



Management of Commercial Harvesting of Protected Flora in Western Australia

1 July 2018 – 30 June 2023

DRAFT 2018



Department of **Biodiversity,
Conservation and Attractions**

Department of Biodiversity, Conservation and Attractions
Locked Bag 104
Bentley Delivery Centre WA 6983
Phone: (08) 9219 9000
Fax: (08) 9334 0498

www.dbca.wa.gov.au

© Department of Biodiversity, Conservation and Attractions on behalf of the State of Western Australia 2018
DRAFT April 2018

This work is copyright. You may download, display, print and reproduce this material in unaltered form (retaining this notice) for your personal, non-commercial use or use within your organisation. Apart from any use as permitted under the *Copyright Act 1968*, all other rights are reserved. Requests and enquiries concerning reproduction and rights should be addressed to the Department of Biodiversity, Conservation and Attractions.

This document was prepared by Species and Communities Branch

Questions regarding the use of this material should be directed to:
Melanie Smith
Species and Communities Branch
Department of Biodiversity, Conservation and Attractions
Locked Bag 104
Bentley Delivery Centre WA 6983
Phone: 9219 9529
Email: melanie.smith@dbca.wa.gov.au

The recommended reference for this publication is:
Department Biodiversity, Conservation and Attractions, 2013, *Management of Commercial Harvesting of Protected Flora in Western Australia, 1 July 2018- 30 June 2023*, Department of Biodiversity, Conservation and Attractions, Perth.

Please note: urls in this document which conclude a sentence are followed by a full point. If copying the url please do not include the full point.

Cover image *Banksia hookeriana*. Photo by M. Smith.

Contents

Summary	7
1 Introduction	9
1.1 Purpose of the Management Plan	9
1.2 Scope of the Management Plan.....	9
1.3 Reason for Wildlife Harvest	12
2 Background Information	13
2.1 Biology and Ecology of Target Species	13
2.2 Legislative Basis for Management.....	14
2.3.1 Western Australian State Legislation	14
2.3.2 Federal Legislation.....	17
3 Threats and Issues	18
3.1 Dieback Disease Caused by <i>Phytophthora</i> Species	18
3.1.1 Disease Management	20
3.1.2 Control of Access.....	21
3.1.3 Phytosanitary Measures	22
3.1.4 Coordination of <i>Phytophthora</i> dieback management and research	23
3.2 Aerial Canker.....	23
3.3 Fire	24
3.4 Land Clearing.....	24
3.5 Mining.....	26
3.6 Salinity.....	26
3.7 Weeds	27
3.8 Myrtle Rust	28
4 Aims and Objectives of this Management Plan	29
5 Management	32
5.1 Management Measures	32
5.1.1 Licences.....	32
5.1.2 Endorsements.....	34
5.1.3 Conservation Reserves.....	37
5.1.4 Threatened (Declared Rare) Flora	38
5.1.5 Research	40
5.2 Management Strategies	41

5.2.1	Licence Conditions.....	41
5.2.2	Area-Specific Management.....	42
5.2.3	Taxon-Specific Management	43
5.2.4	Education.....	48
5.3	Monitoring and Assessment	49
5.3.1	Flora Industry Regions.....	49
5.3.2	Licence Application, Licensing Procedures and Flora Returns	52
5.3.3	Analyses of Flora Harvest.....	53
5.3.4	Assessment of Management Options	54
6	Audit, Monitoring, Reporting and Compliance.....	56
6.1	Flora Industry Data Management System (FIDMS).....	56
6.2	Flora Dealer Inspections	57
6.3	District Monitoring and Reporting	57
6.4	Role of Wildlife Officers	59
6.5	Advisory Committees on Flora Conservation	61
6.6	REPORTS.....	62
6.6.1	DBCA Reports	62
6.6.2	Reports to the Department of Environment and Energy	63
6.6.3	Reports from the Department of Environment and Energy	64
7	KEY PERFORMANCE INDICATORS.....	65
8	GLOSSARY	67
9	REFERENCES	69
	APPENDIX 1 - EXPORT FLORA LIST	
	APPENDIX 2 – CORPORATE POLICY STATEMENT NO. 37 MANAGEMENT OF WILDLIFE UTILISATION.....	
	APPENDIX 3 – SCHEDULE OF DECLARED RARE FLORA.....	
	APPENDIX 4 – CORPORATE POLICY STATEMENT NO. 3 MANAGEMENT OF <i>PHYTOPHTHORA</i> DISEASE	
	APPENDIX 5 – APPLICATION FORM FOR COMMERICAL PURPOSES LICENCE	
	APPENDIX 6 - APPLICATION FORM FOR COMMERICAL PRODUCER'S NURSERYMAN'S LICENCE	
	APPENDIX 7 – STANDARD LICENCE CONDITIONS APPLYING TO A COMMERICAL PURPOSES LICENCE	
	APPENDIX 8 – STANDARD LICENCE CONDITIONS APPLYING TO A COMMERICAL PRODUCER'S OR NURSERYMAN'S LICENCE	

APPENDIX 9 – SECTION 303FO OF THE ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999	
APPENDIX 10 – SPECIES INFORMATION FOR PROTECTED FLORA ON THE EXPORT FLORA LIST	

DRAFT

Summary

Background

Western Australia has a rich and diverse native flora, that is internationally renowned. The conservation of this flora is a major undertaking in the State, with the recognition of the south west region being one of the top 34 world biodiversity hotspots highlighting the importance of this conservation work. The commercial harvesting of native flora is a significant industry in Western Australia, especially in the south west, and its management is an important part of the flora conservation activities in the State.

The sustainable field harvesting of native flora is a key mechanism through which we can help to ensure the long term retention of native flora by providing a clear economic value to the flora's habitat. This value is attributed through harvesting on both private and public (Crown) lands and occurs outside the core nature conservation reserve system. Harvesting on both public and private land helps to provide financial and management incentives to landholders to value and conserve the State's flora.

What is Covered by the Plan?

This plan covers:

- All protected flora in Western Australia (all Western Australian native plants); and
- All Australian native plants that are not native to Western Australia but are growing in Western Australia.

Legislative Framework

The management of the flora industry in Western Australia is primarily through the *Wildlife Conservation Act 1950*, and the *Conservation and Land Management Act 1984*. Industry regulation is thus on the basis of flora conservation and appropriate land management, rather than for industry development *per se*. A system of licensing, area and species-specific management, and monitoring has been developed to ensure the conservation of flora being harvested. This system complements other flora conservation initiatives being undertaken in the State, including the undertaking of biogeographical surveys, the development and management of a comprehensive, adequate and representative reserve system, the identification and conservation of threatened species, and the investigation into, and management of, key threatening processes.

Provisions relating to the management of the flora industry under the new *Biodiversity Conservation Act 2016* are yet to be brought into effect. Minor changes to licensing will be implemented under the new Biodiversity Conservation Regulations, including licensing provisions for dealers, however the above-mentioned system for the management of the flora industry in WA will not change when these regulations come into effect.

This management plan describes the various elements of the management system in place for the conservation of commercially harvested native plant taxa in WA.

1 INTRODUCTION

1.1 Purpose of the Management Plan

This plan has been developed by the Department of Biodiversity, Conservation and Attractions to satisfy the requirements of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and to meet the legislative, policy and other requirements of the Western Australian Government for the period from 1 July 2018 to 30 June 2023. It is intended to address the goals of Australia's Biodiversity Conservation Strategy.

The plan is designed to meet the requirements for approval of a Wildlife Trade Management Plan under the EPBC Act.

1.2 Scope of the Management Plan

Flora is defined in the *Wildlife Conservation Act 1950* as "any plant, including any wildflower, palm, shrub, tree, fern, creeper or vine which is either native to Western Australia or declared to be flora under the Act and includes any part of flora and all seeds and spores thereof". Thus, all parts of the plant including roots, branches, stems, leaves, flowers, seeds and spores come within the legal meaning of flora¹. Plants from other parts of Australia (and not declared to be flora in WA) and which are growing in WA, are not referred to as "flora" in this plan, but are instead referred to as "Australian native plants that are not native to Western Australia".

Classes of flora which are protected in WA under the *Wildlife Conservation Act* include all flowering plants, conifers and cycads (Spermatophyta), ferns and fern allies (Pteridophyta), mosses and liverworts (Bryophyta) and algae, fungi and lichens (Thallophyta). Under the *Wildlife Conservation Act 1950*, protected flora on Crown land is deemed to be the property of the Crown, until legally taken.

As indicated above, all Western Australian native plants are protected flora under the *Wildlife Conservation Act 1950*. This Act also provides for plants not native to Western Australia to be declared as protected flora. At the time of publication, no such plants have been declared as protected flora.

Australian native plants that are not native to Western Australia are not protected flora (unless otherwise declared) and the harvesting of such plants in WA is not subject to regulation under the *Wildlife Conservation Act 1950* (unless declared). The cultivation and harvest of such plants does not threaten Western Australian native flora or their habitat. As Western Australia is outside their natural range, the taking of these plants in Western Australia is considered sustainable and non-

detrimental. Thus, their harvest in Western Australia is also covered by this plan and may be considered to be taken in accordance with this management plan.

Protected flora may be harvested for commercial purposes subject to the management controls as outlined in this Management Plan. This plan covers the commercial taking (picking) of all protected flora within Western Australia, and has been specifically prepared for approval by the Commonwealth Government in relation to the export of material from the Commonwealth- and State- approved Export Flora List (Appendix 1).

Only taxa listed on the Export Flora List (Appendix 1) may be exported under this plan, unless being exported as a DBCA-approved test export. At the time of publication, the Export Flora List allows the export of:

- All Australian native plants that are not native to Western Australia and that are artificially propagated or wild-harvested in WA¹;
- All protected flora (Western Australian native plants) that are artificially propagated in WA¹; and
- Specimens of listed species of protected flora (174 species at the time of preparation of this plan) that may be taken from naturally occurring stands in WA (wild-harvested), in accordance with specified conditions.

This plan does not cover the export of:

- Any CITES I species or eligible threatened species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Seeds do not require an export permit or authority under the EPBC Act, however, flowers, foliage, fruits and whole plants do require a permit for export, and export authorisation may only be given where the flora has been harvested in accordance with this Management Plan once approved. All approved flora products (eg. flowers, foliage, fruits, seed and plants) taken under this plan may

¹ Excluding any CITES I species or species listed as threatened under the Commonwealth EPBC Act. Under the EPBC Act, such species may only be exported commercially if sourced from a separate, EPBC Act-approved artificial propagation program. CITES is the Convention on International Trade in Endangered Species of Wild Fauna and Flora and a CITES I species is a species listed on Appendix I of CITES, the highest level of protection under CITES for species that are endangered by trade. Severe penalties apply for any breach of the EPBC Act.

also be traded within Western Australia and the rest of Australia, subject to individual State and Territory controls.

This management plan also provides for the commercial harvesting of whole plants of protected flora in DBCA-approved salvage operations within Western Australia.

This plan replaces the previous 2013-2018 Management Plan prepared for the harvest of protected flora from Western Australia. This plan covers those taxa listed in the Export Flora List (Appendix 1), as updated during the term of this plan. This plan also covers any other protected flora taxa that may, from time to time, be permitted to be harvested from within Western Australia and traded commercially within Australia, or exported only as test exports under 5.2.3.2. The Department may also prepare separate subsidiary management plans for individual taxa or groups of taxa which may require additional management measures. Such management plans will be forwarded separately to the Department of the Environment and Energy (DEE) for approval under the EPBC Act, where appropriate.

This plan may be amended or varied prior to the expiration of its approval under the EPBC Act if the amendments or variations are approved by the Commonwealth Minister for the Environment after consultation with DBCA.

1.3 Reason for Wildlife Harvest

The commercial harvesting of wildflowers and foliage for the cut flower trade started in WA in the 1950s. Since then, the native flora industry in Western Australia has become a multi-million dollar industry.

In 2017 the wildflower and foliage industry in Western Australia was estimated to have an export value of approximately \$4.6 million (Manju Radhakrishnan, Department of Primary Industries and Regional Development, pers. comm.) which is comparative to the export value recorded around five years ago (\$4.7 million, 2011/2012). However during this five year period the export value fell to \$1.7 million in 2014, before slowly recovering to its current value. The recent increase in exports is partly due to the recovery in Japanese and Netherlands markets and the emergence of new markets such as Vietnam and Georgia (Manju Radhakrishnan, Department of Primary Industries and Regional Development, pers. comm.). In 2017 wild-harvested flora exported directly out of Western Australia went mainly to the Asian market with 54% of the total exports destined for Japan.

The WA Flora Industry also includes: seed harvesting, primarily for propagation and revegetation purposes; *Eucalyptus* species stems for production of didgeridoos; and nuts and grasstree stems for the craft market. There is no data available on the value of these industries, but anecdotal evidence suggests that it is worth millions of dollars to the State's economy.

In 2016/2017 a total of 314 Commercial Purposes Licences were issued to commercial Crown land pickers, and 146 Commercial Producers Licences for private property were issued to sell native flora (both wild-harvested and artificially propagated). This represents a 3% increase in Commercial Purposes Licences and a 28% decrease in Commercial Producer's Licences compared with 2011/2012 figures.

An adequately regulated system of flora harvesting provides a useful economic incentive for active conservation of flora resources, far and above the threats of penalties for clearing native vegetation.

2 BACKGROUND INFORMATION

2.1 Biology and Ecology of Target Species

Summary information on the biology and ecology of each species of protected flora native to Western Australia can be accessed through the Department's Florabase website <https://florabase.dpaw.wa.gov.au/>. This includes plant description, habitat, flowering time, species distribution and conservation status. None of the taxa which are listed on the Export Flora List are Threatened or Priority species (of conservation concern).

Information on the parts harvested and industry specification has already been collated for taxa on the Export Flora List.

Florabase
The Western Australian Flora

Home Themes Find *Nyctia* Tools Help Sign in

Plants → Pinophyta → Pinopsida → Pinales → **Podocarpaceae** Endl. → **Podocarpus** Labill. → **Podocarpus drouynianus** F. Muell.

Podocarpus drouynianus F. Muell. Wild Plum
Fragn. 4:86-87 (1864)

Conservation Code: **Not threatened**
Naturalised Status: Native to Western Australia
Name Status: **Current**

Brief Description
Amanda Spooner, Monday 3 November 1997
Tree or shrub or (conifer), 0.75-3 m high, dioecious; female cone solitary, with 2 separate ovules; seed 1, with fleshy receptacle. Fl. Aug to Dec or Jan to Apr. White or grey sand, sandy loam or gravelly loam. Lower slopes or lowlands, near creeks.

Distribution
Beard's Provinces: South-West Province.
IBRA Regions: Jarrah Forest, Swan Coastal Plain, Warren.
IBRA Subregions: Northern Jarrah Forest, Perth, Southern Jarrah Forest, Warren.
IMCRA Regions: WA South Coast.
Local Government Areas (LGA): Albany, Augusta-Margaret River, Bridgetown-Greenbushes, Bunbury, Busselton, Capel, Denmark, Donnybrook-Balingup, Manjimup, Nannup, Plantagenet, Swan, Toodyay, Wandering.

Florabase is produced by the staff of the Western Australian Herbarium, Biodiversity and Conservation Science, Department of Biodiversity, Conservation and Attractions. Publication or other use of content on this site is unauthorised unless that use conforms with the copyright statement.

Figure 1. Information on target species biology and ecology can be found on the Department's Florabase website

CONSERVATION STATUS OF TARGET SPECIES

The groupings of flora into categories within the Export Flora List (Appendix 1) reflect the structured management strategy being used in Western Australia for commercial flora harvesting and flora conservation. The Export Flora List is arranged so that the extent of specific picking or trade restrictions for any listed taxon can be readily identified and reflect market-driven conservation strategies. The structured management approach to flora conservation is:

- Declared Rare flora (see section 5.1.4 and 5.2.3.3) taxa may not be taken without special permission of the State Minister for Environment, and are not included on the Export Flora List;
- State “priority” listed (see section 5.2.3.3) flora taxa and certain other flora taxa identified as requiring specific management may not be harvested from Crown land, but may be harvested from private property;
- certain flora taxa may be harvested from Crown land, but only under special endorsement that has specific management conditions imposed; and
- flora taxa that have no identified specific management requirements may be harvested from Crown land under general collecting licences with general management conditions.

The Export Flora List provides a clear means of restricting the number of taxa being exploited for the export market where greatest market demand occurs. At the time of writing this plan, the Export Flora List contained 174 taxa permitted for harvesting from natural stands of the 12,521 taxa of Western Australian vascular flora (as at 1 June 2017) (DBCA 2017).

2.2 Legislative Basis for Management

2.3.1 Western Australian State Legislation

The *Wildlife Conservation Act 1950*, as detailed above (section 1.1) protects flora native to Western Australia (and Australian native plants that are not native to Western Australia and declared to be protected). This protection provides the basis for the management of the flora industry in Western Australia, as detailed in this management plan.

Under the *Conservation and Land Management Act 1984*, DBCA is responsible for the conservation and management of protected flora throughout Western Australia, and for administration of the *Wildlife Conservation Act 1950*. DBCA thus has the authority to exert controls on the commercial harvesting of protected flora in Western Australia on all lands. DBCA is also responsible for the management of various public lands including national parks, conservation parks, nature reserves, State forests and timber reserves.

Amendments to the *Conservation and Land Management Act 1984* in 1993 gave DBCA the statutory authority to promote research on, and encourage the use of, flora for therapeutic, scientific or horticultural purposes. The

amendments also give the Western Australia Minister for Environment and the Director General of DBCA powers to control the issue of licences for the purpose of developing the potential of products for therapeutic, scientific or horticultural purposes. These powers include the right to provide an exclusive licence.

Amendments to Part V of the *Environmental Protection Act 1986* in 2004 introduced reformed vegetation clearing regulations for Western Australia (refer to Section 3.4 – Land Clearing). These regulations require that the clearing of native vegetation must be done under a permit, unless subject to a legal exemption. The issue of licences under the *Wildlife Conservation Act 1950* to take or sell protected flora provides an exemption from requiring a clearing permit for that activity under the *Environmental Protection Act 1986*. Consequently there is an onus on DBCA when assessing flora licences to ensure the activity does not conflict with the ten clearing principles for biodiversity, water and soil conservation included in the vegetation clearing assessment framework of the *Environmental Protection Act 1986*.

A Memorandum of Understanding (MOU) between the Department of Biodiversity, Conservation and Attractions and the Department of Planning, Lands and Heritage in relation to management of the flora industry on unallocated Crown land (UCL) and unmanaged Crown reserves in WA was signed in March 2000. Under this agreement DBCA has the ability to implement specific management control measures in relation to flora harvesting over all UCL and unmanaged Crown reserves in Western Australia.

In 2016, several parts of the new *Biodiversity Conservation Act 2016* were proclaimed. These parts came into effect on 3 December 2016, and cover (amongst other things):

- the ability for the Minister to approve “Biodiversity management programmes;”
- the ability for the Minister to agree to “Biodiversity conservation agreements;”
- the ability for the Director General of the Department to enter into “Biodiversity Conservation Covenants” with private landholders; and
- the ability for the Minister to make regulations for certain matters identified in the Act.

Provisions that replace those existing under the *Wildlife Conservation Act 1950* (including threatened species listings and controls over the taking and keeping of native species) and their associated Regulations cannot be brought into effect until the necessary Biodiversity Conservation Regulations have been made. Work on the drafting of the new Biodiversity Conservation Regulations is underway. Minor changes to flora licensing will be implemented under the new regulations (outlined in section 5.1) however they will still align with the current management measures of the plan.

In addition, the Department has a series of formal policy statements to direct its operations. Corporate Policy Statement N^o. 37: Management of Wildlife Utilisation addresses the issue of commercial flora harvesting (Appendix 2). It outlines DBCA's overall objective, policies and strategies for the commercial flora industry to ensure that commercial flora harvesting is ecologically sustainable.

Broad strategies for conservation have been developed in Australia's Biodiversity Conservation Strategy 2010-2030 (NRMMC, 2010). One of the main threats to Australia's biodiversity identified is unsustainable use and management of natural resources. The priorities for action under this strategy are:

1. Engaging all Australians in biodiversity conservation *through*:
 - mainstreaming biodiversity
 - increasing Indigenous engagement
 - enhancing strategic investments and partnerships.
2. Building ecosystem resilience in a changing climate *by*:
 - protecting diversity
 - maintaining and re-establishing ecosystem functions
 - reducing threats to biodiversity.
3. Getting measurable results *through*:
 - improving and sharing knowledge
 - delivering conservation initiatives efficiently
 - implementing robust national monitoring, reporting and evaluation.

While all native flora is protected under the *Wildlife Conservation Act 1950*, only that flora occurring on Crown land is vested in the Crown, and protected flora occurring on private property is owned by the land owner. Further, it is recognised that private land owners have a vested interest in the conservation and management of their land, and consequently are able to provide more intensive management and regulation of harvesting activities on their lands. As a consequence, the regulatory measures applicable to the management of the flora industry within Western Australia vary between Crown land and private property. The management of the flora industry in Western Australia is, however, effective in ensuring the conservation of the flora through the provisions of the *Wildlife Conservation Act 1950*, and the operation of other applicable legislation such as the Environmental Protection Act (refer to Section 3.4 – Land Clearing).

2.3.2 Federal Legislation

Flora harvesting, as well as other activities that may affect flora such as land-clearing and mining (see 3.4 and 3.5 below), are subject to the environmental assessment and approval provisions of Chapter 4 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Under the EPBC Act a person must not take an action that has, will have or is likely to have a significant impact on a matter of National Environmental Significance (which includes nationally threatened species and ecological communities) without approval from the Commonwealth Environment Minister.

Any significant impact on a matter of National Environmental Significance needs to be referred to the Department of the Environment and Energy, which administers the EPBC Act. The list of EPBC-listed threatened species and ecological communities, as well as guidelines on referring actions, can be obtained from the Department of the Environment and Energy at www.environment.gov.au.

3 THREATS AND ISSUES

3.1 Dieback Disease Caused by *Phytophthora* Species

The disease known as dieback has caused serious damage to large areas of forest, woodlands and heathlands in south-western Australia. It is caused by several species in the fungal genus *Phytophthora* which infect, rot and often kill the entire root systems and lower stems of susceptible plants. Approximately 40% of the plant species in Western Australia's south-west Botanical Province are susceptible to *Phytophthora*. In many places, populations of most banksias and some heaths may be severely affected or destroyed. A total of 720,000 ha of land in the south-west of WA was intensively mapped for dieback. Of this, 170,000 ha were found to be affected (DEC, 2006b).

Of the fifteen species of *Phytophthora* recorded in Western Australia, five (*Phytophthora cinnamomi*, *P. citricola*, *P. cryptogea*, *P. drechsleri* and *P. megasperma*) have become widely established in the native vegetation of south west Western Australia. Of these, *P. cinnamomi* is by far the most damaging, with *P. megasperma* the only other causing significant damage to the natural environment. A new species, *P. multivora*, has more recently been found to be well established in tuart forest south of Mandurah, and has the potential to be a significant pathogen, affecting communities not previously thought to be very susceptible to dieback disease (Scott *et. al.*, 2008). Various other species are important to nurseries, horticulture, vegetables and pastures. These fungi spread by the movement of spores in water, and are easily spread in winter and in wetter areas. The fungi can also be spread widely by transporting soil from infested to uninfested areas. Vehicles, especially when driven off tracks or roads, can carry infested soil on tyres or underbody, and thus also have the potential to spread the disease.

Species adversely affected by dieback include representatives of many of the families of native plants. Families and genera which contain a high proportion of Western Australian flora variously susceptible to *Phytophthora* are:

PROTEACEAE	MYRTACEAE	ERICACEAE	OTHER
<i>Adenanthos</i>	<i>Beaufortia</i>	<i>Andersonia</i>	<i>Acacia</i> <i>Oxylobium</i>
<i>Banksia</i>	<i>Calothamnus</i>	<i>Astroloma</i>	<i>Allocasuarina</i> <i>Patersonia</i>
<i>Conospermum</i>	<i>Calytrix</i>	<i>Leucopogon</i>	<i>Anarthria</i> <i>Phlebocarya</i>
<i>Franklandia</i>	<i>Eremaea</i>	<i>Lysinema</i>	<i>Boronia</i> <i>Podocarpus</i>
<i>Grevillea</i>	<i>Eucalyptus</i>	<i>Monotoca</i>	<i>Conostylis</i> <i>Xanthorrhoea</i>
<i>Hakea</i>	<i>Hypocalymma</i>	<i>Sphenotoma</i>	<i>Dasypogon</i>
<i>Isopogon</i>	<i>Kunzea</i>	<i>Styphelia</i>	<i>Daviesia</i>
<i>Lambertia</i>	<i>Melaleuca</i>		<i>Eutaxia</i>
<i>Persoonia</i>	<i>Regelia</i>		<i>Hibbertia</i>
<i>Petrophile</i>	<i>Scholtzia</i>		<i>Hovea</i>
<i>Stirlingia</i>	<i>Thryptomene</i>		<i>Jacksonia</i>
<i>Synaphea</i>	<i>Verticordia</i>		<i>Lasiopetalum</i>
<i>Xylomelum</i>			<i>Macrozamia</i>

Many of the genera listed above include taxa which are amongst the most important to the flora industry, including *Adenanthos*, *Banksia* (which now includes *Dryandra*), *Hakea*, *Persoonia*, *Podocarpus*, *Xylomelum*, *Leucopogon*, *Lysinema*, *Verticordia* and *Xanthorrhoea*.

The impact of infection may vary between sites due to different interactions between the site environment and the fungi. It can take up to three years after infection for visible symptoms of *Phytophthora* caused dieback to appear in vegetation. On other sites, up to ten years may pass before plants die.

3.1.1 Disease Management

There is no known practical method of eradicating *Phytophthora* in native vegetation. Disinfectants and fumigants used in horticulture are toxic to plants, are not practical or cost effective for natural ecosystems, and if used in bushland could cause damage to the native vegetation. A number of systemic fungicides are available, the most promising of which is neutralised phosphorous acid (H_3PO_4), also known as phosphite. Initial research indicates that applications can achieve control of *Phytophthora* development in infected plants. Currently, however, it is impractical to apply on a broad scale, although it has use for attacking fronts in areas of high conservation value such as populations of Declared Rare Flora. Research into the use of this chemical is continuing.

The current aims of disease management are to prevent introduction of the disease to uninfected areas, and to restrict the spread and intensification of the disease in infected areas. This is done by:

- rating disease hazard (the recognition of sites of different vulnerability so that priorities can be assigned for protection);
- assessing the risk of introduction (this is affected by factors such as the proximity of diseased areas, the season of access and the type of operation planned);
- hygiene (e.g. cleaning of machinery, vehicles, footwear, and whether dry or moist soil conditions);
- quarantine (denying access to areas);
- manipulation of conditions to disfavour the disease and enhance host resistance (e.g. by appropriate road and path construction, manipulation of drainage, stimulation of antagonistic microflora, use of fungicides); and
- education and training.

Management of *Phytophthora* dieback on lands vested in the Conservation and Parks Commission of WA (conservation reserves, State forest and vested timber reserves) is through hygiene measures which aim to prevent the introduction and intensification of the disease. The management of access in forested lands is principally achieved through the declaration of areas as Disease Risk Areas under Part VII (Sections 79-86) of the *Conservation and Land Management Act 1084*. Part VII may also apply to any other Crown land with the permission of the vesting authority. Other Acts, such as the *Mining Act 1978-1987* and the *Water Authority Act 1984*, also provide for the control of access.

DBCA's policy statement on dieback management, Corporate Policy Statement No. 3 – Management of *Phytophthora* Disease (Appendix 4), guides management of *Phytophthora* dieback, including in the area of flora harvesting.

In 2003 DBCA produced management and operational guidelines on *Phytophthora cinnamomi* which collated all previous information into a single document. This in conjunction with other procedural manuals and checklists (e.g. Dieback Hygiene Manual, Fire Control Checklists, Dieback Hygiene Evaluation) guide officers of DBCA to plan and implement operations.

3.1.2 Control of Access

Control of access is a key element in minimising the vectored spread of *Phytophthora* dieback. The following strategies are applied to the commercial flora industry:

- as a condition of the Commercial Purposes Licence, pickers may not take vehicles into areas containing, or suspected of containing, *Phytophthora* dieback;
- pickers must use existing tracks and roads as designated by the managing agency, and are not permitted to make, cut or extend new tracks by any means;
- in general, on DBCA-managed lands, commercial flora harvesters are restricted to all-weather access tracks and roads (i.e. those which are open to the general public) and may not use roads, or pick within areas, which are closed due to disease risk or within disease risk areas, except as described under "Hygiene Evaluation" (see below); and
- the following factors are evaluated before any commercial flora harvesting proceeds which has the potential to introduce, spread or intensify the impact of *Phytophthora* dieback on lands managed by DBCA:
 - (i) Activity - whether the proposed activity needs to take place.
 - (ii) Hazard - site, host and climatic factors that influence the probabilities of host mortality.
 - (iii) Risk - the risk of introduction, spread and intensification of disease.
 - (iv) Consequence - the consequences of infection on landuse and ecological values.
 - (v) Hygiene - the hygiene measures required to minimise the consequences.

- (vi) Evaluation - the judgement of the manager regarding the adequacy of hygiene tactics to minimise the consequences to a level that is acceptable.

This procedure is referred to as the "Hygiene Evaluation". It is used as a disease management tool to determine appropriate operational hygiene after balancing the risk of disease introduction and spread against the consequences of hygiene failure.

As outlined in section 1.2 above, DBCA has an inter-agency agreement with the Department of Planning, Lands and Heritage for the management of UCL and unmanaged Crown reserves where the need for specific management has been identified. *Phytophthora* dieback is an issue which may require additional management of access (i.e. restriction on areas where picking is permitted). DBCA evaluates management of non-departmental managed lands for commercial flora harvesting on a case-by-case basis, and applies management to these areas as required.

3.1.3 Phytosanitary Measures

The following phytosanitary measures aim to minimise the further spread of *Phytophthora* dieback by flora pickers:

- all vehicles capable of carrying dieback disease from infected to uninfected areas should be washed down and pickers should therefore wash down vehicles before moving from a flora picking area (pickers are urged never to assume that any vehicle is clean, or that the site does not contain dieback if it is within the region from which dieback is known to exist);
- washdown should be undertaken on bridges, rocky crossings or hard, well-drained surfaces within dieback areas (it is important not to wash down in dieback-free areas as these might then become infected from material being washed off the vehicle);
- the washdown liquid should be a hospital grade biocide suitable for use against *Phytophthora* and the washdown solution should not be kept longer than 24 hours so it is best that the solution is made up fresh each day when required; and
- to make the washdown effective, excess soil must first be removed. This can be done by using a brush or spade to knock off larger clods of soil.

3.1.4 Coordination of *Phytophthora* dieback management and research

The responsibility for implementation of policy and prescriptions which incorporate the protection of plant communities from disease caused by *Phytophthora* spp. lies with DBCA Regional and District staff, with assistance and advice from specialist staff. DBCA Management Audit Branch have a role within DBCA of periodically checking compliance of management activities with legislation, policies and procedures in relation to *Phytophthora* dieback.

In October 1996, a review of *Phytophthora* dieback in Western Australia was prepared for the Western Australian Minister for the Environment. The review provided a series of recommendations pertaining to dieback research, management and administration. Following the publication of the review, a Dieback Coordinator was appointed within DBCA to provide for a more integrated approach to dieback management in Western Australia.

Phytophthora dieback does impact on some species listed on the Export Flora List. When monitoring or research indicates that a species on the List is being affected steps will be taken to ensure the species' survival.

3.2 Aerial Canker

Canker (particularly *Cryptodiaporthe melanocraespida* and *Zythiostroma* species) is another disease affecting the State's flora in the south-west. Current data show that disease development can be rapid causing plant death within 2 years. Occurrence of plant disease is dependent on a combination of a susceptible host, infective pathogen, infection site and favourable environmental conditions. Research carried out to date suggests that *Cryptodiaporthe melanocraespida* preferentially enters through wounds.

Aerial canker may impact on some species listed on the Export Flora List. When research indicates that there is an issue this will be taken into consideration in respect to the management of flora harvesting, including limiting Crown land harvesting, or the removal of the species from the Export Flora List, where this is warranted.

3.3 Fire

The issue of fire is a complex one. Fire may be either a natural event (e.g. lightning strikes) or started by humans, either deliberately (prescribed burning, arson) or by accident. Depending upon its timing, intensity, and frequency, fire may be a tool for regeneration or may adversely affect the conservation status of an area through, for example, changes to taxa composition or local extinctions as a result of too-frequent fire. In addition, in areas close to houses, farms or other property, prescribed use of fire may be necessary for protection of human life and property.

In forest production areas, DBCA's burn prescriptions take into account protection of life and property, timber production and nature conservation requirements. On conservation reserves, protection of life and property and nature conservation are the primary considerations.

DBCA does not generally burn areas of land specifically for purposes associated with flora harvesting. However, wherever practical, flora harvesters have access to burn plans in State forest areas, and can plan harvesting operations accordingly. Harvesting is generally not permitted during the year before and for several years after a prescribed burn to facilitate the regeneration of species, especially re-seeder species.

Similarly, in the event of a wildfire on DBCA managed lands harvesting will not be permitted for several seasons post fire.

3.4 Land Clearing

Amendments to the *Environmental Protection Act 1986* in 2004 resulted in tighter restrictions on clearing of native vegetation in WA. Under these amendments, clearing is not generally permitted where the biodiversity values, land conservation and water protection roles of native vegetation would be significantly affected. 'Clearing' as defined in the Environmental Protection Act is:

- (a) the killing or destruction of;
- (b) the removal of;
- (c) the severing or ringbarking of trunks or stems of; or
- (d) the doing of any other substantial damage to, some or all of the native vegetation in an area, and includes the draining or flooding of land, the burning of vegetation, the grazing of stock, or any other act or activity, that causes:
- (e) the killing or destruction of;
- (f) the severing of trunks or stems of; or
- (g) any other substantial damage to, some or all of the native vegetation in an area.

All clearing of native vegetation requires a permit unless it is exempt. There are exemptions under the Act for activities authorised under certain other legislation. Further exemptions under the associated *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* enable day-to-day activities that have a low environmental impact (e.g. maintenance of existing cleared areas around infrastructure, clearing firebreaks or fencelines). Exemptions under the Regulations do not apply in Environmentally Sensitive Areas which are defined and include areas within threatened ecological communities, within 50m of declared rare flora sites, and within 50m of significant wetlands.

The harvesting of protected flora under a licence issued under the *Wildlife Conservation Act 1950* is an exempt activity under the *Environmental Protection Act 1986*, and hence does not require a clearing permit. However, the issue of a licence which enables any such harvesting on private property must take into account the requirements of the *Environmental Protection Act 1986* to ensure that it is environmentally acceptable. Non-destructive harvesting of flora, whereby the source plants recover fully from the harvest activity, is regulated simply through the licensing provisions of the *Wildlife Conservation Act 1950*, while any other proposed harvest activity will require approved management strategies and an assessment against the clearing principles detailed in the *Environmental Protection Act 1986*. Similarly, any harvest activity that includes the taking of any significant amount of non-target flora, including situations of salvage harvest from land clearing activities, will require assessment for land clearing under the *Environmental Protection Act 1986*. A Commercial Producers Licence shall not be issued for the sale of protected flora taken from private property if the harvest of that flora would be seriously at variance with the clearing principles. The 10 clearing principles, as specified in Schedule 5 of the *Environmental Protection Act 1986*, are listed below:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.
- (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.
- (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- (j) Native vegetation should not be cleared the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

3.5 Mining

Mining in Western Australia is regulated through the *Mining Act 1978* administered by the Department of Mines, Industry, Regulation and Safety and the *Environmental Protection Act 1986* administered by DBCA. In general, areas where mining occurs are outside the main areas for commercial flora harvesting, with the exception of bauxite mining in the jarrah forest, and mineral sands mining along the coast north and south of Perth. One aspect of the commercial flora industry, seed collection for rehabilitation, is involved directly in these and other areas as it is needed for the revegetation of areas after mining is completed. Mining proposals may also require Commonwealth approval under the EPBC Act (see final paragraph of section 2.3 above for further details).

Mining affects a small number of species harvested for the flora industry as it occurs in small pockets of the State. The Department is consulted and made aware of proposals which may affect the flora industry.

However the creation of survey/seismic lines is an issue to the flora industry. The mining industry is responsible for the rehabilitation of these lines and hence flora pickers are denied access to these lines so they do not become permanent tracks.

3.6 Salinity

Salinity is one of the State's most critical environmental problems. Secondary salinisation has resulted from rising water tables as a consequence of the removal of deep rooted native perennial plants and their replacement by shallow rooted annual crops and pastures. This allows more rainfall to pass below the root zone and accumulates as groundwater, in turn causing the water table to

rise. The groundwater mobilises natural salts in the soil as it rises and carries them toward the surface, eventually degrading land and waterways.

In 1996 it was estimated that 1.8 million hectares of farmed areas has been affected by salinity (Government of Western Australia, 1996). As salinity is preventable and thought to be reversible in the long term, the Government of Western Australia released and commenced implementation of the Salinity Action Plan in November 1996. The Salinity Action Plan details measures designed to arrest and reverse the impact of salinity in the State. This Plan was updated and re-released as the State Salinity Strategy in March 2000.

Salinity may, in the longer term, affect a small number of species on the Export Flora List. If this occurs to the extent that the species becomes of conservation concern, harvesting of these species for flowers will be suspended, while seed harvest for revegetation purposes would continue to be permitted.

The flora industry, through the harvesting of native seed, has a significant role to play in the revegetation of cleared land in areas affected by salinity.

3.7 Weeds

Of the 13,827 taxa of vascular plants growing wild in Western Australia (as at June 2017), about 90% are native, the rest (1306 vascular plant taxa) have been introduced and become naturalised in Western Australia (Hussey et al, 2007; DBCA, 2017). Many of these plants have the potential to cause degradation and eventual simplification of bushland ecosystems. Invasion of bushland is usually associated with disturbance; hence by keeping disturbance of the bush to a minimum, the chances of further weed invasion can be significantly reduced.

Weeds that are considered to become, or are, a problem to agriculture can be formally 'declared' under the *Agriculture and Related Resources Protection Act 1976*. The list of declared plants is updated each year. As of December 2007, 77 non aquatic plants were gazetted as being Declared Plants. In August 2012, the Minister for Environment also endorsed a revised list of 59 taxa which are serious weeds of roadsides.

In 1999 the Department released an Environmental Weed Strategy for Western Australia which provides information on environmental weeds and their management. This was followed in 2001 by the release of the State Weed Plan which will direct weed management in the State.

Management of weeds in the flora industry is through education of pickers and the industry. In addition, if the cultivation of any Australian native plant that is not native to Western Australia poses a threat to Western Australian native plant species, ecosystems or habitat, DBCA may restrict the utilisation of that plant by removing the species from the Export Flora List.

3.8 Myrtle Rust

Myrtle rust is a wind borne pathogen that causes widespread devastation to myrtaceous plants. It is a rust fungus native to South America and is a member of a fungal complex assigned the name *Puccinia psidii sensu lato*. It is also known by the synonym *Uredo rangelii*, and the common names 'guava rust' and 'eucalyptus rust'. It was first detected in the central coast of New South Wales in April 2010 and has since been found on numerous properties including natural bushland in NSW, and more recently in Queensland and Victoria.

Myrtle rust is currently not known to be in WA and the susceptibility of many potential and recognised hosts in Western Australia is unknown, however, it has the potential to impact all plants in the family Myrtaceae, including many species of value to the flora industry, and therefore poses a significant threat to the economy and biodiversity of Western Australia.

The Department of Primary Industries and Regional Development (DPIRD) is coordinating the Myrtle Rust Preparedness and Response Plan, with current efforts focused on preventing its entry into Western Australia, early detection and prompt response. For example, after Myrtle rust was found on a property in North-west Tasmania, DPIRD introduced restrictions in 2015 on the entry of Myrtaceae plants coming into Western Australia from Tasmania.

4 AIMS AND OBJECTIVES OF THIS MANAGEMENT PLAN

DBCA's overall aim for the management of commercial flora harvesting is:

"To ensure commercial flora utilisation is managed by the Department in a sustainable manner both for the species involved and the environment" (from Corporate Policy Statement N^o.37, copied at Appendix 2).

The specific objectives of this management plan are to:

- ensure conservation of the taxa subject to this plan by maintaining sustainable populations throughout their existing geographical ranges in the State, taking into account the precautionary principle;
- manage the commercial harvesting of protected flora to ensure that it is undertaken in a manner that does not jeopardise the conservation of the taxon being harvested nor, in the case of Crown land, the conservation values of the land;
- provide for the development and operation of the flora industry in Western Australia in accordance with the principles of ecological sustainability, Government policy and the *Wildlife Conservation Act 1950*; and
- provide for inter-generational equity by ensuring that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

It is necessary to set subsidiary aims which focus these broad objectives and therefore help to determine the appropriate management procedures.

The first objective seeks to ensure the overall conservation of the flora taxa subject to commercial harvesting. The aims subsidiary to this objective are to:

- conduct a biological survey program in order to identify changes to the distribution and conservation status of protected flora;
- record and update information provided through the biological survey program and external sources on the distribution and conservation status of protected flora;
- encourage sustainable commercial flora harvesting on private land to promote the maintenance of biological diversity on such lands;

- progressively develop a representative system of reserves throughout the State to provide for the protection of flora taxa; and
- progressively develop the taxon-specific conservation system that provides full legal protection for threatened and other declared flora taxa on a statewide basis, as Declared Rare Flora (pursuant to the *Wildlife Conservation Act 1950*).

The second objective focuses on the actual management of the harvest to ensure the conservation of the taxa involved and their habitats. Aims to achieve this objective are to:

- regulate, through a licensing regime, the harvesting (picking) or collection of stems, fruit, seeds, foliage and flowers of protected flora, on Crown land, subject to land use priorities, conservation needs and management conditions;
- regulate, through a licensing regime, the sale of protected flora derived from commercial harvesting on private land, and through that regulation ensure the conservation of harvested flora on private land;
- permit whole plants to be taken from Crown land and sold from private property through special licence conditions where the taking is under a legitimate, DBCA-approved, salvage operation;
- implement management practices to conserve harvested species of flora and their habitats, including the use of precautionary measures;
- define management categories for species sharing similar management requirements and, where relevant, implement a system providing for maximum harvest limits to be set; and
- develop and operate suitable monitoring, verification and analysis systems related to the status of plant taxa and the level and impacts of harvesting.

The third objective relates to the development and efficient regulation of the flora industry. The aims subsidiary to this objective are to:

- further develop and maintain an effective administrative, licensing and monitoring system to ensure sustainable operation of the industry;
- provide for a sufficient financial return to the State from licensing and royalties so that the industry meets the cost of regulation required to satisfy State and Commonwealth requirements;
- endorse harvesting on appropriate DBCA-managed lands, and lands over which DBCA has management agreements in place, within sustainable levels for individual taxa and to maintain the conservation values of those lands; and
- develop feedback strategies to allow for modifications to management where there has been either a change in the status of taxa being

harvested, or a change in the management requirements of lands subject to flora harvesting.

The fourth objective relates to inter-generational equity.

The first three objectives are designed to ensure that the commercial harvest is ecologically sustainable and that the use of these resources does not prevent future generations from meeting their needs.

DRAFT

5 MANAGEMENT

5.1 Management Measures

The key measures available to DBCA to regulate the flora industry include:

- licences which control:
 - what flora/parts of flora are taken;
 - where they may be taken;
 - how they are taken; and
 - in the case of flora taken from private property, the sale of the flora;
- licence endorsements which give further control for:
 - specific localities from where flora may be taken; and/or
 - specific taxa that may be taken by particular licensees;
- quotas to set an upper limit on the quantities of protected flora that may be taken or sold;
- a conservation reserve system to provide 'in-situ' protection of taxa and habitats from exploitation and destruction; and
- statutory protection of Declared Rare Flora to provide 'in-situ' protection of specific taxa from exploitation or destruction on all lands.

The application of these measures to the management of the commercial harvest is discussed in detail below.

5.1.1 Licences

Under the *Wildlife Conservation Act 1950*, "to take in relation to any flora includes to gather, pluck, cut, pull up, destroy, dig up, remove or injure the flora or permit the same to be done by any means". Under the Act, the taking of protected flora from Crown land is prohibited unless a licence is held. On private property a licence is required to sell protected flora taken from that property. Licences are normally issued for a 12 month period.

No licence is required under the *Wildlife Conservation Act 1950* for the harvest or sale of Australian native plant species that are not native to Western Australia (unless declared as protected). The export of such species still requires an export permit under the EPBC Act.

5.1.1.1 *Crown land*

The following licences apply to flora taken from Crown land.

- a) A Commercial Purposes Licence (under S 23C(a) of the *Wildlife Conservation Act 1950*) is required when taking flora for commercial purposes, e.g. for sale.
- b) A Scientific or Other Prescribed Purposes Licence (under S 23C(b) of the *Wildlife Conservation Act 1950*) is required when taking flora for scientific or specified non-commercial purposes as prescribed in Wildlife Conservation Regulation 56B, i.e. education, hobby, propagation or personal enjoyment.

Under the new *Biodiversity Conservation Act 2016* a Flora Industry Licence for the activity of 'Taking' of flora will replace A Commercial Purposes Licence. This licence will also cover the 'supply' of flora taken. A Flora (other purposes) Licence will replace the Scientific or Other Prescribed Purposes Licence.

