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|---|---|
| Taxon: <i>Tabernaemontana africana</i> Hook. | Family: Apocynaceae |
| Common Name(s): Samoan gardenia | Synonym(s): <i>Conopharyngia chippii</i> Stapf <i>Conopharyngia longiflora</i> (Benth.) <i>Tabernaemontana chippii</i> (Stapf) <i>Tabernaemontana grandiflora</i> Hook. <i>Tabernaemontana longiflora</i> Benth. |

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|--------------------------------|----------------------------------|-----------------------------|
| Assessor: Chuck Chimera | Status: Assessor Approved | End Date: 7 Sep 2022 |
| WRA Score: -1.0 | Designation: L | Rating: Low Risk |

Keywords: Tropical Tree, Ornamental, Shade Tolerant, Fleshy-Fruit, Animal 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 | ? |
| 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 | | |
| 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 | | |
| 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 |

| Qsn # | Question | Answer Option | Answer |
|-------|--|---------------|--------|
| 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 | y |
| 410 | Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island) | y=1, n=0 | n |
| 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 | | |
| 604 | Self-compatible or apomictic | | |
| 605 | Requires specialist pollinators | | |
| 606 | Reproduction by vegetative fragmentation | y=1, n=-1 | n |
| 607 | Minimum generative time (years) | | |
| 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 | n |
| 706 | Propagules bird dispersed | | |
| 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) | | |
| 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 | | |
| 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 |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | [No evidence] "Species occurrence increases with rainfall to reach a very wide optimal region between 2000-3000 mm/yr (logistic regression analysis, Chi2 test). It can be found in the forest understorey but also in disturbed areas and forest edges" |

| | | |
|-----|---|-------|
| 102 | Has the species become naturalized where grown? | |
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | NA |

| | | |
|-----|--|-------|
| 103 | Does the species have weedy races? | |
| | Source(s) | Notes |
| | WRA Specialist. (2022). 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 |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "Continent: Upper Guinea endemic Upper Guinea: Senegal, Guinea Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire, Ghana" |

| | | |
|-----|---|--|
| 202 | Quality of climate match data | High |
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "Continent: Upper Guinea endemic Upper Guinea: Senegal, Guinea Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire, Ghana" |

| | | |
|-----|---|---|
| 203 | Broad climate suitability (environmental versatility) | y |
| | Source(s) | Notes |
| | Tropical Plants Database, Ken Fern. (2022). <i>Tabernaemontana africana</i> . http://tropical.theferns.info . [Accessed 6 Sep 2022] | "A tree of the humid tropics, growing from sea level to moderate elevations." |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | [Occurs in a broad range of ecosystems] "Distribution type: continuous, widespread, present in 82 30' cells, distribution range is 1803 km. Forest type: wet evergreen forest, moist semideciduous forest, dry semi-deciduous forest" |

| Qsn # | Question | Answer |
|-------|---|---|
| 204 | Native or naturalized in regions with tropical or subtropical climates | y |
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "Continent: Upper Guinea endemic Upper Guinea: Senegal, Guinea Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire, Ghana" |
| | Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI | Cultivated, but no evidence of naturalization in the Hawaiian Islands |

| 205 | Does the species have a history of repeated introductions outside its natural range? | ? |
|-----|--|--|
| | Source(s) | Notes |
| | Top Tropicals. (2022). <i>Tabernaemontana africana</i> . https://toptropicals.com/catalog/uid/tabernaemontana_africana.htm . [Accessed 6 Sep 2022] | "It is a new plant introduction and is hard to find." |
| | Dave's Garden. (2022). <i>Tabernaemontana</i> Species, Samoan Gardenia - <i>Tabernaemontana africana</i> . https://davesgarden.com/guides/pf/go/193829/ . [Accessed 6 Sep 2022] | "This plant is said to grow outdoors in the following regions: Boca Raton, Florida Fort Lauderdale, Florida Fort Myers, Florida Opa Locka, Florida Saint Petersburg, Florida Ainaloa, Hawaii (2 reports) Hawaiian Beaches, Hawaii (2 reports) Hawaiian Paradise Park, Hawaii Hilo, Hawaii Kapaau, Hawaii Keaau, Hawaii Leilani Estates, Hawaii (2 reports) Mountain View, Hawaii Nanawale Estates, Hawaii (2 reports) Orchidlands Estates, Hawaii Pahoa, Hawaii (2 reports)" |

