

Application form

Heritage

Entry of a place in the Queensland Heritage Register

Use this form to apply to have a place considered for entry in the Queensland Heritage Register under the Queensland Heritage Act 1992.

Before completing this application form:

- read the *Application Guide: Entering a State Heritage Place in the Queensland Heritage Register* available at www.qld.gov.au/environment/land/heritage/
- call 13 QGOV (13 74 68) and discuss this application with the Applications Coordinator, Heritage Branch

1. Applicant details

APPLICANT NAME/S Gemma Horner and Megan Gixti		TITLE Ms/Ms
ORGANISATION NAME (if applicable)		
POSTAL ADDRESS [REDACTED]		POSTCODE [REDACTED]
EMAIL ADDRESS [REDACTED]		
TELEPHONE (business hours)	MOBILE [REDACTED]	
TELEPHONE (after hours)	EMAIL [REDACTED]	

2. Applicant consent

Ticking YES in the box below means you give consent to the department to publicly disclose your name with this application. At no time (whether you tick YES or NO) will your personal contact details be made public during processing and assessment of this application. The department removes contact details (i.e. address, email and telephone numbers) from all copies of the application except those provided to the Queensland Heritage Council.

Applicant consents to personal information being released	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
APPLICANT'S SIGNATURE		

Entry of a place in the Queensland Heritage Register

PRINT APPLICANT'S NAME Gemma Horner		DATE SIGNED Megan Grixti 27 th November 2023

3. Place details

NAME OF PLACE AND / OR FORMER NAME Atherton Arboretum (formerly part of the CSIRO Tropical Forest Research Centre, Atherton)	
STREET ADDRESS 47-67 Maunds Road, Atherton Queensland 4883	
LOT/S ON PLAN/S 1/RP723695	LOCAL GOVERNMENT AREA/S Tablelands Regional
GPS COORDINATES (IF KNOWN) -17.27851, 145.48487	

4. Consultation with the owner of the place

Do you own the place that is the subject of this application? Yes No

If you are not the owner of this place, have you consulted with the owner? Yes No

5. History of the place

HISTORICAL SUMMARY Refer Attachment A – Historical Summary
REFERENCE LIST (and Bibliography) Australian National Botanical Gardens (ANBG) (n.d.) Atherton Herbarium Information Kit, CSIRO Plant Industry and The Centre for Plant Biodiversity Research, accessed 22nd February 2023 https://www.anbg.gov.au/cpbr/brochures/Atherton-Herbarium.pdf ANH (2022), Council Heads of Australasian Herbaria Biographical Notes, Hyland, Bernard (Bernie) Patrick Matthew (1937-), Australian National Herbarium, accessed 13 May 2023, https://www.anbg.gov.au/biography/hyland-bernie.html ANPC (2023), Myrtle rust, accessed 19 April 2023, https://www.anpc.asn.au/myrtle-rust/

Entry of a place in the Queensland Heritage Register

Atherton Centenary Committee, (1985) 'One hundred years of growth' Atherton 1885-1985, Atherton, Atherton Centenary Committee, 1985.

Cairns Local News (2021) 'Operation Plant Rescue'. Cairns Local News, published online 28th May 2021, accessed 12th January 2023, <https://www.cairnslocalnews.com.au/community/operation-plant-rescue>

Centre for Australian National Biodiversity Research (CANBR) (2011) Australian National Herbarium, Accessed 6th March 2023, <https://www.anbg.gov.au/cpbr/history-cpbr/atherton-lab.html>

CSIRO (2021), Identifying Tropical Rainforest Plants, accessed 14 April 2023, <https://www.csiro.au/en/about/facilities-collections/collections/anh/tropicalrainforestid>

CSIRO (2022), History of Australian Tropical Rainforest Plants RFK, accessed 13 April 2023, <https://apps.lucidcentral.org/rainforest/text/intro/history.htm>.

DoR (2023a), QImagery Atherton 1971 aerial imagery captured 1 August 1971 (QAP2337 Frame 70), Queensland Department of Resources, Brisbane.

DoR (2023b), QImagery Atherton 1986 aerial imagery captured 1 May 1986 (QAP4549 Frame 148), Queensland Department of Resources, Brisbane.

DoR (2023c), Queensland Globe 2021 aerial imagery, Queensland Department of Resources, Brisbane.

Elick, R. W. (2005) Tropical Forest Research Centre, Maunds Road, Atherton – 30 Year Anniversary Report. Unpublished report prepared by Rebel W. Elick for the 30th Anniversary of CSIRO in Atherton, Atherton, 2005.

Hyland, B (n.d) Rain Forest Key. Unpublished notes on the history of the Rain Forest Key by Bernie Hyland.

Hyland, B.P.M (1971) A Card Key to the Rain Forest Trees of North Queensland, CSIRO Division of Forest Research, Atherton.

Hyland, B.P.M (1982) A revised card key to rainforest trees of north Queensland, CSIRO Division of Forest Research, Atherton.

Hyland B.P.M (1983) A Revision of Syzygium and Allied Genera (Myrtaceae) in Australia. Australian Journal of Botany Supplementary Series 13, 1-164.

Hyland, B.P.M. (1986) A revision of Lauraceae in Australia (excluding Cassytha). PhD thesis, James Cook, accessed on 21st April 2023, <https://researchonline.jcu.edu.au/33773/10/33773-hyland-1986-thesis-volume-1.pdf>

Hyland, B (1996) 'History of Australian Tropical Rainforest Trees' key - Prepared for the web from an old document written by Bernie Hyland, exact date unknown'. Accessed 14th April 2023, <https://www.anbg.gov.au/cpbr/history-cpbr/rainforest-key-history.html>

Entry of a place in the Queensland Heritage Register

Hyland, BPM and Henry, N (1974) The preparation of A Card Key to the Rain Forest Trees of North Queensland, *Commonwealth Forestry Review*, 53:214-220.

Hyland, B. P. M. and Whiffin, T. (1993) Australian Tropical Rainforest Trees. An Interactive Identification System. Volume 2. CSIRO Australia

Laidlaw MJ. (2022) Census of the Queensland Flora and Fungi 2022. Queensland. Department of Environment and Science, Queensland Government. <http://www.data.qld.gov.au/dataset/census-of-the-queensland-flora-and-fungi-2022> , accessed 10th May 2023.

Papua New Guinea Association of Australia (PNGAA) 'Vale – June 2021'. Accessed 12th December 2022, <https://pngaa.org/article/vales-2/>

Smith, A (2022) 'Locals alarmed as Queensland haven to rare tree species to be sold off by CSIRO'. The Guardian, published online 3rd December 2022, <https://www.theguardian.com/australia-news/2022/dec/03/locals-alarmed-as-queensland-haven-to-rare-tree-species-to-be-sold-off-by-csiro>

Stocker, G. C. (1983) Aspects of the dynamics of rainforests in north-east Australia. PhD Thesis, The University of New England.

The Tablelander (1985) Atherton centenary : 1885-1985. The Tablelander Atherton "Our rainforests a national asset" Atherton Centenary Commemorative Edition, Pg 57.

Vanclay, J.K. (1989) A Growth Model for North Queensland Rainforests, *Forest Ecology and Management*, 27:245-271.

Wild (2019) What rainforest plant is that. CSIRO: *Ecos*, Issue 253, published online 22nd March 2019, accessed 20th April 2023, <https://ecos.csiro.au/rainforest/>

Zich, AF, Hyland, BPM, Whiffin & T, Kerrigan, RA 2020, Australian Tropical Rainforest Plants, edition 8, CSIRO, <<https://apps.lucidcentral.org/rainforest/>>.

LIST OF ATTACHMENTS

Attachment A – Historical Summary

Attachment B – Description of the Place

Attachment C – Site Plan

Attachment D - Site Plan Spatial Coordinates

Attachment E – Atherton Arboretum Grid Map and Species Locations

Attachment F – History of the place references (unpublished reports)

1. Rainforest Key History (Hyland unpublished)
2. Tropical Forest Research Centre, Maunds Road, Atherton – 30 Year Anniversary Report (Elick 2005)

Entry of a place in the Queensland Heritage Register

6. Description of the place

WRITTEN DESCRIPTION

Refer Attachment B – Description of the Place

7. Statement of cultural heritage significance

Decide which criteria are relevant to your application and complete a response for each in the boxes below. Write 'not applicable' against the criteria that are not relevant to your application.

<p>CRITERION A the place is important in demonstrating the evolution or pattern of Queensland's history</p>	<p>The Atherton Arboretum is important in demonstrating the evolution of tropical forest research in Queensland and is the product of 50 years of research in North Queensland. Its establishment in 1971, resulting from a collaboration between the Commonwealth Forestry and Timber Bureau and Queensland's Department of Forestry has made a strong contribution to the Queensland forestry industry and our understanding of northern Australia's flora. Much of the research undertaken at the site has been supported by the arboretum's living collection and the associated herbarium specimens. The place contains the product of early expeditions across northern Queensland in the 1970s which were aimed at acquiring information on the tropical rainforests of the region which up until then were still poorly understood.</p> <p>The history of the Atherton Arboretum's importance in demonstrating the evolution of tropical forest research in Queensland is summarised as follows:</p> <ul style="list-style-type: none"> • In the early 1960's, approximately 160 north Queensland tree species were logged to produce high quality timber; however correct identification of the target tree species by forestry logging personnel was difficult, and non-commercial species were often misidentified as a commercial species. • In 1963, Bernard Hyland (at the time was the Assistant Forester at Queensland's Department of Forestry in Atherton) commenced the development of an identification manual to be used by foresters to assist with identification of commercial species. • In 1971, the establishment of the Atherton Arboretum was proposed by Hyland and Geoff Stocker (Principal Research Scientist and Officer in Charge) to support the development of the tree identification manual and create an easily accessible resource to study the trees from the tropical forests of north Queensland. • Since 1971, the research conducted using Atherton Arboretum specimens, contributed significantly to the publication and continuous development of the identification manual: '<i>A Card Key to the Rain Forest Trees of North Queensland</i>', later known as the '<i>Australian Tropical Rainforest Plants Key</i>' (RFK). The first and second editions (Hyland 1971, 1982) provided the Queensland Department of Forestry with a critical resource for identifying commercial species by leaf and bark characteristics (Vanclay 1989). The RFK is considered an outstanding example of the relationship between technology and applied science and was considered pioneering work in the Queensland Forestry Industry. • Between the 1970s-1990s numerous expeditions were conducted to remote locations, previously unexplored by western science. Atherton Arboretum specimens were collected from across Wet Tropics, Cape York, Gulf of Carpentaria, and the Northern Territory, predominantly representing Gondwanan Rainforest species. Often seeds collected during expeditions were germinated in the greenhouses and planted in the Arboretum to allow continued study of newly discovered plants and further describe species characteristics for the RFK. • Between 1980-1986, the Atherton Arboretum was instrumental in expanding the knowledge of two of north Queensland's largest plant families utilised by Queensland Forestry, Myrtaceae (Hyland 1993) and Lauraceae (1986). Seeds from Type specimens, used to describe the species, were grown, and planted in the Arboretum for further study.
---	--

Entry of a place in the Queensland Heritage Register

	<ul style="list-style-type: none"> In the mid-1980's, researchers provided observation data from the Atherton Arboretum, to support the submission for the ultimately successful inscription of the rainforests of the Wet Tropics to the UNESCO World Heritage List (<i>pers. comm.</i> Ellen Weber, Senior Scientist, Wet Tropics Management Authority, email dated 27 April 2023). The knowledge gained through utilisation of the Atherton Arboretum, was considered essential in understanding the values of the Wet Tropics rainforests and the provision of this data made an influential contribution to the preservation of the rainforests within the Wet Tropics region, and the overall development of our society and environment in Queensland. In 1993, the third edition of the RFK was published (Hyland and Whiffin 1993), providing descriptions for 1,056 tree species. In addition to the bark and leaf characteristics, additional features from flowers, fruits and seedlings were included, many of which were described through observing the trees at the maturing Atherton Arboretum (Hyland, 2021). Today, the Atherton Arboretum presents an exceptional living collection of 539 species of plants collected during the 50 years that the research facility was operating (until 2021). The Atherton Arboretum has remained a key resource in the continued development of the RFK. Now in its 8th Edition (Zich <i>et al.</i> 2020) the RFK continues to be a key resource for the study of Australia's tropical rainforest flora. The Atherton Arboretum and the development of the RFK has improved our understanding of Queensland's tropical rainforests whilst continuing to provide a resource for further scientific enquiry.
CRITERION B the place demonstrates rare, uncommon, or endangered aspects of Queensland's cultural heritage	Not applicable
CRITERION C the place has potential to yield information that will contribute to an understanding of Queensland's history	<p>The Atherton Arboretum contains the most comprehensive and well-documented living collection of Queensland's tropical flora with particular focus on the Wet Tropics and Cape York Peninsula rainforests, representing 50 years of tropical forest research. During this time the living collection supported research by scientists and students from around Australia and the world. Its extensive living collection supported by herbarium voucher specimens and detailed collection information has made a strong contribution to the evolution of the Queensland forestry industry and our understanding of tropical rainforest flora and has the potential to continue to yield new information to support research in this field.</p> <p>It is likely that many of the plants in the arboretum's collection represent the only cultivated specimens of the species and thus the place provides exceptional and unparalleled scientific value. The plantings, along with associated documentation demonstrate a rare representation and important surviving evidence of the history of tropical forest research in Australia.</p> <p>Of the 539 species held within the living collection, 53 species are currently listed as Critically Endangered, Endangered, Vulnerable and/or Near Threatened under Federal and State environmental legislation and as such the site demonstrates an exceptional scientific resource and its preservation has the potential to yield information essential to the conservation of the threatened species held within.</p> <p>The arboretum's extensive collection of tropical Myrtaceae (128 species) presents an important scientific resource with the potential to contribute to conservation efforts on the exotic fungal pathogen myrtle rust (<i>Austropuccinia psidii</i>). Myrtle rust is currently a significant threat to Australia's second-largest plant family, Myrtaceae, which includes gum trees (<i>Eucalyptus</i> spp.) tea trees (<i>Melaleuca</i> spp.) and lilly pillies (<i>Syzygium</i> spp.).</p> <p>Many of the living specimens held in the arboretum were propagated from seeds or cuttings collected when the species was first discovered and represent the first cultivated plants of the species and represent the offspring of the Type material on which the species was first described. Many species present in the collection have extremely limited distributions and study of living plant material can be difficult, such as the Claudie macadamia (<i>Lasjia claudiensis</i>) which is restricted to the rainforests of Iron Range near Lockhart River. Not only is this location difficult to access but the majority of its habitat falls within the Iron Range National Park. Although protected, the remoteness of this location makes collection of plant material for research difficult. Like the Claudie macadamia many of the species present in the arboretum were collected from remote areas which are difficult to access or located in areas whereby changes in tenure and land management have inhibited further collections. Therefore the availability of mature, reproductive specimens as an ongoing seed source is significant.</p> <p>The arboretum's living collection has direct links to the Australian National Herbarium (Atherton) collection through vouchered specimens which were collected for each species planted in the arboretum. The herbarium collection, which held over 120 000 specimens was housed at the TFRC up until 2007 when it was integrated</p>

Entry of a place in the Queensland Heritage Register

	<p>into the Australian Tropical Herbarium collection in Cairns.</p> <p>Specimens held in the arboretum have also provided key information used to develop the interactive identification key to Australian Tropical Rain Forest Plants, known as the RFK. The RFK is a primary reference tool for the identification of Australia's tropical rainforest flora. As such, the site has the potential to continue to yield information that will further improve our understanding of Queensland's tropical biota. Furthermore, the Atherton Arboretum has direct links to Hyland's revision of Australia's Myrtaceae (1983) and Lauraceae (1986) in that plant material (seeds and cuttings) from species described were propagated and planted in the arboretum collection.</p> <p>The Atherton Arboretum is an internationally recognised source of scientific information and education of northern Australian flora and has had a special association with the vegetation of the Wet Tropics Bioregion. In 1988, CSIRO researchers Geoff Stocker, Len Webb, Bernie Hyland, Tony Irvine, Bruce Gray, Graham Harrington, Geoff Tracey, Michael Hopkins among others from James Cook University provided core data from research conducted at the CSIRO Tropical Forest Research Station, including observations made at the Atherton Arboretum to support the submission for the inscription of the rainforests of the Wet Tropics to the UNESCO World Heritage List. The provision of this data made an influential contribution to the preservation of the rainforests within the Wet Tropics region, and the overall development of our society and environment in Queensland. Thus the place forms part of the region's local identity and holds significant scientific values relating to the region's history.</p>
<p>CRITERION D the place is important in demonstrating the principal characteristics of a particular class of cultural places</p>	<p>The place type to which the place (Atherton Arboretum) refers is 'arboretum in Queensland'.</p> <p>The Atherton Arboretum is an important example of its type as it contains an extensive and unique collection of tropical forest plantings with supporting comprehensive documentation. The collection is configured in a 10 m x 10 m grid format and is supported by a database detailing the taxon name, plot location, associated RFK code, and collection information of each species. Of particular importance is the representation of each species in the living collection by an herbarium voucher specimen which presents a permanent and verifiable record of the associated living specimen. These specimens were originally held in the Australian National Herbarium (Atherton) which was located at the CSIRO Tropical Forest Research Centre but in 2007 were integrated into the Australian Tropical Herbarium collection.</p> <p>The living collection is represented by 539 species from 86 plant families, with considerable representation from Myrtaceae (128 species), Lauraceae (39 species), Proteaceae (27 species), Sapindaceae (27 species), Leguminosae (25 species), Rutaceae (24 species), Arecaceae (18 species), Sterculiaceae (16 species) and Moraceae (15 species).</p> <p>Of the 539 species planted in the Atherton Arboretum, 53 species are currently listed as Critically Endangered, Endangered, Vulnerable and/or Near Threatened under Australia's Federal or State legislation.</p> <p>Many of the plants in the Atherton Arboretum are likely to be the only cultivated specimens of the species in existence. Most species are endemic to the rainforests of the Wet Tropics and the rainforests and savannahs of Cape York Peninsula, with several comprising very restricted distributions (e.g., <i>Claudia macadamia</i> - <i>Lasjia claudiensis</i>). Many of the specimens planted in the Atherton Arboretum derive from plant material (i.e., seeds or cuttings) collected when the species was first discovered and are related to the Type specimen from which the species was first described.</p>
<p>CRITERION E the place is important because of its aesthetic significance</p>	<p>Not applicable</p>
<p>CRITERION F the place is important in demonstrating a high degree of creative or technical achievement at a particular period</p>	<p>Not applicable.</p>
<p>CRITERION G the place has a strong or special association with a particular community or cultural group for social, cultural, or spiritual reasons</p>	<p>Not applicable</p>

Entry of a place in the Queensland Heritage Register

<p>CRITERION H the place has a special association with the life or work of a particular person, group, or organisation of importance in Queensland's history</p>	<p>The Atherton Arboretum has a strong association with the alliance made between two government agencies, the then Commonwealth Forestry and Timber Bureau which was absorbed into CSIRO in 1975, and Queensland's Department of Forestry, which formed the Commonwealth Forest Research Institute (1971-1975), later known as the CSIRO Tropical Forest Research Centre (TFRC) of which the arboretum forms part of. The research station was known for its pioneering work in the identification and documentation of commercial timber species and more broadly for its contributions to tropical forest research through the establishment of the Australia National Herbarium (Atherton), the Atherton Arboretum and through the development of the Tropical Rainforest Key (RFK).</p> <p>The place also has a special association with the work of Dr Bernard Hyland and the late Dr Geoff Stocker who together established the Atherton Arboretum in 1971.</p> <p>Dr Geoff Stocker (Officer in Charge / Principal Research Scientist - TFRC, 1971-1985) Dr Geoff Stocker was the Officer in Charge (OIC) of the Queensland Regional Station of the Forest Research Institute, a branch of the Commonwealth Forestry and Timber Bureau in Atherton (later known as the CSIRO Tropical Forest Research Centre 'TFRC') between 1971 and 1985. During his appointment Stocker and his staff established soils, ecology and botany research groups and set out to investigate Australia's tropical rainforests and related forest environments. Their research focussed on management of the region's tropical cabinet-wood species, the results of which contributed to improved tropical silviculture of the region's valuable and ecologically complex forests. During this time, Stocker's research groups established a series of long-term reference plots throughout northern Queensland which involved the collection and propagation of poorly known species for further study at the arboretum.</p> <p>In July 1983 Stocker completed his doctoral thesis on the 'Aspects of the dynamics of rainforests in north-eastern Australia' (Stocker 1983) which was carried out while he was employed at the TFRC. During this research, the arboretum played a key role and was used to study the survival and growth of rainforest species.</p> <p>Prior to this Stocker had worked for the Commonwealth Forestry and Timber Bureau in the Northern Territory where he was involved in pine plantation trials in Melville Island and elsewhere (AFHS, 2021)</p> <p>After 1985, Stocker extended his professional interests in Papua New Guinea as Professor and Head of the Forestry School at the University of Technology, Lae from 1989 to 1992 and Director of the Forest Institute from 1993 to 1996 (Vale, PNGAA 2021).</p> <p>Upon return to Australia, Geoff served as a Councillor in the Eacham Shire and then in the Tablelands Regional Council (TRC) and was Deputy Mayor of TRC from 2014 until he retired in 2016.</p> <p>Dr Bernard Hyland (Botanist – TFRC, 1971-2002) Dr Bernard ('Bernie') Patrick Matthew Hyland is an Australia botanist who contributed substantially to our knowledge of Australia tropical flora. During his tenure at the TFRC, Hyland made important contributions and innovations to science through the development of the Tropical Rainforest Key ('RFK') (as detailed in Criterion A) and his taxonomic revisions of two of the largest rainforest families Myrtaceae (Genus <i>Syzygium</i>) (Hyland 1983) and Lauraceae (Hyland, 1986) of which the arboretum contains significant representation.</p> <p>The RFK is the foremost identification and botanical guide to rainforest plants of northern Australia and is utilised by researchers, scientists, field naturalists and students. It continues to be a primary reference for those studying tropical rainforest flora and presents a significant contribution to science. The identification system was first developed by Hyland in 1971 and had been in development since the 1960's whilst Hyland worked at the Queensland Department of Forestry.</p> <p>In 1993, Bernie Hyland and Trevor Whiffin of LaTrobe University published the 3rd edition of the RFK 'Australian Tropical Rainforest Trees'. This edition of the key was an interactive identification system covering 1056 species of rainforest plants and was the world's first online computer-based plant identification key, demonstrating significant innovation at the time. It consisted of two volumes, a leaf atlas which was developed with the help of the late David Christophel a paleobotanist from the University of Adelaide using leaf images on low energy x-rays on x-ray film, and computer-based keys in both MS-DOS and Macintosh formats. Additional features from flowers, fruits and seedlings were included in this edition, incorporating information acquired from the arboretum and associated Australian National Herbarium (Atherton) collection.</p> <p>Hyland had a long involvement with the Atherton research facility and herbarium until his retirement in February 2002 retired from CSIRO in 2002, however, he continued to provide advice on the development of the RFK as a CSIRO Honorary Research Fellow.</p> <p>Prior to his appointment at the TFRC, Hyland worked as a botanist for the Queensland Department of Forestry between 1960 and 1971.</p>
---	---

Entry of a place in the Queensland Heritage Register

	<p>Other notable contributions to the arboretum collection were made by: Anthony Irvine (Technical Officer TFRC, 1971-1981), Geoff Tracey (Technical Officer TFRC, 1980-1991), Alick Dockrill (Technical Officer TFRC, 1971-1980) and Andrew Ford (Technical Officer / Researcher TFRC, 1994-2021).</p> <p>The place is a rare representation of the vegetation of the Wet Tropics and was involved in the successful nomination of the Wet Tropics rainforests to the UNESCO World Heritage List in 1988. This was due to the contributions of CSIRO researchers Geoff Stocker, Len Webb, Bernard Hyland, Anthony Irvine, Bruce Gray, Graham Harrington, Geoff Tracey, Michael Hopkins, among others who provided core data from research conducted at the CSIRO Atherton Research Station, including observations made at the Atherton Arboretum (pers. comm. Ellen Weber, Senior Scientist, Wet Tropics Management Authority, email dated 27 April 2023). Thus data derived from the arboretum together with the associated research outputs has made an influential contribution to the preservation of the rainforests within the Wet Tropics region, and the overall development of our society and environment in Queensland.</p>
--	--

8. Site plan showing proposed boundary

Attach a site plan to this form. Tick to confirm:

- the site plan is drawn or sketched to scale
- all significant heritage elements of the place are shown and clearly labelled in their approximate locations
- the proposed heritage boundary is shown
- the cadastral (lot on plan) boundaries of the place are shown

9. Photographs

Attach photographs to this application that show the place in its current state. Number all photographs and complete the index table below adding more rows if needed.

If submitting an electronic application, submit the photographs in a digital file attached with the application form. Maximum file size for digital images attached to this form is 250kb each.

If submitting an application in hard copy, submit the photographs as an electronic file saved onto a CD or USB and attach one hardcopy print out of images to this application form.

DATE AND TIME TAKEN 20 th April 2023 (14:29 – 14:49) 2 nd December 2022 (10:41)		PHOTOGRAPHER Rebel Warren
COPYRIGHT PERMISSIONS <i>By law copyright of material submitted is subject to conditions set out in the copyright licence for that material.</i> <i>Please enter licensing details in the metadata for each image/file requiring copyright.</i> <i>A copyright licence may be obtained free of charge from Creative Commons at www.creativecommons.org. Creative Commons licence 'Creative Commons Attribution-Non-Commercial-No Derivative Works' is recommended. This licence maintains author copyright but allows others to copy and distribute work provided the author is given credit (in a way specified by the author) and the work is not changed in any way and is not used commercially.</i>		
IMAGE NUMBER	FILE NAME	DESCRIPTION
1	1_1599	Front entrance to research station on Maunds Road, facing west

Entry of a place in the Queensland Heritage Register

2	2_7365	Atherton Arboretum, Maunds Road frontage, facing north-west
3	3_1578	Atherton Arboretum, Maunds Road frontage, facing south-west
4	4_1581	Atherton Arboretum, Grove Street frontage, facing west
5	5_1580	Internal planting layout

10. Lodgement

All sections of this form must be completed and attachments prepared (in particular the site plan showing the proposed heritage boundary and photographs of the place) before an application is lodged. Incomplete applications cannot be accepted.

Send one copy of the completed form and attachments to:

Email:

heritage@des.qld.gov.au

OR

Post:

Applications Coordinator
Heritage Branch
Arts and Heritage
Department of Environment and Science
GPO Box 2454
Brisbane Qld 4001

Further information

- email heritage@des.qld.gov.au
- call 13 QGOV (13 74 68) and ask to speak to the Applications Coordinator, Heritage Branch
- visit www.qld.gov.au/environment/land/heritage/

Background

Arboretums are living botanical collections that are devoted to trees or woody plants, intended for scientific study, education and the promotion of conservation.

The Atherton Arboretum represents a unique collection of 539 tropical plant species. Each specimen is directly linked to its original collection location through the documentation of herbarium specimens. It is likely that many of the specimens represent the only cultivated examples in the world. The living collection includes 128 species from the family Myrtaceae, one of the largest rainforest families and 53 species which are currently listed as threatened or near threatened under the Commonwealth's *Environment and Biodiversity Conservation Act 1999* (EPBC Act) or Queensland's *Nature Conservation Act 1992* (NC Act).

The Arboretum database documents the taxon name, plot location and collection information of all 539 species that have been planted over 50 years. Most importantly, each species in the Arboretum's living collection is also represented by herbarium voucher specimens that can be traced back to the original forest locations. These specimens formed part of the Australian National Herbarium (Atherton) collection which was housed at the CSIRO Tropical Forest Research Station, Atherton and were incorporated in 2007 into the Australian Tropical Herbarium (CNS) at James Cook University, Cairns, where they remain today. The collection held over 120 000 specimens predominantly of tropical plants of Australia, including the Atherton Arboretum's associated voucher specimens.

Establishment of the Queensland Forest Research Institute, Queensland Regional Station

In 1970 the Commonwealth Government Department of National Development, Forestry and Timber Bureau purchased Lot 1 on Plan RP723695 (47-67 Maunds Road, Atherton QLD 4883) to establish the Queensland headquarters of the Forest Research Institute, known as the Queensland Regional Station (QRS) (Elick 2005). Prior to the Commonwealth Government purchase of the site, the land had been used for growing maize, peanuts, potatoes and for grazing horses and cattle (Elick 2005).

On 21 October 1971, construction of the laboratories at QRS was completed. The facility was opened by the Honourable Reginald William Swartz (Minister for National Development) (**Plate 1**), led by Principal Research Scientist and Officer in Charge Dr Geoff Stocker and Principal Botanist Bernard Hyland (PNGAA 2021, ANH 2022).

In 1975, the Queensland Forest Research Institute and the Commonwealth Forestry and Timber Bureau amalgamated and became the CSIRO Division of Forest Research. It was at this time that ownership of the property was transferred to CSIRO and the facility became known as the CSIRO Tropical Forest Research Centre (TFRC) (Elick 2005).

During his tenure Stocker established research groups, focussing on soils, ecology, and botany, to investigate Australia's tropical rainforests and related environments. The research outcomes have contributed significantly to present knowledge of Australia's tropical forests.



Figure 1: Plaque commemorating the opening of the QRS in 1971 (located on the entrance to the facility main building)

Establishing the Atherton Arboretum

In the early 1960's, approximately 160 north Queensland tree species were logged to produce high quality timber. At the time efficiency in logging operations were being impeded by the paucity of resources available to correctly identify the target species. The task of developing an identification manual was handed to the then Assistant Forester at Queensland's Department of Forestry Office in Atherton, Bernard Hyland. Hyland argued that to identify the 160 commercial species one had to incorporate information on all the other tree species to avoid the possibility of misidentifying a non-commercial species as a commercial species. From the specimens he had collected, Hyland realised it was not only difficult to collect from trees, but it was also hard to identify them from the literature available at that time (Hyland, 2021). In 1963, Hyland (whilst working as an Assistant Forester at Queensland's Department of Forestry in Atherton) commenced the development of an identification manual to be used by foresters to assist with identification of commercial species. In 1971, the Queensland Department of Forestry published the first edition of the identification manual: "A Card Key to the Rain Forest Trees of North Queensland", which provided foresters with a critical resource for identifying commercial species by leaf and bark characteristics. In the same year Hyland transferred to the Forest Research Institute.

It was during the early days of research at the Forest Research Institute that in 1971 that Stocker and Hyland proposed the establishment of an Arboretum at the QRS to support the development of the tree identification manual and to create an easily accessible resource to study the tropical forests of north Queensland. At that time, much of north Queensland was unexplored by western science and field locations were remote with limited access, particularly during the monsoon season. The establishment of an Arboretum would allow the continued study of newly discovered plants without needing to revisit remote and restricted locations.

In 1971, Hyland and the late Tony Irvine (QRS Technical Officer) established the first Arboretum plantings on a large block to the northeast of the QRS main building (**Plate 2**). Subsequent plantings occurred along the northern, western and southern property boundaries. The Maunds Road frontage, to the east of the QRS main building was planted in the 1980s and by 1986 the Arboretum was well established (**Plate 3**) (*pers comm.* Nigel Tucker, 12 March 2022). The Arboretum was designed to provide easy access for data collection and obtaining plant material. The trees were planted in rows, laid out in a 10m x 10m grid format (**see Plate 5**) with sufficient space left between each stem to allow the tree to grow to its full extent and the area beneath to be regularly maintained.

