003. Weed Management Guide. Karroo thorn (Acacia karroo). http://www.environment.gov.au/biodiversity/invasive/weeds/publications/guidelines/alert/pubs/a-karroo.pdf.. [Accessed 23 Jan 2015]	"Karroo thorn reproduces by seed; large trees produce up to 19,000 seeds per year. The seeds can lie in the soil for 7 years and still germinate."

607	Minimum generative time (years)	2
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	[2+] "The first flowers are produced when the plant is two or three years old (Anon., 2001)."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"The pods and seeds may be blown by the wind, but it more likely that spread is facilitated by being eaten by mammals and distributed in dung (CRC Weed Management, 2002)."

702	Propagules dispersed intentionally by people	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"Like other Acacia spp., A. karroo has been promoted for soil improvement and as a fodder crop. As the species is known to behave invasively in its native range, and in its exotic range (e.g. Australia) introduction to other countries/regions is likely to carry a risk of the species becoming invasive, particularly where other factors (such as overgrazing) are likely to occur."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	[Unlikely] "The pods and seeds may be blown by the wind, but it more likely that spread is facilitated by being eaten by mammals and distributed in dung (CRC Weed Management, 2002). Concerning long distance dispersal, A. karroo has been deliberately introduced to countries in Asia, Europe, Australasia and Indian Ocean islands for use as a fodder plant, an ornamental and for soil stabilization and improvement."

704	Propagules adapted to wind dispersal	y
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"Pods split open on the tree, releasing the seeds which are dispersed by wind and can also be distributed in animal dung, namely by stock and game that feed on the pods (Aubrey and Reynolds, 2002)."

705	Propagules water dispersed	y
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"Aubrey and Reynolds (2002) state that it is generally found in low ground to highveld altitudinal zones. It can also dominate riverbed vegetation (DEH, 2005)."
	CRC Weed Management. 2003. Weed Management Guide. Karroo thorn (Acacia karroo). http://www.environment.gov.au/biodiversity/invasive/weeds/publications/guidelines/alert/pubs/a-karroo.pdf.. [Accessed 23 Jan 2015]	"Its seeds are spread by animals, wind and water, as well as by people – it has been intentionally cultivated in several states."

706	Propagules bird dispersed	n
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"The pods and seeds may be blown by the wind, but it more likely that spread is facilitated by being eaten by mammals and distributed in dung (CRC Weed Management, 2002)."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	[Internal dispersal] "Pods split open on the tree, releasing the seeds which are dispersed by wind and can also be distributed in animal dung, namely by stock and game that feed on the pods (Aubrey and Reynolds, 2002)."

708	Propagules survive passage through the gut	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"Pods are dehiscent on the trees but not explosive; hence dispersal is principally by cattle and other herbivores ingesting seed and voiding them through their dung."

801	Prolific seed production (>1000/m2)	y
	Source(s)	**Notes**
	CRC Weed Management. 2003. Weed Management Guide. Karroo thorn (Acacia karroo). http://www.environment.gov.au/biodiversity/invasive/weeds/publications/guidelines/alert/pubs/a-karroo.pdf.. [Accessed 23 Jan 2015]	"Karroo thorn reproduces by seed; large trees produce up to 19,000 seeds per year."

802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"- Seed storage orthodox"
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"Seed must be soaked in hot water, left overnight, and then sown the next morning. Seeds are planted either directly into small black nursery bags or in flat seedling trays filled with seedling mix. Seeds germinate in 3-12 days."
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"The Australian Government (DEH, 2005) cite information quantifying the prolific seeding ability of this species, and the long viability of the seeds. Seeds are orthodox."
	Queensland Government. 2011. Weeds of Australia. Karroo thorn - Acacia karroo. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508 8300-0b0a06060e01/media/Html/Acacia_karroo.htm. [Accessed 23 Jan 2015]	"The hard seeds are long-lived, and buried seeds are reported to remain viable in the soil for up to 7 years."

803	Well controlled by herbicides	
	Source(s)	**Notes**
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"No information on the control of A. karroo specifically is available from the literature, though it may be assumed that similar treatments as used on other invasive acacia species may be appropriate."
	Barnes, R.D., Filer, D.L. & Milton, S.J. 1996. Acacia karroo. Monograph and Annotated Bibliography. Tropical Forestry Papers No. 32. University of Oxford, Oxford, UK	"Three proprietary herbicides are registered for the chemical control oft. karroo in South African rangeland; these are bromacil, ethidimuron and tebuthiuron (Vermeulen and Grobler, 1986)." [Efficacy unspecified]
	Dube, S., Oluwole, F. A., & Lesoli, M. S. 2011. Impacts, efficacy and economics of Bushwacker Sc (Bromacil) In controlling Acacia invasion in South Africa. Herbicides and Environment, In Tech Publishing	[Bromacil herbicide ineffective] "In the current study bromacil herbicide did not show any effect on Acaccia karroo in short term. It is clear from other research that bromacil achieves its total kill in a minimum of two years under favourable conditions."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"- Ability to sucker; fix nitrogen; regenerate rapidly"

Qsn #	Question	Answer
	CABI. 2015. Acacia karroo in: Invasive Species Compendium. www.cabi.org/isc	"A. karroo does not require shade, shelter or protection from fire, and plants more than one year old are able to regenerate after fire (Aubrey and Reynolds, 2002). Trees are able to coppice vigorously and produce root suckers."
	Orwa C,et al. (2009). Agroforestree Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org. [Accessed 21 Jan 2015]	"A. karroo tolerates drought, fire, frost and termites. It also regenerates rapidly through suckers and fixes nitrogen."

805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	
	Source(s)	**Notes**
	WRA Specialist. (2025). Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits
• Elevation range exceeds 1000 m, demonstrating environmental versatility
• Thrives in tropical climates
• Naturalized in several countries where it has been introduced (but not reported in the Hawaiian Islands to date)
• Agricultural and environmental weed
• Other Acacia species have become invasive
• Thorny, with spinescent stipules
• Tolerates many soil types
• Forms dense thickets
• May hybridize with other Acacia species
• Seeds dispersed in droppings of animals, by wind (short distances), water & people
• Able to reach maturity in 2+ years
• Prolific seed production
• Seeds form a persistent seed bank (up to 7 years)
• Coppices vigorously and spreads by root suckers

Low Risk Traits
• Provides fodder for livestock
• Non-toxic to animals and humans
• Mostly self-incompatible
• Not reported to spread vegetatively