5.1.1.2 *Private land*

A Commercial Producer's or Nurseryman's Licence (under S. 23D of the *Wildlife Conservation Act 1950*) is required for the sale of protected flora taken from private land. A Commercial Producer's Licence is required for the sale of naturally occurring and/or cultivated protected flora, while a Nurseryman's Licence is required for the sale of protected flora which has been artificially propagated. While applications describe the source of flora to be sold, a combined Commercial Producer's or Nurseryman's Licence is issued which allows the applicant to sell flora of either source. Such a licence may be taken out by either the landowner/occupier or a person who has written authorisation from the landowner/occupier.

Under the new *Biodiversity Conservation Act 2016* a Flora Industry Licence for the activity of 'Supplying' flora will replace a Commercial Producer's or Nurseryman's Licence.

The application of licence conditions, the screening process in considering licence applications (Section 5.3.2) and the flora harvest/sale returns required of licensees all provide the basis for the control of harvesting, the strategies adopted in the control of harvesting and the monitoring of harvesting. For further information on these aspects see the sections on Management Strategies and on Monitoring and Assessment.

The State Minister for Environment may revoke or refuse to issue a flora licence issued under the *Wildlife Conservation Act 1950*, such as in the case where the licensee is convicted of an offence against the Act. This includes offences relating to the contravention of conditions attached to licences, including conditions relating to the conservation of the flora, its habitat or the ecosystem in which it occurs.

5.1.1.3 *Proposed new Licences under the Biodiversity Conservation Act 2016*

The *Biodiversity Conservation Act 2016* has included additional licensing requirements to help manage the commercial flora industry. These changes include licensing provisions to operate a flora processing establishment, a licence for dealing in flora and to export flora. These activities will be covered under a Flora Industry Licence and can be combined with other activities such as taking and supplying.

5.1.2 **Endorsements**

A DBCA endorsement is the written permission given to a picker to operate on Crown land managed by DBCA pursuant to the *Conservation and Land Management Act 1984*, or Crown land on which DBCA, by agreement, manages flora harvesting on behalf of the managing authority. It is an allocation of a specific area, and in some cases specific taxa, to a picker for their use and may specify particular conditions relating to the access or harvest activity, or taxa and quantities that may be harvested. The authority for this mechanism is established through licence conditions on a Commercial Purposes Licence. The principles and strategies for allocation of areas and taxa are outlined in the Management Strategies section.

Pickers applying for endorsements subsequent to all available endorsements (areas or quotas) being allocated are put on a waiting list until an endorsement becomes available.

Endorsements may not be issued beyond the expiry date of the Commercial Purposes Licence and may not exceed 12 months. It is recommended, however, that area-based endorsements are issued on a three monthly basis to encourage contact between pickers and local (District) DBCA staff, and to allow more flexibility in area and taxa allocation.

An endorsement may be cancelled for any breach of its provisions.

Under this plan, the operation and use of endorsements as a management tool is tailored to particular situations related to the tenure of the land on which picking is proposed. The requirements for various tenures are outlined below.

5.1.2.1 *Endorsements on Crown land managed by DBCA*

Endorsements are used to regulate picking on multiple use areas of State forests, timber reserves, other Crown land managed by DBCA under the *Conservation and Land Management Act 1984* or other Crown land where such land is managed by DBCA under a management agreement. Holders of a Commercial Purposes Licence are required to obtain a DBCA endorsement on their licence from the local DBCA District Office. This endorsement identifies the area to be picked, the taxa and quantities which may be taken and the time period approved. A map which identifies the area usually accompanies the endorsement. Areas are normally identifiable in the field by physical boundaries.

The number of endorsements issued for a particular management area is determined by the combination of taxa being sought, and the number of licensees the area is judged to be able to sustain.

5.1.2.2 *Endorsements on other vested Crown lands or reserves*

In such situations the licensee is required to obtain the written approval of the applicable land manager prior to any picking, and this permission may specify conditions for the picking. Where the land vesting or management authority which has responsibility for a particular block of Crown land agrees, DBCA may issue endorsements for flora harvesting on this land in consultation with the vesting or management authority. DBCA may also provide advice to the managing authority as to the controls or conditions that might be included in any approval to harvest on such lands.

5.1.2.3 *Endorsements on unallocated Crown land and unmanaged Crown reserves*

A Memorandum of Understanding (MOU) between DBCA and the Department of Planning, Lands and Heritage in relation to management of the flora industry on unallocated Crown land (UCL) and unmanaged reserves was signed in March 2000. Under this agreement DBCA has the ability to implement specific management control measures in relation to flora harvesting over all UCL and unmanaged reserves in Western Australia. This includes the issuing of endorsements. Endorsements are

issued where there is an identified need to do so for the conservation of particular taxa or for the management of the land.

5.1.2.4 *Taxon-specific Endorsements*

The harvesting of Declared Rare (Threatened) Flora (refer to section 4.1.4, below) is prohibited by law unless specific Ministerial permission is obtained, and this is reflected in conditions on the Commercial Purposes and Commercial Producer's or Nurseryman's Licences. Ministerial permission would not generally be granted unless a conservation benefit was demonstrated. The various options for restriction of harvesting of other protected flora are outlined below in the Management Strategies section.

Some taxa, however, which have special management needs (e.g. susceptibility to intensive harvesting, such as *Banksia hookeriana*), may be able to be harvested only under certain conditions and, in these cases, the general licence condition is varied to allow restricted harvesting where this can be demonstrated to be sustainable. Measures to ensure that harvesting is sustainable may include:

- special licence conditions being set, to cover such matters as specified harvesting methods and the amount of material (both vegetative and reproductive) which may be taken from any one plant in a season;
- harvest limits through quotas;
- specific areas being closed for picking (e.g. following a fire for a specific number of years, or after a certain number of years of harvesting);
- restrictions being placed on the number of pickers permitted to harvest the taxon; and/or
- royalties being charged to fund research and monitoring.

Where taxa which are to be exported have special management requirements, they will be so identified in the Export Flora List.

5.1.2.5 *Quotas*

Where data on the level of exploitation of a particular taxon gives rise to concerns about sustainability, DBCA has the ability to impose a quota on the amount of material able to be legally taken for commercial purposes, or impose limits on the numbers of pickers allowed to harvest the taxon, or a combination of both strategies. When quotas are set they will be set at conservative levels (i.e. application of precautionary principle) relative to the availability and reproductive capacity of the species being considered

for harvest. Quotas may be varied from year to year according to criteria such as rainfall, time since last fire, other land use operations, the impact of past harvests and projected resource availability from field observations.

Annual quota levels, when set, are notified to affected sections of the flora industry, and the Commonwealth Department of the Environment and Energy.

5.1.3 Conservation Reserves

In addition to the general protection afforded to Western Australia's flora under the *Wildlife Conservation Act 1950*, the establishment and management of a comprehensive, adequate and representative conservation reserve system is a strategic approach to achieve the aim of conserving genetic resources, biological communities, and ecological processes. Through an integrated system of conservation reserves, appropriately managed and broadly representative of the landforms, marine and inland aquatic systems, biogeographic districts and biota of Western Australia, the aim is to maintain habitats and the necessary evolutionary processes and ecological support systems which will maximise the long term persistence of taxa and communities. As well as being broadly representative, the reserve system also seeks to include "special" areas to encompass threatened taxa and ecosystems, geographical outliers, and unique or spectacular landforms.

Western Australia's system of protected areas makes a substantial contribution to the conservation of flora. Large areas of land have been vested in the Conservation and Parks Commission of Western Australia and reserved as national parks, conservation parks and nature reserves for the purpose of conserving native flora and fauna and natural ecosystems. Commercial harvesting is not permitted in these areas, other than under special circumstances for the harvest of propagation material for revegetation activities associated with the park or reserve.

The area of land reserved for national parks at 30 June 2017 was 6,267,602 hectares; 10,267,826 hectares were reserved as nature reserves; 1,084,346 hectares were gazetted as conservation parks; and a further 1,097,606 hectares for other reserves with a conservation component. The total area of terrestrial conservation reserves was 20,306,921 hectares or approximately 8% of the terrestrial area of Western Australia.

5.1.4 Threatened (Declared Rare) Flora

The richness and high degree of endemism in Western Australia's flora, and the localised distribution of many taxa, have resulted in a situation where many flora taxa are naturally rare or have been made rare through habitat loss due to land clearing or other causes. Threats from land clearing, disease infection, weed invasion, drought and other local disturbances are major causes of endangerment of Western Australia's many naturally rare and localised plants.

Under the *Wildlife Conservation Act 1950*, any protected flora that the State Minister for Environment considers is “*likely to become extinct or is rare or otherwise in need of special protection*” may be declared to be Rare Flora (also known as Threatened Flora). No person is permitted to take (harvest or disturb in any way) any taxon gazetted as Declared Rare Flora from wild populations anywhere in Western Australia, either on Crown land or private land, without the written consent of the Minister, or his delegate. Failure to obtain this permission can result in fines up to \$10,000. Declaration as Rare Flora thus provides greater protection, focuses attention on the need for more detailed research and management, and helps to ensure the continued survival of the taxon in the wild.

Normal procedure has been for only flora which is “likely to become extinct or is rare” to be Declared Rare Flora. There is, however, the facility for the Minister to declare flora “otherwise in need of special protection” to be Declared Rare Flora and therefore to protect that flora from taking (including harvesting) on all lands. This is a mechanism available to the Minister to prevent harvesting of particular flora taxa, if it is felt that such harvesting is unsustainable, or otherwise inappropriate.

Protected flora taxa may be recommended for gazettal as Declared Rare Flora if they satisfy each of the following criteria.

- a) The taxon (species, subspecies, variety) is well defined, readily identified and represented by a voucher specimen in a State or National Herbarium. It need not necessarily be formally described under conventions in the International Code of Botanical Nomenclature, but such a description is preferred and should be undertaken as soon as possible after listing on the schedule.
- b) The taxon has been searched for thoroughly in the wild by competent botanists during the past five years in most likely habitats, according to guidelines approved by the Director General.

- c) Searches have established that the plant in the wild is either:
- (i) rare; or
 - (ii) in danger of extinction; or
 - (iii) deemed to be threatened and in need of special protection; or
 - (iv) presumed extinct (i.e. the taxon has not been collected from the wild, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently).
- d) In the case of hybrids, or suspected hybrids, the following criteria must also be satisfied:
- (i) they must be a distinct entity, that is, the progeny are consistent within the agreed taxonomic limits for that taxon group;
 - (ii) they must be [capable of being] self perpetuating, that is, not reliant on the parent stock for replacement; and
 - (iii) they are the product of a natural event, that is, both parents are naturally occurring and cross fertilisation was by natural means.

The status of a threatened plant in cultivation has no bearing on this matter. The legislation refers only to the status of plants in the wild.

Plants may be deleted from the schedule of Declared Rare Flora (as flora which is likely to become extinct or is rare) where:

- recent botanical survey as defined above has shown that the taxon is not rare, in danger of extinction or otherwise in need of special protection;
- the taxon is shown to be a hybrid that does not comply with the inclusion criteria; or
- the taxon is no longer threatened because it has been adequately protected by reservation of land where it occurs, or because its population numbers have increased beyond the danger point.

The Declared Rare Flora list is reviewed annually. As at January 2018 there were 428 extant taxa and 15 taxa that are presumed extinct, gazetted as Declared Rare Flora (Appendix 3).

Commercial harvesting of Declared Rare Flora is not generally permitted. An exception may be made in special circumstances, such as where the Minister approves the taking of seed, cuttings or tissue culture material for commercial propagation, where the conservation status of the taxa in the wild would be assisted, or would not be adversely affected (e.g. the establishment of cultivated populations of a rare taxon that is attractive to the flora trade could reduce the likelihood of illegal picking in the wild).

5.1.5 Research

There are various programs designed to provide specialised scientific information which support DBCA's management of commercial flora harvesting. The main areas which are being addressed are:

- investigation and documentation of Western Australia's flora, ecological processes and biological resources;
- conservation of threatened taxa and ecological communities; and,
- sustainable use of land and biological resources.

Research programs will also be initiated into specific issues relating to the sustainable harvesting of flora as identified through the monitoring and assessment of the industry. Investigations will include the assessment of the sustainability of harvesting specific taxa, and in specific communities, as well as into the development of specific harvest prescriptions for taxa. Recommendations from research will be considered by DBCA, and any management recommendations implemented as required through licence conditions or special endorsements to licences.

5.2 Management Strategies

The mechanisms available to, and used by, DBCA in order to regulate the harvesting of flora are detailed in section 4.1 above. The range of measures in place provides scope for tailoring management to specific taxa and specific situations. This section details how those measures can be manipulated, where required, in order to ensure conservation of flora.

5.2.1 Licence Conditions

Under the *Wildlife Conservation Act 1950*, licences may be issued subject to conditions. A standard set of conditions forms part of the licence, and these are attached to each licence. The standard licence conditions differ between those applying to Commercial Purposes Licences (for Crown land) (Appendix 7) and those applying to Commercial Producer's or Nurseryman's Licences (private property) (Appendix 8) due to the different management and control available to such lands. Both licence types do allow, however, for licence conditions to be imposed that have regard to the conservation of protected flora, and the respective licence conditions can be amended to address conservation concerns or changes in management issues.

These licence conditions outline DBCA's requirements for management of picking. Licence conditions may include such matters as prohibition of taking of certain taxa, methods of taking flora so as to ensure the conservation of the flora, restrictions on areas from where flora may be taken, restrictions on the method of operation so as to ensure the conservation of the habitat and associated ecosystem, including conditions relating to the control of the introduction and spread of dieback disease, requirements to carry and produce the commercial flora licence, and submission of flora returns. It is a requirement of a commercial flora licence that these conditions are complied with, and non-compliance may result in a letter of warning or advice, cancellation or amendment of an endorsement to the licence, non-renewal of the licence, cancellation of the licence, or prosecution, depending on circumstances.

The standard licence conditions may be modified by DBCA as necessary to ensure the conservation of protected flora or appropriate land management. Standard licence conditions may also be modified to require special endorsement for certain taxa. Such special licence conditions can, for example, set quotas, limit the locations where a taxon may be harvested, times when it may be harvested, the parts that may be harvested or the parts that must be left on the plant. Special licence conditions can also be used for situations where whole plants may be taken under DBCA-approved salvage operations.

Once a licence is issued, the licensee may harvest or sell any protected flora provided it is not specifically prohibited through licence conditions, or the

method of operation relating to the harvesting is contrary to the licence conditions as they relate to the conservation of the flora, its habitat and associated ecosystem.

5.2.2 Area-Specific Management

While the *Wildlife Conservation Act 1950* provides for the conservation of flora on all lands, there are many land tenures (e.g. private, pastoral leases, reserves vested in other agencies) where DBCA is not the land manager. In order to ensure that commercial flora harvesting is sustainable, there need to be measures in place for the management of the industry on all lands. Such mechanisms come from legislation and, more specifically, conditions on flora licences. Licence conditions apply on all land tenures, although conditions applying to Crown and private land differ (refer to Appendices 7 and 8).

Consideration of licence issue, licence conditions and endorsement decisions are all measures that can be used to provide directed restrictions on harvesting in particular areas, where required. These measures have been described under the Management Measures section of this plan. In implementing these measures, DBCA has the ability to restrict or stop picking effort within an area, if there is an identified need to do so (e.g. because the populations have declined significantly), or to re-open or expand areas for picking (e.g. when populations have recovered). Such measures will be taken based on population monitoring, and will take a precautionary approach where the scientific evidence is uncertain.

On private land, no licence is required to take protected flora, and hence the provisions of the *Wildlife Conservation Act 1950* cannot regulate flora harvesting on these lands, other than where the land owner does not give permission, or in the case of Declared Rare Flora, where the permission of the Minister is required. However, while the taking of the flora may not be able to be regulated *per se*, the sale is under licence, and consequently indirect regulation is provided through licence conditions where the flora is being harvested for sale. Such conditions may apply to specific areas of private property where this is necessary for the conservation of the flora.

Flora harvesting on private land may also be subject to vegetation clearing provisions included in the *Environmental Protection Act 1986* (section 3.4). These provisions enhance the controls on private property flora harvesting, especially if such harvesting has the potential to result in any damage to the flora, its habitat or associated ecosystem.

Ultimately, acquisition of land, as a conservation reserve can be used to provide permanent protection for particular flora populations and habitats.

5.2.3 Taxon-Specific Management

There are several options for individual management of taxa where this may be necessary to ensure conservation, including:

- restrictions on harvest methods, or circumstances under which harvesting may occur;
- restricting harvesting through quotas;
- banning the harvesting of the taxon from Crown land or banning the sale of the taxon where taken from private land;
- removal from the list of flora permitted to be exported (Export Flora List), or assignment to specific categories of the Export Flora List;
- listing on DBCA's Priority Flora list (section 5.2.3.3) as poorly known or rare (but not threatened) flora; and
- gazettal as Declared Rare Flora by the State Minister for Environment (section 5.1.4).

Where the sustainable harvesting of a taxon requires specific management beyond that which may be provided by endorsements to licences, separate subsidiary species-specific management plans will be prepared.

5.2.3.1 *Regulating, restricting or banning the harvesting of taxa*

Through Commercial Purposes Licence conditions, the Department may specifically restrict or ban the harvesting of any flora taxa on Crown lands if harvesting poses a threat to the taxon (management actions will be based on monitoring and research, taking into account the precautionary principle). Taxon-specific harvest techniques or commercial harvest quotas specifying the quantities of a particular species (or specific products) which may be harvested may be set where there is concern that the method or level of previous harvesting could be unsustainable. Similarly, circumstances in which particular products may be taken from Crown lands can be specified (e.g. salvage situations where whole plants may be taken). Exported taxa for which quotas on Crown land harvesting or where other special restrictions apply, are identified in the Export Flora List.

As outlined above, the taking of a plant taxon on private property can only be legally prevented under the *Wildlife Conservation Act 1950* where the taxon is declared as Rare Flora. However, licence conditions and the Export Flora List can be used to prevent and otherwise restrict the commercial trading of protected flora harvested from these lands. Taxa will only be considered for addition to the Export Flora List where the flora

is demonstrably able to be sustainably harvested from either Crown or private land, as applicable.

5.2.3.2 *Export Flora List and amendments*

The taxa to be permitted for export after being taken under this management plan are listed on the Commonwealth- and State- approved Export Flora List. Except in the case of test exports (see below), no flora may be exported under this plan if it is not listed on the Export Flora List. The Export Flora List contains both protected flora (Western Australian native plant species) that is allowed for export and Australian native flora that is not native to Western Australia (none of which has been declared as protected flora as of the commencement of the plan) and which is growing in Western Australia.

The Export Flora List is compiled by DBCA in consultation with industry. The list is then forwarded to DEE for consideration. If DEE is satisfied that the taxa included on the draft list are being conserved adequately under the management arrangements in place through this plan, that Agency may approve the Export Flora List, and subsequently the export of the taxa included on it.

The Export Flora List is reviewed and modified as determined necessary by DEE and DBCA during the period of operation of this management plan, following the procedure detailed below. This procedure includes the ability to temporarily add taxa to the Export Flora List on a small-scale trial basis while the potential for full export listing is assessed. At the time of initial approval of this management plan the Export Flora List was as attached at Appendix 1. Both DEE and DBCA will maintain copies of the current (at that date) approved Export Flora List during the operation of this plan and copies of the current list will be freely available to interested persons.

Where DBCA and DEE agree that commercial harvesting of a species may not be sustainable, the species can be removed from the Export Flora List. Such decisions will be based on monitoring and research and take into account the precautionary principle. In addition, where DBCA or industry considers that a particular species is no longer required for export, and hence does not need to remain on the Export Flora List, the removal of that taxon from the list will occur.

With regard to Australian native plants that are not native to Western Australia, if it is evident that species are not being exported in accordance with this Plan, but are being purported as being so, those species may be removed from the Export Flora List.

Where a proponent wishes to add a taxon to the Export Flora List, the following procedure will be followed.

- The proponent will provide voucher specimens of the taxon to DBCA for formal identification. DBCA will determine whether the taxon is already represented in the Western Australian Herbarium and the distribution of the taxon based on herbarium specimens.
- DBCA and the industry will collate information on distribution and population status of commercial stands, desired end product, harvesting technique and regeneration capability of the taxon.
- DBCA will assess the application against section 303FO of the EPBC Act (Appendix 9) including, but not limited to, an assessment of the status of the species in the wild, the extent of its habitat, the threats to the species and the potential impacts of the proposed addition on the species or its habitat. DBCA will then decide on the proposed inclusion of the taxon on the Export Flora List, and any restrictions on harvests which may be applicable. If endorsed by DBCA the proposal will then be forwarded to DEE for endorsement and, if appropriate, inclusion on the Export Flora List.
- Amendments to the Export Flora List accepted by both DBCA and DEE will be appended to this approved plan as supplements, and will be advised to persons engaged in the flora industry.

Where a taxon is required to be exported for the purpose of evaluating commercial potential, the taxon may be considered for a test export of generally less than 20 specimens. Each test export will be subject to endorsement from DBCA provided:

- voucher specimens have been lodged with DBCA, and the identity of the taxon is confirmed;
- the taxon is not listed as Declared Rare or priority flora, nor listed as Threatened Flora under the Commonwealth EPBC Act; and
- DBCA is satisfied that there are no apparent flora conservation reasons for not permitting the harvest of that flora.

Such taxa will not be added to the Export Flora List until the formal process for adding the taxon has been completed.

5.2.3.3

Threatened (Declared Rare Flora) and Priority Flora

Because of the special protection afforded to Declared Rare Flora (refer to section 5.1.4), and hence the obligations that this places on land managers, DBCA sets stringent requirements for adequate field surveys to reliably assess a taxon's conservation status before it will be recommended for declaration as Declared Rare Flora (also referred to as Threatened Flora).

Consequently many taxa are known from only a small number of populations, and may be rare or threatened, but have not been adequately surveyed to demonstrate this. To provide some priorities for survey of these poorly known taxa, DBCA maintains a Priority Flora list. In addition to the poorly known taxa, the Priority Flora list includes a further category for those taxa that have been adequately surveyed, and while being rare, are not considered to be threatened. These taxa are listed to facilitate the monitoring of their conservation status. The four priority levels at the time of approval of this plan, are as follows.

1: Priority One: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

2: Priority Two: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

3: Priority Three: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.

4: Priority Four: Rare, Near Threatened and other species in need of monitoring

- (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
- (b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
- (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Known populations of the poorly known priority taxa require monitoring to determine if their conservation status changes whilst field surveys are being undertaken. The list is distributed widely among field staff and interested botanists to encourage and provide a focus for monitoring and survey efforts.

The Priority Flora list is updated regularly, as information becomes available on new taxa that may possibly be threatened, or where survey shows a listed taxon to be more common, or better conserved than originally thought.

It is unlikely that poorly known taxa would support commercial harvesting unless the specimens are propagated. In general, therefore, Crown land populations of flora listed on DBCA's Priority Flora list will not be allowed to be commercially harvested unless it can be demonstrated that they can withstand such harvesting. This would normally be due to the identification of new populations, and the subsequent removal of the taxon from the Priority Flora list or via special endorsements with supporting monitoring and management structures. Otherwise, taking of these taxa from Crown land will be restricted to harvesting for propagation or other

purposes with conservation benefits. Priority flora populations being harvested on private property will be monitored to ensure their conservation status does not decline. Harvest control for priority flora is implemented through licence conditions.

5.2.4 Education

Education of industry operators on matters of flora conservation and licensing is seen as vital in the management of a sustainable commercial flora industry. DBCA develops educational material on a variety of topics which is circulated to industry when required and available on the department's website. The department also attends industry association meetings and forums and provides advice to these groups.

Training of DBCA officers involved in administration, management and enforcement relating to the flora industry is ongoing to ensure that personnel are skilled in the conservation of taxa used by the commercial flora industry and are familiar with DBCA's management objectives and their implementation. Avenues used for training include:

- formal education including short vocational courses and longer tertiary qualifications;
- seminars and workshops;
- internal DBCA courses; and,
- on-the-job training.

5.3 Monitoring and Assessment

5.3.1 Flora Industry Regions

For the purposes of flora industry management, Western Australia has been divided into six regions which correspond as closely as possible with biogeographic, administrative and management boundaries pertinent to the industry. Figure 2 shows DCBA's administrative boundaries, while Figure 3 shows the flora industry management regions, as adopted by DBCA, and Figure 4 shows IBRA biogeographic regions.

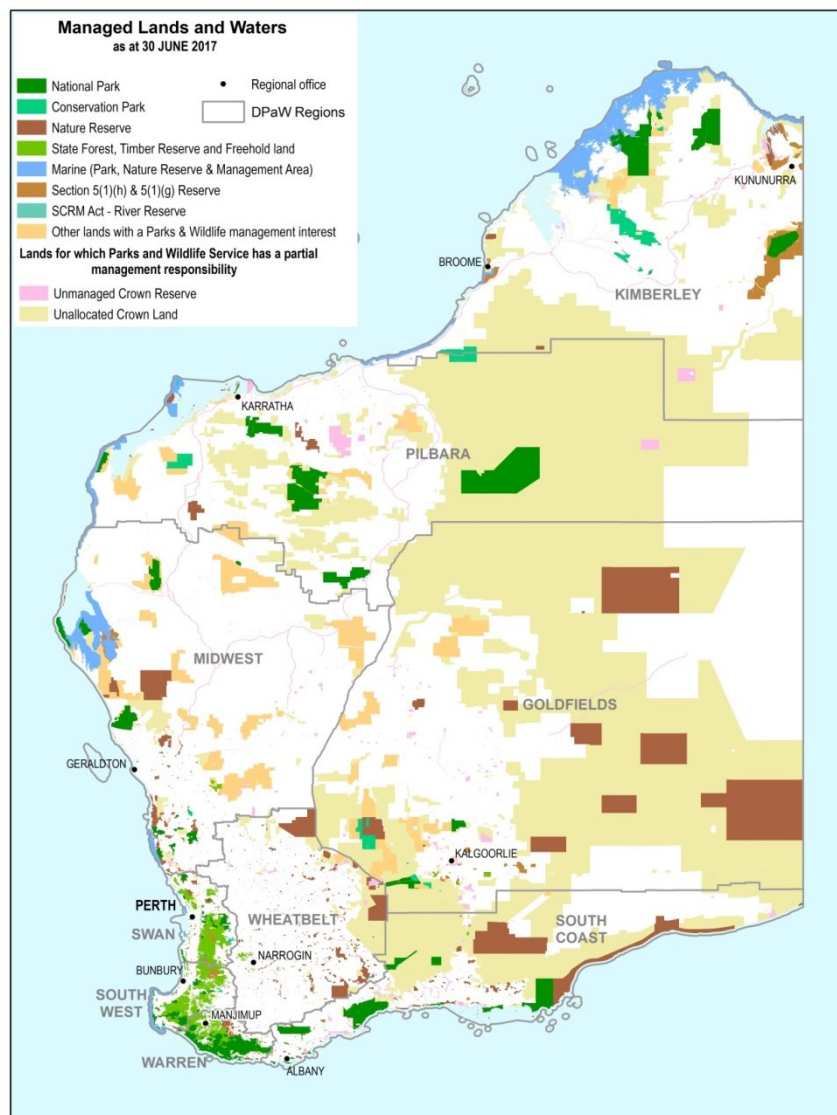


Figure 2. DBCA administrative boundaries (9 Regions).

The six flora industry management regions comprise:

- Southern Sandplain (which largely corresponds with DBCA's South Coast Region, plus the eastern part of DBCA's Warren Region);
- Southern Forest (which consists of the western two thirds of DBCA's Warren Region, and the southern half of DBCA's South West Region);
- Northern Forest (which consists of the northern half of DBCA's South West Region, with the southern half of Swan Region);
- Northern Sandplain (the northern part of DBCA's Swan Region, in addition to the sandplain north to Carnarvon);
- Wheatbelt; and
- Rangelands (including the goldfields, desert, Pilbara and Kimberley areas).

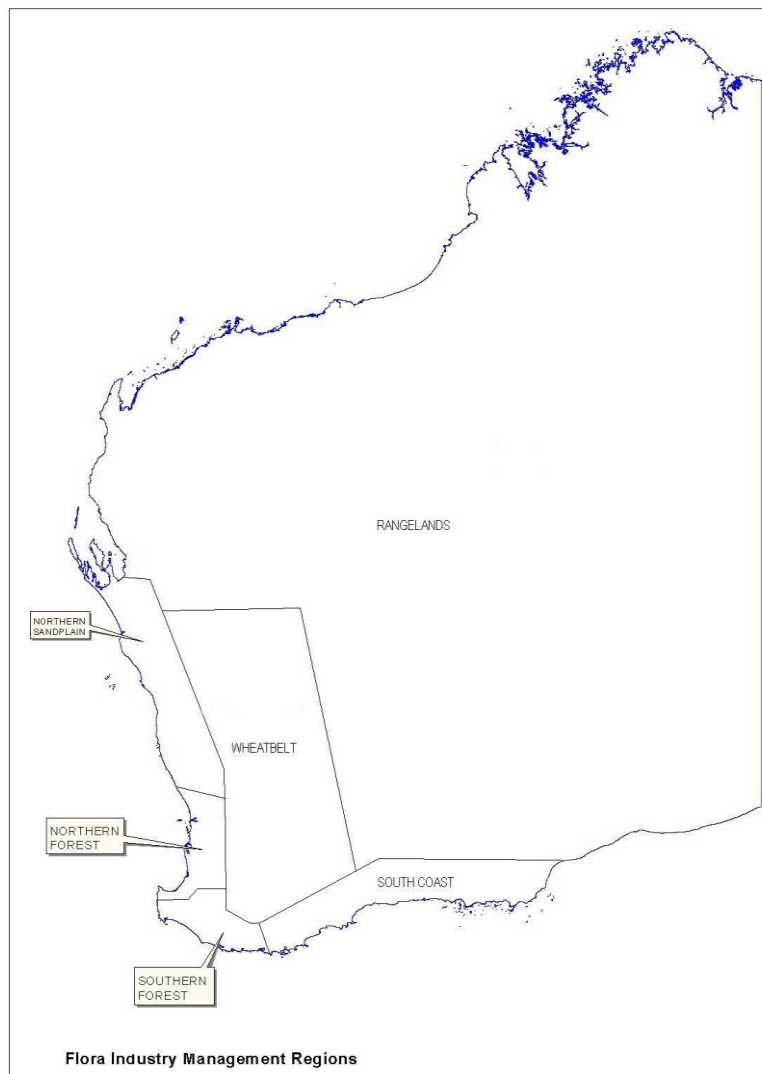


Figure 3. DBCA Flora Industry Management Regions.

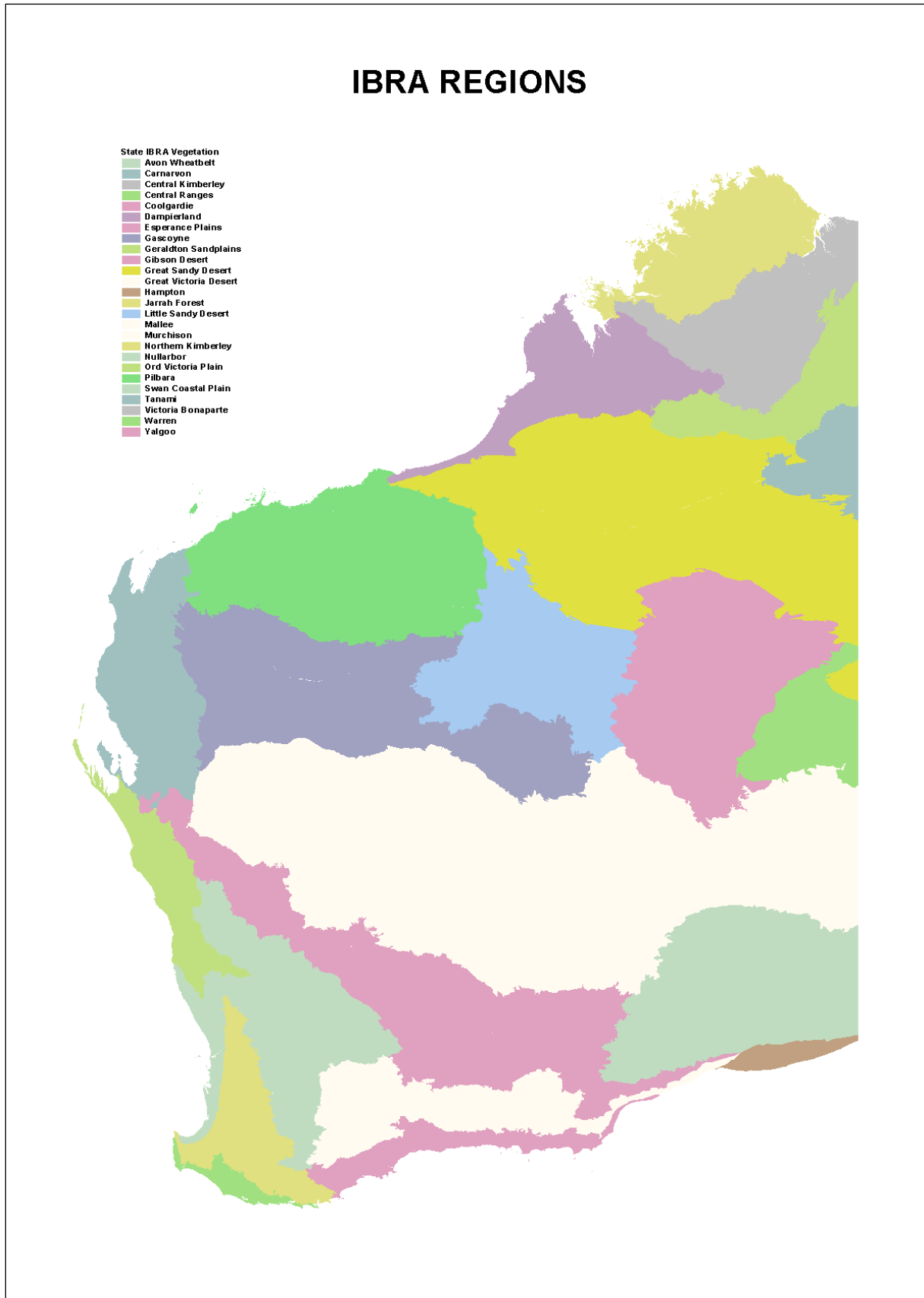


Figure 4. IBRA biogeographic regions.

5.3.2 Licence Application, Licensing Procedures and Flora Returns

Application forms must be completed by an applicant before an application for a commercial flora licence can be considered. The application form for a Commercial Purposes Licence is at Appendix 5, and the application form for a Commercial Producer's or Nurseryman's Licence is at Appendix 6.

Each licence applicant must nominate area(s) where they wish to pick, and produce written permission from the management authority for that land, where such an authority exists, as part of their licence application. This is to ensure that applicants are aware of the requirement to have permission of land managers before picking, in accordance with regulation 56E(2) of the *Wildlife Conservation Regulations 1970* for Crown land, and section 23D(1) of the *Wildlife Conservation Act 1950* for private property. The licence issued has the nominated picking area(s) endorsed on it. In the case of Crown land licences, additional areas can be accessed for flora harvesting provided that the written authority is carried by the picker, as required under licence conditions. In the case of private property, properties must be nominated at the time of licence issue, and protected flora taken from additional properties may not be sold under the licence, even where the landowner has given permission for the flora to be harvested.

On receipt of an application for a commercial flora licence, the DBCA screens the application to ensure that it has been completed, and the necessary authorisations are attached. The application is also screened in relation to the flora and products being requested to harvest or sell. Licensees are advised when their application includes prohibited flora, or flora for which special management conditions apply to their harvest, and are required to provide specific justification for such flora to be included in a licence. In such situations, permission is only granted where such conditions can be applied to ensure the conservation of the flora, such as through the species-specific endorsements (Section 5.1.2.4). In the case of private property, applications to sell flora that is otherwise restricted, are investigated to ensure that the flora either is being cultivated on the property, or occurs in sufficient quantity to permit sustainable harvest. This may include property inspections where corroborating evidence is not available.

As a requirement of licence conditions, and in order to facilitate monitoring and enforcement, all commercial licence holders, operating on both Crown and private property, must submit quarterly returns detailing flora taken each month. Data required include taxon, quantity, the unit of measure, and part of flora taken, product use, the status of the land where harvesting was undertaken, whether the flora, is cultivated or wild picked, the name of the private property owner where taken from private land, the grid square location of the flora and the person to whom the flora was supplied.

The licensing system is computerised, containing records of past and present licence holders and all licences held currently and in the past by these

persons. In addition, a database management system, containing records of flora returns submitted by licensees, is maintained.

The month prior to the expiry of their licences, licensees receive a renewal notice if the requirement to submit flora returns has been complied with, or, where the requirement has not been met, notification that their licence will not be renewed unless returns are submitted. Reminder letters are automatically computer-generated for those licensees who have overdue flora returns. Failure to submit returns results in non-renewal of the licence.

The State Minister for Environment may revoke a licence that has been issued, or refuse to issue a licence under the *Wildlife Conservation Act 1950* to any person who has been convicted of any offence against the Wildlife Conservation Act or Regulations. This includes offences relating to the contravention of conditions attached to licences.

5.3.3 Analyses of Flora Harvest

Harvest data are analysed based on the six flora industry management regions outlined above, and factors influencing biology, ecology and conservation status (including representation in conservation reserves, harvest levels, community/habitat rarity) are also assessed on a regional basis.

The following analyses of harvested taxa can be undertaken using data from flora returns, and other information supplied by DBCA officers and industry:

- harvest levels are analysed by taxon to determine major, medium and low use taxa;
- harvest is analysed according to the source of the flora, i.e. whether the flora is taken from Crown or private land, and whether private land harvest is from natural occurring populations, or cultivated flora;
- changing patterns of harvest, or harvest trends, are identified and used as a basis for investigation into causes and potential management issues;
- the main purpose of harvesting is determined, i.e. dried flowers, fresh flowers, seed or woody products; and
- harvest data are analysed at the level of each of the six regions detailed in section 5.3.1, based on 1° by 1° 30' grid cells in the south west and 4° by 6° grid cells in the remainder of the State. A comparison of numbers of taxa and quantity within regions and grid cells is undertaken and provided to regional managers to assist in planning monitoring activities.

DBCA's management of the flora industry is based on factors such as the taxon's conservation status, monitoring reports from DBCA's field officers and research results. This data also helps define priorities for research.

Harvesting trends from flora returns may also be provided to industry and other sectors to assist in flora industry development and assessment.

5.3.4 Assessment of Management Options

5.3.4.1 Area-specific management

State forest and other lands managed by DBCA where flora harvesting is permitted are subject to specific management by a system of allocation and endorsements. Section 5.1.2 above describes the options that DBCA has for management of such land. Specific areas of Crown land, not managed by DBCA under the Conservation and Land Management Act, may also have special management requirements. Where an inter-agency agreement is reached between DBCA and the managing agency, DBCA may manage those areas on a more intensive basis in regard to flora harvesting activities. DBCA also makes recommendations to other managing agencies on their management of flora harvesting where this is appropriate. The need for special management on Crown lands is assessed according to the following criteria:

- land tenure and purpose;
- degree of harvest activity;
- conservation value;
- presence of Declared Rare Flora;
- proposals for areas to become conservation reserves; and
- the potential for detrimental impacts from, for example, over harvesting, *Phytophthora* dieback or erosion.

Regulation of harvest activity of naturally occurring flora on specific areas of private property may be implemented through the standard licence conditions and any specific licence conditions pertaining to the taxa being harvested. Additionally, where a harvest activity has the potential to impact on the conservation of the flora, its habitat or the associated ecosystem, property-specific management can be required to ensure that such an impact does not occur. This management requirement may be as conditions to either the Commercial Producers' Licence or permits to clear vegetation under the *Environmental Protection Act 1986*.

5.3.4.2

Taxon-specific management

As outlined in section 5.1.2.4, certain taxa may have special management requirements and are singled out for more intensive management, monitoring and research. Criteria that taxa are assessed on include:

- the quantity harvested;
- the status of the taxon within the conservation estate;
- the distribution, population size and ease of access to the taxon;
- the value of the harvested product;
- the potential for concern over harvest techniques (e.g. regeneration capacity from cut stems);
- the potential impact from pests and diseases (e.g. *Phytophthora* dieback on *Banksia* taxa and other taxa, aerial canker); and
- the level of concern in regard to regeneration, including from soil-borne seed banks.

Commercial Purposes and Commercial Producers' Licences include in their conditions certain flora which may not be harvested, and other flora which may only be harvested under specific endorsement with conditions to ensure the conservation of the flora.

6 AUDIT, MONITORING, REPORTING AND COMPLIANCE

6.1 Flora Industry Data Management System (FIDMS)

As detailed in section 5.3.2, DBCA requires flora returns on a quarterly basis from all licensed flora harvesters. All return data is entered in the FIDMS database. The database can be interrogated to determine harvest levels, trends and locations of flora harvested. This information is used to help determine research requirements, management strategies and flora industry monitoring by DBCA district staff and Wildlife Officers.

At the time of data entry, flora returns are checked for inconsistencies, such as unusual quantities of flora or parts being taken, and to confirm the identity of flora that is known to be confused by licensees, usually as a consequence of the use of industry common names. The FIDMS database is also set up to reject certain data entry, such as Declared Rare, Priority Flora or other flora that has harvest restrictions, or names that are not current in the Western Australian Herbarium. Queries with flora returns are referred back to the licensee before the return information is accepted into FIDMS.

Upon receiving an application for an export permit for flora sourced from Western Australia, DEE staff are encouraged to contact DBCA to confirm that the proposed export is in accordance with this plan.

Data held in FIDMS is interrogated to check that flora the subject of an application to DEE for an export permit has been legally sourced from licensed pickers or persons licensed to sell flora taken from private property. This information forms the basis of advice on the appropriateness or otherwise of DEE granting or renewing an export permit. The comparison of data held in FIDMS with the details included on export applications also provides a means to cross check the information provided. Any discrepancies are followed up with exporters, dealers and licensees to determine the true source of harvested flora.

In the case of protected flora that is identified as artificially propagated by the permit applicant, DBCA uses FIDMS and other knowledge of the flora industry to confirm that the plants are indeed artificially propagated. DBCA will not advise that the export permit should be issued unless satisfied that the plant has been grown under controlled conditions and that the parental stock is established and managed in a way that it is not detrimental to the species in the wild.

In the case of hybrid cultivars of Western Australian native flora or Australian native plants not native to Western Australia, export applications are checked to ensure that such plants are known to be cultivated by the industry, and that they are not known to be able to be confused with other Western Australian native species. Approval of the application for such flora is provided on the basis that

DBCA is satisfied that the growing and harvesting of such flora does not pose any threat to native flora or vegetation.

Under the Biodiversity Conservation Regulations, a new system is currently being developed which will capture the relevant components of FIDMS in order to continue management of flora harvesting data.

6.2 Flora Dealer Inspections

The *Wildlife Conservation Act 1950* provides for the issue of licences to take or sell protected flora and also allows for terms and conditions to be placed on each licence as discussed in section 5.1.1 above. Dealers are not currently licensed, however, under the legislation they may not sell any protected flora unless they purchase the flora from another person lawfully entitled to sell the flora to them pursuant to the provisions of a licence issued under section 23C or 23D of the Act. In addition, dealers must keep legible records of the quantity and class or description of flora purchased, the date of the purchase and the name and address of the person from whom the flora was purchased. These records must be retained for not less than 12 months, and produced on demand to a Wildlife Officer.

Wildlife Officers carry out routine inspection of dealers' premises. The frequency of inspection depends, in part, on the size and nature of the dealer's operations. A report is filled out for each inspection. Data collected for each dealer includes the date of the last inspection, the taxa of flora found on the premises, the names and licence numbers of the principal flora pickers who supplied the flora, and whether records are being kept according to legal obligations. These reports are used for ongoing monitoring of dealer activity. These reports also assist DBCA in making recommendations to DEE on whether an export authority should be granted or renewed.

Under the new *Biodiversity Conservation Act 2016* a person must not deal (conduct business that involves the purchase or supply) in flora except under the authority of a licence. When the Biodiversity Conservation Regulations come into effect, a dealer must hold a valid Flora Industry Licence for the activity of 'dealing'. This will allow the department to have a legal register of who is dealing in flora for monitoring and compliance purposes. Licence conditions are expected to be similar to current requirements in regards to record keeping.

6.3 District Monitoring and Reporting

DBCA district staff undertake on-ground administration, monitoring and management. Monitoring and management of the flora industry is part of the integrated management of multiple land uses on lands that the Department manages.

A standard questionnaire is available to district DEC officers dealing with the flora industry, to guide them in their day-to-day monitoring of pickers. This form includes such questions as the names and flora licence numbers of the pickers, taxa being harvested, quantity of flora taken, area in which operations occur, the name of the dealer to whom flora will be sold, and any other relevant observations on picker activities.

District officers are required to be familiar with picking practices and the major commercial flora taxa in their areas. Regional or District reference flora voucher specimen collections are maintained which have specimens representing the major commercially exploited and rare or threatened taxa within the Region/District. These collections may be made available to flora pickers to assist with identifications.

District staff provide information on commercial taxa distribution and quantities for the compilation of records that assist in determining sustainable picker numbers and harvest levels, and numbers of pickers, for allocated blocks under the endorsements system. This data is used in conjunction with information supplied by pickers in flora returns to determine quotas, where applicable.

