Taxon: Ungnadia speciosa Endl. **Family:** Sapindaceae

Common Name(s): Mexican buckeye
Spanish buckeye
Texas buckeye

Synonym(s):

Assessor: Chuck Chimera **Status:** Assessor Approved **End Date:** 23 Jul 2016

WRA Score: 3.0 **Designation:** L **Rating:** Low Risk

Keywords: Shrub, Toxic Seeds, Unarmed, Water Dispersed, Coppices

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)		
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	?
301	Naturalized beyond native range		
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
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		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	y
405	Toxic to animals	y=1, n=0	y
406	Host for recognized pests and pathogens	y=1, n=0	n
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	y
408	Creates a fire hazard in natural ecosystems		
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		
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	n
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation		
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	y
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m2)		
802	Evidence that a persistent propagule bank is formed (>1 yr)		
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**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"The currently accepted scientific name of Mexican buckeye is Ungnadia speciosa Endl. [11]. Mexican buckeye is placed in the monotypic genus Ungnadia [6] within the family Sapindaceae [11]." [No evidence of domestication]

102	**Has the species become naturalized where grown?**	
	Source(s)	**Notes**
	WRA Specialist. 2016. Personal Communication	NA

103	**Does the species have weedy races?**	
	Source(s)	**Notes**
	WRA Specialist. 2016. 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**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 19 Jul 2016]	"Mexican buckeye grows from the Edwards Plateau of south-central Texas west to Trans-Pecos Texas, and into southern New Mexico and northeastern Mexico [14]."

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 19 Jul 2016]	

203	**Broad climate suitability (environmental versatility)**	
	Source(s)	**Notes**

Qsn #	Question	Answer
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Elevation: In Trans-Pecos Texas, Mexican buckeye grows from 1,000 to 6,500 feet (305-1,981 m) in elevation [16]."
	Dave's Garden. 2016. Mexican Buckeye. Ungnadia speciose, http://davesgarden.com/guides/pf/go/53033/. [Accessed 21 Jul 2016]	"Hardiness: USDA Zone 7a: to -17.7 °C (0 °F) USDA Zone 7b: to -14.9 °C (5 °F) USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15 °F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F)"

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Mexican buckeye grows from the Edwards Plateau of south-central Texas west to Trans-Pecos Texas, and into southern New Mexico and northeastern Mexico [14]."

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	**Notes**
	Dave's Garden. 2016. Mexican Buckeye. Ungnadia speciose, http://davesgarden.com/guides/pf/go/53033/. [Accessed 21 Jul 2016]	"This plant has been said to grow in the following regions: Chandler, Arizona Huntington, Arkansas Morrilton, Arkansas Napa, California Shawnee Mission, Kansas New Orleans, Louisiana Opelousas, Louisiana Raleigh, North Carolina (2 reports) Florence, South Carolina"

301	Naturalized beyond native range	
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 21 Jul 2016]	"Naturalized: . natzd. elsewhere" [Possibly. Unable to verify this independently with other sources]

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	No evidence

303	Agricultural/forestry/horticultural weed	n
	Source(s)	**Notes**
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

304	Environmental weed	n
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed]	No evidence

305	Congeneric weed	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 19 Jul 2016]	"Mexican buckeye is placed in the monotypic genus Ungnadia [6] within the family Sapindaceae [11]."

401	Produces spines, thorns or burrs	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	[No evidence] "Mexican buckeye grows as an upright or spreading, multistemmed shrub or small tree [19,23]. It commonly reaches 4 to 15 feet (1.2-4.6 m) in height but on favorable sites can grow to 30 feet (9.5 m) with trunk diameters of 10 inches (25.4 cm) [6,19,23]. Bark is a mottled light gray to brown, with shallow fissures developing on old trunks [16,23]. Slender brown to orange, pubescent twigs become reddish-brown and glabrous with age [23]. Some roots grow horizontally along the rock or soil surface while others extend deep into the vertical face of soft rock cliffs [19]. Leaves of Mexican buckeye are deciduous, alternate, and odd-pinnately compound [17,18]. The three to seven ovate-lanceolate leaflets are leathery with crenate-serrate margins [16,23]. The upper surface is dark green and glabrous, whereas the lower surface is paler and pubescent to glandular [23]."

