Key Words: Low Risk, Tropical Tree, Ornamental, Bird-dispersed, Resprouts

Family: ***Araliaceae***

Taxon: ***Polyscias nodosa***

Synonym: *Aralia nodosa Blume (basionym)*

Common Name: jie jie nan yang shen
Malapapaya
Dog-bone Tree
Kahili Tree

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** L
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score 0**

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**	**n**
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**	**n**
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)**	
401	**Produces spines, thorns or burrs**	**y=1, n=0**	**n**
402	**Allelopathic**	**y=1, n=0**	
403	**Parasitic**	**y=1, n=0**	**n**
404	**Unpalatable to grazing animals**	**y=1, n=-1**	
405	**Toxic to animals**	**y=1, n=0**	
406	**Host for recognized pests and pathogens**	**y=1, n=0**	
407	**Causes allergies or is otherwise toxic to humans**	**y=1, n=0**	
408	**Creates a fire hazard in natural ecosystems**	**y=1, n=0**	**n**
409	**Is a shade tolerant plant at some stage of its life cycle**	**y=1, n=0**	
410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	

411	**Climbing or smothering growth habit**	**y=1, n=0**	**n**
412	**Forms dense thickets**	**y=1, n=0**	**n**
501	**Aquatic**	**y=5, n=0**	**n**
502	**Grass**	**y=1, n=0**	**n**
503	**Nitrogen fixing woody plant**	**y=1, n=0**	**n**
504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**y=1, n=0**	**n**
601	**Evidence of substantial reproductive failure in native habitat**	**y=1, n=0**	**n**
602	**Produces viable seed**	**y=1, n=-1**	**y**
603	**Hybridizes naturally**	**y=1, n=-1**	
604	**Self-compatible or apomictic**	**y=1, n=-1**	**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**	
701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**y=1, n=-1**	
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**	
706	**Propagules bird dispersed**	**y=1, n=-1**	**y**
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**	
803	**Well controlled by herbicides**	**y=-1, n=1**	
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	**y**
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: L **WRA Score** **0**

Supporting Data:

