

Family: *Poaceae*

Taxon: *Cynodon dactylon*

Synonym: *Cynodon dactylon* var. *densus* Hurcombe
Panicum dactylon L.
Digitaria dactylon (L.) Scop.
Digitaria stolonifera Schrad.
Capriola dactylon (L.) Kuntze
Capriola dactylon var. *maritimus* (Kunth) Hit
Cynodon dactylon var. *maritimus* (Kunth) Ha
Cynodon maritimus Kunth

Common Name: Bahama grass
Bermuda grass

Questionnaire :	current 20090513	Assessor:	Patti Clifford	Designation: H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Patti Clifford	WRA Score 22
101	Is the species highly domesticated?		y=-3, n=0	n
102	Has the species become naturalized where grown?		y=1, n=-1	
103	Does the species have weedy races?		y=1, n=-1	
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"		(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data		(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)		y=1, n=0	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)	n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)	y
401	Produces spines, thorns or burrs		y=1, n=0	n
402	Allelopathic		y=1, n=0	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	
407	Causes allergies or is otherwise toxic to humans		y=1, n=0	y

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	n
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	y
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	n
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	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	n
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	y
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m ²)	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	y
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 22

Supporting Data:

101	2010. WRA Specialist. Personal Communication.	No evidence of domestication that reduces weediness.
201	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.	"Possibly native to tropical Africa, now widely cultivated and naturalized."
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.	"Possibly native to tropical Africa, now widely cultivated and naturalized."
203	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	In the United States <i>C. dactylon</i> occurs at elevations under 6000 feet, primarily in waste places, agricultural fields, and roadsides. Although widespread, this species thrives only under extreme disturbance and does not invade natural grasslands or forest vegetation"
203	2010. USDA Forest Service. Fire Effects Information System <i>Cynodon dactylon</i> . USDA Forest Service, http://www.fs.fed.us/database/feis/index.html	"In California Bermuda grass occurs below 2,950 feet (900 m) elevation. In Colorado it occurs from 4,200 to 5,300 feet (1,280-1,620 m) elevation. In Utah it occurs along waterways below 465 feet (1,525 m)."
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.	"Naturalized in Hawaii along roadsides and in rocky or sandy sites."
205	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.	"Possibly native to tropical Africa, now widely cultivated and naturalized."
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.	"Widely cultivated and naturalized." Naturalized in Hawaii.
302	2010. USDA Forest Service. Fire Effects Information System <i>Cynodon dactylon</i> . USDA Forest Service, http://www.fs.fed.us/database/feis/index.html	"Bermuda grass is considered a weed in corn, alfalfa, citrus, grape, cotton, sugarcane, and other crops, as well as in landscaping and nonBermuda grass lawns."
303	2010. USDA Forest Service. Fire Effects Information System <i>Cynodon dactylon</i> . USDA Forest Service, http://www.fs.fed.us/database/feis/index.html	"Bermuda grass is considered a weed in corn, alfalfa, citrus, grape, cotton, sugarcane, and other crops, as well as in landscaping and nonBermuda grass lawns."
304	2010. USDA Forest Service. Fire Effects Information System <i>Cynodon dactylon</i> . USDA Forest Service, http://www.fs.fed.us/database/feis/index.html	"Bermuda grass is considered a weed in corn, alfalfa, citrus, grape, cotton, sugarcane, and other crops, as well as in landscaping and nonBermuda grass lawns."
305	2003. Laegaard, S./Garcia, P.P.. Invasive grasses in the Galapagos Islands. <i>Lyonia</i> . 6: 171-175.	" <i>Cynodon nlemfuensis</i> is of SE African origin, it is low growing, rarely more than 50 cm high, often without flowering and confined to propagation by its very long stolons. It is growing very dense and is a very strong competitor. In the mainland of Ecuador it is recently introduced but now well established as invasive from sea level to about 2000 m in areas with dry climate. In Galápagos it has only been observed in a couple of places but it is feared that it may in future become the most severely invasive of all grass species.
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.	No spines, thorns, or burrs.