| 301 | Naturalized beyond native range | n |
|-----|---|---|
| | Source(s) | Notes |
| | Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall | " <i>Tabernaemontana africana</i> Hook. f. Apocynaceae Total N° of Refs: 1 Preferred Climate/s: Tropical Origin: Africa Major Pathway/s: Ornamental Dispersed by: Humans References: India-W-1977." [Source material cited reports no evidence of impacts] |

| Qsn # | Question | Answer |
|-------|---|--|
| | Choo, L. M. et al. (2020). Additions to the Flora of Singapore: New and overlooked records of naturalised plant species (4). <i>Nature in Singapore</i> 13: 39–45 | [No evidence of seedling or sapling production] "Local status. Casual; as a remnant of former cultivation—the species is native to Africa but is known to be planted in Singapore for ornamental purposes (Chen et al., 2015). The presence of two plants in a previously non-managed area in Singapore shows that they are likely remnants persisting from former cultivation. It is not known if these are the same trees that were originally planted, or if they were descendants of the previously cultivated trees on Coney Island, since we did not observe any seedlings or saplings even though the two trees were clearly producing fruits and seeds. Further observations will be required to see if the species will reproduce successfully and naturalise in due course." |
| | Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI | No evidence to date |
| | GBIF Secretariat (2022). <i>Tabernaemontana africana</i> Hook. in GBIF Secretariat (2021). GBIF Backbone Taxonomy. Checklist dataset. https://www.gbif.org/species/8426630 . [Accessed 6 Sep 2022] | Recorded as introduced in: India According to: Global Register of Introduced and Invasive Species - India Evidence of impact: No |

| 302 | Garden/amenity/disturbance weed | n |
|-----|---|------------------------|
| | Source(s) | Notes |
| | GBIF Secretariat (2022). <i>Tabernaemontana africana</i> Hook. in GBIF Secretariat (2021). GBIF Backbone Taxonomy. Checklist dataset. https://www.gbif.org/species/8426630 . [Accessed 6 Sep 2022] | Evidence of impact: No |
| | Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall | No evidence |

| 303 | Agricultural/forestry/horticultural weed | n |
|-----|---|------------------------|
| | Source(s) | Notes |
| | GBIF Secretariat (2022). <i>Tabernaemontana africana</i> Hook. in GBIF Secretariat (2021). GBIF Backbone Taxonomy. Checklist dataset. https://www.gbif.org/species/8426630 . [Accessed 6 Sep 2022] | Evidence of impact: No |
| | Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall | No evidence |
| | CABI. (2022). <i>Invasive Species Compendium</i> . Wallingford, UK: CAB International. www.cabi.org/isc | No evidence |

| 304 | Environmental weed | n |
|-----|---|------------------------|
| | Source(s) | Notes |
| | GBIF Secretariat (2022). <i>Tabernaemontana africana</i> Hook. in GBIF Secretariat (2021). GBIF Backbone Taxonomy. Checklist dataset. https://www.gbif.org/species/8426630 . [Accessed 6 Sep 2022] | Evidence of impact: No |

| Qsn # | Question | Answer |
|-------|---|-------------|
| | Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall | No evidence |
| | CABI. (2022). Invasive Species Compendium. Wallingford, UK: CAB International. www.cabi.org/isc | No evidence |

| 305 | Congeneric weed | |
|-----|---|--|
| | Source(s) | Notes |
| | Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall | Several species listed as weeds of some sort, but little or no evidence of substantial impacts reported. |

