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|--|---|
| Taxon: Phoenix reclinata | Family: Arecaceae |
| Common Name(s): dattier du Ségégal Senegal date palm swamp date palm wild date palm | Synonym(s): Phoenix abyssinica Drude Phoenix leonensis Lodd. ex Kunth, Phoenix pumila Regel, nom. nud. Phoenix reclinata var. leonensis Phoenix spinosa Schumach. |

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|---------------------------|----------------------------------|------------------------------|
| Assessor: Assessor | Status: Assessor Approved | End Date: 15 Apr 2014 |
| WRA Score: 10.0 | Designation: H(HPWRA) | Rating: High Risk |

Keywords: Naturalized, Invasive Palm, Spiny, Thicket-forming, Bird-dispersed

| Qsn # | Question | Answer Option | Answer |
|-------|---|--|--------|
| 101 | Is the species highly domesticated? | y=-3, n=0 | n |
| 102 | Has the species become naturalized where grown? | | |
| 103 | Does the species have weedy races? | | |
| 201 | Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical" | (0-low; 1-intermediate; 2-high) (See Appendix 2) | High |
| 202 | Quality of climate match data | (0-low; 1-intermediate; 2-high) (See Appendix 2) | High |
| 203 | Broad climate suitability (environmental versatility) | y=1, n=0 | y |
| 204 | Native or naturalized in regions with tropical or subtropical climates | y=1, n=0 | y |
| 205 | Does the species have a history of repeated introductions outside its natural range? | y=-2, ?=-1, n=0 | y |
| 301 | Naturalized beyond native range | y = 1*multiplier (see Appendix 2), n= question 205 | y |
| 302 | Garden/amenity/disturbance weed | n=0, y = 1*multiplier (see Appendix 2) | y |
| 303 | Agricultural/forestry/horticultural weed | n=0, y = 2*multiplier (see Appendix 2) | n |
| 304 | Environmental weed | | |
| 305 | Congeneric weed | n=0, y = 1*multiplier (see Appendix 2) | y |
| 401 | Produces spines, thorns or burrs | y=1, n=0 | n |
| 402 | Allelopathic | | |
| 403 | Parasitic | y=1, n=0 | n |
| 404 | Unpalatable to grazing animals | y=1, n=-1 | n |
| 405 | Toxic to animals | y=1, n=0 | n |
| 406 | Host for recognized pests and pathogens | | |
| 407 | Causes allergies or is otherwise toxic to humans | | |

| Qsn # | Question | Answer Option | Answer |
|-------|--|---------------|--------|
| 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 | | |
| 410 | Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island) | y=1, n=0 | y |
| 411 | Climbing or smothering growth habit | y=1, n=0 | n |
| 412 | Forms dense thickets | y=1, n=0 | y |
| 501 | Aquatic | y=5, n=0 | n |
| 502 | Grass | y=1, n=0 | n |
| 503 | Nitrogen fixing woody plant | y=1, n=0 | 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 | y |
| 604 | Self-compatible or apomictic | y=1, n=-1 | n |
| 605 | Requires specialist pollinators | y=-1, n=0 | n |
| 606 | Reproduction by vegetative fragmentation | y=1, n=-1 | y |
| 607 | Minimum generative time (years) | | |
| 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 | 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/m ²) | | |
| 802 | Evidence that a persistent propagule bank is formed (>1 yr) | | |
| 803 | Well controlled by herbicides | y=-1, n=1 | y |
| 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 |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | No evidence |
| 102 | Has the species become naturalized where grown? | |
| | Source(s) | Notes |
| | WRA Specialist. 2014. Personal Communication | NA |
| 103 | Does the species have weedy races? | |
| | Source(s) | Notes |
| | WRA Specialist. 2014. 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 |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | " <i>Phoenix reclinata</i> is distributed throughout sub-Saharan Africa, from Senegal and Gambia eastwards to Somalia and southwards to South Africa and Madagascar. It also occurs in Egypt, Saudi Arabia and Yemen." |
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. <i>Cunningham</i> , 12(1): 85-114 | "REGION OF ORIGIN: Native to tropical and subtropical Africa, Asia (southern Saudi Arabia, Yemen) and Indian Ocean islands (Comoro Islands, Madagascar)." |
| 202 | Quality of climate match data | High |
| | Source(s) | Notes |
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. <i>Cunningham</i> , 12(1): 85-114 | |
| 203 | Broad climate suitability (environmental versatility) | y |
| | Source(s) | Notes |