402	2005. Vasilakoglou, I./Dhima, K./Eleftherohorinos, I.. Allelopathic potential of Bermudagrass and Johnsongrass and their interference with cotton and corn. <i>Agronomy Journal</i> . 97: 303-313.	"Field experiments were conducted in northern Greece during the 2002 and 2003 growing seasons to study interference between bermudagrass [<i>Cynodon dactylon</i> (L.) Pers] or johnsongrass [<i>Sorghum halepense</i> (L.) Pers] and cotton (<i>Gossypium hirsutum</i> L.) or corn (<i>Zea mays</i> L.). Moreover, bioassay studies were also conducted to assess allelopathic potential of these two weeds on cotton and corn as well as on barnyardgrass [<i>Echinochloa crus-galli</i> (L.) P. Beauv.] and bristly foxtail [<i>Setaria verticillata</i> (L.) P. Beauv.]. The bioassay experiments showed that cotton, barnyardgrass, and bristly foxtail germination, total fresh weight, and root length were inhibited by bermudagrass or johnsongrass extracts more than those of corn. In addition, johnsongrass extracts caused greater germination, fresh weight, and root length inhibition than bermudagrass extracts. In the field, growth and yield of cotton were reduced due to bermudagrass (200 and 400 stems m ⁻² from planted rhizomes) or johnsongrass (100 and 200 stems m ⁻² from planted rhizomes) season-long interference 50 and 74% or 64 and 86%, respectively, averaged over the two weed densities. The corresponding corn losses were 46 and 30% or 62 and 41%, respectively. Both stem number and fresh weight of bermudagrass or johnsongrass increased with increasing interference duration, and they were greater where both weeds were grown with cotton than with corn. These results suggest that there is growth inhibition of both crops due to potential allelopathic substances released from the two perennial weeds, but cotton growth was inhibited more than corn. Furthermore, cotton and corn yield were reduced more by the johnsongrass interference compared with that caused by bermudagrass."
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.	Not parasitic.
404	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"The increase in the amount of <i>Cynodon dactylon</i> due to cattle grazing is well documented. Unlike many other plants, intensive grazing on Bermuda grass results in an increase in carbohydrate accumulation in the below-ground structures."
405	2005. Cook, B.G./Pengelly, B.C./Brown, S.D./Donnelly, J.L./Eagles, D.A./Franco, M.A./Hanson, J./Mullen, B.F./Partridge, I.J./Peters, M/Schultze-Kraft, R.. Tropical Forages: an interactive selection tool., [CD-ROM],. SIRO, DPI&F(Qld), CIAT and ILRI, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"Some varieties have the potential to produce high levels of prussic or hydrocyanic acid (HCN), especially when high levels of nitrogen are applied. However, instances of prussic acid poisoning in cattle grazing <i>C. dactylon</i> are rare. Although levels of total oxalate of >1% of the DM have been recorded, there is no experience of detrimental effects on grazing cattle.
406	2005. Cook, B.G./Pengelly, B.C./Brown, S.D./Donnelly, J.L./Eagles, D.A./Franco, M.A./Hanson, J./Mullen, B.F./Partridge, I.J./Peters, M/Schultze-Kraft, R.. Tropical Forages: an interactive selection tool., [CD-ROM],. SIRO, DPI&F(Qld), CIAT and ILRI, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"Rust (<i>Puccinia graminis</i>) and <i>Helminthosporium</i> leafspot are the major fungal diseases of <i>Cynodon dactylon</i> , although resistant types are available. Other fungal diseases include <i>Bipolaris</i> , <i>Gaeumannomyces</i> , <i>Leptosphaeria</i> , <i>Marasmius</i> , and tar spot (<i>Phyllachora</i>). Smuts from <i>Sporisorium</i> , <i>Sorosporium</i> and <i>Ustilago</i> can infest seedheads. Also attacked by the bacterium <i>Xanthomonas cynodontis</i> , and by barley yellow dwarf virus, lucerne dwarf virus, and viral stripe diseases (which affect corn and rice), as well as by a range of nematodes, the main one being root knot nematode (<i>Meloidogyne</i> spp.). Selection for nematode resistance has been important in breeding programs. Armyworm (<i>Spodoptera</i> spp.), tropical grass webworm (<i>Herpetogramma licarsialis</i>), spittlebug (<i>Prosapia bicinata</i>) and bermudagrass mite (<i>Eriophes cynodontiensis</i>) are major pests. The parasitic flowering plants <i>Cuscuta pentagona</i> , <i>Nuytsia floribunda</i> , <i>Striga harmonithica</i> , and <i>S. lutea</i> can adversely affect stands.
407	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	<i>C. dactylon</i> 's "high pollen production leads to its notoriety as a major contributor to Allergies. Forty years ago Bermuda grass was considered the leading cause of hay fever in Arizona."
408	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"With the exception of extremely dry conditions or long periods of fire suppression, both of which result in hot fires that may damage the rhizomes, most rhizomatous grasses, such as <i>Cynodon dactylon</i> tend to benefit from fire. Winter burning of Bermuda grass is performed in several southern states in the U.S. in order to hasten spring growth, resulting in increased yield and quality of forage."
409	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	" <i>Cynodon dactylon</i> needs direct sunlight to grow and dies out with increased shade. This characteristic can be utilized in the control of Bermuda grass."