DBCA field officers are responsible for monitoring picking operations and reporting any possible breaches of licence conditions or legislation relating to flora harvesting. The enforcement of these provisions is the responsibility of a network of Wildlife Officers located throughout Western Australia (see section 6.4 for Role of Wildlife Officers). Any activity suspected of breaching the *Wildlife Conservation Act 1950*, the *Wildlife Conservation Regulations 1970* or licence conditions is referred to a Wildlife Officer for investigation and subsequent court action by the Department if appropriate. Flora industry activities that are observed which may lead to non sustainable harvesting are reported by the District office to Head Office for use in defining management and research needs for the industry.

District officers are encouraged to submit annual reports on the status of the commercial flora industry within their District; addressing *inter alia* illegal activities, proposals for research, and management and administrative issues. These reports cover the preceding calendar year's flora industry activities and are compiled and used for improving management of the flora industry.

District staff (other than Wildlife Officers, see below) do not have authority to enter private land without permission to undertake flora industry inspections. They may, however, request permission to undertake inspections to confirm the details of a Commercial Producer's or Nurseryman's Licence, or to inquire as to the flora returns for such licences. Should a land owner refuse permission for an inspection, the DBCA may hold the issue or re-issue of a licence, pending such an inspection being granted.

6.3.1.1 *Verification of Export Permit Applications*

Wildlife Officers and other DBCA staff may also investigate applications for export permits where requested by DEE. Such investigations may be carried out to verify the details stated by an applicant on an export permit application, such as the source of the plant specimens (location) or the method of harvesting (artificial propagation or wild-harvest). Such investigations may be instigated for protected flora, as well as for Australian native plants that are not native to WA, and may involve activities on Crown or private land. The DBCA may recommend the rejection of an application to export flora based on the outcome of such an investigation, including if permission to enter private property is not granted. It is noted that there are severe penalties under the EPBC Act for making false or misleading statements on export permit applications.

6.4 Role of Wildlife Officers

Wildlife Officers have statutory appointment under the *Conservation and Land Management Act 1984*, with powers defined under that Act and the *Wildlife Conservation Act 1950*, which includes statutory authority over wildlife management matters on private property, including the harvesting for sale of, and dealing in, protected flora. Wildlife Officers are located at DBCA's Wildlife Protection Branch (Perth), and at most DBCA Regional and District offices. Central coordination and support of Wildlife Officers is provided through DBCA's Perth Office. The primary role of the Wildlife Officers is to ensure compliance with the *Wildlife Conservation Act 1950* and the *Wildlife Conservation Regulations 1970*.

Wildlife Officers and Officers of Wildlife Protection Branch (specifically Wildlife Licensing Section) have accumulated a substantial amount of flora industry data from field surveys and patrols, licensing information and the findings of research officers. Essential information is also acquired through liaison with flora dealers and pickers. Knowledge of picker activities, market conditions, identification and seasonal development of commercially exploited taxa and factors such as fire and regeneration provide Wildlife Officers with information on when and where particular taxa are likely to be harvested. Effort is directed seasonally and shifts accordingly.

Field operations may be active or reactive. Wildlife Officers and Wildlife Protection Branch Officers liaise with flora industry representatives and inspect dealers' premises, checking flora on hand and the dealers' records, which may result in subsequent investigations. Having determined the need for a patrol based on seasonal factors and locations known to be targeted by pickers, Wildlife Officers develop patrol plans as necessary. Alternatively, patrols may be planned in response to specific complaints or information about an alleged illegal activity. At the conclusion of such field work, a patrol report and any breach reports are submitted to the officer's supervisor for processing.

Wildlife Officer's and Wildlife Protection Branch Officers may check for unlicensed pickers, check pickers for compliance with licence conditions, check prohibited picking areas, check protected flora occurrence on private property, or investigate the sale of flora to flora dealers at their premises. Such field inspections may occur on Crown or private land, depending on the nature of information received and the conservation issues pertinent to the area.

Wildlife Officers can monitor picker activity, as well as the status and condition of commercially harvested taxa, in the course of their fieldwork. Because of the nature of their duties, Wildlife Officers have the ability to monitor taxa and populations from year to year and from area to area. Additionally, information from the FIDMS is available to Wildlife Officers (on request) to identify taxa that are being harvested in their areas, and highlight any causes for concern, such as the commencement of harvest or increases in the harvest of certain taxa, including taxa that are restricted to private property as a management strategy. Such information is used to formulate inspection patrols to ensure that the conservation of the taxa or their habitat or associated ecosystems is not being compromised by harvest activity. Feedback on taxa and picker activities is provided to Head Office and management recommendations are made as a result of this monitoring

Such information is used to formulate inspection patrols to ensure that the conservation of the taxa or their habitat or associated ecosystems is not being compromised by harvest activity. Feedback on taxa and picker activities is provided to Head Office and management recommendations are made as a result of this monitoring.

Wildlife Officers are also encouraged to submit annual reports on the status of the industry within the area they are stationed, addressing *inter alia* illegal activities within the preceding calendar year.

District and Regional officers, on completion of a course in law enforcement, as described below, may be issued with a wildlife officer authority. These officers support the functions of the appointed Wildlife Officers.

6.4.1 Law enforcement training and operations procedures

All DBCA personnel involved in the management of the commercial flora industry are required to know the relevant parts of the *Conservation and Land Management Act 1984*, the *Wildlife Conservation Act 1950* and their associated Regulations. Specific training on this legislation, general legal principles, gathering and presentation of evidence, and court attendance can be provided to DBCA officers who undertake compliance work, through an accredited training course. Wildlife Officers receive more detailed and extensive 'on the job' training in respect of the *Wildlife Conservation Act 1950* and legal procedures.

6.5 Advisory Committees on Flora Conservation

The Conservation and Parks Commission of Western Australia is established as an advisory, vesting and controlling body under Section 18 of the *Conservation and Land Management Act 1984* and is responsible to the WA Minister for Environment. The Conservation and Parks Commission considers matters concerning the conservation estate and other nature conservation issues in Western Australia, and can provide advice to the Minister on the appropriateness of the measures contained within this management plan for the conservation of flora.

Threatened Species Scientific Committee (TSSC) provides policy and management advice to DBCA on threatened flora conservation. A major function of the TSSC is to provide recommendations for amendments to the schedule of Declared Rare Flora.

Issues relating to commercial harvesting of flora are referred to DBCA directly by Departmental staff, industry or the community. Where flora industry management issues develop, meetings have been held with specific interest groups to resolve those issues as they arise.

The Department of Primary Industries and Regional Development has a role in the development of commercial flora production on private land, either through the development of flora cultivation, or the sustainable management of native vegetation. The Botanic Gardens and Parks Authority within DBCA also has expertise in flora cultivation, as do flora growers and the Wildflower Society of Western Australia (a voluntary conservation organisation). These representatives are able to provide information on flora production and the feasibility of alternative strategies for flora conservation.

DBCA and the Wildflower Society have considerable expertise in flora conservation. The Wildflower Society also provides an important role in contributing community expectations for flora conservation. These representatives ensure that the conservation of flora has primary consideration in the development of flora management strategies.

6.6 REPORTS

Reports take several different forms. The following summarise the various reports on the flora harvesting industry within Western Australia.

6.6.1 DBCA Reports

As detailed in section 5.3.2, commercial flora harvesters are required as a condition of licence to submit returns covering flora taken each month on a quarterly basis. Data required include taxa, quantity, part, unit measure, the land tenure and grid location where picked, and to whom the flora was supplied.

From this data, monitoring reports are prepared to cover flora taken in each 12 month period (financial year). These data are used as part of the monitoring process described above. The reports will be compiled and forwarded to DEE, upon completion, usually by 30 June the following year to allow for the submission and data entry of picker return information.

A proforma report form for harvested flora taxa and populations may be completed by Region/District staff and Wildlife Officers, and a copy forwarded to Wildlife Protection Branch, whenever a significant issue regarding commercially harvested taxon is located in the field during the course of work. The report includes habitat and population details, the status of the population, the degree of harvesting noted and any recommendations (if required). These reports are used in conjunction with other monitoring methods to monitor the taxon.

Wildlife Officers conduct inspections of dealers' premises to ensure that legislative requirements are being met. These inspection reports are used to assist in making recommendations to DEE on whether or not to renew an export authority. Following the detection of an offence Wildlife Officers prepare breach reports for evaluation. These reports are used as a basis for the preparation of a case to prosecute or take other action, as appropriate.

One month prior to the expiry of a licence, a report is generated which assesses the status of a picker's harvest returns. If the picker's returns are satisfactory a letter reminding the picker of the expiry of her/his licence is sent. If returns are incomplete, the picker is informed that the licence can not be renewed until returns have been received. District and Regional staff, Wildlife Officers and licensing staff have access to this information via the FIDMS.

District/Regional flora industry officers are encouraged to submit an annual report to DBCA Wildlife Protection Branch, covering harvesting activity, enforcement issues, administrative issues, and recommendations for research and management. These annual reports are compiled and a summary is distributed to Regions/District and used by Head Office (Nature Protection Branch) staff to assist in the management of the industry.

6.6.2 Reports to the Department of Environment and Energy

Reports on the implementation of the WA flora management plan will be provided to DEE on a regular basis as detailed below.

6.6.2.1 *Reports sent to the Department of Environment and Energy*

Special reports will be provided to DEE as changes occur, detailing:

- documentary support for any proposed amendments to the Export Flora List, or the list of flora approved for trial exports (additions, deletions or changes in the category of listing);
- any amendments to the list of Declared Rare Flora, as published in the *Government Gazette*; and,
- variations in standard licence conditions.

Annual reports will be provided to DEE detailing:

- data summaries from the analysis of flora returns detailed in section 6.5.1, above;
- harvest quotas and the information considered in setting quotas for individual taxa;
- statistics which show the number and category of flora offences, and the recommended action and results;
- statistics on the amount of land reserved for national parks, conservation parks, nature reserves and other reserves with a conservation purpose; and,

- a compilation of the results of research carried out in the previous twelve month period which is relevant to the commercial flora industry.

6.6.3 Reports from the Department of Environment and Energy

DEE will provide to DBCA on an annual basis, or as otherwise agreed between DEE and DBCA, a compiled summary of the WA flora exported by each of the international exporters.

7 KEY PERFORMANCE INDICATORS

The specific objectives of this management plan as outlined in section 4 were:

- ensure conservation of the taxa subject to this plan by maintaining sustainable populations throughout their existing geographical ranges in the State, taking into account the precautionary principle;
- manage the commercial harvesting of protected flora to ensure that it is undertaken in a manner that does not jeopardise the conservation of the taxon being harvested nor, in the case of Crown land, the conservation values of the land;
- provide for the development and operation of the flora industry in Western Australia in accordance with the principles of ecological sustainability, Government policy and the *Wildlife Conservation Act 1950*; and
- provide for inter-generational equity by ensuring that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

The above objectives are met through the management measures and strategies outlined in section 5 of the plan, that being through licensing, the implementation of the Export Flora List and the management of the reserve system throughout the State. Annual reports will be provided on any changes to the Export Flora list, Declared Rare Flora List, licence conditions and statistics on the amount of land reserved for national parks, conservation parks, nature reserves and other reserves with a conservation purpose as outlined in section 6.6.2.1.

The following annual Key Performance indicators have been set to measure the success of the management arrangements identified in the plan, through: the comprehensive, adequate and representative reservation of lands for conservation; a measure of effective flora licensing arrangements; and, the outcome of field monitoring of compliance by persons involved in the industry.

KPI 1: Proportion of terrestrial IBRA sub-bioregions with greater than 15% reservation for conservation.

KPI 2: number of commercial flora licences issued under the *Wildlife Conservation Act 1950*.

KPI 3: number of reported offences under the *Wildlife Conservation Act 1950* in relation to commercial flora harvesting in Western Australia, investigated by DBCA.

8 GLOSSARY

DBCA-approved salvage operations

Salvage operations under which whole plants may be taken under this management plan are limited to situations where the original vegetation will be permanently destroyed under otherwise legally approved land clearing operations, including urban development, mining, or infrastructure development. Such salvage operations will be subject to DBCA licensing and approval based on the following considerations and conditions:

- plants will only be taken from areas that are specifically designated and approved by the relevant land management authority for vegetation clearing;
- the clearing activity must be unrelated to the harvest operation; and,
- DBCA will assess salvage proposals, and individually endorse such areas on flora collecting licences.

Declared Rare Flora

Protected flora described as being “rare flora” under section 23F of the *Wildlife Conservation Act 1950*. Also referred to as Threatened Flora.

Ecologically Sustainable Development

Taken from the National Strategy for the Conservation of Australia’s Biological Diversity (1996):

- to enhance individual and community wellbeing and welfare by following a path of economic development that safeguards the welfare of future generations;
- to provide for equity within and between generations; and
- to protect biological diversity and maintain essential ecological processes and life-support systems.

Export Flora List

Is a list of species, allocated to several management categories, which have been approved for export by the Department of Biodiversity, Conservation and Attractions, and the Department of the Environment and Energy.

Flora

Flora is defined in the *Wildlife Conservation Act 1950* as “any plant, including any wildflower, palm, shrub, tree, fern, creeper or vine which is either native to Western Australia or declared to be flora under the Act and includes any part of flora and all seeds and spores thereof”.

Priority Flora

Taxa of protected flora which are poorly known or are rare but not currently threatened by any identifiable factors.

Precautionary Principle

Where there are threats of serious or irreversible damage, the lack of scientific certainty shall not be used as a reason for postponing measures which seek to protect or restore or prevent loss of biodiversity.

Protected flora

Under the *Wildlife Conservation Act 1950* all classes of flora are protected in WA. Therefore protected flora includes all flowering plants, conifers and cycads (Spermatophyta), ferns and fern allies (Pteridophyta), mosses and liverworts (Bryophyta) and algae, fungi and lichens (Thallophyta). All parts of the plant including roots, branches, stems, leaves, flowers, seeds and spores come within the legal meaning of flora.

9 REFERENCES

- Department of Environment and Conservation (DEC) (2006b). *Phytophthora Dieback Atlas – From the bush to your back fence: what you need to know*, Department of Environment and Conservation.
- Department Biodiversity, Conservation and Attractions (DBCA) (2017). *Western Australian Flora Statistics*. <https://florabase.dpaw.wa.gov.au/statistics/>
- Government of Western Australia (2000). *The Salinity Strategy*, Perth.
- Hussey, B.M.J., G.J. Keighery, R.D. Cousens, J. Dodd and S.G. Lloyd (2007). *Western Weeds. A guide to the weeds of Western Australia (Second edition)*. The Weeds Society of Western Australia.
- Natural Resource Management Ministerial Council (NRMMC) (2010), *Australia's Biodiversity Conservation Strategy 2010-2030*, Australian Government, Department of Sustainability, Environment, Water, Population and Communities, Canberra.
- Podger, F.D., S.H. James and M.J. Mulcahy (1996). *Review of Dieback in Western Australia – Report to the Western Australian Minister for the Environment*.
- Scott, P.M., Jung, T., Shearer, B.L., Barber, P.A. and Hardy, G.E.St.J. (2008). *Potential role of Phytophthora species in Eucalyptus gomphocephala (tuart) decline*. In: Third International Workshop on Phytophthora/Pythium and Related Genera, Ninth International Congress of Plant Pathology, 23 - 24 August, Turin, Italy.
- Thackway, R. and Creswell, I.D. (1995). *An Interim Biogeographic Rationalisation for Australia*, Australian Nature Conservation Agency, Canberra.

APPENDIX 1 - EXPORT FLORA LIST

DRAFT

EXPORT FLORA LIST

Page No 1

Taxa which may be harvested from natural stands only where a specific endorsement (and any standard licence conditions) is attached to the licence

<i>Boronia megastigma</i>	Brown boronia, Boronia
<i>Banksia hookeriana</i>	Hookerana, hookers

Taxa which may be harvested from natural stands, subject to standard licence conditions

<i>Acacia pentadenia</i>	Karri wattle
<i>Actinodium cunninghamii</i>	Albany daisy, Swamp daisy
<i>Adansonia gregorii</i>	Baobab, Boab
<i>Adenanthos cuneatus</i>	Templetonia, Native temp
<i>Adenanthos cygnorum</i>	Woolly bush
<i>Adenanthos obovatus</i>	Basket flower
<i>Agonis flexuosa</i>	Peppermint
<i>Allocasuarina decussata</i>	Karri She-oak
<i>Allocasuarina humilis</i>	Dwarf She-oak
<i>Anigozanthos flavidus</i>	Kangaroo paw
<i>Anigozanthos humilis</i>	Cats paw
<i>Anigozanthos manglesii</i>	Red & green kangaroo paw
<i>Anigozanthos pulcherrimus</i>	Yellow kangaroo paw
<i>Anigozanthos rufus</i>	Rufous/red kangaroo paw
<i>Baeckea grandiflora</i>	Large-flowered Baeckea
<i>Banksia ashbyi</i>	Ashby's banksia
<i>Banksia attenuata</i>	Coast banksia
<i>Banksia candolleana</i>	Candolleana
<i>Banksia gardneri</i>	Ground leaves
<i>Banksia grandis</i>	Bull banksia
<i>Banksia heliantha</i>	Oak-leaved Dryandra
<i>Banksia ilicifolia</i>	Holly-leaved Banksia
<i>Banksia littoralis</i>	Swamp banksia
<i>Banksia menziesii</i>	Menzies banksia, Firewood banksia
<i>Banksia occidentalis</i>	Water banksia
<i>Banksia prionotes</i>	Acorn banksia
<i>Banksia repens</i>	Ground leaves
<i>Banksia sceptrum</i>	Sceptre banksia
<i>Banksia speciosa</i>	Showy banksia

<i>Beaufortia decussata</i>	Gravel Bottlebrush, Decussata
<i>Beaufortia sparsa</i>	Sparsa, Swamp bottlebrush
<i>Beaufortia squarrosa</i>	Sand bottlebrush
<i>Boronia purdieana</i>	Lemon-scented boronia
<i>Bossiaea aquifolium</i>	Miniature holly
<i>Callistemon glaucus</i>	Callis greens, Albany bottlebrush
<i>Calothamnus quadrifidus</i>	One-sided Bottlebrush
<i>Calytrix flavescens</i>	Summer Starflower
<i>Calytrix fraseri</i>	Pink Summer Calytrix
<i>Caustis dioica</i>	Chinese puzzle
<i>Cephalopterum drummondii</i>	Pompom Head
<i>Chaetanthus aristatus</i>	
<i>Conospermum amoenum</i>	Blue smokebush
<i>Conospermum crassinervium</i>	Tassel smokebush
<i>Conospermum nervosum</i>	
<i>Conospermum incurvum</i>	Plume smokebush
<i>Conospermum stoechadis</i>	Common smokebush
<i>Conospermum triplinervium</i>	Tree smokebush
<i>Corymbia calophylla</i>	Red gumnuts, Honky nuts, Marri
<i>Crowea angustifolia</i>	Crowea
<i>Dasypogon bromeliifolius</i>	Drumsticks
<i>Daviesia cordata</i>	Bookleaf
<i>Eucalyptus forrestiana</i>	Fuschia mallee
<i>Eucalyptus gomphocephala</i>	Tuart
<i>Eucalyptus lehmannii</i>	Bushy yate
<i>Eucalyptus marginata</i>	Jarrah
<i>Eucalyptus patens</i>	Swan River Blackbutt
<i>Eucalyptus preissiana</i>	Bell-fruited mallee
<i>Eucalyptus pyriformis</i>	Pear-fruited Mallee
<i>Eucalyptus rudis</i>	Flooded gum
<i>Eucalyptus tetragona</i>	Blue mallee
<i>Evandra aristata</i>	Fisherman's rod, kangaroo grass
<i>Grevillea diversifolia</i>	Variable-leaved Grevillea
<i>Grevillea endlicheriana</i>	Spindly Grevillea
<i>Grevillea synapheae</i>	Catkin Grevillea
<i>Hakea cucullata</i>	Cup-leaf hakea, Scallops
<i>Hakea lasiantha</i>	Crowsfoot

<i>Hakea laurina</i>	Pincushion Hakea
<i>Hakea pandanica</i>	Corked hakea
<i>Hakea platysperma</i>	Cricket ball hakea, Native peach
<i>Hybanthus floribundus</i> subsp. <i>adpressum</i>	Native violet
<i>Hypocalymma angustifolium</i>	White myrtle
<i>Hypocalymma robustum</i>	Swan River myrtle
<i>Johnsonia lupulina</i>	Hooded lily
<i>Juncus caespiticius</i>	Grassy Rush
<i>Juncus holoschoenus</i>	Fern rush
<i>Juncus pallidus</i>	Coarse rush
<i>Kingia australis</i>	Grass girls, Djingarra
<i>Kunzea ericifolia</i>	Spearwood
<i>Lachnostachys eriobotrya</i>	Sago conspermum
<i>Lachnostachys verbascifolia</i>	Lambstail and ears
<i>Lawrencia helmsii</i>	Long fingers, Plagianthus
<i>Lechenaultia biloba</i>	Blue Leschenaultia
<i>Lepidosperma effusum</i>	Spreading Sword-sedge
<i>Lepidosperma gladiatum</i>	Coast Sword-sedge
<i>Leptocarpus tenax</i>	Slender Twine Rush
<i>Leucopogon parviflorus</i>	Coast Beard-heath
<i>Leucopogon polymorphus</i>	Baeckea
<i>Leucopogon pulchellus</i>	Beard-heath
<i>Leucopogon verticillatus</i>	Native bamboo
<i>Lomandra hastilis</i>	Kojaneerup rush
<i>Lysinema ciliatum</i>	Curry and rice
<i>Macrozamia riedlei</i>	Zamia palm
<i>Meeboldina cana</i>	
<i>Melaleuca megacephala</i>	
<i>Melaleuca raphiophylla</i>	Beard-heath
<i>Olearia axillaris</i>	Coastal Daisybush
<i>Ozothamnus cordatus</i>	Seacrest
<i>Pericalymma ellipticum</i>	Swamp ti-tree
<i>Persoonia longifolia</i>	Snottygobble, cherry bush
<i>Petrophile diversifolia</i>	
<i>Philothea spicata</i>	Pepper and Salt
<i>Pimelea suaveolens</i>	Scented Banjine
<i>Podocarpus drouynianus</i>	Emu bush
<i>Pteridium esculentum</i>	Bracken fern

<i>Ptilotus calostachyus</i>	Weeping Mulla Mulla
<i>Ptilotus exaltatus</i>	Tall mulla mulla
<i>Ptilotus manglesii</i>	Pom Poms
<i>Ptilotus obovatus</i>	Cotton Bush
<i>Ptilotus rotundifolius</i>	Royal Mulla Mulla
<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i>	Roseum everlasting
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i>	
<i>Rhodanthe floribunda</i>	
<i>Rhodanthe manglesii</i>	
<i>Scholtzia capitata</i>	
<i>Scholtzia involucrata</i>	Spiked Scholtzia
<i>Scholtzia oligandra</i>	Pink Scholtzia
<i>Sphenotoma dracophylloides</i>	
<i>Stirlingia latifolia</i>	Blueboy, Stirlingia
<i>Taxandria fragrans</i>	Coarse tea tree
<i>Taxandria juniperina</i>	Coarse tea tree
<i>Taxandria linearifolia</i>	Rosa tea tree
<i>Taxandria parviceps</i>	Fine tea tree
<i>Triptilodiscus pygmaeus</i>	
<i>Trymalium venustum</i>	Karri hazel
<i>Typha domingensis</i>	Bullrush
<i>Verticordia densiflora</i>	Compacted Featherflower ,Densaflora
<i>Verticordia drummondii</i>	Drummond's Featherflower
<i>Verticordia grandis</i>	Scarlet Featherflower
<i>Verticordia nitens</i>	Yellow morrison, Christmas morrison
<i>Verticordia picta</i>	Painted Featherflower
<i>Verticordia plumosa</i>	Plumed Featherflower
<i>Verticordia serrata</i> var. <i>ciliata</i>	
<i>Verticordia serrata</i> var. <i>serrata</i>	
<i>Waitzia acuminata</i>	Orange Immortelle
<i>Waitzia suaveolens</i>	Fragrant Waitzia
<i>Xanthorrhoea gracilis</i>	Grass tree, Wallaby tails
<i>Xanthorrhoea preissii</i>	Grass tree, Kangaroo tails
<i>Xanthorrhoea thorntonii</i>	Grass tree
<i>Xerochrysum bracteata</i>	Bushy everlasting
<i>Xylomelum angustifolium</i>	Woody or Sandplain pear
<i>Xylomelum occidentale</i>	Holly oak

Taxa which may be harvested from natural stands, but only on private property

<i>Acacia merinthophora</i>	Twisted or zigzag wattle
<i>Andersonia caerulea</i>	Purple heath, Foxtails
<i>Banksia baueri</i>	Woolly Banksia
<i>Banksia baxteri</i>	Baxteri
<i>Banksia burdettii</i>	Burdett's banksia
<i>Banksia coccinea</i>	Albany banksia
<i>Banksia formosa</i>	Formosa, Albany dryandra
<i>Banksia hewardiana</i>	
<i>Banksia laricina</i>	Rose cones
<i>Banksia nobilis</i>	Golden dryandra
<i>Banksia pteridifolia</i>	Skeleton leaves
<i>Banksia victoriae</i>	Woolly orange banksia
<i>Boronia heterophylla</i>	Red boronia
<i>Boronia molloyae</i>	Tall Boronia
<i>Chamelaucium megalopetalum</i>	Large waxflower
<i>Chamelaucium uncinatum</i>	Geraldton wax
<i>Conospermum teretifolium</i>	Spider Smokebush
<i>Corynanthera flava</i>	Golden cascades
<i>Eucalyptus buprestium</i>	Apple Mallee
<i>Geleznovia verrucosa</i>	Yellow bells
<i>Grevillea leucopteris</i>	White Plume Grevillea
<i>Hakea victoria</i>	Royal hakea
<i>Homalospermum firmum</i>	
<i>Hypocalymma myrtifolium</i>	
<i>Meeboldina scariosa</i>	Velvet or Seeded rush
<i>Melaleuca nesophila</i>	Mindiyed
<i>Physopsis spicata</i>	Hill River lambstail
<i>Verticordia eriocephala</i>	Cauliflower bush, Brownii
<i>Verticordia monadelphae</i> var. <i>monadelphae</i>	
<i>Verticordia nobilis</i>	
<i>Verticordia roei</i>	Roe's Featherflower

Taxa which may be harvested from artificially propagated plants

All flora native to Western Australia, except for CITES I species and eligible threatened species listed under the EPBC Act.

Taxa which may be harvested or sold without a licence

All Australian native species that are not native to Western Australia, except for CITES I species and eligible threatened species listed under the EPBC Act.

APPENDIX 2 – CORPORATE POLICY STATEMENT NO. 37 MANAGEMENT OF WILDLIFE UTILISATION

DRAFT



CORPORATE POLICY STATEMENT NO. 37

MANAGEMENT OF WILDLIFE UTILISATION

October 2015

1. OBJECTIVE

To ensure commercial fauna and flora utilisation is managed by the Department of Parks and Wildlife in a sustainable manner both for the species involved and the environment.

2. SCOPE

This policy statement applies to the management of all harvesting, commercial exploitation and other significant human exploitation or interference of fauna and flora managed by the department under the *Wildlife Conservation Act 1950* and the *Conservation and Land Management Act 1984* (CALM Act), but does not apply to the harvesting of timber under a production contract issued in accordance with the *Forest Products Act 2000*.

3. CONTEXT

Industries and activities covered by this policy include, but are not limited to:

- flora harvesting, including whole plants, wildflowers, seed and native sandalwood;
- kangaroo harvesting;
- collection of crocodile eggs;
- emu and crocodile farming;
- educational and public display of animals;
- keeping pet reptiles, amphibians and birds;
- whale watching and interactions with whale sharks, dolphins, dugong, Australian sea lions and marine turtles;
- use of flora and fauna for scientific purposes; and
- bioprospecting.

Under the Wildlife Conservation Act, the following definitions apply in relation to protected fauna and flora, which defines the scope of this policy:

Fauna means any animal indigenous to any State or Territory of the Commonwealth or territorial waters of the Commonwealth, any animal that periodically migrates to and lives in such State, Territory or territorial waters, or any animal declared by the Minister to be fauna, and includes any class or individual member thereof; the eggs, larvae or semen; and the carcass, skin, plumage or fur thereof.

Flora means any plant native to the State or declared by the Minister to be flora, and includes any part of flora and all seeds and spores thereof.

To take in relation to any fauna, includes to kill or capture any fauna by any means or to disturb or molest any fauna by any means or to use any method whatsoever to hunt or kill any fauna whether this results in killing or capturing any fauna or not; and also includes every attempt to take fauna and every act of assistance to another person to take fauna and derivatives and inflections have corresponding meanings.

To take in relation to any flora includes to gather, pluck, cut, pull up, destroy, dig up, remove or injure the flora or to cause or permit the same to be done by any means.

The meaning of 'to take' in relation to fauna and flora has a broad interpretation for different types of utilisation, and includes the direct harvesting or destructive sampling of individuals or parts of individuals, and the indirect impacts on individuals which may be caused by other interactions, such as whale watching.

4. LEGISLATION

The Department of Parks and Wildlife is responsible for the administration and implementation of the Wildlife Conservation Act and CALM Act that together provide the legal basis for the conservation of biodiversity in Western Australia, and in particular, the taking of protected fauna and flora. This also includes the administration of the *Sandalwood Act 1929*, which is read as one with the CALM Act. The department also has a responsibility under the *Animal Welfare Act 2002* to ensure any licensed activity relating to protected fauna complies with that Act's animal welfare provisions.

The Australian Government also has powers under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in relation to biodiversity. The export of animal and plant material from Australia is regulated under the EPBC Act, and in most cases requires an approved management program and the material to have come from an approved source.

5. POLICY

The department will, consistent with its statutory functions, government policy and within its finite resources:

- 5.1 Identify those species of protected fauna and flora, which are subject to commercial harvesting, or other significant human exploitation or interference, in Western Australia.
- 5.2 Establish and implement an appropriate licensing regime to take protected fauna or flora under the Wildlife Conservation Act, CALM Act or Sandalwood Act.
- 5.3 Negotiate and manage licensing agreements under the CALM Act for proposals to take protected flora for bioprospecting purposes, which provide for a suitable return to the State.
- 5.4 Ensure the harvesting of protected fauna and flora is done in a sustainable manner for the target species, non-target species, and the habitat in which they occur.
- 5.5 Manage access to lands and waters managed by the department, or for which delegated authority has been granted to the department, for harvesting or exploiting protected fauna and flora to ensure the access is in accordance with the CALM Act, and does not negatively impact on those lands or waters.
- 5.6 Undertake research as required to determine the susceptibility or response of targeted fauna or flora to their utilisation and inform the development and implementation of sustainable management strategies.

- 5.7 Prepare Wildlife Management Programs for guiding the management of harvesting of, or interactions with, fauna and flora subject to significant human exploitation or interference, according to priorities established by the department.
- 5.8 Prepare management programs as required under the EPBC Act to facilitate the export of harvested Western Australian fauna or flora from Australia, and seek adoption of those management programs by the Australian government.
- 5.9 Manage the harvesting and exploitation of protected fauna and flora in accordance with any approved management programs.
- 5.10 Regulate the harvesting and exploitation of protected fauna in accordance with the Animal Welfare Act.

6. STANDARDS

Licensed activities will meet standards of best practice and any relevant guidelines that minimise behavioural change and unnecessary suffering of fauna, or the ability of the species or population of fauna or flora to recover from the activity, including the Code of Practice for the Humane Shooting of Kangaroos, Code of Practice on the Humane Treatment of Wild and Farmed Australian Crocodiles, marine fauna interaction codes of conduct, flora-specific harvest guidelines, code of practice for exhibited animals in Western Australia, and Australian animal welfare standards, guidelines and code of conduct for scientific use of animals. Licensed activities will comply with current approved management plans.

7. POLICY IMPLEMENTATION STRATEGIES

The department will ensure commercial and scientific fauna and flora utilisation is managed in a sustainable manner for the species involved and the environment, primarily through Science and Conservation Division, Regional and Fire Management Services Division, and Parks and Visitor Services Division, via:

- 7.1 licensing activities that will result in the taking of protected fauna and flora, including for scientific purposes;
- 7.2 licensing keeping and display of animals for educational and public purposes;
- 7.3 ensuring licensed activities meet the standards outlined in section 6;
- 7.4 granting conditional approval to licence holders to enter lands and waters managed by the department under the CALM Act;
- 7.5 undertaking research into the impacts of harvesting or other disturbance activities on protected fauna and flora;
- 7.6 preparing and implementing wildlife management programs and any associated codes of conduct or management guidelines;
- 7.7 monitoring the compliance and sustainability of industry activities; and
- 7.8 reporting on the implementation of wildlife management programs.

8. CUSTODIAN

Director Science and Conservation

9. PUBLICATION

This policy will be made available on the department's website and intranet.

10. KEY WORDS

Bioprospecting, commercial exploitation, crocodile farming, emu farming, kangaroo harvesting, fauna, flora, take, utilisation, sandalwood, scientific purpose, seed harvest, wildflower harvest, wildlife, wildlife interaction, whale watching

11. REVIEW

This policy will be reviewed no later than October 2020.

12. DIRECTOR GENERAL APPROVAL

Approved by



Jim Sharp
DIRECTOR GENERAL

Effective date: 16 October 2015

APPENDIX 3 – SCHEDULE OF DECLARED RARE FLORA

DRAFT

— PART 1 —

CONSERVATION

CO301

Wildlife Conservation Act 1950

Wildlife Conservation (Rare Flora) Notice 2017

Made by the Minister for Environment under section 23F(2) of the Act.

1. Citation

This notice may be cited as the *Wildlife Conservation (Rare Flora) Notice 2017*.

2. Interpretation

In this notice—

“**extant**” means known to be living in a wild state;

“**protected flora**” means any flora belonging to the classes of flora declared by the Minister under section 6 of the Act to be protected flora by notice published in the *Gazette* 9 October 1987, at p. 3855;

“**taxon**” includes any taxon that is described by a genus name and any other name or description.

Note: The plural form of “taxon” is “taxa”.

3. Declaration of rare flora

Subject to clause 4, protected flora—

- (a) specified in Schedule 1, being taxa that are extant and considered likely to become extinct or rare, as critically endangered flora, and therefore in need of special protection;
- (b) specified in Schedule 2, being taxa that are extant and considered likely to become extinct or rare, as endangered flora, and therefore in need of special protection;
- (c) specified in Schedule 3, being taxa that are extant and considered likely to become extinct or rare, as vulnerable flora, and therefore in need of special protection; and
- (d) specified in Schedule 4, being taxa that are presumed to be extinct in the wild and therefore in need of special protection,

are declared to be rare flora for the purposes of section 23F of the Act throughout the State.

4. Application

Clause 3 does not apply to those plants of a taxon of protected flora specified in Schedule 1, 2, 3 or 4 that have been planted for any purpose other than such plants that have been planted for the purpose of conservation of that taxon and in accordance with approval given by the Director General.

5. Revocation

The *Wildlife Conservation (Rare Flora) Notice 2016* is revoked.

Schedule 1 — Flora that are considered likely to become extinct or rare, as critically endangered flora

[cl. 3(a)]

Division 1 — Spermatophyta (flowering plants, conifers and cycads)

- | | |
|---|------------------------------------|
| 1. <i>Acacia aprica</i> | 31. <i>Caladenia busselliana</i> |
| 2. <i>Acacia awestoniana</i> | 32. <i>Caladenia caesarea</i> |
| 3. <i>Acacia cochlocarpa</i> | subsp. <i>maritima</i> |
| subsp. <i>cochlocarpa</i> | 33. <i>Caladenia drakeoides</i> |
| 4. <i>Acacia cochlocarpa</i> | 34. <i>Caladenia elegans</i> |
| subsp. <i>velutinosus</i> | 35. <i>Caladenia hopperiana</i> |
| 5. <i>Acacia imitans</i> | 36. <i>Caladenia huegelii</i> |
| 6. <i>Acacia insolita</i> | 37. <i>Caladenia lodgeana</i> |
| subsp. <i>recurva</i> | 38. <i>Caladenia luteola</i> |
| 7. <i>Acacia leptoneura</i> | 39. <i>Caladenia melanema</i> |
| 8. <i>Acacia pharangites</i> | 40. <i>Caladenia procera</i> |
| 9. <i>Acacia rhamphophylla</i> | 41. <i>Caladenia viridescens</i> |
| 10. <i>Acacia sciophanes</i> | 42. <i>Caladenia williamsiae</i> |
| 11. <i>Acacia splendens</i> | 43. <i>Calectasia cyanea</i> |
| 12. <i>Acacia subflexuosa</i> | 44. <i>Calochilus pruinus</i> |
| subsp. <i>capillata</i> | 45. <i>Calytrix breviseta</i> |
| 13. <i>Acacia unguicula</i> | subsp. <i>breviseta</i> |
| 14. <i>Acacia vassalii</i> | 46. <i>Chorizema humile</i> |
| 15. <i>Acacia volubilis</i> | 47. <i>Commersonia apella</i> |
| 16. <i>Adenanthos pungens</i> | 48. <i>Commersonia erythrogyna</i> |
| subsp. <i>effusus</i> | 49. <i>Conospermum galeatum</i> |
| 17. <i>Andersonia annelsii</i> | 50. <i>Conostylis setigera</i> |
| 18. <i>Andersonia axilliflora</i> | subsp. <i>dasy</i> |
| 19. <i>Androcalva adenothalia</i> | 51. <i>Cyphanthera odgersii</i> |
| 20. <i>Androcalva bivillosa</i> | subsp. <i>occidentalis</i> |
| 21. <i>Austrostipa jacobsoniana</i> | 52. <i>Darwinia carnea</i> |
| 22. <i>Banksia anatona</i> | 53. <i>Darwinia collina</i> |
| 23. <i>Banksia brownii</i> | 54. <i>Darwinia masonii</i> |
| 24. <i>Banksia fuscobracea</i> | 55. <i>Darwinia whicherensis</i> |
| 25. <i>Banksia ionthocarpa</i> subsp. | 56. <i>Dasymalla axillaris</i> |
| <i>chrysophoenix</i> | 57. <i>Daviesia bursarioides</i> |
| 26. <i>Banksia ionthocarpa</i> subsp. | 58. <i>Daviesia cunderdin</i> |
| <i>ionthocarpa</i> | 59. <i>Daviesia euphorbioides</i> |
| 27. <i>Banksia montana</i> | 60. <i>Daviesia glossosema</i> |
| 28. <i>Banksia serratuloides</i> subsp. | 61. <i>Daviesia microcarpa</i> |
| <i>perissa</i> | 62. <i>Daviesia ovata</i> |
| 29. <i>Banksia verticillata</i> | 63. <i>Daviesia pseudaphylla</i> |
| 30. <i>Brachyscias verecundus</i> | 64. <i>Drakaea confluens</i> |

65. *Drakaea elastica*
66. *Drakaea isolata*
67. *Eremophila glabra* subsp.
Scaddan
68. *Eremophila koobabbiensis*
ms
69. *Eremophila lactea*
70. *Eremophila* sp. narrow
leaves (J.D. Start D12-150)
71. *Eremophila nivea*
72. *Eremophila pinnatifida*
73. *Eremophila rostrata* subsp.
rostrata
74. *Eremophila rostrata* subsp.
trifida
75. *Eremophila scaberula*
76. *Eremophila subteretifolia*
77. *Eremophila verticillata*
78. *Eucalyptus absita*
79. *Eucalyptus dolorosa*
80. *Eucalyptus impensa*
81. *Eucalyptus* x *balanites*
82. *Eucalyptus* x *phylacis*
83. *Gastrolobium argyrotrichum*
84. *Gastrolobium*
diabolophyllum
85. *Gastrolobium glaucum*
86. *Gastrolobium hamulosum*
87. *Gastrolobium luteifolium*
88. *Gastrolobium papilio*
89. *Gastrolobium vestitum*
90. *Grevillea althoferorum*
subsp. *althoferorum*
91. *Grevillea althoferorum*
subsp. *fragilis*
92. *Grevillea batrachoides*
93. *Grevillea brachystylis* subsp.
grandis
94. *Grevillea bracteosa* subsp.
howatharra
95. *Grevillea calliantha*
96. *Grevillea curviloba*
subsp. *curviloba*
97. *Grevillea dryandroides*
subsp. *dryandroides*
98. *Grevillea humifusa*
99. *Grevillea maccutcheonii*
100. *Grevillea maxwellii*
101. *Grevillea phanerophlebia*
102. *Grevillea pythara*
103. *Grevillea scapigera*
104. *Grevillea thelemanniana*
subsp. *thelemanniana*
105. *Grevillea* sp. Gillingarra
(R.J. Cranfield 4087)
106. *Guichenotia seorsiflora*
107. *Gyrostemon reticulatus*
108. *Haloragis platycarpa*
109. *Hemiandra gardneri*
110. *Hemiandra rutilans*
111. *Hemigenia ramosissima*
112. *Hibbertia abyssus*
113. *Hibbertia* sp. Toolbrunup
114. *Hybanthus cymulosus*
115. *Isopogon robustus*
116. *Isopogon uncinatus*
117. *Jacksonia pungens*
118. *Kunzea similis* subsp. *similis*
119. *Lambertia echinata*
subsp. *echinata*
120. *Lambertia echinata*
subsp. *occidentalis*
121. *Lambertia fairallii*
122. *Lambertia orbifolia*
subsp. *orbifolia* ms
123. *Lasiopetalum pterocarpum*
124. *Lasiopetalum* sp. Mount
Caroline
125. *Latrobea colophona*
126. *Leucopogon gnaphalioides*
127. *Leucopogon spectabilis*
128. *Leucopogon* sp. Flynn (F.
Hort, J. Hort & A. Lowrie
859)
129. *Lysiosepalum abollatum*
130. *Marianthus aquilonaris*
131. *Persoonia micranthera*
132. *Petrophile latericola*
133. *Philotheca basistyla*
134. *Pityrodia scabra* subsp.
scabra
135. *Pterostylis sinuata*
136. *Ptilotus pyramidatus*
137. *Rhizanthella gardneri*
138. *Scaevola macrophylla*
139. *Seringia exastia*
140. *Stylidium amabile*
141. *Stylidium appianatum*
142. *Stylidium coroniforme* subsp.
amblyphyllum
143. *Stylidium semaphorum*
144. *Styphelia longissima*
145. *Symonanthus bancroftii*
146. *Synaphea stenoloba*
147. *Synaphea* sp. Fairbridge
Farm (D. Papenfus 696)
148. *Synaphea* sp. Pinjarra
(R.Davis 6578)
149. *Synaphea* sp. Serpentine
(G.R. Brand 103)
150. *Tetratheca deltoidea*
151. *Tetratheca paynterae* subsp.
paynterae
152. *Thelymitra dedmaniarum*

- | | |
|---|---|
| 153. <i>Thomasia</i> sp. Green Hill
(S.Paust 1322)
154. <i>Trithuria occidentalis</i>
155. <i>Verticordia albida</i>
156. <i>Verticordia apecta</i>
157. <i>Verticordia plumosa</i>
var. <i>ananeotes</i> | 158. <i>Verticordia spicata</i>
subsp. <i>squamosa</i>
159. <i>Verticordia staminosa</i>
subsp. <i>cylindracea</i>
var. <i>erecta</i>
160. <i>Verticordia staminosa</i>
subsp. <i>staminosa</i> |
|---|---|

Division 2 — Bryophyta (mosses and liverworts)

161. *Rhacocarpus rehmannianus* var. *webbianus*

Schedule 2 — Flora that are considered likely to become extinct or rare, as endangered flora

[cl. 3(b)]

Division 1 — Spermatophyta (flowering plants, conifers and cycads)