Since the first plantings in 1971, many notable Australian botanists and researchers have contributed to the Arboretum over its 50 years of operation, including the late Geoff Tracey, the late Alick Dockrill, Dr Greg Unwin, Bruce Gray, John Connors, Andrew Ford, Nigel Tucker and Matt Bradford.



Plate 1: Aerial imagery (1971) showing the Arboretum site prior to establishment (DoR 2023a)



Plate 2: Aerial imagery (1986) showing the established Arboretum (DoR 2023b)

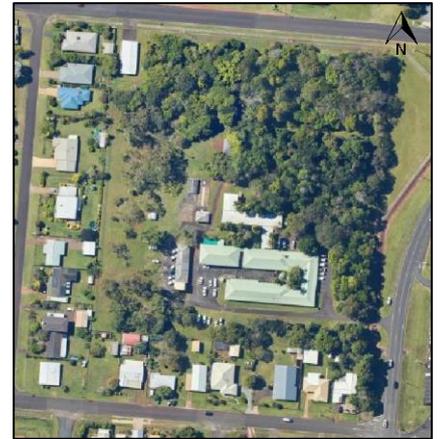


Plate 3: Aerial imagery (2021) showing the present Arboretum (DoR 2023c)

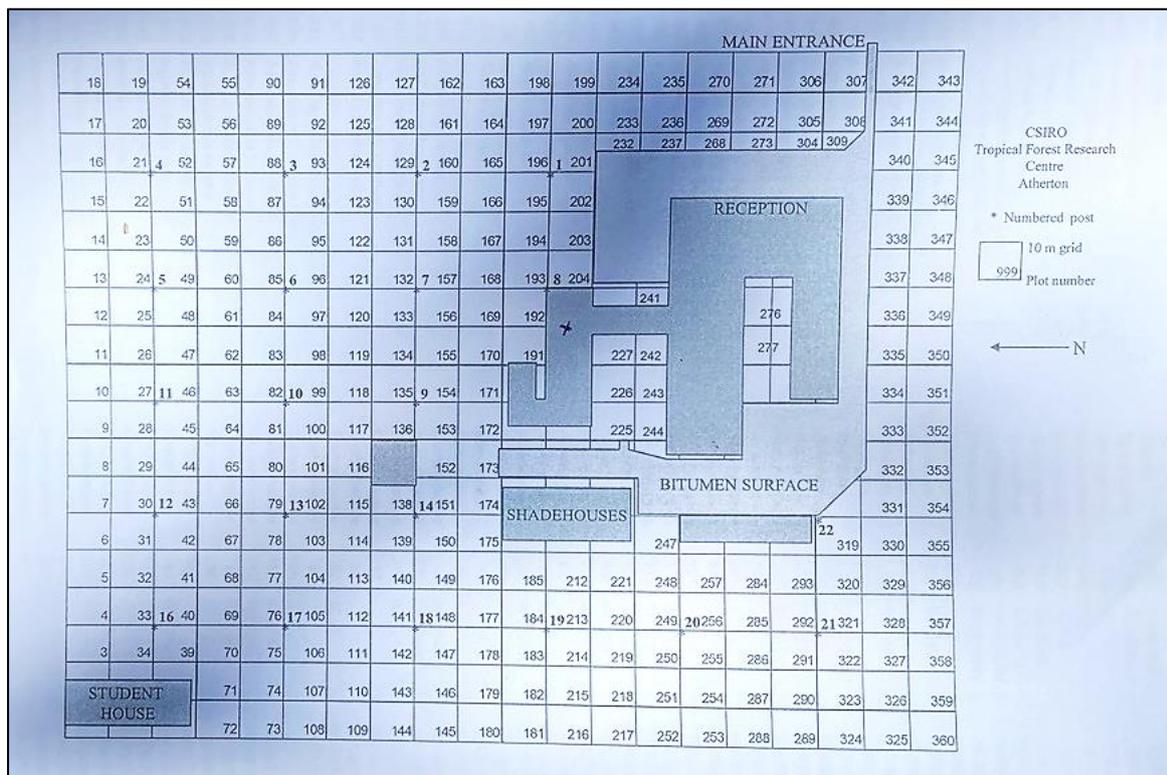


Plate 4: Atherton Arboretum grid map

Growing and documenting the Arboretum collection

Although most of the species in the Arboretum comprise rainforest trees of northern Australia, the collection includes representations from the savannah communities of north Queensland, including from the genera *Eucalyptus* and *Corymbia*. Many of the living specimens within the Arboretum were propagated from seeds

collected when the species was first discovered or were collected from the individual by which the species was described (*i.e.*, seeds collected from the same plant from which the Type specimen was collected). Moreover, it is likely that many of the plants in the Atherton Arboretum represent the only cultivated specimens of the species in the world and thus the place provides an exceptional and unparalleled scientific value.

Today, the Arboretum represents an exceptional living collection of 539 plant species accumulated during the 50 years that the TFRC was operating (ceasing upon closure of the facility in 2022). The living collection includes 128 species from the family Myrtaceae, one of the largest rainforest families and 53 species which are currently listed as threatened under the Commonwealth's *Environment and Biodiversity Conservation Act 1999* or Queensland's *Nature Conservation Act 1992*.

The Arboretum database documents the taxon name, plot location and collection information of all 539 species. Most importantly, each species in the Arboretum's living collection is represented by herbarium voucher specimens which are held within State, National and International herbaria. These voucher specimens form a permanent and verifiable record of the associated living specimen in the Arboretum and the species' original collection location details. Vouchered herbarium specimens collected from the Arboretum continue to be used for research purposes and the retention of the living specimens in the Arboretum present a unique value in that the living specimens can continue to be studied at an easily accessible location. Many of these vouchered specimens were originally held in the on-site QRS herbarium (formerly the Australian National Herbarium (Atherton) established in 1971). This collection formed an important part of the Australian National Herbarium (Canberra) collection and contained over 120 000 specimens. In 2007 the QRS collection was incorporated into the Australian Tropical Herbarium (CNS) at James Cook University, Cairns, where they remain today.

The Arboretum's plantings, along with their vouchered specimens, demonstrate a rare representation and important surviving evidence of the history of tropical forest research in Australia. Thus the place demonstrates not only cultural significance due to its links to past discoveries but also Local, State, National and International scientific significance to past, present, and future generations.

"There is no equivalent set of cultivated plants in existence, and it would be very difficult to replicate the collection elsewhere in Australia" (*pers. comm.* Dr Paul Forster, Principal Botanist, Queensland Herbarium, 21 April 2023).

Research and partnerships at the QRS

The QRS operated as a research facility between 1971 and 2022, providing a base for scientists and students to study various aspects of the tropical forest environment through national and international partnerships. Since establishment, new species continued to be added to the Arboretum collection and were contributing to much of the research that was being conducted at QRS, particularly in establishing the QRS Herbarium collection and the development of the Tropical Rain Forest Key.

Once Stocker and Hyland established the Atherton Arboretum in 1971, the living collection contributed significantly to the ongoing development of the rain forest identification key. The publication later became known as the tropical rainforest key (RFK) and was and still remains the primary reference tool for the identification of Australia's tropical rainforest flora (CSIRO 2022). In 1993, the third edition was published and became the world's first computer-based plant identification system which greatly increased the data capacity of the RFK and provided users with descriptions for 1,056 tree species. In addition to the bark and leaf characteristics, additional features from flowers, fruits and seedlings were included, many of which were described through observing the trees at the maturing Atherton Arboretum. The RFK is an outstanding example of the relationship between technology and applied science and the Atherton Arboretum was instrumental to its development.

In the 1980's Hyland published revisions of two of the largest rainforest families in tropical Australia, Myrtaceae (Syzygium genus) (1986) and Lauraceae (1983). At the time, new species were being discovered by researchers at QRS and specimens and plant material were being collected during field expeditions. In some instances, this plant material was being used to describe species in the taxonomic revisions and thus the living specimens in the Arboretum represent a direct link between the original individual from when

the species was first discovered and the Type specimen upon which the species was described (*pers. comm.* B. Hyland, 6 October 2021). This plant material was subsequently accessioned into herbaria across Australia and internationally. Furthermore, seeds collected during these expeditions were germinated in the greenhouses and planted in the Arboretum to further describe seedling characteristics for the RFK. The Arboretum and the associated QRS Herbarium collection provided a crucial part in this research as Hyland was able to examine specimens as they developed, whilst providing continuous access to living material.

Much of the knowledge gained at the TFRC including through the establishment and utilisation of the Arboretum collection, was considered essential in understanding the values of the Wet Tropics rainforests. In the mid-1980's, CSIRO researchers Geoff Stocker, Leonard 'Len' Webb, Bernard 'Bernie' Hyland, Anthony 'Tony' Irvine, Bruce Gray, Graham Harrington, Geoff Tracey, Michael Hopkins among others from James Cook University provided core data from research conducted at the TFRC, including observations made at the Atherton Arboretum to support the submission for the inscription of the rainforests of the Wet Tropics to the UNESCO World Heritage List. The provision of this data made an influential contribution to the preservation of the rainforests within the Wet Tropics region, and the overall development of our society and environment in Queensland.

From the early 1990's many scientists utilising the facility were engaged with the Rainforest Cooperative Research Centre (CRC), Weeds CRC and or Savannah CRC which also operated out of the TFRC (Elick 2005). The TFRC has had a special association with the vegetation of the Wet Tropics and Cape York Bioregions and as an internationally recognised source of scientific information and education of northern Australia Flora. The site has supported a diverse range to research topics, including in plant taxonomy, soil ecology, hydrology, ecology, plant physiology, mycology, entomology, vertebrate ecology, animal behaviour, spatial modelling and climate change (Elick 2005), some of which has been supported by the living collection in the Arboretum.

Prior to closing, CSIRO leased out offices to other local environmental organisations (The Nature Conservancy, Terrain NRM, Cape York NRM, Barron Catchment Care).

In mid-2022, the site was formally closed.

Description of the Place

The 3.64-hectare property, located on Lot 1 on Plan RP723695 (47-67 Maunds Road, Atherton Queensland 4883), operated as a joint Commonwealth and State (Queensland) research facility between 1971 and 2022. The property includes offices, student accommodation, library, laboratories, greenhouse, glasshouse, potting shed, workshops and a tropical forest Arboretum known as the 'Atherton Arboretum'. The Atherton Arboretum being the key heritage element of this application.

The proposed heritage boundary of the Atherton Arboretum is defined as the area containing the plantings and excludes the existing buildings, roads and ancillary infrastructure as shown on the Site Plan (see Attachment C). Although, the construction of the buildings utilised locally sourced tropical rainforest timbers, which do hold some historical value, the historical and cultural significance of the site is predominantly held within the scientific resource of the Arboretum.

Within this boundary is the living Arboretum collection, including plantings which are located within and/or adjacent to the building footprint and courtyards.

The collection has been arranged in a 10m x 10m grid format (see Attachment E) and is represented by 539 species from 86 plant families, with considerable representation from Myrtaceae (128 species), Lauraceae (39 species), Proteaceae (27 species), Sapindaceae (27 species), Leguminosae (25 species), Rutaceae (24 species), Arecaceae (18 species), Sterculiaceae (16 species) and Moraceae (15 species).

Of the 539 species planted in the Atherton Arboretum, 53 species are currently listed as Critically Endangered, Endangered, Vulnerable and/or Near Threatened under the Commonwealth *Environment Protection and Biodiversity Act 1999* (EPBC Act) and/or the Queensland *Nature Conservation Act 1992* (NC Act).

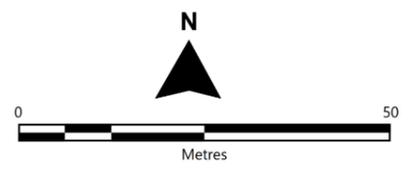
Many of the plants in the Atherton Arboretum are likely to be the only cultivated specimens of the species in existence (*pers. comm.* Bernard Hyland, 6 October 2021). Most species are endemic to the rainforests of the Wet Tropics and the rainforests and savannahs of Cape York Peninsula, with several comprising very restricted distributions (*e.g.*, *Claudia macadamia* - *Lasjia claudiensis*). Many of the specimens planted in the Atherton Arboretum came from plant material (*i.e.*, seeds or cuttings) collected when the species was first discovered and are related to the Type specimen from which the species was first described.

Vouchered herbarium specimens, taken from the living Atherton Arboretum specimens are held in State, National and International herbaria and continue to be used for research purposes. The Atherton Arboretum demonstrates Local, State, National and International cultural heritage significance, providing historical and ongoing scientific value to past, present and future generations.



Figure 1: Atherton Arboretum proposed Heritage Register site plan
 Project: Entry of a Place in the Queensland Heritage Register Application - Atherton Arboretum

- Cadastral boundary
- Atherton Arboretum proposed Heritage Register boundary

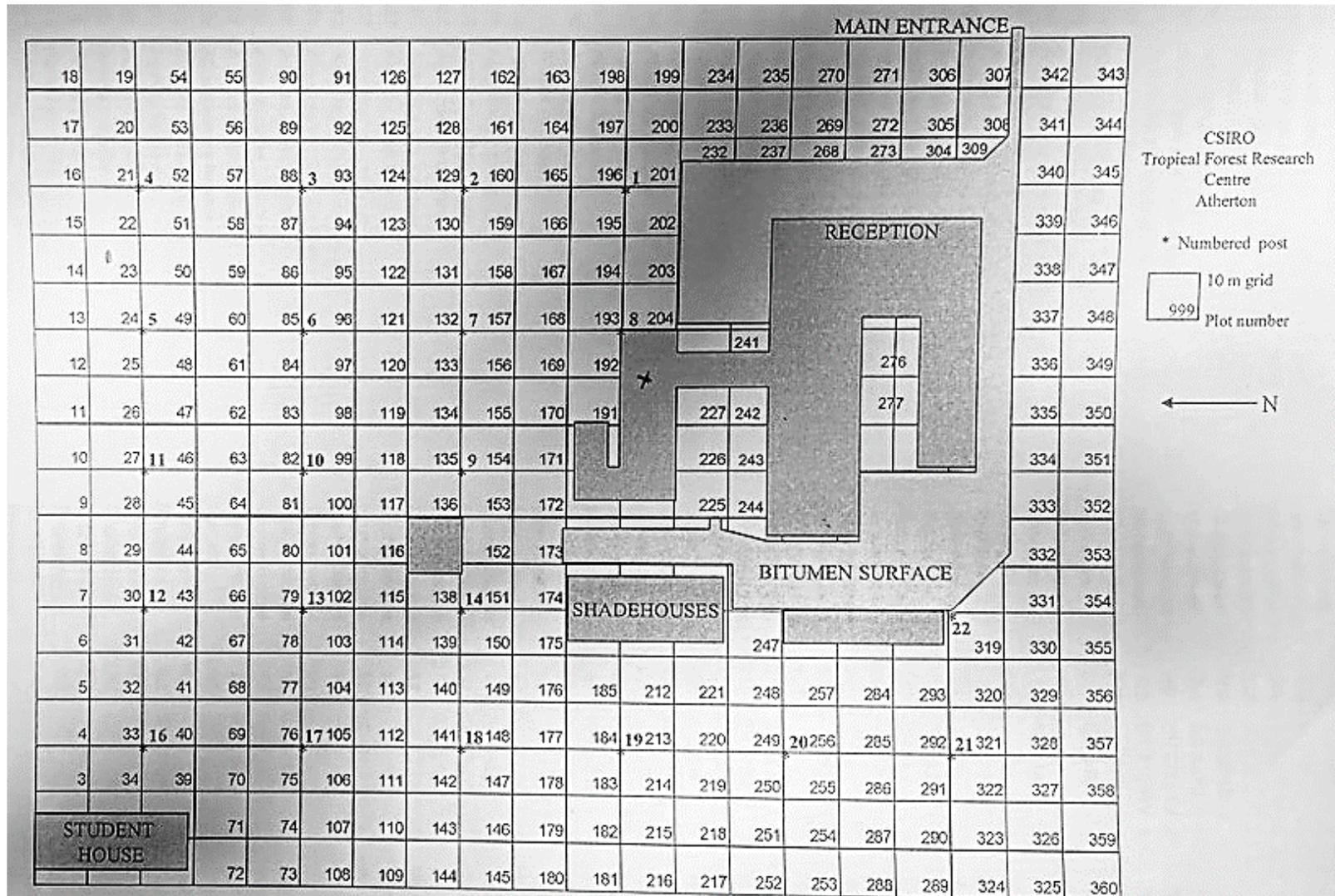


Datum: GDA2020
 Date: November 2023
 Source: Queensland Department of Resources 2022, 2023, Queensland Globe 2023.
 T:\L_AAA\100\WOR\100999\03\AthertonArboretumSitePlan_231126.WOR

Atherton Arboretum Proposed Heritage Register Boundary Spatial Coordinates

Description	Node Number	Latitude	Longitude
Proposed Heritage Register boundary 1	1	-17.257614	145.484275
	2	-17.257899	145.484254
	3	-17.257889	145.484145
	4	-17.259381	145.484031
	5	-17.259428	145.484596
	6	-17.259256	145.484614
	7	-17.259223	145.484326
	8	-17.258734	145.484376
	9	-17.258734	145.484308
	10	-17.258677	145.484307
	11	-17.25869	145.484427
	12	-17.258416	145.484421
	13	-17.258285	145.48459
	14	-17.25821	145.484835
	15	-17.258326	145.484824
	16	-17.258322	145.484691
	17	-17.258493	145.484688
	18	-17.258528	145.484944
	19	-17.258663	145.484927
	20	-17.258682	145.485156
	21	-17.258743	145.485348
	22	-17.25899	145.485453
	23	-17.2593	145.485457
	24	-17.259319	145.485668
	25	-17.257761	145.485802
	26	-17.257725	145.48577
	27	-17.257614	145.484275
Proposed Heritage Register boundary 2	28	-17.259349	145.485663
	29	-17.259521	145.485649
	30	-17.259447	145.484715
	31	-17.259359	145.484721
	32	-17.259289	145.484953
	33	-17.259349	145.485663
Proposed Heritage Register boundary 3	34	-17.258744	145.484772
	35	-17.25877	145.485018
	36	-17.258839	145.484768
	37	-17.258846	145.484792
	38	-17.258865	145.484792
	39	-17.258899	145.485018
Proposed Heritage Register boundary 4	40	-17.259016	145.4852
	41	-17.259023	145.485283
	42	-17.259126	145.485193
	43	-17.259129	145.48528

Attachment E – Atherton Arboretum Grid Map and Species Locations



Atherton Arboretum Specimen Plots

Atherton Arboretum Plot Specimen List

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
3	Myrtaceae	<i>Syzygium divaricatum</i>	01/01/1985	Wyvuri Holding	10	4185
3	Myrtaceae	<i>Syzygium hemilamprum</i> subsp. <i>hemilamprum</i>	17/01/1975	Portion 62 Alexandra - Noah Ck.	11	4187
3	Verbenaceae	<i>Clerodendrum longiflorum</i> var. <i>glabrum</i>	07/03/1974	Self Sown	9	3170
4	Lauraceae	<i>Cryptocarya melanocarpa</i>	20/01/1975	South QLD.	14	3327
4	Lauraceae	<i>Neolitsea dealbata</i>	20/01/1975	Source Unkown	12	3390
4	Moraceae	<i>Ficus superba</i>	01/04/1983	Bravery's Farm	15	4116
4	Rubiaceae	<i>Atractocarpus fitzalanii</i> subsp. <i>fitzalanii</i>	07/03/1974	TR 106	13	6097
4	Sapindaceae	<i>Elattostachys megalantha</i>	07/03/1974	SFR 700 Gillies LA	16	6521
5	Lauraceae	<i>Litsea fawcettiana</i>	05/06/1975	Halloran's Hill	20	3382
6	Lauraceae	<i>Cryptocarya corrugata</i>	01/03/1980	SFR 185 Noel LA	26	3313
6	Malvaceae	<i>Hibiscus tiliaceus</i>	01/01/1971	NPR 1353	23	3660
6	Rubiaceae	<i>Neonauclea glabra</i>	01/04/1979	Claudie River	22	6180
8	Myrtaceae	<i>Syzygium cormiflorum</i>	01/02/1982	SFR 310	32	4531
8	Rubiaceae	<i>Atractocarpus fitzalanii</i> subsp. <i>fitzalanii</i>	14/12/1993	TR 106 Poverty LA	31	6097
8	Rutaceae	<i>Acronychia laevis</i>	16/01/1974	SFR 185	36	6315
8	Rutaceae	<i>Dinosperma melanophloia</i>	01/01/1972	SFR 607	34	6350
10	Pandanaceae	<i>Pandanus gemmifer</i>	20/01/1975	TR 14 Leo Ck.Road	39	5027
11	Euphorbiaceae	<i>Choriceras tricornis</i>	16/01/1974	TR 14 (Transplant)	42	2239
11	Mimosaceae	<i>Archidendron hendersonii</i>	16/01/1975	Dan Metcalfe	1879	3997
11	Myrtaceae	<i>Syzygium mackinnoniana</i>	01/03/1971	Rocky River	43	4189
11	Myrtaceae	<i>Syzygium malaccense</i>	04/02/1976	Lockerbie	41	4555
11	Rubiaceae	<i>Neonauclea gordonana</i>	01/02/1981	Matt Bradford. Robson Ck 25ha seed trap (1/10/07)	1880	6180
12	Arecaceae	<i>Archontophoenix alexandrae</i>	04/02/1976	Rocky River	46	448
12	Burseraceae	<i>Garuga floribunda</i> var. <i>floribunda</i>	04/02/1976	Claudie River	44	1007
12	Myrtaceae	<i>Syzygium pseudofastigiatum</i>	02/04/1983	Pin Pin	45	4561
13	Moraceae	<i>Antiaris toxicaria</i> var. <i>macrophylla</i>	20/02/1975	Pin Pin	49	4076
13	Myrtaceae	<i>Syzygium fibrosum</i>	20/02/1975	Rocky River	47	4542
13	Sapindaceae	<i>Diploglottis diphylostegia</i>	20/02/1975	Claudie River	48	6489
14	Moraceae	<i>Ficus albipila</i>	20/02/1975	Rocky River	51	4082
15	Meliaceae	<i>Dysoxylum gaudichaudianum</i>	20/02/1975	TR 14	54	3758
16	Apocynaceae	<i>Alstonia spectabilis</i> subsp. <i>spectabilis</i>	01/01/1975	Claudie River	59	321
16	Ebenaceae	<i>Diospyros hebecarpa</i>	07/03/1974	TR 14 ? (Transplant)	55	2056
16	Lecythidaceae	<i>Barringtonia calyptata</i>	01/01/1972	Claudie River (Transplant)	56	3423
16	Lecythidaceae	<i>Barringtonia calyptata</i>	07/03/1974	Claudie River (Transplant)	57	3423
16	Lecythidaceae	<i>Barringtonia calyptata</i>	07/03/1974	Claudie River (Transplant)	58	3423
16	Lythraceae	<i>Lagerstroemia archeriana</i>	26/02/1973	Rocky River	60	3577
17	Araliaceae	<i>Schefflera bractescens</i>	26/02/1973	Alligator Creek	63	441
17	Combretaceae	<i>Terminalia complanata</i>	26/02/1973	Claudie River	61	1356
17	Euphorbiaceae	<i>Aleurites moluccanus</i>	26/02/1973	Iron Range (Transplant)	68	2187
17	Euphorbiaceae	<i>Endospermum myrmecophilum</i>	26/02/1973	Claudie River (Transplant)	66	2286
17	Fabaceae	<i>Austrosteensia</i> sp.	26/02/1973	Claudie River (Transplant)	62	9999
17	Lecythidaceae	<i>Barringtonia calyptata</i>	26/02/1973	Claudie River (Transplant)	67	3423
17	Lythraceae	<i>Lagerstroemia archeriana</i>	26/02/1973	Rocky River	69	3577
17	Moraceae	<i>Ficus septica</i>	21/01/1974	Claudie River (Transplant)	64	4113
17	Myrtaceae	<i>Syzygium fibrosum</i>	16/01/1974	Iron Range	65	4542
18	Combretaceae	<i>Terminalia complanata</i>	26/02/1973	Claudie River	72	1356
18	Myrtaceae	<i>Syzygium angophoroides</i>	26/02/1973	Seed from BH6608	71	4510
18	Myrtaceae	<i>Syzygium tierneyanum</i>	26/02/1973	SFR 1073	70	4568
19	Lauraceae	<i>Endiandra impressicosta</i>	26/02/1973	SFR 933	77	3358
19	Lecythidaceae	<i>Barringtonia calyptata</i>	01/03/1973	Claudie River (Transplant)	73	3423
19	Myristicaceae	<i>Horsfieldia australiana</i>	01/03/1984	Iron Range	76	4152
19	Myrtaceae	<i>Syzygium angophoroides</i>	26/02/1973	Seed from BH6608	74	4510
19	Myrtaceae	<i>Syzygium tierneyanum</i>	26/02/1973	SFR 1073	75	4568
20	Apocynaceae	<i>Alstonia spectabilis</i> subsp. <i>spectabilis</i>	01/03/1984	Claudie River	80	322
20	Lauraceae	<i>Cryptocarya hypospodia</i>	01/03/1973	Claudie River	81	3321
20	Meliaceae	<i>Vavaea amicornum</i>	26/02/1973	SFR 933 (Transplant)	79	3777
20	Nyctaginaceae	<i>Pisonia umbelliflora</i>	26/02/1978	Noah Creek	85	4636
20	Rutaceae	<i>Bosistoa medicinalis</i>	26/02/1973	Horse Ck. - Pascoe River Road	86	6335
20	Sterculiaceae	<i>Heritiera littoralis</i>	26/02/1973	SFR 185 (Transplant)	83	6868
21	Lauraceae	<i>Cryptocarya hypospodia</i>	26/02/1973	Claudie River	89	3321
21	Lauraceae	<i>Cryptocarya hypospodia</i>	26/02/1973	Claudie River	90	3321
21	Lauraceae	<i>Cryptocarya rhodosperma</i>	01/04/1983	Lockerbie	87	3333
21	Myrtaceae	<i>Syzygium puberulum</i>	26/02/1973	Claudie River	92	4562
21	Sapindaceae	<i>Mischarytera macrobotrys</i>	17/09/1980	Claudie River	91	6554
21	Sapindaceae	<i>Mischarytera macrobotrys</i>	26/02/1973	Claudie River	93	6554

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
21	Sterculiaceae	<i>Brachychiton acerifolius</i>	21/01/1974	(Transplant)	88	6833
22	Euphorbiaceae	<i>Glochidion pungens</i>	26/02/1973	TR 14	98	2313
22	Lauraceae	<i>Cryptocarya burckiana</i>	21/01/1974	Claudie River	102	3309
22	Meliaceae	<i>Dysoxylum gaudichaudianum</i>	14/03/1974	TR 14	100	3758
22	Mimosaceae	<i>Albizia retusaa</i>	21/01/1974	Iron Range (Transplant)	96	3992
22	Rhizophoraceae	<i>Carallia brachiata</i>	13/04/1974	Cape Conway	101	6066
22	Rutaceae	<i>Flindersia brassii</i>	20/02/1975	Puffdeeloony Ridge Iron Range	94	6359
22	Sterculiaceae	<i>Sterculia quadrifida</i>	07/03/1974	Iron Range	95	6890
23	Moraceae	<i>Ficus virgata</i>	01/01/1972	Rocky River	106	4122
23	Myrtaceae	<i>Syzygium pseudofastigiatum</i>	01/10/1975	Pin Pin	109	4561
23	Rutaceae	<i>Citrus garrawayae</i>	01/01/1972	TR 14	110	6340
24	Fabaceae	<i>Millettia pinnata</i>	07/03/1974	Archer River	112	2708
24	Monimiaceae	<i>Wilkiea rigidifolia</i>	07/03/1974	Claudie River	113	4052
24	Moraceae	<i>Ficus virgata</i>	08/06/1984	Rocky River	116	4122
24	Myrtaceae	<i>Eugenia reinwardtiana</i>	20/02/1975	A.Ford, ex-Mulgrave River	1873	4391
24	Myrtaceae	<i>Syzygium fibrosum</i>	20/02/1975	Rocky River	111	4542
25	Lauraceae	<i>Cryptocarya glaucocarpa</i>	20/02/1975	Claudie River	118	3319
25	Meliaceae	<i>Dysoxylum oppositifolium</i>	20/02/1975		119	3762
25	Myrsinaceae	<i>Myrsine porosa</i>	20/02/1975	TR 14 (Transplant)	121	4175
25	Myrtaceae	<i>Xanthostemon chrysanthus</i>	20/02/1975	TR 14 Leo Creek (Transplant)	120	4592
25	Sapindaceae	<i>Flindersia laevicarpa</i>	01/01/1988	A.Ford	1851	6535
26	Annonaceae	<i>Monoon patinatum</i>	20/02/1975	A.Ford, El Arish	1872	
26	Myrsinaceae	<i>Myrsine porosa</i>	01/04/1984	TR 14 (Transplant)	122	4175
26	Rutaceae	<i>Halfordia kendack</i>	17/09/1980	TR.14 (Transplant)	123	6372
27	Lauraceae	<i>Litsea breviumbellata</i>		Lockerbie-Somerset	125	3380
27	Lauraceae	<i>Litsea breviumbellata</i>	04/02/1976	Lockerbie-Somerset	126	3380
27	Proteaceae	<i>Helicia glabriflora</i>	04/02/1976	TR.14 (Transplant)	127	5963
28	Euphorbiaceae	<i>Cleistanthus hylandii</i>	04/02/1976	TR.14 (Transplant)	131	2248
28	Lauraceae	<i>Cinnamomum baileyianum</i>	04/02/1976	TR.14 (Transplant)	130	3298
28	Pandanaceae	<i>Pandanus gemmifer</i>	01/04/1981	TR.14 Leo Ck.Road	132	5027
28	Rutaceae	<i>Acronychia acronychioides</i>	01/04/1981	SFR 185 (Transplant)	129	6309
29	Celastraceae	<i>Maytenus disperma</i>	04/02/1976	SFR 144	134	1233
29	Elaeocarpaceae	<i>Peripentadenia phelpsi</i>	04/02/1976	NPR 133	139	
29	Idiospermaceae	<i>Idiospermum australiense</i>	04/02/1976	Noah Creek	133	3136
29	Lauraceae	<i>Cryptocarya onoprienkoana</i>	04/02/1976	SFR 194	135	3330
29	Myrtaceae	<i>Gossia bidwillii</i>	04/02/1976	Downfall Creek	1838	4396
29	Myrtaceae	<i>Syzygium papyraceum</i>	16/01/1974	TR 1230 Boonjie	138	4560
29	Sapindaceae	<i>Ganophyllum falcatum</i>	28/02/1980	Little Mulgrave River	137	6524
30	Lauraceae	<i>Cryptocarya cocosoides</i>	01/02/1978	A.Ford, Mt Baldy plot	1839	3312
30	Myrtaceae	<i>Syzygium australe</i>	01/02/1978	Carrington Falls	142	4523
30	Myrtaceae	<i>Syzygium australe</i>	16/01/1974	Carrington Falls	147	4523
30	Myrtaceae	<i>Syzygium sayeri</i>	01/02/1979	SFR 191	146	4564
30	Rutaceae	<i>Flindersia laevicarpa</i>	10/01/1973	SFR 185 EP/9	144	6364
31	Idiospermaceae	<i>Idiospermum australiense</i>	16/01/1974	Noah Creek	151	3136
31	Rubiaceae	<i>Antirhea putaminosa</i>	20/01/1975	Barrabas Scrub	152	6092
31	Sapindaceae	<i>Toechima erythrocarpum</i>	08/07/1998	SFR 607	150	6588
32	Euphorbiaceae	<i>Macaranga tanarius</i>	16/01/1974	SFR 299	158	2334
32	Myrtaceae	<i>Syzygium cryptophlebium</i>	16/01/1974	Hutchison Creek (Seedling collection)	160	4533
32	Myrtaceae	<i>Syzygium gustavioides</i>	16/01/1974	TR 142 Zarda LA	161	4549
32	Myrtaceae	<i>Syzygium papyraceum</i>	16/01/1974	TR 1230 Boonjie	157	4560
32	Sapindaceae	<i>Toechima daemelianum</i>	16/01/1974	Iron Range	155	6587
33	Lauraceae	<i>Endiandra impressicosta</i>	04/11/1999	Julatten	162?	3358
33	Lauraceae	<i>Endiandra longipedicellata</i>	26/02/1973	TR 1230 Boonjie LA	162	3362
33	Lauraceae	<i>Endiandra palmerstonii</i>	16/01/1974	SFR 310 (Transplant)	163	3369
33	Moraceae	<i>Streblus brunonianus</i>	01/04/1984	VCL Gadgarra	164	4126
33	Myrtaceae	<i>Thaleropia queenslandica</i>	04/02/1976	SFR 194 Cpt.55	165	4575
33	Sapindaceae	<i>Sarcopteryx martyana</i>	07/03/1974	SFR 185	166	6574
34	Myrtaceae	<i>Syzygium forte subsp. forte</i>	01/03/1984	TR 1137	172	4544
34	Myrtaceae	<i>Syzygium hemilamprum subsp. hemilamprum</i>	07/03/1974	Portion 62 Alexandra - Noah Ck.	170	4187
34	Myrtaceae	<i>Thaleropia queenslandica</i>	01/04/1983	SFR 194 Cpt.55	169	4575
34	Rutaceae	<i>Dinosperma melanophloia</i>	07/03/1974	SFR 144	167	6350
35	Proteaceae	<i>Lasjia claudiensis</i>	01/03/1978	Claudie River	174	5975
39	Euphorbiaceae	<i>Mallotus philippensis</i>	21/12/1979	SFR 700 Gillies LA	193	2342
39	Proteaceae	<i>Lasjia whelanii</i>	07/03/1974	SFR 143 Little Mossman LA	198	5977
39	Verbenaceae	<i>Clerodendrum longiflorum var. glabrum</i>	07/03/1974	Goldsborough	195	3170
40	Lauraceae	<i>Cryptocarya lividula</i>	17/01/1975	???	205	3324

