GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Cyathea cooperi***

Cyathea cooperi 简体中文 正體中文 **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Pteridophyta	Filicopsida	Polypodiales	Cyatheaceae

Common name lacy tree fern (English), Australian tree fern (English), Cooper's cyathea (English), straw tree fern (English), fanjan Australien (French), scaly tree fern (English), fougère arborescente d'Australia (French)

Synonym
Sphaeropteris cooperi , (Hook. ex F. Muell.) R. M. Tryon
Alsophila australis , R.Br.var. *excelsa* F.M.Bailey
Alsophila cooperi , Hook. ex F.Muell.
Alsophila australis , R.Br.var. *pallida* F.M.Bailey
Cyathea australis , (R.Br.) Domin var. *pallida* (F.M.Bailey) Domin
Cyathea australis , (R.Br.)Domin var. *cervicalis* (F.M.Bailey) Domin
Cyathea brownii , Domin var. *cooperi* (Hook. ex F.Muell.)Domin
Alsophila excelsa , R.Br. ex Endl.var. *cooperi* (Hook. ex F.Muell.) Domin
Alsophila australis , R.Br.var. *cervicalis* F.M.Bailey

Similar species *Cyathea australis*

Summary Native to Queensland, Australia, Cyathea cooperi has invaded several islands in the Pacific. It is a fast growing fern that displaces native vegetation easily by forming dense stands. C. cooperi has become a problem in Hawaii by displacing its native ferns. It spreads its spores very easily by wind and proceeds to grow within a few weeks. It can grow up to 12m high and its fronds can grow up to 5m long.

view this species on IUCN Red List

Species Description
Cyathea cooperi can grow up to 12m in height (Wilson, 2007). The stipe base of *Cyathea cooperi* has two different types of scales. The first being dark, small scales and the other being large, pale, papery scales. The latter is the reason for the shaggy blond mat of scales that forms. After the leaves die, the stipes will fall off at the trunk leaving oval scars (Medeiros*et al*, 1992). The sorus lacks an indisium and has a ring of small scales around the sporangia (Heenan*et al*, 1998). The fronds of *C. cooperi* can grow up to 5m long (Wilson, 2007). HEAR (2006) states, \"Blades 2-pinnate-pinnatifid to 3-pinnate at base, green or light green above, paler below; rachises with dark brown, obtuse tubercles. Pinnae up to 65 x 26cm. Pinnules stalked, tips acuminate. Ultimate segments deeply pinnatifid to 1-pinnate, segment lobes falcate, margins irregularly toothed or rarely deeply lobed. Veins 1-forked.\" In older *Cyathea cooperi* a tight rosette will form at the top of the trunk (Large, 2005).

Lifecycle Stages
According to Deppler (1998), \"Spore are microscopic dust-like particles which are released from the sporangia (spore sacs) when they are ripe. The spores are dispersed by wind and, if they should settle in a shady, constantly moist and warm position, they may germinate. Germination usually takes about three months but in some species it may take many months. Initially at germination a tiny flat, green heart-shaped structure is formed and it is at this stage that fertilisation occurs. Some weeks later, the first tiny fronds will begin to develop and a new plant will begin to grow.\"

Uses
Cyathea cooper is commonly used as an ornamental plant (Starr*et al*, 2005).

Habitat Description
The native habitat for *Cyathea cooperi* is in gullies and rainforests. It can also be found along roadsides and streamcourses above permanent waterline. *C. cooperi* is somewhat tolerant of dry conditions but is found most in wet sites. These wet sites are usually where there is ground disturbance (Medeiros *et al*, 1992). This species likes loam, clay loam, and sand soils (Coleman, 1997).

Reproduction
The spores of *Cyathea cooperi* are dispersed by the wind (Hear, 2006). *Cyathea cooperi* produces 22-27 fertile fronds per year (Durand and Goldstein, 2001b).

General Impacts
In Hawaii the threat to forests is the displacement of native species where the fern achieves high densities (Medeiros*et al*, 1992). Medeiros *et al* (1992) reports that *Cyathea cooperi* has displaced two native species of *Cyathea*, *Cyathea excelsa* and *Cyathea bourbonica*, in native rainforests and headlands.