- | | |
|--|--|
| 1. <i>Acacia aristulata</i>
2. <i>Acacia ataxiphylla</i>
subsp. <i>magna</i>
3. <i>Acacia chapmanii</i>
subsp. <i>australis</i>
4. <i>Acacia depressa</i>
5. <i>Acacia lobulata</i>
6. <i>Acacia pygmaea</i>
7. <i>Acacia wilsonii</i>
8. <i>Acacia woodmaniorum</i>
9. <i>Adenanthos eyrei</i>
10. <i>Adenanthos pungens</i>
subsp. <i>pungens</i>
11. <i>Adenanthos velutinus</i>
12. <i>Aluta quadrata</i>
13. <i>Androcalva perlaria</i>
14. <i>Apium prostratum</i> subsp.
Porongurup Range (G.J.
Keighery 8631)
15. <i>Austrostipa bronwenae</i>
16. <i>Banksia cuneata</i>
17. <i>Banksia nivea</i> subsp.
<i>uliginosa</i>
18. <i>Banksia oligantha</i>
19. <i>Banksia pseudoplumosa</i>
20. <i>Banksia rufa</i> subsp. <i>pumila</i>
21. <i>Boronia clavata</i>
22. <i>Boronia exilis</i>
23. <i>Bossiaea</i> sp. Frankland
24. <i>Caladenia barbarella</i>
25. <i>Caladenia bryceana</i>
subsp. <i>bryceana</i>
26. <i>Caladenia bryceana</i>
subsp. <i>cracens</i>
27. <i>Caladenia christineae</i>
28. <i>Caladenia dorrienii</i>
29. <i>Caladenia excelsa</i>
30. <i>Caladenia graniticola</i>
31. <i>Caladenia granitora</i>
32. <i>Caladenia hoffmanii</i> | 33. <i>Caladenia leucochila</i>
34. <i>Caladenia wanosa</i>
35. <i>Caladenia winfieldii</i>
36. <i>Chorizema varium</i>
37. <i>Conospermum densiflorum</i>
subsp. <i>unicephalatum</i>
38. <i>Conostylis drummondii</i>
39. <i>Conostylis seorsiflora</i>
subsp. <i>trichophylla</i>
40. <i>Conostylis wonganensis</i>
41. <i>Cooperhooikia georgei</i>
42. <i>Darwinia acerosa</i>
43. <i>Darwinia apiculata</i>
44. <i>Darwinia ferricola</i>
45. <i>Darwinia foetida</i>
46. <i>Darwinia nubigena</i>
47. <i>Darwinia oxylepis</i>
48. <i>Darwinia polychroma</i>
49. <i>Darwinia wittwerorum</i>
50. <i>Daviesia dielsii</i>
51. <i>Daviesia megacalyx</i>
52. <i>Daviesia obovata</i>
53. <i>Daviesia speciosa</i>
54. <i>Diplolaena andrewsii</i>
55. <i>Diuris purdiei</i>
56. <i>Drakaea concolor</i>
57. <i>Drakaea micrantha</i>
58. <i>Duma horrida</i> subsp. <i>abditia</i>
59. <i>Eremophila ciliata</i>
60. <i>Eremophila denticulata</i>
subsp. <i>trisulcata</i>
61. <i>Eremophila glabra</i> subsp.
<i>chlorella</i>
62. <i>Eremophila resinosa</i>
63. <i>Eremophila virens</i>
64. <i>Eremophila viscida</i>
65. <i>Eucalyptus articulata</i>
66. <i>Eucalyptus beardiana</i>
67. <i>Eucalyptus brevipes</i>
68. <i>Eucalyptus coronata</i> |
|--|--|

- | | |
|--|---|
| 69. <i>Eucalyptus crispata</i> | 105. <i>Lepidosperma rostratum</i> |
| 70. <i>Eucalyptus crucis</i>
subsp. <i>crucis</i> | 106. <i>Leucopogon marginatus</i> |
| 71. <i>Eucalyptus crucis</i>
subsp. <i>praecipua</i> | 107. <i>Leucopogon nitidus</i> |
| 72. <i>Eucalyptus cuprea</i> | 108. <i>Leucopogon obtectus</i> |
| 73. <i>Eucalyptus insularis</i> subsp.
<i>continentalis</i> | 109. <i>Leucopogon</i> sp. Ongerup
(A.S. George 16682) |
| 74. <i>Eucalyptus lateritica</i> | 110. <i>Macarthuria keigheryi</i> |
| 75. <i>Eucalyptus leprophloia</i> | 111. <i>Marianthus paralius</i> |
| 76. <i>Eucalyptus pruiniramis</i> | 112. <i>Melaleuca sciotostyla</i> |
| 77. <i>Frankenia parvula</i> | 113. <i>Melaleuca</i> sp. Wanneroo |
| 78. <i>Gastrolobium appressum</i> | 114. <i>Myoporum cordifolium</i> |
| 79. <i>Gastrolobium humile</i> | 115. <i>Myoporum velutinum</i> |
| 80. <i>Glyceria drummondii</i> | 116. <i>Myriophyllum lapidicola</i> |
| 81. <i>Goodenia arthrotricha</i> | 117. <i>Ornduffia calthifolia</i> |
| 82. <i>Goodenia integerrima</i> | 118. <i>Pandanus spiralis</i>
var. <i>flammeus</i> |
| 83. <i>Grevillea acropogon</i> | 119. <i>Patersonia spirifolia</i> |
| 84. <i>Grevillea brachystylis</i>
subsp. <i>australis</i> | 120. <i>Philotheca falcata</i> |
| 85. <i>Grevillea bracteosa</i> subsp.
<i>bracteosa</i> | 121. <i>Philotheca wonganensis</i> |
| 86. <i>Grevillea christineae</i> | 122. <i>Pityrodia</i> sp. Marble Bar (G.
Woodman & D. Coultas
GWDC Opp 4) |
| 87. <i>Grevillea curviloba</i>
subsp. <i>incurva</i> | 123. <i>Reedia spathacea</i> |
| 88. <i>Grevillea elongata</i> | 124. <i>Ricinocarpus brevis</i> |
| 89. <i>Grevillea involucrata</i> | 125. <i>Schoenia filifolia</i>
subsp. <i>subulifolia</i> |
| 90. <i>Grevillea murex</i> | 126. <i>Sphenotoma drummondii</i> |
| 91. <i>Grevillea rara</i> | 127. <i>Stylidium asymmetricum</i> |
| 92. <i>Hakea aculeata</i> | 128. <i>Stylidium coroniforme</i> subsp.
<i>coroniforme</i> |
| 93. <i>Hibbertia priceana</i> | 129. <i>Synaphea quartzitica</i> |
| 94. <i>Hypocalymma angustifolium</i>
subsp. Hutt River | 130. <i>Synaphea</i> sp. Pinjarra Plain
(A.S. George 17182) |
| 95. <i>Hypocalymma sylvestre</i> | 131. <i>Tetratheca nephelioides</i> |
| 96. <i>Hypocalymma</i> sp. Cascade | 132. <i>Thelymitra stellata</i> |
| 97. <i>Jacksonia quairading</i> | 133. <i>Typhonium</i> sp. Kununurra
(A.N. Start ANS 1467) |
| 98. <i>Jacksonia velveta</i> | 134. <i>Verticordia densiflora</i>
var. <i>pedunculata</i> |
| 99. <i>Kennedia lateritia</i> | 135. <i>Verticordia fimbrilepis</i>
subsp. <i>australis</i> |
| 100. <i>Kunzea similis</i> subsp.
<i>mediterranea</i> | 136. <i>Verticordia hughanii</i> |
| 101. <i>Lambertia orbifolia</i>
subsp. Scott River Plains
(L.W.Sage 684) | 137. <i>Verticordia pityrhops</i> |
| 102. <i>Lasiopetalum rotundifolium</i> | 138. <i>Verticordia plumosa</i>
var. <i>vassensis</i> |
| 103. <i>Lechenaultia chlorantha</i> | 139. <i>Xyris exilis</i> |
| 104. <i>Lepidosperma gibsonii</i> | |

Schedule 3 — Flora that are considered likely to become extinct or rare, as vulnerable flora

[cl. 3(c)]

Division 1 — Spermatophyta (flowering plants, conifers and cycads)

- | | |
|------------------------------|---------------------------------|
| 1. <i>Acacia anomala</i> | 5. <i>Acacia caesariata</i> |
| 2. <i>Acacia aphylla</i> | 6. <i>Acacia denticulosa</i> |
| 3. <i>Acacia auratiflora</i> | 7. <i>Acacia forrestiana</i> |
| 4. <i>Acacia brachypoda</i> | 8. <i>Acacia lanuginophylla</i> |

- | | |
|--|--|
| 9. <i>Acacia leptalea</i> | 55. <i>Diuris micrantha</i> |
| 10. <i>Acacia recurvata</i> | 56. <i>Drummondita ericoides</i> |
| 11. <i>Acacia shapelleae</i> | 57. <i>Drummondita longifolia</i> |
| 12. <i>Acrotriche orbicularis</i> | 58. <i>Eleocharis keigheryi</i> |
| 13. <i>Adenanthos dobagii</i> | 59. <i>Eremophila denticulata</i>
subsp. <i>denticulata</i> |
| 14. <i>Adenanthos ellipticus</i> | 60. <i>Eremophila ternifolia</i> |
| 15. <i>Allocasuarina fibrosa</i> | 61. <i>Eremophila vernicosa</i> |
| 16. <i>Allocasuarina globosa</i> | 62. <i>Eucalyptus argutifolia</i> |
| 17. <i>Allocasuarina tortiramula</i> | 63. <i>Eucalyptus burdettiana</i> |
| 18. <i>Andersonia gracilis</i> | 64. <i>Eucalyptus ceracea</i> |
| 19. <i>Andersonia pinaster</i> | 65. <i>Eucalyptus johnsoniana</i> |
| 20. <i>Anigozanthos bicolor</i>
subsp. <i>minor</i> | 66. <i>Eucalyptus merrickiae</i> |
| 21. <i>Anigozanthos viridis</i>
subsp. <i>terraspectans</i> | 67. <i>Eucalyptus mooreana</i> |
| 22. <i>Anthocercis gracilis</i> | 68. <i>Eucalyptus nutans</i> |
| 23. <i>Atriplex yeelirrie</i> | 69. <i>Eucalyptus platydisca</i> |
| 24. <i>Banksia aurantia</i> | 70. <i>Eucalyptus purpurata</i> |
| 25. <i>Banksia catoglypta</i> | 71. <i>Eucalyptus recta</i> |
| 26. <i>Banksia goodii</i> | 72. <i>Eucalyptus rhodantha</i>
var. <i>rhodantha</i> |
| 27. <i>Banksia mimica</i> | 73. <i>Eucalyptus steedmanii</i> |
| 28. <i>Banksia serratuloides</i> subsp.
<i>serratuloides</i> | 74. <i>Eucalyptus suberea</i> |
| 29. <i>Banksia sphaerocarpa</i>
var. <i>dolichostyla</i> | 75. <i>Eucalyptus synandra</i> |
| 30. <i>Banksia squarrosa</i> subsp.
<i>argillacea</i> | 76. <i>Frankenia conferta</i> |
| 31. <i>Beyeria cockertonii</i> | 77. <i>Gastrolobium graniticum</i> |
| 32. <i>Beyeria lepidopetala</i> | 78. <i>Gastrolobium lehmannii</i> |
| 33. <i>Boronia adamsiana</i> | 79. <i>Gastrolobium modestum</i> |
| 34. <i>Boronia capitata</i>
subsp. <i>capitata</i> | 80. <i>Grevillea corrugata</i> |
| 35. <i>Boronia revoluta</i> | 81. <i>Grevillea dryandroides</i>
subsp. <i>hirsuta</i> |
| 36. <i>Caladenia harringtoniae</i> | 82. <i>Grevillea flexuosa</i> |
| 37. <i>Calectasia pignattiana</i> | 83. <i>Grevillea fuscolutea</i> |
| 38. <i>Chamelaucium</i> sp. Cataby
(G.J. Keighery 11009) | 84. <i>Grevillea infundibularis</i> |
| 39. <i>Chamelaucium</i> sp. Gingin
(N.G. Marchant 6) | 85. <i>Hakea megalosperma</i> |
| 40. <i>Chamelaucium</i> sp. S coastal
plain (R.D. Royce 4872) | 86. <i>Hensmania chapmanii</i> |
| 41. <i>Chordifex abortivus</i> | 87. <i>Hypocalymma longifolium</i> |
| 42. <i>Conospermum undulatum</i> | 88. <i>Kennedia glabrata</i> |
| 43. <i>Conostylis dielsii</i> subsp. <i>teres</i> | 89. <i>Kunzea acicularis</i> |
| 44. <i>Conostylis lepidospermoides</i> | 90. <i>Kunzea ericifolia</i> subsp.
<i>subulata</i> |
| 45. <i>Conostylis micrantha</i> | 91. <i>Laxmannia grandiflora</i>
subsp. <i>brendae</i> |
| 46. <i>Conostylis misera</i> | 92. <i>Lechenaultia laricina</i> |
| 47. <i>Conostylis rogeri</i> | 93. <i>Lepidium aschersonii</i> |
| 48. <i>Darwinia chapmaniana</i> | 94. <i>Lepidosperma bungalbin</i> |
| 49. <i>Darwinia meeboldii</i> | 95. <i>Microcorys eremophiloides</i> |
| 50. <i>Darwinia squarrosa</i> | 96. <i>Microtis globula</i> |
| 51. <i>Darwinia</i> sp. Mt Heywood
(R. Davis 11066) | 97. <i>Paracaleana dixonii</i> |
| 52. <i>Daviesia elongata</i>
subsp. <i>elongata</i> | 98. <i>Paragoodia crenulata</i> |
| 53. <i>Deyeuxia drummondii</i> | 99. <i>Petrophile nivea</i> |
| 54. <i>Diuris drummondii</i> | 100. <i>Pityrodia augustensis</i> |
| | 101. <i>Ptychosema pusillum</i> |
| | 102. <i>Pultenaea pauciflora</i> |
| | 103. <i>Rhagodia acicularis</i> |
| | 104. <i>Ricinocarpos trichophorus</i> |
| | 105. <i>Roycea pycnophylloides</i> |
| | 106. <i>Spirogardnera rubescens</i> |

- | | |
|--|---|
| 107. <i>Stylidium galioides</i> | 118. <i>Thomasia glabripetala</i> |
| 108. <i>Stylidium scintillans</i> | 119. <i>Thomasia montana</i> |
| 109. <i>Tecticornia bulbosa</i> | 120. <i>Thryptomene wittweri</i> |
| 110. <i>Tetraria australiensis</i> | 121. <i>Tribonanthes purpurea</i> |
| 111. <i>Tetratheca aphylla</i> subsp.
<i>aphylla</i> | 122. <i>Verticordia carinata</i> |
| 112. <i>Tetratheca aphylla</i> subsp.
<i>megacarpa</i> | 123. <i>Verticordia crebra</i> |
| 113. <i>Tetratheca erubescens</i> | 124. <i>Verticordia fimbrialepis</i>
subsp. <i>fimbrialepis</i> |
| 114. <i>Tetratheca harperi</i> | 125. <i>Verticordia helichrysantha</i> |
| 115. <i>Tetratheca paynterae</i> subsp.
<i>cremnobata</i> | 126. <i>Verticordia staminosa</i>
subsp. <i>cylindracea</i>
var. <i>cylindracea</i> |
| 116. <i>Tetratheca spenceri</i> | 127. <i>Wurmbea calcicola</i> |
| 117. <i>Thelymitra psammophila</i> | 128. <i>Wurmbea tubulosa</i> |

Schedule 4 — Flora presumed to be extinct

[cl. 3(d)]

Spermatophyta (flowering plants, conifers and cycads)

1. *Acacia kingiana*
2. *Acacia prismifolia*
3. *Coleanthera virgata*
4. *Conospermum caeruleum* subsp. *contortum*
5. *Frankenia decurrens*
6. *Lepidium drummondii*
7. *Leptomeria dielsiana*
8. *Leucopogon cryptanthus*
9. *Myriocephalus nudus*
10. *Picris compacta*
11. *Ptilotus caespitosus*
12. *Scholtzia* sp. Bickley (W.H. Loaring s.n. PERTH 06165184)
13. *Taraxacum cygnorum*
14. *Tetratheca fasciculata*
15. *Thomasia gardneri*

STEPHEN DAWSON, Minister for Environment.

CO302

Wildlife Conservation Act 1950

Wildlife Conservation (Specially Protected Fauna) Notice 2017

Made by the Minister for Environment under section 14(4) of the Act.

1. Citation

This notice may be cited as the *Wildlife Conservation (Specially Protected Fauna) Notice 2017*.

APPENDIX 4 – CORPORATE POLICY STATEMENT NO. 3 MANAGEMENT OF *PHYTOPHTHORA* DISEASE



CORPORATE POLICY STATEMENT NO. 3

MANAGEMENT OF *PHYTOPHTHORA* DISEASE

August 2015

1. OBJECTIVE

To provide direction and guidance for managing the risk of introducing or spreading *Phytophthora* disease on *Conservation and Land Management Act 1984* land (CALM Act land) managed by the Department of Parks and Wildlife (the department).

2. SCOPE

This policy applies to activities occurring on CALM Act land, in the south-west of Western Australia (WA) within the 'vulnerable zone', which have potential to introduce and/or spread *Phytophthora* disease.

The focus of this policy is on *Phytophthora cinnamomi* as it currently remains the major disease threat to the State's unique native flora, ecosystem health and a range of associated values and benefits. However, there are a number of *Phytophthora* species currently known to occur in south-west Western Australia, some which are thought to be indigenous and others introduced. All these currently recorded *Phytophthora* species are soil-borne and are potentially plant pathogens, hence this policy provides a basis for the management of all currently known *Phytophthora* species occurring in south-west Western Australia.

This policy is the responsibility of all departmental staff engaged in planning, implementing, supervising, monitoring or reviewing disturbance activities on CALM Act land, including staff employed in specialist branches and divisions, and applies to contractors and other parties undertaking works on CALM Act land in the vulnerable zone.

3. CONTEXT

There are a number of known vectors associated with the spread of *Phytophthora*. These include various human caused disturbance activities, both planned and unplanned, vehicle use and the activity of native and introduced fauna. Some of these vectors are more amenable to management intervention than others. Management measures may differ for different areas, circumstances and *Phytophthora* species, depending upon the potential impacts and feasibility of controlling introduction and spread. Given resource limitations, the department will prioritise its management efforts.

Further background information is given in Appendix 1. Appendix 2 provides definitions of key terms.

4. LEGISLATION

The department is responsible for the administration and implementation of the *Wildlife Conservation Act 1950* and the *Conservation and Land Management Act 1984*, which together provide the primary legal basis for the conservation of biodiversity in Western Australia. Also relevant are the *Forest Management Regulations 1993* and the *Conservation and Land Management Regulations 2002*.

The department has certain statutory obligations under the *Biosecurity and Agriculture Management Act 2007* concerning biosecurity matters generally, and through part VII of the CALM Act, for the management of forest diseases (which includes *Phytophthora*).

In addition, the department seeks to cooperate with the Commonwealth Government in implementation of the national threat abatement plan for *Phytophthora cinnamomi*¹.

5. POLICY

Consistent with broader departmental objectives and priorities, and within the resources available to it, the department will:

- 5.1 determine i) 'infested' areas; ii) uninfested, 'unprotectable' areas; iii) uninfested, 'protectable' areas; and iv) Identified Protectable Areas (IPAs), which are a subset of iii);
- 5.2 minimise the *Phytophthora* disease risk for planned disturbance and other known human activities, particularly in IPAs on CALM Act land;
- 5.3 protect, maintain or restore key environmental and other assets/values, in 'infested' and uninfested 'unprotectable' areas on CALM Act land;
- 5.4 integrate and coordinate control activities and develop partnerships with other landholders and key stakeholders where there are management benefits;
- 5.5 revise approaches to continuously improve compliance with *Phytophthora* disease management requirements on CALM Act land;
- 5.6 monitor and review its *Phytophthora* disease management effectiveness; and
- 5.7 contribute to raising community and stakeholder awareness of the threat posed by *Phytophthora* disease, and appropriate risk management strategies.

6. STANDARDS

The department maintains a range of subsidiary documents which cover related operational procedures, including:

- Guidelines for Management of *Phytophthora cinnamomi* and disease caused by it – Vol. 1.
- Manual for detecting and mapping *Phytophthora* dieback disease (Procedures for CALM Act land).

¹ Department of the Environment (2014) "Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi*".

7. POLICY IMPLEMENTATION STRATEGIES

The department will endeavour to:

7.1 Identify protectable areas and/or high priority biodiversity assets at risk

- develop, review and apply protocols, informed by operational and research knowledge, for determining IPAs, and key environmental and other assets/values in 'infested' and uninfested 'unprotectable' areas.
- maintain surveillance and mapping/recording systems for monitoring *Phytophthora* disease status.
- develop, review and apply a range of mechanisms for the protection of IPAs in the vulnerable zone.

7.2 *Phytophthora* disease risk management

- maintain and review protocols, informed by operational and research knowledge, to guide land managers in managing uninfested 'protectable' areas and in prioritising the allocation of available resources.
- review and apply a *Phytophthora* disease risk assessment process for planned disturbance activities, consistent with Policy 56 (Risk Management), and as required, prepare and implement Hygiene Management Plans.
- as appropriate, contribute to the development and review of non-departmental guidelines for growing of seedlings and other activities, to minimise the risk of introduction and spread of *Phytophthora* disease.
- where feasible, implement measures to protect, maintain or restore key environmental and other assets/values, located within 'infested' and uninfested 'unprotectable' areas, including for example;
 - recovery or re-introduction of populations of threatened flora that are susceptible to *Phytophthora* disease,
 - *ex situ* conservation of species and genetic resources that are susceptible to *Phytophthora* disease,
 - application of repeated treatments of phosphite to maintain populations of threatened flora or ecological communities that are susceptible to *Phytophthora* disease, and
 - identification and protection of individuals and populations of native flora that show resistance to *Phytophthora* disease.

7.3 Training and registration

- develop, review and facilitate delivery of awareness-raising and training in *Phytophthora* disease mapping and management (in conjunction with others as appropriate) to departmental staff and others as required.
- develop, review and facilitate a process for registering personnel in *Phytophthora* disease mapping and management.
- require personnel responsible for *Phytophthora* disease mapping and management, on CALM Act land, to be trained and registered to carry out such tasks.
- maintain a cadre of registered *Phytophthora* disease interpreters.

7.4 Accountability

- monitor Hygiene Management Plan preparation and implementation to identify issues which require follow-up action.
- review and implement appropriate responses to non-conformance that are proportionate to the risk posed and which are consistent with an overall department approach to compliance issues.

7.5 Expertise and research

- maintain capability for plant disease detection and diagnosis.
- review and implement priority research programs that inform *Phytophthora* disease detection and management, and maintain links with other relevant research organisations.

7.6 Consultation

- liaise with other agencies, landholders and key stakeholders, including Aboriginal groups, to develop, integrate and coordinate management procedures and activities to minimise *Phytophthora* disease risk.
- cooperate with other relevant agencies to ensure requirements for notification of *Phytophthora* diseases are met, and as appropriate, participate in containment efforts.
- liaise with relevant agencies and stakeholders to facilitate knowledge transfer, awareness raising and capacity building, for managing *Phytophthora* disease risk.

7.7 Improving performance

- in conjunction with relevant agencies and key stakeholders, review the effectiveness and applicability of *Phytophthora* disease management strategies.

8. CUSTODIAN

The Director Forest and Ecosystem Management is accountable for the recording, storage, review and dissemination of this policy statement.

Responsibility for *Phytophthora* dieback awareness-raising, training and the preparation of manuals and guidance notes rests with the Director Forest and Ecosystem Management, with assistance from Corporate Services Division.

Responsibility for the implementation of this policy across the department's regional operations rests with the Director Regional and Fire Management Services.

The Director Forest and Ecosystem Management may establish groups involving representatives from relevant departmental divisions and others as required, to coordinate related activities, including implementation and review of this policy and related guidelines.

9. PUBLICATION

This policy will be made available on the department's website and intranet.

10. KEY WORDS

Phytophthora, dieback, disease, disease management, protectable areas, hygiene, identified protectable areas, risk management, unprotectable, uninfested, infested.

11. REVIEW

This policy will be reviewed no later than 31 January 2019.

12. DIRECTOR GENERAL APPROVAL

Approved by



Jim Sharp
DIRECTOR GENERAL

Effective date: 20 August 2015

POLICY BACKGROUND

1. INTRODUCTION

At least 32 distinct species of *Phytophthora* occur at various places in native plant communities of Western Australia, and about another 10 species have been found only in agriculture and horticulture. Whilst the potential importance and the level of threat posed to biodiversity and other values by many of them still requires further investigation, *P. cinnamomi* currently represents the greatest ongoing threat to biodiversity conservation of the *Phytophthora* species known to be present. This policy therefore concentrates on *P. cinnamomi*, although the threat posed by other *Phytophthora* species is considered through the risk assessment process.

2. THE PATHOGEN *PHYTOPHTHORA CINNAMOMI* AND DISEASE CAUSED BY IT IN NATIVE VEGETATION

The introduced soil-borne water mould *P. cinnamomi* is known for its capacity to invade and destroy the function of the root systems of a wide range of Western Australia's native plants. This slow moving epidemic of root disease in native vegetation in Australia is known as "*Phytophthora* dieback". Its impact varies across the landscape, but almost always it results in the permanent loss from infested sites of one or more susceptible species. At worst, mass collapse of ecosystems occurs along with significant disruption to important ecological processes. Consequently, a range of environmental and socio-economic values and benefits can be affected.

It has been estimated through glasshouse trials and field observations that about half of the State's threatened flora species are susceptible to *P. cinnamomi*. In some cases the only known wild populations of susceptible threatened flora and locations of some threatened ecological communities have been invaded by *P. cinnamomi*. Approximately 40 per cent of the entire flora of the South West Botanical Province is susceptible.

In Western Australia, *P. cinnamomi* will continue its autonomous spread from all its established disease fronts through root to root growth amongst host plants, spread of oospores in soil, and through the dispersal of zoospores in free flowing water (unless impermeable barriers are introduced).

Assisted movement of infested soil or infected root material by native animals, feral animals, and people (including their vehicles and machinery) are major contributors to disease spread. Of these, activities of people are the most amenable to some form of management control.

The most important means of limiting the impact of *P. cinnamomi* is through direct management action to reduce the incidence of human (and related vehicle) transport into uninfested areas. This can be achieved by limiting the construction of new infrastructure within uninfested areas, closing and rehabilitating unnecessary infrastructure within uninfested areas, through the application of rigorous hygiene regimes that minimise the risk of disease introduction and spread, and by ensuring that only people who have a valid reason are able to enter uninfested areas. Effective management action depends upon the prior analysis of the likely presence or absence of *P. cinnamomi* and accurate demarcation of disease boundaries.

While this policy relates primarily to *P. cinnamomi* and planned disturbance operations on CALM Act public lands, such as construction of roads and other infrastructure, mining, timber harvesting and fire management, many of these lands are also subject

to ongoing access by the wider public. This includes persons engaged in Aboriginal customary and cultural activities, scientific study, tourism, sightseeing, and accessing various sites for recreation activities such as fishing, surfing and camping, driving off-road vehicles, cycling and bushwalking. Each of these forms of access has inherent risks of introduction and/or movement of *Phytophthora* dieback. Furthermore, as *Phytophthora* can be transported in both surface and sub-surface water, via root to root contact and by the movement of infested soil by native and introduced animals, activities near to CALM Act land can pose risks of introduction onto these areas and other lands with high biodiversity value. On CALM Act land, disease risk areas were introduced soon after the confirmation in the mid-1900s of the link between *P. cinnamomi* and deaths of patches of forest, in an effort to control access and limit the spread of dieback disease.

Detailed scientific studies over the past 20 years, primarily in Western Australia, have demonstrated that control of *P. cinnamomi* and the disease it causes is possible for some small areas through repeat application of the chemical phosphite. Careful application of phosphite can sometimes be used to increase the resistance of some susceptible flora and threatened ecological communities, and to slow the spread of the pathogen by limiting host to host transfer.

Eradication trials of *P. cinnamomi* have been undertaken in infestations in Western Australia and Tasmania. These trials involved the destruction of virtually all flora in the infested areas, but have demonstrated that eradication from small spot infestations is possible, although costly. This also demonstrates the importance of prompt and adequate testing of suspected *Phytophthora* infestations, and early intervention to control them. The department and other organisations are pursuing further eradication trials, and exploring options for sterilisation of infested basic raw materials (e.g. gravel). Restoration of areas that have suffered serious environmental damage through the introduction of *P. cinnamomi* is currently restricted to very small areas, given the significant resources required and limitations in technology.

In the case of threatened flora that is susceptible to and threatened by *Phytophthora*, conservation actions can include: translocations, collection and *ex situ* storage of germplasm for the purpose of maintaining gene pools and subsequent reintroductions, investigations into field establishment methods for the species collected, and the development of seed orchards to ensure sufficient seed is available for translocations into *Phytophthora*-free areas.

GLOSSARY

“Registered” means: a person officially recognised by the department or department-endorsed registered training organisation or other entity, as being able to undertake specified tasks to an acceptable standard.

“Hygiene” means: the set of practices to be followed to maintain native vegetation health in terms of protection from human and vehicle vectored spread of soil-borne *Phytophthora* species.

“Identified Protectable Area” means: a ‘Protectable area’ identified by the department as a focus for *Phytophthora* disease management. IPAs may be assigned priority for management by the Department.

“Infested area” means: an area that a registered person has determined has plant disease symptoms that indicate the presence of a *Phytophthora* species, and has had this interpretation supported by sampling and positive testing².

“Phytophthora disease” means: for the purposes of this policy, principally *P. cinnamomi*, although the policy provides a basis for the management of all currently known *Phytophthora* species occurring in south-west Western Australia.

“Protectable area” means: an area defined by the department, including areas of high conservation and/or socio-economic value (e.g. a small uninfested area which contains a known population of a susceptible species of threatened flora) within the vulnerable zone, that is:

- situated in zones receiving greater than 600 mm per annum average rainfall, or is water gaining (e.g. granite outcrops, impeded drainage or engineering works which aggregate rainfall) and occurring below 600 mm per annum average rainfall; and,
- determined to be free of *Phytophthora* disease by a registered Disease Interpreter; and,
- positioned in the landscape and of sufficient size (e.g. greater than 4 hectares with axis greater than 100 metres) such that a registered Disease Interpreter judges that *Phytophthora* disease will not autonomously infest it, in the short term (a period of up to several decades); and,
- where human vectors are controllable (e.g. not an open road or private property).

“Risk” means: the effect of uncertainty on objectives.

“Risk management” means: the application of measures to avoid, minimise, monitor or control unacceptable risks.

“Susceptible” means: potentially influenced or harmed by *P. cinnamomi*, and potentially, other *Phytophthora* species.

“Threat” means: an indication that serious or irreversible environmental damage may occur (e.g. a process is defined as a threatening process if it threatens or may threaten the survival, abundance or evolutionary development of a native species or ecological community, or other priority values/assets).

² Note a recently infested site may not yet have any plants displaying outwardly-visible disease symptoms.

“Uninfested” means: an area that a registered Disease Interpreter has determined may be free of plant disease symptoms that indicate the presence of the pathogen *Phytophthora cinnamomi*.

“Vulnerable zone” means: that part of the South West Land Division and the areas adjoining it to the north-west and the south-east in which susceptible native plants occur in conjunction with the environmental factors required for *Phytophthora* pathogens to establish and persist. Historically, the vulnerable zone was largely confined to areas that received mean annual rainfall (historic) greater than 400mm.

APPENDIX 5 – APPLICATION FORM FOR COMMERCIAL PURPOSES LICENCE

DRAFT

Application for a Commercial Purposes Licence

To take protected (native) flora from Crown land for commercial purposes

Completed forms should be returned to: Department of Parks and Wildlife Locked Bag 30 Bentley Delivery Centre WA 6983 Or faxed to (08) 9334 0242 or emailed.	Further information on the licensing requirements is available from DPaW Wildlife Licensing Section Phone: (08) 9219 9836 Email: wildlifelicencing@dpaw.wa.gov.au
--	--

Commercial purposes licences are issued for a maximum **1-year period**, with a **\$125 fee (from 1 January 2017)**.

Please allow **ten (10) working days** to process complete and correct applications.

Please note that renewal of a licence is dependent on satisfactory completion and submission of **flora returns**.

Applicant:

Surname Dr/Mr/Mrs/Miss/Ms			Other names		
Address (residential)					
			Postcode		
Address (postal)					
			Postcode		
Day time Telephone			Business Name (if applicable)		
Date of birth	/ /		Previous Licence No.: CP0.....	Expiry Date: / /	

Land to which application relates (Write all lands that you intend to take from):

Non-DPaW managed lands (Note: Proof of permission to pick on land is required from at least one land manager-see Proforma letter page):

Name of Local Government Authority (e.g. Shire, City, Town)	Location of Crown Land: (e.g. Reserve or Location No., name of Pastoral Station, or Reserve name)	Land Manager (Government Authority that manages the land)

DPaW managed lands (Wildlife Licensing will seek pre-approvals on the applicant's behalf):

State Forest or Unallocated Crown Land (UCL)?	Name of Forest Block (for State Forest) or Description of location of UCL	DPaW District

Proforma letter (for Crown land managers) to authorise other persons to harvest and sell protected flora from land stated below, and apply for a licence issued under the *Wildlife Conservation Act 1950* to do so

Land's managing authority details:

Name of the land's managing authority (e.g. Shire of Mundaring):

Name of representative for the land's managing authority:

Title of position held with the land's managing authority:

Postal address of the land's managing authority:

.....

.....

Contact telephone number for the land's managing authority:

Land permission details:

Please be advised that as an approved agent for the managing authority for this land:

Property name:

Lot/Location No(s)/ Reserve No(s):

Local Authority:

I give permission for (print name of applicant) of

..... (print address) to harvest and sell the following

species of protected flora from this land as listed above.

Flora species to which this authorisation applies: Either tick the 'All species' box, list the species in the space provided, or tick the 'List attached' box and attach and sign a list:

☐ All species OR ☐ List attached OR

.....

.....

Period for which this authorisation applies: Either tick the '12 months from date of issue' box, or state a time period (**Note:** Permissions can only be granted for a maximum of 12 months):

☐ 12 months from date of issue OR/...../20.... to/...../20....

Special conditions that apply to this authorisation (e.g. area, methods, use of facilities):

.....

.....

Signed

Name (Print):

Date/...../20.....

This proforma may be photocopied to allow for attaching multiple permissions for multiple Crown lands.

APPENDIX 6 - APPLICATION FORM FOR COMMERCIAL PRODUCER'S NURSERYMAN'S LICENCE



Application for a Commercial Producer's Licence

To sell protected (native) flora taken from, or grown and cultivated on, private property

Completed forms should be returned to: Department of Parks and Wildlife Locked Bag 30 Bentley Delivery Centre WA 6983 Or faxed to (08) 9334 0242 or emailed.	Further information on the licensing requirements is available from DPaW Wildlife Licensing Section Phone: (08) 9219 9836 Email: wildlifelicensing@dpaw.wa.gov.au
--	---

COMMERCIAL PRODUCER'S (PN) LICENCES ARE ISSUED FOR A MAXIMUM **1-YEAR PERIOD**, WITH A **\$25 FEE**.

PLEASE ALLOW APPROXIMATELY **TEN (10) WORKING DAYS** TO PROCESS COMPLETE AND CORRECT APPLICATIONS.

PLEASE NOTE THAT RENEWAL OF A LICENCE IS DEPENDENT ON SATISFACTORY COMPLETION AND SUBMISSION OF **FLORA RETURNS**.

Applicant:

Surname Dr/Mr/Mrs/Miss/Ms		Other names	
Address (residential)			
		Postcode	
Address (postal)			
		Postcode	
Day time Telephone		Email address	
Business Name (if applicable)			
Date of birth	/ /	Previous Licence No.: PN0.....	Expiry Date: / /

Land to which application relates (Note: A letter of permission from **ALL** of the land owners is required to pick on lands other than your own - see Proforma letter page):

Name of Local Government Authority (e.g. Shire, City)	Street Address (eg. Avon Loc 123, Flora Road, Floraville)	Property Name (if applicable)	Owner or Occupier

Flora to which application relates

☐ Seed/Stems (circle your selection) of all flora, except Declared Rare Flora and Priority flora taken from Natural (P)/Cultivated (A) (circle your selection) stands.

OR

Scientific Name (e.g. <i>Banksia prionotes</i>)	Common Name (if any)	Parts to be taken (e.g. Flowering Stems, Fruits/Nuts, Seeds, Leaves, Cuttings)	Natural (P) or Cultivated (A)

OR

☐ List attached. (The list must contain the same fields as the above example)

Note 1: for the sale of **Sandalwood** (*Santalum spicatum*) wood taken from private land, a valid Sandalwood Act Licence is required

Note 2: for the sale of **major forest products** (log timber), please see "Application for a Commercial Producer's Licence - Timber"

Note 3: for the sale of **whole plants**, please see "Application for a Commercial Producer's Licence - whole plants"

/ /

Signature of Applicant

Date

Payment (Please select one of the following payment methods):

- ☐ Cheque enclosed
- ☐ Money order enclosed
- ☐ Payment made at DPaW office (refer to 'Office Use Only' section below)
- ☐ Credit Card (complete 'Credit Card Payment' section below)

No responsibility will be taken for cash payments sent via mail.

Credit Card Payment (VISA & MASTERCARD ONLY) ****Please print clearly****

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Name of Cardholder: _____

Expiry Date: ____/____

Signature of Cardholder: _____

Proforma letter (for a private property owner/occupier) to authorise other persons to harvest and sell protected flora from land stated below, and apply for a licence issued under the *Wildlife Conservation Act 1950* to do so.

Land owner/occupier details:

Name of the land owner/occupier (delete whichever does not apply):

Postal address of the land owner/occupier:
.....
.....

Contact telephone number for the land owner/occupier:

Land permission details:

Please be advised that as the owner/occupier (delete whichever does not apply) of the property:

Property name:

Lot/Location No(s) or Street Address:

Local Government Authority:

I give permission for (print name of applicant) of
..... (print address) to harvest and sell the
following species of protected flora from my property as listed above.

Flora species to which this authorisation applies: Either tick the 'All species' box, list the species in the space provided, or tick the 'List attached' box and attach and sign a list:

☐ All species OR ☐ List attached OR
.....
.....

Period for which this authorisation applies: Either tick the '12 months from date of issue' box, or state a time period (**Note:** Permissions can only be granted for a maximum of 12 months):

☐ 12 months from date of issue OR /...../20.... to/...../20....

Special conditions that apply to this authorisation (e.g. area, methods, use of facilities):

.....
.....

Signed

Name(Print):

Date/...../20.....

This proforma may be photocopied to allow for attaching multiple permissions for multiple private properties.

APPENDIX 7 – STANDARD LICENCE CONDITIONS APPLYING TO A COMMERCIAL PURPOSES LICENCE

DRAFT

COMMERCIAL PURPOSES LICENCE CONDITIONS

WILDLIFE CONSERVATION ACT 1950. SECTION 23C(1)(a)

COMMERCIAL PURPOSES LICENCE

CONDITIONS

- 1 The licensee shall comply with the provisions of the Wildlife Conservation Act and regulations and any notices in force under this Act and Regulations.
- 2 This licence DOES NOT authorise the taking from any lands those species of flora declared as rare flora pursuant to Section 23F of the Wildlife Conservation Act.
- 3 The licensee shall, on a form approved by the Director General, furnish to the Director General, Department of Environment and Conservation, a return of all protected flora taken under this licence for each calendar month. Flora returns shall be forwarded so as to be received no later than the 15th day of the month following the period for which the return form is applicable.
- 4 No protected flora shall be taken by the licensee in such a manner which destroys or jeopardises the survival of the plant, population or associated vegetation, or in the case of annual flora, in such a manner that jeopardises the survival of the population and associated vegetation.
- 5 The licensee shall not take whole plants, or roots of plants, unless authorised to do so in writing by the Director General of Environment and Conservation.
- 6 Further standard conditions are attached which form part of this licence – do not detach.

WILDLIFE CONSERVATION ACT 1950. SECTION 23C(1)(a)

COMMERCIAL PURPOSES LICENCE

FURTHER CONDITIONS RELATING TO COMMERCIAL PURPOSES LICENCE

(Condition numbers 9 to 22)

9 This licence does not authorise the taking of those species on The Department of Environment and Conservation's Priority Flora List, unless further conditions added to this licence expressly authorise the taking (**see For Your Information item (c) for more details**).

10 This licence does not authorise the taking of the following species:

<i>Andersonia caerulea</i> (Purple Heath)	<i>Macropidia fuliginosa</i> (Black Kangaroo Paw)
<i>Banksia baxteri</i> (Baxter's Banksia)	<i>Melaleuca viminea</i> (Tea Tree; when taken as sticks, stakes or similar woody products)
<i>Banksia coccinea</i> (Scarlet Banksia)	Species of the family <i>Orchidaceae</i> (Native Orchids)
<i>Boronia heterophylla</i> (Pink or Red Boronia)	<i>Reedia spathacea</i>
<i>Cephalotus follicularis</i> (Albany Pitcher Plant)	<i>Santalum spicatum</i> (Sandalwood; except Sandalwood seed taken for the purpose of propagation)
<i>Corynanthera flava</i> (Golden Cascades)	<i>Verticordia eriocephala</i> (Cauliflower Bush, Brownii, except seed taken for the purpose of propagation).
<i>Banksia</i> (previously <i>Dryandra</i>) <i>formosa</i>	
<i>Eucalyptus macrocarpa</i> (Mottlecah)	
<i>Kunzea ericifolia</i> and <i>K. glabrescens</i> (Spearwood, Tea Tree; when taken as sticks, stakes or similar woody products)	
<i>Meeboldina scariosa</i> formally <i>Leptocarpus scariosus</i> (velvet rush or seeded rush)	

- 11 This licence does not authorise the taking of the flora listed below unless further conditions (special endorsement) are added to this licence which expressly authorise the taking of:
- whole plants (live or dead) of grass trees (*Xanthorrhoea* and *Kingia* species), boabs (*Adansonia gregorii*), fan palms (*Livistona* species), pineapple bush (*Dasypogon hookeri*) and zamia palms (*Zamiaceae*);
 - Banksia hookeriana*, *Boronia megastigma* and *Daviesia oppositifolia*;
 - Agonis*, *Kunzea*, *Leptospermum*, *Melaleuca* (tea tree) and *Eucalyptus* species, taken for garden sticks, beansticks, craypot sticks, tomato rails or similar woody products;
 - the bark of paperbark tree (*Melaleuca* species);
 - seeds, fruits or nuts of boabs (*Adansonia gregorii*), Sandalwood (*Santalum spicatum*) taken for the purpose of propagation, and fan palms (*Livistona* species);
 - craftwood, including woody fruits such as banksia cones (*Banksia* species), and stems and branches, such as snakewood (*Acacia xiphophylla*) or mallee (*Eucalyptus* species), including material taken for didgeridoo production; and.
 - burls or woody outgrowths on *Eucalyptus* or any other species.
- 12
- The licensee must carry this licence and any other written permission which is required under condition 14 and 15, whenever engaged in activities related to the picking, transport or sale of protected flora.
 - Whenever engaged in activities related to the picking, transport or sale of protected flora, the licensee must produce this licence and any written permission which is required under condition 14 and 15, when requested to do so by:
 - a Wildlife Officer or any person appointed by the body or authority which has the care or control of the Crown land;
 - or
 - holders of pastoral leases in respect of Crown land,from which protected flora is intended to be taken or is taken.

- 13 The licensee must ascertain the agency, body or person which is responsible for the care, control or management of any land from which the licensee intends to take protected flora.
- 14 Before commencing any picking activities on vested and managed Crown Reserves and lands, the licensee must obtain the written permission from the agency, body or person which is responsible for the care, control or management of the land. These include but are not limited to pastoral leases, Shire Reserves, Water Reserves and Catchment areas and public roads dedicated under the Local Government Act and/or Main Roads Act.
- 15 Before commencing any picking activities on land managed by the Department of Environment and Conservation, including State forest and timber reserves, or other unallocated Crown land and unmanaged reserves which the Department manages in relation to the flora industry, the licensee must contact the relevant District office in the District where the land is located and obtain the written permission (endorsement) as required by the District office **(refer to ‘For Your Information’ item (j) for managed areas)**.
- 16 The licensee must not take any protected flora from any Crown land reserved as a Nature Reserve, National Park, Conservation Park, Marine Park, Marine Nature Reserve, or otherwise reserved for the purposes of conservation of flora or fauna or both flora and fauna.
- 17 This licence does not apply to any area of unallocated Crown land or unvested Crown reserve to which a management plan applies that precludes the taking of protected flora.
- 18 The licensee shall only use existing tracks, and shall not extend or cut or make new tracks by any means. For the purposes of condition 18, ‘existing tracks’ do not include:
 - a) tracks that are being revegetated or are revegetating naturally; or
 - b) scrub-rolled seismic lines, which have been created for the purposes of exploration, such that the passage of a vehicle along the tracks will result in damage to the vegetation on the surface of the tracks.
- 19 The licensee must take all necessary precautions to avoid the spread of *Phytophthora* dieback disease whilst undertaking activities related to the taking of protected flora.
- 20 The licensee must remove any materials introduced to a picking site, and leave the site in a state similar to as would be found under natural conditions, or as prior to picking. Stripped leaves and other plant material taken at the site may be left distributed over the site, but may not be left in discernible heaps, nor distributed to other sites.
- 21 When reasonable and practicable, the licensee, when called upon to do so, shall show any Wildlife Officer or Conservation and Land Management Officer the areas from which the protected flora in his/her possession was taken under this licence.
- 22 Voucher specimens sufficient for the identification of flora taken under the authority of this licence shall be furnished by the licensee to the Director General of the Department of Environment and Conservation when required to do so.

FOR YOUR INFORMATION

Licensees are urged to become acquainted with Sections 23C, 23E and 23F of the Wildlife Conservation Act.