101	2005. ASEAN Tropical Plant Database. Polyscias nodosa (Blume) Seem.. http://211.114.21.20/tropicalplant/html/search01_view.jsp?rno=156&fno=&page=6&all=1	[Is the species highly domesticated? No] No evidence
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2005. ASEAN Tropical Plant Database. Polyscias nodosa (Blume) Seem.. http://211.114.21.20/tropicalplant/html/search01_view.jsp?rno=156&fno=&page=6&all=1	[Species suited to tropical or subtropical climate(s) 2-High] "Java, Sulawesi, Philippines, Moluccas, Lesser Sunda Islands, New Guinea, and Solomon Islands. In forests and open thickets, mostly at low altitudes."
201	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) 2-High] Species suited to tropical or subtropical climate(s) 2-High] " Native: ASIA-TROPICAL: Malesia: Indonesia - Celebes, Irian Jaya, Java, Lesser Sunda Islands, Moluccas; Papua New Guinea; Philippines PACIFIC Southwestern Pacific: Solomon Islands"
202	2005. ASEAN Tropical Plant Database. Polyscias nodosa (Blume) Seem.. http://211.114.21.20/tropicalplant/html/search01_view.jsp?rno=156&fno=&page=6&all=1	[Quality of climate match data 2-High]
203	1983. Steenis, C.G.G.J. van (ed.). Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 9. Martinus Nijhoff/Dr. W. Junk Publishers, The Hague/Boston/London	[Broad climate suitability (environmental versatility)? No] "Open thickets and rain-forest, mostly at low altitudes and on small islands, but recorded to 1000 m." [Mostly low elevation tropical climates]
203	2010. CSIRO. Australian Tropical Rainforest Plants Edition 6 [online database] - Polyscias nodosa. http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Polyscias_nodosa.htm	[Broad climate suitability (environmental versatility)? No evidence] "Occurs in CYP and NEQ and southwards to coastal central Queensland. A rare species known only from a few collections at Iron Range, Hutchinson Creek, Kuranda Range, Edmonton, Mission Beach and Conway. Altitudinal range from near sea level to 300 m. Grows in gaps in well developed lowland rain forest. Also occurs in the Solomon Islands and Malesia."
203	2012. Dave's Gardern. PlantFiles: Malapapaya - Polyscias nodosa. http://davesgarden.com/guides/pf/go/198578/	[Broad climate suitability (environmental versatility)? No] "Hardiness: USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"
204	2005. ASEAN Tropical Plant Database. Polyscias nodosa (Blume) Seem.. http://211.114.21.20/tropicalplant/html/search01_view.jsp?rno=156&fno=&page=6&all=1	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Java, Sulawesi, Philippines, Moluccas, Lesser Sunda Islands, New Guinea, and Solomon Islands. In forests and open thickets, mostly at low altitudes."
204	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Native: ASIA-TROPICAL: Malesia: Indonesia - Celebes, Irian Jaya, Java, Lesser Sunda Islands, Moluccas; Papua New Guinea; Philippines PACIFIC Southwestern Pacific: Solomon Islands"
205	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Does the species have a history of repeated introductions outside its natural range? Yes] "Five species are fairly common in Hawaii, with a sixth (P. nodosa) less common."
205	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Does the species have a history of repeated introductions outside its natural range? Yes] "Widely cultivated in Fujian (Fuzhou) and Guangdong (Guangzhou) [native to Malesia and the Solomon Islands]. This species is used as an ornamental."
301	2007. Randall, R.P.. Global Compendium of Weeds - Index. http://www.hear.org/gcw/	[Naturalized beyond native range? No] No evidence
301	2012. Wagner, W.L./Herbst, D.R./Khan, N./Flynn, T.. Hawaiian Vascular Plant Updates: A Supplement to the Manual of the Flowering Plants of Hawai`i & Hawai`i's Ferns & Fern Allies. http://botany.si.edu/pacificislandbiodiversity/hawaianflora/supplement.htm	[Naturalized beyond native range? No] No evidence to date
302	2007. Randall, R.P.. Global Compendium of Weeds - Index. http://www.hear.org/gcw/	[Garden/amenity/disturbance weed? No] No evidence
303	2007. Randall, R.P.. Global Compendium of Weeds - Index. http://www.hear.org/gcw/	[Agricultural/forestry/horticultural weed? No] No evidence