| Qsn # | Question | Answer |
|-------|---|---|
| | Barrow, S. C. 1998. A monograph of Phoenix L.(Palmae: Coryphoideae). Kew Bulletin 53(3): 513-575 | "Phoenix reclinata is a widely distributed species growing in a range of habitats, often seasonally water-logged or inundated, such as along watercourses, in high rainfall areas, in riverine forest, and even in rainforest areas (although always restricted to areas of sparse canopy). The species can also be found in drier conditions on rocky hillsides, cliffs and grasslands to 3000 m." [Environmentally versatile] |
| | Segu, K. 2011. Phoenix reclinata Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Phoenix reclinata occurs from sea-level up to 3000 m altitude in a range of habitats, often seasonally inundated, such as on the edges of swamps, lakes and water courses in forest, woodland and wooded grassland, but also on open rocky hillsides." [Elevation range exceeds 1000 m in a variety of habitats. Demonstrates environmental versatility] |

| 204 | Native or naturalized in regions with tropical or subtropical climates | y |
|-----|---|--|
| | Source(s) | Notes |
| | Segu, K. 2011. Phoenix reclinata Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Phoenix reclinata is distributed throughout sub-Saharan Africa, from Senegal and Gambia eastwards to Somalia and southwards to South Africa and Madagascar. It also occurs in Egypt, Saudi Arabia and Yemen. Phoenix reclinata is widely planted as an ornamental in tropical and subtropical regions, also outside tropical Africa." |
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. <i>Cunningham</i> , 12(1): 85-114 | "REGION OF ORIGIN: Native to tropical and subtropical Africa, Asia (southern Saudi Arabia, Yemen) and Indian Ocean islands (Comoro Islands, Madagascar). NEW SOUTH WALES DISTRIBUTION / HABITATS: North Coast. Recorded from a wetland at Marmong Point, a suburb of Newcastle." ... "Fruits are animal-dispersed. At Marmong Point there were many hundreds of plants of all ages growing in an area that is seasonally wet." |

| 205 | Does the species have a history of repeated introductions outside its natural range? | y |
|-----|---|---|
| | Source(s) | Notes |
| | Segu, K. 2011. Phoenix reclinata Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Phoenix reclinata is widely planted as an ornamental in tropical and subtropical regions, also outside tropical Africa." |

| 301 | Naturalized beyond native range | y |
|-----|---------------------------------|-------|
| | Source(s) | Notes |
| | | |

| Qsn # | Question | Answer |
|-------|--|--|
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. <i>Cunningham</i> , 12(1): 85-114 | "REGION OF ORIGIN: Native to tropical and subtropical Africa, Asia (southern Saudi Arabia, Yemen) and Indian Ocean islands (Comoro Islands, Madagascar). NEW SOUTH WALES DISTRIBUTION / HABITATS: North Coast. Recorded from a wetland at Marmong Point, a suburb of Newcastle." ... "Fruits are animal-dispersed. At Marmong Point there were many hundreds of plants of all ages growing in an area that is seasonally wet." ... "This palm is not known to be naturalised elsewhere in Australia but is recorded as naturalised in the USA (Adanson et al. in Morin 2000)." |
| | Flora of North America Editorial Committee. 2000, <i>Flora of North America: North of Mexico</i> , Volume 22. Oxford University Press, Oxford, UK | "Volunteer in waste places and disturbed areas; 0-10 m; introduced; Fla,;" |
| | Imada, C. 2012. Hawaiian Native and Naturalized Vascular Plants Checklist (December 2012 update). Bishop Museum Technical Report 60. Bishop Museum, Honolulu, HI | No evidence in the Hawaiian Islands |

| 302 | Garden/amenity/disturbance weed | y |
|-----|--|---|
| | Source(s) | Notes |
| | Gilman, E.F. & Watson, D.G. 2013. <i>Phoenix reclinata</i> : Senegal Date Palm. ENH-599. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu . [Accessed 14 Apr 2014] | "Invasive potential: According to the IFAS Assessment of Non-Native Plants in Florida's Natural Areas (IFAS Invasive Plant Working Group 2008), <i>Phoenix reclinata</i> is invasive and not recommended in the central and south zone in Florida..." [Invasive plant of unspecified impacts] |