The licensee shall note that:

- (a) Classes of flora protected throughout the State and subject to this licence include all Spermatophyta (flowering plants, conifers and cycads), Pteridophyta (ferns and fern allies), Bryophyta (mosses and liverworts) and Thallophyta (algae, fungi and lichens).
- (b) For information on precautions to be taken to avoid the spread of *Phytophthora* dieback disease, contact the Department of Environment and Conservation.
- (c) The Priority Flora List is available from the Department of Environment and Conservation. Species potentially utilised by the flora industry, but which are on the Priority Flora List include *Aotus carinata*, *Banksia meisneri* var. *ascendens*, *Calothamnus rupestris*, *Banksia* (previously *Dryandra*) *polycephala*, *Banksia* (previously *Dryandra*) *serra*, *Eucalyptus caesia*, *Eucalyptus kruseana*, *Livistona alfredii* and *Verticordia muelleriana*, and varieties of *Verticordia densiflora*, *Verticordia plumosa* and *Verticordia serrata*. Endorsement to take Priority Flora, through the addition of a further condition to this licence, will only be given where it can be demonstrated that there are benefits to flora conservation and no detrimental impact on the species.
- (d) It is the responsibility of the licensee to know the name of the flora being harvested prior to the taking of the flora under this licence.
- (e) Approval to export flora taken under this licence is required under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act is administered by the Department of Environment, Water, Heritage and the Arts, Canberra. Approval may only be granted if:
 - the flora is listed in the Export Flora List associated with the WA Flora Management Plan approved under the EPBC Act (except for test exports which must have specific approval);
 - the flora has been taken in accordance with the WA Flora Management Plan; and
 - it can be demonstrated that the flora has been taken in a manner that does not threaten the survival of the species or its habitat.
- (f) Under the EPBC Act, a person must not take an action that has, will have or is likely to have a significant impact on any matter of National Environmental Significance without approval from the Commonwealth Environment Minister. Nationally listed threatened species and ecological communities are a matter of National Environmental Significance, and it should be **noted that such** species may not be the same as those listed as "Rare Flora" under the WA *Wildlife Conservation Act 1950*. Any significant impact on a matter of National Environmental Significance needs to be referred to the Department of Environment, Water, Heritage and the Arts, which administers the EPBC Act. The list of EPBC-listed threatened species and ecological communities, as well as guidelines on referring actions, can be obtained from the Department of Environment, Water, Heritage and the Arts at www.environment.gov.au.

- (g) Research into flora harvesting has shown that for the species studied, no more than 20% of flowers/stems/seed on a plant should be harvested, so that the plant is able to set sufficient seed for regeneration of the population. This maximum level of harvest should be used as a guide for complying with condition 4.
- (h) The following Government agencies have advised the Department of Environment and Conservation that they will not normally give permission for the taking of protected flora for commercial purposes from reserves or other lands under their control:
- Main Roads WA;
Westrail; and
Department for Planning and Infrastructure.

- (i) The following local government authorities have advised the Department of Environment and Conservation that they will not normally give permission for the taking of protected flora for commercial purposes from any road reserve, Shire reserve or any other reserve or land owned or under their control:

Albany, Armadale, Beverley, Boyup Brook, Brookton, Broomehill, Bruce Rock, Carnamah, Chapman Valley, Collie, Coorow, Cranbrook, Dalwallinu, Dandaragan, Dardanup, Denmark, Derby/West Kimberley, Dowerin, Dundas, Geraldton, Gingin, Goomalling, Gnowangerup, Harvey, Kalamunda, Katanning, Kellerberrin, Kojonup, Koorda, Kulin, Kwinana, Meekatharra, Merredin, Mingenew, Moora, Morawa, Mt Magnet, Mt Marshall, Mukinbudin, Mullewa, Mundaring, Murchison, Narembeen, Northampton, Plantagenet, Quairading, Ravensthorpe, Rockingham, Roebourne, Serpentine-Jarrahdale, Shark Bay, Swan, Tambellup, Tammin, Three Springs, Trayning, Upper Gascoyne, Victoria Plains, Wagin, Wandering, Westonia, Williams, Wongan-Ballidu, Woodanilling, Wyalkatchem, and Yalgoo.

Please note that the licensee must still obtain the written permission for picking on lands controlled by any local government authority.

- (j) Crown land areas that have had their management in relation to flora harvesting devolved to the Department of Environment and Conservation, include:
- Kent River Water Catchment (Reserve No. 29660)
Denmark River Water Catchment (Reserve No. 24660)
Waychinicup River Water Catchment Reserve (Reserve No. 29883)
Unallocated Crown land and unmanaged reserves in many of the Department's Districts, including Swan Coastal, Donnelly and Frankland Districts.
- Pastoral leases purchased by the Department for the purpose of conservation, but which may currently be held as unallocated Crown land.**

Contact your local Department of Environment and Conservation office for further information.

- (k) If renewal of this licence is required it is the responsibility of the licensee to request such renewal one (1) month prior to the expiry date as shown on the licence. Any outstanding flora returns should be submitted prior to application for licence renewal.

APPENDIX 8 – STANDARD LICENCE CONDITIONS APPLYING TO A COMMERCIAL PRODUCER'S OR NURSERYMAN'S LICENCE

COMMERCIAL PRODUCER'S/NURSERYMAN'S LICENCE CONDITIONS

WILDLIFE CONSERVATION ACT 1950. SECTION 23D(1)(a)

COMMERCIAL PRODUCER'S/NURSERYMAN'S LICENCE

CONDITIONS

1. The licensee shall, on a form approved by the Director General, furnish to the Director General, Department of Environment and Conservation, a return of all protected flora taken under this license for each calendar month. Flora returns shall be forwarded so as to be received no later than the 15th day of the month following the period for which the return form is applicable.
2. This license must be carried by the licensee when transporting or selling protected flora, and, where the licensee is not the owner/occupier of the property, when taking protected flora from private property detailed under this license. This license must also be shown on demand to a Wildlife Officer or any other authorised DEC officer.
3. This license does not authorise the sale of plant material from the following species unless specifically endorsed: *Banksia hookeriana*, *Boronia megastigma*, *Corynanthera flava*, *Eucalyptus* species taken for didgeridoos and wood products of *Santalum spicatum* (sandalwood).
4. This license does not authorise the sale of major forest products (log timber) taken from private property for the purpose of milling.
5. Further standard conditions are attached with form part of this license – do not detach.

COMMERCIAL PRODUCER'S LICENCE

FURTHER CONDITIONS RELATING TO COMMERCIAL PRODUCER'S LICENCE

(Condition numbers 8 to 13)

GENERAL

- 8 The Licensee shall comply with the provisions of the *Wildlife Conservation Act 1950*, *Wildlife Conservation Regulations 1970*, *Sandalwood Act 1929* and the *Forest Management Regulations 1993* and any orders or other notices in force under these statutes.
- 9 This licence does not authorise the taking of any flora declared as “rare flora” under Section 23F of the *Wildlife Conservation Act 1950*.
- 10 This licence does not authorise the taking of protected flora from Crown land.
- 11 The licensee is not permitted to sell protected flora where it is taken from naturally occurring plants in such a manner which destroys or jeopardises the survival of the plant, its habitat, or the associated vegetation, unless taken in accordance with approved management guidelines that provide for the conservation of the flora.
- 12 The Licensee is not permitted to sell whole plants of those species listed on the Export Flora List appended to the management program “Management of Commercial Harvesting of Protected Flora in Western Australia”, taken under authority of this licence, unless the plants have been artificially propagated, or where they are taken as a salvage operation approved by the Department of Environment and Conservation.
- 13 Voucher specimens sufficient for the identification of protected flora sold under the authority of this licence shall, upon request, be furnished by the Licensee to the Director General, Department of Environment and Conservation.

ADDITIONAL INFORMATION TO COMMERCIAL PRODUCER'S LICENCE

FOR YOUR INFORMATION

- (a) The Licensee should become acquainted and comply with Sections 23D, 23E and 23F of the *Wildlife Conservation Act 1950*.
- (b) Classes of flora protected throughout the State include all Spermatophyta (flowering plants, conifers and cycads), Pteridophyta (ferns and fern allies), Bryophyta (mosses and liverworts) and Thallophyta (algae, fungi and lichens).
- (c) Approval to export flora taken under this licence is required under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act is administered by the Department of Environment, Water, Heritage and the Arts, Canberra. Approval may only be granted if:
 - the flora is listed in the Export Flora List associated with the WA Flora Management Plan approved under the EPBC Act (except for test exports which must have specific approval);
 - the flora has been taken in accordance with the WA Flora Management Plan; and
 - it can be demonstrated that the flora has been taken in a manner that does not threaten the survival of the species or its habitat.

No species listed as threatened under the EPBC Act or listed on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora may be exported under this licence. Such species require the approval of a separate artificial propagation program under the EPBC Act.

- (d) Under the Commonwealth EPBC Act, a person must not take an action that has, will have or is likely to have a significant impact on any matter of National Environmental Significance without approval from the Commonwealth Environment Minister. Nationally listed threatened species and ecological communities are a matter of National Environmental Significance, and it should be noted that such species may not be the same as those listed as "Rare Flora" under the WA *Wildlife Conservation Act 1950*. Any significant impact on a matter of National Environmental Significance needs to be referred to the Department of Environment, Water, Heritage and the Arts, which administers the EPBC Act. The list of EPBC-listed threatened species and ecological communities, as well as guidelines on referring actions, can be obtained from the Department of Environment, Water, Heritage and the Arts at www.environment.gov.au.
- (e) If renewal of this licence is required it is the responsibility of the Licensee to request such renewal one month prior to the expiry date shown on the licence, and to ensure that flora returns that are due have been submitted.

APPENDIX 9 – SECTION 303FO OF THE ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

DRAFT

ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

- SECT 303FO

Approved wildlife trade management plan

- (1) The export of a specimen is an export in accordance with an approved wildlife trade management plan if the specimen is, or is derived from, a specimen that was taken in accordance with a plan declared by a declaration in force under subsection (2) to be an approved wildlife trade management plan.
- (2) The Minister may, by instrument published in the *Gazette*, declare that a specified plan is an *approved wildlife trade management plan* for the purposes of this section.
- (3) The Minister must not declare a plan under subsection (2) unless the Minister is satisfied that:
 - (a) the plan is consistent with the objects of this Part; and
 - (b) there has been an assessment of the environmental impact of the activities covered by the plan, including (but not limited to) an assessment of:
 - (i) the status of the species to which the plan relates in the wild; and
 - (ii) the extent of the habitat of the species to which the plan relates; and
 - (iii) the threats to the species to which the plan relates; and
 - (iv) the impacts of the activities covered by the plan on the habitat or relevant ecosystems; and
 - (c) the plan includes management controls directed towards ensuring that the impacts of the activities covered by the plan on:
 - (i) a taxon to which the plan relates; and
 - (ii) any taxa that may be affected by activities covered by the plan; and
 - (iii) any relevant ecosystem (for example, impacts on habitat or biodiversity);are ecologically sustainable; and
 - (d) the activities covered by the plan will not be detrimental to:
 - (i) the survival of a taxon to which the plan relates; or
 - (ii) the conservation status of a taxon to which the plan relates; or
 - (iii) any relevant ecosystem (for example, detriment to habitat or biodiversity); and
 - (e) the plan includes measures:
 - (i) to mitigate and/or minimise the environmental impact of the activities covered by the plan; and
 - (ii) to monitor the environmental impact of the activities covered by the plan; and
 - (iii) to respond to changes in the environmental impact of the activities covered by the plan; and
 - (f) if the plan relates to the taking of live specimens that belong to a taxon specified in the regulations—the conditions that, under the regulations, are applicable to the welfare of the specimens are likely to be complied with; and
 - (g) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.
- (4) In deciding whether to declare a plan under subsection (2), the Minister must have regard to:
 - (a) whether legislation relating to the protection, conservation or management of the specimens to which the plan relates is in force in the State or Territory concerned; and
 - (b) whether the legislation applies throughout the State or Territory concerned; and

- (c) whether, in the opinion of the Minister, the legislation is effective.
- (5) A declaration under subsection (2) ceases to be in force at the beginning of the fifth anniversary of the day on which the declaration took effect. However, this rule does not apply if a period of less than 5 years is specified in the declaration in accordance with subsection 303FT(4).
- (6) If a declaration ceases to be in force, this Act does not prevent the Minister from making a fresh declaration under subsection (2).
- (7) A fresh declaration may be made during the 90-day period before the time when the current declaration ceases to be in force.
- (8) A fresh declaration that is made during that 90-day period takes effect immediately after the end of that period.

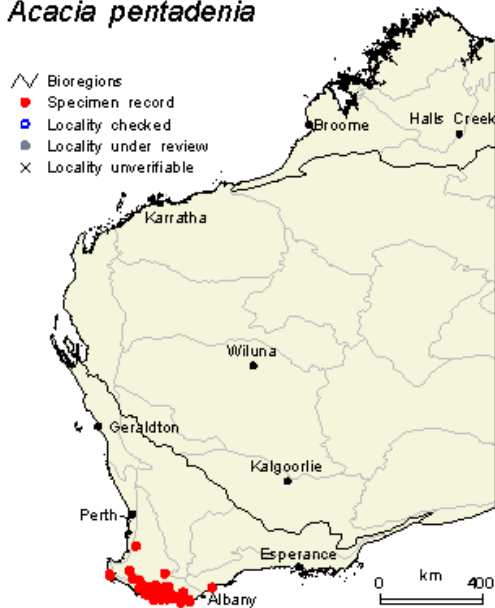
APPENDIX 10 – SPECIES INFORMATION FOR PROTECTED FLORA ON THE EXPORT FLORA LIST

Acacia pentadenia

(Karri wattle)

Family:	Mimosaceae
Plant Description:	Often slender, willowy shrub or tree 1-9 m high, usually 2-5m. Flowers are yellow to cream in colour.
Habitat:	This species is often found in swampy areas.
Flowering Time:	July-December
Part Harvested/Specifications:	Leave for foliage 80 + cm, clean leaves.
Peak Harvesting Period:	July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Acacia pentadenia



Map by Paul Gioia, WA Herbarium. Current at November 11, 2002

Acacia merinthophora

(Twisted or zigzag wattle)

Family:	Mimosaceae
Plant Description:	Openly branched, weeping shrub or tree, 1.5-4 m high. Flowers yellow.
Habitat:	Grows on white/grey or yellow sand, rocky soils. Sandplains, hillsides, low-lying areas, granite outcrops.
Flowering Time:	May-September
Part Harvested/Specifications:	Foliage stems, 80+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	This species does not occur within the area affected by <i>Phytophthora</i> .
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Acacia merinthophora

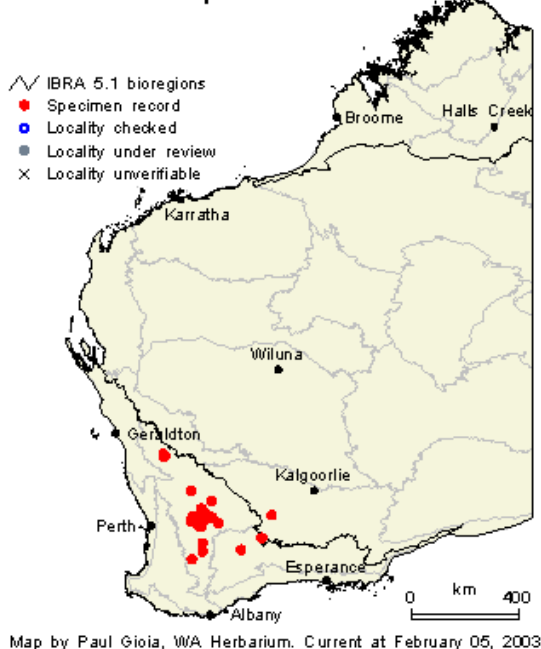


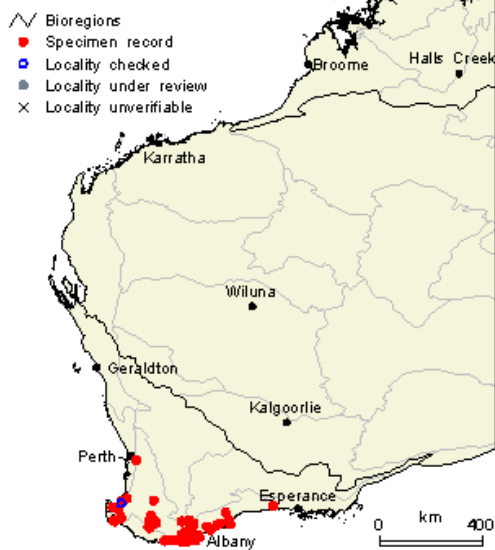
Photo by Ken Atkins

Actinodium cunninghamii

(Albany daisy, Swamp daisy)

Family:	Myrtaceae
Plant Description:	Slender shrub 0.15–1 m high with white to pink flowers.
Habitat:	Found on sandy or clay soils in winter wet depressions.
Flowering Time:	August–November
Part Harvested/Specifications:	Flowering stems, including buds, 50+ cm.
Peak Harvesting Period:	August
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Actinodium cunninghamii



Map by Paul Gioia, W.A. Herbarium. Current at November 11, 2002



Photo by Penny Hussey

There is pic on florabase!

Adansonia gregorii

(Baobab, Boab)

Family:

Bombacaceae

Plant Description:

Deciduous tree 5 – 15 m tall, trunk bottle shaped. This species is thought to live for more than 1000 years. Flowers white to cream.

Habitat:

Grows on sandy and loamy soils.

Flowering Time:

December to May

Part Harvested/Specifications:

Nuts with velvet

Peak Harvesting Period:

May-November

Conservation status:

Not threatened

Conservation issues:

Regeneration

Seed.

***Phytophthora* susceptibility**

This species does not occur within the area affected by *Phytophthora*.

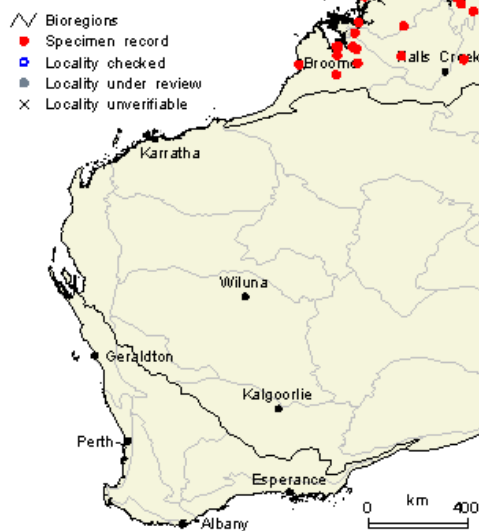
Fire

Fire may kill the plant, regeneration is by seed.

Harvesting

A maximum of 20% of nuts should be harvested in any one year to ensure sustainability.

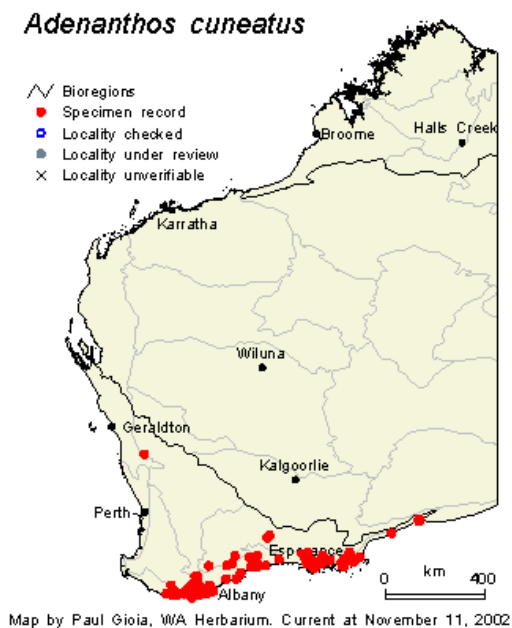
Adansonia gregorii



Adenanthos cuneatus

(Templetonia, Native temp)

Family:	Proteaceae
Plant Description:	Erect or spreading shrub, lignotuberous shrub 0.3–3 m high. Flowers red/pink.
Habitat:	Found on coastal sand dunes and sandplains.
Flowering Time:	January–December
Part Harvested/Specifications:	Foliage stems, no soft tips, 65-75+ cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

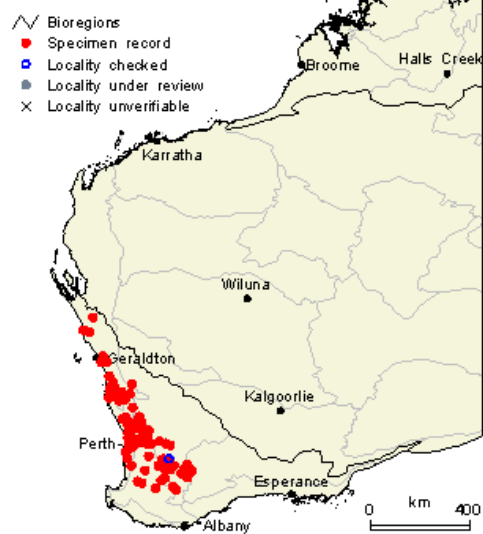


Adenanthos cygnorum

(Woolly bush)

Family:	Proteaceae
Plant Description:	Non lignotuberosus shrub to 4 m high. Flowers white, cream and pink.
Habitat:	Found on sand, clay, gravel or laterite soils.
Flowering Time:	July - January
Part Harvested/Specifications:	Foliage stems, stripped at bottom, 70+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire. Regeneration is by seed which has been transported and buried by ants.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Adenanthos cygnorum



Adenanthos obovatus

(Basket flower)

Family:	Proteaceae
Plant Description:	Erect, lignotuberosus shrub 0.3–1.5 m high. Flowers are red/orange.
Habitat:	Found on sand dunes, swamps, winter wet depressions and on hillsides.
Flowering Time:	May-December
Part Harvested/Specifications:	Foliage stems (with & without flowers), stripped at bottom, 65+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	High.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

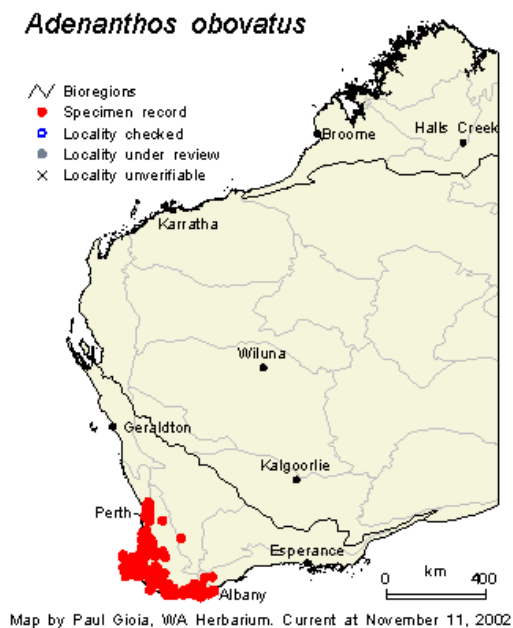


Photo by FECA

Agonis flexuosa

(Peppermint)

Family:

Myrtaceae

Plant Description:

Tree or shrub, 1–10 m tall, with white flowers.

Habitat:

Coastal dunes, granite outcrops and limestone areas.

Flowering Time:

July-December

Part Harvested/Specifications:

Flowering stems, 80+cm.

Peak Harvesting Period:

July - December

Conservation status:

Not threatened

Conservation issues:

Regeneration

Lignotuber.

***Phytophthora* susceptibility**

Appears to be susceptible.

Fire

Sprouts from lignotuber after fire.

Harvesting

Sprouts after harvesting.

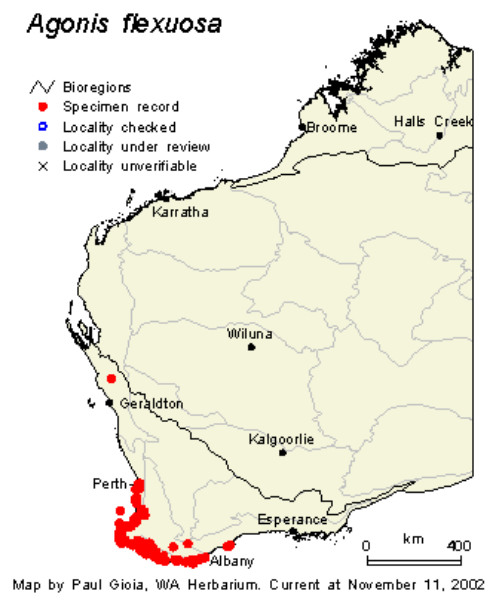


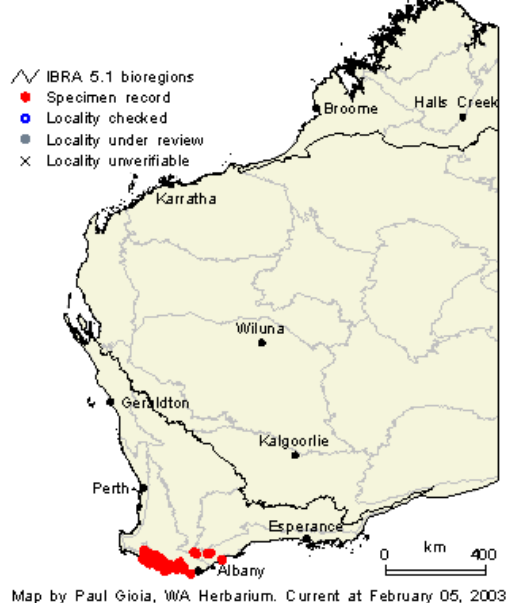
Photo by FECA

Allocasuarina decussata

(Karri Sheoak)

Family:	Casuarinaceae
Plant Description:	Monoecious tree or shrub (more rarely), to 15 m high.
Habitat:	Found on loam soils in the Karri forest.
Flowering Time:	September-November
Part Harvested/Specifications:	Stems, 70+ cm
Peak Harvesting Period:	March-June
Conservation status:	Not threatened
Conservation issues:	
Regeneration	. Lignotuber.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting

Allocasuarina decussata



Allocasuarina humilis

(Dwarf Sheoak)

Family:

Casuarinaceae

Plant Description:

Plants of this species can either be dioecious or monoecious. Erect or spreading shrub 0.2–2 m tall with red/orange/brown coloured flowers.

Habitat:

Found on sandplains and dunes.

Flowering Time:

May-November

Part Harvested/Specifications:

Stems.

Peak Harvesting Period:

May-June

Conservation status:

Not threatened

Conservation issues:

Regeneration

Lignotuber.

***Phytophthora* susceptibility**

Not known to be susceptible.

Fire

Sprouts from lignotuber after fire.

Harvesting

Sprouts after harvesting.

Allocasuarina humilis

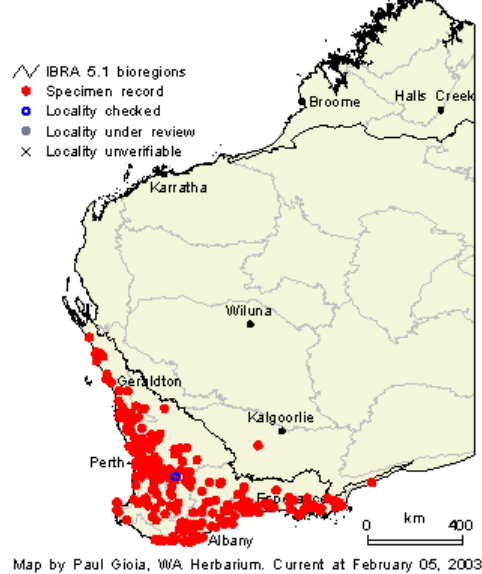


Photo by Ken Atkins/Liesl Rohl

Andersonia caerulea

(Purple heath, Foxtails)

Family:	Epacridaceae
Plant Description:	Perennial, erect or spreading to decumbent shrub, 0.5–1m high (usually 40 cm). Flowers pink, blue and white.
Habitat:	Grows in the jarrah forest on sandy soils.
Flowering Time:	January-December
Part Harvested/Specifications:	Flowering stems, 35+cm
Peak Harvesting Period:	June-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Highly.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	Several green leaves must be left below the harvest cut.

Andersonia caerulea

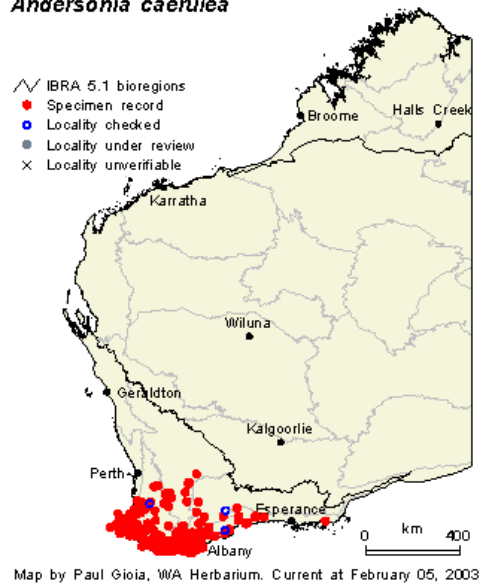


Photo by Liesl Rohl/Lawrie Anderson

Anigozanthos flavidus

(Kangaroo paw)

Family:	Haemodoraceae
Plant Description:	Rhizomatous, perennial herb 0.5–3 m high. Flowers yellow, green, brown, red.
Habitat:	Occurs mainly in drainage lines, fringing wet lands and roadside gutters.
Flowering Time:	November-January
Part Harvested/Specifications:	Flowering stems, 70+cm.
Peak Harvesting Period:	August-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears resistant.
Fire	Sprouts from rhizome after fire.
Harvesting	Leave green leaves, and several flower heads.

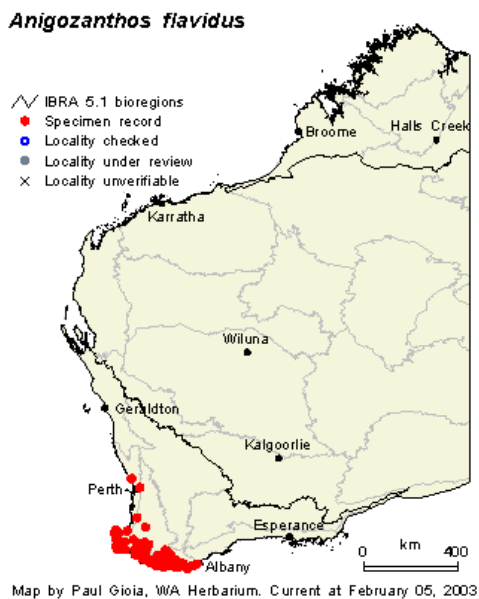


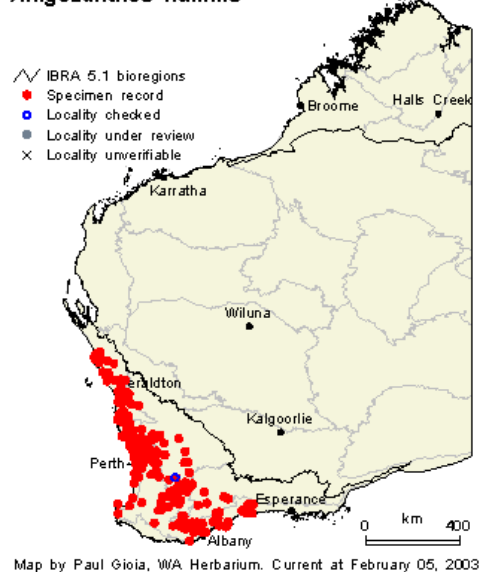
Photo by Ken Atkins

Anigozanthos humilis

(Cats paw)

Family:	Haemodoraceae
Plant Description:	Rhizomatous, perennial herb, 0.1–1 m high. Flowers yellow.
Habitat:	Occurs in winter wet swamps, creek banks, alluvial flats.
Flowering Time:	July-October
Part Harvested/Specifications:	Flowering stems, 50+cm.
Peak Harvesting Period:	September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from rhizome after fire.
Harvesting	Leave green leaves and several flower heads.

Anigozanthos humilis

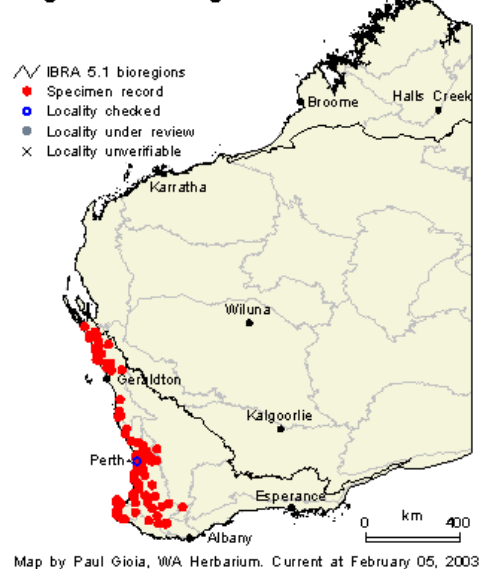


Anigozanthos manglesii

(Red & green kangaroo paw)

Family:	Haemodoraceae
Plant Description:	Rhizomatous, perennial herb, 0.2–1.1 m high. Flowers green and red.
Habitat:	Grows on sandy soils.
Flowering Time:	August–November
Part Harvested/Specifications:	Flowering stems, 60+cm.
Peak Harvesting Period:	August–November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from rhizome after fire.
Harvesting	Leave green leaves and several flower heads.

Anigozanthos manglesii



Anigozanthos pulcherrimus

(Yellow kangaroo paw)

Family:	Haemodoraceae
Plant Description:	Rhizomatous, perennial herb, 0.2–1 m high. Flowers yellow.
Habitat:	Grows on sandy seasonally wet areas.
Flowering Time:	October - December
Part Harvested/Specifications:	Flowering stems, 70+cm.
Peak Harvesting Period:	November-January
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from rhizome after fire.
Harvesting	Leave green leaves and several flower heads.

Anigozanthos pulcherrimus

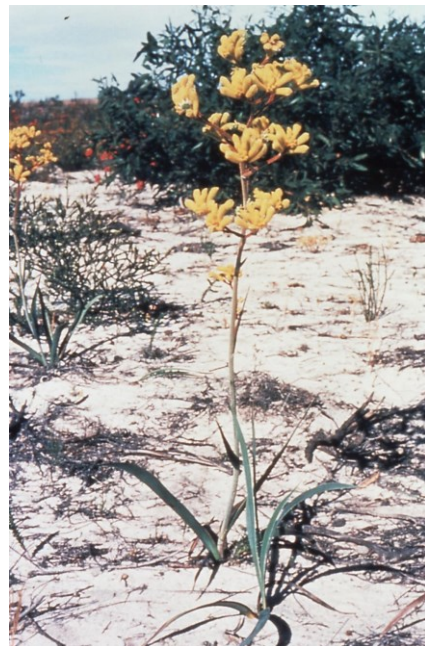
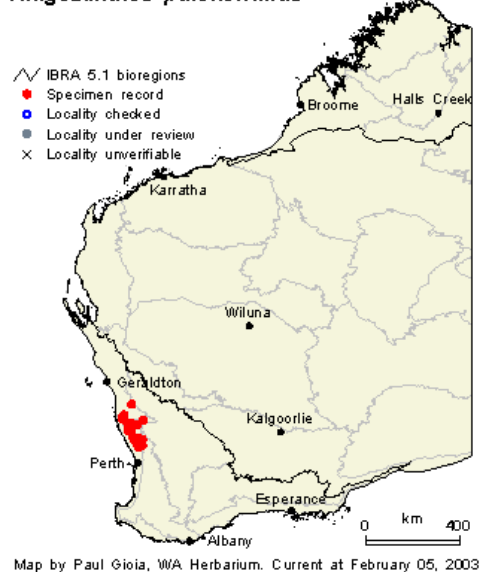


Photo by Phil Roberts

***Anigozanthos rufus*.**

(Rufous/red kangaroo paw)

Family:	Haemodoraceae
Plant Description:	Rhizomatous, perennial herb 0.2–1 m high. Flowers red, purple, yellow.
Habitat:	Found in sandy seasonally wet areas.
Flowering Time:	August-January
Part Harvested/Specifications:	Flowering stems, 70+cm.
Peak Harvesting Period:	September-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed and rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Germinates from seed and sprouts from rhizome after fire.
Harvesting	Leave green leaves and several flower heads.

Anigozanthos rufus

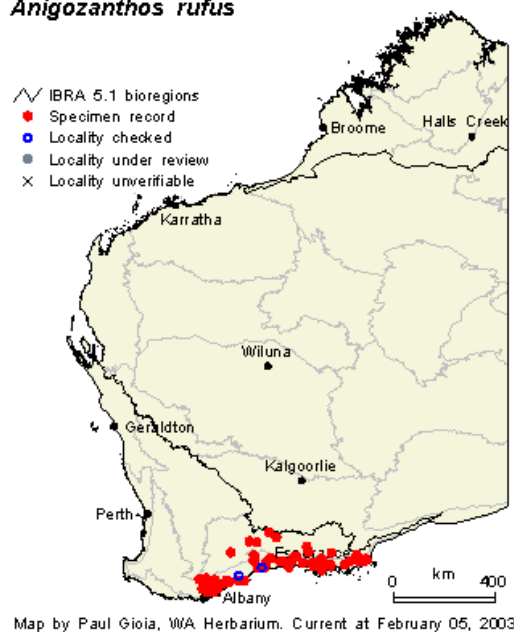


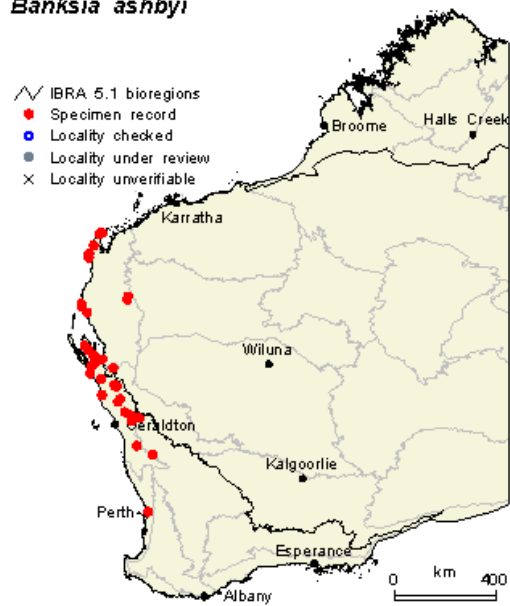
Photo by Ken Atkins

Banksia ashbyi.

(Ashby's banksia)

Family:	Proteaceae
Plant Description:	Small tree or shrub, 1–8 m high. Some plants have lignotubers others do not. Flowers yellow, orange.
Habitat:	Grows on coastal or red sand dunes, sandplains.
Flowering Time:	February–September/December.
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+ cm preferably 50+cm.
Peak Harvesting Period:	May-August
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia ashbyi



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Photo by FECA

Banksia attenuata

(Coast banksia)

Family:

Proteaceae

Plant Description:

Lignotuberous tree or shrub, 0.4-10m high with epicormic buds. Flowers yellow.

Habitat:

White, yellow, brown or pale red sands, sometimes over laterite, sandunes, sandplains.

Flowering Time:

October-February

Part Harvested/Specifications:

Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+cm preferably 50+cm.

Peak Harvesting Period:

October-December

Conservation status:

Not threatened

Conservation issues:

Regeneration

Lignotuber.

***Phytophthora* susceptibility**

Susceptible.

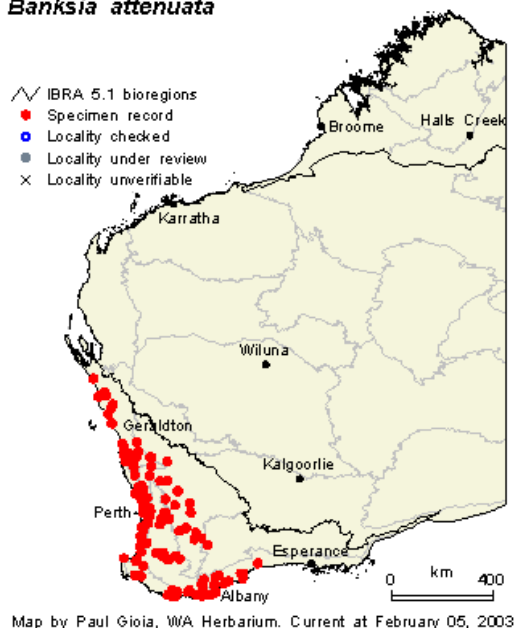
Fire

Sprouts from branches, trunk or lignotuber.

Harvesting

Sprouts after harvesting.

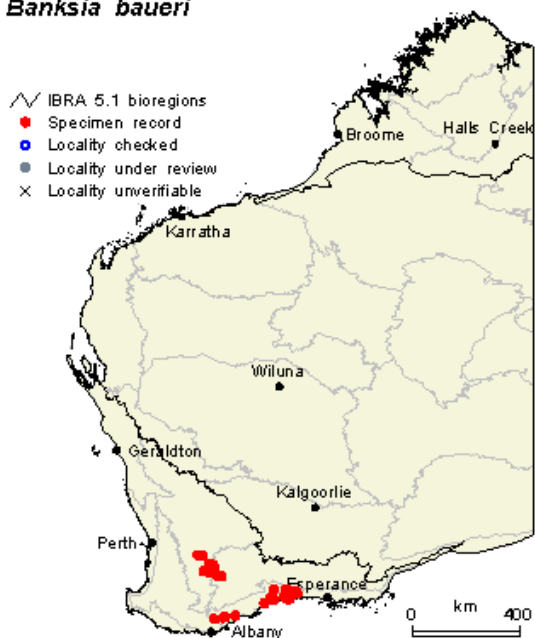
Banksia attenuata



Banksia baueri

Family:	Proteaceae
Plant Description:	Bushy, non-lignotuberous shrub, 0.5-2m high. Flowers brown, yellow, cream, grey.
Habitat:	Grows on white or grey and, lateritic gravel, among quartzite rocks, granite, sandplains.
Flowering Time:	May-October
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 50+cm.
Peak Harvesting Period:	June-August
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Variable. Not known as susceptible in its natural distribution. However, it has been recorded in artificial situations.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia baueri



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



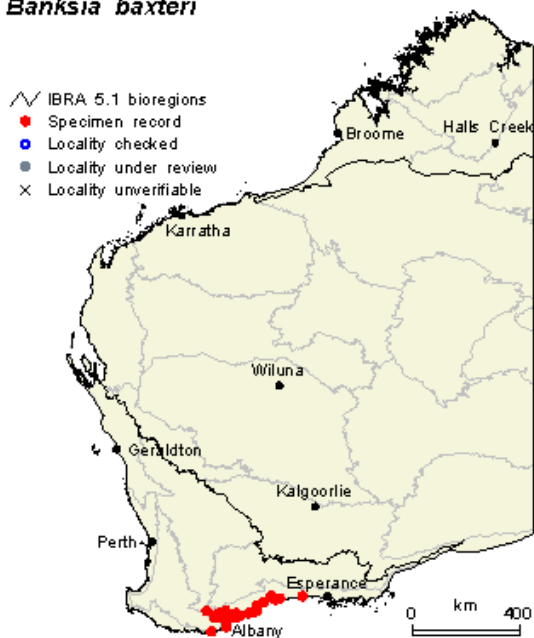
Photo by Ken Atkins/Liesl Rohl

Banksia baxteri

(Baxteri)

Family:	Proteaceae
Plant Description:	Non-lignotuberos shrub, 1.7-4 m high. Flowers yellow.
Habitat:	Found on white or grey sand, sandplains, consolidated sand dunes.
Flowering Time:	August-September/December-May
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+cm preferably 50+cm.
Peak Harvesting Period:	December-February
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia baxteri



Banksia burdettii

(Burdett's banksia)

Family:

Proteaceae

Plant Description:

Bushy, non-lignotuberous shrub 10-4 m high. Flowers orange, yellow.

Habitat:

Grows on white or yellow sand.

Flowering Time:

January-May

Part Harvested/Specifications:

Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35 + cm, preferably 50+ cm.

Peak Harvesting Period:

January-February

Conservation status:

Not threatened

Conservation issues:

Regeneration

Seed.

***Phytophthora* susceptibility**

Not known to be susceptible.

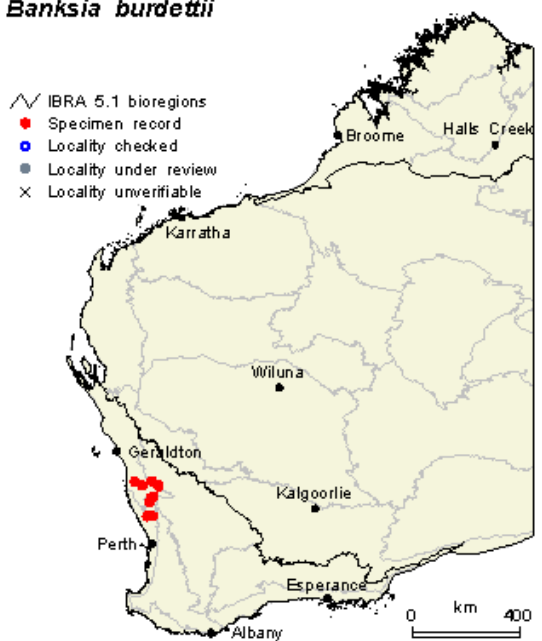
Fire

Fire kills the plant.

Harvesting

Green leaves must be left below the harvest cut for regeneration to occur.

Banksia burdettii

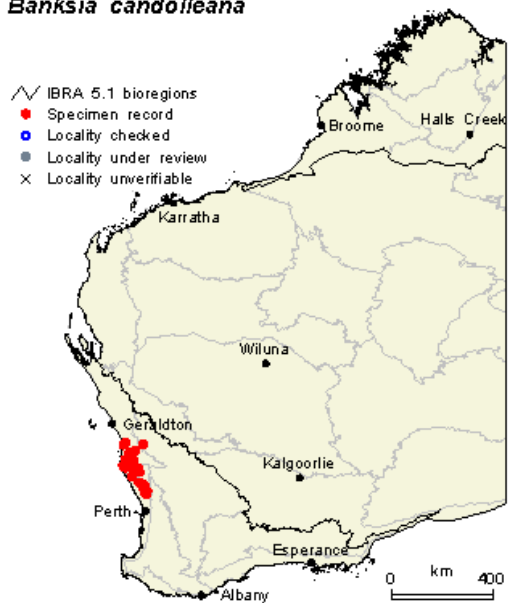


Banksia candolleana

(Candolleana)

Family:	Proteaceae
Plant Description:	Lignotuberous shrub, 0.5-1.3 (4)m high, up to 2.5m wide. Flowers yellow/orange.
Habitat:	Grows on white, grey, yellow or brown sandy lateritic gravel.
Flowering Time:	April-June
Part Harvested/Specifications:	Leaves, stems with mature fruits (seed pods).
Peak Harvesting Period:	March-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts from lignotuber.
Harvesting	Sprouts after harvesting.