| 401 | Produces spines, thorns or burrs | n |
|-----|--|---|
| | Source(s) | Notes |
| | Choo, L. M. et al. (2020). Additions to the Flora of Singapore: New and overlooked records of naturalised plant species (4). Nature in Singapore 13: 39–45 | [No evidence] "Description. Large shrub 5–6 m tall, dbh 10 cm. Branchlets glabrous, lenticellate and ringed with old leaf scars. Leaves opposite, with colleters in the leaf axils; petiole 4–13 mm; leaf lamina simple, elliptic, (3.3–)6.3–13.5 × (1.4–)2.6–4.2 cm, 2.3–3.2 times as long as wide, base cuneate, apex acuminate, smoothly coriaceous, secondary veins 6–10 pairs, tertiary venation indistinct, glabrous above and below. Inflorescence 1–2-flowered, glabrous, pedicels 8–11 mm. Calyx 5-lobed, lobes ovate, 7–7.2 × 3.6–4 mm, margins ciliate, apex obtuse, surface glabrous. Corolla sympetalous, 5-lobed, sinistrose, creamy white blending into egg-yellow at the centre of the corolla in open flowers, mature buds 6.7–7 cm long with a subglobose head 6–8 mm long, apex rounded; tube 6.1–7.3 cm; lobes 4.5–5 × 1–1.2 cm, apex rounded; outer surface of tube glabrous but pubescent at base and margins of lobes, inner surface of tube pubescent with villose hairs, lobes pubescent with short hairs from lower half to the rim of the top of the tube. Stamens 5, inserted in the lower third of the tube, anthers 1.35–1.4 × 2.4–2.6 mm. Pistil 1, glabrous; ovary ovoid, c. 5.5 × 2.5 mm, with a 2-mm tall disk at the base; style glabrous, c. 1.8 mm long in bud, style head c. 5 × 3 mm in bud, flared at the base. Fruit dehiscent, consisting of two follicles joined at the base; follicle ovoid, green (unripe), 3.5–4.2 × 3–3.2 × 2.5–2.8 cm, surface smooth glossy. Seeds numerous, with an orange-red aril." |

| 402 | Allelopathic | |
|-----|--|----------------------------|
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | Unknown. No evidence found |

| Qsn # | Question | Answer |
|-------|---|--|
| 403 | Parasitic | n |
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "Life form: small tree" [Apocynaceae. No evidence] |

| 404 | Unpalatable to grazing animals | |
|-----|---|---|
| | Source(s) | Notes |
| | Catarino, L. & Indjai, B. (2019). Árvores florestais da Guiné-Bissau. IBAP, Bissau | [Fruit edible. Palatability of foliage unknown] "O fruto é referido como sendo comestível." [Translation from Portuguese: The fruit is referred as being edible.] |
| | Van Wyk, B. & Van Wyk, P. (1997). Field Guide to Trees of Southern Africa. Struik Publishers, Cape Town, South Africa | [Related species reportedly palatable] "The leaves are browsed by game." |
| | Catarino L, Frazão-Moreira A, Bessa J, Parathian H, & Hockings K. (2020). Plants used by chimpanzees and humans in Cantanhez, Guinea-Bissau - Field Guide. LAE/CRIA, Lisboa | Used as food by humans and chimpanzees. Palatability of foliage unspecified |

| 405 | Toxic to animals | n |
|-----|---|---|
| | Source(s) | Notes |
| | Tropical Plants Database, Ken Fern. (2022). <i>Tabernaemontana africana</i> . http://tropical.theferns.info . [Accessed 6 Sep 2022] | "Known Hazards None known" |
| | Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL | [No evidence. Used medicinally] "Antimicrobially active alkaloids." |
| | Catarino L, Frazão-Moreira A, Bessa J, Parathian H, & Hockings K. (2020). Plants used by chimpanzees and humans in Cantanhez, Guinea-Bissau - Field Guide. LAE/CRIA, Lisboa | No evidence. Used as food by humans and chimpanzees. |