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

| 304 | Environmental weed | |
|-----|--|---|
| | Source(s) | Notes |
| | Gilman, E.F. & Watson, D.G. 2013. <i>Phoenix reclinata</i> : Senegal Date Palm. ENH-599. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu . [Accessed 14 Apr 2014] | "Invasive potential: According to the IFAS Assessment of Non-Native Plants in Florida's Natural Areas (IFAS Invasive Plant Working Group 2008), <i>Phoenix reclinata</i> is invasive and not recommended in the central and south zone in Florida..." [Invasive plant of unspecified impacts. Insufficient evidence to classify as an environmental weed] |

| Qsn # | Question | Answer |
|-------|--|--|
| 305 | Congeneric weed | y |
| | Source(s) | Notes |
| | DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA | "Canary Island date palm [<i>Phoenix canariensis</i> Chabaud]" ... "Mexican fan palm [<i>Washingtonia robusta</i> H. Wendl.] ... "These palm trees have become problematic in natural riparian stream and river corridors, orchard crops, and as seedlings that volunteer in landscaped areas. Both are commonly cultivated as landscape ornamentals. In wildlands, invasive palms are most common in southern California. Populations are densest downstream from the source of invasion, which are typically residential areas." |

| 401 | Produces spines, thorns or burrs | n |
|-----|--|--|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "leaflets up to 130 on each side of the rachis, towards the top arranged singly and regularly, towards the base in groups of 2–5, sessile, linear-lanceolate, up to 50(–60) cm × 3.5 cm, single fold, stiff, pointed, when old splitting along the midvein, bright green, often shiny, when young bearing white indumentum on the lower surface, margin finely spiny." ... |

| 402 | Allelopathic | |
|-----|--|---------|
| | Source(s) | Notes |
| | WRA Specialist. 2014. Personal Communication | Unknown |

| 403 | Parasitic | n |
|-----|--|---|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Dioecious, usually clustering, rarely solitary tree up to 15 m tall, often forming dense thickets" [Arecaceae] |

| Qsn # | Question | Answer |
|-------|--|---|
| 404 | Unpalatable to grazing animals | n |
| | Source(s) | Notes |
| | Orwa C., Mutua, A., Kindt R., Jamnadass, R. & Anthony, S. 2009 Agroforestry Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed] | "Fodder: Leaves are eaten by elephants, and the fruit is food for many wild animals." |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | " <i>Phoenix reclinata</i> is an important local source of a wide range of products, including fibre, construction material, food, fodder,..." [Used as fodder. Presumably palatable] |
| 405 | Toxic to animals | n |
| | Source(s) | Notes |
| | Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL | No evidence |
| 406 | Host for recognized pests and pathogens | |
| | Source(s) | Notes |
| | Gilman, E.F. & Watson, D.G. 2013. <i>Phoenix reclinata</i> : Senegal Date Palm. ENH-599. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu . [Accessed 14 Apr 2014] | "Pests: A variety of scales infest this palm. Diseases: Some diseases of this tree are lethal yellowing disease, leaf spot. Stressed and damaged trees often are infected with the Ganoderma fungus. A conk is formed at the base of the tree which appears as a varnished shelf or mushroom. Remove the conk and the tree to help control the spread of the disease to other plants. Prevent injury to the trunk and roots, and plant in well-drained soil. Be sure sprinklers do not irrigate the trunk so it remains wet. A wet trunk and wet soil encourage this disease. There is no control for butt rot, only prevention." |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | " <i>Phoenix reclinata</i> is slightly susceptible to lethal yellowing disease, caused by a phytoplasma." |
| 407 | Causes allergies or is otherwise toxic to humans | |
| | Source(s) | Notes |
| | Pollen Library. 2014. Senegal Date Palm (<i>Phoenix reclinata</i>). http://www.pollenlibrary.com/Specie/Phoenix+reclinata/ . [Accessed 14 Apr 2014] | "Allergenicity: Senegal Date Palm (<i>Phoenix reclinata</i>) is a mild allergen." [Possibly to susceptible individuals] |

