Archidendron vaillantii

NT

Taxonomic Authority: (F.Muell.) F.Muell.

☑ Global Assessment ☐ Regional Assessment

Region: Global ☐ Endemic to region

Synonyms

Affonsea vaillantii (F.Muell.) Kuntze
Albizia vaillantii (F.Muell.) F.Muell.
Pithecellobium vaillan F.Muell.

Common Names

SALMON BEAN **English (Primary)**

Upper Level Taxonomy

Kingdom: PLANTAE
Phylum: TRACHEOPHYTA
Class: MAGNOLIOPSIDA
Order: FABALES
Family: LEGUMINOSAE

Lower Level Taxonomy

Rank:
Infra- rank name:
☐ Plant Hybrid
Subpopulation:
Authority:

Very similar to A. lucyi, with which it is sometimes confused; A. lucyi can be distinguished by the cauliflorous and ramiflorous habit.

General Information

Distribution

Archidendron vaillantii is endemic to Australia, distributed in the state of Queensland. It is known from the vicinity of Mount Misery south to Dotswood Holding.

Range Size

Area of Occupancy:
Extent of Occurrence: 24000

Map Status:

Elevation

Upper limit: 1100
Lower limit:

Depth

Upper limit:
Lower limit:

Depth Zones

☐ Shallow photic ☐ Bathyl ☐ Hadal
☐ Photic ☐ Abyssal

Biogeographic Realm

☐ Afrotropical
☐ Antarctic
☑ Australasian
☐ Neotropical
☐ Oceanian
☐ Palearctic
☐ Indomalayan
☐ Nearctic

Population

There is no information on total population size, it was last collected in 2002.

Total Population Size

Minimum Population Size:
Maximum Population Size:

Habitat and Ecology

A tree to 25 m tall that grows in rainforest and monsoon forest. It is classified as a small slow growing tree (Vanclay 1988). It is known to occur in the regional ecosystem 7.12.16, Simple to complex notophyll vine forest (Department of Environment and Resource Management 2009).

System		Movement pattern		Crop Wild Relative
☑ Terrestrial	☐ Freshwater	☐ Nomadic	☐ Congregatory/Dispersive	☐ Is the species a wild relative of a crop?
	☐ Marine	☐ Migratory	☐ Altitudinally migrant	

Life History

Age at Maturity	Female:	Units for Age:
	Male:	
Size at Maturity (in cm)	Female:	
	Male:	
Longevity:		Units for Longevity:
Averate Reproductive Age:		Units for Reproductive Age:
Maximum Size (in cm):		
Size at Birth (in cm):		
Gestation Time:		Units for Gestation:
Generation Length:		
Justification:		
Reproductive Periodicity:		Average Annual Fecundity or Litter Size:
Annual Rate of Population Increase:		Annual Rate of Population Increase:
Natural Mortality:		

Growth From	Definition
Tree - large	Large tree, also termed a Phanerophyte (>1m)

Threats

There are no direct threats to this species, however since the late 1700s much of Australia's rainforest, including 75% of its original tropical rainforest, has been cleared for agricultural, industrial and urban development. Today rainforest covers just 0.5% or 4.2 million hectares of Australia's landmass (Australian Rainforest Foundation 2008). The simple to complex notophyll vine forest remnant extent where this species occurs, was more than 10,000 hectares in 2006 and more than 30% of the pre-clearing area remained (Department of Environment and Resource Management 2009). Despite the fact that this species is not listed as susceptible to root-rot disease caused by Phytophthora cinnamomi fungus (O'Gara et al. 2005), the pathogen is widespread in the Wet Tropics area and the impact on the vegetation, on some sites where this species is known to occur, is dramatic and severe. Patch death of rainforests was first observed in the 1970s in Far North Queensland at Dalrymple Heights, as well as in Garrawalt. Although no species or communities were found to be threatened by P. cinnamomi-related dieback, the long term threats cannot be determined from the existing information. If many species in a community are susceptible, removal of entire suites of species can lead to fundamental changes in ecology of systems, and threaten individual species with extinction. It therefore represents a significant threat to many native ecosystems. Dieback is particularly widespread along high-altitude ridgelines, where this species occurs. There may be some environmental factors, such as poorly drained soils or susceptible species, present along ridgelines which predispose these environments to dieback (Gadek and Worboys 2003).

	Past	Present	Future
1 Habitat Loss/Degradation (human induced)	☑	☑	☐
1.1 Agriculture	☑	☐	☐
1.3 Extraction	☑	☐	☐
1.3.3 Wood	☑	☐	☐
1.4 Infrastructure development	☑	☐	☐
1.4.1 Industry	☑	☐	☐
1.4.2 Human settlement	☑	☐	☐
1.5 Invasive alien species (directly impacting habitat)	☑	☑	☐
1.6 Change in native species dynamics (directly impacting habitat)	☑	☑	☐
8 Changes in native species dynamics	☑	☑	☐
8.5 Pathogens/parasites	☑	☑	☐

Conservation Measures

This species is known to occur in Daintree, Wooroonooran and Paluma Range National Parks in the Wet Tropics of Queensland

World Heritage Site. It is not listed as Threatened under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). It is recommended that its seeds are banked as a ex situ conservation measure and that further research is carried out to monitor the habitat status and level of threat, specially concerning the effect of P. cinnamomi-related dieback. Furthermore, management plans should be set in place to prevent the disease from spreading.