410	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	" <i>Cynodon dactylon</i> tolerates a wide range of soil types and conditions. Growth is greater on heavy clay soils than on light sandy soils in dry regions; this may be due to the greater water holding capacity of the clay. It grows on soils with a wide range of pH values, however alkaline soils are tolerated more than acidic ones. Growth is promoted by the addition of lime to soils with a pH of 5."
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.	"Strongly rhizomatous or stoloniferous perennials; culms decumbent and rooting at lower nodes, 2-6(-8) dm long."
412	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Strongly rhizomatous or stoloniferous perennials; culms decumbent and rooting at lower nodes, 2-6(-8) dm long."
501	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Terrestrial.
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.	Poaceae
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.	Poaceae.
504	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Not a geophyte.
601	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.	"Possibly native to tropical Africa, but now widely cultivated and naturalized."
601	2010. WRA Specialist. Personal Communication.	No evidence.
602	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"Asexual reproduction, not sexual reproduction, is responsible for the spread of most Bermuda grass. Most biotypes are infertile, and those that are fertile tend to produce sparse amounts of seeds. However, southwestern United States varieties often have a good seed set. The tiny seeds remain viable after passing through livestock and after submergence in water for 50 days."
603	2010. WRA Specialist. Personal Communication.	Unknown.
604	2005. Cook, B.G./Pengelly, B.C./Brown, S.D./Donnelly, J.L./Eagles, D.A./Franco, M.A./Hanson, J./Mullen, B.F./Partridge, I.J./Peters, M./Schultze-Kraft, R.. Tropical Forages: an interactive selection tool., [CD-ROM],. SIRO, DPI&F(Qld), CIAT and ILRI, http://www.ciat.cgiar.org/	<i>C. dactylon</i> is "generally self-incompatible, suffering from inbreeding depression when genotypes are self-pollinated."
605	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.	Wind-pollinated.
606	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"Aerial growth from shoots, tillers and previous season's rhizomes produce an abundance of stolons, which in turn produce more shoots, rhizomes and roots. This growth pattern explains the tremendous spreading capacity of Bermuda grass; the highest monthly area increase was 6 m ² during July and August. However, the average area increase for <i>Cynodon dactylon</i> is only 0.9 m ² per month."