| Qsn # | Question | Answer |
|-------|--|---|
| | Orwa C., Mutua, A., Kindt R., Jamnadass, R, & Anthony, S. 2009 Agroforestry Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed] | "Food: Buds may be eaten raw or cooked as a vegetable. The heart of the crown is eaten, and the fruit is also edible." [No evidence] |
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. <i>Cunningham</i> , 12(1): 85-114 | "In other countries trunks and leaves of this palm are used for building purposes, leaflets for baskets, hats, brushes, building ties, woven dolls and ornaments, fruits are eaten and the sap fermented into an alcoholic beverage (Barrow 1998)." [No evidence] |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | [Widely used by humans with no evidence of toxicity] "The leaflets or strips of the leaflets of young, unexpanded leaves are widely used for making mats, bags, baskets, hats, sieves, rope, string, fishing nets, traps, parasols and ornaments. Strips from mature leaves are used for weaving hats. The split petiole and rachis of mature leaves are used in coarse weaving, e.g. of baskets, mats and fish traps, and for tying. The whole rachis is used for making huts and fish kraals. The Maasai use the rachis for cleaning gourds. The leaves are used for thatching and as fans. Hand brooms are made from the stem by pounding its end until the fibres separate. Dried inflorescences are also used as brooms. The trunk, although often bent, is much used in the construction of huts, houses, fences, bridges, landing-stages, traps and hives. In Ghana the wood is made into drums. The wood is also used as fuelwood and is suitable for charcoal production. The base of the stem is sometimes eaten. The palm is tapped for sap to be fermented into a palm wine. The apical bud is eaten as a vegetable ('palm cabbage'); it is said to be slightly bitter. The ripe fruits are eaten, sometimes after having been immersed in boiling water for a moment. In Sierra Leone the kernels are parched and ground into flour for consumption. Roasted seeds are used as a coffee substitute. The roots yield an edible gum and contain tannins. In Kenya and Tanzania a brown dye is obtained from the root." |

| 408 | Creates a fire hazard in natural ecosystems | n |
|-----|---|--|
| | Source(s) | Notes |
| | Orwa C., Mutua, A., Kindt R., Jamnadass, R, & Anthony, S. 2009 Agroforestry Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed] | " <i>P. reclinata</i> is a clump-forming palm; it may be solitary but is usually found growing in colonies. Grows throughout tropical Africa in humid lowland woodlands, highland forests and on open, rocky hillsides. Occasionally it grows in grasslands with a high water table. Throughout Zambia the species is essentially a swamp or riverine species and is found in considerable concentrations around Lake Bangweulu. It is also found around anthills, on boggy dambos, in munga woodland on the Kafue Flats and in the Kalahari woodland." [No evidence of increased fire risk, although fire may be carried if it is able to spread into thickets] |

| 409 | Is a shade tolerant plant at some stage of its life cycle | |
|-----|---|-------|
| | Source(s) | Notes |
| | | |

| Qsn # | Question | Answer |
|-------|--|---|
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | " <i>Phoenix reclinata</i> prefers full sun but tolerates light shade." [Possibly] |
| | Riffle, R.L. & Craft, P. 2003. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR. | "It needs full sun from youth to old age and, with regular and adequate moisture, grows moderately fast;" |
| | Gilman, E.F. & Watson, D.G. 2013. <i>Phoenix reclinata</i> : Senegal Date Palm. ENH-599. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu.. [Accessed 14 Apr 2014] | "Light requirement: full sun, partial sun or partial shade" [Possibly] |
| | Squire, D. 2007. Palms and Cycads. A Complete Guide to Selecting, Growing and Propagating. Ball Publishing, Batavia, Illinois | "This moderate to fast growing palm needs moisture-retentive but well-drained soil in full sun." |