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
40	Lauraceae	<i>Endiandra microneura</i>	17/01/1975	Daintree	203	3363
40	Myrtaceae	<i>Syzygium angophoroides</i>	01/01/2004	VCL Noah - Near Oliver Ck.	200	4510
40	Myrtaceae	<i>Syzygium paniculatum</i>	01/01/1972	Seed from Arboretum	201	9999
41	Davidsoniaceae	<i>Davidsonia pruriens</i>	17/01/1975	Butchers Creek	207	1938
41	Lauraceae	<i>Endiandra impressicosta</i>	01/04/1983	SFR 933	211	3358
41	Lauraceae	<i>Endiandra palmerstonii</i>	07/03/1974	SFR 310 (Transplant)	208	3369
41	Myrtaceae	<i>Syzygium hemilamprum subsp. hemilamprum</i>	01/10/1984	Portion 62 Alexandra - Noah Ck.	206	4187
41	Myrtaceae	<i>Syzygium papyraceum</i>	16/01/1974	TR 1230	212	4560
41	Proteaceae	<i>Carnarvonia aralifolia var. montana</i>	01/03/1984	SFR 194	210	5927
42	Euphorbiaceae	<i>Macaranga tanarius</i>	01/01/1972	SFR 299	214	2334
42	Lauraceae	<i>Cryptocarya onoprienkoana</i>	07/03/1975	SFR 194	215	3330
42	Lauraceae	<i>Neolitsea dealbata</i>	01/04/1983	SFR 607	218	3390
42	Sapindaceae	<i>Sarcopteryx reticulata</i>	07/03/1974	SFR 143	217	6574
42	Sterculiaceae	<i>Argyrodendron sp. (Mt Haig L.S.Smith+ 14307)</i>	07/03/1974	Windsor Tableland	219	6828
43	Lauraceae	<i>Cryptocarya mackinnoniana</i>	07/03/1974	TR 1230	220	3326
43	Lauraceae	<i>Litsea leefeana</i>	20/03/1974	SFR 185	224	3385
43	Rutaceae	<i>Dinosperma melanophloia</i>	26/02/1978	SFR 607	222	6350
43	Sterculiaceae	<i>Argyrodendron sp. (Whyanbeel B.P.Hyland RFK1106)</i>	16/01/1974	TR 55	225	6830
44	Fabaceae	<i>Millettia pinnata</i>	01/04/1984	Noah Creek (Transplant)	230	2708
44	Myrtaceae	<i>Sphaerantia discolor</i>	01/02/1978	SFR 756	232	4513
44	Myrtaceae	<i>Syzygium sayeri</i>	01/04/1979	SFR 191	229	4564
44	Sapindaceae	<i>Arytera divaricata</i>	16/01/1974	Morgan River Crossing	231	6451
44	Sterculiaceae	<i>Argyrodendron actinophyllum subsp. diversifolium</i>	01/04/1979	Dotswood Holding	228	6823
45	Fabaceae	<i>Millettia pinnata</i>	16/01/1974	Archer River	236	2708
45	Verbenaceae	<i>Vitex helogiton</i>	16/01/1974	Packers Creek	238	3273
46	Lauraceae	<i>Cinnamomum baileyana</i>	16/01/1974	TR 14 (Transplant)	239	3298
46	Lauraceae	<i>Cryptocarya clarksoniana</i>	17/01/1975		240	3310
46	Lauraceae	<i>Cryptocarya rhodosperma</i>	10/04/1980	TR 14	242	3333
46	Proteaceae	<i>Grevillea baileyana</i>	16/01/1974	TR 14 Mcllwraith Range (Transplant)	241	5934
47	Araliaceae	<i>Polyscias australiana</i>	11/05/1973	TR.14 (Transplant)	244	430
47	Myrtaceae	<i>Gossia sheperdii</i>	20/01/1975	Andrew Ford	1878	4408
47	Myrtaceae	<i>Syzygium hemilamprum subsp. hemilamprum</i>	12/04/1988	Portion 62 Alexandra - Noah Ck.	245	4187
47	Myrtaceae	<i>Xanthostemon chrysanthus</i>	01/04/1978	TR 14 Leo Creek (Transplant)	246	4592
48	Euphorbiaceae	<i>Alchornea rugosa</i>	01/02/1976	Tip Creek	249	2185
48	Myrtaceae	<i>Syzygium mackinnoniana</i>	27/05/1976	Rocky River	248	4189
48	Myrtaceae	<i>Xanthostemon chrysanthus</i>	01/03/1984	TR 14 Leo Creek (Transplant)	247	4592
49	Lauraceae	<i>Cryptocarya claudiana</i>	04/02/1976	Gordon Creek	253	3311
49	Moraceae	<i>Ficus virgata</i>		Rocky River	252	4122
49	Sapindaceae	<i>Diploglottis diphylostegia</i>	04/02/1976	Claudie River	250	6489
49	Sapindaceae	<i>Harpullia ramiflora</i>	01/06/1984	Claudie River	251	6537
50	Celastraceae	<i>Hedraianthera porphyropetala</i>	04/02/1976	A.Ford, Oliver Creek	1849	1223
50	Lauraceae	<i>Cryptocarya rhodosperma</i>	07/03/1974	Lockerbie	257	3333
50	Meliaceae	<i>Dysoxylum gaudichaudianum</i>	04/02/1976	TR 14	260	3758
50	Myrtaceae	<i>Gossia floribunda</i>	04/02/1976	Iron Range (Transplant)	259	4398
50	Myrtaceae	<i>Syzygium forte subsp. forte</i>	04/02/1976	Jardine River	258	4544
50	Proteaceae	<i>Stenocarpus davallioides</i>	20/02/1975	EP18 Mt Lewis, transplant	1846	5994
51	Myrtaceae	<i>Gossia floribunda</i>	20/02/1975	Iron Range (Transplant)	261	4398
51	Sapindaceae	<i>Mischarytera macrobotrys</i>	10/02/1980	Claudie River	255	6554
51	Sterculiaceae	<i>Sterculia quadrifida</i>	20/02/1975	Iron Range	262	6890
52	Clusiaceae	<i>Calophyllum sil</i>	01/06/1984	Iron Range (Transplant)	267	1318
52	Lauraceae	<i>Cinnamomum oliveri</i>	21/01/1974	Iron Range (Transplant)	274	3301
52	Monimiaceae	<i>Wilkia rigidifolia</i>	17/09/1980	Claudie River	271	4052
52	Moraceae	<i>Ficus nodosa</i>	01/02/1981	Gordon Creek	269	4101
52	Myrtaceae	<i>Syzygium aqueum</i>	07/03/1974	Claudie River	272	4521
52	Rosaceae	<i>Prunus brachystachya</i>	07/03/1974	TR 14	265	6077
52	Sapindaceae	<i>Mischarytera macrobotrys</i>	07/03/1974	Claudie River	276	6554
52	Sterculiaceae	<i>Argyrodendron polyandrum</i>	20/02/1975	Claudie River (Transplant)	268	6825
52	Sterculiaceae	<i>Argyrodendron polyandrum</i>	13/04/1973	Claudie River	277	6825
53	Lauraceae	<i>Beilschmiedia obtusifolia</i>	01/01/1971	Iron Range	279	867
53	Lauraceae	<i>Cryptocarya hypospodia</i>	21/11/1974	Claudie River	281	3321
53	Myrtaceae	<i>Syzygium fibrosum</i>	26/02/1973	Iron Range	282	4542
54	Euphorbiaceae	<i>Aleurites moluccanus</i>	26/02/1973	Iron Range (Transplant)	287	2188
54	Mimosaceae	<i>Albizia retusaa</i>	26/02/1973	Iron Range (Transplant)	288	3992
54	Myrtaceae	<i>Syzygium angophoroides</i>	01/02/1983	Seed from BH6608	285	4510
55	Combretaceae	<i>Terminalia sericocarpa</i>	21/01/1974	Claudie River	294	1367
55	Lauraceae	<i>Cryptocarya hypospodia</i>	26/02/1973	Claudie River	296	3321

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
55	Myrtaceae	<i>Syzygium angophoroides</i>	27/05/1976	Seed from BH6608	290	4510
55	Sapindaceae	<i>Toechima daemelianum</i>	21/01/1974	Iron Range (Transplant)	295	6587
55	Sterculiaceae	<i>Brachychiton velutinosus</i>	26/02/1973	Iron Range (Transplant)	289	6849
56	Combretaceae	<i>Terminalia sericocarpa</i>	01/01/1974	Claudie River	303	1367
56	Monimiaceae	<i>Wilkiea rigidifolia</i>	26/02/1974	Claudie River (Transplant)	299	4052
56	Myrtaceae	<i>Syzygium puberulum</i>	21/01/1974	Claudie River	297	4562
56	Rosaceae	<i>Prunus brachystachya</i>	16/01/1974	TR 14	300	6077
56	Sterculiaceae	<i>Sterculia shillinglawii</i>	01/03/1984	Iron Range (Transplant)	302	6891
57	Apocynaceae	<i>Alstonia spectabilis</i> subsp. <i>spectabilis</i>	26/02/1973	Claudie River	307	323
57	Moraceae	<i>Ficus nodosa</i>	26/02/1973	Gordon Creek	311	4101
57	Rutaceae	<i>Flindersia brassii</i>	07/03/1974	Puffdeloony Ridge Iron Range	314	6359
57	Sapotaceae	<i>Chrysophyllum roxburghii</i>	01/03/1984	Claudie River	308	6592
58	Euphorbiaceae	<i>Glochidion pungens</i>	26/02/1973	TR 14	315	2313
58	Mimosaceae	<i>Albizia retusaa</i>	26/02/1973	Iron Range (Transplant)	316	3992
58	Sapindaceae	<i>Mischarytera macrobotrys</i>	26/02/1973	Claudie River	317	6554
59	Anacardiaceae	<i>Blepharocarya involucrigera</i>	14/03/1974	Lockerbie	321	215
59	Lauraceae	<i>Cryptocarya glaucocarpa</i>	26/02/1973	Claudie River	323	3319
59	Loganiaceae	<i>Fagraea berteroaana</i>	21/01/1974	TR 14 Leo Creek	324	2879
59	Myrtaceae	<i>Rhodomyrtus macrocarpa</i>	26/02/1973	TR 14	325	4503
60	Arecaceae	<i>Ptychosperma elegans</i>	26/02/1973	Claudie River	328	488
60	Lauraceae	<i>Cinnamomum baileyannum</i>	26/02/1973		326	3298
60	Myrtaceae	<i>Gossia bidwillii</i>	21/02/1973	Downfall Creek	1834	4396
61	Malvaceae	<i>Berrya javanica</i>	26/02/1973	Iron Range - seedling	330	6997
61	Proteaceae	<i>Grevillea baileyana</i>	13/04/1974	TR 14 McIlwraith Range (Transplant)	331	5934
61	Rubiaceae	<i>Timonius timon</i> var. <i>timon</i>	01/10/1975	Pin Pin	329	6294
62	Bignoniaceae	<i>Deplanchea tetraphylla</i>	07/03/1974	TR 14 (Transplant)	333	866
62	Myrsinaceae	<i>Myrsine porosa</i>	21/01/1974	TR 14	334	4175
62	Myrtaceae	<i>Rhodamnia longisepala</i>	01/04/1981	A.Ford	1836	4493
62	Myrtaceae	<i>Syzygium aqueum</i>	17/09/1980	Claudie River	335	4521
63	Clusiaceae	<i>Garcinia warrenii</i>	07/04/1974	Lockerbie	343	1326
63	Euphorbiaceae	<i>Antidesma ghaesembilla</i>	04/02/1976	Cape York ? NT Darwin	342	2192
63	Euphorbiaceae	<i>Cleistanthus hylandii</i>		TR 14 (Transplant)	338	2248
63	Mimosaceae	<i>Albizia lebbeck</i>	08/11/1982	Chester River	340	3990
64	Euphorbiaceae	<i>Mallotus philippensis</i>	07/03/1974	Upper Barron	337	2342
64	Euphorbiaceae	<i>Mallotus philippensis</i>	20/02/1975	new germination	345	2342
64	Lauraceae	<i>Litsea breviumbellata</i>	04/02/1976	Lockerbie-Somerset	344	3380
65	Anacardiaceae	<i>Euroschinus falcatus</i> var. <i>falcatus</i>	04/02/1976	Tolga	352	219
65	Lauraceae	<i>Cryptocarya triplinervis</i>	04/02/1976	Rotary Park Atherton	347	3337
65	Lauraceae	<i>Endiandra cowleyana</i>	01/02/1983	SFR 191	354	3350
65	Melastomataceae	<i>Memecylon pauciflorum</i>	01/02/1983	Chester River	355	3732
65	Melastomataceae	<i>Memecylon pauciflorum</i>	01/05/1982	Chester River	356	3732
65	Myrtaceae	<i>Syzygium claviflorum</i>	04/02/1976	SFR 299	348	4192
65	Sapindaceae	<i>Diploglottis smithii</i>	01/04/1979	Babinda	349	6494
65	Verbenaceae	<i>Vitex queenslandica</i>	01/02/1983	SFR 191	353	3280
66	Lauraceae	<i>Cryptocarya triplinervis</i>	01/02/1981	Rotary Park Atherton	346	3337
66	Moraceae	<i>Ficus obliqua</i>	01/04/1981	Melville Range	358	4102
67	Apocynaceae	<i>Alyxia spicata</i>		Coastal Plant	336	328
67	Lauraceae	<i>Cryptocarya mackinnoniana</i>	01/02/1980	TR 1230	368	3326
67	Lauraceae	<i>Endiandra microneura</i>	01/03/1984	Daintree	369	3363
67	Myrtaceae	<i>Syzygium australe</i>	01/03/1984	Seed from Arboretum	370	4523
67	Myrtaceae	<i>Syzygium oleosum</i>	01/04/1984	SFR 194 Cpt.50	371	4559
67	Rubiaceae	<i>Neonauclera glabra</i>	01/02/1984	Claudie River	367	6180
68	Myrtaceae	<i>Syzygium kuranda</i>	01/02/1983	TR 146	374	4552
68	Sapindaceae	<i>Elattostachys megalantha</i>	16/01/1974	SFR 700 Gillies LA	376	6521
69	Moraceae	<i>Ficus superba</i>	01/02/1987	Bravery's Farm	377	4116
69	Proteaceae	<i>Stenocarpus sinuatus</i>	01/02/1987	Atherton	380	5996
70	Myrtaceae	<i>Ristantia gouldii</i>	01/03/1984	TR 1230	391	4509
70	Myrtaceae	<i>Syzygium claviflorum</i>	01/04/1979	SFR 299	390	4192
70	Rutaceae	<i>Flindersia laeviscarpa</i>	16/01/1974	SFR 185 EP/9	387	6364
70	Sapotaceae	<i>Mimusops elengi</i>	07/03/1975	Weary Bay	388	6594
71	Flacourtiaceae	<i>Scolopia braunii</i>	01/03/1984	SFR 607	396	2871
72	Apocynaceae	<i>Alstonia scholaris</i>	16/01/1974	SFR 452	404	320
73	Sapindaceae	<i>Diploglottis diphyllostegia</i>	20/02/1975	SFR 191	406	6489
73	Sapindaceae	<i>Guioa acutifolia</i>	07/03/1974	Lake Eacham NPWS Nursery	405	6526
74	Euphorbiaceae	<i>Cleidion javanicum</i>	07/03/1974	Claudie River	408	2243
74	Flacourtiaceae	<i>Scolopia braunii</i>	01/02/1982	SFR 607	412	2871

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
74	Oleaceae	<i>Ligustrum australianum</i>	20/01/1975	SFR 310 Goldsbrough LA	409	4668
74	Oleaceae	<i>Ligustrum australianum</i>	17/01/1975	SFR 310 Goldsbrough LA	410	4668
74	Rutaceae	<i>Dinosperma melanophloia</i>	01/03/1984	SFR 144	411	6350
74	Rutaceae	<i>Pitaviaster haplophyllus</i>	17/01/1975	SFR 310	414	6402
74	Sapotaceae	<i>Planchonella chartacea</i>	17/01/1975	Wyvuri Holding	413	6604
75	Euphorbiaceae	<i>Mallotus paniculatus</i>	01/04/1983	NPR 398	417	2341
75	Lauraceae	<i>Endiandra longipedicellata</i>	05/03/1984	Freshwater Creek	419	3362
75	Moraceae	<i>Ficus triradiata</i>	17/01/1975	TR 142 Zarda LA	420	4117
75	Moraceae	<i>Ficus virens var. virens</i>	10/02/1979	Mount Molloy Holding	418	4121
75	Myrsinaceae	<i>Myrsine variabilis</i>	01/02/1983	40 Mile Scrub	416	4180
75	Sapindaceae	<i>Diploglottis diphylostegia</i>	01/02/1983	SFR 191	423	6489
75	Verbenaceae	<i>Vitex queenslandica</i>	01/04/1980	SFR 191	422	3280
76	Lauraceae	<i>Endiandra palmerstonii</i>	17/01/1975	SFR 310 (Transplant)	425	3369
76	Meliaceae	<i>Dysoxylum papuanum</i>	17/01/1975	TR 1230	424	3763
76	Myrtaceae	<i>Syzygium monospermum</i>	03/02/1984	VCL Noah	428	4537
76	Sterculiaceae	<i>Firmiana papuana</i>	01/03/1984	SFR 191	427	6858
77	Ebenaceae	<i>Diospyros hebecarpa</i>	01/02/1983	SFR 607	439	2056
77	Euphorbiaceae	<i>Macaranga tanarius</i>	01/02/1982	SFR 299	438	2334
77	Proteaceae	<i>Carnarvon araliifolia var. araliifolia</i>	04/03/1985	SFR 607 Bridle LA	436	5926
77	Sapindaceae	<i>Diploglottis diphylostegia</i>	17/01/1975		435	6489
78	Myrtaceae	<i>Syzygium angophoroides</i>	01/02/1983	VCL Noah	444	4510
78	Pittosporaceae	<i>Auranticarpa papyracea</i>	17/01/1975	SFR 194	446	5094
78	Proteaceae	<i>Helicia australasica</i>	17/01/1975	SFR 144	443	5961
78	Sapindaceae	<i>Toechima pterocarpum</i>	07/03/1974	Julatten	441	6590
78	Sterculiaceae	<i>Argyrodendron sp. (Whyanbeel B.P.Hyland RFK1106)</i>	01/04/1983	TR 55	445	6830
78	Theaceae	<i>Ternstroemia cherryi</i>	07/03/1974	SFR 143	447	6945
78	Ulmaceae	<i>Celtis paniculata</i>		SFR 191	442	7046
79	Lauraceae	<i>Cryptocarya murrayi</i>	17/01/1975	TR 1230	449	3328
79	Myrtaceae	<i>Syzygium angophoroides</i>	01/04/1984	VCL Noah	453	4510
79	Sapindaceae	<i>Toechima pterocarpum</i>	07/03/1974	Julatten	450	6590
80	Myristicaceae	<i>Myristica insipida</i>	01/01/1980	TR 1230	457	4154
80	Myrtaceae	<i>Syzygium smithii</i>	01/03/1983	SFR 194	460	4191
80	Rutaceae	<i>Acronychia crassipetala</i>	07/03/1981	SFR 194	456	6312
80	Sterculiaceae	<i>Argyrodendron trifoliolatum</i>	16/01/1974	Windsor Tableland	458	6831
81	Annonaceae	<i>Monoon australe</i>	17/01/1975	Bamaga	462	262
81	Bombacaceae	<i>Bombax ceiba var. leiocarpum</i>	01/05/1982	Croll Creek Holding	464	914
81	Bombacaceae	<i>Bombax ceiba var. leiocarpum</i>	20/04/1976	Croll Creek Holding	465	914
81	Mimosaceae	<i>Albizia lebbeck</i>	16/01/1974	Chester River	463	3990
82	Ebenaceae	<i>Diospyros hebecarpa</i>	01/01/1980	SFR 607	474	2056
82	Lauraceae	<i>Endiandra phaeocarpa</i>	16/01/1974	Dan Metcalfe	1876	3370
82	Myrtaceae	<i>Syzygium aqueum</i>	01/04/1982	Claudie River	471	4521
82	Myrtaceae	<i>Syzygium macilwraithianum</i>	16/01/1974	TR 14	469	4554
82	Rutaceae	<i>Halfordia kendack</i>	01/04/1982	TR 14 (Transplant)	473	6372
82	Verbenaceae	<i>Vitex helogiton</i>	12/04/1980	Packers Creek	472	3273
83	Annonaceae	<i>Monoon patinatum</i>	01/04/1981	A.Ford, El Arish	1871	
83	Lauraceae	<i>Endiandra phaeocarpa</i>	01/04/1979	Dan Metcalfe, seed from Mt Lewis, near EP18 (13/12/2005)	1877	3370
83	Mimosaceae	<i>Archidendron hirsutum</i>	01/04/1982	Near Lockerbie Station	482	3998
83	Myrtaceae	<i>Xanthostemon chrysanthus</i>	01/04/1982	TR 14 Leo Creek (Transplant)	476	4592
84	Euphorbiaceae	<i>Margaritaria indica</i>	01/06/1976	NPR 8	488	2350
84	Lauraceae	<i>Cryptocarya cunninghamii</i>	01/02/1983	Claudie River	489	3314
84	Proteaceae	<i>Grevillea baileyana</i>	01/03/1984	TR 14 McIlwraith Range (Transplant)	486	5934
85	Lauraceae	<i>Cryptocarya cunninghamii</i>	04/02/1976	Claudie River	493	3314
85	Lauraceae	<i>Cryptocarya murrayi</i>	07/03/1974	TR 1230 River	497	3328
85	Myrtaceae	<i>Syzygium aqueum</i>	04/02/1976	Claudie River	496	4521
85	Myrtaceae	<i>Syzygium macilwraithianum</i>	12/04/1988		498	4554
85	Rubiaceae	<i>Timonius timon var. timon</i>	01/04/1982	Pin Pin	495	6294
86	Meliaceae	<i>Dysoxylum gaudichaudianum</i>	04/02/1976	TR 14	500	3758
86	Myristicaceae	<i>Horsfieldia australiana</i>	10/10/1984	Iron Range	501	4152
86	Myrtaceae	<i>Syzygium bamagense</i>	01/03/1984	Lockerbie	504	4524
86	Myrtaceae	<i>Syzygium bungadinnia</i>	17/09/1980	Garraway Range	502	4529
86	Myrtaceae	<i>Syzygium bungadinnia</i>	01/14/79	Garraway Range	503	4529
87	Euphorbiaceae	<i>Aleurites moluccanus</i>	07/03/1974	Iron Range (Transplant)	507	2189
87	Fabaceae	<i>Millettia pinnata</i>	01/02/1983	Archer River	511	2708
87	Lauraceae	<i>Cryptocarya glaucocarpa</i>	16/01/1974	Claudie River	509	3319
87	Moraceae	<i>Ficus albipila</i>	01/06/1977	Rocky River	506	4082
87	Myrtaceae	<i>Syzygium forte subsp. forte</i>	07/03/1974	Jardine River	508	4544

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
87	Rutaceae	<i>Flindersia brassii</i>	26/02/1973	Puffdeloony Ridge Iron Range	512	6359
87	Sterculiaceae	<i>Brachychiton velutinosus</i>	01/04/1979	Iron Range (Transplant)	510	6849
88	Euphorbiaceae	<i>Cleistanthus apodus</i>	01/04/1979	Iron Range (Transplant)	520	2244
88	Lauraceae	<i>Cryptocarya rhodosperma</i>	01/03/1982	TR 14	515	3333
88	Malvaceae	<i>Berrya javanica</i>	07/03/1974	Iron Range - seedling	521	6997
88	Moraceae	<i>Ficus nodosa</i>	03/07/1974	Gordon Creek	516	4101
88	Sapindaceae	<i>Harpullia ramiflora</i>	01/02/1981	Claudie River	518	6537
89	Araliaceae	<i>Schefflera bractescens</i>	17/09/1980	Alligator Ck.	528	441
89	Lauraceae	<i>Beilschmiedia obtusifolia</i>	07/03/1974	Iron Range	526	867
89	Lauraceae	<i>Endiandra longipedicellata</i>	07/03/1974	Iron Range	524	3362
89	Liliaceae	<i>Priophrys amboinensis</i>	13/04/1974	Cardwell	531	210
89	Loganiaceae	<i>Fagraea berteriana</i>	01/06/1984	TR 14 Leo Creek	523	2879
89	Myrtaceae	<i>Syzygium angophoroides</i>	26/02/1973	Seed from BH6608	522	4510
89	Rutaceae	<i>Lunasia amara</i>	10/02/1980	Claudie River (Transplant)	529	6375
90	Datiaceae	<i>Tetrameles nudiflora</i>	26/02/1973	Lankelly Creek	535	1932
90	Euphorbiaceae	<i>Phyllanthus cuscutiflorus</i>	20/02/1975	SFR 310	537	2368
90	Moraceae	<i>Ficus nodosa</i>	01/03/1984	Gordon Creek	538	4101
90	Myrtaceae	<i>Syzygium angophoroides</i>	26/02/1973	Seed from BH6608	532	4510
90	Myrtaceae	<i>Syzygium angophoroides</i>	21/01/1974	Seed from BH6608	533	4510
90	Pandanaceae	<i>Pandanus sp.</i>	26/02/1974	Unknown Source	534	9999
90	Sterculiaceae	<i>Sterculia quadrifida</i>	26/02/1973	NPR 8	530	6890
91	Euphorbiaceae	<i>Omphalea queenslandiae</i>	26/02/1973	Wyvuri Holding	540	2356
91	Euphorbiaceae	<i>Omphalea queenslandiae</i>	01/04/1982	Wyvuri Holding	542	2356
91	Euphorbiaceae	<i>Omphalea queenslandiae</i>	01/04/1976	Wyvuri Holding	543	2356
91	Myrtaceae	<i>Syzygium tierneyanum</i>	01/03/1984	SFR 1073	539	4568
91	Myrtaceae	<i>Syzygium tierneyanum</i>	01/03/1984	SFR 1073	541	4568
91	Oleaceae	<i>Jasminum simplicifolia subsp. australiense</i>	26/02/1973	Cutting.Cape york	544	4667
92	Mimosaceae	<i>Entada phaseoloides</i>	26/02/1973	Old Lockhart River Mission Road	546	4011
92	Mimosaceae	<i>Entada phaseoloides</i>	01/03/1984	Old Lockhart River Mission Road	547	4011
93	Annonaceae	<i>Melodorum leichhardtii</i>	21/01/1974	Nicholas Creek	551	250
93	Verbenaceae	<i>Petraevitex multiflora</i>	01/03/1973	Claudie River	550	3203
94	Verbenaceae	<i>Glossocarya hemiderma</i>	20/02/1975	Wyvuri Holding (Transplant)	556	3179
95	Convolvulaceae	<i>Erycibe coccinea</i>	18/12/1971	Russell River East of Bellenden Ker	557	1422
95	Fabaceae	<i>Austrosteenisia blackii</i>	20/02/1975	SFR 185	561	2461
95	Menispermaceae	<i>Sarcopetalum harveyanum</i>	20/02/1975	Wyvuri Holding (Transplant)	552	3796
95	Vitidaceae	<i>Cissus sterculiifolia</i>	01/04/1988	SFR 185	562	7140
96	Mimosaceae	<i>Acacia pennata subsp. kerrii</i>	01/04/1974	Lockerbie	567	9999
96	Passifloraceae	<i>Hollrungia sp.</i>	01/04/1974	SFR 194	581	9999
97	Asclepiadaceae	<i>Ichnocarpus frutescens</i>	14/03/1974	Pascoe River (Transplant)	574	342
97	Asclepiadaceae	<i>Ichnocarpus frutescens</i>	10/02/1976	Pascoe River (Transplant)	579	342
97	Fabaceae	<i>Dalbergia densa var. australis</i>	01/04/1975	King Park. Iron Range	565	2545
97	Hippocrateaceae	<i>Salacia chinensis</i>	01/10/1975	Portion 62 Alexandra	569	1239
97	Leguminosae	<i>Acacia pennata subsp. kerrii</i>	01/04/1982	Lockerbie	558	9999
97	Menispermaceae	<i>Legnephora moorei</i>	18/09/1979	SFR 675 Mulgrave LA	564	3790
97	Vitidaceae	<i>Cissus adnata</i>	15/01/1980	Goldsborough SFR 310	566	7129
97	Vitidaceae	<i>Tetrastigma thorsborneorum</i>	12/09/1977	Goldsborough	570	7146
98	Arecaceae	<i>Livistona benthamii</i>	02/09/1976	Swamp Creek	480	479
98	Bignoniaceae	<i>Pandorea jasminoides</i>	01/04/1983	SFR 652.Cauley	578	876
98	Connaraceae	<i>Connarus conchocarpus subsp. conchocarpus</i>	20/02/1978	SFR 933	576	1405
98	Fabaceae	<i>Ibatiria furfuracea</i>	18/09/1979	TR 1230 Boonjie	571	9999
98	Fabaceae	<i>Ibatiria furfuracea</i>	01/04/1982	TR 1230 Boonjie	572	9999
98	Fabaceae	<i>Ibatiria furfuracea</i>	01/04/1980	TR 1230 Boonjie	573	9999
98	Mimosaceae	<i>Senna gaudichaudii</i>	20/07/1973	Valley of Lagoons	584	1089
99	Annonaceae	<i>Melodorum leichhardtii</i>	20/07/1973	Nicholas Creek	583	250
99	Fabaceae	<i>Derris koolgibberah</i>	20/07/1973	Goldsborough (Whites Plot)	582	2558
100	Apocynaceae	<i>Melodinus australis</i>	01/01/1978	Tarzali (Transplant)	278	347
100	Dilleniaceae	<i>Tetracera nordiana</i>	18/04/1975	SFR 933	585	2002
100	Nyctaginaceae	<i>Pisonia aculeata</i>	10/04/1974	SFR 933	586	4634
101	Annonaceae	<i>Cananga odorata</i>	01/01/1978	SFR 657 Mulgrave LA	594	233
101	Lauraceae	<i>Endiandra impressicosta</i>	01/04/1978	SFR 933	587	3358
101	Lauraceae	<i>Endiandra impressicosta</i>	01/04/1981	SFR 934	588	3358
101	Myrtaceae	<i>Sphaerantia discolor</i>	10/02/1976	McNamee Creek SFR 756	590	4513
102	Lauraceae	<i>Cryptocarya endiandrifolia</i>	01/02/1980	Lockerbie	596	3316
102	Moraceae	<i>Ficus obliqua</i>	16/02/1975	Melville Range	597	4102
102	Pittosporaceae	<i>Auranticarpa papyracea</i>	23/01/1976	SFR 194	600	5094
102	Podocarpaceae	<i>Podocarpus elatus</i>	01/03/1984	Bakers Blue Mountains	1945	