| 406 | Host for recognized pests and pathogens | |
|-----|--|--|
| | Source(s) | Notes |
| | Palmpedia. (2022). <i>Tabernaemontana africana</i> . http://www.palmpedia.net . [Accessed 4 Sep 2022] | "Other than an occasional aphid interest, I have not experienced much of any pest issues." |

| 407 | Causes allergies or is otherwise toxic to humans | n |
|-----|---|----------------------------|
| | Source(s) | Notes |
| | Tropical Plants Database, Ken Fern. (2022). <i>Tabernaemontana africana</i> . http://tropical.theferns.info . [Accessed 6 Sep 2022] | "Known Hazards None known" |

| Qsn # | Question | Answer |
|-------|---|---|
| | Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL | [No evidence. Used medicinally] "Antimicrobially active alkaloids." |

| 408 | Creates a fire hazard in natural ecosystems | |
|-----|---|--|
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "Forest type: wet evergreen forest, moist semideciduous forest, dry semi-deciduous forest" ... "Species occurrence increases with rainfall to reach a very wide optimal region between 2000-3000 mm/yr" [No evidence that this tree occurs in fire prone ecosystems, but could potentially contribute to fuel load in dry semi-deciduous forest] |

| 409 | Is a shade tolerant plant at some stage of its life cycle | y |
|-----|--|---|
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "It can be found in the forest understorey but also in disturbed areas and forest edges" |
| | Dave's Garden. (2022). <i>Tabernaemontana</i> Species, Samoan Gardenia - <i>Tabernaemontana africana</i> . https://davesgarden.com/guides/pf/go/193829/ . [Accessed 7 Sep 2022] | "Sun Exposure: Sun to Partial Shade" |
| | Riffle, R.L. (1998). The Tropical Look - An Encyclopedia of Dramatic Landscape Plants. Timber Press, Portland, OR | "Sun to partial shade" [Genus description] |
| | Palmpedia. (2022). <i>Tabernaemontana africana</i> . http://www.palmpedia.net . [Accessed 7 Sep 2022] | "While these can live in shadier environments, I have seen them thrive and bloom regularly throughout the year if they are getting good amounts of direct to full sun." |

| 410 | Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island) | n |
|-----|--|--|
| | Source(s) | Notes |
| | Flora Fauna Web. (2022). <i>Tabernaemontana africana</i> . https://www.nparks.gov.sg/florafaunaweb/flora/4/2/4213 . [Accessed 6 Sep 2022] | "Plant & Rootzone Preference - Tolerance Moist Soils, Acidic (low pH) Soils" |
| | Top Tropicals. (2022). <i>Tabernaemontana africana</i> . https://toptropicals.com/catalog/uid/tabernaemontana_africana.htm . [Accessed 6 Sep 2022] | "This shrub likes acid soil conditions best." |

| 411 | Climbing or smothering growth habit | n |
|-----|---|-------------------------|
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "Life form: small tree" |

| Qsn # | Question | Answer |
|-------|---|--|
| 412 | Forms dense thickets | n |
| | Source(s) | Notes |
| | Owusu, G., Anning, A. K., Belford, E. J., & Acquah, E. (2022). Plant species diversity, abundance and conservation status of the Ankasa Resource Reserve, Ghana. <i>Trees, Forests and People</i> , 8, 100264 | [Identified as a dominant species in one forest, but no evidence that it forms dense, monotypic stands] "For the BC, <i>F. elastica</i> , <i>P. nitida</i> and <i>T. africana</i> were the dominant species with corresponding IVIs of 11%, 10% and 7%. <i>P. nitida</i> (15%), <i>D. klaineana</i> (12%) and <i>Drypetes gilgiana</i> (8%) constituted the dominant species in the BGA sites." |
| | Asase, A., & Tetteh, D. A. (2010). The role of complex agroforestry systems in the conservation of forest tree diversity and structure in southeastern Ghana. <i>Agroforestry Systems</i> , 79(3), 355-368 | [No evidence] "Appendix 1 Native forest/non-crops tree species, their families and density (individuals ha ⁻¹) in a complex agroforestry landscape in southeastern Ghana" [<i>Tabernaemontana africana</i> - Natural forest = 10 individuals ha ⁻¹ ; Cocoa agroforest = 3.2 individuals ha ⁻¹ ; Mixed food crop agroforest = 0 individuals ha ⁻¹] |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | [No evidence] "Distribution type: continuous, widespread, present in 82 30' cells, distribution range is 1803 km Forest type: wet evergreen forest, moist semideciduous forest, dry semi-deciduous forest" |