| 410 | Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island) | y |
|-----|--|---|
| | Source(s) | Notes |
| | Gilman, E.F. & Watson, D.G. 2013. <i>Phoenix reclinata</i> : Senegal Date Palm. ENH-599. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu.. [Accessed 14 Apr 2014] | "Soil tolerances: clay; sand; loam; alkaline; acidic; well-drained" ... "Growing easily in full sun or partial shade, Senegal Date Palm will thrive on any well-drained soil." |
| | Riffle, R.L. & Craft, P. 2003. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR. | "The palm is indifferent to soil type as long as it is not highly acidic or extremely alkaline." |

| 411 | Climbing or smothering growth habit | n |
|-----|--|----------------------|
| | Source(s) | Notes |
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. <i>Cunningham</i> , 12(1): 85-114 | "Palm to 12 m high." |

| 412 | Forms dense thickets | y |
|-----|--|--|
| | Source(s) | Notes |
| | Dransfield, J. 1986. Flora of Tropical East Africa - Palmae. | "Clustering, very rarely solitary palm, often forming dense thickets with trunks ultimately to 10 m" |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Dioecious, usually clustering, rarely solitary tree up to 15 m tall, often forming dense thickets" |

| 501 | Aquatic | n |
|-----|---------|---|
|-----|---------|---|

| Qsn # | Question | Answer |
|-------|--|---|
| | Source(s) | Notes |
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. <i>Cunningham</i> , 12(1): 85-114 | "The species is recorded as often growing in seasonally water-logged or inundated areas but can be found in drier locations (Barrow 1998)." |

| 502 | Grass | n |
|-----|--|--------------|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | Areaceae |

| 503 | Nitrogen fixing woody plant | n |
|-----|--|--------------|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | Areaceae |

| 504 | Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers) | n |
|-----|--|--|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Dioecious, usually clustering, rarely solitary tree up to 15 m tall, often forming dense thickets; trunk up to 10(–12) m tall, erect or oblique, unbranched, cylindrical, up to 25(–40) cm in diameter, dull brown, the upper part with persistent leaf sheaths, the lower part free of leaf sheaths but marked with leaf scars, exuding a clear yellowish gum when injured. Leaves clustered at the end of trunk, pinnate, up to 4 m long, sheathing at the base, arching; sheath splitting and persistent, reddish-brown, fibrous; true petiole c. 15 cm long, apparent petiole c. 50 cm long, with on each side 10–15 irregularly arranged acanthophylls 3–10 cm long; leaflets up to 130 on each side of the rachis, towards the top arranged singly and regularly, towards the base in groups of 2–5, sessile, linear-lanceolate, up to 50(–60) cm × 3.5 cm, single-fold, stiff, pointed, when old splitting along the midvein, bright green, often shiny, when young bearing white indumentum on the lower surface, margin finely spiny." |

| 601 | Evidence of substantial reproductive failure in native habitat | n |
|-----|--|---|
| | | |

| Qsn # | Question | Answer |
|-------|--|---|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "As <i>Phoenix reclinata</i> is widely distributed, occurs in a range of habitats, and readily forms suckers, the species is not threatened." |

| 602 | Produces viable seed | y |
|-----|--|--|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | " <i>Phoenix reclinata</i> can be propagated by seed or by suckers. The seed is separated from the fruit pulp by soaking in cold water for 3 days and changing the water every 12 hours. The 1000-seed weight is 200–1100 g. The seeds can be stored, but fresh seeds germinate best. Germination usually starts within 10 days, but may take as long as 90 days." |

| 603 | Hybridizes naturally | y |
|-----|--|---|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | " <i>Phoenix reclinata</i> hybridizes with the true date palm (<i>Phoenix dactylifera</i>) and other <i>Phoenix</i> species." |

| 604 | Self-compatible or apomictic | n |
|-----|--|---|
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Dioecious, usually clustering, rarely solitary tree up to 15 m tall" [Presumably No] |

| 605 | Requires specialist pollinators | n |
|-----|--|--|
| | Source(s) | Notes |
| | Howard, F.W., Moore, D., Giblin-Davis, R.M. & Abad, R.G. 2001. <i>Insects on Palms</i> . CABI, Wallingford, UK | "Table 4.1. Arthropods associated with palm pollination (derived largely from Henderson, 1986, and references therein." ... " <i>Apis mellifera</i> attracted to <i>Phoenix reclinata</i> and many bees to <i>Phoenix caespitosa</i> . Male flowers scented and nectaries possibly present." |