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
102	Rutaceae	<i>Dinosperma melanophloia</i>	01/03/1985	SFR 144	598	6350
103	Anacardiaceae	<i>Semecarpus australiensis</i>	01/03/1984	SFR 310	605	226
103	Elaeocarpaceae	<i>Peripentadenia phelpsii</i>	17/09/1980	NPR 133	599	2107
103	Rhamnaceae	<i>Alphitonia excelsa</i>	05/02/1976	40 Mile Scrub	601	6027
103	Sterculiaceae	<i>Argyrodendron actinophyllum subsp. diversifolium</i>	01/06/1984	Dotswood Holding	606	6823
104	Moraceae	<i>Streblus brunonianus</i>	01/03/1984	SFR 310	611	4126
104	Sapindaceae	<i>Aglaia spectabilis</i>	01/04/1980	Lockerbie	591	3750
105	Anacardiaceae	<i>Semecarpus australiensis</i>	01/02/1979	SFR 310	612	226
105	Lauraceae	<i>Cryptocarya exfoliata</i>	01/05/1982	Claudie River	614	3317
106	Mimosaceae	<i>Acacia crassicarpa</i>	01/03/1984	SFR 607	616	3854
106	Sterculiaceae	<i>Firmiana papuana</i>	11/04/1978	SFR 191	615	6858
107	Myrtaceae	<i>Backhousia enata</i>	01/03/1984	Tully River	620	9999
107	Myrtaceae	<i>Lophostemon suaveolens</i>	10/04/1980	Portion 61V.Barron	618	4439
107	Simaroubaceae	<i>Ailanthus triphysa</i>	01/03/1984	A. Ford	1824	6700
110	Myrtaceae	<i>Corymbia polycarpa</i>	01/03/1984	Between Mc Ivor River & Cape Flattery	626	4279
110	Myrtaceae	<i>Eucalyptus camaldulensis var. obtusa</i>	01/06/1984	Walsh River	625	4307
110	Myrtaceae	<i>Eucalyptus cloeziana</i>	01/04/1983	Herberton Range	627	4316
110	Myrtaceae	<i>Eucalyptus cloeziana</i>	01/04/1983	Herberton Range	628	4316
110	Myrtaceae	<i>Eucalyptus howittiana</i>	01/04/1982	Wairuna Station	623	4340
110	Myrtaceae	<i>Eucalyptus tereticornis</i>	21/01/2004	Rocky Creek	624	4385
111	Euphorbiaceae	<i>Antidesma bunius</i>	21/02/1973	SFR 185	631	2190
111	Myrtaceae	<i>Eucalyptus tereticornis</i>	20/02/1975	Rocky Creek	630	4385
112	Casuarinaceae	<i>Allocasuarina torulosa</i>	20/02/1975	SFR 194	636	1199
112	Casuarinaceae	<i>Allocasuarina torulosa</i>	16/01/1974	SFR 194	637	1199
112	Myrtaceae	<i>Eucalyptus howittiana</i>	16/01/1974	Wairuna Station	632	4340
113	Myrtaceae	<i>Callistemon recurvus</i>	16/01/1974	Carrington Falls	640	4223
113	Myrtaceae	<i>Callistemon viminalis</i>	20/02/1975	Seed from Arboretum	648	4232
113	Myrtaceae	<i>Syzygium suborbiculare</i>	17/05/1975	Gove NT.	641	4566
114	Araliaceae	<i>Polyscias australiana</i>	21/02/1973	SFR 1073	603	430
114	Celastraceae	<i>Elaeodendron melanocarpum</i>	20/02/1975	SFR 607	646	1219
114	Moraceae	<i>Ficus virens var. virens</i>	20/02/1975	SFR 607	643	4119
114	Myrtaceae	<i>Syzygium cormiflorum</i>	04/02/1976	CSIRO Nursery	644	4531
114	Myrtaceae	<i>Syzygium cormiflorum</i>	01/02/1976	CSIRO Nursery	647	4531
115	Myrtaceae	<i>Harpullia hillii</i>	01/03/1985	Euramo	1853	4572
117	Araliaceae	<i>Polyscias australiana</i>	01/03/1984	SFR 1073	660	430
117	Araucariaceae	<i>Agathis robusta</i>	01/04/1982	SFR 185	659	445
117	Flacourtiaceae	<i>Scolopia braunii</i>	01/03/1984	SFR 607	668	2871
117	Leeaceae	<i>Leea indica</i>	01/03/1984	SFR 675	658	3426
117	Myrtaceae	<i>Syzygium mulgraveanum</i>	04/02/1976	SFR 675	662	4587
118	Araucariaceae	<i>Agathis robusta</i>	04/02/1973	SFR 185	663	445
118	Arecaceae	<i>Archontophoenix alexandrae</i>	11/04/1978	SFR 299	673	448
118	Lauraceae	<i>Endiandra sankeyana</i>	01/04/1977	SFR 191	664	3372
118	Malvaceae	<i>Hibiscus tiliaceus</i>	04/02/1973	NPR 1353	666	3660
119	Annonaceae	<i>Monoon patinatum</i>	16/01/1974	Wyvuri Holding	671	265
119	Arecaceae	<i>Archontophoenix maxima</i>	01/02/1982	SFR 194	672	9999
119	Elaeocarpaceae	<i>Elaeocarpus grandis</i>	26/07/1973	SFR 194 (Transplant)	676	2088
119	Lauraceae	<i>Endiandra compressa</i>	17/01/1975	SFR 185	675	3348
119	Lauraceae	<i>Endiandra sankeyana</i>	21/02/1973	SFR 191	674	3372
120	Araucariaceae	<i>Agathis microstachya</i>	27/04/1973	SFR 310 (Transplant)	678	444
120	Clusiaceae	<i>Garcinia warrenii</i>	04/02/1976	Lockerbie	679	1326
120	Myrtaceae	<i>Lindsayomyrtus racemoides</i>	04/02/1976	Portion 62 Alexandra	680	4429
120	Pittosporaceae	<i>Auranticarpa papyracea</i>	16/01/1974	SFR 185	681	5094
120	Symplocaceae	<i>Symplocos gittInsii</i>	27/04/1973	SFR 194 (Transplant)	677	6926
121	Araucariaceae	<i>Agathis microstachya</i>	15/03/1972	SFR 310 (Transplant)	685	444
121	Arecaceae	<i>Normanbya normanbyi</i>	18/12/1971	Noah Creek	1802	485
121	Moraceae	<i>Ficus variegata</i>	18/02/1971	SFR 756 (Transplant)	686	4118
121	Myrtaceae	<i>Syzygium monospermum</i>	01/02/1981	Portion 62 Alexandra	688	4537
121	Pandanaceae	<i>Pandanus sp.</i>	21/02/1973	SFR 194 (Transplant)	687	9999
121	Sapindaceae	<i>Cupaniopsis flagelliformis var. flagelliformis</i>	26/02/1973	SFR 185 (Transplant)	683	6477
122	Arecaceae	<i>Normanbya normanbyi</i>	18/12/1971	Noah Creek	1803	485
122	Meliaceae	<i>Toona ciliata</i>	03/12/1971	SFR 452 (Transplant)	692	3775
122	Moraceae	<i>Ficus destruens</i>	03/12/1971	SFR 185 (Transplant)	690	4089
122	Myrtaceae	<i>Syzygium cormiflorum</i>	18/12/1971	SFR 310 Swipers LA	693	4531
122	Oleaceae	<i>Chionanthus ramiflorus</i>	17/03/1972	SFR 607	691	4654
123	Arecaceae	<i>Normanbya normanbyi</i>	27/04/1973	Noah Creek	701	485
123	Lauraceae	<i>Endiandra compressa</i>	16/01/1974	Wyvuri Holding	697	3348

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
123	Myrtaceae	<i>Syzygium cormiflorum</i>	18/12/1971	SFR 310	703	4531
124	Lauraceae	<i>Endiandra sankeyana</i>	17/03/1973	SFR 191	708	3372
124	Moraceae	<i>Ficus variegata</i>	03/12/1971	SFR 756 (Transplant)	707	4118
124	Proteaceae	<i>Stenocarpus cryptocarpus</i>	27/04/1973	SFR 755 Boonjee LA (Transplant)	704	5992
125	Proteaceae	<i>Hollandaea sayeriana</i>	05/12/1971	SFR 756 (Transplant)	709	5971
125	Rutaceae	<i>Flindersia iffiaiana</i>	12/04/1973	SFR 144	710	6363
125	Rutaceae	<i>Flindersia iffiaiana</i>	27/04/1973	SFR 144	713	6363
126	Annonaceae	<i>Monoon patinatum</i>	27/04/1973	Dan Metcalfe	1887	265
126	Myrtaceae	<i>Syzygium angophoroides</i>	27/04/1973	Seed from BH6608	721	4510
126	Sterculiaceae	<i>Argyrodendron (Karnak P.I.Forster+ PIF10711)</i>	27/04/1973	Dan Metcalfe, seed from Russel River (17/01/2007)	1907	6827
127	Myrtaceae	<i>Rhodomyrtus macrocarpa</i>	17/03/1972	SFR 185 (Transplant)	724	4503
127	Myrtaceae	<i>Syzygium tierneyanum</i>	16/01/1974	SFR 1073	722	4568
127	Myrtaceae	<i>Syzygium tierneyanum</i>	17/03/1972	SFR 1073	723	4568
128	Annonaceae	<i>Huberantha nitidissima</i>	21/02/1973	SFR 185 Downfall LA (Transplant)	726	264
128	Euphorbiaceae	<i>Cleistanthus semiopacus</i>	21/02/1973	SFR 185 Downfall LA (Transplant)	729	2251
128	Euphorbiaceae	<i>Glochidion harveyanum</i>	01/03/1984	SFR 185 (Transplant)	730	2306
128	Myrtaceae	<i>Backhousia enata</i>	18/12/1971	A. Ford	1826	9999
128	Myrtaceae	<i>Decaspermum humile</i>	18/12/1971	SFR 185 Downfall LA (Transplant)	727	4293
128	Myrtaceae	<i>Sphaerantia discolor</i>	03/12/1971	SFR 756	725	4513
128	Pandanaceae	<i>Pandanus gemmifer</i>	12/04/1988	SFR 194 (Transplant)	731	5027
128	Sterculiaceae	<i>Argyrodendron polyandrum</i>	03/12/1971	SFR 144 (Transplant)	728	6825
129	Araucariaceae	<i>Araucaria cunninghamii var. cunninghamii</i>	03/12/1971	Danbulla Forestry Nursery	736	447
129	Euphorbiaceae	<i>Antidesma erostre</i>	13/12/1971	Dan Metcalfe	1886	2191
129	Euphorbiaceae	<i>Mallotus philippensis</i>	03/12/1971	SFR 185 Downfall LA (Transplant)	734	2342
129	Myrtaceae	<i>Syzygium pringlei</i>	03/12/1971	A.Ford, Cooktown area	1854	4193
129	Verbenaceae	<i>Faradaya splendida</i>	03/12/1971	SFR 452 (Transplant)	737	3177
130	Arecaceae	<i>Normanbya normanbyi</i>	03/12/1971	Noah Creek	699	485
130	Celastraceae	<i>Elaeodendron melanocarpum</i>	21/02/1973	SFR 185 Downfall Ck. (Transplant)	742	1219
130	Lauraceae	<i>Cryptocarya clarksoniana</i>	03/12/1971	SFR 185 (Transplant)	746	3310
130	Lauraceae	<i>Cryptocarya hypospodia</i>	21/11/1971		740	3321
130	Lauraceae	<i>Cryptocarya lividula</i>	03/12/1971	SFR 1073	745	3324
130	Lauraceae	<i>Litsea leefeana</i>	03/12/1971	SFR 452 (Transplant)	695	3385
130	Sapindaceae	<i>Castanospora alphandii</i>	03/12/1971	SFR 191 Wongabel (Transplant)	741	6470
130	Sapindaceae	<i>Mischocarpus stipitatus</i>	03/12/1971	SFR 185 Downfall LA (Transplant)	743	6565
131	Araucariaceae	<i>Araucaria cunninghamii var. cunninghamii</i>	03/12/1971	Danbulla Forestry Nursery	747	448
131	Myrtaceae	<i>Lindsayomyrtus racemoides</i>	03/12/1971	Portion 62 Alexandra	751	4429
131	Rutaceae	<i>Dinosperma longifolium</i>	21/02/1973	A.Ford, Mt Bellenden Ker	1829	6349
132	Ebenaceae	<i>Diospyros pentamera</i>	01/03/1980	SFR 185 Downfall LA (Transplant)	759	2060
132	Ebenaceae	<i>Diospyros pentamera</i>	21/02/1973	SFR 185 Downfall LA (Transplant)	761	2060
132	Meliaceae	<i>Synoum glandulosum subsp. paniculosum</i>	21/02/1973	SFR 144 (Transplant)	757	3774
132	Moraceae	<i>Streblus brunonianus</i>	21/02/1972	SFR 185	758	4126
132	Myrsinaceae	<i>Myrsine porosa</i>	03/12/1975	SFR 143 (Transplant)	684	4175
132	Oleaceae	<i>Chionanthus ramiflorus</i>	02/02/1972	SFR 607	753	4654
132	Proteaceae	<i>Athertonia diversifolia</i>	21/02/1973	SFR 310 (Transplant)	754	5912
132	Verbenaceae	<i>Gmelina fasciculiflora</i>	03/12/1971	SFR 185 Python LA	755	3182
133	Arecaceae	<i>Licuala ramsayi var. ramsayi</i>	03/12/1971	SFR 933 (Transplant)	1804	469
133	Arecaceae	<i>Oraniopsis appendiculata</i>	26/02/1973	SFR 194 (Transplant)	762	487
133	Lauraceae	<i>Cryptocarya cocosoides</i>	26/02/1973	Arthur Bailliee road	1947	
133	Lauraceae	<i>Endiandra grayi</i>		Cape Trib Canopy Crane	1948	
133	Monimiaceae	<i>Wilkiea hylandii</i>	18/12/1971	Mcllwraith Range	1937	
133	Myrtaceae	<i>Syzygium resa</i>	18/12/1971	SFR 143 (Transplant)	682	4190
133	Myrtaceae	<i>Syzygium tierneyanum</i>	20/04/1975	SFR 1073	766	4568
133	Naucleaceae	<i>Nauclea orientalis</i>	21/02/1973	VCL Noah (Transplant)	765	6178
133	Pandanaceae	<i>Pandanus sp.</i>	21/02/1973	SFR 194 (Transplant)	763	9999
133	Rutaceae	<i>Flindersia pimenteliana</i>	02/02/1979		764	6367
134	Lauraceae	<i>Beilschmiedia obtusifolia</i>	18/12/1971	Claudie River (Transplant)	771	867
134	Myrtaceae	<i>Lindsayomyrtus racemoides</i>	01/04/1982	Portion 62 Alexandra	770	4429
134	Rutaceae	<i>Melicope vitiflora</i>	01/04/1977	SFR 185 (Transplant)	773	6391
134	Sterculiaceae	<i>Argyrodendron trifoliolatum</i>	04/02/1976	TR 1230	772	6831
134	Verbenaceae	<i>Callicarpa pedunculata</i>	04/02/1979	SFR 194	768	3162
135	Myrtaceae	<i>Lindsayomyrtus racemoides</i>	04/02/1976	Portion 62 Alexandra	669	4429
135	Myrtaceae	<i>Rhodamnia longisepala</i>	01/03/1984	A.Ford	1857	4493
135	Pittosporaceae	<i>Aurantiarpa papyracea</i>	01/03/1984	SFR 185	667	5094
135	Rutaceae	<i>Micromelum minutum</i>	04/02/1976	Undara	1856	6393
135	Sapindaceae	<i>Diploglottis harpullioides</i>	04/02/1976	NPR 226 Sophia - Fishery Cks.	776	6490
136	Myrtaceae	<i>Syzygium mulgraveanum</i>	10/02/1974	SFR 675	782	4587

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
136	Proteaceae	<i>Megahertzia amplexicaulis</i>	12/04/1973	Oliver Creek	784	5978
140	Arecaceae	<i>Livistona decora</i>	01/01/1974	Cape Hillsborough Road	785	9999
140	Arecaceae	<i>Wodyetia bifurcata</i>	24/05/1991	Melville Range	791	491
140	Arecaceae	<i>Wodyetia bifurcata</i>	24/05/1991	Melville Range	792	491
140	Myrtaceae	<i>Callistemon recurvus</i>	16/01/1974	Carrington Falls	787	4223
141	Myrtaceae	<i>Eucalyptus raveretiana</i>	12/04/1973	SFR 652	793	4373
141	Myrtaceae	<i>Eucalyptus raveretiana</i>	12/04/1973	SFR 652	794	4373
141	Myrtaceae	<i>Melaleuca stenostachya</i>	01/01/1974	Christmas Creek	796	4462
142	Celastraceae	<i>Maytenus disperma</i>	21/01/2004	Andrew Ford	1898	1233
142	Myrtaceae	<i>Eucalyptus brassiana</i>	04/02/1976	Cape Flattery	798	4301
143	Cupressaceae	<i>Callitris intratropica</i>	05/02/1976	Stannary Hills Range	801	1573
143	Myrtaceae	<i>Melaleuca lophocoracorium</i>	01/01/1974	Ravenshoe State Forest	1927	
144	Myrtaceae	<i>Melaleuca lophocoracorium</i>	01/03/1984	Ravenshoe State Forest	1926	
146	Myrtaceae	<i>Eucalyptus argillacea</i>	01/03/1984	Jeannie River	806	9999
146	Myrtaceae	<i>Eucalyptus brassiana</i>	12/04/1973	Cape Flattery	808	4301
146	Myrtaceae	<i>Eucalyptus exserta</i>	04/03/1985	Andrew Ford, Hidden Valley	1911	4334
146	Myrtaceae	<i>Neofabricia myrtifolia</i>	04/07/1976	Iron Range	805	4476
147	Cycadaceae	<i>Cycas media</i>	01/06/1984	SFR 194 (Transplant)	809	9999
147	Fabaceae	<i>Erythrina insularis</i>	14/07/1984	Haggerstone Island	810	2594
147	Myrtaceae	<i>Eucalyptus argillacea</i>	04/02/1976	Jeannie River	817	9999
147	Myrtaceae	<i>Eucalyptus pachycalyx</i>	01/04/1979	Andrew Ford, Mt Emerald	1910	4359
148	Arecaceae	<i>Wodyetia bifurcata</i>	04/02/1976	Melville Range	815	491
148	Arecaceae	<i>Wodyetia bifurcata</i>	01/02/1982	Melville range	816	491
148	Myrtaceae	<i>Callistemon polandii</i>	04/02/1976	Walsh Pyramid	813	4222
148	Myrtaceae	<i>Corymbia intermedia</i>	01/02/1980	SFR 652	811	4264
148	Myrtaceae	<i>Leptospermum polygalifolium</i>	18/12/1971	Between Mclvor River & Cape Flattery	812	4426
150	Arecaceae	<i>Livistona mariae</i> ?	01/04/1981	NT.(D.Nicholson)	802	9999
150	Arecaceae	<i>Livistona mariae</i> ?	04/03/1985	NT (D.Nicholson)	803	9999
152	Euphorbiaceae	<i>Glochidion philippicum</i>	18/12/1971	CSIRO Nursery	821	2311
152	Rutaceae	<i>Halfordia kendack</i>	21/11/1971	SFR 194	834	6372
153	Apocynaceae	<i>Cerbera floribunda</i>	01/02/1980	Cooper Creek	822	338
153	Lauraceae	<i>Cryptocarya cunninghamii</i>	18/12/1971	SFR 993	823	3314
153	Moraceae	<i>Ficus rubiginosa forma rubiginosa</i>	21/02/1973	Millstream Falls	824	4111
154	Araucariaceae	<i>Araucaria bidwillii</i>	18/12/1971	Danbulla Forestry Nursery	831	446
154	Boraginaceae	<i>Cordia dichotoma</i>	18/12/1971	SFR 310	832	921
154	Moraceae	<i>Ficus racemosa</i>	03/12/1975	Christmas Creek	827	4109
154	Myrtaceae	<i>Syzygium trachyphloium</i>	01/04/1981	SFR 194	825	4569
154	Proteaceae	<i>Neorites kevedianus</i>	03/12/1971	TR 55 (Transplant)	829	5981
154	Proteaceae	<i>Stenocarpus sinuatus</i>	03/12/1971	Atherton	828	5996
154	Rubiaceae	<i>Atractocarpus fitzalanii subsp. fitzalanii</i>	01/04/1980	SFR 700	830	6097
154	Sapindaceae	<i>Toechima erythrocarpum</i>	01/07/1974	VCL Noah	826	6588
155	Fabaceae	<i>Castanospermum australe</i>	01/03/1971	SFR 452 Curtain Fig (Transplant)	836	2490
155	Myrtaceae	<i>Syzygium tierneyanum</i>	21/02/1973	SFR 1073	838	4568
155	Proteaceae	<i>Hollandaea sayeriana</i>	03/11/1971	SFR 756 (Transplant)	889	5971
155	Rubiaceae	<i>Atractocarpus fitzalanii subsp. fitzalanii</i>	01/03/1971	SFR 700	837	6097
155	Sterculiaceae	<i>Argyrodendron peralatum</i>	26/02/1973	SFR 452 Curtain Fig (Transplant)	835	6824
156	Arecaceae	<i>Archontophoenix alexandrae</i>	08/03/1974	A.Ford, Hann Tableland	1869	448
156	Boraginaceae	<i>Cordia dichotoma</i>	05/03/1974	SFR 310	845	921
156	Moraceae	<i>Streblus brunonianus</i>	20/03/1971	SFR 185	841	4126
156	Myrtaceae	<i>Rhodamnia costata</i>	21/11/1971	SFR 194 Crater EP 30	848	4491
156	Naucleaceae	<i>Nauclea orientalis</i>	01/03/1971	VCL Noah (Transplant)	843	6178
156	Proteaceae	<i>Lomatia fraxinifolia</i>	21/11/1971	SFR 194	842	5974
156	Verbenaceae	<i>Gmelina fasciculiflora</i>	20/03/1971	SFR 185	844	3182
157	Flacourtiaceae	<i>Homalium circumpinnatum</i>	21/11/1971	SFR 185 (Transplant)	852	2865
157	Lauraceae	<i>Beilschmiedia obtusifolia</i>	21/11/1971	Claudie River (Transplant)	853	867
157	Lauraceae	<i>Cryptocarya mackinnoniana</i>	21/11/1971	SFR 185 (Transplant)	847	3326
157	Lauraceae	<i>Cryptocarya triplinervis</i>	21/11/1971	SFR 310 (Transplant)	851	3337
157	Liliaceae	<i>Dianella sp.</i>	26/02/1973	Mt Lewis ? (Transplant)	855	9999
157	Mimosaceae	<i>Archidendron grandiforum</i>	21/11/1971	SFR 607 Emerald LA (Transplant)	846	3996
157	Proteaceae	<i>Darlingia darlingiana</i>	21/11/1971	SFR 185 (Transplant)	854	5929
158	Celastraceae	<i>Hedraianthera porphyropetala</i>	21/11/1971	A.Ford, Oliver Creek	1830	1223
158	Euphorbiaceae	<i>Croton insularis</i>	21/11/1971	SFR 185 Downfall LA (Transplant)	860	2265
158	Pandanaceae	<i>Pandanus sp.</i>	21/11/1971	Unknown Source	857	9999
158	Rutaceae	<i>Flindersia bourjotiana</i>	21/11/1971	Winfield Road Lake Eacham	858	6358
158	Rutaceae	<i>Flindersia brayleyana</i>	03/12/1971	G.Stocker's Farm	859	6360
159	Cunoniaceae	<i>Geissois biagiana</i>	04/02/1978	SFR 194 Crater (Transplant)	869	1560

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
159	Elaeocarpaceae	<i>Sloanea macbrydei</i>	21/11/1971	SFR 185 (Transplant)	865	2111
159	Pittosporaceae	<i>Aurantiarca papyracea</i>	21/11/1971	Dan Metcalfe	1893	5094
159	Proteaceae	<i>Carnarvon araliifolia</i> var. <i>araliifolia</i>	21/11/1971	SFR 933 (Transplant)	870	5926
159	Rutaceae	<i>Acronychia laevis</i>	18/12/1971	SFR 185 (Transplant)	864	6315
159	Sapindaceae	<i>Jagera pseudorhus</i> var. <i>integerrima</i>	18/12/1971	SFR 185 (Transplant)	863	6542
160	Cunoniaceae	<i>Pullea stutzeri</i>	18/12/1971	SFR 194 (Transplant)	738	1565
160	Moraceae	<i>Ficus destruens</i>	14/07/1971	SFR 185 Robson LA (Transplant)	871	4089
160	Proteaceae	<i>Carnarvon araliifolia</i> var. <i>montana</i>	21/11/1971	SFR 194	875	5927
160	Proteaceae	<i>Lomatia fraxinifolia</i>	01/03/1971	SFR 194	877	5974
160	Proteaceae	<i>Opisthiolepis heterophylla</i>	01/03/1971	SFR 185 (transplant)	873	2356
160	Rutaceae	<i>Flindersia brayleyana</i>	03/12/1971	Danbulla Nursery	876	6360
160	Sterculiaceae	<i>Franciscodendron laurifolium</i>	01/02/1982	SFR 194 Baldy (Transplant)	872	6859
161	Annonaceae	<i>Huberantha nitidissima</i>	14/07/1971	SFR 185 Downfall LA (Transplant)	883	264
161	Elaeocarpaceae	<i>Sloanea macbrydei</i>	01/03/1971	SFR 185 (Transplant)	878	2111
161	Elaeocarpaceae	<i>Sloanea macbrydei</i>	01/03/1971	SFR 185 (Transplant)	880	2111
161	Elaeocarpaceae	<i>Sloanea macbrydei</i>	12/11/1971	SFR 185 (Transplant)	886	2111
161	Fabaceae	<i>Castanospermum australe</i>	01/03/1971	SFR 452 Curtain Fig (Transplant)	885	2490
161	Moraceae	<i>Ficus septica</i>	17/10/1971	SFR 185 (Transplant)	887	4113
161	Sapindaceae	<i>Castanospora alphandii</i>	21/02/1973	SFR 191 Wongabell (Transplant)	881	6470
161	Verbenaceae	<i>Vitex queenslandica</i>		SF 755 Gosschalk LA. Russell River	884	3280
162	Myrtaceae	<i>Syzygium tierneyanum</i>	18/12/1971	SFR 1073	891	4568
162	Sterculiaceae	<i>Argyrodendron</i> (Karnak P.I.Forster+ PIF10711)	01/03/1971	Dan Metcalfe	1889	6827
163	Anacardiaceae	<i>Euroschinus falcatus</i> var. <i>falcatus</i>	01/03/1971	SFR 452 Curtain Fig (Transplant)	899	219
163	Monimiaceae	<i>Wilkiea hylandii</i>	07/10/1971	Mcllwraith Range	1936	
163	Moraceae	<i>Ficus crassipes</i>	20/03/1971	TR 1230 (Transplant)	894	4088
163	Myrtaceae	<i>Syzygium tierneyanum</i>	21/02/1973	SFR 1073	893	4568
163	Sterculiaceae	<i>Argyrodendron</i> (Karnak P.I.Forster+ PIF10711)	01/03/1971	Dan Metcalfe	1890	6827
164	Fabaceae	<i>Castanospermum australe</i>	01/12/1971	SFR 452 Curtain Fig (Transplant)	903	2490
164	Flacourtiaceae	<i>Xylosma</i> sp. (Mt Lewis G.Sankowsky+ 1108)	01/04/1971	Hunter Creek	1924	
164	Flacourtiaceae	<i>Xylosma</i> sp. (Mt Lewis G.Sankowsky+ 1108)	01/03/1971	Hunter Creek	1925	
164	Lauraceae	<i>Beilschmiedia obtusifolia</i>	01/03/1971	SFR 310	902	867
164	Monimiaceae	<i>Doryphora aromatica</i>	18/12/1971	SFR 194 (Transplant)	901	4046
165	Annonaceae	<i>Monoon patinatum</i>	01/03/1984	Andrew Ford	1891	265
165	Annonaceae	<i>Monoon patinatum</i>	18/12/1971	Andrew Ford	1892	265
165	Fabaceae	<i>Castanospermum australe</i>	18/12/1971	SFR 452 Curtain Fig (Transplant)	896	2490
166	Myrsinaceae	<i>Maesa dependens</i> var. <i>pubescens</i>	18/12/1971	SFR 185 (Transplant)	923	3590
166	Myrtaceae	<i>Syzygium alliiigneum</i>	11/05/1973	Palmerston Hwy	924	4518
166	Sapindaceae	<i>Guioa acutifolia</i>	01/04/1981	SFR 185 (Transplant)	917	6526
166	Sterculiaceae	<i>Argyrodendron polyandrum</i>	18/12/1971	Windsor Tableland	922	6825
167	Anacardiaceae	<i>Pleiogynium timorense</i>	21/11/1971	40 Mile Scrub	934	223
167	Apocynaceae	<i>Alyxia ruscifolia</i>	12/04/1973	SFR 185 Downfall LA (Transplant)	932	327
167	Araucariaceae	<i>Araucaria bidwillii</i>	08/06/1984	Danbulla Forestry Nursery	928	446
167	Cunoniaceae	<i>Pseudoweinmannia apetala</i>	16/01/1975	SFR 185 Downfall LA (Transplant)	935	1563
167	Euphorbiaceae	<i>Croton insularis</i>	12/04/1973	SFR 185 Downfall LA (Transplant)	933	2265
167	Rutaceae	<i>Pitaviaster haplophyllus</i>	12/04/1973		927	6402
167	Sterculiaceae	<i>Argyrodendron polyandrum</i>	12/04/1973	Malanda (Transplant)	930	6825
167	Sterculiaceae	<i>Argyrodendron polyandrum</i>	20/02/1975	Malanda (Transplant)	931	6825
168	Euphorbiaceae	<i>Croton triacros</i>	01/02/1973	SFR 185 Downfall LA (Transplant)	867	2274
168	Mimosaceae	<i>Acacia celsa</i>	01/10/1985	SFR 185 Danbulla (Transplant)	939	3842
168	Proteaceae	<i>Alloxylon wickhamii</i>	01/10/1985	SF 607 Emerald LA	943	5911
168	Proteaceae	<i>Cardwellia sublimis</i>	01/02/1973	SFR 194 Baldy (Transplant)	942	5925
168	Rutaceae	<i>Sarcomelicope simplicifolia</i> subsp. <i>simplicifolia</i>	16/01/1975	SFR 185 Danbulla (Transplant)	937	6403
169	Elaeocarpaceae	<i>Sloanea macbrydei</i>	01/03/1984	SFR 185 (Transplant)	950	2111
169	Myrtaceae	<i>Stockwellia quadrifida</i>	26/02/1973	TR 1230 (Transplant)	944	4514
169	Myrtaceae	<i>Syzygium tierneyanum</i>	16/01/1974	SFR 1073	949	4568
169	Pandanaceae	<i>Pandanus</i> sp.	01/03/1984	Unknown Source	945	9999
169	Proteaceae	<i>Stenocarpus davallioides</i>	01/04/1985	SFR 143 North Mary LA	946	5994
170	Boraginaceae	<i>Cordia dichotoma</i>	01/04/1985	SFR 310	952	921
170	Cunoniaceae	<i>Geissois biagiana</i>	01/03/1986	SFR 194 Crater (Transplant)	954	1560
170	Elaeocarpaceae	<i>Sloanea macbrydei</i>	01/03/1984	SFR 185 (Transplant)	953	2111
170	Fabaceae	<i>Millettia</i> sp. (Mcllwraith BH 3295RFK)	08/06/1984	Noah Creek (Transplant)	951	9999
177	Myrtaceae	<i>Eucalyptus tereticornis</i> x <i>grandis</i>	01/03/1984	Marcot from original tree	24	9999
178	Arecaceae	<i>Livistona muelleri</i>	01/03/1984	Chester River	968	484
178	Myrtaceae	<i>Corymbia polycarpa</i>	01/03/1984	Maitland Downs	966	4279
178	Myrtaceae	<i>Eucalyptus acmenoides</i>	01/03/1984	Koah Road	969	4369
179	Myrtaceae	<i>Asteromyrtus symphyocarpa</i>	01/03/1984	Bathurst Bay	971	4201