Management Info
Preventative measures: A Risk assessment of *Cyathea cooperi* for Australia was prepared by Pacific Island Ecosystems at Risk (PIER) using the Australian risk assessment system (Pheloung, 1995). The result is a score of 8 and a recommendation of: reject the plant for import (Australia) or species likely to be of high risk (Pacific).
Physical: Bushcare (2006) states, that sawing the trunk at ground level, or leaving a thigh high stump that won't become a trip hazard.

Pathway
Cyathea cooperi was first introduced outside of its native range as a horticultural plant by the 1950s it had escaped cultivation (Durand and Goldstein, 2001a).

Principal source: Hawaiian Ecosystems At Risk (HEAR). 2006. *Cyathea cooperi* (Hook. ex F. Muell.) Domin, Cyatheaceae.
Medeiros, A.C., L.L. Loope, T. Flynn, J. Anderson, L.W. Cuddihy, K.A. Wilson. 1992. Notes on the status of the invasive Australian tree fern (*Cyathea cooperi*) in Hawaiin rain forests. *American Fern Journal*. 82(1): 27-33.

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[2] AUSTRALIA
[1] MAURITIUS
[2] NEW ZEALAND
[4] UNITED STATES
[1] FRENCH POLYNESIA
[1] NEW CALEDONIA
[1] REUNION

BIBLIOGRAPHY
19 references found for **Cyathea cooperi**

Managment information

Durand, L.Z., G. Goldstein. 2001. Growth, Leaf Characteristics, and Spore Production in Native and Invasive Tree Ferns in Hawaii. *American Fern Journal*. 91(1): 25-35.
Summary: This article attempts to compare growth rates of two different ferns in Hawaii.
Durand, L.Z., G. Goldstein. 2001. Photosynthesis, photoinhibition, and nitrogen use efficiency in native and invasive tree ferns in Hawaii. *Oceologica*. 126: 345-354.
Summary: This article attempts to compare growth rates of two different ferns in Hawaii.
Hawaiian Ecosystems At Risk (HEAR). 2006. *Cyathea cooperi* (Hook. ex F. Muell.) Domin, Cyatheaceae.
Summary: This website gives detailed information on distribution and ecology of *Cyathea cooperi*.
Available from: http://www.hear.org/pier/species/cyathea_cooperi.htm [Accessed April 6, 2007]
Medeiros, A.C., L.L. Loope, T. Flynn, J. Anderson, L.W. Cuddihy, K.A. Wilson. 1992. Notes on the status of the invasive Australian tree fern (*Cyathea cooperi*) in Hawaiin rain forests. *American Fern Journal*. 82(1): 27-33.
Space, J.C., T. Flynn. 2001. Report to the Kingdom of Tonga on Invasive Plant Species of Environmental Concern. U.S.D.A. Forest Service, Pacific Southwest Research Station, Institute of Pacific Islands Forestry, Honolulu, Hawai&#65533;i, USA.
Summary: This is report on the invasive species of environmental concern in Tonga.
Available from: http://www.hear.org/pier/pdf/tonga_report.pdf [Accessed April 6, 2007]
Starr, F., K. Starr, L.L. Loope. 2005. Roadside Survey and Expert Interviews for Selected Plant Species on Molokai, Hawaii. Molokai Invasive Species Committee (MoMISC). 3-31.
Summary: This was a study done to find all roadside invasive species on the island of Molokai, Hawaii.
Available from: http://www.hear.org/starr/publications/2005_molokai_road_survey.pdf [Accessed April 6, 2007]