| Qsn # | Question | Answer |
|-------|--|---|
| | <p>Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp. [Accessed 9 Apr 2014]</p> | <p>[No evidence from floral morphology] "Inflorescence unisexual, axillary, between the leaves, branched to 1 order; prophyll 20–70 cm × 5–10 cm, 2-keeled, often persistent and splitting longitudinally into 2 halves, orange-brown at anthesis, fading to dull grey-brown; male inflorescence erect, with peduncle not greatly elongating, sometimes scarcely emerging from the bract, peduncle 10–30 cm long, greatly compressed, rachis up to 30 cm long, rachillae up to 70, arranged in groups and partial spirals, up to 20 cm long; female inflorescence erect, but arching with fruits, 30–80 cm long, emerging from the bract and often greatly elongating after anthesis, with the fruiting rachillae pendulous, peduncle up to 60 cm long, rachillae up to 40(–60), spirally arranged, up to 55 cm long, with up to 50 flowers, flowers solitary or in small groups. Flowers unisexual; male flowers creamy white, rapidly turning brown, musty scented, calyx cup-shaped, c. 1 mm long, with 3 triangular lobes, corolla tubular at the base with 3 lobes 6–7 mm long, acute, somewhat dentate towards the apex, fleshy, stamens 6, epipetalous, shorter than petals; female flowers greenish, rounded, c. 2 mm in diameter, calyx cup-shaped, c. 1.5 mm long, with 3 triangular lobes, petals 3, free, rounded, up to 5 mm long, closely overlapping, staminodes 6, stigmas reflexed."</p> |

| 606 | Reproduction by vegetative fragmentation | y |
|-----|--|---|
| | Source(s) | Notes |
| | <p>Squire, D. 2007. <i>Palms and Cycads. A Complete Guide to Selecting, Growing and Propagating</i>. Ball Publishing, Batavia, Illinois</p> | <p>"...it can be increased by detaching sucker-like growths."</p> |
| | <p>Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp. [Accessed 9 Apr 2014]</p> | <p>"<i>Phoenix reclinata</i> forms suckers and is often found in clumps of a mother tree surrounded by smaller trees. "</p> |
| | <p>Gilman, E.F. & Watson, D.G. 2013. <i>Phoenix reclinata: Senegal Date Palm. ENH-599. Revised</i>. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu.. [Accessed 14 Apr 2014]</p> | <p>"Propagation is by seed or division of the many suckers which appear at the base of old clumps."</p> |

| 607 | Minimum generative time (years) | |
|-----|--|---|
| | Source(s) | Notes |
| | <p>South African National Biodiversity Institute. 2004. <i>PlantzAfrica.com - Phoenix reclinata</i>. http://www.plantzafrika.com/plantnop/phoenixrec.htm. [Accessed 15 Apr 2014]</p> | <p>"The growth rate is variable, depending on a good water supply which will also probably affect the ultimate size and shape of the palm." [Unknown]</p> |
| | <p>Gilman, E.F. & Watson, D.G. 2013. <i>Phoenix reclinata: Senegal Date Palm. ENH-599. Revised</i>. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu.. [Accessed 14 Apr 2014]</p> | <p>"They are very costly to purchase due to the slow growth rate." [Suggests long time to reproductive maturity. Probably 4+ years]</p> |