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
179	Myrtaceae	<i>Eucalyptus acmenoides</i>	01/06/1984	Koah Road	972	4369
179	Myrtaceae	<i>Eucalyptus cambageana</i>	08/06/1984	Charters Towers	977	4312
179	Myrtaceae	<i>Eucalyptus platyphylla</i>	08/06/1984	Herberton Road	975	4366
179	Myrtaceae	<i>Eucalyptus provecta</i>	01/06/1984	Rungulla Holding	1929	
182	Arecaceae	<i>Livistona muelleri</i>		Chester River	984	484
182	Cupressaceae	<i>Callitris intratropica</i>	21/11/1971	Andrew Ford, Watsonville	1908	1573
182	Myrtaceae	<i>Eucalyptus crebra</i>	01/02/1973	The Lynd & Conjuboy	981	4322
182	Myrtaceae	<i>Eucalyptus lockyeri subsp. lockyeri</i>	18/12/1971	Andrew Ford, Mt Misch	1915	4344
183	Casuarinaceae	<i>Allocasuarina littoralis</i>	18/12/1971	Portland Roads	986	1196
183	Cupressaceae	<i>Callitris intratropica</i>	01/03/1984	Andrew Ford, Watsonville	1909	1573
183	Myrtaceae	<i>Eucalyptus brownii</i>	18/12/1971	Mt.Garnet	990	4303
183	Myrtaceae	<i>Eucalyptus lockyeri subsp. lockyeri</i>	17/01/1975	Andrew Ford, Mt Misch	1914	4344
191	Annonaceae	<i>Meiogyne hirsuta</i>	12/04/1988	Palmerston NP (G.Sankowsky)	1731	247
191	Annonaceae	<i>Monoon michaelii</i>	18/12/1971	Crawfords Look Out	1160	263
191	Annonaceae	<i>Pseuduvaria froggattii</i>	18/12/1971	Mossman (G.Sankowsky)	1734	266
191	Arecaceae	<i>Archontophoenix alexandrae</i>	20/05/1972	Peach Creek.Coen	1769	448
191	Arecaceae	<i>Licuala ramsayi var. ramsayi</i>	01/03/1984	SFR 933	1757	469
191	Arecaceae	<i>Licuala ramsayi var. ramsayi</i>	02/03/1971	SFR 933	1766	469
191	Arecaceae	<i>Livistona benthamii</i>	01/03/1984	Swamp Creek	1159	479
191	Arecaceae	<i>Livistona benthamii</i>	01/03/1971	Swamp Creek	1774	479
191	Arecaceae	<i>Livistona benthamii</i>	10/10/1984	Swamp Creek	1775	479
191	Arecaceae	<i>Normanbya normanbyi</i>	01/03/1971	Noah Creek	1777	485
191	Arecaceae	<i>Normanbya normanbyi</i>	01/04/1978	Noah Creek	1781	485
191	Arecaceae	<i>Ptychosperma elegans</i>	03/12/1971	TR 14	1165	488
191	Arecaceae	<i>Wodyetia bifurcata</i>	01/03/1971	Melville Range	1167	491
191	Celastraceae	<i>Hedraianthera porphyropetala</i>	01/10/1984	Shiptons Flat	1934	
191	Celastraceae	<i>Hedraianthera porphyropetala</i>	01/03/1971	Shiptons Flat	1935	
191	Celastraceae	<i>Maytenus disperma</i>	01/03/1981	SFR 144	1156	1233
191	Cyatheaceae	<i>Cyathea cooperi</i>	01/03/1984	Lake Eacham NPWS Nursery	1771	1578
191	Cyatheaceae	<i>Cyathea cooperi</i>	01/03/1984	Lake Eacham NPWS Nursery	1782	1578
191	Euphorbiaceae	<i>Cleistanthus apodus</i>	01/03/1984	Lake Eacham NPWS Nursery	1761	2244
191	Lauraceae	<i>Endiandra impressicosta</i>	05/03/1974	SFR 933	1751	3358
191	Monimiaceae	<i>Wilkiea macrophylla</i>	01/03/1971	EP37, Crediton, Eungella	1756	4068
191	Myrsinaceae	<i>Myrsine maculata</i>	01/04/1978	Lake Eacham NPWS Nursery	1763	4173
191	Myrtaceae	<i>Gossia floribunda</i>	01/03/1976	Lake Eacham NPWS Nursery	1155	4398
191	Myrtaceae	<i>Rhodomyrtus pervagata</i>	10/12/1971	Lake Eacham NPWS Nursery	1786	4504
191	Myrtaceae	<i>Syzygium smithii</i>	01/03/1984	SFR 194	1158	4191
191	Pandanaceae	<i>Pandanus sp.</i>	01/03/1984	Unknown Source	1741	9999
191	Pandanaceae	<i>Pandanus sp.</i>		Unknown Source	1742	9999
191	Pandanaceae	<i>Pandanus sp.</i>	21/02/1973	Unknown Source	1754	9999
191	Rubiaceae	<i>Atractocarpus fitzalanii subsp. fitzalanii</i>	05/03/1974	Lake Eacham NPWS Nursery	1163	6097
192	Arecaceae	<i>Livistona benthamii</i>	01/01/1985	Swamp Creek	1020	479
192	Fabaceae	<i>Austrostenisia blackii</i>	14/07/1971		1010	2461
192	Hamamelidaceae	<i>Ostrearia australiana</i>	01/07/1971	TR 176 ? (Transplant)	1021	3017
192	Moraceae	<i>Ficus triradiata</i>	14/07/1971	TR 142 Zarda LA	1019	4117
192	Myrtaceae	<i>Syzygium graveolens</i>	01/01/1974	Wyvuri Holding	1013	4186
192	Naucleaceae	<i>Nauclea orientalis</i>	08/03/1974	VCL Noah (Transplant)	1015	6178
192	Rutaceae	<i>Melicope vitiflora</i>	01/03/1984	SFR 185 (Transplant)	1018	6391
192	Sapindaceae	<i>Castanospora alphandii</i>	14/07/1971	SFR 191 Wongabell (Transplant)	1012	6470
192	Sterculiaceae	<i>Franciscodendron laurifolium</i>	14/07/1971	SFR 194 Baldy	1016	6859
193	Araucariaceae	<i>Agathis atropurpurea</i>	14/07/1971	SFR 607 Emerald LA (Transplant)	1033	443
193	Pandanaceae	<i>Pandanus sp.</i>	14/07/1971	Unknown Source	1034	9999
193	Rutaceae	<i>Flindersia pimenteliana</i>	01/03/1984	NPR 226 Belenden Ker	1025	6367
193	Sterculiaceae	<i>Argyrodendron peralatum</i>	01/03/1985	SFR 452 Curtain Fig (Transplant)	1022	6824
194	Arecaceae	<i>Livistona sp.</i>		Kennedy River	1028	9999
194	Lauraceae	<i>Neolitsea brassii</i>	01/04/1984	SFR 607	1039	3389
194	Meliaceae	<i>Toona ciliata</i>		Danbulla Forstry Nursery	1038	3775
194	Meliaceae	<i>Toona ciliata</i>	01/03/1984	SFR 452 Curtain Fig	1045	3775
194	Sapindaceae	<i>Arytera divaricata</i>	14/07/1971	SFR 185 Danbulla (Transplant)	1048	6451
194	Sapindaceae	<i>Cupaniopsis foveolata</i>	14/07/1971	SFR 185 (Transplant)	1041	6479
194	Thymelaeaceae	<i>Lethedon setosa</i>	01/02/1978	SFR 700	1051	6972
194	Ulmaceae	<i>Aphananthe philippinensis</i>	01/04/1980	SFR 185 (Transplant)	1035	7044
195	Lauraceae	<i>Neolitsea brassii</i>	10/02/1980	SFR 607	1062	3389
195	Meliaceae	<i>Melia azedarach</i>	01/03/1984	Wongabel (Transplant)	915	3769
195	Myrtaceae	<i>Rhodomyrtus macrocarpa</i>	02/03/1971	SFR 185 Downfall LA	1061	4503
195	Proteaceae	<i>Lomatia fraxinifolia</i>	01/06/1984	SFR 185	1063	5974

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
195	Rutaceae	<i>Flindersia bourjotiana</i>	26/02/1973	Winfield Road Lake Eacham	1057	6358
195	Urticaceae	<i>Dendrocnide photinophylla</i>	01/03/1984	SFR 452 Curtain Fig (Transplant)	1065	7061
196	Araliaceae	<i>Schefflera actinophylla</i>	12/04/1980	Self Sown	1076	440
196	Araucariaceae	<i>Araucaria cunninghamii</i> var. <i>cunninghamii</i>	01/04/1971	Danbulla Forestry Nursery	1073	449
196	Euphorbiaceae	<i>Aleurites rockinghamensis</i>	10/10/1984	SFR 185 Danbulla (Transplant)	913	2188
196	Euphorbiaceae	<i>Aleurites rockinghamensis</i>	04/10/1984		1071	2188
196	Rutaceae	<i>Flindersia schottiana</i>	04/10/1984	SFR 185	1075	6368
197	Arecaceae	<i>Laccospadix australasica</i>	10/10/1984	Dan Metcalfe, seed from Mt Lewis (3/1/2008)	1906	
197	Cupressaceae	<i>Callitris macleayana</i>	04/10/1984	Danbulla Forestry Nursery	1079	1574
197	Fabaceae	<i>Castanospermum australe</i>	01/02/1982	SFR 452 Curtain Fig (Transplant)	1081	2490
197	Myrtaceae	<i>Syzygium boonjee</i>	26/02/1973	Dan Metcalfe	1894	4526
197	Myrtaceae	<i>Syzygium wilsonii</i> subsp. <i>wilsonii</i>	12/04/1980	SFR 185 (Transplant)	1088	4572
197	Myrtaceae	<i>Syzygium wilsonii</i> subsp. <i>wilsonii</i>	04/10/1984	seed from Robson Creek 25ha plot	1921	
197	Podocarpaceae	<i>Podocarpus dispersus</i>	20/05/1972	Danbulla Forestry Nursery	1086	5784
197	Podocarpaceae	<i>Podocarpus grayae</i>	01/06/1984	Danbulla Forestry Nursery	1077	5786
197	Proteaceae	<i>Athertonia diversifolia</i>	14/11/1971	SFR 310 (Transplant)	1090	5912
197	Rubiaceae	<i>Psychotria</i> (<i>Utchee Creek H.Flecker NQNC5313</i>)	12/04/1988	Dan Metcalfe	1895	6233
197	Rutaceae	<i>Flindersia brayleyana</i>	01/04/1984	Danbulla Forestry Nursery	1089	6360
197	Rutaceae	<i>Flindersia schottiana</i>	01/03/1984	SFR 185	1084	6368
197	Zingiberaceae	<i>Alpinia hylandii</i>	12/04/1980	Dan Metcalfe, seed from base of Mt Lewis, Brooklyn Station (26/2/2009)	1904	
197	Zingiberaceae	<i>Alpinia hylandii</i>	12/04/1988	Dan Metcalfe, seed from base of Mt Lewis, Brooklyn Station (26/2/2009)	1905	
198	Anacardiaceae	<i>Euroschinus falcatus</i> var. <i>falcatus</i>	12/04/1988	Self Sown	1095	219
198	Combretaceae	<i>Terminalia sericocarpa</i>	12/04/1988	Claudie River	900	1367
198	Moraceae	<i>Ficus virens</i> var. <i>virens</i>	12/04/1988	SFR 607	1093	4119
198	Rubiaceae	<i>Aidia cowleyi</i>	01/06/1984	Cowley Beach	1942	
198	Rubiaceae	<i>Aidia cowleyi</i>	12/04/1988	Cowley Beach	1943	
199	Moraceae	<i>Ficus obliqua</i>	01/03/1984	Melville Range	1091	4102
199	Symplocaceae	<i>Symplocos gittinsii</i>	01/03/1984	Lake Eacham NPWS Nursery	1106	6926
200	Anacardiaceae	<i>Blepharocarya involucrigera</i>	01/03/1984	SFR 185 Danbulla	1111	215
200	Apocynaceae	<i>Alstonia muelleriana</i>	01/06/1984	SFR 185 Downfall LA (Transplant)	1110	319
200	Moraceae	<i>Ficus variegata</i>	01/06/1984	cassowary poo, Mission Beach	1866	4118
200	Myrtaceae	<i>Syzygium luehmannii</i>	01/03/1984	cassowary poo, Mission Beach	1867	4553
201	Araucariaceae	<i>Agathis atropurpurea</i>	01/03/1986	SFR 607 Emerald LA (Transplant)	1119	443
201	Myrtaceae	<i>Pilidiostigma tropicum</i>	01/02/1973	SFR 191	1112	4485
201	Myrtaceae	<i>Rhodamnia costata</i>	02/02/1973	SFR 194 Crater EP 30	1113	4491
201	Rutaceae	<i>Acronychia acidula</i>	01/07/1972	Palmerston Hwy	1114	6308
202	Lauraceae	<i>Cryptocarya lividula</i>	01/02/1976	Lake Eacham NPWS Nursery	1122	3324
202	Lythraceae	<i>Lagerstroemia archeriana</i>	12/04/1973	Rocky River	1123	3577
202	Mimosaceae	<i>Acacia celsa</i>	01/01/1974	SFR 185 Danbulla Transplant)	1128	3842
202	Myrtaceae	<i>Syzygium claviflorum</i>	30/05/1978	SFR 299	1124	4192
203	Agavaceae	<i>Pleomele angustifolia</i>	08/06/1984	Cairns - Mission Beach	1132	2014
203	Arecaceae	<i>Livistona</i> sp.	08/06/1984	Eungella Range	1131	9999
203	Arecaceae	<i>Livistona</i> sp.	01/02/1973	Eungella Range	1137	9999
203	Arecaceae	<i>Livistona</i> sp.		Eungella	1142	9999
203	Arecaceae	<i>Livistona</i> sp.	16/01/1974	Eungella	1806	9999
203	Arecaceae	<i>Ptychosperma elegans</i>	01/01/1984	TR 14	1129	488
203	Arecaceae	<i>Ptychosperma elegans</i>	01/03/1984	TR 14	1134	488
203	Lythraceae	<i>Lagerstroemia archeriana</i>	01/02/1988	Rocky River	1140	3577
203	Mimosaceae	<i>Acacia hylonoma</i>	01/02/1988	SFR 933	1236	3892
203	Myrtaceae	<i>Syzygium australe</i>		Seed from Arboretum	1118	4523
203	Myrtaceae	<i>Syzygium smithii</i>	01/04/1978	SFR 194	1126	4191
203	Sapindaceae	<i>Guioa lasioneura</i>		SFR 185	1139	6528
204	Myrtaceae	<i>Syzygium smithii</i>	01/02/1976	SFR 194	1141	4191
205	Arecaceae	<i>Livistona drudei</i>	01/03/1984	Hen Camp Creek	1017	482
205	Corynocarpaceae	<i>Corynocarpus cribbianus</i>	01/03/1984	SFR 143 (Transplant)	1154	1502
205	Rutaceae	<i>Flindersia oppositifolia</i>	01/03/1984	NPR 226 Bellenden Ker	1151	6366
214	Myrtaceae	<i>Corymbia erythrophloia</i>	01/01/1985	Mt. Molloy	1178	4258
214	Myrtaceae	<i>Eucalyptus normantonensis</i>	01/03/1984	Normanton Area ?	1177	9999
215	Myrtaceae	<i>Corymbia erythrophloia</i>	01/02/1986	Mt.Molloy	1182	4259
215	Myrtaceae	<i>Rhodamnia angustifolia</i>	01/03/1978	Andrew Ford, Calliope	1912	
215	Myrtaceae	<i>Syzygium suborbiculare</i>	08/06/1984	Gove NT	1181	4566
218	Myrtaceae	<i>Eucalyptus exserta</i>	01/03/1984	Barrabas Scrub	1190	4334
218	Myrtaceae	<i>Neofabricia myrtifolia</i>	16/01/1975	Iron Range	1192	4476
225	Annonaceae	<i>Milium brahei</i>	01/04/1982	Scrubby Creek	1724	257
225	Costaceae	<i>Costus potierae</i>	01/02/1984	A.Ford	1858	7194
225	Myrtaceae	<i>Asteromyrtus symphyocarpa</i>	01/06/1984	Lake Eacham NPWS Nursery	1667	4201

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
225	Myrtaceae	<i>Gossia floribunda</i>	04/10/1984	Seed from Arboretum	1670	4398
225	Myrtaceae	<i>Gossia floribunda</i>	10/02/1980	Seed from Arboretum	1672	4398
225	Myrtaceae	<i>Gossia myrsinocarpa</i>	01/03/1984	Lake Eacham NPWS Nursery	1200	4404
225	Myrtaceae	<i>Pilidiostigma tropicum</i>	01/01/1987	SFR 191	1671	4485
225	Myrtaceae	<i>Sphaerantia chartacea</i>	01/01/1970	TR 176 Parrot Creek Rossville	1201	4512
225	Myrtaceae	<i>Syzygium xerampelinum</i>	01/01/1970	SFR 310	1677	4574
225	Myrtaceae	<i>Xanthostemon umbrosus</i>	01/01/1970	Cape Tribulation	1725	4597
226	Annonaceae	<i>Meiogyne hirsuta</i>	10/03/1974	Mossman (G.Sankowsky)	1723	247
226	Arecaceae	<i>Livistona sp.</i>	01/02/1974	Barrett Creek. Cooktown	1681	9999
226	Elaeocarpaceae	<i>Aceratium ferrugineum</i>	01/03/1980	Lake Eacham NPWS Nursery	1683	2074
226	Melastomataceae	<i>Memecylon pauciflorum</i>	12/04/1973	Chester River	1679	3732
226	Melastomataceae	<i>Memecylon pauciflorum</i>	01/06/1984	Chester River	1680	3732
226	Myrtaceae	<i>Pilidiostigma tropicum</i>	01/03/1984	SFR 191	1682	4485
226	Myrtaceae	<i>Sphaerantia chartacea</i>	26/02/1973	TR 176 Parrot Creek Rossville	1675	4512
226	Myrtaceae	<i>Syzygium canicortex</i>	17/01/1975	Lake Eacham NPWS Nursery	1673	4530
226	Myrtaceae	<i>Syzygium puberulum</i>	01/01/1988	Seed from Arboretum	1687	4562
227	Annonaceae	<i>Meiogyne hirsuta</i>	01/03/1987		1713	247
227	Annonaceae	<i>Monoon australe</i>	01/02/1982	Lake Eacham NPWS Nursery	1717	262
227	Annonaceae	<i>Xylopiya maccreae</i>	21/01/2004	Clohesy River NPWS Nursery	1715	275
227	Myrtaceae	<i>Callistemon sp.</i>	01/04/1985	Seed from Arboretum	1698	9999
227	Myrtaceae	<i>Syzygium australe</i>	01/06/1984		1203	4523
227	Myrtaceae	<i>Syzygium puberulum</i>	01/06/1984	Seed from Arboretum	1690	4562
232	Apocynaceae	<i>Cerbera floribunda</i>	14/03/1975	Cooper Creek	1262	338
232	Arecaceae	<i>Archontophoenix maxima</i>	01/04/1981	Walsh River (T.Irvine)	1209	9999
232	Euphorbiaceae	<i>Cleistanthus apodus</i>	01/06/1984	Lake Eacham NPWS Nursery	1266	2244
232	Euphorbiaceae	<i>Glochidion hylandii</i>	01/03/1987	SFR 185	1232	2309
232	Lauraceae	<i>Cryptocarya triplinervis</i>	02/03/1983	Lake Eacham NPWS Nursery	1265	3337
232	Mimosaceae	<i>Acacia celsa</i>	01/03/1984	SFR 1073 (requires Flowers & Fruit)	1231	3842
232	Mimosaceae	<i>Pararchidendron pruinosum</i>	01/03/1984	Lake Eacham NPWS Nursery	1522	4030
232	Moraceae	<i>Ficus triradiata</i>	01/03/1984	TR 142 Zarda LA	1271	4117
233	Lauraceae	<i>Cryptocarya exfoliata</i>	04/02/1976	Lake Eacham NPWS Nursery	1281	3317
233	Lauraceae	<i>Cryptocarya glaucocarpa</i>	01/03/1984	Claudie River	1280	3319
233	Lauraceae	<i>Cryptocarya onoprienkoana</i>	01/03/1984	NPR 353	1286	3330
233	Lauraceae	<i>Litsea breviumbellata</i>	01/01/1980	Lockerbie-Somerset	1285	3380
233	Meliaceae	<i>Toona ciliata</i>	03/06/1984	CSIRO Nursery	1276	3775
233	Meliaceae	<i>Toona ciliata</i>	01/03/1984	CSIRO Nursery	1287	3775
233	Mimosaceae	<i>Adenantha pavonina</i>	01/03/1984	Cooroo Lands VCL Gladly	1288	3986
233	Myrtaceae	<i>Corymbia torelliana</i>	01/03/1984	Kennedy Hwy. Kuranda	1283	4289
233	Rhamnaceae	<i>Emmenosperma alphonoides</i>	01/03/1984	SFR 194	1279	6041
234	Anacardiaceae	<i>Euroschinus falcatus var. falcatus</i>	01/03/1984	Self Sown	1208	219
234	Arecaceae	<i>Livistona sp.</i>	01/03/1984	Barrett Creek. Cooktown	1810	9999
234	Lauraceae	<i>Litsea fawcettiana</i>	01/03/1984	Halloran's Hill	748	3382
234	Meliaceae	<i>Toona ciliata</i>	08/06/1984	Self sown	1275	3775
234	Myrtaceae	<i>Syzygium australe</i>	01/03/1984	Seed from Arboretum	1214	4523
234	Myrtaceae	<i>Syzygium maraca</i>	01/03/1984	Coolamon Creek, Towalla	1278	4556
234	Sapindaceae	<i>Diploglottis smithii</i>	01/03/1984	NPR 904	1205	6494
234	Sapindaceae	<i>Guioa lasioneura</i>	01/03/1984	SFR 185	1277	6528
234	Sapindaceae	<i>Mischocarpus lachnocarpus</i>		Lake Eacham NPWS Nursery	1215	6561
235	Mimosaceae	<i>Archidendron lucyi</i>	01/02/2007	CSIRO Nursery	1229	4000
235	Moraceae	<i>Streblus brunonianus</i>	01/03/1984	Lake Eacham NPWS Nursery	1365	4126
235	Myrtaceae	<i>Syzygium angophoriodes</i>	01/03/1984	Seed from BH6608	1366	4510
235	Myrtaceae	<i>Syzygium australe</i>	01/03/1984	Seed from Arboretum	1222	4523
235	Myrtaceae	<i>Syzygium fibrosum</i>	01/03/1984	Seed from Arboretum	1216	4542
235	Myrtaceae	<i>Xanthostemon chrysanthus</i>	01/03/1984	Lake Eacham NPWS Nursery	1367	4592
235	Rubiaceae	<i>Timonius timon var. timon</i>	08/06/1984	Lake Eacham NPWS Nursery	1370	6294
235	Sapindaceae	<i>Cupaniopsis foveolata</i>	01/03/1984	Lake Eacham NPWS Nursery	1227	6479
235	Sapindaceae	<i>Mischocarpus exangulatus</i>	01/03/1984	SFR 607	1221	6559
235	Sapindaceae	<i>Mischocarpus exangulatus</i>	01/03/1984	SFR 607	1223	6559
235	Sapindaceae	<i>Mischocarpus stipitatus</i>	01/03/1984	SFR 185	1224	6565
236	Elaeocarpaceae	<i>Elaeocarpus bancroftii</i>	01/03/1984	SFR 933	1006	2080
236	Lauraceae	<i>Cryptocarya burckiana</i>	01/03/1984	Claudie River	998	3309
236	Lauraceae	<i>Cryptocarya triplinervis</i>	12/04/1973	Lake Eacham NPWS Nursery	1009	3337
236	Myrsinaceae	<i>Myrsine porosa</i>	01/03/1985	Lake Eacham NPWS Nursery	1004	4175
236	Myrtaceae	<i>Sphaerantia chartacea</i>	20/02/1975	TR 176 Parrot Creek Rossville	985	4512
236	Myrtaceae	<i>Sphaerantia chartacea</i>	07/04/1972	TR 176 Parrot Creek Rossville	991	4512
236	Myrtaceae	<i>Syzygium fibrosum</i>	07/04/1972	Seed from Arboretum	1001	4542

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
236	Myrtaceae	<i>Xanthostemon whitei</i>	07/04/1972	Portion 21 Malanda	992	4599
236	Proteaceae	<i>Grevillea baileyana</i>	07/04/1972	Seed From Arboretum Tree 331	1002	5934
236	Proteaceae	<i>Grevillea baileyana</i>	21/02/1973	Seed From Arboretum Tree 331	1003	5934
236	Proteaceae	<i>Grevillea hilliana</i>	21/02/1973	SFR 657	994	5944
236	Rhamnaceae	<i>Emmenasperma alphonoides</i>	07/04/1972	SFR 194	993	6041
236	Sapindaceae	<i>Cupaniopsis anacardioides</i>	01/04/1974	Atherton	1007	6473
236	Sapindaceae	<i>Cupaniopsis anacardioides</i>	01/04/1974	Atherton	1008	6473
236	Sapindaceae	<i>Cupaniopsis flagelliformis</i> var. <i>flagelliformis</i>	01/03/1984	Lake Eacham NPWS Nursery	967	6477
236	Sapindaceae	<i>Mischocarpus grandissimus</i>	01/03/1984	SFR 758	978	6560
236	Sapindaceae	<i>Mischocarpus grandissimus</i>	01/03/1984	SFR 758	979	6560
236	Sterculiaceae	<i>Franciscodendron laurifolium</i>	01/03/1984	Lake Eacham NPWS Nursery	996	6859
236	Sterculiaceae	<i>Heritiera littoralis</i>	01/03/1986	Daintree River	1000	6868
237	Arecaceae	<i>Livistona muelleri</i>	01/03/1984	Chester River	1230	484
237	Clusiaceae	<i>Calophyllum sil</i>	01/03/1982	Lake Eacham NPWS Nursery	1329	1318
237	Euphorbiaceae	<i>Alchornea thozetiana</i>	01/03/1984	TR 176	1309	2186
237	Lauraceae	<i>Cryptocarya clarksoniana</i>	01/03/1984	Lake Eacham NPWS Nursery	1233	3310
237	Myrtaceae	<i>Allosyncarpia ternata</i>	08/06/1984	Lake Eacham NPWS Nursery	1328	9999
237	Myrtaceae	<i>Sphaerantia chartacea</i>	01/03/1984	TR 176 Parrot Creek Rossville	1237	4512
237	Myrtaceae	<i>Syzygium xerampelinum</i>	01/03/1984	SFR 310	1335	4574
239	Arecaceae	<i>Archontophoenix maxima</i>	01/03/1984	T.Irvine	1793	9999
239	Arecaceae	<i>Archontophoenix maxima</i>	01/03/1984	Walsh River (T.Irvine)	1795	9999
239	Arecaceae	<i>Licuala ramsayi</i> var. <i>ramsayi</i>	01/03/1984	SFR 933	1234	469
239	Arecaceae	<i>Licuala ramsayi</i> var. <i>ramsayi</i>	01/03/1984	SFR 933	1792	469
239	Caesalpiniaceae	<i>Maniltoa lenticellata</i>	01/03/1984	Iron Range (Transplant)	1796	1067
239	Podocarpaceae	<i>Prumnopitys ladei</i>	01/03/1984	SFR 143 Mt.Lewis (Seedling)	1797	5788
241	Arecaceae	<i>Livistona benthamii</i>	01/03/1984	Swamp Creek	1578	479
241	Arecaceae	<i>Livistona benthamii</i>	01/03/1984	Swamp Creek	1585	479
241	Flacourtiaceae	<i>Scolopia braunii</i>	01/03/1984	CSIRO Nursery	1580	2871
241	Myrtaceae	<i>Decaspermum humile</i>	01/03/1984	Lake Eacham NPWS Nursery	1599	4293
241	Myrtaceae	<i>Eugenia reinwardtiana</i>	01/03/1984	Seed from Arboretum	1579	4391
241	Myrtaceae	<i>Eugenia reinwardtiana</i>	01/03/1984	Seed from Arboretum	1582	4391
241	Myrtaceae	<i>Ptilidostigma tetramerum</i>	01/03/1984	Lake Eacham NPWS Nursery	1583	4484
241	Myrtaceae	<i>Ptilidostigma tropicum</i>	01/03/1984	SFR 191	1596	4485
241	Myrtaceae	<i>Rhodomyrtus pervagata</i>	01/03/1984	Lake Eacham NPWS Nursery	1589	4504
242	Acanthaceae	<i>Graptophyllum excelsum</i>	01/03/1984	Yuruga Nursery	1719	28
242	Acanthaceae	<i>Graptophyllum</i> sp. <i>Emu Creek</i>	01/03/1984	Yuruga Nursery	1733	9999
242	Acanthaceae	<i>Graptophyllum spinigerum</i>	01/03/1984	Yuruga Nursery	1730	30
242	Euphorbiaceae	<i>Phyllanthus lamprophyllus</i>	01/03/1984	Yuruga Nursery	1661	2381
242	Euphorbiaceae	<i>Phyllanthus lamprophyllus</i>	01/03/1984	Yuruga Nursery	1688	2381
242	Melastomataceae	<i>Memecylon pauciflorum</i>	01/03/1984	Yuruga Nursery	1663	3732
242	Myrtaceae	<i>Syzygium cryptophlebium</i>	01/03/1984	Lake Eacham NPWS Nursery	1244	4533
242	Proteaceae	<i>Banksia robur</i>	01/03/1984	Yuruga Nursery	1710	5920
242	Rubiaceae	<i>Gardenia psidioides</i>	01/03/1984	Yuruga Nursery	1697	6128
243	Acanthaceae	<i>Graptophyllum excelsum</i>	01/03/1984	Yuruga Nursery	1605	28
243	Acanthaceae	<i>Graptophyllum</i> sp. <i>Emu Creek</i>	01/03/1984	Yuruga Nursery	1629	9999
243	Acanthaceae	<i>Graptophyllum spinigerum</i>	01/03/1984	Yuruga Nursery	1640	30
243	Annonaceae	<i>Uvaria concava</i>	01/03/1984	Iron Range. NPWS Nursery (R.Tucker)	1711	272
243	Arecaceae	<i>Archontophoenix alexandrae</i>	01/03/1984	Peach Creek.Coen	1695	448
243	Arecaceae	<i>Archontophoenix alexandrae</i>	01/03/1984	Peach Creek.Coen	1696	448
243	Arecaceae	<i>Ptychosperma macarthurii</i>	01/03/1980	Cairns nursery (Neville Starkey)	1657	489
243	Caesalpiniaceae	<i>Maniltoa lenticellata</i>	01/01/1975	Claudie River	1699	1067
243	Cycadaceae	<i>Cycas silvestris</i>	04/10/1984	Bolt Head, Olive River	1739	1596
243	Melastomataceae	<i>Memecylon pauciflorum</i>	21/02/1973	Yuruga Nursery	1736	3732
243	Myrtaceae	<i>Baeckea tozerensis</i>	01/01/1970	Yuruga Nursery	1642	9999
243	Myrtaceae	<i>Baeckea tozerensis</i>	01/03/1973	Yuruga Nursery	1650	9999
243	Myrtaceae	<i>Corymbia ptychocarpa</i>	01/04/1972	Gordonvale Primary School	1708	9999
243	Myrtaceae	<i>Melaleuca leucadendra</i>	12/04/1973	Bramston Beach	1705	4453
243	Myrtaceae	<i>Melaleuca leucadendra</i>	07/04/1972	Bramston Beach	1709	4453
243	Myrtaceae	<i>Syzygium brandehorstii</i>	12/04/1973	Lockerbie	1701	4527
243	Myrtaceae	<i>Syzygium luehmannii</i>	10/04/1973	CSIRO Nursery	1707	4553
243	Rubiaceae	<i>Gardenia psidioides</i>	01/04/1972	Yuruga Nursery	1651	6128
243	Rubiaceae	<i>Gardenia psidioides</i>	07/04/1972	Yuruga Nursery	1656	6128
243	Sapindaceae	<i>Mischocarpus exangulatus</i>	21/02/1973	SFR 607	1700	6559
243	Sterculiaceae	<i>Helicteres isora</i>	01/04/1972	Cape York Penuinsula A Ford	178	6863
243	Zamiaceae	<i>Bowenia spectabilis</i> x <i>serrulata</i>	16/01/1974	Bob Hewitt (Nth Qld x Byfield)	1600	9999
245	Proteaceae	<i>Stenocarpus sinuatus</i>	04/02/1984	Original Landscape Planting	1248	5996