| 501 | Aquatic | n |
|-----|---|--|
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | [Terrestrial] "It can be found in the forest understorey but also in disturbed areas and forest edges" |

| 502 | Grass | n |
|-----|---|--|
| | Source(s) | Notes |
| | USDA, Agricultural Research Service, National Plant Germplasm System. (2022). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 6 Sep 2022] | Genus: <i>Tabernaemontana</i> Family: Apocynaceae Subfamily: Rauvolfioideae Tribe: <i>Tabernaemontaneae</i> |

| 503 | Nitrogen fixing woody plant | n |
|-----|---|--|
| | Source(s) | Notes |
| | USDA, Agricultural Research Service, National Plant Germplasm System. (2022). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 6 Sep 2022] | Genus: <i>Tabernaemontana</i> Family: Apocynaceae Subfamily: Rauvolfioideae Tribe: <i>Tabernaemontaneae</i> |

| Qsn # | Question | Answer |
|-------|--|--|
| 504 | Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers) | n |
| | Source(s) | Notes |
| | | [Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Fairly common, medium-sized tree..." |

| | | |
|-----|--|--|
| 601 | Evidence of substantial reproductive failure in native habitat | n |
| | Source(s) | Notes |
| | | [Evidence of substantial reproductive failure in native habitat? No] "Fairly common, medium-sized tree with conspicuous lenticels, the slash exuding white latex..." |

| | | |
|-----|--|---|
| 602 | Produces viable seed | y |
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "Fruit: fleshy (berry), dehiscent, double (approx. 10 cm in diameter), yellow to orange Seed: medium-sized to large" |
| | Flora Fauna Web. (2022). <i>Tabernaemontana africana</i> . https://www.nparks.gov.sg/florafaunaweb/flora/4/2/4213 . [Accessed 7 Sep 2022] | "Propagation Method: Seed" |
| | Tropical Plants Database, Ken Fern. (2022). <i>Tabernaemontana africana</i> . http://tropical.theferns.info . [Accessed 7 Sep 2022] | "Propagation: Seed" |

| | | |
|-----|--|----------------------------|
| 603 | Hybridizes naturally | |
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | Unknown. No evidence found |

| | | |
|-----|--|--|
| 604 | Self-compatible or apomictic | |
| | Source(s) | Notes |
| | Moura, T. N. D., Webber, A. C., & Torres, L. N. M. (2011). Floral biology and a pollinator effectiveness test of the diurnal floral visitors of <i>Tabernaemontana undulata</i> Vahl. (Apocynaceae) in the understory of Amazon Rainforest, Brazil. <i>Acta Botanica Brasiliica</i> , 25(2): 380-386 | [Unknown. Congener appears to be self-incompatible] "Despite the fact that <i>T. undulata</i> pollination mechanism avoids self pollination, this does not prevent geitonogamy. The pollinator effectiveness test failure may be explained by at least two reasons: geitonogamy and a low fruit set pattern for this species. The deposition of self pollen onto the stigma of a self-incompatible species may interfere with the growth of pollen tubes from outcross pollination, resulting in a clogging effect." |