304	2007. Randall, R.P.. Global Compendium of Weeds - Index. http://www.hear.org/gcw/	[Environmental weed? No] No evidence
305	1999. Rozefelds, A.C.F./Cave, L./Morris, D.I./Buchanan, A.M.. The Weed Invasion in Tasmania since 1970. Australian Journal of Botany. 47: 23-48.	[Congeneric weed? Possibly] "Appendix 2. List of taxa introduced in Tasmania since 1970" … "Polyscias sambucifolia" … "Broad-leaved form established on roadsides, narrow-leaved form may be native (AMB)"
305	2011. Queensland Government. Weeds of Australia - Elderberry panax, Polyscias sambucifolia. http://keyserver.lucidcentral.org/weeds/data/03030800-0b07-490a-8d04-0605030c0f01/media/Html/Polyscias_sambucifolia.htm	[Congeneric weed? Possibly] "Elderberry panax (Polyscias sambucifolia) is regarded as an environmental weed in Tasmania."
401	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Produces spines, thorns or burrs? No] "Shrubs or trees, evergreen, hermaphroditic, andromonoecious or dioecious, unarmed, often glabrous, some with sharply aromatic herbage." … "Trees, to 25 m tall, dioecious. Leaves 1- or 2 pinnate; petiole ca. 30 cm, with a short sheathing base, not clasping or alate; petiolules absent or very short (leaflets sessile to subsessile); leaflets 21-33, ovate oblong, 15-20 × 4-5 cm, papery, base rounded to truncate, margin shallowly crenate, apex apiculate."
402	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Parasitic? No] "Trees, to 25 m tall, dioecious." [Araliaceae. Not parasitic]
404	2004. Stevens, A.M.. Kamus Lengkap Indonesia Inggris. A Comprehensive Indonesian-English Dictionary. Ohio University Press, Athens, OH	[Unpalatable to grazing animals? Possibly Palatable] "jaranan: various species of plant used as fodder, Crataeva nurvala, Polyscias nodosa, Hiptage benghalensis." [No other information on use of P. nodosa as a fodder plant was found]
405	2010. CSIRO. Australian Tropical Rainforest Plants Edition 6 [online database] - Polyscias nodosa. http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Polyscias_nodosa.htm	[Toxic to animals? Unknown] "The leaves are used to stupefy fish. Philipson (1979)." [Unknown if this will affect large mammals]
406	1991. Florido, H.B./Saplan, J.C./Arcilla, R.P.. Reforestation Species. Research Information Series on Ecosystems. 3(4): 1-15.	[Host for recognized pests and pathogens? Possibly] Diseases: Damping-off Symptoms: Damping-off occurs either before or after seedling emergence. In post emergence damping-off, infected seedlings develop water soaked lesions at the base which dehydrate later, turn brown, wilt and cause the seedlings to topple over. In very crowded seedbeds, the cotyledons and the upper part of the stem may turn brown and die. Causal pathogen: Phytopthora, Pythium, Diplodia, Rhizoctonia and Fusarium spp."
407	1983. Steenis, C.G.G.J. van (ed.). Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 9. Martinus Nijhoff/Dr. W. Junk Publishers, The Hague/Boston/London	[Causes allergies or is otherwise toxic to humans? Unknown. Medicinal properties suggest potential for inadvertent poisoning] "Uses. Used medicinally against purpuric fever and to delay pregnancy (Mindanao)."
407	1997. Nellis, D.W.. Poisonous plants and animals of Florida and the Caribbean. Pineapple Press Inc., Sarasota, FL	[Causes allergies or is otherwise toxic to humans? Unknown] "Polyscias guilfoylei" … "Repeated contact with the plant may produce inflammation and a local or widespread rash. Systemic allergic reaction with swelling is reported." [Related species shows evidence of toxicity]
407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No evidence]
408	1991. Florido, H.B./Saplan, J.C./Arcilla, R.P.. Reforestation Species. Research Information Series on Ecosystems. 3(4): 1-15.	[Creates a fire hazard in natural ecosystems? No evidence]
408	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Creates a fire hazard in natural ecosystems? No evidence]
409	2012. Dave's Gardern. PlantFiles: Malapapaya - Polyscias nodosa. http://davesgarden.com/guides/pf/go/198578/	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "Sun Exposure: Sun to Partial Shade"