Banksia candolleana

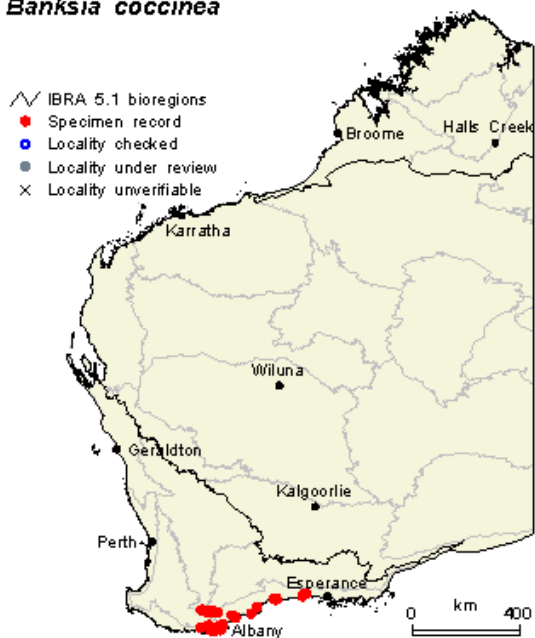


Banksia coccinea

(Albany/Scarlet banksia)

Family:	Proteaceae
Plant Description:	Non-lignotuberos, small tree or shrub, 1-8 m high (usually 2-4). Flowers red, perianth grey, orange.
Habitat:	Grows on grey or white sand, coastal sand dunes, swamp margins, sandplains.
Flowering Time:	May-June
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+cm, preferably 50+cm.
Peak Harvesting Period:	July-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia coccinea

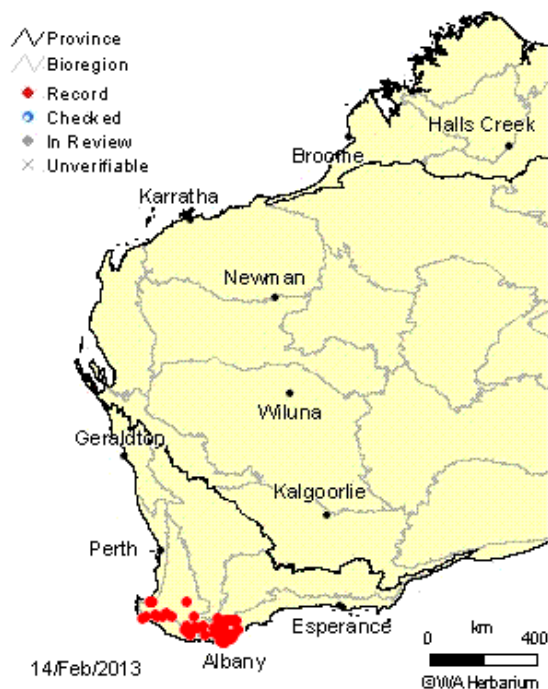


Banksia formosa

(Formosa, Albany dryandra)

Family:	Proteaceae
Plant Description:	Erect, non-lignotuberos shrub, 1-3 m high. Flowers yellow, orange.
Habitat:	Grows on yellow sand, gravel, skeletal sandy soils over sandstone or granite, dunes, hill slopes, granite outcrops.
Flowering Time:	May/September-December
Part Harvested/Specifications:	Flowering stems, some in bud, clean leaves, no blown flowers, 50+cm.
Peak Harvesting Period:	August-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia formosa

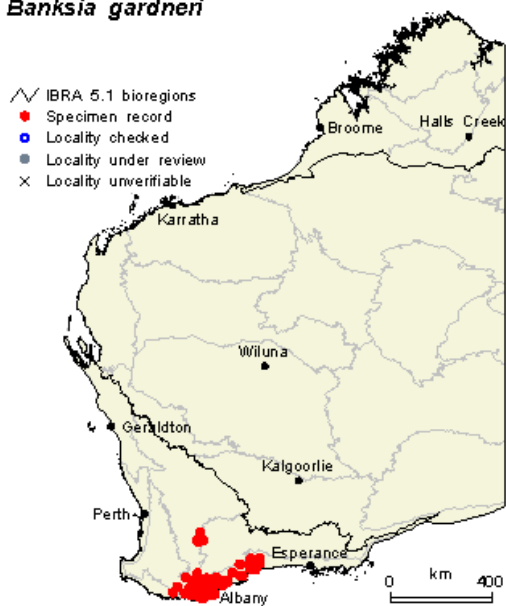


Banksia gardneri

(Ground leaves)

Family:	Proteaceae
Plant Description:	Lignotuberous shrub to 0.35 m high. Flowers orange, brown, pink and red.
Habitat:	Grows on white, grey or yellow sand, sandy loam, gravel, laterite, schist.
Flowering Time:	April-November
Part Harvested/Specifications:	Leaves.
Peak Harvesting Period:	May-June
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

Banksia gardneri



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Banksia grandis.

(Bull banksia)

Family:

Proteaceae

Plant Description:

Understorey tree or shrub (in south coastal areas), 1.5 to 10 m high, with epicormic buds. Flowers yellow green.

Habitat:

Grows on white grey sand, laterite.

Flowering Time:

September-January

Part Harvested/Specifications:

Leaves, 25+ cm flowering stems, 10-20% flowers open, straight stems, clean leaves, nuts on stems, 35+cm dehiscent fruits for craft.

Peak Harvesting Period:

All year depending of part required.

Conservation status:

Not threatened

Conservation issues:

Regeneration

Shoots from epicormic buds and seed.

***Phytophthora* susceptibility**

Susceptible.

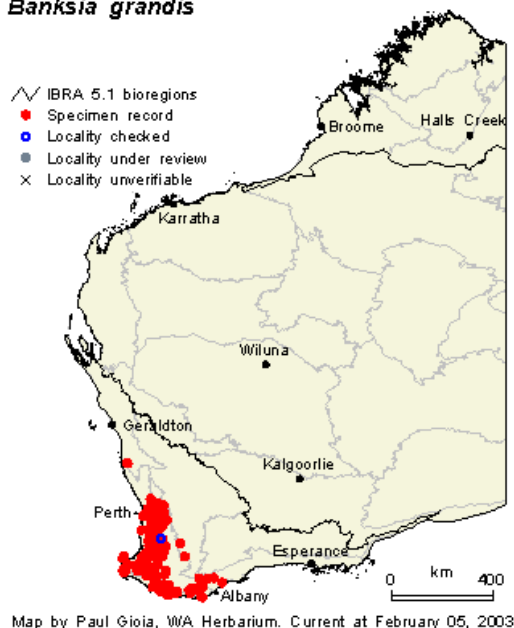
Fire

Shoots after fire by epicormic shoots. Hot fires can kill this species, regeneration is then by seed.

Harvesting

Shoots after harvesting.

Banksia grandis



Banksia heliantha

(Quercifolia)

Family:	Proteaceae
Plant Description:	Robust, openly-branched, non-lignotuberous shrub, 0.6 to 3 m high. Flowers yellow, orange.
Habitat:	Grows on rocky soils over laterite, quartzite or shale, white sand, slopes and tops of hills.
Flowering Time:	March/July-October
Part Harvested/Specifications:	Flowering stems, some in bud, clean leaves, no blown flowers, 45+ cm.
Peak Harvesting Period:	April-July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Highly.
Fire	Fire kills this species.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia heliantha

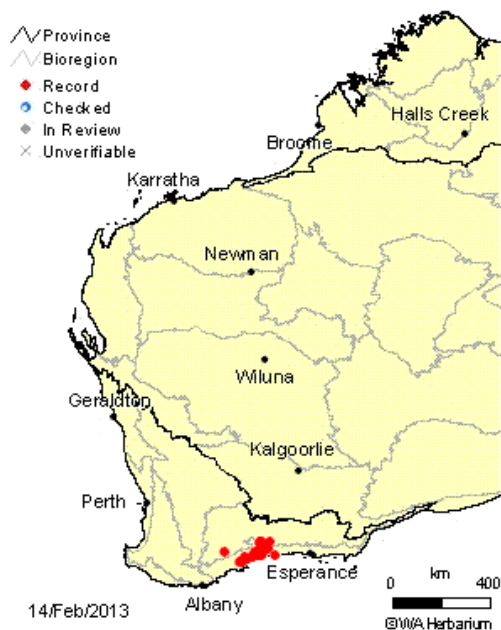
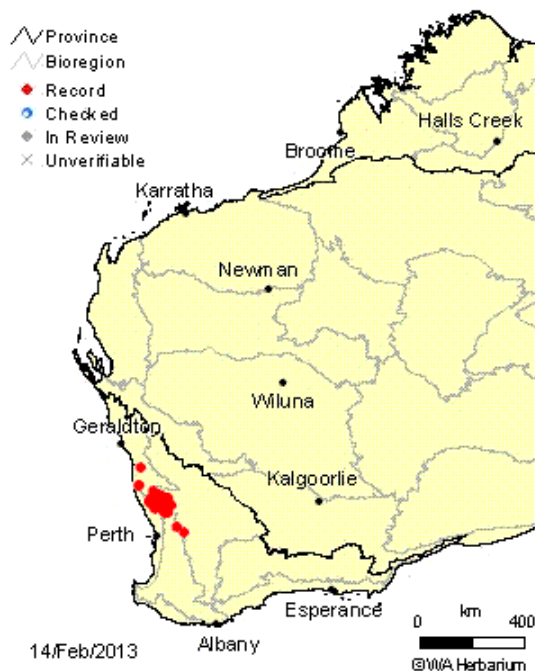


Photo by Penny Hussey

Banksia hewardiana

Family:	Proteaceae
Plant Description:	Open, non-lignotuberous shrub, 1-5 m high. Flowers yellow, cream.
Habitat:	Grows on sand, gravel, and laterite.
Flowering Time:	July-November
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	May
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia hewardiana

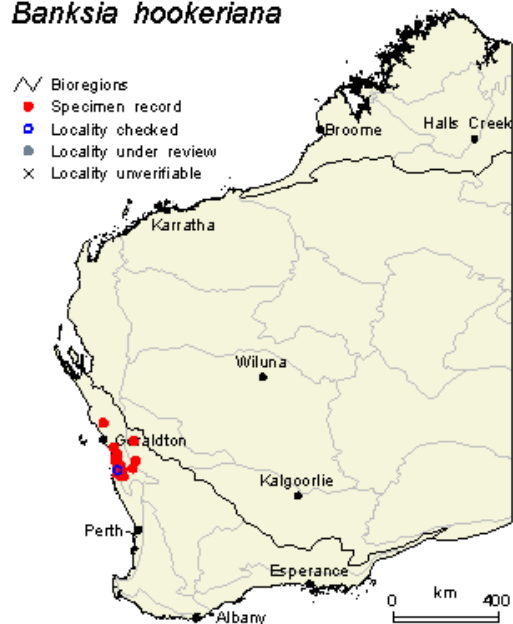


Banksia hookeriana

(Hookerana, hookers)

Family:	Proteaceae
Plant Description:	Non lignotuberous shrub 0.5–3 m tall. Flowers yellow to orange.
Habitat:	Grows on white, grey or yellow sands.
Flowering Time:	April–October
Part Harvested/Specifications:	Flowering stems, 35+ cm, and preferably 50+ cm.
Peak Harvesting Period:	June–September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed–released from the seed cone after fire.
<i>Phytophthora</i> susceptibility	Variable–not known to be susceptible in its natural distribution. However, it has been recorded in artificial situations.
Fire	Fire kills the plant.
Harvesting	Branches do not regenerate if they are cut into the old wood.

Banksia hookeriana



Banksia ilicifolia

(Holly leaved banksia)

Family:

Proteaceae

Plant Description:

Tree or shrub, 0.7 to 10 m high, with epicormic buds. Flowers white, cream, pink, yellow. Follicles open and release seed without fire 2/3 years after flowering.

Habitat:

Grows on white or grey sand, consolidated dunes or low lying flats.

Flowering Time:

March-January

Part Harvested/Specifications:

Flowering stems.

Conservation status:

Not threatened

Conservation issues:

Regeneration

Shoots from epicormic buds and seed.

***Phytophthora* susceptibility**

Susceptible.

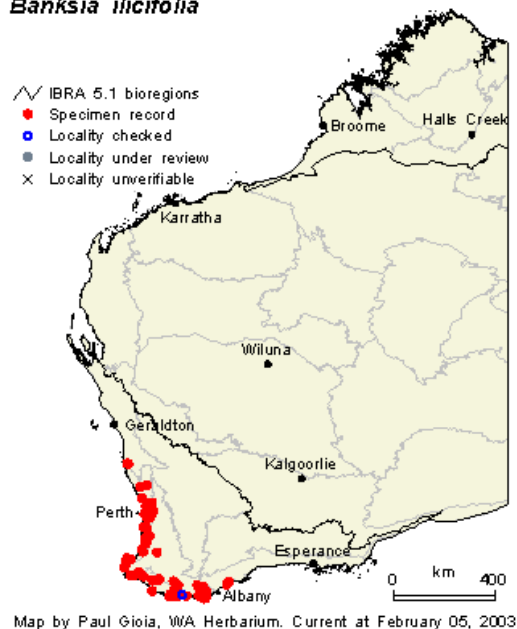
Fire

Shoots after fire by epicormic shoots. Hot fires can kill this species, regeneration is then by seed.

Harvesting

Shoots after harvesting.

Banksia ilicifolia

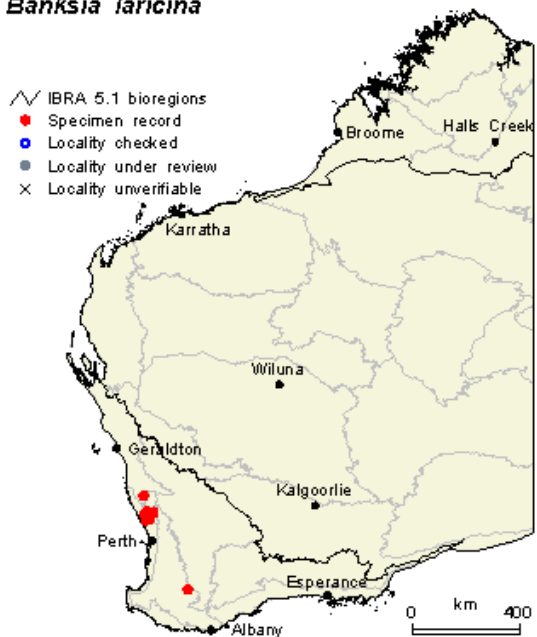


Banksia laricina

(Rose cones)

Family:	Proteaceae
Plant Description:	Non-lignotuberos shrub, 0.3-2m high. Flowers yellow.
Habitat:	Grows on white or grey sand, flats or slight depressions.
Flowering Time:	April-June
Part Harvested/Specifications:	Nuts - seed pods/cones on stem.
Peak Harvesting Period:	November-February
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia laricina



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



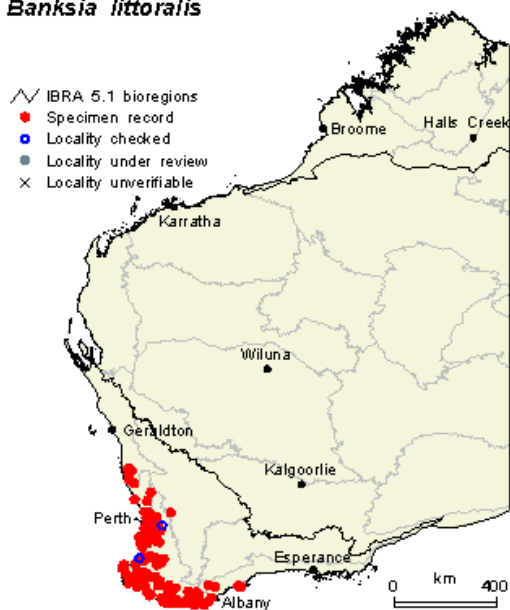
Photo by Peter Lambert

Banksia littoralis

(Swamp banksia)

Family:	Proteaceae
Plant Description:	Tree or shrub, 1.5–12 m high, with epicormic buds. Flowers yellow, orange.
Habitat:	Grey or black peaty sand on low-lying, seasonally damp areas, along watercourses
Flowering Time:	March - August
Part Harvested/Specifications:	Flowering stems.
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from epicormic buds and seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Shoots after fire by epicormic shoots. Hot fires can kill this species, regeneration is then by seed.
Harvesting	Shoots after harvesting.

Banksia littoralis



Map by Paul Gioia, WA Herbarium. Current at December 05, 2007

Banksia menziesii

(Menzies, Firewood banksia)

Family:	Proteaceae
Plant Description:	Tree or shrub, 1.3-7 m high; usually arising from lignotuber or epicormic buds. Flowers pink, red, yellow.
Habitat:	Found on white, grey or yellow sand.
Flowering Time:	February-October
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+ cm preferably 50+cm. Cones on stems, 35+cm.
Peak Harvesting Period:	February-July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from epicormic buds and lignotuber.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts after fire by epicormic shoots/lignotuber.
Harvesting	Sprouts after harvesting.

Banksia menziesii

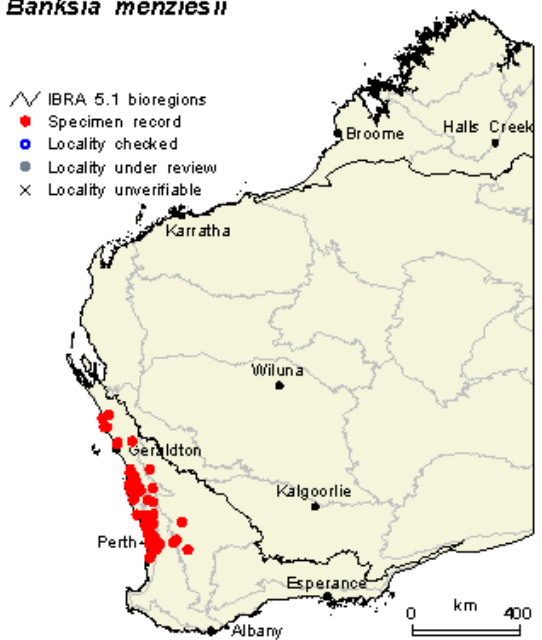


Photo by FECA

Banksia nobilis subsp. nobilis

(Golden dryandra)

Family:	Proteaceae
Plant Description:	Shrub, 0.6-4 m high. Flowers yellow, orange, green, pink.
Habitat:	Grows on sand, clay, gravel, laterite hills.
Flowering Time:	July-October
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	August-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia nobilis subsp. *nobilis*

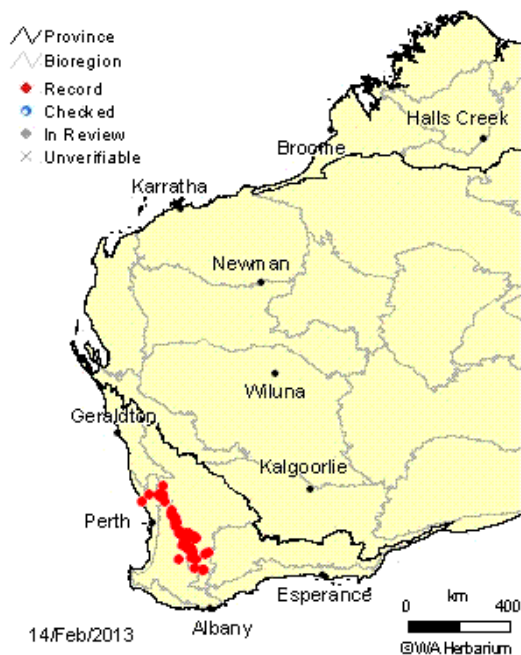


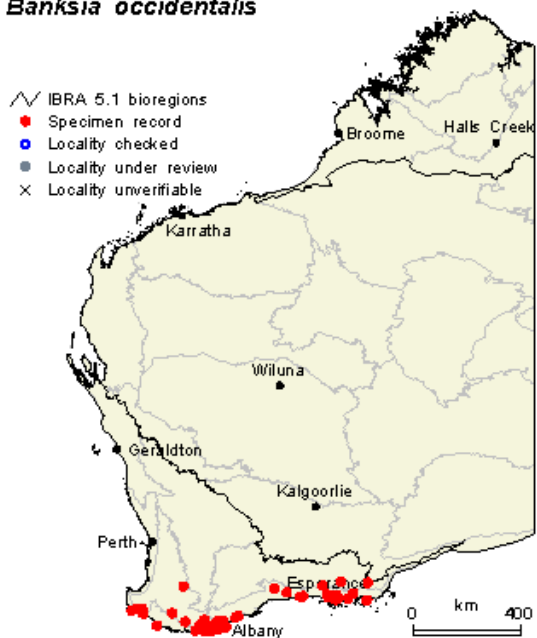
Photo by Penny Hussey

Banksia occidentalis

(Water banksia)

Family:	Proteaceae
Plant Description:	Non-lignotuberous, small tree or shrub, 1-7m high, flowers yellow, orange and red.
Habitat:	Grows on sand or peaty sand, low lying and seepage areas, swamps, consolidated sand dunes.
Flowering Time:	September-May
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+cm, preferably 50+cm.
Peak Harvesting Period:	January-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia occidentalis



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



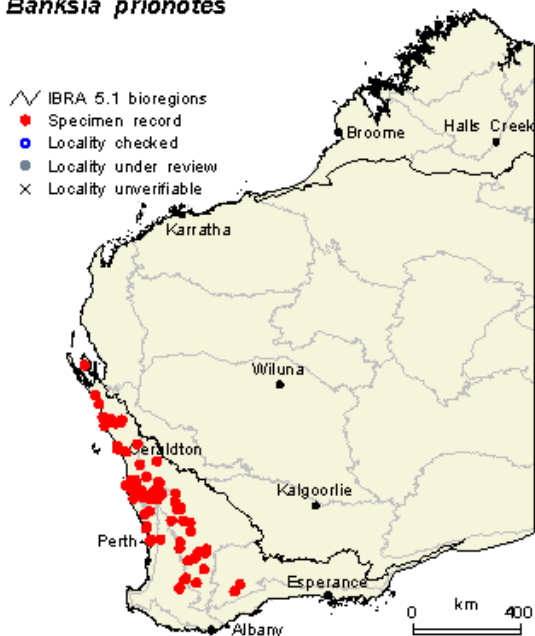
Photo by Stephen Hopper

Banksia prionotes

(Acorn banksia)

Family:	Proteaceae
Plant Description:	Non-lignotuberos tree or shrub, 2-8 m high. Flowers orange, yellow.
Habitat:	Grows on white, yellow or brown sand, sandplains, sand dunes.
Flowering Time:	January-August
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+cm, preferably 50+cm.
Peak Harvesting Period:	January-July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia prionotes



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Photo by Penny Hussey

Banksia pteridifolia subsp. *pteridifolia*

(Skeleton leaves)

Family:	Proteaceae
Plant Description:	Shrub, 0.3-0.5 m high. Flowers cream, white, yellow
Habitat:	Grows on white or grey sand, quartzite, laterite.
Flowering Time:	March-May/September-October
Part Harvested/Specifications:	Leaves.
Peak Harvesting Period:	September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia pteridifolia subsp. *pteridifolia*

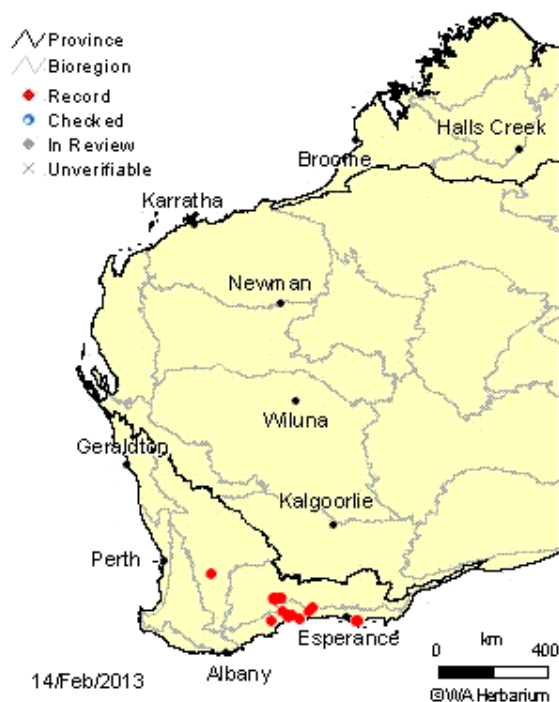


Photo by Penny Hussey

Banksia repens

(Ground leaves)

Family:	Proteaceae
Plant Description:	Prostrate, lignotuberous shrub, to 0.4 m high. Flowers cream, pink, brown, orange, yellow.
Habitat:	Grows on white or grey sand, sandy loam sometimes with gravel, sandplains, consolidated coastal dunes.
Flowering Time:	September-November
Part Harvested/Specifications:	Leaves.
Peak Harvesting Period:	May
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts from lignotuber.
Harvesting	Sprouts after harvesting.

Banksia repens

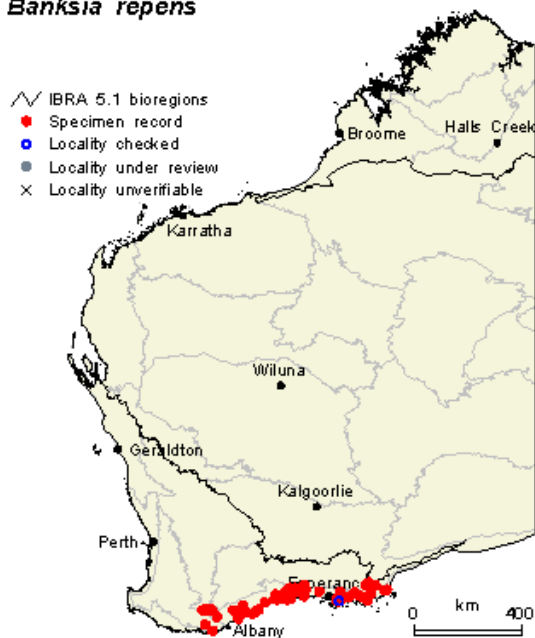


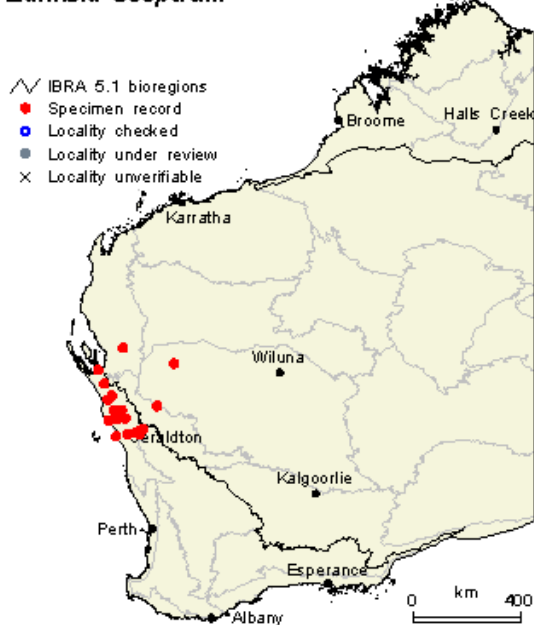
Photo by Ken Atkins

Banksia sceptrum

(Sceptre banksia)

Family:	Proteaceae
Plant Description:	Much-branched, lignotuberous shrub, 1.5–5m high. Flowers yellow.
Habitat:	Grows on yellow or pale red-brown sand, dunes and in swales.
Flowering Time:	November-January
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+cm, preferably 50+cm.
Peak Harvesting Period:	November-January
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia sceptrum



Banksia speciosa

(Showy banksia)

Family:	Proteaceae
Plant Description:	Non-lignotuberous shrub or tree, 1-6 (8) m high. Flowers yellow, green, cream.
Habitat:	Grows on white, grey or yellow sand, laterite, coastal sand dunes and sandplains.
Flowering Time:	May-January
Part Harvested/Specifications:	Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+cm preferably 50+cm.
Peak Harvesting Period:	October-May
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur.

Banksia speciosa

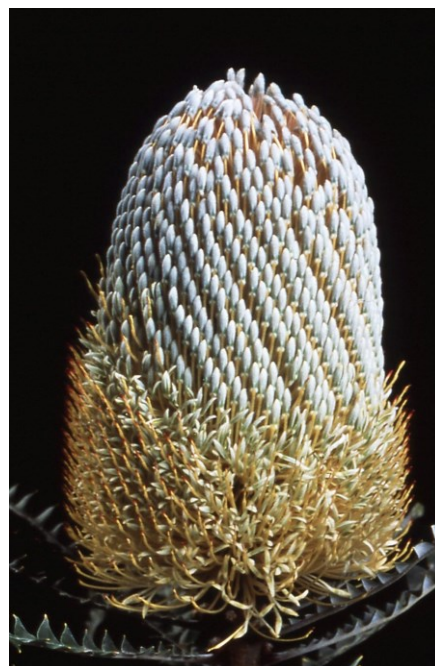
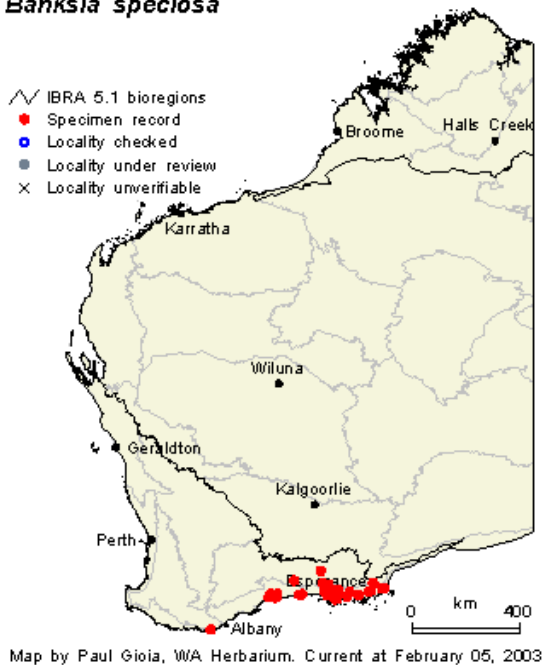


Photo by FECA

Banksia victoriae

(Woolly orange banksia)

Family:

Proteaceae

Plant Description:

Non-lignotuberous shrub or tree, 2-7 m high. Flowers orange, yellow.

Habitat:

Grows on yellow or pale red/brown sand.

Flowering Time:

January-February

Part Harvested/Specifications:

Flowering stems, 10-20% flowers open, straight stems, clean leaves, 35+ cm, preferably 50+ cm.

Peak Harvesting Period:

January-March

Conservation status:

Not threatened

Conservation issues:

Regeneration

Seed.

***Phytophthora* susceptibility**

Susceptible.

Fire

Fire kills the plant.

Harvesting

Green leaves must be left below the harvest cut for regeneration to occur.

Banksia victoriae

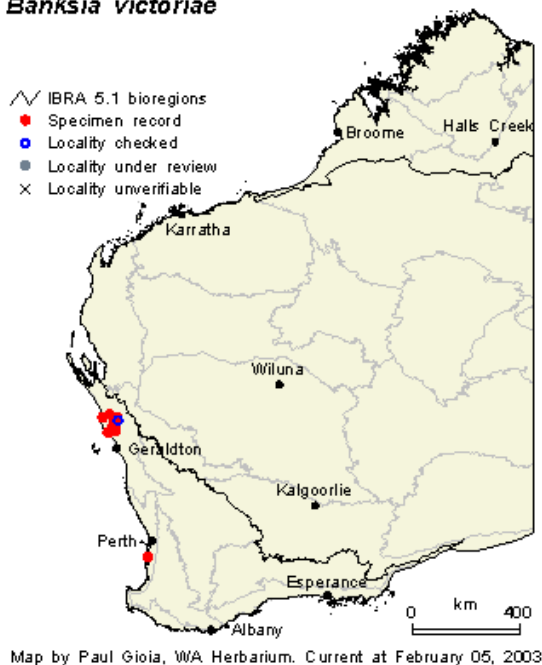


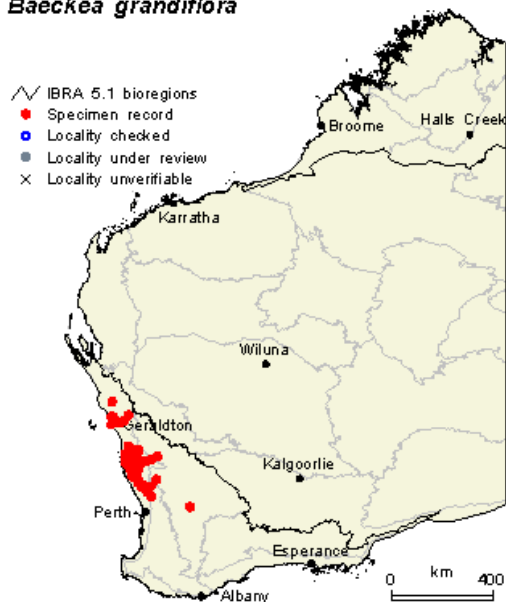
Photo by Penny Hussey

Baeckea grandiflora

(Large flowered baeckea)

Family:	Myrtaceae
Plant Description:	Erect, open or straggling shrub 0.3–1 m high. Flowers pink, white.
Habitat:	Undulating plains and hills and breakaways.
Flowering Time:	August-December
Part Harvested/Specifications:	Flowering stems, with some bud, 50cm.
Peak Harvesting Period:	August-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Baeckea grandiflora



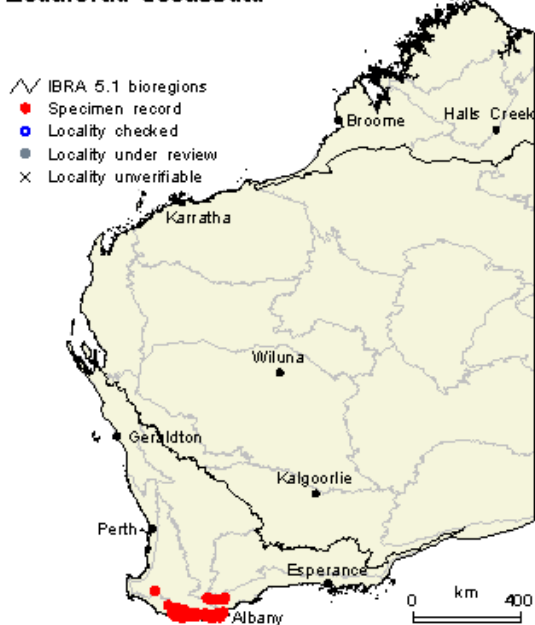
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Beaufortia decussata

(Decussata)

Family:	Myrtaceae
Plant Description:	Shrub, 1-3 m high, flowers red.
Habitat:	Grows on lateritic soils.
Flowering Time:	August-April
Part Harvested/Specifications:	Foliage stems, 70+cm.
Peak Harvesting Period:	September-April
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Beaufortia decussata



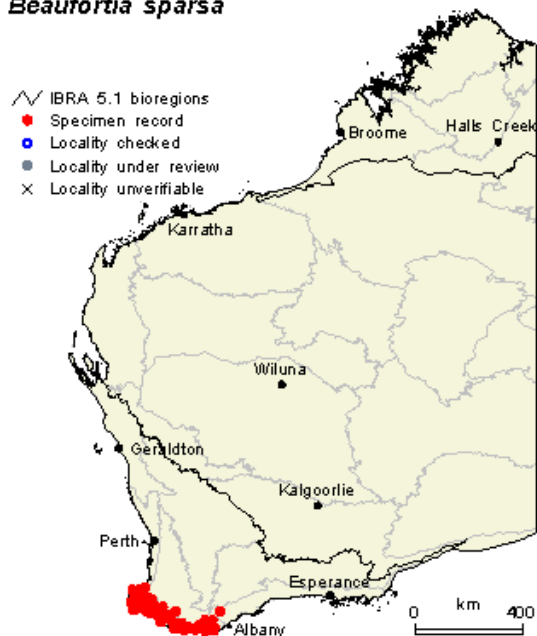
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Beaufortia sparsa

(Sparsa, Swamp bottlebrush)

Family:	Myrtaceae
Plant Description:	Shrub, 1-3 m high, flowers red/orange.
Habitat:	Grows on sand, swampy areas, river banks.
Flowering Time:	January–April/September–November
Part Harvested/Specifications:	Foliage and flowering stems, 60+cm. Flowers mainly in red bud.
Peak Harvesting Period:	February–April
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

Beaufortia sparsa

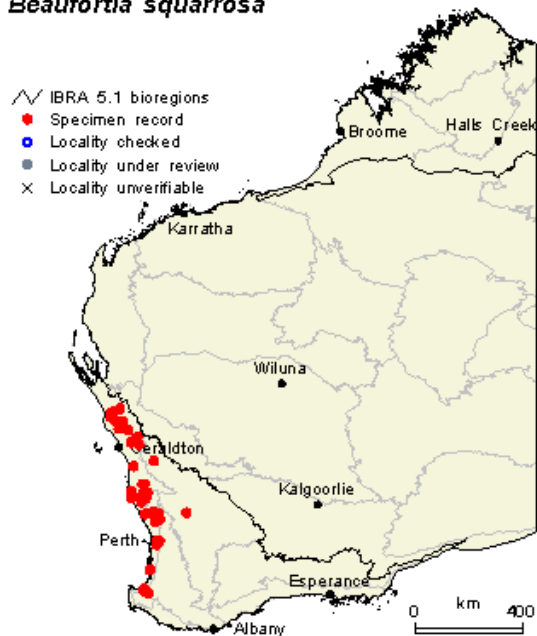


Beaufortia squarrosa

(Sand bottlebrush)

Family:	Myrtaceae
Plant Description:	Shrub, 0.5–2 m high, fruit 4-6 mm long, flowers red, orange.
Habitat:	Grows on white, grey or yellow sand, sometimes over limestone, laterite, sandplains, associated with winter wet depressions.
Flowering Time:	January-May/August-December
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Variable - not known to be susceptible in its natural distribution. However, it has been recorded in artificial situations.
Fire	Fire kills the plant.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Beaufortia squarrosa



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Photo by Penny Hussey

Boronia heterophylla

(Red boronia)

Family:	Rutaceae
Plant Description:	Erect, slender shrub, 1-3 m (5) m high. Flowers pink, red.
Habitat:	Grows on sandy soils, wet flats and places, river banks.
Flowering Time:	September-November
Part Harvested/Specifications:	Flowering stems, 40+cm, preferably 50+cm.
Peak Harvesting Period:	August-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to susceptible in its natural distribution.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	At least two lateral branches must be left after harvesting for regeneration to occur.

Boronia heterophylla

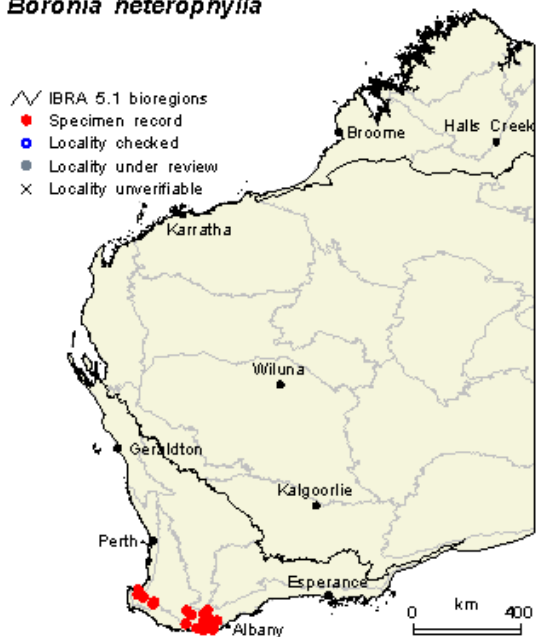


Photo by Ken Atkins/Liesl Rohl

Boronia megastigma

(Brown boronia)

Family:	Rutaceae
Plant description:	Erect, slender, scented shrub 0.2–2 m tall. Flowers are brown, yellow or green.
Habitat:	Grows in wet winter depressions.
Flowering time:	July–October
Part harvested/specifications:	Flowering stems, 50+cm.
Peak harvesting period:	August–September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Variable - not known to be susceptible in its natural distribution. However, it has been recorded in artificial situations.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	At least two lateral branches must be left after harvesting for regeneration to occur.

Boronia megastigma

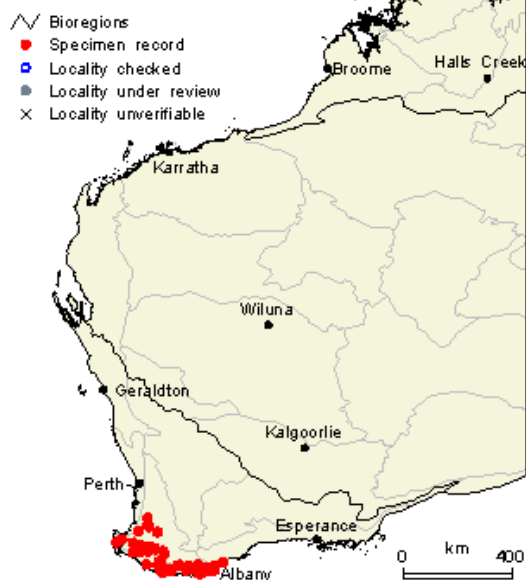


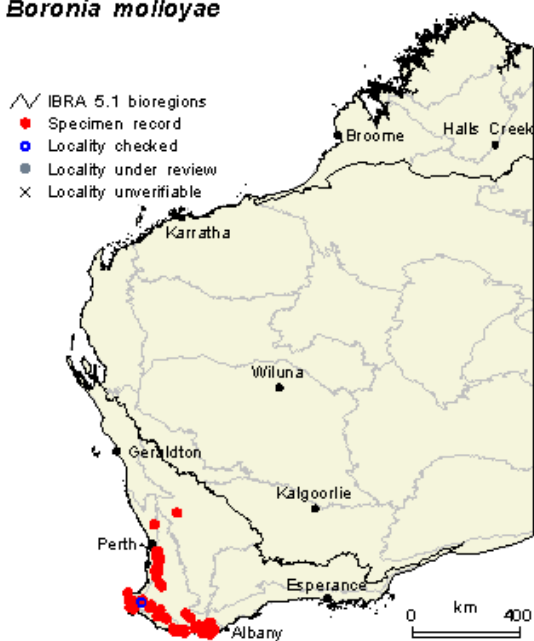
Photo by Penny Hussey

Boronia molloyae

(Tall boronia)

Family:	Rutaceae
Plant Description:	Slender shrub, 1-3 (5) m high. Flowers pink.
Distinctive Features:	Very aromatic foliage.
Habitat:	Grows on sandy soils along creeks and streams, swamps.
Flowering Time:	September-December
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	October-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to susceptible in its natural distribution.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	At least two lateral branches must be left after harvesting for regeneration to occur.

Boronia molloyae



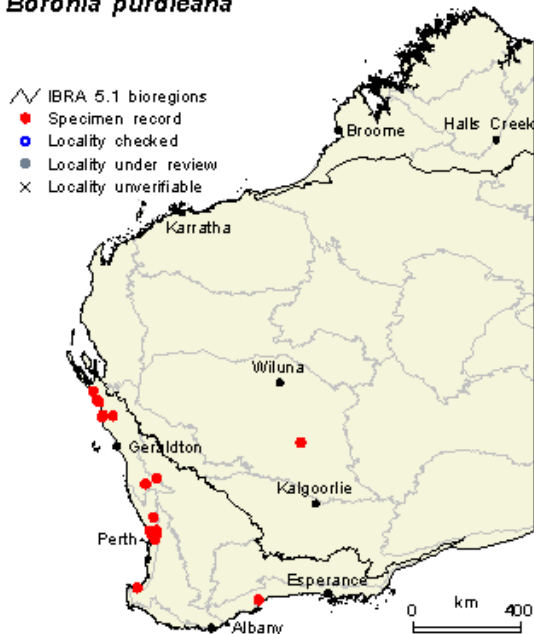
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Boronia purdieana

(Lemon-scented/yellow boronia)

Family:	Rutaceae
Plant Description:	Shrub, 0.2–1.5 m high, lemon scent, flowers yellow sometimes red.
Habitat:	Grows on white, grey or yellow sand, limestone, laterite, coastal plains, outcrops, swamps/swampy areas.
Flowering Time:	May-October
Part Harvested/Specifications:	Flowering stems, some in bud, 35+ cm, preferably 50+cm.
Peak Harvesting Period:	June-August
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire
Harvesting	At least two lateral branches must be left after harvesting for regeneration to occur.