| Qsn # | Question | Answer |
|-------|---|---|
| | Choo, L. M. et al. (2020). Additions to the Flora of Singapore: New and overlooked records of naturalised plant species (4). <i>Nature in Singapore</i> 13: 39–45 | [Unknown] "Inflorescence 1–2-flowered, glabrous, pedicels 8–11 mm. Calyx 5-lobed, lobes ovate, 7–7.2 × 3.6–4 mm, margins ciliate, apex obtuse, surface glabrous. Corolla sympetalous, 5-lobed, sinistrose, creamy white blending into egg-yellow at the centre of the corolla in open flowers, mature buds 6.7–7 cm long with a subglobose head 6–8 mm long, apex rounded; tube 6.1–7.3 cm; lobes 4.5–5 × 1–1.2 cm, apex rounded; outer surface of tube glabrous but pubescent at base and margins of lobes, inner surface of tube pubescent with villose hairs, lobes pubescent with short hairs from lower half to the rim of the top of the tube. Stamens 5, inserted in the lower third of the tube, anthers 1.35–1.4 × 2.4–2.6 mm. Pistil 1, glabrous; ovary ovoid, c. 5.5 × 2.5 mm, with a 2-mm tall disk at the base; style glabrous, c. 1.8 mm long in bud, style head c. 5 × 3 mm in bud, flared at the base." |

| 605 | Requires specialist pollinators | |
|-----|---|---|
| | Source(s) | Notes |
| | Moura, T. N. D., Webber, A. C., & Torres, L. N. M. (2011). Floral biology and a pollinator effectiveness test of the diurnal floral visitors of <i>Tabernaemontana undulata</i> Vahl. (Apocynaceae) in the understory of Amazon Rainforest, Brazil. <i>Acta Botanica Brasílica</i> , 25(2): 380-386 | "Few registers on pollination biology for representatives of the genus have been made in Brazil, with the exception of Gottsberger & Gottsberger (2006) for <i>Tabernaemontana hystrix</i> Steud. and <i>T. solanifolia</i> DC., both with nocturnal flowers and classified as moth-pollinated by the authors." |
| | Kato, M. (2005). Ecology of traplining bees and understory pollinators. In <i>Pollination ecology and the rain forest</i> (pp. 128-133). Springer, New York, NY | [Genus description] "Moths. Most moths are nocturnal, and some of them pollinate nocturnal flowers. For example, <i>Barringtonia sarcostachys</i> (Lecythidaceae) is visited by nocturnal sphingid moths (Momose et al. 1998c). Other nocturnal tubular flowers such as <i>Tabernaemontana</i> (Apocynaceae) would also be visited by sphingid moths. Some of these nocturnal flowers may be visited also by fruit bats." |

| 606 | Reproduction by vegetative fragmentation | n |
|-----|---|-----------------------------------|
| | Source(s) | Notes |
| | Tropical Plants Database, Ken Fern. (2022). <i>Tabernaemontana africana</i> . http://tropical.theferns.info . [Accessed 7 Sep 2022] | "Propagation: Seed" [No evidence] |

| 607 | Minimum generative time (years) | |
|-----|--|---|
| | Source(s) | Notes |
| | Top Tropicals. (2022). <i>Tabernaemontana africana</i> . https://toptropicals.com/catalog/uid/tabernaemontana_africana.htm . [Accessed 7 Sep 2022] | "Although it's slow growing, it is capable of reaching 15 feet." [Unknown] |
| | Flora Fauna Web. (2022). <i>Tabernaemontana africana</i> . https://www.nparks.gov.sg/florafaunaweb/flora/4/2/4213 . [Accessed 7 Sep 2022] | "Plant Growth Rate: Moderate" |
| | Johnson, D. & Johnson, S. (2002). <i>Down to Earth: Gardening with Indigenous Trees</i> . Struik Publishers, Cape Town, South Africa | [<i>Tabernaemontana elegans</i> flowers at 3 years] "It flowers at three years, prolifically by five." |