| Qsn # | Question | Answer |
|-------|--|---|
| 701 | Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas) | n |
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Fruit an ovoid-ellipsoid or almost obovoid drupe 13–25 mm × 7–15 mm, pale yellow to orange or dull red, smooth, calyx and petals persistent, mesocarp 1–2 mm thick, dry or moist, 1-seeded. Seed obovoid, 10–15 mm × 5–9 mm, deeply grooved along 1 side." [No evidence. Fruits and seeds lack means of external attachment] |
| 702 | Propagules dispersed intentionally by people | y |
| | Source(s) | Notes |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | " <i>Phoenix reclinata</i> is widely planted as an ornamental in tropical and subtropical regions, also outside tropical Africa." ... " <i>Phoenix reclinata</i> is widely planted as an ornamental and locally for shade and amenity." |
| 703 | Propagules likely to disperse as a produce contaminant | n |
| | Source(s) | Notes |
| | Orwa C., Mutua, A., Kindt R., Jamnadass, R., & Anthony, S. 2009 Agroforestry Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed] | "Fruits borne in large, drooping bunches, individual fruit oval, orange to reddish- or yellow-brown, up to 2.5 cm long, fleshy, datelike with a rather insipid but edible flesh." ... "Fruit is eaten by birds and elephants, which also disperse the seeds." [Unlikely. No evidence of produce contamination] |
| 704 | Propagules adapted to wind dispersal | n |
| | Source(s) | Notes |
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. <i>Cunningham</i> , 12(1): 85-114 | "Fruits are animal-dispersed." |
| 705 | Propagules water dispersed | y |
| | Source(s) | Notes |
| | South African National Biodiversity Institute. 2004. Plantzafrica.com - <i>Phoenix reclinata</i> . http://www.plantzafrica.com/plantnop/phoenixrec.htm . [Accessed 15 Apr 2014] | "It is almost always associated with water, either on riverbanks or in swamps." |
| | Riffle, R.L. & Craft, P. 2003. <i>An Encyclopedia of Cultivated Palms</i> . Timber Press, Portland, OR. | " <i>Phoenix reclinata</i> grows along rivers and streams in tropical western, eastern, and central Africa..." [Occurrence along watercourses suggests seeds may be moved by water in addition to animals] |

| Qsn # | Question | Answer |
|-------|--|--|
| | Barrow, S. C. 1998. A monograph of Phoenix L.(Palmae: Coryphoideae). Kew Bulletin 53(3): 513-575 | "Phoenix reclinata is a widely distributed species growing in a range of habitats, often seasonally water-logged or inundated, such as along watercourses, in high rainfall areas, in riverine forest, and even in rainforest areas (although always restricted to areas of sparse canopy)." [Occurrence along watercourses suggests seeds may be moved by water in addition to animals] |

| 706 | Propagules bird dispersed | y |
|-----|---|---|
| | Source(s) | Notes |
| | Flora of North America Editorial Committee. 2000, Flora of North America: North of Mexico, Volume 22. Oxford University Press, Oxford, UK | "Phoenix reclinata is commonly cultivated in central and southern Florida. Its seeds are dispersed by birds and raccoons." |
| | Barrow, S. C. 1998. A monograph of Phoenix L.(Palmae: Coryphoideae). Kew Bulletin 53(3): 513-575 | "The fruits of P reclinata are animal-dispersed: their bright orange colour and sweet, slightly fleshy mesocarp is attractive to birds (parrots) (Schonland 1924), elephants (Corner 1966), lemurs (Petter et al. 1977), mangabey (forest monkeys) (Kinnaird 1992) and humans." |
| | Segu, K. 2011. Phoenix reclinata Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "The seeds are dispersed by animals eating the fruits. These include birds, elephants, lemurs and monkeys." |

| 707 | Propagules dispersed by other animals (externally) | n |
|-----|---|--|
| | Source(s) | Notes |
| | Orwa C., Mutua, A., Kindt R., Jamnadass, R, & Anthony, S. 2009 Agroforestry Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed] | "Fruit is eaten by birds and elephants, which also disperse the seeds." [No evidence and no means of external attachment. Presumably adapted for consumption and internal dispersal] |

| 708 | Propagules survive passage through the gut | y |
|-----|---|---|
| | Source(s) | Notes |
| | Hosking, J. R., Conn, B. J., Lepschi, B. J., & Barker, C. H. 2011. Plant species first recognised as naturalised or naturalising for New South Wales in 2004 and 2005. Cunningham, 12(1): 85-114 | "Fruits are animal-dispersed." |
| | McLennan, M. R. 2013. Diet and feeding ecology of chimpanzees (<i>Pan troglodytes</i>) in Bulindi, Uganda: foraging strategies at the forest–farm interface. International Journal of Primatology, 34(3): 585-614 | "Ripe fruits of the palm <i>Phoenix reclinata</i> were available in 10 of 13 mo. Seeds of <i>Phoenix</i> appeared in 44 % of samples and it was top-ranked in 4 mo (Table II)." |
| | Kinnaird, M. F. 1992. Competition for a forest palm: use of <i>Phoenix reclinata</i> by human and nonhuman primates. Conservation Biology, 6(1), 101-107 | "Seeds extracted from the feces of mangabeys showed 100% germination success, indicating that mangabeys can be effective seed dispersers." |