402	Allelopathic	

Qsn #	Question	Answer
	Source(s)	**Notes**
	WRA Specialist. 2016. Personal Communication	Unknown

403	Parasitic	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Mexican buckeye grows as an upright or spreading, multistemmed shrub or small tree [19,23]." [Sapindaceae. No evidence]

404	Unpalatable to grazing animals	y
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Mexican buckeye is seldom browsed by domestic livestock except during periods of food scarcity [6,23]." ... "Mexican buckeye browse is relatively unpalatable to domestic livestock."

405	Toxic to animals	y
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Mexican buckeye is seldom browsed by domestic livestock except during periods of food scarcity [6,23]. Fruit and leaves contain the toxic alkaloid saponin which is poisonous to livestock [6]. Mexican buckeye may be responsible for occasional losses of cattle and goats in parts of southern New Mexico [6]."

406	Host for recognized pests and pathogens	n
	Source(s)	**Notes**
	Gilman, E.F. & Watson, D.G.1994. Ungnadia speciosa. Mexican-Buckeye. Fact Sheet ST-657. Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida	"Pests and Diseases: No pests or diseases are of major concern."

407	Causes allergies or is otherwise toxic to humans	y
	Source(s)	**Notes**

Qsn #	Question	Answer
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Toxicity: The sweet seeds of Mexican buckeye taste like pistachio nuts and were formerly considered as a potential human food source [19]. Stanford [19] and his colleagues reportedly consumed up to 20 seeds without suffering ill effects. However, results of laboratory tests with rats soon put an end to these culinary experiments. Rats which had ingested Mexican buckeye seeds soon exhibited numerous signs of both neurological and organ damage and most died within 3 weeks [19]. Seeds can cause dizziness, nausea, and abdominal discomfort in humans [6,16]."

408	Creates a fire hazard in natural ecosystems	
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 21 Jul 2016]	[Unknown] "Wright [24] notes that fires have historically been relatively unimportant in the Chihuahuan Desert, which is dominated by shrubs rather than grasses. Mexican buckeye often occurs in deciduous riparian woodlands, which burn infrequently. It is not known whether Mexican buckeye possesses specific adaptations to fire. However, the majority of shrubs indigenous to southwestern Texas sprout readily from the root crown after fire [10]. Mexican buckeye coppices from the root crown after mechanical removal [19], and postfire sprouting is possible. Natural seedling establishment is extremely rare [19], but limited seedling establishment from off-site sources may occur in unusually moist years."

409	Is a shade tolerant plant at some stage of its life cycle	n
	Source(s)	**Notes**
	Gilman, E.F. & Watson, D.G.1994. Ungnadia speciosa. Mexican-Buckeye. Fact Sheet ST-657. Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida	"Light requirement: tree grows in part shade/part sun; tree grows in the shade; tree grows in full sun"
	Dave's Garden. 2016. Mexican Buckeye. Ungnadia speciose, http://davesgarden.com/guides/pf/go/53033/. [Accessed 21 Jul 2016]	"Sun Exposure: Full Sun"
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 21 Jul 2016]	[Seedlings are shade intolerant] "Seedlings grow well in full sun on warm, damp soil. Those grown in even partial shade may appear stunted and eventually die. Conditions necessary for seedling establishment, such as warm, but moist soil and full sun, may be rare in the desert Southwest."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	
	Source(s)	**Notes**
	Dave's Garden. 2016. Mexican Buckeye. Ungnadia speciose, http://davesgarden.com/guides/pf/go/53033/. [Accessed 21 Jul 2016]	"Soil pH requirements: 7.9 to 8.5 (alkaline)"

Qsn #	Question	Answer
	Gilman, E.F. & Watson, D.G.1994. Ungnadia speciosa. Mexican-Buckeye. Fact Sheet ST-657. Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida	"Soil tolerances: clay; loam; sand; acidic; alkaline; well-drained"
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Soils: Mexican buckeye typically grows on well-drained calcareous soils [19,22,23]."

411	Climbing or smothering growth habit	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Mexican buckeye grows as an upright or spreading, multistemmed shrub or small tree [19,23]. It commonly reaches 4 to 15 feet (1.2-4.6 m) in height but on favorable sites can grow to 30 feet (9.5 m) with trunk diameters of 10 inches (25.4 cm) [6,19,23]. Bark is a mottled light gray to brown, with shallow fissures developing on old trunks [16,23]. Slender brown to orange, pubescent twigs become reddish-brown and glabrous with age [23]. Some roots grow horizontally along the rock or soil surface while others extend deep into the vertical face of soft rock cliffs [19]."