| Qsn # | Question | Answer |
|-------|---|--|
| 701 | Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas) | n |
| | Source(s) | Notes |
| | Choo, L. M. et al. (2020). Additions to the Flora of Singapore: New and overlooked records of naturalised plant species (4). <i>Nature in Singapore</i> 13: 39–45 | "Fruit dehiscent, consisting of two follicles joined at the base; follicle ovoid, green (unripe), 3.5–4.2 × 3–3.2 × 2.5–2.8 cm, surface smooth glossy. Seeds numerous, with an orange-red aril." [No evidence. No means of attachment] |

| | | |
|-----|--|--|
| 702 | Propagules dispersed intentionally by people | y |
| | Source(s) | Notes |
| | Top Tropicals. (2022). <i>Tabernaemontana africana</i> . https://toptropicals.com/catalog/uid/tabernaemontana_africana.htm . [Accessed 7 Sep 2022] | "The intoxicating sweet fragrant blossoms of pinwheel shape are creamy white. The plant blooms almost all year and has a wonderful spicy fragrance that carries a good distance both day and night." |

| | | |
|-----|---|--|
| 703 | Propagules likely to disperse as a produce contaminant | n |
| | Source(s) | Notes |
| | Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall | "Major Pathway/s: Ornamental Dispersed by: Humans" [No evidence] |

| | | |
|-----|---|---|
| 704 | Propagules adapted to wind dispersal | n |
| | Source(s) | Notes |
| | Choo, L. M. et al. (2020). Additions to the Flora of Singapore: New and overlooked records of naturalised plant species (4). <i>Nature in Singapore</i> 13: 39–45 | [Fleshy-fruited] "Fruit dehiscent, consisting of two follicles joined at the base; follicle ovoid, green (unripe), 3.5–4.2 × 3–3.2 × 2.5–2.8 cm, surface smooth glossy. Seeds numerous, with an orange-red aril." |

| | | |
|-----|---|--|
| 705 | Propagules water dispersed | n |
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). <i>Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species</i> . CABI, Wallingford, UK | "Fruit: fleshy (berry), dehiscent, double (approx. 10 cm in diameter), yellow to orange Seed: medium-sized to large" ... "Forest type: wet evergreen forest, moist semideciduous forest, dry semi-deciduous forest" ... "It can be found in the forest understorey but also in disturbed areas and forest edges" [No direct evidence of water dispersal or seed buoyancy, and distribution does not suggest seeds might be dispersed by water] |
| | Kadereit J., & Bittrich V. (eds). (2018). <i>The Families and Genera of Vascular Plants, Volume XV. Flowering Plants Eudicots Apiales, Gentianales (except Rubiaceae)</i> . Springer, Cham, Switzerland | "In Africa <i>Cylindropsis</i> , <i>Dictyophleba</i> , <i>Landolphia</i> , <i>Hunteria</i> and <i>Tabernaemontana</i> are reported to be consumed and dispersed by cercopithecine monkeys (Gautier-Hion and Michaloud 1989; Astaras and Waltert 2010)" |

| | | |
|-----|---|---|
| 706 | Propagules bird dispersed | |
| | Source(s) | Notes |
| | Catarino L, Frazão-Moreira A, Bessa J, Parathian H, & Hockings K. (2020). Plants used by chimpanzees and humans in Cantanhez, Guinea-Bissau - Field Guide. LAE/CRIA, Lisboa | "Fruits: double, opposite, fleshy (4-6 cm in diameter), yellow when ripe." [Reported to be consumed by chimpanzees. Unknown if birds also consume fruit or seeds] |

| Qsn # | Question | Answer |
|-------|---|--|
| | Kadereit J., & Bittrich V. (eds). (2018). The Families and Genera of Vascular Plants, Volume XV. Flowering Plants Eudicots Apiales, Gentianales (except Rubiaceae). Springer, Cham, Switzerland | "In Africa <i>Cylindropsis</i> , <i>Dictyophleba</i> , <i>Landolphia</i> , <i>Hunteria</i> and <i>Tabernaemontana</i> are reported to be consumed and dispersed by cercopithecine monkeys (Gautier-Hion and Michaloud 1989; Astaras and Waltert 2010)" |