607	2009. Cudney, D.W./Elmore, C.L.. UC IPM Pest Notes: Bermudagrass. PM Education and Publications, University of California Statewide IPM Program, http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7453.html	"Be careful not to cultivate bermudagrass if the soil is moist or the weed will spread, because cultivation chops the stems into segments and each segment becomes a new plant. While cultivating and drying can effectively kill established plants and rhizomes, they do not kill seeds in the soil."
701	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"The principle means of propagation of <i>Cynodon dactylon</i> is through the rhizomes and stolons. These structures are often severed from the plant by burrowing animals and animal hooves; the fragments are then transported by contaminated animals, hay, and machinery, as well as by running water."
702	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.	"Possibly native to tropical Africa, now widely cultivated and naturalized."
703	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"The principle means of propagation of <i>Cynodon dactylon</i> is through the rhizomes and stolons. These structures are often severed from the plant by burrowing animals and animal hooves; the fragments are then transported by contaminated animals, hay, and machinery, as well as by running water."
704	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"The principle means of propagation of <i>Cynodon dactylon</i> is through the rhizomes and stolons. These structures are often severed from the plant by burrowing animals and animal hooves; the fragments are then transported by contaminated animals, hay, and machinery, as well as by running water."
705	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	" <i>C. dactylon</i> rhizomes cannot be drowned. Submergence of fragments for eight days in running water or four weeks in stagnant water had no effect on sprouting ability. Thus water is likely to be an efficient means of spreading rhizomes."
706	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"The principle means of propagation of <i>Cynodon dactylon</i> is through the rhizomes and stolons. These structures are often severed from the plant by burrowing animals and animal hooves; the fragments are then transported by contaminated animals, hay, and machinery, as well as by running water."
707	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"The principle means of propagation of <i>Cynodon dactylon</i> is through the rhizomes and stolons. These structures are often severed from the plant by burrowing animals and animal hooves; the fragments are then transported by contaminated animals, hay, and machinery, as well as by running water."
708	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"Asexual reproduction, not sexual reproduction, is responsible for the spread of most Bermuda grass. Most biotypes are infertile, and those that are fertile tend to produce sparse amounts of seeds. However, southwestern United States varieties often have a good seed set. The tiny seeds remain viable after passing through livestock and after submergence in water for 50 days."
801	2010. WRA Specialist. Personal Communication.	Unknown.
802	2009. Cudney, D.W./Elmore, C.L.. UC IPM Pest Notes: Bermudagrass. PM Education and Publications, University of California Statewide IPM Program, http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7453.html	"Improved hybrids of bermudagrass (Tifgreen, Tifdwarf, Tifway, Santa Ana) with fine leaves and a longer season of dark green color have been developed specifically for use as turfgrass. These hybrid varieties do not produce seed, whereas common bermudagrass produces seeds that remain viable in soil for at least 2 years."
802	2010. Food and Agriculture Organization of the United Nations. Food and Agriculture Organization of the United Nations. http://www.fao.org/	No seed dormancy has been reported.
803	2010. Food and Agriculture Organization of the United Nations. Food and Agriculture Organization of the United Nations. http://www.fao.org/	"Dalapon at 6-12 kg/ha applied to young growth can give a high degree of control. Repeated cultivations will kill the plant, but repeated spraying with herbicides are effective. Spray young, vigorously growing plants with paraquat at 2.8 l/ha of a 200 g AI/l product (e.g. Gramoxone) plus surfactant at 250 ml/200 l of water, using a minimum of 400 ml water per hectare. TCA 2,2,-DPA and glyphosate (Round up) can also be used (Tilley, 1977)."

803	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"Glyphosate, sprayed from helicopters, trailer sprayers or backpack sprayers, at a concentration of 2% will result in an 85% to 95% control after the first year. The best time to spray is when the carbohydrates are being translocated down to the rhizomes at the time of maximum rhizome growth. A downward movement of the herbicides most likely coincides with the spring and fall rhizome growth period, fall spraying of herbicides is recommended for maximum effectiveness."
804	2010. Newman, D.. Element stewardship abstract for <i>Cynodon dactylon</i> Bermuda grass. The Nature Conservancy, http://www.invasive.org/weedcd/pdfs/tncweeds/cynodac.pdf	"With the exception of extremely dry conditions or long periods of fire suppression, both of which result in hot fires that may damage the rhizomes, most rhizomatous grasses, such as <i>Cynodon dactylon</i> tend to benefit from fire. Winter burning of Bermuda grass is performed in several southern states in the U.S. in order to hasten spring growth, resulting in increased yield and quality of forage."
805	2010. WRA Specialist. Personal Communication.	Unknown.