412	Forms dense thickets	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	[No evidence] "Mexican buckeye grows on lower mountain slopes and foothills, in arroyos, and along streambanks in valley bottoms [6,16,23]. It commonly occurs on the exposed face or rim of chalk caprock cliffs and along fractures or depressions in igneous or limestone outcrops [5,19]. Mexican buckeye is tolerant of full sun and thrives under drought conditions [19]. It is commonly associated with deciduous riparian woodlands, oak-juniper woodlands, and desert grassland communities [5,7]."

501	Aquatic	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	[Terrestrial] "Mexican buckeye grows on lower mountain slopes and foothills, in arroyos, and along streambanks in valley bottoms [6,16,23]. It commonly occurs on the exposed face or rim of chalk caprock cliffs and along fractures or depressions in igneous or limestone outcrops [5,19]. Mexican buckeye is tolerant of full sun and thrives under drought conditions [19]. It is commonly associated with deciduous riparian woodlands, oak-juniper woodlands, and desert grassland communities [5,7]."

502	Grass	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 18 Jul 2016]	Family: Sapindaceae Subfamily: Sapindoideae

503	Nitrogen fixing woody plant	n
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 18 Jul 2016]	Family: Sapindaceae Subfamily: Sapindoideae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Mexican buckeye grows as an upright or spreading, multistemmed shrub or small tree [19,23]."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	"Mexican buckeye reproduces through seed or by vegetative means. However, seedlings are rarely observed under natural conditions [19]." [Rarely produces seedlings]

602	Produces viable seed	y
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 19 Jul 2016]	"Mexican buckeye reproduces through seed or by vegetative means." ... "Seed: Mexican buckeye first flowers during the 3rd year when plants have reached approximately 2 to 3.5 feet (0.6-1.1 m) in height [19]. Each plant produces an abundance of seed annually. Some seed falls from the plant when fruit first ripens in the fall. However, some fruit may persist on the tree through winter [19,22]."

603	Hybridizes naturally	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	[No evidence of intergeneric hybridization] "Mexican buckeye is placed in the monotypic genus Ungnadia [6] within the family Sapindaceae [11]."

604	Self-compatible or apomictic	
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	"Small fragrant flowers are rose to purplish-pink and are borne in clusters on bare stems [16,19,23]. "
	Hill Country Natives. 2016. Pollination. http://hillcountrynatives.net/learn/pollination/. [Accessed 19 Jul 2016]	Ungnadia speciose - Pollinator Required = No [Suggests self-pollination may be possible]

605	Requires specialist pollinators	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Flowers provide nectar for honey bees, and it is considered a good honey plant [22]."

606	Reproduction by vegetative fragmentation	
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	[Possibly, but primarily resprouts after cutting] "Mexican buckeye reproduces through seed or by vegetative means." ... "Vegetative regeneration: Mexican buckeye coppices readily [19]. Plants cut to ground level at 4- or 5-year intervals retain good vigor and growth [19]."

607	Minimum generative time (years)	3
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Seed: Mexican buckeye first flowers during the 3rd year when plants have reached approximately 2 to 3.5 feet (0.6-1.1 m) in height [19]."

Qsn #	Question	Answer
701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**n**
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	[Seeds moved by animals or water] "Fruit is a woody, reddish-brown, three-lobed pod or capsule 1 to 1.5 inches (2.5-3.8 cm) in diameter [16,19]. The shiny, dark brown to black, rounded seeds average approximately 0.4 to 0.6 inch (1-1.5 cm) in diameter [16]. Seeds are smooth, leathery and "buckeyelike" [17,19,23]." ... "seed carried by animals or water"

702	Propagules dispersed intentionally by people	y
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Mexican buckeye can be planted as a shade tree or as an ornamental in landscaping [6,20]. It is attractive when either planted alone or intermixed with other species [20]. Fragrant, showy flowers enhance its attractiveness during the spring [19,23]. Mexican buckeye can be trained as a hedge, planted onto berms of earth-covered homes, and used as a "display thicket shrub" [19]."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	"The shiny, dark brown to black, rounded seeds average approximately 0.4 to 0.6 inch (1-1.5 cm) in diameter [16]. Seeds are smooth, leathery and "buckeyelike" [17,19,23]. Each capsule generally contains a single seed [23]." [No evidence. Unlikely. Small shrub that produces relatively large seeds]