Boronia purdieana



Bossiaea aquifolium

(Miniature holly)

Family:	Papilionaceae
Plant Description:	Shrub or tree, 0.6-8m high, flowers orange, yellow red, brown.
Habitat:	Grows on clay, loam, laterite, granite.
Flowering Time:	July-November
Part Harvested/Specifications:	Foliage stems, no soft tips, 70+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Bossiaea aquifolium

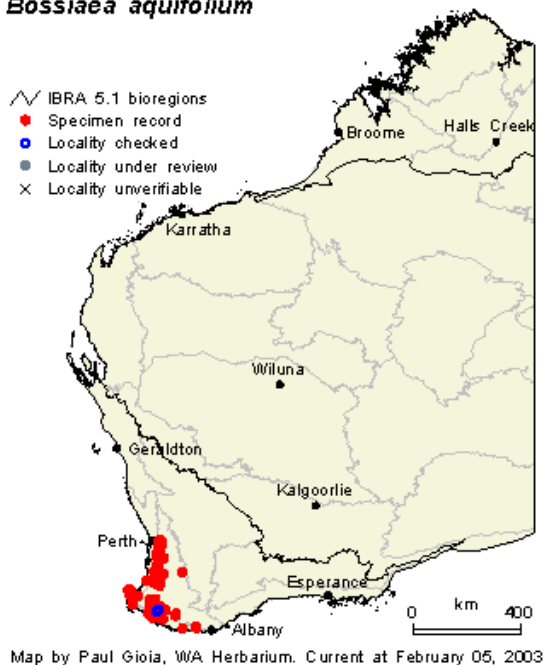


Photo by Andrew Horan

Callistemon glaucus
(Albany bottlebrush)

Family:	Myrtaceae
Plant Description:	Slender, erect shrub, 1-3 m high, flowers red.
Habitat:	Grows on grey or white sand, clay, swampy flats.
Flowering Time:	September-December
Part Harvested/Specifications:	Foliage and flowering stems, 60-80 cm.
Peak Harvesting Period:	February-November.
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from lignotuber after fire.
Harvesting	Stems must be cut with secateurs and not broken off.

Callistemon glaucus

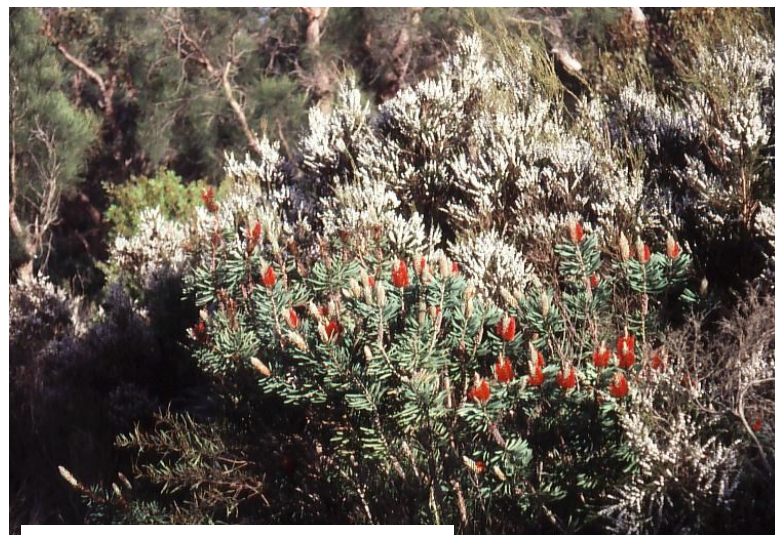
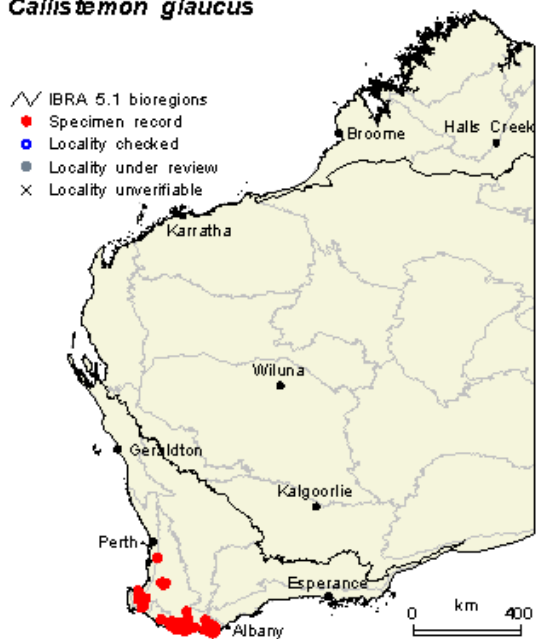


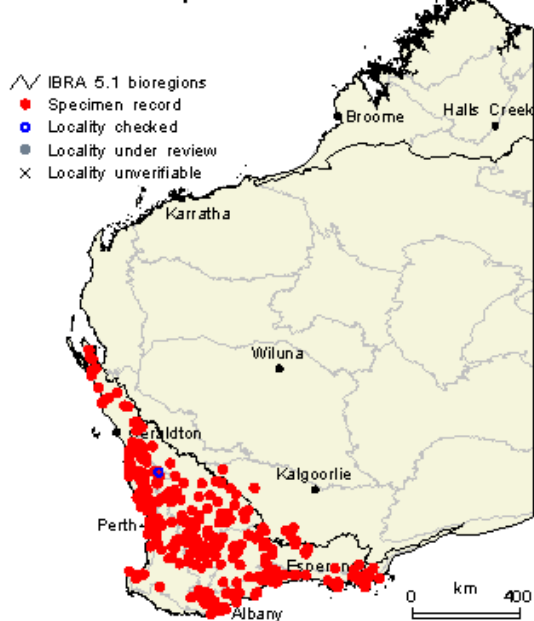
Photo by Penny Hussey

Calothamnus quadrifidus

(One-sided bottlebrush)

Family:	Myrtaceae
Plant Description:	Erect, compact or spreading shrub, (0.5) 0.9–2 (3)m high, flowers red, white yellow.
Habitat:	Grows on a wide variety of soils and habitats.
Flowering Time:	June-December
Part Harvested/Specifications:	Flowering stems, foliage and fruiting stems.
Peak Harvesting Period:	June-July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber and seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from lignotuber after fire. Hot fires can kill this species, regeneration is then by seed.
Harvesting	Stems must be cut with secateurs and not broken off.

Calothamnus quadrifidus

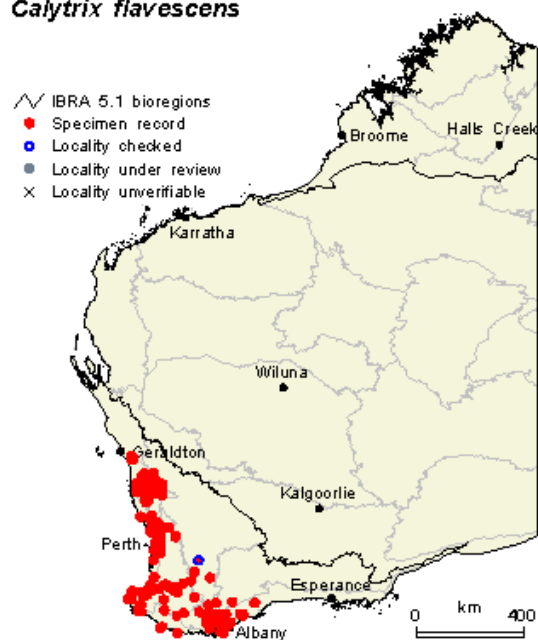


Calytrix flavescens

(Summer starflower)

Flowering Family:	Myrtaceae
Plant Description:	Shrub, 0.3-0.8 m high, flowers yellow.
Habitat:	Grows on white, grey or yellow sand, often over laterite, granite or sandstone, undulating sandplains, gentle slopes, sometimes in swampy areas.
Flowering Time:	January-December
Part Harvested/Specifications:	Flowering stems, some in bud, 60+cm.
Peak Harvesting Period:	All year round
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Calytrix flavescens



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Calytrix fraseri

(Pink summer starflower)

Family:	Myrtaceae
Plant Description:	Shrub, 0.2-1 (2) m high; flowers pink, purple, yellow.
Habitat:	Grows on white, grey or yellow sand, sandplains, coastal dunes, rocky granite outcrops.
Flowering Time:	November-August
Part Harvested/Specifications:	Flowering stems, some in bud.
Peak Harvesting Period:	Summer
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Calytrix fraseri

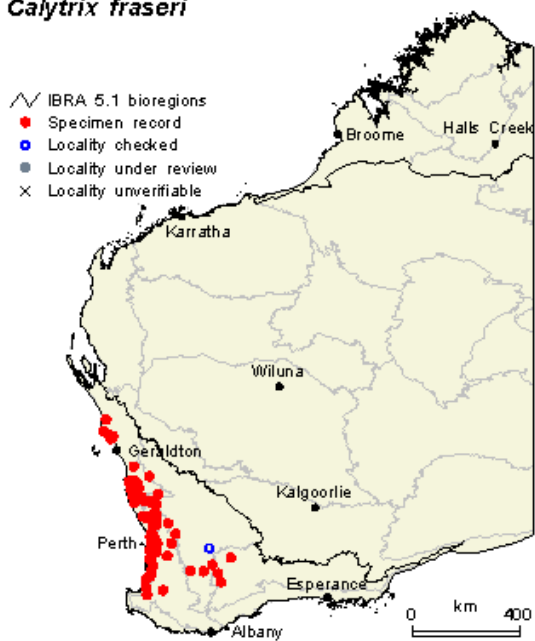


Photo by Penny Hussey

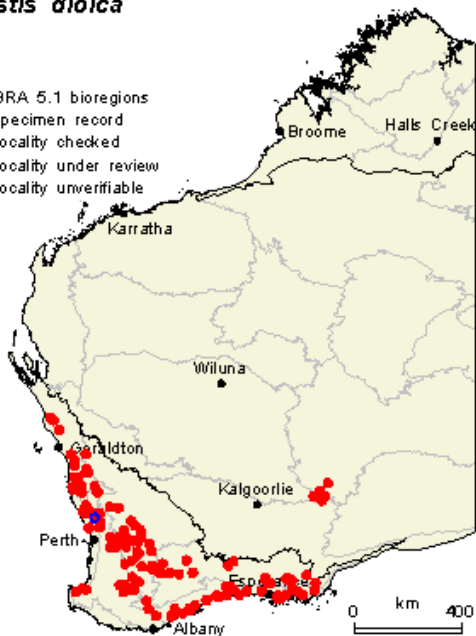
Caustis dioica

(Chinese puzzle)

Family:	Cyperaceae
Plant Description:	Dioecious, rhizomatous, tangled, tussocky, pungent leaved perennial, grass-like or herb (sedge), 0.15-0.7m high to 0.5m wide. Flowers yellow, brown.
Habitat:	Grows on white, grey, yellow or red sand, loam.
Flowering Time:	September-December
Part Harvested/Specifications:	Stems with leaves, 45+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after fire.

Caustis dioica

- IBRA 5.1 bioregions
- Specimen record
- Locality checked
- Locality under review
- Locality unverifiable



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

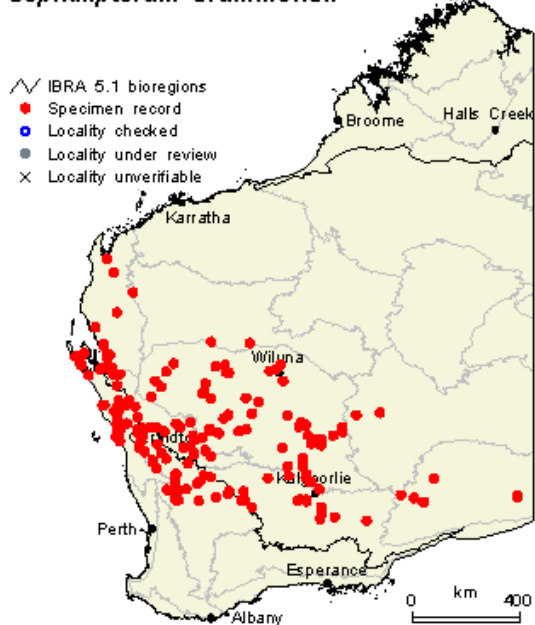


Cephalipterum drummondii

(Pompom head)

Family:	Asteraceae
Plant Description:	Slender, erect annual, herb (0.025) 0.05–0.45 m high, flowers white, cream, yellow, pink.
Habitat:	Grows on a variety of soils.
Flowering Time:	July-October
Part Harvested/Specifications:	Flowers.
Peak Harvesting Period:	August-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems can be harvested in any one season.

Cephalipterum drummondii



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

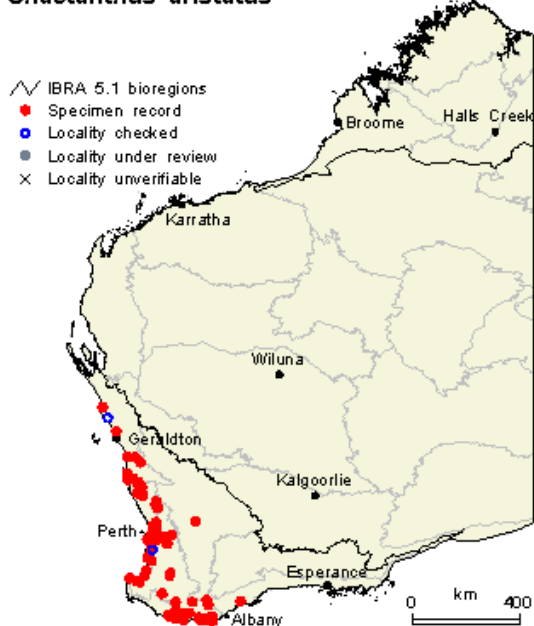


Photo by Penny Hussey

Chaetanthus aristatus

Family:	Restionaceae
Plant Description:	Tufted, perennial herb (rush-like), 0.2-1m high. Flowers brown, yellow.
Habitat:	Grows on sand, clay, winter-wet depressions, inundated areas, swamps, sometimes in saline sites.
Flowering Time:	May/August-December
Part Harvested/Specifications:	Stems with seed.
Peak Harvesting Period:	March-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome and seed (after fire).
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Regenerate from the rhizome after fire. Hot fires can kill this species, regeneration is then by previous season's seed.
Harvesting	To encourage regeneration harvesting should occur a minimum of 30 cm above ground level.

Chaetanthus aristatus



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Chamelaucium megalopetalum

(Large waxflower)

Family:	Myrtaceae
Plant Description:	Shrub 0.25-1.4 (2) m high. Flowers white, pink, red, cream, yellow.
Habitat:	Grows on yellow or grey/white sand, gravelly lateritic soils, sandplains, sandy ridges.
Flowering Time:	May-December
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	August
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	This species is killed by fire. Soil stored seed are required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Chamelaucium megalopetalum

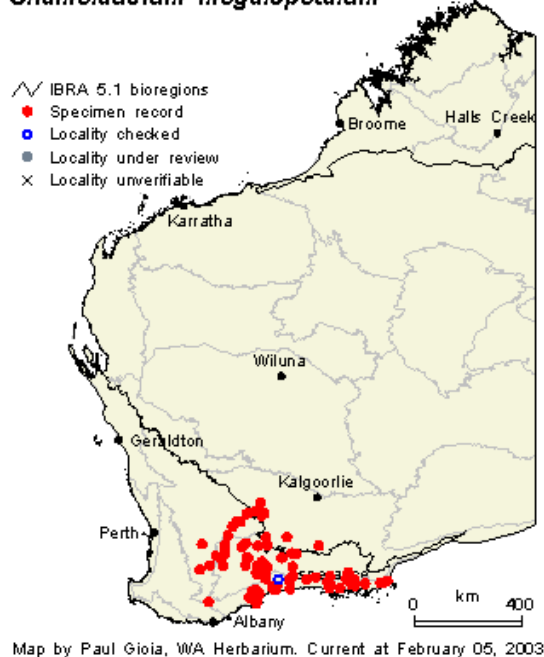


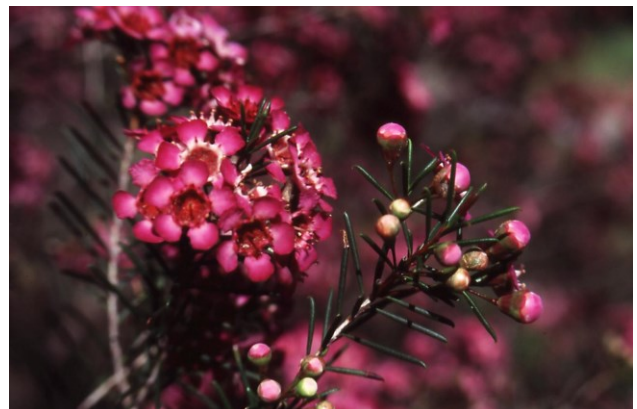
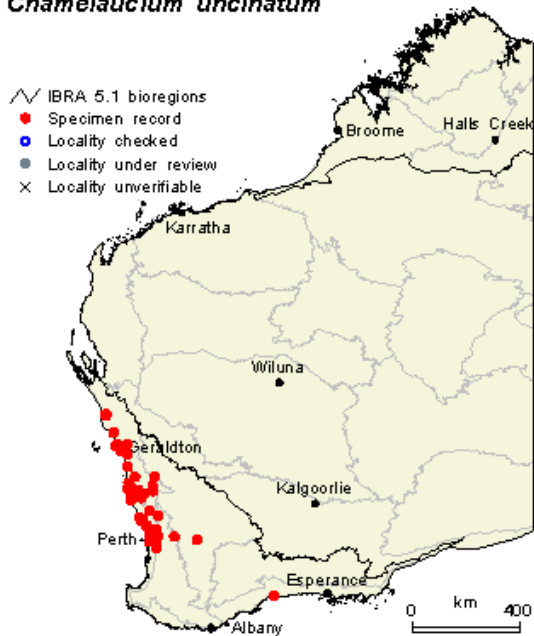
Photo by FECA

Chamelaucium uncinatum

(Geraldton wax)

Family:	Myrtaceae
Plant Description:	Slender, spindly shrub, 0.3 –1.75 m high. Flowers yellow.
Habitat:	Grows on white, grey or yellow sand over limestone, laterite, coastal areas, edges of swamps, hillsides, plains.
Flowering Time:	June-November
Part Harvested/Specifications:	Flowering stems, some in bud, 70+ cm.
Peak Harvesting Period:	July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Chamelaucium uncinatum



Conospermum amoenum

(Blue smokebush)

Family:	Proteaceae
Plant Description:	Erect, non-lignotuberous shrub, 0.3-1 m high. Flowers blue, white.
Habitat:	Grows on yellow sand or sandy clay over laterite, lateritic gravel, ironstone hills, uplands.
Flowering Time:	July-October
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Conospermum amoenum

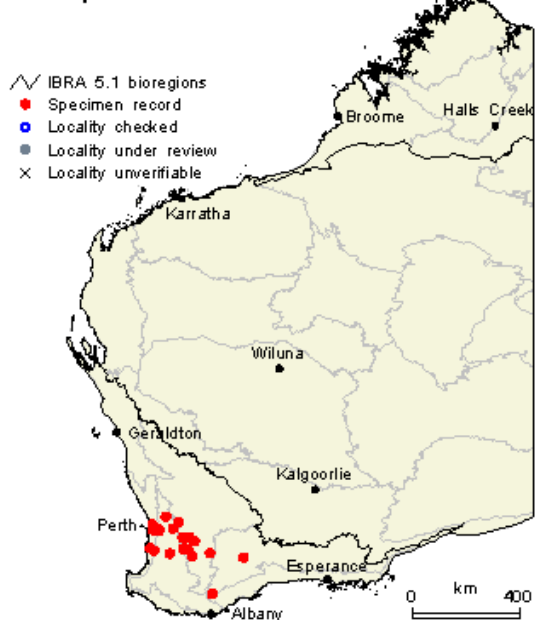


Photo by Penny Hussey

Conospermum crassinervium

(Tassel smokebush)

Family:	Proteaceae
Plant Description:	Tufted, non-lignotuberous shrub, 0.6-1.5 m high. White flowers.
Habitat:	Grows on white, grey, yellow or brown sand, over laterite or limestone, hill slopes and sandplains.
Flowering Time:	October-April
Part Harvested/Specifications:	Flowering stems, 50+cm.
Peak Harvesting Period:	September-February
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Conospermum crassinervium

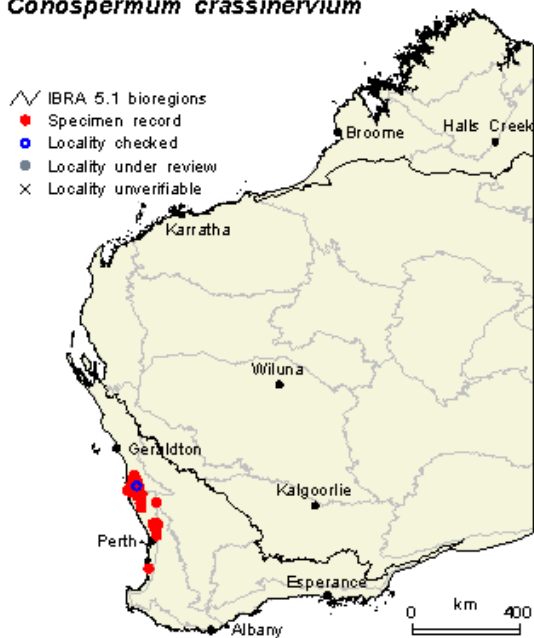
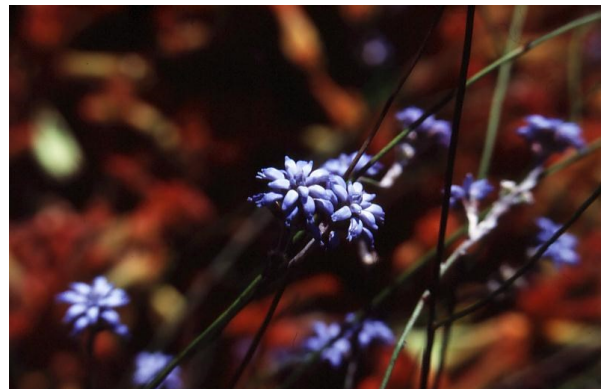
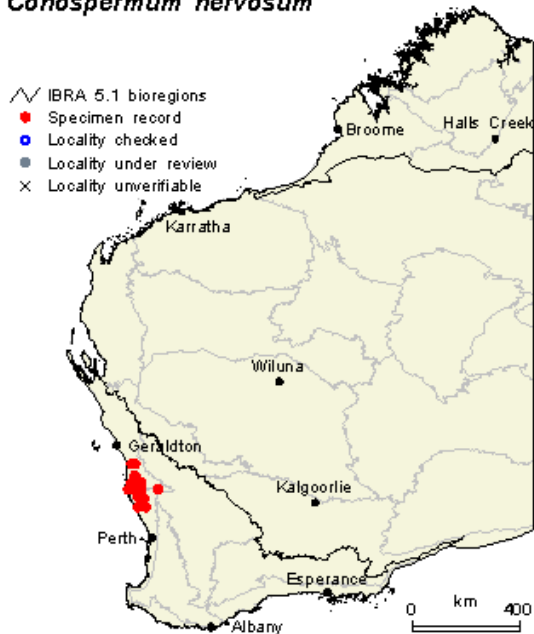


Photo by Kevin Seaton

Conospermum nervosum

Family:	Proteaceae
Plant Description:	Erect, much branched shrub, 0.3-0.6 m high, flowers purple, pink, blue.
Habitat:	Grows on lateritic sand on gravel, hills, sandplains.
Flowering Time:	May-February
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	Winter
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Conospermum nervosum



Conospermum incurvum

(Plume smokebush)

Family:	Proteaceae
Plant Description:	Erect, spindly, non-lignotuberous shrub, 0.4-1m high. Flowers white, grey.
Habitat:	Grows on white, grey or yellow/brown sand over laterite, undulating sandplains.
Flowering Time:	July-November
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	September-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Conospermum incurvum

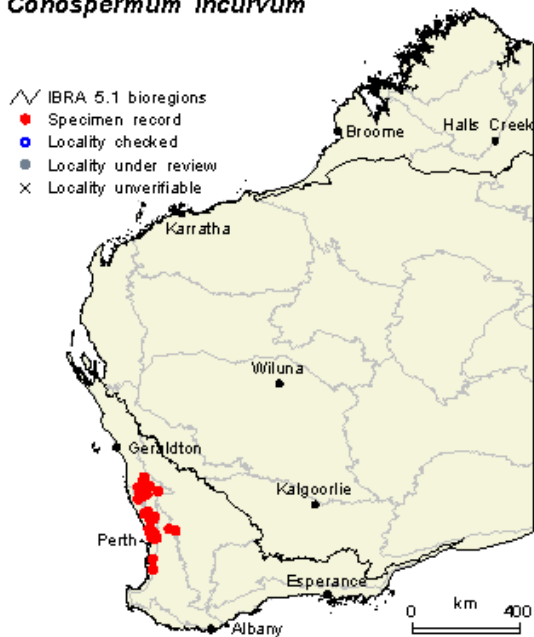


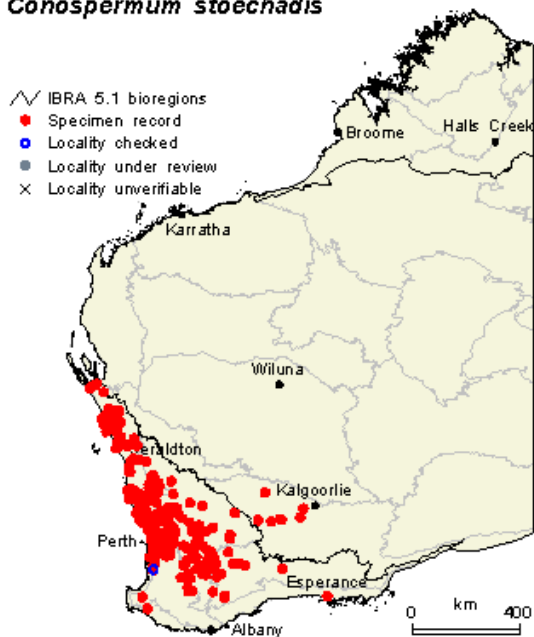
Photo by Kevin Seaton

Conospermum stoechadis

(Common smokebush)

Family:	Proteaceae
Plant Description:	Erect, multi-stemmed, lignotuberos shrub, 0.3 to 2 m high. Flowers white, grey.
Habitat:	Found on sand, gravel, laterite, sandplains.
Flowering Time:	July-December
Part Harvested/Specifications:	Flowering stems, some in bud, 60+cm.
Peak Harvesting Period:	August-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber and seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts from lignotuber after fire. Hot fires can kill this species, regeneration is then by seed.
Harvesting	Stems must be cut with secateurs and not broken off.

Conospermum stoechadis



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Photo by Kevin Seaton

Conospermum teretifolium

Family:	Proteaceae
Plant Description:	Erect, lignotuberous shrub, broad, many stemmed shrub, 0.6-2 m high. Flowers white, cream.
Habitat:	Grows on lateritic sand, white / grey sand over granite.
Flowering Time:	August-January
Part Harvested/Specifications:	Flowering stems, 50+cm.
Peak Harvesting Period:	September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Not killed by fire. Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

Conospermum teretifolium

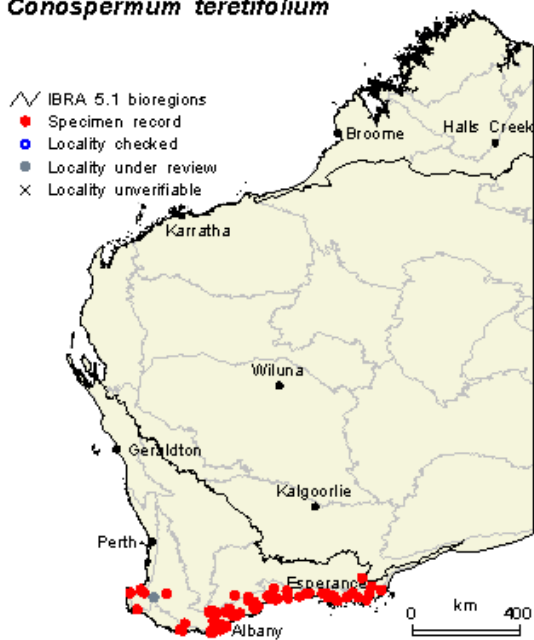


Photo by Kevin Seaton

Conospermum triplinervium

(Tree smokebush)

Family:	Proteaceae
Plant Description:	Shrub or tree, 0.5–4.5 m high. Flowers white, grey.
Habitat:	Grows on white, grey or yellow sand, laterite, sandplains.
Flowering Time:	August-January
Part Harvested/Specifications:	Flowering stems, some in bud, 60+cm.
Peak Harvesting Period:	August-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber and seed.
<i>Phytophthora</i> susceptibility	Variable - not known to susceptible in its natural distribution. However, it has been recorded in artificial situations.
Fire	Sprouts from lignotuber after fire. Hot fires can kill this species, regeneration is then by seed.
Harvesting	Stems must be cut with secateurs and not broken off.

Conospermum triplinervium

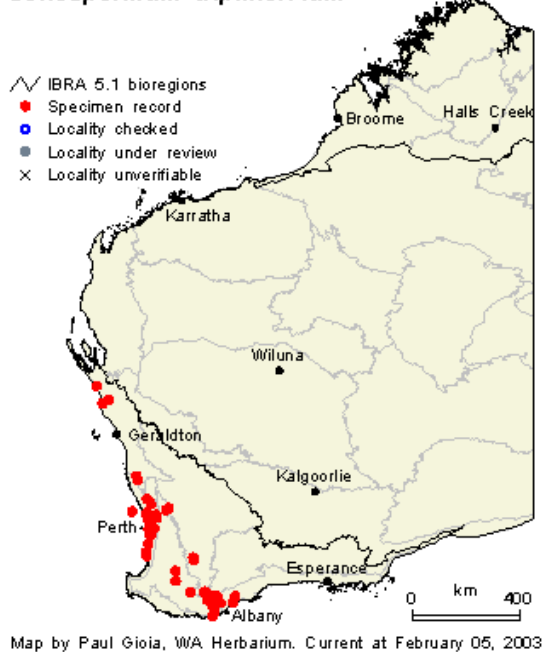


Photo by Penny Hussey

Corymbia calophylla

(Red gumnuts, Marri)

Family:	Myrtaceae
Plant Description:	Tree (mallee, rarely), 3-40 (60) m high, bark rough, tessellated, flowers white, pink.
Habitat:	Grows on sandy and laterite soils.
Flowering Time:	December-May
Part Harvested/Specifications:	Stems with leaves and nuts.
Peak Harvesting Period:	January and May-June
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts after fire.
Harvesting	Sprouts after harvesting.

Corymbia calophylla

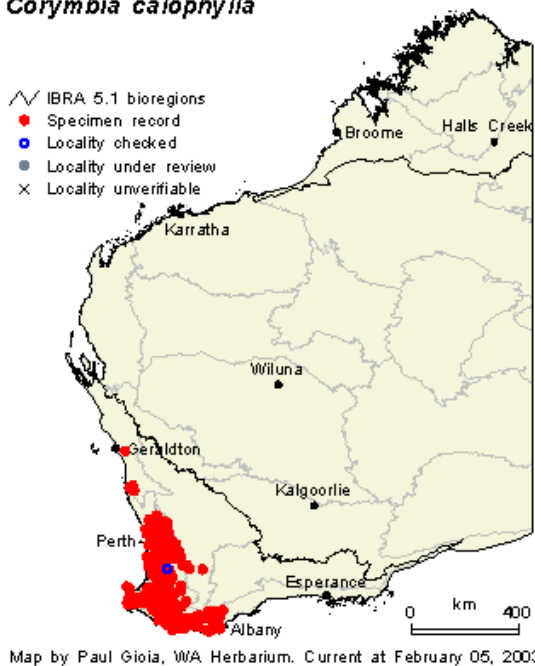


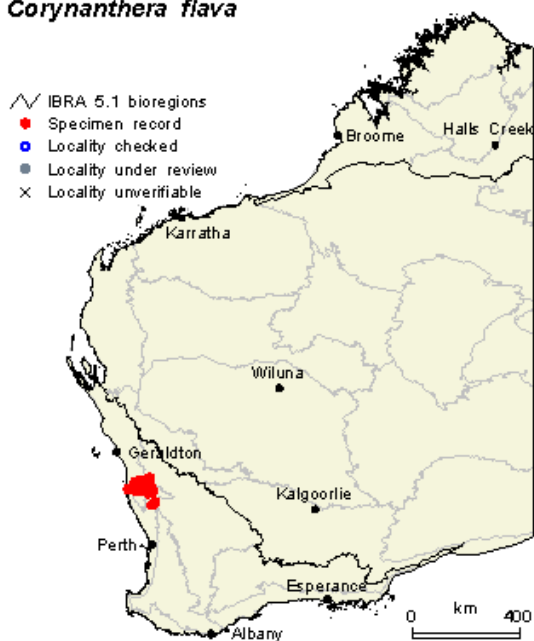
Photo by Penny Hussey

Corynanthera flava

(Golden cascades)

Family:	Myrtaceae
Plant Description:	Slender spindly shrub, 0.3-1.75 m high. Flowers yellow
Habitat:	Grows on white/ grey or yellow sand or loamy sand over laterite, sandplains.
Flowering Time:	September-February
Part Harvested/Specifications:	Flowering stems, 70+cm. Banned from picking in wild as is geographically restricted.
Peak Harvesting Period:	October-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the population should be harvested in any one year to ensure sustainability.

Corynanthera flava



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



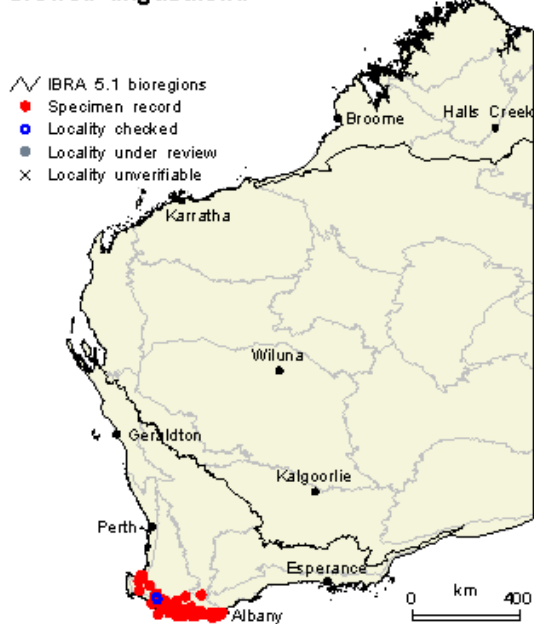
Photo by Carol Davies and Mark Holtfreter

Crowea angustifolia

(Crowea)

Family:	Rutaceae
Plant Description:	Shrub, 0.3-3.5 m high, flowers pink, white.
Habitat:	Grows on sandy soils, gravel, granite, ridge tops and slopes, outcrops.
Flowering Time:	September-December
Part Harvested/Specifications:	Flowering stems, some in bud, 60+cm.
Peak Harvesting Period:	August/October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Crowea angustifolia



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Photo by Andrew Horan

Dasypogon bromeliifolius

(Pineapple)

Family:	Dasypogonaceae
Plant Description:	Rhizomatous, tufted perennial herb, 0.3–1.5 m high. Flowers white.
Habitat:	Grows on white or grey sand, lateritic soils, often winter wet depressions.
Flowering Time:	September-January
Part Harvested/Specifications:	Foliage stems, leaves clean, 50+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Low.
Fire	Sprouts from horizontal rhizome after fire.
Harvesting	Sprouts after harvesting.

Dasypogon bromeliifolius

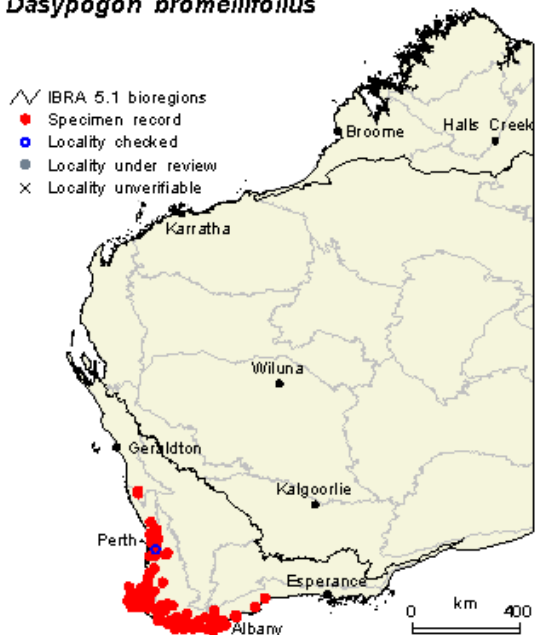


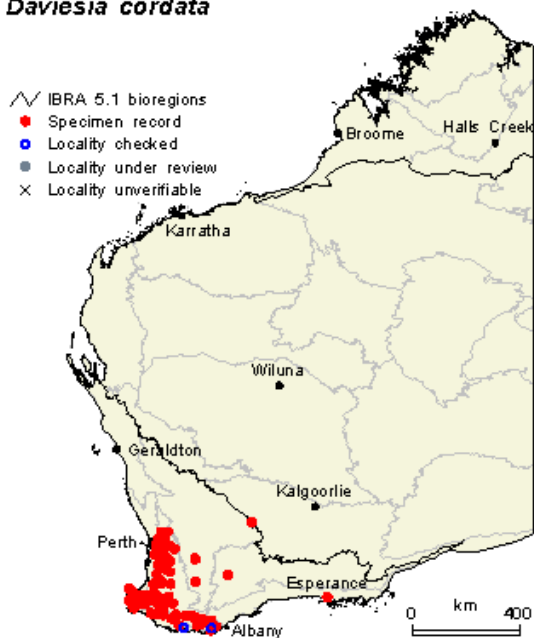
Photo by Ken Atkins/Liesl Rohl

Daviesia cordata

(Bookleaf)

Family:	Papilionaceae
Plant Description:	Erect, slender shrub 0.5-2m high. Flowers yellow, orange, red brown.
Habitat:	Grows on lateritic or granite soils, undulating plains, hills ridges.
Flowering Time:	July-January
Part Harvested/Specifications:	Foliage stems, clean leaves, no soft tips, 70+cm, stems taken with seeds.
Peak Harvesting Period:	December-May
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems can be harvested in any one season. Stems must be cut with secateurs and not broken off.

Daviesia cordata

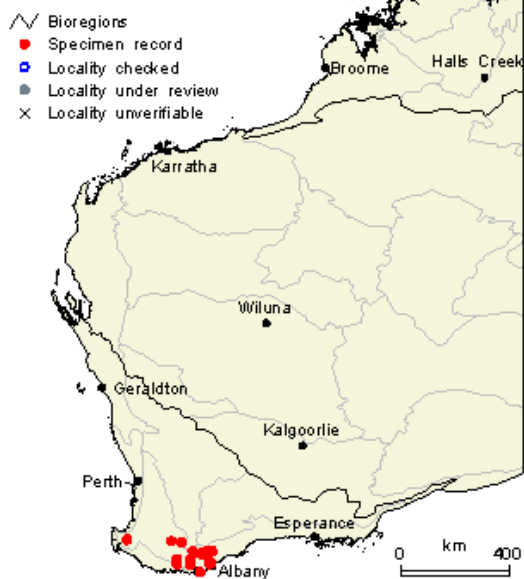


Daviesia oppositifolia

(Low hops)

Family:	Papilionaceae
Plant Description:	Erect, multi-stemmed scrub 0.5 m high. Flowers are red to orange.
Habitat:	Grows on sandy, stony loams on hills.
Flowering Time:	August
Part Harvested/Specifications:	Stems, 35 cm.
Peak Harvesting Period:	November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Daviesia oppositifolia

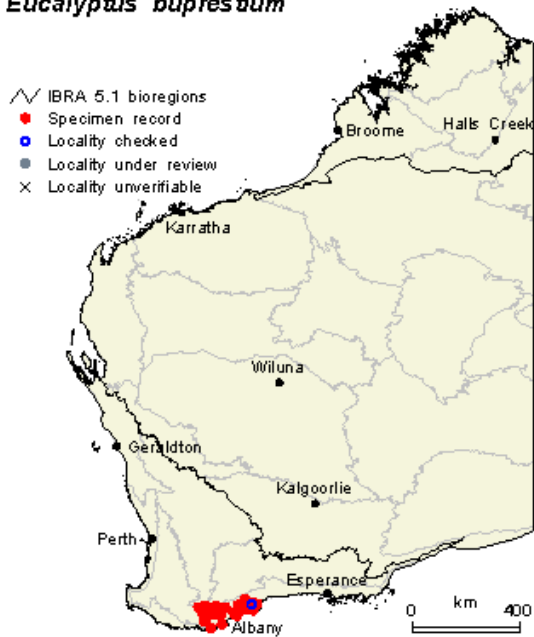


Map by Paul Gioia, WA Herbarium. Current at November 11, 2002

Eucalyptus buprestium

Family:	Myrtaceae
Plant Description:	Mallee, 1-6 m high. Bark smooth, grey. Flowers white.
Habitat:	Grows on sand, often with gravel, sandy clay, sandplains, ridge tops.
Flowering Time:	November-April
Part Harvested/Specifications:	Foliage.
Peak Harvesting Period:	November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from the base.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Shoots after fire.
Harvesting	Shoots after harvesting.

Eucalyptus buprestium

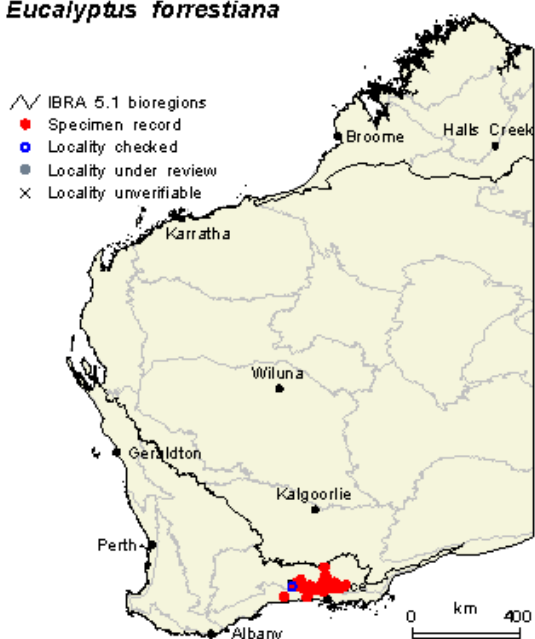


Eucalyptus forrestiana

(Fuchsia mallee)

Family:	Myrtaceae
Plant Description:	Tree (mallee), 1.5-6 m high; bark smooth, flowers yellow.
Habitat:	Grows on white, or grey/yellow clay, sandy clay, grey sand, sandplains, near salt lakes.
Flowering Time:	January-March/April-June
Part Harvested/Specifications:	Stems with nuts, nuts need to be red and leaves clean, 50+cm.
Peak Harvesting Period:	December-January+May
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Shoots after fire.
Harvesting	Shoots after harvesting.

Eucalyptus forrestiana



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Photo by Stephen Hopper

Eucalyptus gomphocephala

(Tuart)

Family:	Myrtaceae
Plant Description:	Tree, 10-40 m high, bark rough, box-type, flowers white.
Habitat:	Grows on sand over limestone, coastal plains.
Flowering Time:	January-April
Part Harvested/Specifications:	Foliage and foliage with nuts.
Peak Harvesting Period:	March/April+November-January
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Hot fires will kill the tree.
Harvesting	Shoots after harvesting.

Eucalyptus gomphocephala

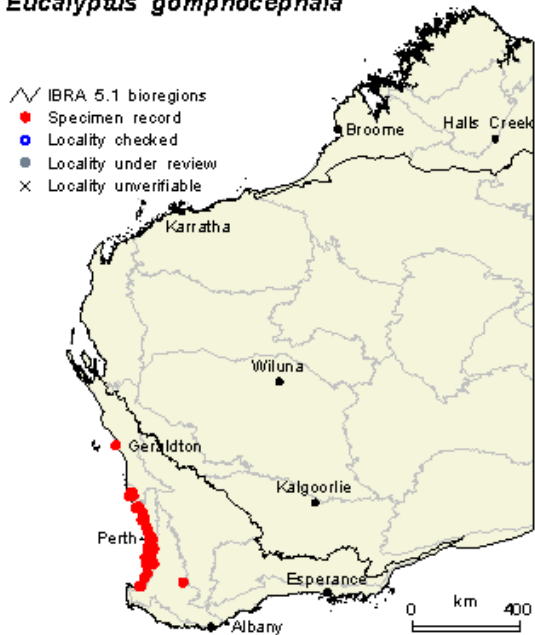


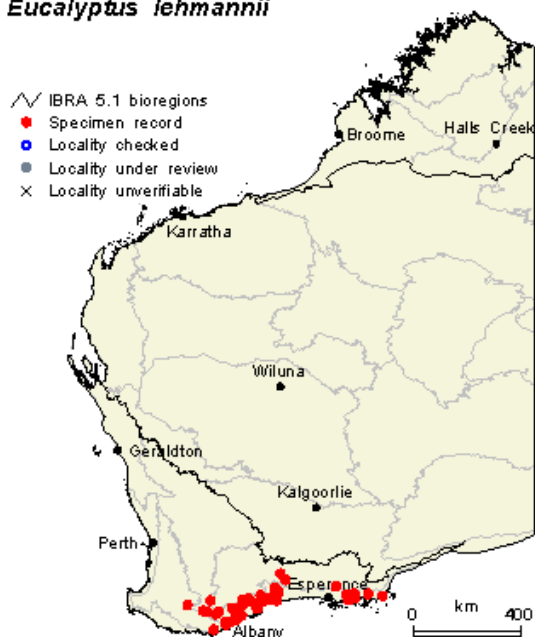
Photo taken by Carol Davies

Eucalyptus lehmannii

(Bushy yate)

Family:	Myrtaceae
Plant Description:	Mallee or shrub, 2-4 (6) m high; bark smooth; flowers green, yellow.
Habitat:	Grows on sandy soils over granite or quartzite, often with gravel, rocky hills, coastal dunes.
Flowering Time:	January-July/November-December
Part Harvested/Specifications:	Nuts, foliage and foliage with nuts.
Peak Harvesting Period:	September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from the base of the plant.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Shoots after fire.
Harvesting	Shoots after harvesting.