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
245	Proteaceae	<i>Stenocarpus sinuatus</i>	01/03/1984	Original Landscape Planting	1249	5996
247	Myrtaceae	<i>Callistemon viminalis</i>	15/05/1975	Original Landscape Planting	1250	4232
250	Myrtaceae	<i>Eucalyptus pellita</i>	01/01/1970	Tozer Gap	1256	4362
251	Myrtaceae	<i>Asteromyrtus brassii</i>	01/04/1973	TR 14 Leo Ck.	1261	4199
254	Myrtaceae	<i>Corymbia abergiana</i>	01/01/1970	Hidden Valley Holding	1263	4239
256	Myrtaceae	<i>Eucalyptus crebra</i>	01/01/1970	Lankelly Creek	1268	4322
268	Arecaceae	<i>Arenga australasica</i>	01/01/1970	Kurramine Beach (T.Irvine)	1813	453
268	Myrtaceae	<i>Syzygium cormiflorum</i>	01/04/1978	Lake Eacham NPWS Nursery	1323	4531
268	Myrtaceae	<i>Syzygium cormiflorum</i>	01/04/1972	Lake Eacham NPWS Nursery	1324	4531
268	Naucleaceae	<i>Nauclea orientalis</i>	01/04/1978	Lake Eacham NPWS Nursery	1325	6178
268	Pandanaceae	<i>Pandanus sp.</i>	14/03/1974	Unknown Source	1814	9999
268	Podocarpaceae	<i>Prumnopytis amara</i>	14/03/1974	Lake Eacham NPWS Nursery	1085	5789
269	Annonaceae	<i>Cananga odorata</i>	16/01/1974	Lake Eacham NPWS Nursery	1168	233
269	Elaeocarpaceae	<i>Elaeocarpus bancroftii</i>	14/03/1974	SFR 933	1153	2080
269	Lauraceae	<i>Cinnamomum oliveri</i>	14/03/1974	Claudie River	1166	3301
269	Lauraceae	<i>Endiandra hypotephra</i>	12/04/1980	Noah Creek	1732	3357
269	Lauraceae	<i>Endiandra impressicosta</i>	14/03/1974	SER 607	1171	3358
269	Lauraceae	<i>Endiandra impressicosta</i>	01/03/1984	SFR 607	1173	3358
269	Moraceae	<i>Streblus brunonianus</i>	01/01/1970	Lake Eacham NPWS Nursery	1760	4126
269	Myrtaceae	<i>Lindsayomyrtus racemoides</i>	01/06/1984	Lake Eacham NPWS Nursery	1157	4429
269	Myrtaceae	<i>Stockwellia quadrifida</i>	01/06/1984	Lake Eacham NPWS Nursery	1109	4514
269	Myrtaceae	<i>Stockwellia quadrifida</i>	01/03/1984	Lake Eacham NPWS Nursery	1752	4514
269	Myrtaceae	<i>Syzygium cormiflorum</i>	01/03/1984	Lake Eacham NPWS Nursery	1169	4531
269	Myrtaceae	<i>Syzygium cormiflorum</i>	01/01/1970	Lake Eacham NPWS Nursery	1170	4531
269	Proteaceae	<i>Grevillea hilliana</i>	01/03/1984	SFR 657	1175	5944
269	Rubiaceae	<i>Atractocarpus fitzalanii subsp. fitzalanii</i>	01/03/1984	Lake Eacham NPWS Nursery	1174	6097
269	Sapindaceae	<i>Sarcopteryx reticulata</i>	01/03/1984		1108	6576
270	Arecaceae	<i>Normanbya normanbyi</i>	01/03/1984	Noah Creek	1812	485
270	Elaeocarpaceae	<i>Elaeocarpus arnhemicus</i>	01/03/1977	Davies Creek	1293	2079
270	Euphorbiaceae	<i>Dissiliaria laxinervis</i>	01/02/1987	Lake Eacham NPWS Nursery	1321	2279
270	Euphorbiaceae	<i>Phyllanthus cuscutiflorus</i>	01/03/1984	Lake Eacham NPWS Nursery	1716	2368
270	Meliaceae	<i>Dysoxylum mollissimum subsp. molle</i>	01/03/1984	SFR 452	1297	3761
270	Myrtaceae	<i>Callistemon viminalis</i>	01/03/1984	Seed from Arboretum	1289	4232
270	Myrtaceae	<i>Callistemon viminalis</i>	01/03/1984	Seed from Arboretum	1291	4232
270	Myrtaceae	<i>Decaspermum humile</i>	01/03/1984	Lake Eacham NPWS Nursery	1594	4293
270	Myrtaceae	<i>Syzygium australe</i>	01/03/1984	Seed from Arboretum	1290	4523
270	Rutaceae	<i>Acronychia crassipetala</i>	01/03/1984	Lake Eacham NPWS Nursery	1294	6312
270	Sapindaceae	<i>Elattostachys xylocarpa</i>	01/04/1984	Lake Eacham NPWS Nursery	1295	6523
270	Sapindaceae	<i>Guioa acutifolia</i>	01/03/1984	Lake Eacham NPWS Nursery	1298	6526
270	Sapindaceae	<i>Toechima pterocarpum</i>	01/03/1977	Bushy Creek Julatten	1296	6590
271	Araliaceae	<i>Schefflera actinophylla</i>	03/04/1987	Self Sown	1198	440
271	Arecaceae	<i>Normanbya normanbyi</i>	01/04/1984	Noah Creek	1307	485
271	Davidsoniaceae	<i>Davidsonia pruriens</i>	01/03/1984	Lake Eacham NPWS Nursery	1304	1938
271	Dilleniaceae	<i>Dillenia alata</i>	01/03/1984		1191	1957
271	Euphorbiaceae	<i>Dissiliaria sp.</i>	01/01/1978	Lake Eacham NPWS Nursery	1308	9999
271	Flacourtiaceae	<i>Scolopia braunii</i>	02/03/1978	Lake Eacham NPWS Nursery	1199	2871
271	Myrtaceae	<i>Choricarpia subargentia</i>	01/06/1984	Lake Eacham NPWS Nursery	1386	4237
271	Myrtaceae	<i>Syzygium australe</i>	12/03/1984	Seed from Arboretum	1300	4523
271	Myrtaceae	<i>Syzygium cormiflorum</i>	01/03/1984	Lake Eacham NPWS Nursery	1305	4531
271	Myrtaceae	<i>Syzygium fibrosum</i>	01/01/1970	Seed from Arboretum	1306	4542
271	Myrtaceae	<i>Syzygium fibrosum</i>	01/03/1984	Seed from Arboretum	1395	4542
271	Sapindaceae	<i>Cupaniopsis anacardioides</i>	01/03/1984	Atherton	1187	6473
271	Sapindaceae	<i>Diploglottis diphylostegia</i>	01/04/1973	Lake Eacham NPWS Nursery	1186	6489
271	Sapotaceae	<i>Niemeyera prunifera</i>	01/03/1984	SFR 605	1302	6597
272	Cunoniaceae	<i>Pseudoweinmannia apetala</i>	01/03/1984	TR 165	1315	1563
272	Davidsoniaceae	<i>Davidsonia pruriens</i>	26/02/1973	Lake Eacham NPWS Nursery	1056	1938
272	Elaeocarpaceae	<i>Peripentadenia phelpsii</i>	05/04/1976	NPR 133	1314	2107
272	Euphorbiaceae	<i>Alchornea thozetiana</i>	12/04/1980	TR 176	1331	2186
272	Myrtaceae	<i>Endiandra longipedicellata</i>	01/03/1984		1313	3362
272	Myrtaceae	<i>Syzygium cormiflorum</i>	01/03/1984	Lake Eacham NPWS Nursery	1052	4531
272	Myrtaceae	<i>Syzygium cormiflorum</i>	01/03/1984	Lake Eacham NPWS Nursery	1310	4531
272	Myrtaceae	<i>Syzygium velarum</i>	01/03/1984	Lockerbie	1311	9999
272	Sapindaceae	<i>Mischarytera macrobotrys</i>	01/03/1984	Claudie River	1053	6554
272	Sterculiaceae	<i>Brachychiton acerifolius</i>	01/03/1984	Lake Eacham NPWS Nursery	1316	6833
273	Euphorbiaceae	<i>Phyllanthus cuscutiflorus</i>	01/03/1984	Lake Eacham NPWS Nursery	1069	2368
273	Lauraceae	<i>Endiandra impressicosta</i>	01/03/1984	SFR 933	1312	3358

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
273	Myrtaceae	<i>Ristantia pachysperma</i>	01/06/1984	Lake Eacham NPWS Nursery	1067	4510
273	Myrtaceae	<i>Syzygium claviflorum</i>	16/01/1974	SFR 299	1320	4192
273	Myrtaceae	<i>Syzygium graveolens</i>	16/01/1974	NPWS Nursery.SFR 755 Russel River	1318	4186
273	Proteaceae	<i>Athertonia diversifolia</i>	16/01/1974	IRVINE (Seedling)	1317	5912
276	Amaryllidaceae	<i>Crinum pedunculatum</i>	01/03/1973	Rocky River (Transplant)	18	206
276	Araceae	<i>Rhaphidophora hayi</i>	01/01/1973	Noah Creek (Transplant)	1183	9999
276	Araliaceae	<i>Polyscias willmottii</i>	12/04/1988	SFR 143	1646	439
276	Araliaceae	<i>Polyscias willmottii</i>	12/04/1988	SFR 143	1660	439
276	Arecaceae	<i>Arenga australasica</i>	12/04/1988	Kurramine Beach (T.Irvine)	1433	453
276	Arecaceae	<i>Licuala ramsayi</i> var. <i>ramsayi</i>	12/04/1988	SFR 933	1602	469
276	Arecaceae	<i>Licuala ramsayi</i> var. <i>ramsayi</i>	12/04/1988	SFR 933	1644	469
276	Arecaceae	<i>Livistona decora</i>	12/04/1988	Cape Hillsborough Road	1047	9999
276	Arecaceae	<i>Livistona</i> sp.	12/04/1988	Eungella Range	1593	9999
276	Aspidiaceae	<i>Arachniodes aristata</i>	04/10/1984	G.Stocker (Transplant)	199	2028
276	Aspleniaceae	<i>Asplenium nidus</i>	08/06/1984	SFR 185 (Transplant)	202	603
276	Blechnaceae	<i>Blechnum cartilagineum</i>	12/04/1988	G.Stocker (Transplant)	1748	891
276	Cunoniaceae	<i>Spiraeanthemum davidsonii</i>	12/04/1988	Lake Eacham NPWS Nursery	1617	1547
276	Cyatheaceae	<i>Cyathea cooperi</i>	01/01/2011	SFR 194 (Transplant)	30	1578
276	Cyatheaceae	<i>Cyathea cooperi</i>	01/06/1984	SFR 194 (Transplant)	189	1578
276	Cyatheaceae	<i>Cyathea rebecca</i>	04/10/1984	SFR 194 (Transplant)	52	1581
276	Cyatheaceae	<i>Cyathea rebecca</i>	01/01/2002	SFR 194 (Transplant)	99	1581
276	Liliaceae	<i>Dianella</i> sp.	11/04/1988	SFR 143 (Transplant)	21	9999
276	Liliaceae	<i>Dianella</i> sp.	01/10/1985	(Transplant)	1764	9999
276	Liliaceae	<i>Proiphys amboinensis</i>	05/10/1984	Cardwell (Transplant)	50	210
276	Loganiaceae	<i>Fagraea berteriana</i>	09/02/1988	TR 14 Leo Creek	1772	2879
276	Myrsinaceae	<i>Myrsine irenae</i> subsp. <i>irenae</i>	01/10/1984	SFR 143	1628	4172
276	Myrtaceae	<i>Syzygium cryptophlebium</i>	01/04/1983	CSIRO Nursery	1621	4533
276	Myrtaceae	<i>Syzygium wilsonii</i> subsp. <i>wilsonii</i>	10/10/1984	Lake Eacham NPWS Nursery	1627	4572
276	Myrtaceae	<i>Syzygium wilsonii</i> subsp. <i>wilsonii</i>	01/10/1984	Lake Eacham NPWS Nursery	1635	4572
276	Myrtaceae	<i>Syzygium wilsonii</i> subsp. <i>wilsonii</i>	01/10/1984	Seed from Arboretum	1654	4572
276	Orchidaceae	<i>Calanthe triplicata</i>	01/01/2002	SFR 310 Swipers LA (Transplant)	1179	4761
276	Orchidaceae	<i>Dendrobium monophyllum</i>	04/10/1984	SFR 756 (Transplant)	1577	4819
276	Osmundaceae	<i>Todea barbara</i>	01/10/1984	SFR 194	97	5005
276	Pandaceae	<i>Freycinetia scandens</i>	01/01/2002	(Transplant)	1082	5021
276	Proteaceae	<i>Eidothea zoexylocarya</i>	30/05/1978	new germination	1822	5931
276	Rubiaceae	<i>Ixora biflora</i>	01/01/2002	SFR 143	117	6152
276	Sapindaceae	<i>Harpullia rhyticarpa</i>	04/10/1984	SFR 143	1623	6538
276	Sapindaceae	<i>Harpullia rhyticarpa</i>	10/10/1984	TR 14 McIlwraith Range	1634	6538
276	Sapindaceae	<i>Mischocarpus grandissimus</i>	01/10/1984	SFR 758	1612	6560
276	Thymelaeaceae	<i>Phaleria clerodendron</i>	15/05/1974	G.Sankowsky	1611	6976
276	Winteraceae	<i>Bubbia queenslandiana</i> subsp. <i>queenslandiana</i>	02/01/2002	SFR 143 Mount Lewis (Transplant)	1615	7159
276	Zamiaceae	<i>Lepidozamia hopei</i>	01/01/2002	TR 603 (Transplant)	115	7182
276	Zingiberaceae	<i>Alpinia caerulea</i>	01/10/1984	G.Stocker (Transplant) SFR 310	1185	7186
276	Zingiberaceae	<i>Alpinia caerulea</i>	01/01/2002	SFR 191 Wongabell (Transplant)	1765	7186
276	Zingiberaceae	<i>Curcuma australasica</i>	01/01/2002	Claudie River	140	7195
277	Arecaceae	<i>Ptychosperma elegans</i>	10/10/1984	TR 14	487	488
277	Arecaceae	<i>Ptychosperma elegans</i>	01/01/2002	TR 14	1036	488
277	Arecaceae	<i>Ptychosperma elegans</i>	01/01/2002	TR 14	1624	488
277	Bignoniaceae	<i>Pandorea pandorana</i>	01/02/1987	SFR 310 Gadgarra (Transplant)	266	878
277	Cyatheaceae	<i>Cyathea celebica</i>	01/02/1987	SFR 62 (Transplant)	1648	1577
277	Cycadaceae	<i>Cycas media</i>	01/02/1987	Gillies Range (Transplant)	235	9999
277	Lauraceae	<i>Cryptocarya laevigata</i>	01/02/1987	Currumbin Q.	1601	3322
277	Moraceae	<i>Ficus septica</i>	01/02/1987	Noah Creek (Transplant)	273	4113
277	Zamiaceae	<i>Bowenia spectabilis</i>	01/02/1987	TR 1230 Boonjie (Transplant)	1647	7181
277	Zingiberaceae	<i>Alpinia caerulea</i>	01/03/1985	SFR 191 (Transplant)	237	7186
277	Zingiberaceae	<i>Alpinia caerulea</i>	01/02/1987	SFR 191 (Transplant)	275	7186
277	Zingiberaceae	<i>Alpinia caerulea</i>	01/02/1987	SFR 310 Caribou LA (Transplant)	1641	7186
285	Myrtaceae	<i>Eucalyptus camaldulensis</i> var. <i>obtusata</i>	01/02/1987	Oaky Creek.Irvinebank	1334	4307
287	Myrtaceae	<i>Corymbia tessellaris</i>	01/02/1987	Rocky River	1339	4288
290	Myrtaceae	<i>Eucalyptus crebra</i>	01/02/1987	Stannary Hills	1348	4322
291	Myrtaceae	<i>Corymbia peltata</i>	01/02/1987	Mount Garnet	1352	4275
291	Myrtaceae	<i>Eucalyptus microneura</i>	02/01/2002	Gilbert River Flats	1355	4354
292	Euphorbiaceae	<i>Flueggea virosa</i> subsp. <i>melanthesioides</i>	01/02/1987	Murray Upper ?	1362	2297
292	Myrtaceae	<i>Eucalyptus microneura</i>	01/02/1987	Gilbert River Flats	1359	4354
292	Myrtaceae	<i>Eucalyptus moluccana</i>	01/02/1987	Gunnawarra	1356	4356
292	Myrtaceae	<i>Eucalyptus moluccana</i>	01/01/2002	Gunnawarra	1358	4356

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
305	Annonaceae	<i>Goniathalamus australis</i>	01/02/1987	Lake Eacham NPWS Nursery	1390	239
305	Cunoniaceae	<i>Ceratopetalum succirubrum</i>	01/02/1987	SFR 194	1374	1558
305	Lauraceae	<i>Endiandra montana</i>	01/02/1986	Liverpool Ck.	1376	3367
305	Myrtaceae	<i>Backhousia bancroftii</i>	01/02/1984	NPR 1394	1387	4211
305	Myrtaceae	<i>Callistemon viminalis</i>	01/02/1984	Seed from Arboretum	1408	4232
305	Myrtaceae	<i>Sphaerantia discolor</i>	01/02/1987	McNamee Creek SFR 756	1373	4513
305	Myrtaceae	<i>Syzygium luehmannii</i>	01/02/1987	SFR 607	1375	4553
305	Proteaceae	<i>Darlingia ferruginea</i>	01/02/1984	Lake Eacham NPWS Nursery	1377	5930
305	Proteaceae	<i>Lomatia fraxinifolia</i>	02/01/2002	SFR 185 Haig LA	1379	5974
305	Proteaceae	<i>Musgravea heterophylla</i>	01/02/1988	Portion 275 Alexandra	1372	5979
305	Proteaceae	<i>Stenocarpus sinuatus</i>		Seed From Arboretum Tree 1248	1388	5996
305	Rubiaceae	<i>Gardenia ovularis</i>	01/02/1988	SFR 310	1419	6127
305	Sterculiaceae	<i>Brachychiton acerifolius</i>	01/03/1984	Lake Eacham NPWS Nursery	1382	6833
306	Myrtaceae	<i>Asteromyrtus brassii</i>	01/02/1988	Lake Eacham NPWS Nursery	1397	4199
306	Myrtaceae	<i>Callistemon viminalis</i>	01/01/2002	Seed from Arboretum	1400	4232
306	Myrtaceae	<i>Syzygium alliligneum</i>	01/02/1988	Seed from GS 925	1384	4518
306	Myrtaceae	<i>Syzygium australe</i>	01/02/1988	Seed from Arboretum	1392	4523
306	Myrtaceae	<i>Syzygium divaricatum</i>	01/02/1988	Lake Eacham NPWS Nursery	1380	4185
306	Myrtaceae	<i>Syzygium fibrosum</i>	01/01/2002	Seed from Arboretum	1396	4542
306	Myrtaceae	<i>Syzygium fibrosum</i>	12/04/1988	Seed from Arboretum	1401	4542
306	Sapindaceae	<i>Mischarytera macrobotrys</i>	01/06/1984	Claudie River	1398	6554
307	Arecaceae	<i>Livistona fulva</i>	01/01/2002	Blackdown Tableland	1816	9999
307	Arecaceae	<i>Livistona nitida</i>	12/04/1988	Delusion Creek	1817	9999
307	Cycadaceae	<i>Cycas normanbyi</i>	01/01/2002	Stannary Hills	1427	9999
307	Myrtaceae	<i>Melaleuca quinquenervia</i>	01/01/1993	Lake Eacham NPWS Nursery	1404	4460
307	Proteaceae	<i>Stenocarpus angustifolius</i>	13/04/1988	CSIRO Nursery	1402	5991
308	Arecaceae	<i>Livistona fulva</i>	12/04/1988	Blackdown Tableland	1412	9999
308	Arecaceae	<i>Livistona sp.</i>	01/07/1974	Paluma Range	1414	9999
308	Arecaceae	<i>Livistona sp.</i>	01/03/1984	Paluma Range	1416	9999
308	Arecaceae	<i>Wodyetia bifurcata</i>	01/03/1984	Melville Range	1428	491
308	Cycadaceae	<i>Cycas normanbyi</i>	12/04/1988	Stannary Hills	1424	9999
308	Cycadaceae	<i>Cycas normanbyi</i>	21/01/2004	Stannary Hills	1425	9999
308	Hamamelidaceae	<i>Ostrearia australiana</i>	12/04/1988	TR 176	1406	3017
308	Myrtaceae	<i>Corymbia intermedia</i>	01/03/1984	Atherton Golf Club	1411	4265
308	Pandanaceae	<i>Pandanus solmslaubachii</i>	12/04/1988	Unknown Source	1417	5031
308	Pandanaceae	<i>Pandanus solmslaubachii</i>	12/04/1988	Julatten	1429	5031
308	Proteaceae	<i>Stenocarpus angustifolius</i>	01/01/1974	CSIRO Nursery	1407	5991
309	Cycadaceae	<i>Cycas normanbyi</i>	07/03/1974	Stannary Hills	1426	9999
309	Myrtaceae	<i>Syzygium cryptophlebium</i>	12/04/1988	Lake Eacham NPWS Nursery	1420	4533
318	Sterculiaceae	<i>Brachychiton discolor</i>	12/04/1988	Original Landscape Planting	1438	9999
320	Myrtaceae	<i>Syncarpia glomulifera subsp. glomulifera</i>	01/02/1988	SFR 194 (Transplant)	1440	4515
322	Myrtaceae	<i>Corymbia abergiana</i>	07/04/1974	Hidden Valley Holding	1445	4240
322	Myrtaceae	<i>Eucalyptus persistens</i>	12/04/1988	Mount Garnet	1443	4363
323	Myrtaceae	<i>Eucalyptus moluccana</i>	12/04/1988	Innot Hot Springs	1446	4356
323	Myrtaceae	<i>Eucalyptus tardecidens</i>	12/04/1988	Mount Carbine	1447	4383
323	Myrtaceae	<i>Eucalyptus tardecidens</i>	12/04/1988	Mount Carbine	1448	4383
324	Myrtaceae	<i>Corymbia peltata</i>	01/02/1988	Mount Garnet	1345	4275
324	Myrtaceae	<i>Eucalyptus crebra</i>	12/04/1988	Ravenshoe	1450	4322
326	Myrtaceae	<i>Eucalyptus pellita</i>	04/10/1984	Mount Garnet	1451	4362
327	Euphorbiaceae	<i>Flueggea melanthesioides</i>	01/02/1976	Murray Upper ?	1363	9999
328	Fabaceae	<i>Erythrina variegata</i>	01/02/1976	Claudie River	1458	2595
328	Myrtaceae	<i>Eucalyptus grandis</i>	01/01/1973	SFR 194	1457	4337
328	Myrtaceae	<i>Eucalyptus moluccana</i>	01/01/1975	Gunnawarra	1437	4356
328	Myrtaceae	<i>Eucalyptus moluccana</i>	27/04/1973	Gunnawarra	1453	4356
328	Myrtaceae	<i>Eucalyptus shirleyi</i>	27/04/1973	Snubby Creek Ravenshoe	1454	4377
329	Myrtaceae	<i>Eucalyptus reducta</i>	02/02/1972	Closey River	1460	4374
329	Sterculiaceae	<i>Brachychiton australis</i>	04/10/1984	40 Mile Scrub	1459	6835
330	Myrtaceae	<i>Eucalyptus sp.</i>	01/03/1984	Unknown (Requires Flowers & Fruit)	1462	9999
330	Myrtaceae	<i>Melaleuca linariifolia</i>	01/03/1984	Original Landscape Planting	1461	9999
330	Sterculiaceae	<i>Brachychiton discolor</i>	12/04/1988	Original Landscape Planting	1463	9999
331	Myrtaceae	<i>Melaleuca linariifolia</i>	01/03/1984	Original Landscape Planting	1465	9999
331	Sterculiaceae	<i>Brachychiton discolor</i>	01/03/1984	Original Landscape Planting	1464	9999
335	Myrtaceae	<i>Rhodamnia longispala</i>	01/03/1984	A.Ford	1862	4493
335	Myrtaceae	<i>Syzygium luehmannii</i>	01/03/1984	CSIRO Nursery	1471	4553
335	Myrtaceae	<i>Syzygium pringlei</i>	01/03/1984	A.Ford, Cooktown area	1863	4193
335	Podocarpaceae	<i>Podocarpus elatus</i>		Bakers Blue Mountains	1919	