	In Place	Needed
1 Policy-based actions	☑	☑
1.1 Management plans	☑	☑
1.1.1 Development	☑	☐
1.1.2 Implementation	☐	☑
3 Research actions	☑	☑
3.4 Habitat status	☑	☑
3.5 Threats	☑	☑
4 Habitat and site-based actions	☑	☐
4.4 Protected areas	☑	☐
5 Species-based actions	☐	☑
5.5 Disease, pathogen, parasite management	☐	☑
5.7 Ex situ conservation actions	☐	☑
5.7.2 Genome resource bank	☐	☑

Countries of Occurrence

	PRESENCE							ORIGIN				
	Year Round	Breeding Season only	Non-breeding season only	Passage migrant	Possibly extinct	Extinct	Presence uncertain	Native	Introduced	Re-Introduced	Vagrant	Origin uncertain
Australia	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐
Queensland	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐

General Habitats	Score	Description	Major Importance
1 Forest	1	Suitable	Unset
1.4 Forest - Temperate	1	Suitable	Unset

Species Utilisation

☐ Species is not utilised at all

Purpose / Type of Use	Subsistence	National	International
17. Unknown	☑	☑	☑

This rainforest tree species is recognised as having commercial potential but listed as being least valuable (Bristow and Annandale 2005). It is not known how this species is used.

Trend in the level of wild offtake/harvest in relation to total wild population numbers over the last five years:

Trend in the amount of offtake/harvest produced through domestication/cultivation over the last five years:

CITES status: Not listed

IUCN Red Listing

Red List Assessment: (using 2001 IUCN system) Near Threatened (NT)

Red List Criteria:

Date Last Seen (only for EX, EW or Possibly EX species):

Is the species Possibly Extinct? ☐ Possibly Extinct Candidate? ☐

Rationale for the Red List Assessment

A. vaillantii is a tall tree that is only known from the Wet Tropics World Heritage Site in north-eastern Queensland. This species does not meet the geographic range requirements to guarrant the listing of Vulnerable (EOO ~24,000 km2), however more than 75% of the rainforests of Australia have been cleared since 1700's, leaving a highly fragmented habitat. There is a significant threat to the native habitat from the spread of root-rot disease particularly on vegetation in high-altitude ridgelines, where salmon bean is known. Therefore, this species is listed here as Near Threatened. It is recommended that its seeds are banked as a ex situ conservation measure and that further research is carried out to monitor the habitat status and level of threat, specially concerning the effect of P. cinnamomi-related dieback.

Reason(s) for Change in Red List Category from the Previous Assessment:

- ☐ Genuine Change
  - ☐ Genuine (recent)
  - ☐ Genuine (since first assessment)
- ☐ Nongenuine Change
  - ☐ New information
  - ☐ Knowledge of Criteria
  - ☐ Incorrect data used previously
  - ☐ Taxonomy
  - ☐ Criteria Revisio
  - ☐ Other
- ☐ No Change
  - ☐ Same category and criteria
  - ☐ Same category but change in criteria

Current Population Trend: Unknown

Date of Assessment: 06/09/2010

Name(s) of the Assessor(s): Malcolm, P.

Evaluator(s):

Notes:

% population decline in the past:

Time period over which the past decline has been measured for applying Criterion A or C1 (in years or generations):

% population decline in the future:

Time period over which the future decline has been measured for applying Criterion A or C1 (in years or generations):

Number of Locations:

Severely Fragmented:

Number of Mature Individuals:

Bibliography

Australian Rainforest Foundation, 2008, Australia's rainforests06-09-2010, , ,

Bristow, M. and Annandale, M., 2005, Growing Rainforest Timber Trees: A farm forestry manual for North Queensland, Rural Industries Research and Development Corporation, , , Canberra

Commonwealth of Australia, 1999, Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)10 June 2010, , ,

Cowan, R.S., 1998, Mimosaceae, Flora of Australia Volume 12, Mimosaceae (excl. Acacia), Caesalpiniaceae, A.E. Orchard and P.M. McCarthy, , , Melbourne

Department of Environment and Resource Management, 2009, Regional ecosystem details for 7.12.16, The State of Queensland06-09-2010, , ,

Gadek, P. and Worboys, S., 2003, Rainforest Dieback Mapping and Assessment: Phytophthora species diversity and impacts of dieback on rainforest canopies, Cooperative Research Centre for Tropical Rainforest Ecology and Management. Rainforest CRC, , , Cairns

O'Gara, E., Howard, K., Wilson, B., Hardy, G.E., 2005, Management of Phytophthora cinnamomi for Biodiversity Conservation in Australia: Part 2 National Best Practice Guidelines, Commonwealth Government Department of the Environment and Heritage by the Centre for Phytophthora Science and Management, , Murdoch University,

Vanclay, J.K., 1988, A stand growth model for yield regulation in north Queensland rainforests, Forest Growth Modelling and Prediction. Proceedings of IUFRO Conference, August 23-27, 1987, Minneapolis, Minnesota. USDA Forest Service General Technical Report NC-120, A.R. Ek, S.R. Shifley and T.E. Burk, , , Minneapolis

Worboys, S.J., 2006, Guide to Monitoring Phytophthora-related Dieback in the Wet Tropics of North Queensland, Cooperative Research Centre for Tropical Rainforest Ecology and Management. Rainforest CRC, , , Cairns