410	2012. Dave's Gardern. PlantFiles: Malapapaya - Polyscias nodosa. http://davesgarden.com/guides/pf/go/198578/	[Tolerates a wide range of soil conditions? Possibly] "Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral) 7.6 to 7.8 (mildly alkaline)" [Acidic to alkaline]
411	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Climbing or smothering growth habit? No] "Trees, to 25 m tall, dioecious."
412	2005. McKenzie, P./Brown, C./Jianghua, S./Jian, W. (eds.). The unwelcome guests: Proceedings of the Asia-Pacific Forest Invasive Species Conference. FAO, Bangkok, Thailand	[Forms dense thickets? No evidence. In fact, Polyscias nodosa and other trees appear to be outcompeted by non-natives] "While mahogany invades regenerating dipterocarp forests and may give the dipterocarps a hard time in competition, the paper mulberry (*Broussonetia papyrifera) also gives indigenous gap and pioneer tree species very keen competition. Ocular observation shows that where paper mulberry forms pure stand thickets, the usual indigenous pioneer tree species such as anabiong (Trema orientalis), binunga (Macaranga tanarius), alim (Melanolepis multiglandulosus), banato (Mallotus philippinensis), tibig (Ficus nota), hauili (F. septica), isis (F. ulmifolia), sablot (Litsea sebifera), paguringon (Cratoxylon sumatranum), and malapapaya (Polyscias nodosa) are not present."
412	2007. Ihalainen, L.. Improved Rubber Agroforestry System RAS1 in West Kalimantan, Indonesia Biodiversity and Farmers' Perceptions. M.Sc. Thesis. University of Helsinki, Department of Forest Ecology, Helsinki, Finland	[Forms dense thickets? No evidence] "Annex 2. Average seedling density (ha-1) per family and species in the RAS1 study sites, type and habitat of the species (x=occurs, (x)=occurs occasionally). Families are arranged in descending order of seedling density." [Polyscias nodosa = 42 / hectare]
501	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Aquatic? No] "Trees, to 25 m tall, dioecious." [Terrestrial tree]
502	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Grass? No] Araliaceae
503	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Nitrogen fixing woody plant? No] Araliaceae
504	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Trees, to 25 m tall, dioecious. Leaves 1- or 2 pinnate; petiole ca. 30 cm, with a short sheathing base, not clasping or alate; petiolules absent or very short (leaflets sessile to subsessile); leaflets 21–33, ovate-oblong, 15–20 × 4–5 cm, papery, base rounded to truncate, margin shallowly crenate, apex apiculate. Inflorescence terminal, erect, a panicle of heads; primary axis 50–150 cm, secondary axes 15–40 cm, peduncles 6–15 mm, with heads of hermaphroditic flowers. Ovary 5-carpellate; styles free, spreading. Fruit subglobose, ca. 4 mm high."
601	1991. Florido, H.B./Saplan, J.C./Arcilla, R.P.. Reforestation Species. Research Information Series on Ecosystems. 3(4): 1-15.	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	1991. Florido, H.B./Saplan, J.C./Arcilla, R.P.. Reforestation Species. Research Information Series on Ecosystems. 3(4): 1-15.	[Produces viable seed? Yes] "Malapapaya is propagated by seeds."
603	2012. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Self-compatible or apomictic? Presumably No] "Trees, to 25 m tall, dioecious."
605	1983. Steenis, C.G.G.J. van (ed.). Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 9. Martinus Nijhoff/Dr. W. Junk Publishers, The Hague/Boston/London	[Requires specialist pollinators? No evidence] "Inflorescence a diffuse panicle; primary axis up to c. 60 cm with secondary branches mostly in verticils at intervals along its length; secondary branches up to 30 cm bearing umbellules in an irregularly branched system towards their extremities; umbellules with 12-20 flowers on pedicels c. 3 mm long. Calyx a minute rim. Petals 5, 2 mm long. Stamens 5. Ovary turbinate, c. 1 mm high, 2-3(-4)-celled; styles at first erect, later spreading."