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
335	Rubiaceae	<i>Psyrax odorata</i>	16/01/2006	Iron Range collection (A. Ford)	1944	
336	Clusiaceae	<i>Garcinia brassii</i>	16/01/2006	Andrew Ford, Mt Sorrow	1918	1320
336	Myrtaceae	<i>Syzygium floribundum</i>	22/02/2007	Kaurivale.Kin Kin Area	1474	4585
336	Myrtaceae	<i>Syzygium luehmannii</i>	22/02/2007	CSIRO Nursery	1473	4553
336	Proteaceae	<i>Stenocarpus angustifolius</i>	22/02/2007	Walsh River	1472	5991
337	Myrtaceae	<i>Syzygium floribundum</i>	22/02/2007	Kaurivale.Kin Kin Area	1475	4585
337	Myrtaceae	<i>Syzygium paniculatum</i>	22/02/2007	Carrington Falls	1476	9999
338	Myrtaceae	<i>Syzygium francisii</i>	22/02/2007	Kin Kin Area	1477	4546
338	Rutaceae	<i>Acronychia peminsularis</i>	22/02/2007	Macrossan Range	145	6318
339	Myrtaceae	<i>Syzygium australe</i>	22/02/2007	Seed from Arboretum	1481	4523
339	Myrtaceae	<i>Syzygium francisii</i>	22/02/2007	Kin Kin Area	1480	4546
340	Arecaceae	<i>Livistona drudei</i>	12/03/2007	Hen Camp Creek	1487	482
340	Myrtaceae	<i>Backhousia citriodora</i>	14/03/2007	Original landscape Planting	1488	4212
341	Arecaceae	<i>Livistona fulva</i>	14/03/2007	Blackdown Tableland	1492	9999
341	Arecaceae	<i>Livistona fulva</i>	14/03/2007	Blackdown Tableland	1818	9999
341	Arecaceae	<i>Livistona nitida</i>	14/03/2007	Delusion Creek	1491	9999
341	Arecaceae	<i>Livistona sp.</i>	14/03/2007	Blackdown Tableland	1490	9999
341	Lauraceae	<i>Cryptocarya bidwillii</i>	14/03/2007	SFR 299 Conway	1484	3307
341	Myrtaceae	<i>Melaleuca linariifolia</i>	14/03/2007	Seed From Arboretum Tree 1461	1494	9999
341	Myrtaceae	<i>Syzygium fibrosum</i>	19/02/2008	Seed from Arboretum	1485	4542
342	Arecaceae	<i>Livistona fulva</i>	19/02/2008	Blackdown Tableland	1503	9999
342	Arecaceae	<i>Livistona fulva</i>	19/02/2008	Blackdown Tableland	1505	9999
342	Arecaceae	<i>Livistona nitida</i>	19/02/2008	Delusion Creek	1819	9999
342	Arecaceae	<i>Wodyetia bifurcata</i>	19/02/2008	Melville Range	1499	491
342	Myrtaceae	<i>Leptospermum brachyandrum</i>	19/02/2008	SFR 486	1497	4421
342	Myrtaceae	<i>Melaleuca viridiflora</i>	19/02/2008	Seed From Arboretum Tree 634	1498	4467
342	Pittosporaceae	<i>Pittosporum ferrugineum</i>	19/02/2008	VCL Gadgarra	1506	5105
342	Proteaceae	<i>Buckinghamia celsissima</i>	16/02/2009	Lake Eacham NPWS Nursery	1500	5923
343	Arecaceae	<i>Livistona nitida</i>	23/03/2010	Delusion Creek	1523	9999
343	Arecaceae	<i>Wodyetia bifurcata</i>	16/02/2009	Melville Range	1519	491
343	Myrtaceae	<i>Leptospermum brachyandrum</i>	16/02/2009	SFR 486	1516	4421
343	Myrtaceae	<i>Melaleuca bracteata</i>	16/02/2009	Wild River Silver Valley	1511	4446
343	Myrtaceae	<i>Syzygium armstrongii</i>	16/02/2009	Melville Island ?	1513	9999
343	Myrtaceae	<i>Syzygium australe</i>	16/02/2009	Seed from Arboretum	1508	4523
343	Myrtaceae	<i>Syzygium fibrosum</i>	16/02/2009	Seed from Arboretum	1520	4542
343	Proteaceae	<i>Athertonia diversifolia</i>	16/02/2009	IRVINE (Seedling)	1514	5912
344	Lauraceae	<i>Cryptocarya bidwillii</i>	16/02/2009	SFR 299 Conway	1483	3307
344	Myrtaceae	<i>Syzygium paniculatum</i>	16/02/2009	Carrington Falls	1564	9999
344	Sapindaceae	<i>Sarcopteryx martyana</i>	16/02/2009	SFR 185	1526	6574
344	Sapotaceae	<i>Planchonella chartacea</i>	16/02/2009	Wyvuri Holding	1525	6604
345	Lauraceae	<i>Cryptocarya grandis</i>	16/02/2009	SFR 933	1530	3320
345	Myrtaceae	<i>Backhousia citriodora</i>	16/02/2009	Original Landscape Planting	1482	4212
345	Myrtaceae	<i>Backhousia citriodora</i>	23/03/2010	Original Landscape Planting	1533	4212
345	Myrtaceae	<i>Callistemon viminalis</i>	23/03/2010	Seed from Arboretum	1532	4232
345	Myrtaceae	<i>Syzygium paniculatum</i>	23/03/2010	Carrington Falls	1565	9999
345	Rutaceae	<i>Flindersia pimenteliana (X F.oppositifolia)</i>	23/03/2010	T.Irvine cross pollenation	1531	9999
346	Myrtaceae	<i>Melaleuca bracteata</i>	12/04/2010	Wild River Silver Valley	1535	4446
347	Myrtaceae	<i>Syzygium fibrosum</i>	13/04/2010	Seed from Arboretum	1478	4542
347	Proteaceae	<i>Athertonia diversifolia</i>	13/04/2010	IRVINE (Seedling)	1537	5912
348	Celastraceae	<i>Brassiantha hedraiantheroides</i>	13/04/2010	Yarrabah, Browns Creek	1949	
348	Myrtaceae	<i>Syzygium eucalyptoides</i>	13/04/2010	Walsh River Chillagoe	1538	4539
348	Myrtaceae	<i>Syzygium smithii</i>	13/04/2010	SFR 194	1479	4191
348	Proteaceae	<i>Stenocarpus angustifolius</i>	13/04/2010	CSIRO Nursery	1540	5991
348	Proteaceae	<i>Stenocarpus verticis</i>	13/04/2010	Lake Eacham NPWS Nursery	1541	5998
349	Myrtaceae	<i>Gossia bidwillii</i>	18/01/2011	Downfall Creek	1840	4396
349	Myrtaceae	<i>Syzygium coolminianum</i>	18/01/2011	Broxner Park (Coffs Harbour)	1545	9999
349	Myrtaceae	<i>Syzygium eucalyptoides</i>	18/01/2011	Walsh River Chillagoe	1542	4539
350	Myrtaceae	<i>Gossia bidwillii</i>	18/01/2011	Downfall Creek	1841	4396
350	Myrtaceae	<i>Syzygium australe</i>	17/02/2014	Seed from Arboretum	1548	4523
350	Myrtaceae	<i>Syzygium pringlei</i>	17/02/2014	A.Ford, Cooktown area	1844	4193
350	Myrtaceae	<i>Syzygium smithii</i>	17/02/2014	SFR 194	1546	4191
351	Myrtaceae	<i>Syzygium australe</i>	17/02/2014	Seed from Arboretum	1549	4523
351	Myrtaceae	<i>Syzygium australe</i>	17/02/2014	Seed from Arboretum	1550	4523
351	Myrtaceae	<i>Syzygium australe</i>	17/02/2014	Seed from Arboretum	1553	4523
351	Rubiaceae	<i>Atractocarpus fitzalanii subsp. fitzalanii</i>	17/02/2014	Lake Eacham NPWS Nursery	1551	6097
352	Loganiaceae	<i>Fagraea berteriana</i>	17/02/2014	CSIRO Nursery	1558	2879

Plot	Family	Taxon	Date planted	Source	Tag	Plant ID
352	Myrtaceae	<i>Syzygium australe</i>	17/02/2014	Seed from Arboretum	1554	4523
352	Myrtaceae	<i>Syzygium australe</i>	17/02/2014	Seed from Arboretum	1555	4523
352	Myrtaceae	<i>Syzygium australe</i>	17/02/2014	Seed from Arboretum	1556	4523
356	Myrtaceae	<i>Syncarpia glomulifera subsp. glomulifera</i>	17/02/2014	SFR 194 (Transplant)	1572	4515
356	Myrtaceae	<i>Xanthostemon umbrosus</i>	17/02/2014	TR 14	1430	4597
359	Myrtaceae	<i>Eucalyptus grandis</i>	17/02/2014	SFR 194	1571	4337

RAIN FOREST KEY

Five percent inspiration, ninety five percent perspiration.
(Apologies to T.A. Edison and perhaps Nicola Tesla.)

Background

I first worked in North Queensland rain forests in 1957. I collected quite a few specimens and realized it was not only difficult to collect from trees, but it was also hard to identify them from the literature available at that time viz. Queensland Flora and Francis – Australian Rain-forest Trees.

Following graduation, I was, in 1960, appointed as an Assistant Forester in the Research Section at Atherton Forestry Office. The main item on my duty statement was to study the regeneration of the prime cabinet species following logging and silvicultural treatment of the rain forest.

After a few years it was suggested that I should compile a manual to help tree markers and other departmental employees identify the rain forest trees.

At this stage, I should point out that the senior officers in the Forestry Department were very competent men who knew how to deal with difficult people. They dealt with timber cutters, sawmillers, conniving politicians and rebellious staff.

Many of the departmental officers had served in the armed forces and employed the army tactic of nullifying a tiresome recruit by making him a lance-corporal. That recruit was then hated by his fellow recruits, despised by regular non commissioned officers and regarded with amused contempt by the commissioned officers.

In my case, they already had me loaded down with the impossible number of 150 regeneration plots. Adding the identification manual was the coup de grace. If I was a young Turk, they had successfully nullified me.

In the early 1960's there were about 160 tree species which were logged for the production of timber. The whole logging operation was carefully controlled and each tree was marked for logging by a tree marker. He recorded the species, the size of the tree, gave it a number and indicated the direction in which it should be felled.

Subsequent extraction operations were also carefully controlled and there was a constant parry and thrust between forestry officers and sawmill representatives. It was very important that tree markers could quickly and accurately identify the trees to be logged.

However, getting back to my task of producing an identification manual: I argued that to identify the 160 commercial species one had to incorporate information on all the other tree species to avoid the possibility of identifying a non-commercial species as a commercial species. (At that time we did not know that we would eventually be talking of about 1000 additional tree species). To my surprise, my logic was accepted fairly readily. I had dug a hole for myself, and had done the one thing a good soldier never did: I had volunteered to do a task which was obviously impossible. They would have no more trouble with me, and everybody was happy.

The Identification Manual

My superiors expected that I would produce a written manual and I certainly made tentative steps in that direction. However, I had experienced the trauma of using large dichotomous keys and did not think them appropriate for tree markers and other personnel.

Edge Punched Card Keys had already been produced by Norm Hall and Doug Johnston for identification of Eucalyptus in Australia. They had also produced a similar key to identify plant families. Similar card keys also existed to identify timber samples in Australia.

I did not think that the available edge punch cards would be able to handle the number of species I envisaged, and I did not want to use double edge punched cards, because they were difficult to use. With edge punched cards each card normally represents a species or other entity and each of the punching positions represents a character or character state.

I had heard of cards using the Visual or Peek-a-Bo system. In this system, each card represents a character or character state and each position on the card represents a species or similar entity. Visual punch cards are punched all over the surface of the card but conform to the some sort of grid pattern. I designed a visual punch card layout which I thought would have been adequate for my purposes. It measured 420 x 265 mm. It was designed to allow 1500 punching positions. We now know this would have been able to accommodate all the trees. However, it could not have been very portable and it would have been distinctly awkward to use.

About this time, 80 Column Punch Cards were widely used in commerce, particularly in banking and the airline industry. They were punched mechanically and decks of cards were fed through card readers to enter data into the computers of the day.

At this stage, I would like to say that I have been particularly lucky during my working career to have been surrounded by a large number of very smart people in addition to those listed as co-authors.

The first of these is Neal Henry, then a Research Forester with the Queensland Department of Forestry and pioneer in the use of computers in forest research and yield calculation. Neil is the person who suggested the use of 80-column computer cards as Visual Punch Cards. Neil is also the person who could foresee the use of computers to identify plants and first performed this operation in 1967?

After a few false starts, work began on data accumulation for the Rain Forest Key in 1963? Initially, work was concentrated on bark-blaze characters as information on these characters had never been recorded in a systematic fashion in the literature. We fondly believe at the time that we had a pretty good knowledge of the tree flora. Fortunately, not too long after starting, I started to worry about the lack of voucher herbarium specimens to confirm the integrity of the bark-blaze characters.

The first Card Key to identify the rain forest trees between Townsville and Cooktown was produced in 1971. The key was based on bark-blaze and leaf characters. It encompassed 584 tree species. It included gymnosperms and angiosperms, but did not cover some of the obvious monocotyledonous trees such as palms. This group was left out because they did not have stems enclosed in a living bark layer and it was therefore not possible to record bark-blaze characters.

Collecting botanical specimens from trees, particularly the larger trees, is seldom easy. Initially, we started with rifles and shotguns, axes and saws. Next we tried climbing spurs, fortunately were not very successful. The next brainwave involved the use of a shanghai. At first I thought that a miniature bolas was the way to go. However, I found that it was physical impossible to fire two linked lead sinkers from a shanghai and attain any useful height. However, it was found that if only one sinker was attached to the end of a nylon fishing line it could be propelled to a considerable height by shanghai. Dick Grimes, Forester with the Queensland Forestry Department demonstrated this on a trip we did together to the Bloomfield area in 196? The collecting technique developed from there, and was described in *Flora Malesiana Bulletin* 26:2038-2040 (1972).

The development of the shanghai collecting technique was a turning point in the Rain Forest Key project and changed the whole face of collecting in North Queensland rain forests. It allowed us to collect botanical specimens from any tree in the forest. Without the shanghai collecting system, the Rain Forest Key would never have been accomplished.

My Research Program

As far as the Department of Forestry was concerned the main thrust of my program was the study of the natural regeneration of the prime cabinet timber species and work on the key was subordinate to that.

Transfer

Significant Contributors

In this category I have included the names of people who helped me in a significant way but are not listed as authors or acknowledged in other ways in the published versions.

At about the same as Neil Henry produced the first trial copy of the card key to the rain forest trees between Townsville and Cooktown, Robert Mazlin was appointed as a Technical Assistant in the Silvicultural Research Section at Atherton and worked as my assistant. Bob was a descendant of one of the early pioneering families on the Atherton Tableland. He had grown up wandering in the rain forest and was well versed in the use of shanghais and firearms. Whatever transpired, Bob believed life was to be enjoyed not endured.

Lindsay Smith (1917 – 1970) was a Senior Botanist at the Queensland Herbarium and his speciality was rain forest species taxonomy. He was always a very helpful man and he helped me enormously and guided me on the path to species delimitation. I doubt if he believed I would succeed in putting the Rain Forest Key together. However, he always assisted me, and without his early help it would have been much more difficult to assemble the key.

My Research Program

At about the same time as Neil Henry had produced the first trial copy of the card Key to the rain forest trees between Townsville and Cooktown, Robert Mazlin was appointed as a technical assistant to the silvicultural research section at Atherton and worked as my assistant. Bob was descended from one of the early pioneer families on the Atherton Tableland and had grown up wandering in the rain forest and was well versed in the use of shanghais and firearms. Whatever transpired Bob believed life was to be enjoyed not endured.

He had the incredible ability to memorise species code numbers and names. One of our prime tasks was to check the accuracy of the Key. Bob could rattle off a string of code numbers and without looking up a species list, could correctly assign botanical names to most of them. This generally speeded up the checking process.

As far as the Department was concerned the main thrust of my research program was the study of the natural regeneration of the prime cabinet timber species and work on the Key was subordinate to that.

Another person I should mention is Lindsay Smith (1917 - 1970). Lindsay was a senior botanist at the Queensland Herbarium and his speciality was rain forest species taxonomy. He was always a very helpful man and he helped me enormously to come to grips with species delimitation. I doubt if he believed I would ever put the rain forest Key together. However, he always assisted me and without his early help it would have been much more difficult to assemble the Key.

The first published version of the Key: "A Card Key to the Rain Forest Trees of North Queensland", was published in 1971.

Transfer

In 1971 I took up the position of Botanist with the Forest Research Institute. This institute was part of the Department of National Development, a Commonwealth Government Department. My research program was now restricted to things botanical and I soon decided that it would be wise to concentrate on rain forest and leave the other vegetation to more talented people.

The next few years were golden years for me. Geoff Stocker the Officer-in-Charge believed we should look at the rain forests of Cape York and this we did. We collected assiduously and we always seemed to be able to get adequate funds to cover work and travel.

I continued to record data on bark-blaze and leaf characters for all the rain forest trees collected.

In 1975 the Forest Research Institute was taken over by CSIRO. This coincided with a downturn in the Australian economy and my early memory of CSIRO is an organisation which was not adequately funded to do the work it had in train.

Despite funding problems and all the problems associated with the transfer to an organisation with different aims and philosophies we managed to produce another version of the card Key in 1982. "A revised card Key to rain forest trees of North Queensland". The master copy of this Key was produced by the Queensland Department of Forestry, mainly by the efforts of Neil Henry. This Key contained information on 799 species and covered the rain forests between Townsville and Torres Strait.

The Card is Full

The 1984 version of the Key contained 799 species. The standard 80-column card really has only space for 800 printing positions so it was obvious that we had reached the capabilities of the punch cards.

I first met Trevor Whiffin in the early 1970's. Trevor had been appointed as lecturer at the La Trobe University and he was primarily a plant taxonomist with the ancillary interests including the developing computer technology. We decided that we should collaborate and try to get all of our data onto computer. Trevor talked to Neil Henry and Neil graciously made all the data available in readily readable form. That was another turning point in the development of the Key. Trevor's involvement changed the whole development of the Key.

Desk Top Computers

With the advent of desk top computers the whole strategy of data accumulation changed. Although the basic data entry in the forest and laboratory was still done onto sheets using nothing more than a lead pencil, the next stage was to incorporate files which would be read into Trevor's computer at La Trobe.

With the subsequent development of the Internet, data entry and transfer was revolutionized.

More Botanical Characters

After the publication of the 1984 version of the Key it was decided that we should try to add other suites of characters. The obvious ones to add were flower and fruit characters which we knew could be desirable, but had never been approached in a systematic way in rain forest previously. Doug Johnston was Officer-in-Charge of Regional Stations. He suggested that we should start growing seedlings from any fruiting species we collected in the course of our studies. He maintained that seedling characters would prove to be of value in the taxonomy of rain forest species just as they had in Eucalyptus. Doug had much experience with Eucalypts and had developed card Keys for their identification.

I embarked on this project without a great deal of enthusiasm and we continued it for more than 30 years. It has proved to be a great addition to the Key. All the seedlings were harvested at the cotyledon and at the tenth leaf stage. They were then pressed and dried and married up with the parent collection.

Once we had decided on a suite of characters and after a couple of trial runs coding for the Key commenced. Much of the early seedling coding was done by Sharon Barbagallo (nee Nella). Sharon worked in the herbarium and her name has never appeared on any versions of the Key as an author but her contribution was substantial.

When it came to coding flower and fruit characters my long suffering staff decided enough was enough. They argued that they were technicians not taxonomists and such work was beyond their capacity. I agreed that they

did not have to interpret any of the morphological features. All they had to do was record what they saw on each individual specimen, as we ploughed our way through the herbarium specimens and associated pickled material.

I told them that at the end of the project they would know more about rain forest flower and fruit morphology than most professional botanists in Australia. I believe this proved to be correct.

Other Workers

When I moved to QRS in 1971, I had two technicians to help me with the establishment of the herbarium and collecting in the forest.

Tony Irvine was involved from 1971- 1981 when he successfully applied for a position in the Regional Station at Darwin. Unfortunately for him Cyclone Tracy interfered and he was never able to take up the position. Tony helped me with collecting the Rain Forest Key and Syzygium project which developed along the way. Tony was interested in palms and most of the high quality palm collections in QRS are the result of Tony's efforts.

Alec Dockrill came to QRS in 1971 and stayed until his retirement in . Alec worked mainly in the herbarium and was responsible for the efficient preparation and incorporation of all the botanical specimens which we collected during our work in the forest. Alec's prime interest was Australian orchids and his publications are still regarded as basic to a study of Australian orchids.

John Connors came to QRS in and took over the running of the herbarium following the retirement of Alec Dockrill. John was also involved in the coding of flower and fruit features for the rain forest trees. John was a careful and methodical observer and when he transferred to Canberra he became involved in work on the electronic Key to the Eucalypts of Australia.

Suzanne Metcalfe worked at QRS from to . She was involved exclusively on coding information for the Rain Forest Key. She worked carefully and cheerfully on what was essentially a large tedious undertaking.

Justin Seawright came in at the very end of the production of the 2003 version of the Rain Forest Key. We had limited funding and therefore limited time to try to scan representative examples of seedlings of as many species as we could of the species to be included in the Key. Justin had a very good attitude to a problem and because of his efforts we succeeded in incorporating about seedling images in the Key.

No list of workers would be complete without mentioned two of my finest and hardest-working minions, Dave Parsons and Rebel Elick. Both worked tirelessly and without complaint, although one spoke funny and the other has gone on to develop liver problems.

Leaf Images

The 1971 version of the Rain Forest Key contained leaf images. These were essentially drawings of the leaves showing the overall shape. These drawings were done by Barry McBride, draughtsman and cartographer at the Atherton Forestry Office.

The 1982 version of the Rain Forest Key contained leaf images. These images were drawn of the leaves showing not only the overall shape, but also a good representation of the venation. These drawings were done by Terry Nolan, a talented botanical illustrator who specialized in line drawings, but occasionally executed beautiful botanical paintings.

Trevor Whiffin and I both agreed that when we produced the next version of the Key it would be highly desirable to include a leaf images or leaf illustrations for all of the species included in the Key.

In our wisdom we decided that the way to do this was skeletonise a representative leaf of each species and photograph the skeleton. This would provide a representation of the leaf outline and show the venation right down to the fine reticulate venation.

We made a start on this project, the progress was slow. We convinced ourselves that progress was steady.

At this stage David Christophel happened on the scene and said that he thought he could produce the images we were seeking by subjecting the leaves to low energy x-rays on x-ray film. Once he produced a few trial images we decided that was the way to go and promptly forgot about the tedious skeletonising procedures.

David was keen to produce a leaf atlas and this was done in time for the 1984 version of the Rain Forest Key. The leaf atlas included images of nearly all the Australian Tropical Rain Forest Trees and was very popular with all people interested in rain forest tree identification.

David was keen to produce a printed leaf atlas for each subsequent expanded version of the Rain Forest Key. However, with the effusion of time and the associated reduction in costs of publication by electronic media and the ease of rearrangement necessitated by name changes and species circumscription, hard copy production of a leaf atlas lost its appeal.

Other Projects

Between 1971 and 2003 projects in addition to the Rain Forest Key were started and concluded. Two projects should be mentioned.

1. A Revision of Syzygium and Allied Genera
2. Australian Lauraceae

It was well known in the early 1970's that there were a large number of undescribed or poorly known species in the Syzygium group and in Lauraceae.

One time when I was at Brisbane I asked Stan Blake and Lindsay Smith whether they thought it would be a good idea for me to work on a taxonomic revision of a rain forest group and without hesitation Stan Blake said that I should look at Eugenia (syzygium) and Lindsay Smith agreed. I protested that the group was too complex and difficult for a new chum like me. Stan Blake replied that I had the advantage of knowing quite a large percentage of them in the forest.

Then with tongue-in-cheek he added that once I had finished Eugenia (Syzygium) I should do Lauraceae and that should keep me going for the rest of my career.

Thinking Back

Ignorance is Bliss

It is almost certain that nobody in 1963 could have possibly forecast the dimensions to be reached by the Rain Forest Key in 2002. I certainly did not. The problems which we encountered along the way were usually solved. The technical ones were solved by commonsense and logic. However, the human ones were more difficult and seldom yielded to simple logic.

One problem which we encountered in the middle of the project was a lack of acceptance of computers in the Division of Plant Industry and their apparent lack of experience in this field of endeavour.

Another problem with the version of the Key involved the direction which we received from the hierarchy in Canberra that we simplify the characters used in the Key and present them as an alternative set of characters.

I argued that this was a waste of everyone's time but my argument fell on deaf ears. I asked what would happen if I were to say that I couldn't do this. I was informed that I would be charged with incompetence. I then

changed tack and asked them what would happen if I said that I wouldn't change characters. This was met with stony silence and nothing happened for some months. Fortunately, Trevor Whiffin could see that we would not win this battle and worked long and hard to produce a set of Simplified Characters and incorporated them with the 19 version. To the best of my knowledge nobody has ever used the Simplified Characters and the only major problem we have had with the Rain Forest Key occurred when both versions of the characters were loaded on the one computer and users got into the Simplified Characters when they thought they were using the Standard Characters.

Bottom of Form



*Join us today, Saturday 23 July 2005, as we celebrate the 30th
Anniversary of CSIRO in Atherton 1975-2005
Compiled by Rebel W. Elick*

Tropical Forest Research Centre, Maunds Road, Atherton



CSIRO

The Commonwealth Scientific and Industrial Research Organisation, better known as CSIRO, is one of the world's largest and most comprehensive scientific institutions. Its work spans everything from molecules of life to the molecules in space, finding ways to improve our quality of life and economic performance.

Over 6500 staff work in sites around Australia performing research and development over a diverse range of areas of science.

History of the Atherton Site

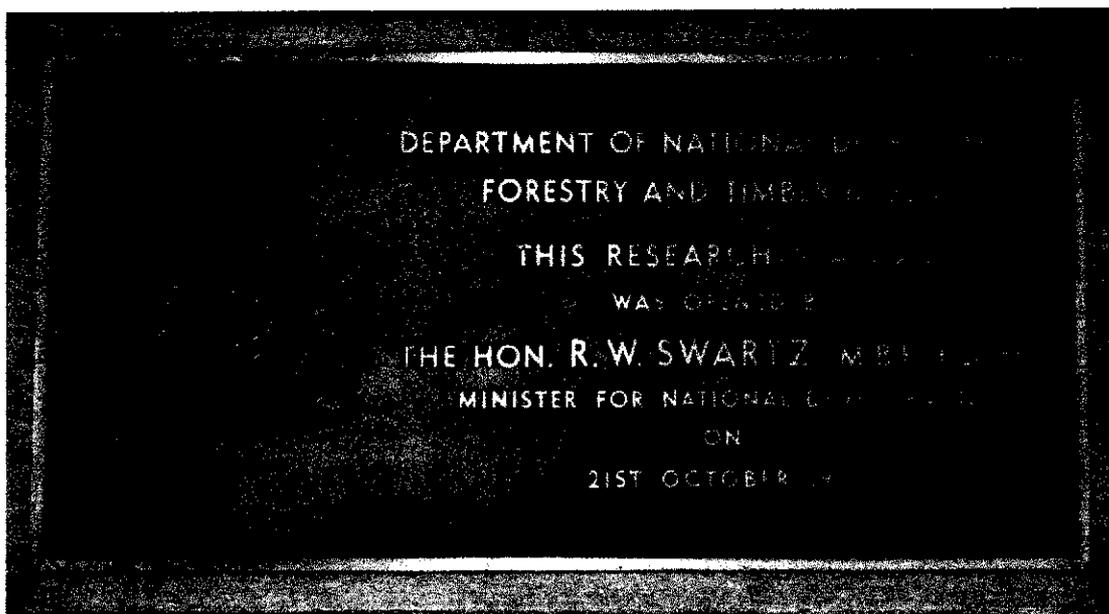
The Tropical Forest Research Centre (TFRC) at Atherton had its beginnings in the late 1960s with an agreement between the Queensland Department of Forestry and the Commonwealth Forestry & Timber Bureau. The Department's research group based in Atherton had recently expanded its activities into tropical rain forest management, concerned with the development of affordable silvicultural techniques and probable timber yields in cutting cycles following harvesting and treatment. The Bureau's Forest Research Institute needed support in rain forest botany and ecology, and from

providing these fundamentals the TFRC has expanded with extensive national and international linkages to provide basic and applied research into a range of different subjects. These include work on soils, hydrology, plant taxonomy, ecology and physiology, mycology and entomology, vertebrate ecology and behaviour, spatial modeling and aspects of past and future climate change. Subject matter has ranged from studies of natural forest and savanna systems to replanted rain forest and forestry plantations to papaya and cashew crops. From the strictly biological beginnings the research foci have also developed to encompass social, economic and conservation planning work, pest and weed management, rain forest water balances, the effects of fire, mine site rehabilitation and natural resource management. Major outcomes include work on rare and threatened species, understanding of long term forest dynamics, and the Rain Forest Key.

The TFRC, located on a 3.64 hectare residential block on Maunds Road in Atherton, North Queensland, is a research facility, including offices, student accommodation, arboretum, library, various types of laboratories, an extensive herbarium, a dark room for observing nocturnal animals, a greenhouse, glasshouses, a potting shed, a workshop and a small animal house for short term research projects. There are scientists, students and support staff from CSIRO Sustainable Ecosystems, CSIRO Plant Industry and CSIRO Land & Water. It also provides a research base for a number of scientists and students engaged in projects within the Rainforest CRC, Weeds CRC, Savanna CRC (Cooperative Research Centre) and for other researchers, including international scientists and students studying aspects of the tropical forest environment. There are approximately 35 staff working on site.

Prior to purchase in 1970 by the Commonwealth Government, the land was used for growing maize, peanuts, potatoes, and for grazing horses and cattle.

In 1970, the site was purchased by the Commonwealth for the development of the Department of National Development, Forestry and Timber Bureau. The centre was opened on the 21st of October 1971, as the headquarters of the now defunct Forestry Research Institute.



The construction of the laboratories was completed in 1971. Ownership was transferred to CSIRO in 1975 at which time a couple of employees were transferred from CSIRO Tobacco Research Station at Walkamin and from the Queensland Department of Forestry in Atherton.

There have been several extensions, the first was an extension to the herbarium in 1977/78. In 1987 a major redevelopment of the site occurred. Works included the construction of a new wing with offices, research laboratories and a conference room.

In the early 1990's Dr Graham Harrington who, at the time, was Director of TFRC teamed up with Dr Jiro Kikkawa to promote the formation of a CRC for Tropical Rainforest Ecology and Management.

September 5, 1995 was the official opening of an extension to the herbarium, the addition of a two story building which houses the site library as well as offices and laboratories.

CSIRO also owns two other sites in Atherton: a residential building used for accommodation for visitors, situated on the corner of Maunds Road and Kelly Street, and a vacant lot, part of which contains a tree plantation, located on Grove Street.

Officers in Charge

Dr Geoff Stocker - First OIC 1971 - 1985

Dr Francis Crome - 1985 – 1986

Dr Graham Harrington 1986-1993

Dr Mike Hopkins - 1993 – 2001

Dr Chris Margules – 2001 - 2002

Mr Andrew Graham – 2002 - 2003

Dr David Hilbert - 2003 to current

Examples of past research projects

CSIRO – TFRC Permanent Plots

Twenty 0.5 ha permanently reserved plots were set up in primary rain forest between 1971-80. Sites chosen encompassed a range of forest types and soil parent materials, and included both lowland and upland sites between the Seaview Range (north-west of Ingham) and the Iron Range (northwest of Lockhart River, Cape York). The plots were initially established to 'record and analyse patterns of tree growth and stand dynamics in a broad range of permanently reserved plots in rain forest and associated

forest types in north Queensland', and essentially provided control plots for an extensive series of experimental plots being established by the Forest & Timber Bureau at the same time. These experimental plots sought to establish regrowth rates and therefore predict future harvesting potential following a range of management treatments.

Trees with diameters greater than 10cm have painted bands on their trunk around which girth re-measurements are taken every 4 years. Full species inventories, individual heights and basal area data are also recorded for each plot, together with information about topography and soils. The plot data themselves or floristic and stand data from particular plots have given rise to more than 40 publications to date, whilst CSIRO staff and students and a number of partner organisations continue to utilise them on a regular basis.

For example, the Curtain Fig plot is number 11 in the series, and represents one of the few remaining stands of the Type 5b Complex Notophyll Vine Forest (Mabi Forest) of Tracey & Webb (1975), and is regarded as a typical example of this now threatened community. Tall to very tall forest with a seasonally sparse canopy on a eutrophic stony basalt soil, the community suffered severe water stress due to a drought between 1991-93. Consequently 49 enumerated trees died between the 1990-98 censuses, and this is the only plot to show a decrease in basal area over the life of the plots. One feature of the forest resulting from this phase is the locally dense understorey of turkey bush (*Hodgkinsonia frutescens*).

Long Term Dynamics of Tropical Rainforest

The overall aim of the study has been to investigate some of the mechanisms responsible for both the high diversity of species, and the great variety of population structures among those species, in two rainforests in Australia. One in tropical rainforest at 17°S (at Davies Creek, one plot of 1.7 ha, 850 m elevation), the other in sub-tropical rainforest at 28°S lat. (near O'Reilly's Guest House in Lamington National Park, two plots of 1.0 ha each, 2 km apart, 850 m elevation).

History

In 1963, all trees > 10 cm diameter at breast height (DBH, usually taken as 1.3 m above the ground), were mapped, tagged, measured and identified on both plots. Smaller trees (2.5-10.0 cm DBH) and seedlings (<2.5 cm DBH, right down to tiny, newly germinated seedlings) were mapped, tagged and measured on permanently-marked belt transects extending throughout the mapped area. At intervals of one to four years thereafter, all previously mapped and tagged individuals were censused, and in addition all newly recruited seedlings that had germinated and survived in the interval since the previous census, were mapped, tagged, measured and identified on precisely the same permanently-marked areas used in the original mapping. These censuses were done 16 times between 1965 and 1999, and serve to indicate the temporal and spatial variation in seedling recruitment of all species of trees.

Joe Connell put in the plots in 1963, with the help of Len Webb and Geoff Tracey, both of CSIRO. Informal links were maintained with CSIRO from then until 1993, when this project established a permanent presence at the TFRC site. Three major projects have been on-going during that time:

- **Continuation of the long-term dynamics project initiated in 1963**

From 1993, this has involved annual censuses for new seedling recruits at both sites, biennial surveys of mortality in all size classes, and remeasurement of stems every six years or so (Connell, Green, Debsky, Juniper, Lowman and many volunteer helpers).

- **Long-term studies of flowering, fruiting and seedling recruitment at Davies Creek, 1995 to present.**

In the last two years, we have increased the spatial extent of this work to include two sites at Robson Creek and Mt Lewis, where we use the CSIRO permanent plots. Each month, a large sample of trees at each site is scored for the abundance of flowers and fruits, from 0 (none) to 5 (heavy flowering or fruiting). This work is showing that unlike several lowland sites elsewhere, the majority of species at Davies Creek are masting species, in that they flower and fruit heavily every few years or so (Green, Debsky, Juniper).