| 707 | Propagules dispersed by other animals (externally) | n |
|-----|---|--|
| | Source(s) | Notes |
| | Poorter, L., Bongers, F., Kouamé, F.Y.N & Hawthorne, W.D. (2004). Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI, Wallingford, UK | "Fruit: fleshy (berry), dehiscent, double (approx. 10 cm in diameter), yellow to orange Seed: medium-sized to large" [No evidence. No means of external attachment] |
| | Kadereit J., & Bittrich V. (eds). (2018). The Families and Genera of Vascular Plants, Volume XV. Flowering Plants Eudicots Apiales, Gentianales (except Rubiaceae). Springer, Cham, Switzerland | "In Africa <i>Cylindropsis</i> , <i>Dictyophleba</i> , <i>Landolphia</i> , <i>Hunteria</i> and <i>Tabernaemontana</i> are reported to be consumed and dispersed by cercopithecine monkeys" |

| 708 | Propagules survive passage through the gut | y |
|-----|---|--|
| | Source(s) | Notes |
| | Kadereit J., & Bittrich V. (eds). (2018). The Families and Genera of Vascular Plants, Volume XV. Flowering Plants Eudicots Apiales, Gentianales (except Rubiaceae). Springer, Cham, Switzerland | "In Africa <i>Cylindropsis</i> , <i>Dictyophleba</i> , <i>Landolphia</i> , <i>Hunteria</i> and <i>Tabernaemontana</i> are reported to be consumed and dispersed by cercopithecine monkeys" |
| | Catarino L, Frazão-Moreira A, Bessa J, Parathian H, & Hockings K. (2020). Plants used by chimpanzees and humans in Cantanhez, Guinea-Bissau - Field Guide. LAE/CRIA, Lisboa | [Consumption by chimps, and monkeys presumably results in dispersal. Feral pigs in Hawaiian Islands may be able to disperse intact seeds if fruits are consumed] "Fruits: double, opposite, fleshy (4-6 cm in diameter), yellow when ripe. Seeds: small, numerous per fruit." |

| 801 | Prolific seed production (>1000/m2) | |
|-----|---|---|
| | Source(s) | Notes |
| | Catarino L, Frazão-Moreira A, Bessa J, Parathian H, & Hockings K. (2020). Plants used by chimpanzees and humans in Cantanhez, Guinea-Bissau - Field Guide. LAE/CRIA, Lisboa | "Fruits: double, opposite, fleshy (4-6 cm in diameter), yellow when ripe. Seeds: small, numerous per fruit." [Densities unknown] |

| 802 | Evidence that a persistent propagule bank is formed (>1 yr) | |
|-----|---|---------|
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | Unknown |

| 803 | Well controlled by herbicides | |
|-----|--|---|
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | Unknown. No information on herbicide efficacy or chemical control of this species |

| Qsn # | Question | Answer |
|-------|--|--|
| 804 | Tolerates, or benefits from, mutilation, cultivation, or fire | |
| | Source(s) | Notes |
| | Palmpedia. (2022). <i>Tabernaemontana africana</i> . http://www.palmpedia.net . [Accessed 7 Sep 2022] | "Occasional pruning or pinching is recommended to keep the shrub more full in its nature, but not to be done too frequently as to suppress the blooms. " [Unknown] |

| 805 | Effective natural enemies present locally (e.g. introduced biocontrol agents) | |
|-----|---|---------|
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | Unknown |

Summary of Risk Traits:

High Risk / Undesirable Traits

- Broad range and climate suitability
- Thrives and could spread in regions with tropical climates
- Tolerates some shade (could possibly establish in forest understory)
- Reproduces by seeds
- Seeds dispersed by chimpanzees and monkeys in its native range, and intentionally cultivated by people

Low Risk Traits

- No confirmed reports of naturalization or invasiveness (but sparingly cultivated outside native range)
- Unarmed (no spines, thorns, or burrs)
- Non-toxic
- Fruits and seeds may be disperser limited outside native range, reducing risk of long distance or accidental dispersal