General information

Baret, S., Rouget, M., Richardson, D. M., Lavergne, C., Egoh, B., Dupont, J., & Strasberg, D. 2006. Current distribution and potential extent of the most invasive alien plant species on La R&#65533;union (Indian Ocean, Mascarene islands). Austral Ecology, 31, 747-758.
Summary: L objectif de ce papier est d identifier les zones prioritaires en mati&#65533;re de gestion des invasions biologiques &#65533; La R&#65533;union en mod&#65533;lisant la distribution actuelle et potentiellle d une s&#65533;lection de plantes parmi les plus envahissantes.
Coleman, H. 1997. *Cyathea cooperi* (F.Muell.) Domin. FloraBase, the Western Australia Flora.
Summary: This website gives a brief description of *Cyathea cooperi*.
Available from: http://florabase.calm.wa.gov.au/browse/flora?f=011a&level=s&id=51&PHPSESSID=a8a5e8da6065749bc02da8f73e17e8e7 [Accessed April 6, 2007]
Conservatoire Botanique National De Mascarin (BOULLET V. coord.) 2007. - *Cyathea cooperi* Index de la flore vasculaire de la R&#65533;union (Trach&#65533;ophytes) : statuts, menaces et protections. - Version 2007.1
Summary: Base de donn&#65533;es sur la flore de la R&#65533;union. De nombreuses informations tr&#65533;s utiles.
Deppler, L. 1998. Introducing Australian Ferns. Australian Plants Online.
Summary: This website gives the structure, life cycle, habitat, and gives information on native ferns of Australia.
Available from: http://farrer.csu.edu.au/ASGAP/APOL9/mar98-4.html [Accessed April 6, 2007]
Heenan, P.B., I. Breitwieser, D.S. Glenny, P.J. De Lange, P.J. Brownsey. Checklist of dicotyledons and pteridophytes naturalised or casual i n New Zealand : additional records 1994&#65533;1996. *New Zealand Journal of Botany*. 36: 155-162.
Summary: This article lists 36 new records of casual adventive plants in New Zealand.
Available from: http://www.rsnz.org/publish/nzjb/1998/13.pdf [Accessed April 6, 2007]
Heydon, A. 2003. *Cyathea australis, Cyathea cooperi*. Australian National Botanical Gardens.
Summary: This website gives detailed infromation on *Cyathea australis* and *Cyathea cooperi*.
Available from: http://www.anbg.gov.au/gnp/interns-2003/cyathea-spp.html [Accessed April 6, 2007]
Institute for Systematic Botany (ISB). 2007. *Cyathea cooperi*.
Summary: This website gives all synonyms for plant species as well as maps.
Available from: http://www.plantatlas.usf.edu/images.asp?plantID=4200 [Accessed April 6, 2007]
ITIS (Integrated Taxonomic Information System). 2007. Online Database *Cyathea cooperi*.
Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and Bioscience from BioOne journals.
Available from: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=506926 [Accessed April 6, 2007]
Ku-ring-gai Council. 2006. Confusing Species - Treeferns. *Bushcare News*.50: 7.
Summary: This is newsletter about the environment in North South Wales. *Available from: http://www.kmc.nsw.gov.au/resources/documents/bushcare_news_autumn_06.pdf [Accessed April 6, 2007]*
Large, M. 2005. Straw or Scaly Tree Fern *Cyathea cooperi* (Hook ex F. Muell.) Domin in New Zealand.*Aliens*. Invasive Species Specialist Group (ISSG). 22: 13-14.
Summary: This article gives a full description of the species of the species *Cyathea cooperi*.
Available from: http://www.issg.org/aliens_newsletter/A22.pdf [Accessed April 6, 2007]
Lavergne, Christophe. 2006. List des especes exotiques envahissantes a La Reunion. Unpublished manuscript (Excel file).
Meyer, J.-Y., Loope, L., Sheppard, A., Munzinger, J., Jaffre, T. 2006. Les plantes envahissantes et potentiellement envahissantes dans l archipel n&#65533;o-cal&#65533;donien : premi&#65533;re &#65533;valuation et recommandations de gestion. in M.-L. Beauvais et al. (2006) : Les esp&#65533;ces envahissantes dans l&#65533;archipel n&#65533;o-cal&#65533;donien, Paris, IRD &#65533;ditions, 260 p.+ c&#65533;d&#65533;rom.
Tassin, J., Triolo, J., Lavergne, C. 2007. Ornamental plant invasions in mountain forests of Reunion (Mascarene Archipelago): a status review and management directions. Afr. J. Ecol., 45, 444&#65533;447