| Qsn # | Question | Answer |
|-------|--|---|
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "The seeds are dispersed by animals eating the fruits. These include birds, elephants, lemurs and monkeys." |

| 801 | Prolific seed production (>1000/m2) | |
|-----|---|--|
| | Source(s) | Notes |
| | Barrow, S. C. 1998. A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). <i>Kew Bulletin</i> 53(3): 513-575 | "Fruits of <i>Phoenix</i> species are one-seeded berries with a smooth epicarp, variously fleshy mesocarp and silvery, membranous endocarp." [Unlikely to achieve such high densities] |

| 802 | Evidence that a persistent propagule bank is formed (>1 yr) | |
|-----|--|--|
| | Source(s) | Notes |
| | Orwa C., Mutua, A., Kindt R., Jamnadass, R., & Anthony, S. 2009 <i>Agroforestry Database: a tree reference and selection guide</i> version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed] | "Seed storage behaviour is orthodox, and they store well. There are about 900-5000 seeds/kg." [Suggests seeds could persist but unknown from field conditions] |
| | Squire, D. 2007. <i>Palms and Cycads. A Complete Guide to Selecting, Growing and Propagating</i> . Ball Publishing, Batavia, Illinois | "Sow seed fresh, which germinates within 12 weeks." |
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "The seeds can be stored, but fresh seeds germinate best. Germination usually starts within 10 days, but may take as long as 90 days." |

| 803 | Well controlled by herbicides | y |
|-----|---|--|
| | Source(s) | Notes |
| | Langeland, K.A.& Stocker, R.K. 2001. Control of Non-native Plants in Natural Areas of Florida. SP 242. Institute of Food & Agricultural Sciences, University of Florida, Gainesville, FL. http://mrec.ifas.ufl.edu/ldspmgmt/Ldsp%20Turf%20Mgmt/PDFfiles/WG20900.pdf . [Accessed] | "Control methods being used for invasive non-native plants by land managers in Florida are listed in Table 4. All methods listed have been found effective under certain circumstances." ... " <i>Phoenix reclinata</i> Senegal date palm. Treatment: Cut stems near ground level and treat with 50% Garlon 3A or 10% Garlon 4 or apply 10% Garlon 4 to meristem." |

| 804 | Tolerates, or benefits from, mutilation, cultivation, or fire | |
|-----|---|-------|
| | Source(s) | Notes |
| | | |

| Qsn # | Question | Answer |
|-------|--|--|
| | Segu, K. 2011. <i>Phoenix reclinata</i> Jacq. [Internet] Record from PROTA4U. Brink, M. & Achigan-Dako, E.G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 9 Apr 2014] | "Removal of all leaves from the palm should be avoided as the tree may die. When trees are tapped for palm wine, the stem usually dies after tapping, but the clump survives. In South Africa a coppice shoot is estimated to need 6–8 years of growth before it can be tapped." [Able to coppice, but otherwise may be damaged from cultivation or heavy pruning] |

| 805 | Effective natural enemies present locally (e.g. introduced biocontrol agents) | |
|-----|---|---------|
| | Source(s) | Notes |
| | WRA Specialist. 2014. Personal Communication | Unknown |

Summary of Risk Traits:

High Risk / Undesirable Traits

- Thrives in tropical climates
- Elevation range exceeds 1000 m
- Naturalized
- Weedy
- Potential environmental weed
- Other Phoenix species have become invasive
- Spiny
- Possible mild allergen
- Tolerates many soil types
- Forms dense thickets
- Produces bird and mammal-dispersed seeds
- Hybridizes with other Phoenix species
- Can spread vegetatively from suckers
- Seeds may also be dispersed by water in riparian habitats

Low Risk Traits

- Palatable to animals
- Non-toxic
- Ornamental
- Herbicides may provide effective control