704	Propagules adapted to wind dispersal	n
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	"Fruit is a woody, reddish-brown, three-lobed pod or capsule 1 to 1.5 inches (2.5-3.8 cm) in diameter [16,19]. The shiny, dark brown to black, rounded seeds average approximately 0.4 to 0.6 inch (1-1.5 cm) in diameter [16]. Seeds are smooth, leathery and "buckeyelike" [17,19,23]. Each capsule generally contains a single seed [23]." ... "seed carried by animals or water"

705	Propagules water dispersed	y
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Fruit is a woody, reddish-brown, three-lobed pod or capsule 1 to 1.5 inches (2.5-3.8 cm) in diameter [16,19]. The shiny, dark brown to black, rounded seeds average approximately 0.4 to 0.6 inch (1-1.5 cm) in diameter [16]. Seeds are smooth, leathery and "buckeyelike" [17,19,23]. Each capsule generally contains a single seed [23]." ... "seed carried by animals or water"

Qsn #	Question	Answer
706	**Propagules bird dispersed**	**n**
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	"Fruit is a woody, reddish-brown, three-lobed pod or capsule 1 to 1.5 inches (2.5-3.8 cm) in diameter [16,19]. The shiny, dark brown to black, rounded seeds average approximately 0.4 to 0.6 inch (1-1.5 cm) in diameter [16]. Seeds are smooth, leathery and "buckeyelike" [17,19,23]. Each capsule generally contains a single seed [23]." ... "seed carried by animals or water"

707	**Propagules dispersed by other animals (externally)**	
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	[Seeds are eaten by predators. May be carried away for consumption & possibly dispersed] "Seeds are eaten by insects and some small mammals after they fall to the ground [19]." ... "The sweet-tasting seeds [16] are readily eaten by a variety of small mammals [19]."

708	**Propagules survive passage through the gut**	
	Source(s)	**Notes**
	Wrede, J. 2010. Trees, Shrubs, and Vines of the Texas Hill Country. 2nd Edition. Texas A&M University Press, College Station, Texas	"Although considered poisonous, the seeds can pass through a human digestive tract without causing harm." [Viability of seeds unknown. Seeds also not likely to be consumed by animals]

801	**Prolific seed production (>1000/m2)**	
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Each plant produces an abundance of seed annually. Some seed falls from the plant when fruit first ripens in the fall. However, some fruit may persist on the tree through winter [19,22]."

802	**Evidence that a persistent propagule bank is formed (>1 yr)**	
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 23 Jul 2016]	"Each plant produces an abundance of seed annually. Some seed falls from the plant when fruit first ripens in the fall. However, some fruit may persist on the tree through winter [19,22]." [Possibly]

803	**Well controlled by herbicides**	

Qsn #	Question	Answer
	Source(s)	**Notes**
	WRA Specialist. 2016. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y**
	Source(s)	**Notes**
	Tirmenstein, D. A. 1990. Ungnadia speciosa. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. http://www.fs.fed.us/database/feis/. [Accessed 18 Jul 2016]	"Mexican buckeye reproduces through seed or by vegetative means." ... "Vegetative regeneration: Mexican buckeye coppices readily [19]. Plants cut to ground level at 4- or 5-year intervals retain good vigor and growth [19]." ... "The response of Mexican buckeye to fire is not well known. Plants coppice readily after mechanical removal [19], and a similar response is possible after fire. Establishment of some seed from off-site may occur in years of unusually abundant summer and fall rainfall. However, seedling establishment is extremely rare under ordinary conditions [19]."

805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	
	Source(s)	**Notes**
	WRA Specialist. 2016. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits
• Elevation range exceeds 1000 m, demonstrating environmental versatility
• Grows in subtropical climates
• Possibly naturalized (unable to confirm)
• Unpalatable to animals
• Toxic to animals
• Seeds toxic to people
• Reproduces by seeds
• Reaches maturity in 3 years
• Seeds dispersed by water, possibly carried by animals & intentionally planted by people
• Able to coppice & resprout after cutting

Low Risk Traits
• No reports of invasiveness, but no evidence of widespread introduction outside native range
• Unarmed (no spines, thorns or burrs)
• Ornamental
• Shade intolerant

Second Screening Results for Tree/tree-like shrubs

(A) Shade tolerant or known to form dense stands?> No. Not known to form dense stands. A light demanding tree, & presumably shade intolerant
(B) Bird or wind-dispersed?> No
Outcome = Accept (Low Risk)