- **An experimental assessment of the role of ground-dwelling vertebrates in generating and maintaining tropical tree diversity, started in 1996.**

In this large experiment, conducted at Davies Creek, 16 pairs of plots were constructed near the long-term dynamics plot. Each plot measures 6 m x 7 m, and within pairs, one plot is fenced to exclude ground-dwelling vertebrates (that would otherwise eat dispersed seeds or young seedlings, or disturb them), and the other plot is unfenced as a control. This work is showing that ground-dwelling vertebrates reduce seedling recruitment, increase seedling mortality, and promote seedling diversity. It has also shown that the abundance and diversity of mycorrhizal spores in the soil, another factor affecting seedling abundance and diversity, is lower in the absence of vertebrates (Gehring, Theimer).

Nitrous Oxide (N₂O) Emissions from Tropical Rainforest Soils

In view of global climate change the accurate determination of the sources and sinks of greenhouse gases like CO₂, N₂O and CH₄ for natural, agricultural and forest ecosystems is one of the crucial tasks in environmental science. Though tropical rainforest soils are one of the major sources for N₂O, contributing 14-23% to the global atmospheric N₂O budget, their source-strength is still poorly constrained.

To contribute towards a higher accuracy of estimates of the N₂O source-strength of tropical rainforest ecosystems more measurements of N₂O-emissions at various sites are required, fulfilling both representativeness and long-term coverage in order to

understand seasonal and spatial variability and to identify environmental drivers which control the magnitude of trace gas emission/deposition.

Based on the results a process orientated biogeochemical model (PnET-N-DNDC model), which allows the simulation of N₂O-emission from tropical rainforest based on the processes involved in production, consumption and emission, was further developed and validated. This model was finally linked to a GIS database in order to calculate a regional inventory of N₂O-emission for rainforest soils of the Wet Tropics of Australia (9000 km²).

History of CSIRO

In 1916, Prime minister Billy Hughes was instrumental in establishing an Advisory Council to work on the establishment of a national science institute. The Council's earliest work was to collect information about the state of scientific research in Australia, undertake research, review existing science research, and collect and disseminate information.

The moves to establish a permanent body resulted in an ACT to establish the *Commonwealth Institute of Science and Industry* being passed in 1920. The institute's work was hampered by a lack of funds and a clear mandate for its existence; the imperative for organising research in a country at war had gone and the economic benefits were not yet appreciated.

Prime minister Bruce saw that it was time to foster and take advantage of this closer cooperation and funding and so arranged for Sir Frank Heath of the British Department of Scientific and Industrial Research to report on reorganising the Institute of Science and Industry. His report resulted in new legislation passed in 1926 that established a successor agency, the *Council for Scientific and Industrial Research (CSIR)*.

The primary aim of CSIR was to carry our scientific research in connection with or in promotion of primary and secondary industries in Australia. The council's first annual report to Parliament listed some 41 scientists on its staff, located in rented rooms in a technical college in Brunswick, a suburb of Melbourne.

Under an ACT in 1949, the CSIR was reconstituted as CSIRO, the *Commonwealth Scientific and Industrial Research Organization*. Over the next three decades CSIRO gradually expanded its activities so that its research was related to almost every field of primary, secondary and tertiary industry. Many other areas affecting the community at large were also covered – such as the environment, human nutrition, conservation, urban and rural planning, water supplies.

In 1971 CSIRO moved its headquarters from Melbourne to Canberra as part of a government initiative to bring the heads of its agencies closer to the daily workings of the Ministers they served. CSIRO today is governed by a Board of external members and a Chief Executive to lead the daily workings of the organisations. Research is carried out through Divisions.

2001 was CSIRO's 75th Anniversary

Names

The organisation now known as CSIRO has existed in several forms and names:-

1916-1920 : Advisory Council of Science and Industry

1920-1926 : Commonwealth Institute of Science and Industry

1926-1949 : Council for Scientific and Industrial Research (CSIR)

1949-1986 : Commonwealth Scientific and Industrial Research Organization (CSIRO)

1986- now : Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Research Projects By Group at TFRC

CSIRO Sustainable Ecosystems

Spectacled Flying Fox: Solutions for Management

Management of the spectacled flying-fox (*Pteropus conspicillatus*) is one of the most contentious natural resource issues in the Wet Tropics. The context of management of the species is complex. *P. conspicillatus* was listed as Vulnerable under the *Environmental Protection and Biodiversity Conservation Act* due to threatening processes such as habitat loss and persecution. At the same time, *P. conspicillatus* is a pest in orchards and is perceived by many to be a "nuisance" in urban areas.

Developing management solutions which are effective in conserving flying-foxes and sustaining orchard industries cannot be achieved without

1. improving our knowledge of the ecology and behaviour of *P. conspicillatus*;
2. understanding flying fox damage, mitigation measures and monitoring in orchards; and
3. improving information access for stakeholders, while encouraging discussion and negotiation of management and conservation strategies.

The aims of this project are to develop management solutions that will enable spectacled flying fox conservation and a viable economic fruit growing industry to co-exist in the long-term. To achieve this the project team will work closely with stakeholder groups in delivering research and management outcomes.



For more information go to: <http://www.tfrc.csiro.au/research/FlyingFox.html>

Seed Dispersal: A Threatened Ecological Process

Ecosystems are maintained by the interaction of many different species and processes, from the climate to the activities of the animals that inhabit them. This project focuses on seed dispersal by frugivores (fruit eating animals).

By eating fruit, passing the seeds without killing them, or by carrying seeds in hands or mouth, frugivores can move seeds a wide variety of distances from the original plant. Seed dispersal is one of the most influential ecosystem processes. Its impacts are felt at the level of individual plant, in the structure and dynamics of entire plant communities, and in associated animal communities.

This project will address a number of important questions relating to seed dispersal:

- How will the decline or loss of threatened frugivores (e.g. cassowaries) affect the process of seed dispersal and the long term persistence of the forests?
- How do general animal populations and behaviour change with changes in landscape context and how does this affect the process of seed dispersal and subsequently the long-term maintenance of plant communities?

Ecosystems are maintained by the interaction of many different species and processes, from the climate to the activities of the animals that inhabit them. This project focuses on seed dispersal by frugivores (fruit eating animals).

By eating fruit, passing the seeds without killing them, or by carrying seeds in hands or mouth, frugivores can move seeds a wide variety of distances from the original plant. Seed dispersal is one of the most influential ecosystem processes. Its impacts are felt at the level of individual plant, in the structure and dynamics of entire plant communities, and in associated animal communities.

This project will address a number of important questions relating to seed dispersal:

- How will the decline or loss of threatened frugivores (e.g. cassowaries) affect the process of seed dispersal and the long term persistence of the forests?



- How do general animal populations and behaviour change with changes in landscape context and how does this affect the process of seed dispersal and subsequently the long-term maintenance of plant communities?
- How do animal movement patterns and feeding behaviour affect the spread of introduced weeds?

For more information go to: <http://www.tffc.csiro.au/research/SeedDispersal.html>

Landscape Ecology and Modelling Team

Regional patterns of environmental variables, land cover classes (including both natural and human components), stocks of carbon and other elements, biophysical processes, and biodiversity must be known in order to manage the Wet Tropics region for the sustainable delivery of ecosystem goods and services.

Since these patterns are not constant, an understanding of how they change and the implications of change are also essential. Further, methods are required to assess the implications of land management decisions and, ideally, to determine landscape patterns that maximise, or at least improve, the ecological, economic and social sustainability of the region.

The team integrates a wide variety of skills (geomorphology, plant and soil ecology, geographic information systems, remote sensing, and modelling) to provide a broad understanding of the landscape ecology of the Wet Tropics and develop techniques that are applicable to other regions.

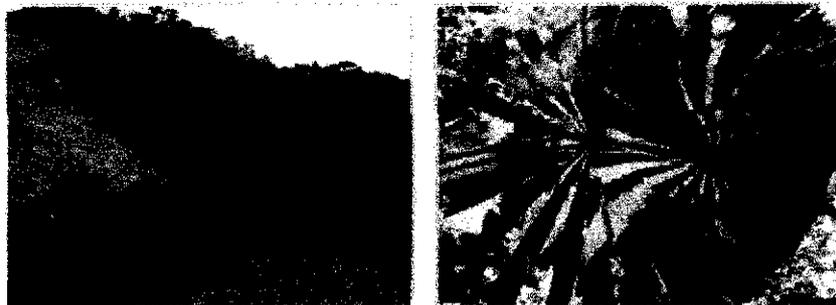


For more information go to: <http://www.tfrc.csiro.au/research/ModellingTeam.html>

Dynamic Models for Management

The realisation of conservation goals and sustainable livelihoods requires strategies for managing whole landscapes including areas allocated to both production and protection. Traditional approaches to conservation planning have generally not been systematic. As a result, irreversible decisions have been made without considering the full complement of biodiversity values and potential tradeoffs to meet both regional protection goals and socio-economic aspirations.

Systematic and dynamic approaches to the identification of biodiversity values and the design of landscapes that meet regional sustainability goals are evolving. *Dynamic Models for Management* represents a strategy for integrating existing information about the distribution and persistence of plants and animals, including their population dynamics and functional interactions, and effectively accounting for interactions with human economies through conservation priority setting and identifying acceptable trade-offs.



Current research themes include:

- measuring and mapping biodiversity and threatening processes,
- identifying priority areas for biodiversity protection,
- developing opportunity cost trade-offs between regional production and protection goals
- identifying and incorporating context-specific spatial constraints in conservation planning,
- developing landscape indicators for the maintenance of ecosystem processes, and
- investigating policy scenarios for landscape change relevant to regional plans that incorporate profitable enterprises and environmental sustainability

Research Strategy

Previous work has resulted in comprehensive databases on the distribution and functional dynamics of species in the Wet Tropics bioregion, allowing for the close examination of ecological patterns and processes in tropical landscapes. The research strategy is to develop dynamic models of biodiversity pattern and persistence, and from these management tools for systematic conservation planning and its

implementation relevant to human livelihoods and environments. These methods and tools have wide application to conservation planning and management within Australia and overseas.

Measure and map biodiversity

Information about the distribution of plants and animals, their population dynamics, habitats, functional interactions and environmental determinants are needed for effective conservation planning. Such information is collated from existing biophysical databases.

and publications. Gaps in information are resolved through additional survey, the development of surrogate measures, and through landscape-level analyses of biodiversity viability and threatening processes. Threatening processes are closely linked to land use history and socio-economic aspirations, representing a mechanism against which to measure the feedback effect of economic development on biodiversity viability.

Priority Setting in Conservation Planning

Regional sustainability goals for natural resource management, which take into account the requirements for biodiversity conservation and the socio-economic aspirations of local communities, are evolving through regulatory and consultative processes. These regional goals for representation and persistence of biodiversity and ecological processes have to be translated into more specific, preferably quantitative, targets for operational use in systematic conservation planning. Targets allow clear identification of the contribution of existing mechanisms for biodiversity protection to regional sustainability goals and provide the means for measuring the conservation value of different areas relevant to priority setting and trade-off processes. The development of policy scenarios for landscape change provides a basis for investigating the implications of production-protection trade-offs, and the potential for a scheme of tradable environmental credits and offsets or other mechanisms to achieve regional sustainability goals.

For more information go to:

<http://www.tffc.csiro.au/research/DynamicManagement.html>

Agricultural Landscapes in the Wet Tropics

The Wet Tropics of North Queensland are characterised by a mixture of natural and agricultural landscapes that exist side-by-side. Balancing the need for protection of areas of high conservation value with profitable production systems to sustain people's livelihoods is a constant challenge for residents of the area.

This project will build links between production and conservation through partnerships with farmers and the community to understand their future goals and aspirations. These will be used to develop a framework for sustainable landscape planning in the Wet Tropics, based on a partnership approach.



The objectives of the project are to:

- Understand farmers' goals and aspirations regarding the use and management of their land.
- Identify sustainable land use and management options (e.g. combining sugarcane farming with timber plantations, fruit orchards, or rainforest restoration) together with local farmers.
- Understand from farmers how novel land use and management options can be adapted to their needs.
- Generate future visions for agricultural landscapes in the Wet Tropics based on the identified land use options.
- Discuss and predict potential trade-offs of each landscape vision with local farmers and the community.
- Identify landscape goals in collaboration with local farmers and the community that can be translated into landscape planning and management of practical conservation measures.

This research attempts to help farmers and the wider community identify options for diversifying income sources, plan for their future and participate in the process of directing change towards sustainable future landscapes.

For more information go to: <http://www.tfrc.csiro.au/research/Agriculture.html>

Secondary Rainforests in the Wet Tropics: Spatial Ecology of Plant Regeneration

Extensive clearance, fragmentation and disturbance of rainforests have occurred in the Wet Tropics over the last century. Conservation of rainforest species and ecosystems clearly depends on protection of remnant rainforests, but also on understanding the ecology of 'secondary' rainforests that regenerate on formerly-cleared lands.

This project looks at spatial patterns of plant regeneration in secondary rainforests on abandoned pastures, and in adjacent primary rainforest, and relates these patterns of regeneration to:

- i. spatial distributions of rainforest cover and possible source plants
- ii. ecological traits of plant species, including seed-dispersal mechanisms, age of reproduction, life-span, and attributes of seeds, stems, and leaves.

'Comprehensive' studies look at changes in species composition, diversity, and the representation of several plant traits, along transects from primary into secondary rainforest on the Atherton Tablelands – To ask, for example, if the diversity of plant life-forms and seed sizes declines as you move further away from the primary rainforest, or if there are changes in the percentage of species with specific dispersers, such as musky rat-kangaroos. The two 180 m transects contain 7863 plants of 197 species, from 67 families.

For more information go to: <http://www.tfrc.csiro.au/research/SpatialEcology.html>



CSIRO Land and Water

Water Regulation by Tropical Rainforests in the Wet Tropics

Most catchments in the Wet Tropics are complex mosaics of different land uses and vegetation, with rainforests frequently comprising a significant proportion of the vegetation cover. However, there is little quantitative information on the hydrology of different forest types, or of their hydrological characteristics compared to similar areas under agricultural land uses.

The effects of changes in vegetation type and cover on catchment response, water quality and water yield from these humid tropical landscapes are poorly understood. Such knowledge is vital in developing a more predictive understanding of the effects of possible land use and climate changes on water resources (distribution and flows) in the region.

The major application of this research is providing data, tools and approaches for assessing the impacts of regional and catchment level changes in land use on water resources in Queensland's Wet Tropics.



For more information go to: <http://www.tfrc.csiro.au/research/WaterRegulation.html>

Sediment Loss From Agricultural Systems

The loss of sediment and nutrients from the land can degrade freshwater and marine ecosystems through reduced water quality and degraded aquatic habitat. It is also acknowledged that a loss of sediment and nutrients from agricultural landscapes can lead to a decline in the productivity of these systems. An essential part of minimising the impact of land use of aquatic ecosystems is to identify the major sources of sediment and nutrients and apply appropriate catchment management to these areas.

SedNet (Sediment River Network model)

This powerful set of GIS-based modelling programs were originally developed by CSIRO Land and Water to construct catchment sediment and nutrient budgets for the National Land and Water Resources Audit (NLWRA). The programs are now being applied widely to assist natural resource managers to identify the key sources of sediment and nutrients within catchments.

The model is also capable of assessing the implications of changes in land management practices on downstream water quality. Both of these processes are crucial for setting and evaluating end of catchment water quality targets. The SedNet model has recently been applied to Herbert River catchment (North Queensland) where it was able to determine the dominant sources of erosion as well as identify specific area's of high erosion risk potential.

For more information go to: <http://www.tfrc.csiro.au/research/SedimentLoss.html>



CSIRO Plant Industry

Herbarium

A herbarium is like a warehouse of information about plant biodiversity. Plant samples are taken from the field by people with special collecting permits, then dried or otherwise preserved. They are then carefully stored in archival conditions to ensure their longevity. These specimens, including information about them, are kept to learn more about the plants and their habitat.

The Atherton Herbarium is part of the Australian National Herbarium (ANH) housing 120,000 of the total 1.4 million specimens of the ANH. These specimens are predominantly tropical plants of Australia with some from Papua New Guinea.

Since the establishment of the Atherton Herbarium in 1971 researchers have been responsible for discovering many new species and identifying a number of rare species in Queensland's rain forests. The Atherton Herbarium has successfully documented the rain forest flora of northern Queensland which was poorly known prior to its establishment.

Specimens held at the Atherton Herbarium also provided the information necessary to develop the interactive identification key *Australian Tropical Rain Forest Plants – trees, shrubs and vines*.



For more information go to: <http://www.pi.csiro.au> or
<http://www.cpbr.gov.au> or
<http://www.anbg.gov.au/cpbr/herbarium/index.html>

Australian Tropical Rain Forest Plants (Rain Forest Key)

With tropical rainforests in Australia containing over 2500 species of higher level plants (representing more than 10% of Australian flora), identifying a sample through a traditional plant key is often a difficult and tedious process.

The Australian Tropical Rain Forest Plants program addresses these issues by providing a computerised identification system for rainforest trees, vines and shrubs. Covering 2154 species from tropical rainforests across the northern part of the continent, it is based on the world's most comprehensive collection of Australia's tropical flora: the CSIRO Plant Industry's Atherton Herbarium, part of the Australian National Herbarium.

Australian Tropical Rain Forest Plants
Trees, Shrubs and Vines

Key Production BPM Hyland ¹ T Whiffin ²	Leaf X-Rays DC Christopher ³	Technical Assistance B Gray ³ RW Elick ³
¹ CSIRO Plant Industry, Australian National Herbarium, Atherton, and Centre for Plant Biodiversity Research	² La Trobe University, Department of Botany	³ University of Adelaide, Department of Botany

LA TROBE UNIVERSITY
CSIRO PUBLISHING
Centre for Plant Biodiversity Research
THE UNIVERSITY OF ADELAIDE

For more information go to: <http://www.cpbr.gov.au/cpbr/cd-keys/rfk/index.html>

Tropical Savanna CRC

Tropical Savannas Ecology

Research on the ecology and health of tropical savannas is being conducted by two members of CSIRO Sustainable Ecosystems, John Ludwig and Elizabeth Poon. They are part of CSE's Rangelands and Savannas Program and represent the Tropical Savannas research team based in Atherton with other team members based in Darwin.

John Ludwig is conducting savanna research through funding and support of the Tropical Savannas Management Cooperative Research Centre. The Tropical Savannas CRC carries out research right across the tropical savannas region from Townsville on the East Coast across the Gulf, Top End and over to the Kimberley in the West, almost a quarter of the continent.



Photos of the same site in 1973 and 2002, showing regeneration of savanna vegetation after cattle were excluded from the area

The Tropical Savannas CRC currently has 16 partners across northern Australia, and adds value to the work of these partners by integrating their research, working with land managers, and making education, extension and communication more effective.

The Tropical Savannas CRC's program is organised around four integrated themes. John serves as the Leader of Theme 1 on "Landscape Ecology and Health", which aims to understand landscape and ecosystem processes and functions and to develop a working definition of savanna landscape health based on scientific, experiential and Indigenous knowledge.

For more information go to: <http://www.tfrc.csiro.au/research/TropicalSavannas.html>

Nitrogen distribution and landscape function in grazed and ungrazed semi-arid tropical savanna, north Queensland

This project investigates the effects of cattle grazing on the distribution of nitrogen in a semi-arid tropical savanna and how this relates to landscape function. Plant and soil N characteristics are analysed in relation to grazing pressure, topographic position and season. The general condition of savanna exposed to grazing will be assessed using Landscape Function Analysis (Tongway & Hindley 1995) and compared to sites where large grazing animals have been excluded for the past 15 years.

My research questions are:

- What is the spatial distribution and dynamics of nitrogen within this semi-arid savanna?
- How are nitrogen distribution and dynamics affected by grazing and how do they relate to landscape function?



Results will increase our understanding of nutrient dynamics in trees and grasses within such savanna landscapes, and this can contribute to the future management grazing in savannas.

For more information go to:

<http://www.tfrc.csiro.au/research/NutrientDisturbance.html>

National and International Partnerships

Earthwatch Institute - Rainforest to Reef Conservation Initiative

Earthwatch Institute is a non-profit, international organisation that supports scientific field research and education with the aim of promoting sustainable conservation of the world's resources and cultural heritage. It has established a working partnership with CSIRO's Tropical Forest Research Centre.

The Rainforest to Reef initiative is one of five new conservation research programs recently established by the Earthwatch Institute worldwide. It provides both international and local volunteers and financial support for conservation orientated scientific field research in North Queensland.

The first project supported by the Rainforest to Reef initiative is "Rainforests of Northern Australia", which is based at CSIRO's Tropical Forest Research Centre and lead by Dr David Westcott and Dr Andrew Dennis. Earthwatch volunteers assist with the field component of this study exploring the role of fruit eating animals in the dispersal of rainforest seeds within the landscape. For the volunteers, this involves observation of the feeding habits of a variety of species of birds and mammals in the field and in captivity. The data will be compiled data for a computer model that will predict the long-term consequences of forest fragmentation and species decline in the region.

The Field Conservation Director of the Conservation Research Initiative based at CSIRO is Dr Suzanne Jenkins. Dr Jenkins will assist scientists in the region to develop additional projects for Earthwatch Institute sponsorship; these projects will commence in 2004.

For more information go to: <http://www.tfrc.csiro.au/research/Earthwatch.html>



Conservation International (CI) – Melanesian Centre for Biodiversity Conservation

Scientific support in conservation outcome definition for the Melanesian Centre for Biodiversity Conservation (M-CBC).

This project commenced in January 2004 with the aim of building on work previously undertaken by both CI and CSIRO in Melanesia. The focus of this collaboration is on the identification of priority conservation areas for the island of New Guinea and other Melanesian island countries.

Systematic conservation planning – using analytical tools for the design of reserve systems for tropical landscapes and ecosystems. The theory underpinning these tools has been applied in tropical regions around the world, with particular emphasis on PNG. The Tropical Landscapes program is currently leading strategic planning for implementation of systematic conservation planning throughout Melanesia by Conservation International. This is a preparatory step to wider application of systematic conservation planning in the region in partnership with governments and Non Government Organisations (NGOs). An explicit goal of this work is incorporation into conservation planning of assessment of impacts on rural livelihoods.



For further information

Numerous publications and research outcomes have come from work undertaken on this site, a complete list of publications is available from the TFRC library.
Phone: (07) 40918800 or email: qstfr@csiro.au



List of Present Staff (Post Docs, visiting scientists, Honorary Fellows or students)

Bartley, Rebecca
Biffin, Ed
Bohnet, Iris
Bradford, Matt
Bruce, Caroline
Castino, Elva
Chapman, Peter
Clarkson, John
Croucher, Cliff
Dennis, Andrew
Elick, Rebel
Felderhof, Leasia
Fletcher, Cameron
Ford, Andrew
Gray, Bruce
Grundon, Noel
Harrington, Graham
Hewett, Bob
Hilbert, Dave

Hogan, Dominic
Hyland, Bernie
Jenkins, Sue
Kay, Sandra
Kroon, Frederieke
Li, Jin
Ludwig, John
Margules, Chris
Metcalf, Dan
Middleton, Jeff
McJannet, David
Mckeown, Adam
Murphy, Helen
Parker, Trevor
Parsons, Jen
Poon, Liz
Shilton, Louise
Westcott, David

List of Past Staff

Aitchison, William
Allen-Waters, Julie Elisabeth
Allman, Anthony Peter
Amundsen, Anthony Leiv
Bailey, Steven John
Bailey, Denise Maree
Baker, Colin Ross
Barbagallo, Sharon Edith
Baron, Zoe
Bauer, Robert Niel
Bayly, Bronwyn Ellen
Beattie, Ian
Bhardwaj, Michael
Bianchi, Sylvio Palmiro
Blanche, Kathleen Rosalind
Borresen, Janelle Marie
Brady, Megan Joy
Brown, Peppa Rae
Brown, John W
Buckley, Brett Arthur
Burchill, Simon Bruce
Cameron, Susan
Carpenter, Guy
Chapman, Angie
Chapman, Irene Netty
Chapman, Peter Alexander T
Chapman, Benjamin
Chappell, Danny
Chiari, Paul
Clark, Gary Sean
Clifford, Laurelle Rhonda
Collett, Jennifer
Collins, Eleanor
Comport, Steven Shayne
Connors, John Robert
Coote, Brigitte Marie Mart
Costelloe, Ross David
Costelloe, Marina Therese
Crome, Francis Hugh
Dawson, Suzanne Patricia
Debski, Igor
Disher, Mark
Dockrill, Alick William
Dooley, Darren Michael
Doucet, Stephanie
Douchin, Michael
Dowding, Nicola
Dykes, Barbara Janet
Edwards, Elizabeth Ceinwen
Elick, Vanda Nicloe
Falster, Daniel Stein
Ferraro, Peter John
Fitzsimon, John Donald
Fitzsimon, Carleen Gay
Frew, Mary Kathleen
Gampe, Leslie W
Gavegan, Denise
Geran, Margaret Anne
Gillison, Andrew Napier
Glass, Steven Jon
Gordon, Victoria Anne
Go-Sam, Patrick K D
Graham, Andrew
Grant, John
Green, Peter
Groen, Thomas
Halbert, Valerie Janice
Hanrahan, Peter Edward
Harris, Craig
Hastie, Stephen
Hastie, Lorraine Ellen
Healy, Eleanor Margaret
Henke, Angela Dawn
Herbohn, Robert William
Hickmott, Patricia Merelle
Holmes, Jennifer Susan
Hopkins, Michael Strother
Hurlimann, Heidi Anne
Ingram, Kay
Irvine, Anthony Kyle
Jacobsen, Sharon Nicola
Jenkins, Suzanne Irene
Jensen Rigel
Johnson, Eric William
Johnson, Lynette Ann
Jones, Barbara
Juniper, Peter
Kammoora, Oliver James
Kanowski, John
Kaepler, Jana
Kemp, Claire Therese
Kerrigan, Raelee
Knowlton, Ronald William
Lambert, Jon

Lang, Randall Keith
Laurance, William Frederic
Le Cussan, Jenni
Lees, Frances May
Lewis, Lorraine
Lindsay, Donald Alexander
MacKness, Madeline Kay
Maggs, John
Mair, Melissa Ellen
Mallett, Judy Ann
Margall, Meritxell
Martel, Dorinda Joyce
McAllan, Ian Arthur Willia
McCarthy, Fiona Jayne
McDowell, Erin Colleen
McGarry, Jessie-Rose
McMahon, Jacqueline Anne
Metcalf, Suzanne Shyamala
Miller, Mindi
Moore, Leslie Allan
Moriarty, Vince K.
Morta, Ernest Edward
Motlap, Glenn Ian Maxwell
Murray, Arnold Stafford
Nehow, Jennifer Margaret
Nehow, Leon Ashley
Newell, Graeme Reginald
Newton, Mark Robert
Niederberger, Sophia Luzia
Nolan, Terry William
O'Connor, Steven Patrick
Onus, Geoffrey Lay
Ostendorf, Bertram Franz
Osunkoya, Olusegun
Palmer, William John
Parker, Kenneth
Parsons, David
Phelps, Roy R
Prideaux, Trudi Maria
Pringle, Andrew David
Rabbet, Garry
Raso, Giuseppe
Rassip, Jaiyah Mw
Reddell, Paul
Richards, Greg
Risley, Tom Stephen
Robinson, Jennifer Jane
Russell, Kelvin Bruce

Sanderson, Keith Douglas
Sandilands, Stanley Wayne
Sayers, Warwick Verney
Schulz, Walter
Scott, David
Seawright, Justin Douglas
Sellers, Elizabeth Anne
Simmonds, Timothy John
Sipkes, Jon
Slape, Susan
Smith, Vikki Ellen
Solly, Roslyn Faye
Starkey, Neville James
Stephensen, Peter Ronald
Stewart, Barbara Christine
Stocker, Geoffrey Charles
Stuart, Clayton
Svendsen, Helen
Talbot, Lucas Michael
Thomson, Pamela Joan
Thomson, Lynne Michelle
Toward, Helen Ann
Tracey, John Geoffrey
Trott, Peter
Tucker, Nigel Ian John
Tuinenburg, Obbe Arjan
Turpin, Valmai Patricia
Umback, Lynda Joy
Unwin, Gregory Leonard
Van Den Muyzenberg, Jeroen
Veldman, Rudolf Lodewijk
Veurmann, E J
Vidal, Fabien
Ward, Catherine Ann Mary
Warner, Ricardo Bastiaan
Warren, Liza
Wason, Glen Edward
Weaver, Janet Elizabeth
Webb, Ian Scott
Webber, Eddie
Webster, Anthony James
Weekes, Natasha Jane
Wells, Jessie Anne
Woodleigh, Glenis Rose
Woods, Leanne
Woods, Rena Anne
Zborowski, Paul Joseph
Zilli, Daniele Paul

plays

Stuffed native animals
Bat tracking
Rain Forest Key
Publications
Careers in CSIRO
Sustainability @ Work

Scheduled Events

10AM – 3PM sausage sizzle run by XXXXXXXXXXXXXXXXXXXX

12:00 PM official welcome and commemoration of the day
Dr David Hilbert – Officer in Charge
Dr Brian Keating Deputy Chief – CSIRO Sustainable Ecosystems
Mr Jim Chapman Mayor Atherton Shire Council
Dr Chris Margules – Senior Principal Research Scientist

20 minute guided herbarium tours 11:00, 1:00, 2:00 & 3:00

20 minute guided arboretum tours 11:00, 1:00, 2:00 & 3:00

North Queensland Science Education Centre continuous display
great fun for kids and adults alike

Videos for kids

Short seminars (15 min plus question time)

10:30 – Dr Andrew Dennis – Seed dispersal in continuous and fragmented rainforest

11:30 – Dr Dave Hilbert – Where have all the forests gone?: 20,000 years of changes in the Wet Tropics.

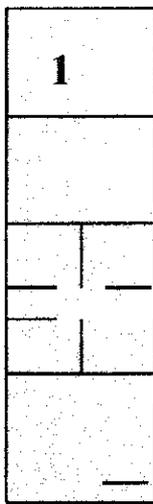
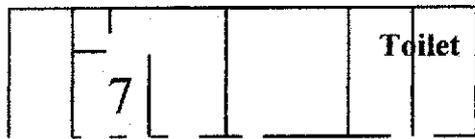
1:00 – Dr Louise Shilton – Spectacled Flying Foxes

2:00 – Dr Iris Bohnet – Future visions for landscapes in the Wet Tropics

3:00 – Dr Dan Metcalfe – Water for a Healthy Country

LOWER FLOOR

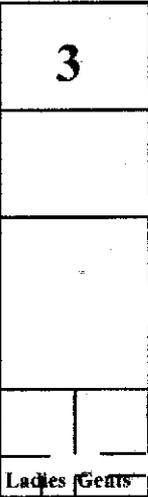
Open Day Activities



other displays

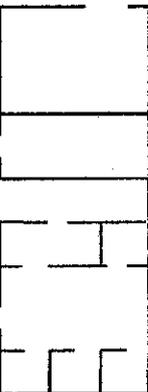
8

UPPER FLOOR



CAR PARK

RAMP



Herbarium

Gents

Ladies

Seminar Room

2

6

CAR PARK

Gents

Ladies

ARBORETUM

Kid's Videos

4

TROPICAL FOREST RESEARCH CENTRE ATHERTON

CAR PARK

- 1 - Science Ed Centre
- 2 - Seminar Room
- 3 - Publications
- 4 - Video for Kids
- 5 - Arboretum Tours
- 6 - Herbarium Tours
- 7 - Food Stall
- 8 - Official Opening
- 9 - Seating/Free Tea & Coffee
- 10 - Information

5