606	1991. Florido, H.B./Saplan, J.C./Arcilla, R.P.. Reforestation Species. Research Information Series on Ecosystems. 3(4): 1-15.	[Reproduction by vegetative fragmentation? No evidence] "Malapapaya is propagated by seeds."
607	2012. WRA Specialist. Personal Communication.	[Minimum generative time (years)? Unknown]
701	1983. Steenis, C.G.G.J. van (ed.). Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 9. Martinus Nijhoff/Dr. W. Junk Publishers, The Hague/Boston/London	[Propagules likely to be dispersed unintentionally? Unlikely] "Fruit subglobose, fleshy, c. 5 mm" [Fruits & seeds lack means of external attachment, although small size may make inadvertent dispersal possible]
702	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules dispersed intentionally by people? Yes] "Widely cultivated in Fujian (Fuzhou) and Guangdong (Guangzhou) [native to Malesia and the Solomon Islands]. This species is used as an ornamental."
703	2012. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence that trees are grown with or have become a produce contaminant.
704	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules adapted to wind dispersal? No] "Fruit a drupe, terete or laterally flattened. Seeds compressed, endosperm smooth." [Genus] "Fruit subglobose, ca. 4 mm high." [Species]
705	1991. Florido, H.B./Saplan, J.C./Arcilla, R.P.. Reforestation Species. Research Information Series on Ecosystems. 3(4): 1-15.	[Propagules water dispersed? Possibly] "…grows in open thickets and second growth forests at low and medium altitudes. It also grows in moist areas along gullys and creeks."
706	2000. Schabacker, J./Curio, E.. Fruit Characteristics as Determinants of Gut Passage in a Bulbul (Hypsipetes philippinus). Ecotropica. 6: 157-168.	[Propagules bird dispersed? Yes] "During summer and winter (June 1997 to January 1998) 80 feeding trials were carried our with briefly captive Philippine Bulbuls (Hypsipetes philippinus) and indigenous fruits. By virtue of its relative abundance" … "The species of fruit significantly influences the GPT of seeds (see Fig. 3) . Those three species with longest GPTs (Geunsia cumingiana, indet. , Polyscias nodosa) show significant differences compared with species with the shortest GPTs…"
706	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules bird dispersed? Presumably Yes] "Fruit a drupe, terete or laterally flattened. Seeds compressed, endosperm smooth." [Genus] "Fruit subglobose, ca. 4 mm high." [Species]
707	1983. Steenis, C.G.G.J. van (ed.). Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 9. Martinus Nijhoff/Dr. W. Junk Publishers, The Hague/Boston/London	[Propagules dispersed by other animals (externally)? No] "Dispersal in the family takes place generally by fruit-fall; but as fruits are baccate or (more usually) drupaceous, they will also be eaten by birds (for the most part) and bats…"
708	2000. Schabacker, J./Curio, E.. Fruit Characteristics as Determinants of Gut Passage in a Bulbul (Hypsipetes philippinus). Ecotropica. 6: 157-168.	[Propagules survive passage through the gut? Yes] "During summer and winter (June 1997 to January 1998) 80 feeding trials were carried our with briefly captive Philippine Bulbuls (Hypsipetes philippinus) and indigenous fruits. By virtue of its relative abundance" … "The species of fruit significantly influences the GPT of seeds (see Fig. 3) . Those three species with longest GPTs (Geunsia cumingiana, indet. , Polyscias nodosa) show significant differences compared with species with the shortest GPTs…"
708	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules survive passage through the gut? Presumably Yes] "Fruit a drupe, terete or laterally flattened. Seeds compressed, endosperm smooth." [Genus] "Fruit subglobose, ca. 4 mm high." [Species]
801	2008. Dayan, M.DP. /Reaviles, R.S./Bandian, D.B.. Bonliw and Laneteng Gubat. Research Information Series on Ecosystems. 20(2): 1-9.	[Prolific seed production (>1000/m2)? Apparently yes] "Bonliw (Polyscias florosa), is a relative of malapapaya (P. nodosa) and can be mistaken for the species." … "Unlike malapapaya with no regeneration below the canopy in spite of thousands of fruits/seeds that fall on the ground, many germinants of bonliw were found and collected below the canopy." [Produces 1000s of seeds in native range, but apparently not seedling recuits]
802	2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] Several Polyscias species exhibit orthodox storage behavior
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species.
804	2000. Lowry II, P.P. et al.. Polyscias nodosa (Blume) Seem. Collection Number 5286. Missouri Botanical Garden Herbarium. http://www.tropicos.org/Specimen/1577940	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Tree, three main trunks recently broken off at ca. 3-4 m above ground, each ca. 20 cm dbh, with several regrowth stems to 5 m tall." [Demonstrates an ability to resprout]

805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents) Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Thrives in tropical climates
- Leaves used as a fish poison (potentially toxic to other animals & people)
- Produces numerous bird-dispersed seeds
- Ability to resprout from cut or damaged trunks

Low Risk / Desirable Traits

- No evidence of naturalization or records of invasiveness elsewhere were found
- Grows only in lower elevation, tropical climates
- Trees are dioecious, and presumably not self-fertile
- Landscaping and ornamental value