Eucalyptus lehmannii



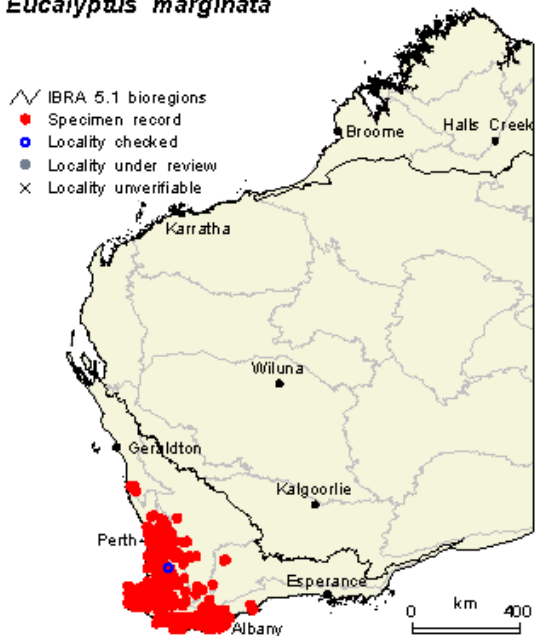
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Eucalyptus marginata

(Jarrah)

Family:	Myrtaceae
Plant Description:	Tree (mallee), 1-30 m high, bark rough, fibrous; flowers white, cream pink.
Habitat:	Grows on grey sand, clay or sandy loam, laterite, hills, and rises.
Flowering Time:	June-January
Part Harvested/Specifications:	Foliage and foliage with nuts.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from the base of the plant.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Shoots after fire.
Harvesting	Shoots after harvesting.

Eucalyptus marginata



Eucalyptus patens

(Swan River blackbutt)

Family:	Myrtaceae
Plant Description:	Tree, 3-25 m high. Bark rough, longitudinally furrowed; flowers white, cream.
Habitat:	Grows on gravelly soils, sandy clay, loam soils in depressions, stream banks, valleys.
Flowering Time:	July-August/November-February
Part Harvested/Specifications:	Foliage and foliage with nuts.
Peak Harvesting Period:	May+November-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Hot fires will kill the tree.
Harvesting	Shoots after harvesting.

Eucalyptus patens

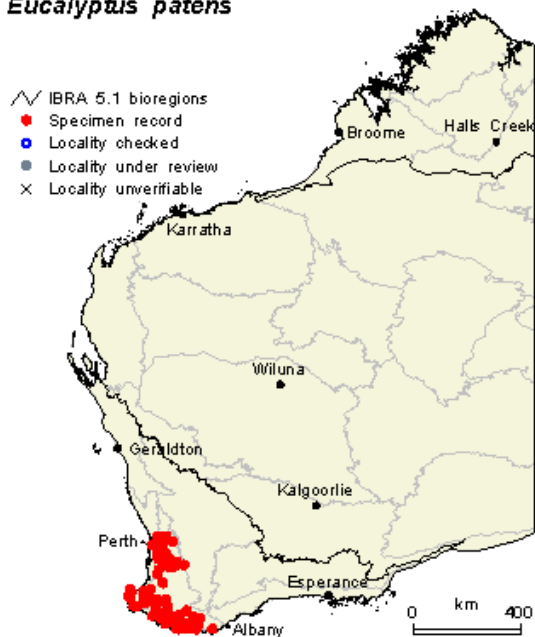


Photo by Stephen Hopper

Eucalyptus preissiana

(Bell-fruited mallee)

Family:	Myrtaceae
Plant Description:	Sprawling mallee to 3 (5) m high, bark smooth, flowers yellow.
Habitat:	Grows on sand, sandy clay or gravel, laterite, limestone in coastal and subcoastal area.
Flowering Time:	May/August-November
Part Harvested/Specifications:	Flowering stems, some in bud, some in flower and some with nuts, 60+ cm.
Peak Harvesting Period:	July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from the base of the plant.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Shoots after fire.
Harvesting	Shoots after harvesting.

Eucalyptus preissiana

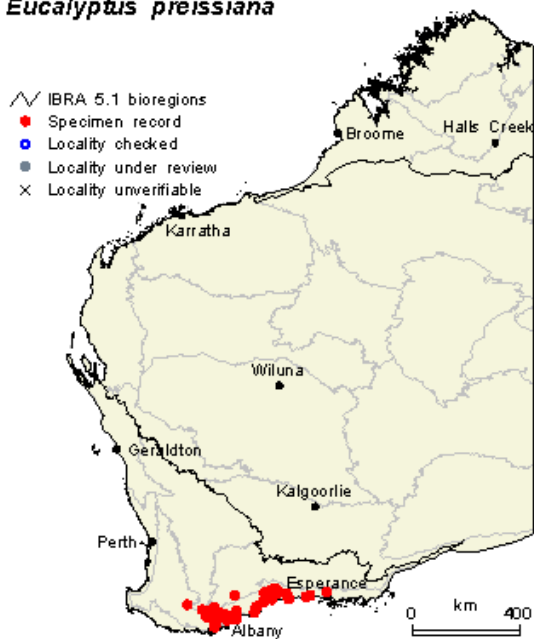


Photo by Stephen Hopper

Eucalyptus pyriformis

(Pear fruited mallee)

Family:	Myrtaceae
Plant Description:	Mallee, 1.5-5 m high. Bark smooth. Flowers red, white, cream, yellow.
Habitat:	Grows on white, grey or yellow sand, and laterite soils and on plains, hill slopes.
Flowering Time:	May-October
Part Harvested/Specifications:	Flowering stems, some in bud, some in flower and some with nuts, 60+cm.
Peak Harvesting Period:	March-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from the base of the plant.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Shoots after fire.
Harvesting	Shoots after harvesting.

Eucalyptus pyriformis

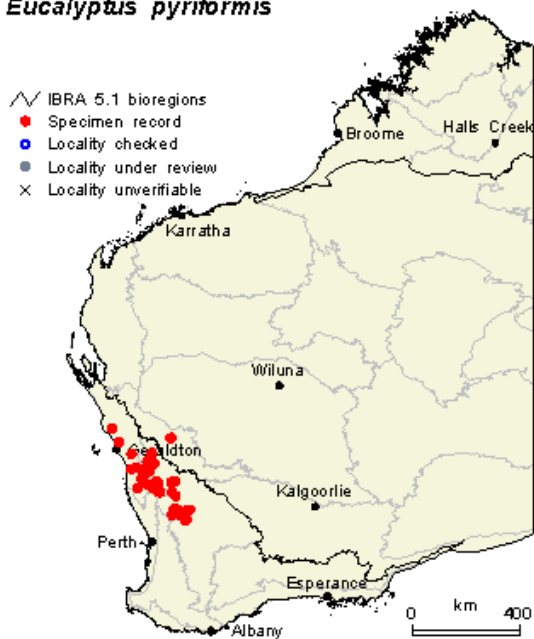


Photo by Stephen Hopper

Eucalyptus rudis

(Flooded gum)

Family:	Myrtaceae
Plant Description:	Tree, 5-20 m high, bark rough, box-type. Flowers white.
Habitat:	Found on sandy or loamy soils in wetter parts of south-western WA, flats, hillsides.
Flowering Time:	July-September
Part Harvested/Specifications:	Foliage and foliage with nuts.
Peak Harvesting Period:	April
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Hot fires will kill the tree.
Harvesting	Shoots after harvesting.

Eucalyptus rudis

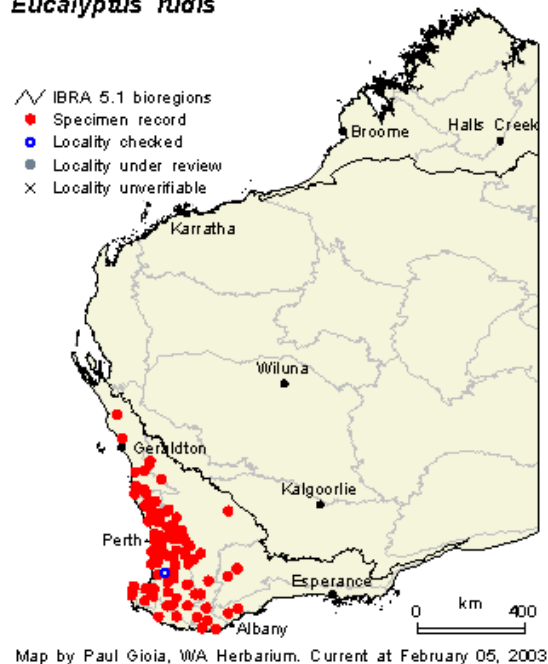


Photo by Penny Hussey

Eucalyptus tetragona

(Blue mallee)

Family:	Myrtaceae
Plant Description:	Mallee, 1-8 m high, bark smooth. Flowers white, cream.
Habitat:	Grows on white or grey sand over laterite, sandplains, hills.
Flowering Time:	September-March
Part Harvested/Specifications:	Stems with white nuts, no soft tips, clean leaves, 50+cm.
Peak Harvesting Period:	March-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from the base of the plant.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Shoots after fire.
Harvesting	Shoots after harvesting.

Eucalyptus x tetragona

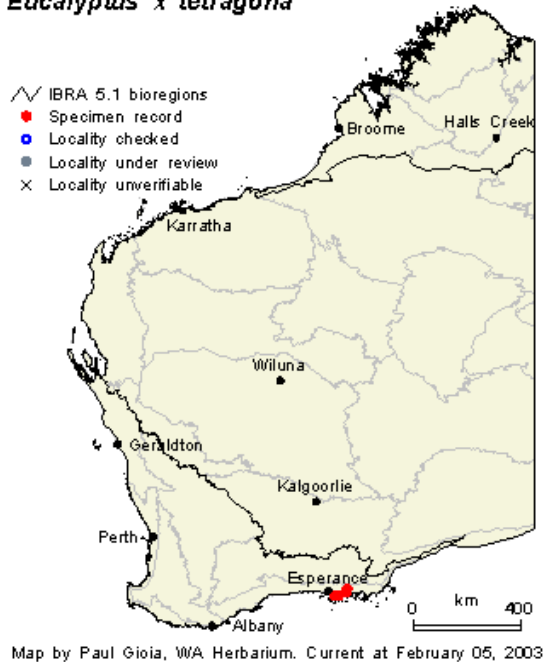


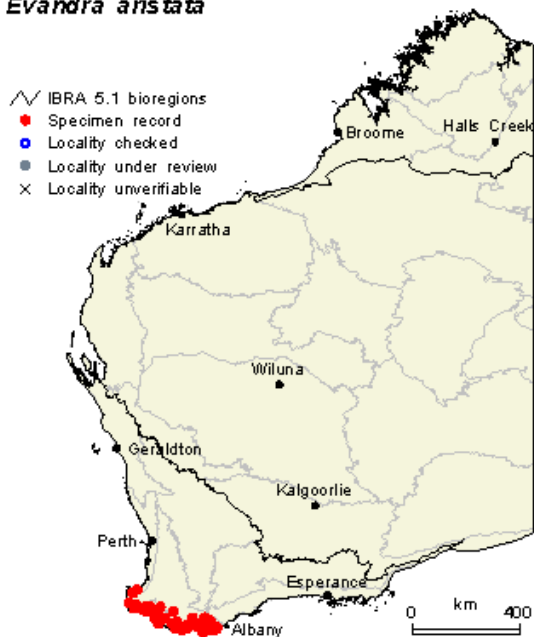
Photo by Penny Hussey

Evandra aristata

(Fisherman's rod, kangaroo grass)

Family:	Cyperaceae
Plant Description:	Rhizomatous, tufted perennial, grass-like or herb (sedge), 0.5-2.2 m high. Flowers brown.
Habitat:	Grows on grey-black sand, winter wet swamps, and seepage areas.
Flowering Time:	October-December
Part Harvested/Specifications:	Flowering stems with young flowers, 90 cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Shoots from rhizome after fire.
Harvesting	Shoots after harvesting.

Evandra aristata

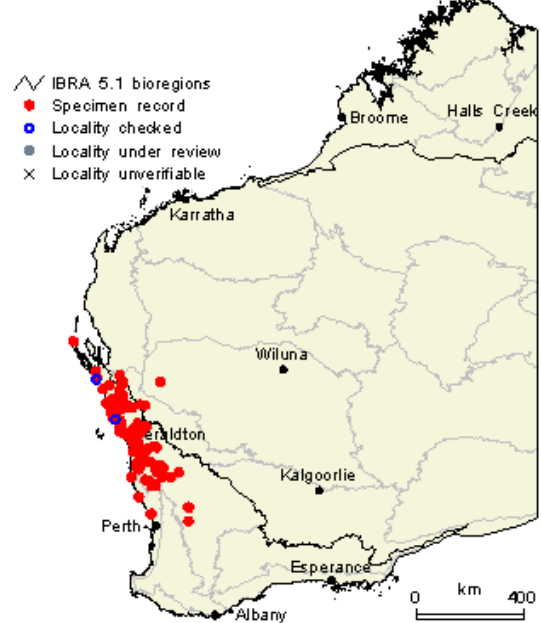


Geleznovia verrucosa.

(Yellow bells)

Family:	Rutaceae
Plant Description:	Shrub, 0.1-1 (1.5) m high. Flowers yellow.
Habitat:	Grows on sandy and gravelly soils. Sandplains.
Flowering Time:	July-October
Part Harvested/Specifications:	Flowering stems, some in bud, no blown flowers, 40+cm.
Peak Harvesting Period:	July-August
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible in this natural distribution.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	At least two lateral branches must be left after harvesting for regeneration to occur.

Geleznovia verrucosa



Grevillea diversifolia

Family:	Proteaceae
Plant Description:	Erect to spreading shrub, 1-6 m high. Flowers yellow, green, cream, white, red.
Habitat:	Grows on loam, gravel, lateritic soils, often along watercourses and low lying, seasonally wet flats.
Flowering Time:	April-January
Part Harvested/Specifications:	Foliage stems, no soft tips, 70+cm.
Peak Harvesting Period:	April-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Fire kills the plant.
Harvesting	This species is fast growing and has a short lifespan. It shoots after harvesting.

Grevillea diversifolia

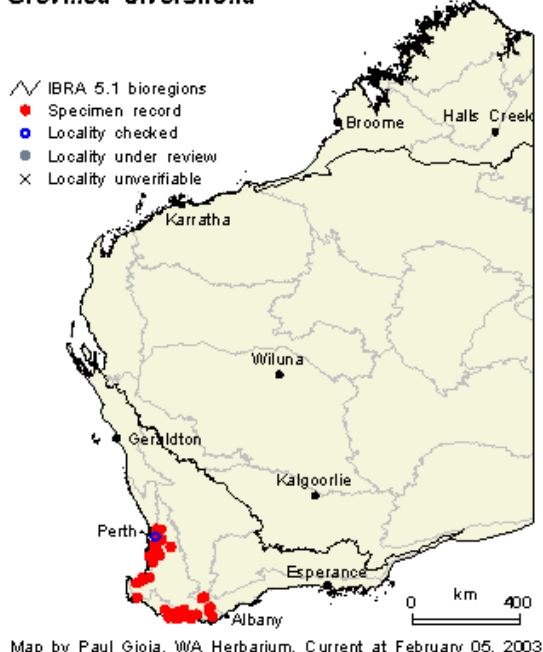


Photo by Penny Hussey

Grevillea endlicheriana

Family:	Proteaceae
Plant Description:	Shrub, (0.8) 1-3 m high. Flowers white, pink red.
Habitat:	Grows on sand over granite, gravelly loam over laterite on granite hills, and laterite outcrops.
Flowering Time:	July-November
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	April-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber. Has poor seed set.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

Grevillea endlicheriana

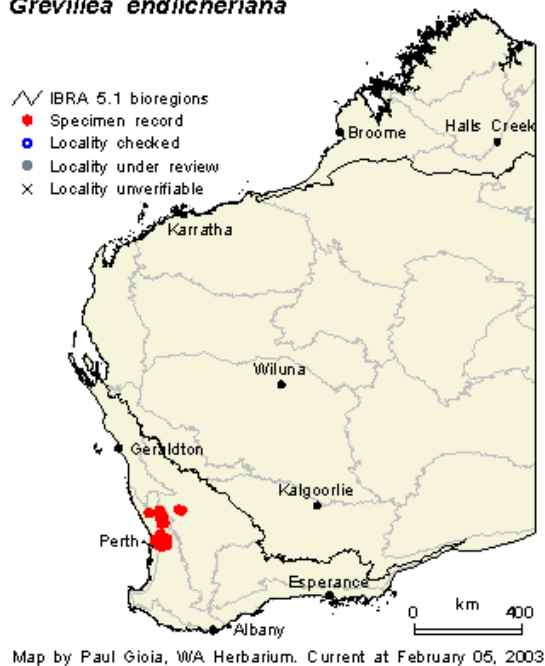


Photo by Penny Hussey

Grevillea leucopteris

(Whip cane)

Family:	Proteaceae
Plant Description:	Spreading, bushy shrub, 1-4 (5) m high. Flowers cream, white, yellow.
Habitat:	Grows on grey, yellow or brown sand, sandy clay, lateritic ridges, plains.
Flowering Time:	July-December
Part Harvested/Specifications:	Flowering stems, flowers must be in bud, 70+cm.
Peak Harvesting Period:	August-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire.
Harvesting	Only 20% of the stems can be harvested to ensure sustainability.

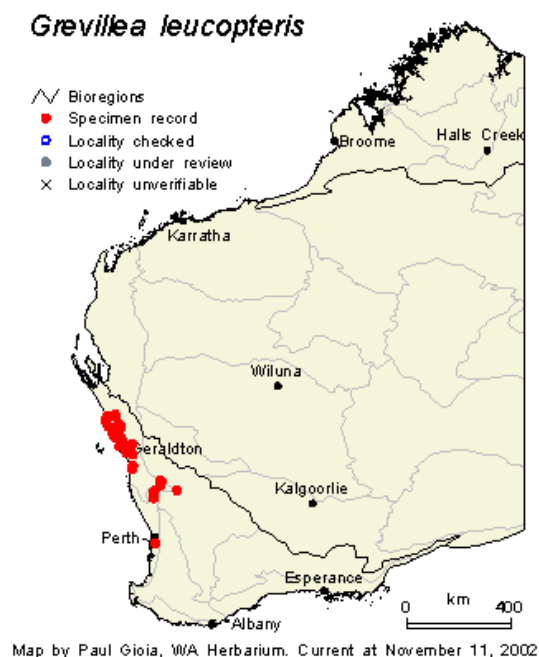


Photo by Phil Roberts

Grevillea synapheae

Family:	Proteaceae
Plant Description:	Sprawling to prostrate, lignotuberous shrub, 0.2 to 0.6 m high. Flowers white, cream, yellow.
Habitat:	Grows on sand, gravel, brown loam, laterite, granite, at or near the top of rises, low heathland.
Flowering Time:	July-November
Part Harvested/Specifications:	Flowering stems, 70+cm.
Peak Harvesting Period:	March-June+November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur. Stems must be cut with secateurs and not broken off.

Grevillea synapheae

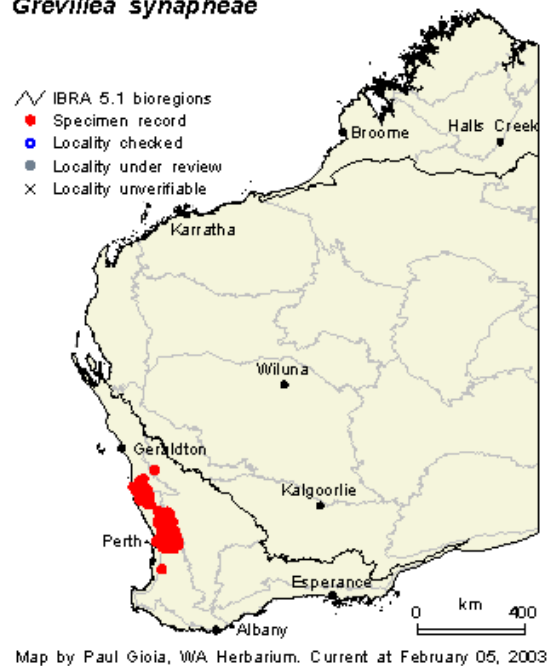


Photo by Penny Hussey

Hakea cucullata

(Cup-leaf hakea, Scallops)

Family:	Proteaceae
Plant Description:	Slender, few branched, non-lignotuberous shrub or tree 1-5 m high. Flowers pink.
Habitat:	Grows on gravelly soils.
Flowering Time:	August-October
Part Harvested/Specifications:	Foliage and flowering stems.
Peak Harvesting Period:	March-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Variable reports.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur. Stems must be cut with secateurs and not broken off.

Hakea cucullata

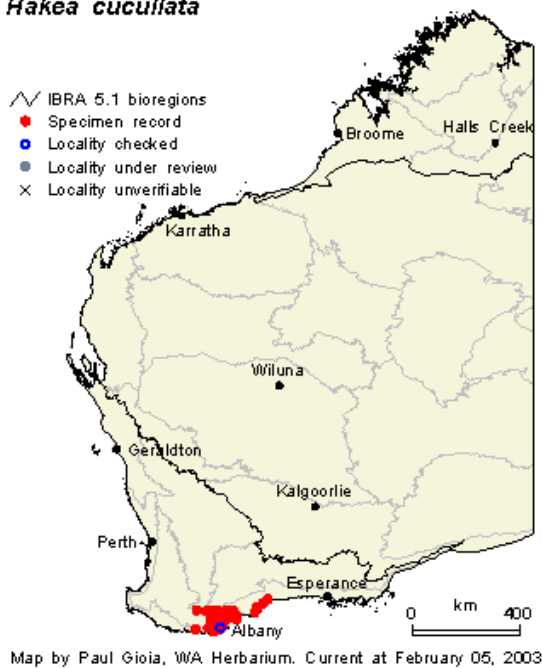


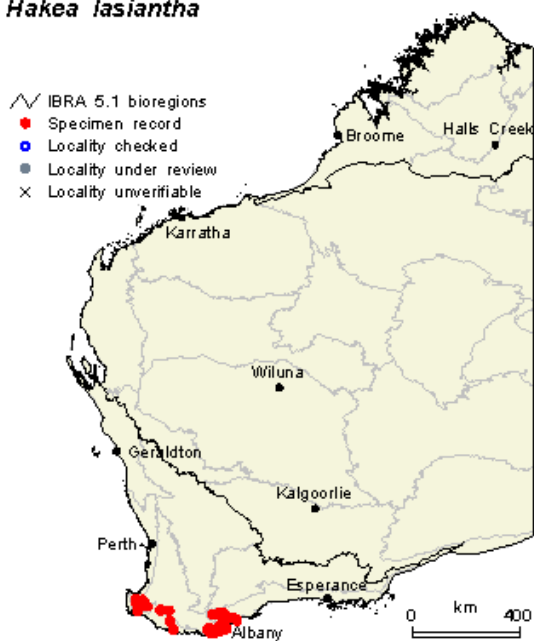
Photo by Penny Hussey

Hakea lasiantha

(Crowsfoot)

Family:	Proteaceae
Plant Description:	Erect, non-lignotuberous shrub, 1-4 m high. Flowers white.
Habitat:	Grows on gravelly soils and sandy clay.
Flowering Time:	May-September
Part Harvested/Specifications:	Flowering stems, 50+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Variable reports.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur. Stems must be cut with secateurs and not broken off.

Hakea lasiantha



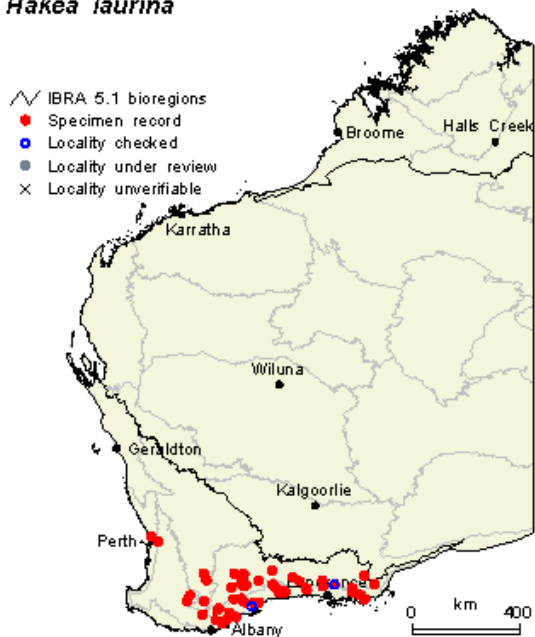
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Hakea laurina

(Pincushion hakea)

Family:	Proteaceae
Plant Description:	Non-lignotuberos shrub or tree, 1-6 m high. Flowers red.
Habitat:	Grows on sand, and sandy clay soils.
Flowering Time:	May-June
Part Harvested/Specifications:	Flowering stems, some in bud, no blown flowers, 50+cm.
Peak Harvesting Period:	April
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur. Stems must be cut with secateurs and not broken off.

Hakea laurina



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



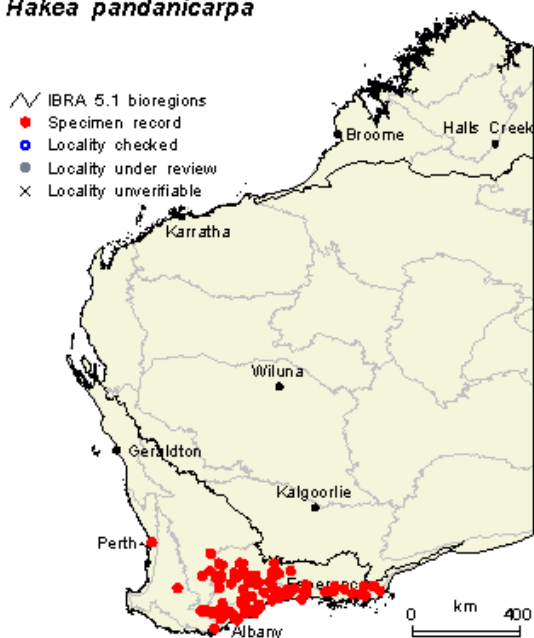
Photo by Penny Hussey

Hakea pandanica

(Corked hakea)

Family:	Proteaceae
Plant Description:	Erect, open shrub, 1-4.5 m high. Flowers white, cream, green.
Habitat:	Grows on sandy, clay or stony soils, laterite soils ion sandplains, breakaways, flats, hills.
Flowering Time:	September-November/March
Part Harvested/Specifications:	Stems with nuts, remove leaves, 50+cm.
Peak Harvesting Period:	May-July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur. Stems must be cut with secateurs and not broken off.

Hakea pandanica



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Hakea platysperma

(Cricket ball hakea, Native peach)

Family:	Proteaceae
Plant Description:	Erect, non-lignotuberos shrub, 0.5-4 m high. Flowers cream, pink, red.
Habitat:	Grows on white/grey or yellow sand, sandy clay, often over laterite.
Flowering Time:	August-September
Part Harvested/Specifications:	Stems with nuts, remove leaves, min of 5 nuts, 50+cm, preferably 70+ cm.
Peak Harvesting Period:	April-May+September-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Fire kills the plant.
Harvesting	Green leaves must be left below the harvest cut for regeneration to occur. Stems must be cut with secateurs and not broken off.

Hakea platysperma

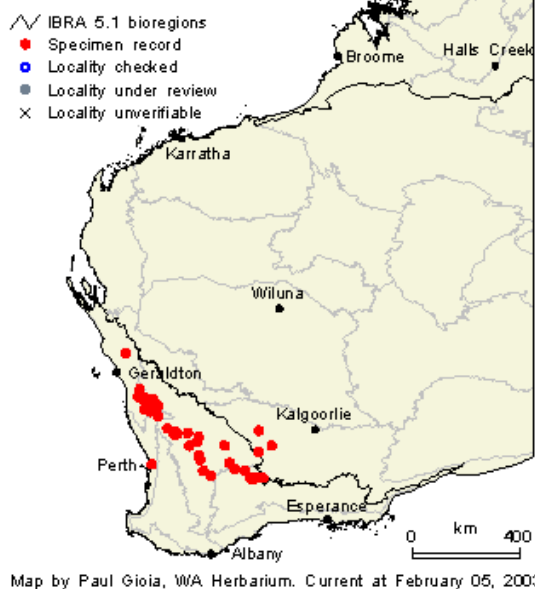


Photo by Penny Hussey

Hakea victoria

(Royal hakea)

Family:

Proteaceae

Plant Description:

Sparsely branched, non-lignotuberous shrub, 1.5-3m high. Flowers cream, white.

Distinctive Features:

Variegated leaves. They persist up to 5 years, the colour becoming deeper each year. Leaves at base are all green.

Habitat:

Grows on white or grey sand over granite or laterite, rocky slopes, among quartzite rocks.

Flowering Time:

June-July

Part Harvested/Specifications:

Foliage stems, red and orange leaves, 50+cm.

Peak Harvesting Period:

May

Conservation status:

Not threatened

Conservation issues:

Regeneration

Seed.

***Phytophthora* susceptibility**

Susceptible.

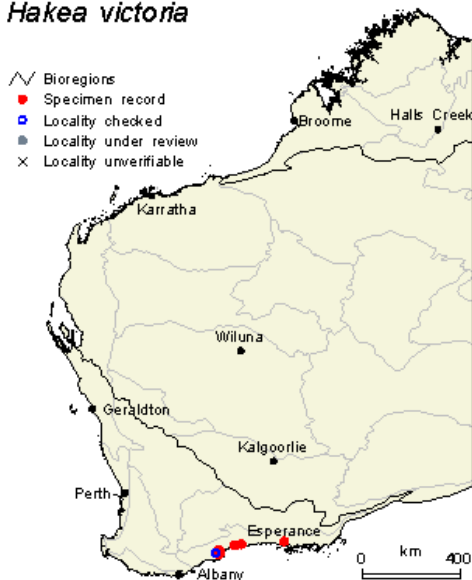
Fire

This species is killed by fire.

Harvesting

Only 20% of the stems can be harvested to ensure sustainability.

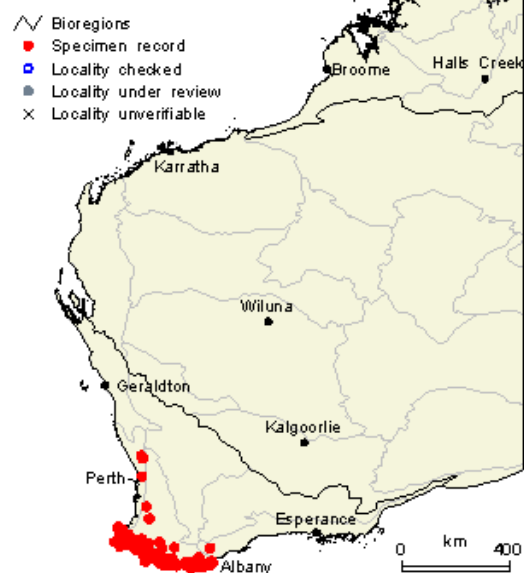
Hakea victoria



Homalospermum firmum

Family:	Myrtaceae
Plant Description:	Shrub or tree (0.3) 1-4 (8) m high. Flowers white, pink.
Habitat:	Grows on white, grey, yellow or black peaty sand, loam in winter-wet depressions, swamps.
Flowering Time:	August-December
Part Harvested/Specifications:	Stems for foliage and foliage and flowers.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts after fire.
Harvesting	Sprouts after harvesting.

Homalospermum firmum



Map by Paul Gioia, WA Herbarium. Current at November 11, 2002



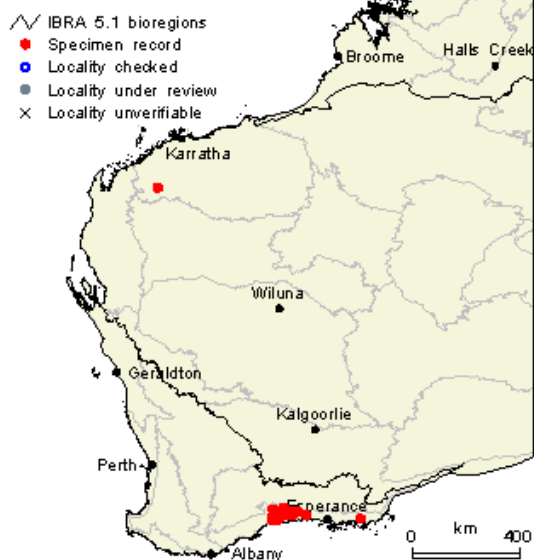
Photo by Stephen Hopper

Hybanthus floribundus subsp. *adpressus*

(Native violet)

Family:	Violaceae
Plant Description:	Shrub, 0.3-1 (2) m high. Flowers pale blue to white.
Habitat:	Grows on sand and clayey soils.
Flowering Time:	April-May/August-November
Part Harvested/Specifications:	Flowering stems, some in bud, lush leaves, 60+cm. Heavily flowered in late bud.
Peak Harvesting Period:	May-June
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Sprouts from the base.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts from the base of the plant after fire.
Harvesting	Does not regenerate if cut or snapped off. Will sprout when cut to base of stem. It takes two seasons before harvestable again.

Hybanthus floribundus subsp. *adpressus*

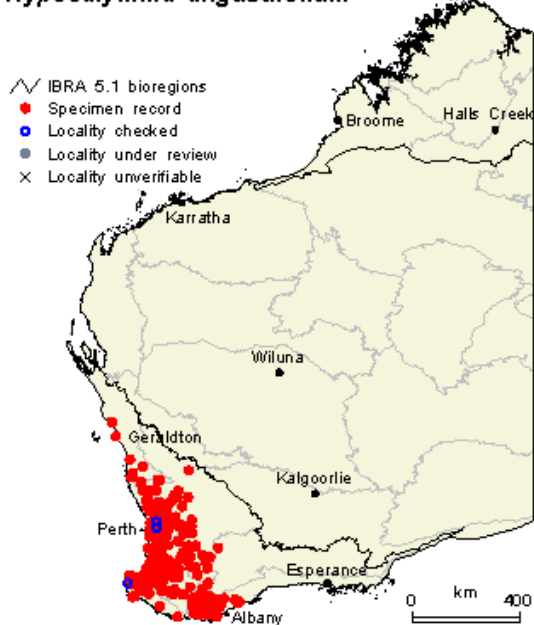


Hypocalymma angustifolium

(White myrtle)

Family:	Myrtaceae
Plant Description:	Erect shrub, 0.2-1 (1.5) high. Flowers white, pink.
Habitat:	Found on sandy, clay, laterite soils in winter wet depressions, along water courses, outcrops, hillsides.
Flowering Time:	July-November
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	August-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

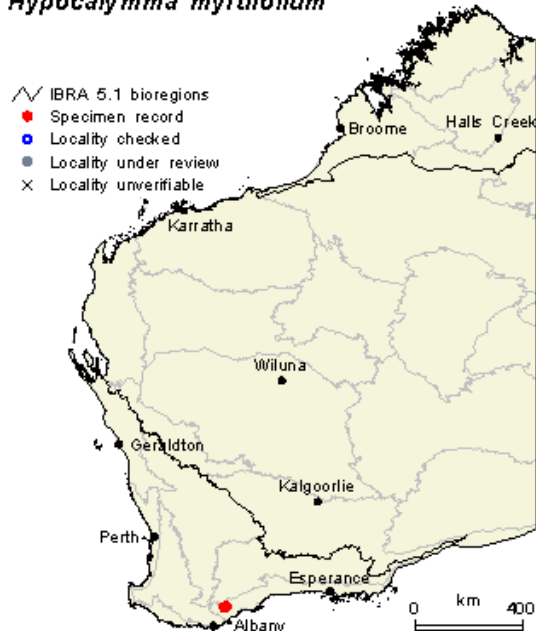
Hypocalymma angustifolium



Hypocalymma myrtifolium

Family:	Myrtaceae
Plant Description:	Erect shrub, 0.3-0.6 (1.5) m high. Flowers cream, white.
Habitat:	Grows on peaty sand over quartzite. Steep rocky slopes.
Flowering Time:	July-November
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	August
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Hypocalymma myrtifolium



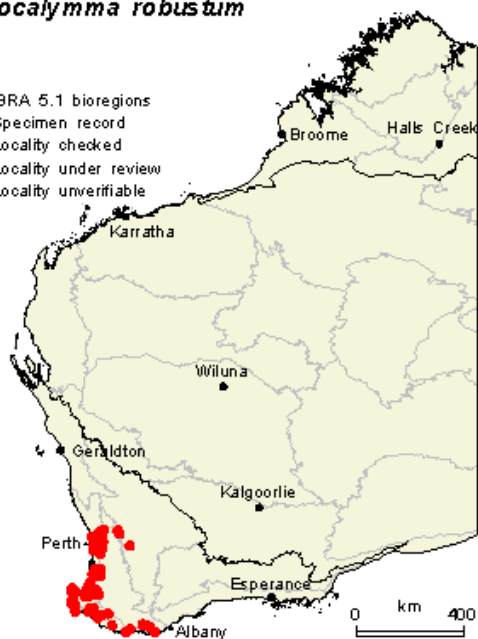
Hypocalymma robustum

(Swan River myrtle)

Family:	Myrtaceae
Plant Description:	Erect shrub, 0.4-1 (1.5) m high. Flowers pink, red.
Habitat:	Grows on gravelly lateritic soils, sandy soils on undulating terrain, ridges.
Flowering Time:	July-November
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	August-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Hypocalymma robustum

- ∧ IBRA 5.1 bioregions
- Specimen record
- Locality checked
- Locality under review
- × Locality unverifiable



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



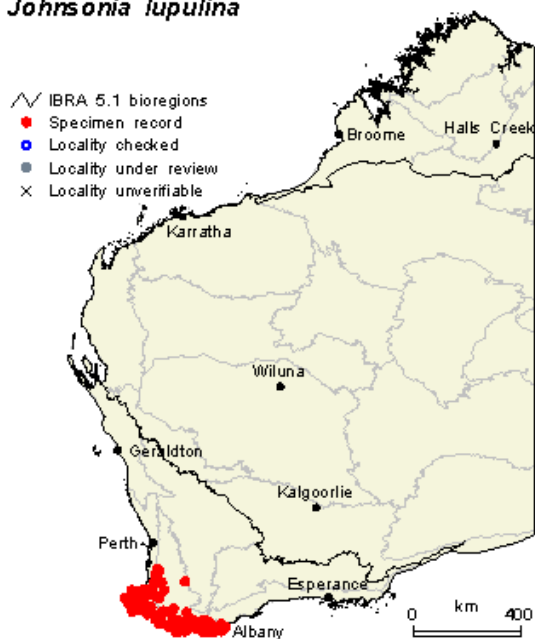
Photo by Penny Hussey

Johnsonia lupulina

(Hooded lily)

Family:	Anthericaceae
Plant Description:	Rhizomatous, tufted, clump forming perennial grass-like or herb, 0.3-0.8 (1) m high 10 0.5 m wide. Flowers cream, white.
Habitat:	Grows on grey or black peaty sand, lateritic gravel, dunes, roadsides, and damp locations.
Flowering Time:	September-December
Part Harvested/Specifications:	Flowering stems, no blown flowers, 60+cm.
Peak Harvesting Period:	October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts from rhizome after fire. Frequent fire does kill the plants.
Harvesting	Sprouts after harvesting.

Johnsonia lupulina

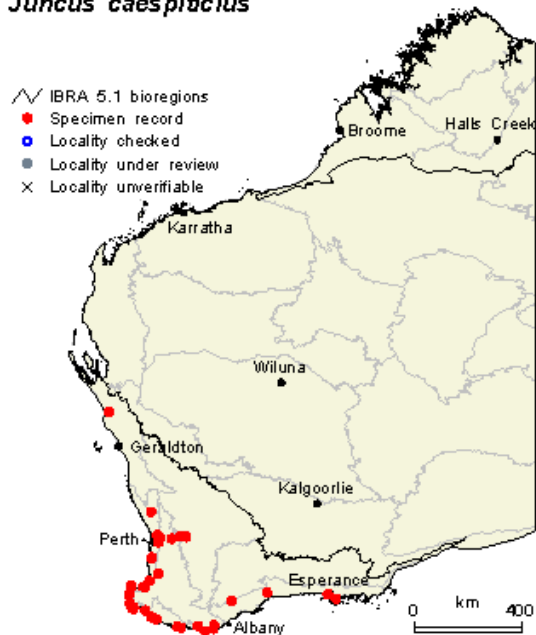


Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Juncus caespiticius

Family:	Juncaceae
Plant Description:	Rhizomatous perennial, grass-like or herb 0.09-0.6m high.
Habitat:	Grows on peaty or saline sand in winter wet depressions.
Flowering Time:	October-December
Part Harvested/Specifications:	Seeded stems.
Peak Harvesting Period:	January-April
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts from rhizome after fire. Frequent fire does kill the plants.
Harvesting	Sprouts after harvesting.

Juncus caespiticius



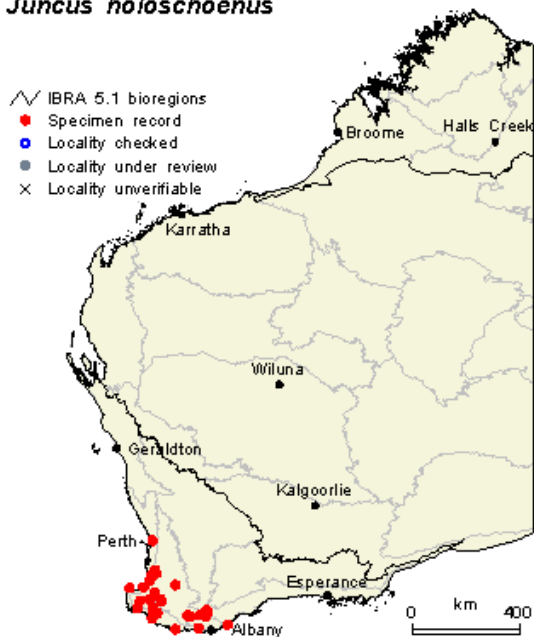
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Juncus holoschoenus

(Fern rush)

Family:	Juncaceae
Plant Description:	Rhizomatous, perennial herb, 0.3-1 m high.
Habitat:	Grows on sand, swamps, and creeks.
Flowering Time:	August-December
Part Harvested/Specifications:	Flowering stems, in full flower, 70+cm.
Peak Harvesting Period:	December-March
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts from rhizome after fire. Frequent fire does kill the plants.
Harvesting	Sprouts after harvesting.

Juncus holoschoenus



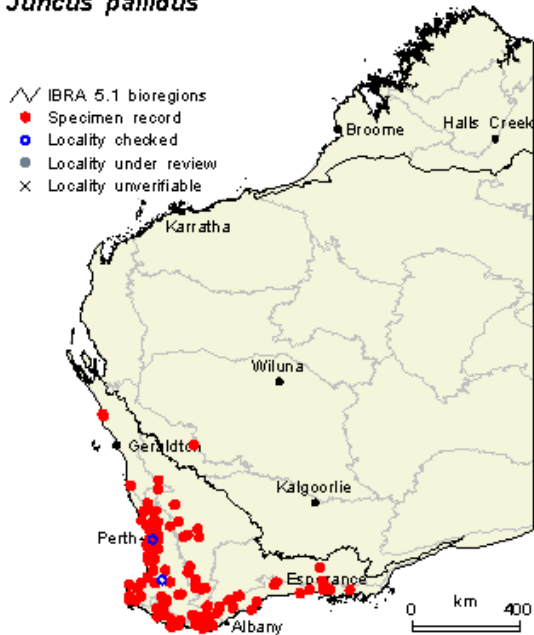
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Juncus pallidus

(Coarse rush)

Family:	Juncaceae
Plant Description:	Rhizomatous, robust perennial herb, 0.5-2 m high. Flowers green.
Habitat:	Grows on clay, swamps, and near watercourses.
Flowering Time:	October–December
Part Harvested/Specifications:	Seeded stems.
Peak Harvesting Period:	April
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts from rhizome after fire. Frequent fire does kill the plants.
Harvesting	Sprouts after harvesting.

Juncus pallidus



Kingia australis

(Grass girls, Djingarra)

Family:	Dasypogonaceae
Plant Description:	Perennial tree-like monocot, 1.8 m high. Flowers yellow, green, brown.
Habitat:	Found on sand, sandy loam, clayey loams.
Flowering Time:	July–August
Part Harvested/Specifications:	Clean leaves, 80+cm, and flowers.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Terminal buds.
<i>Phytophthora</i> susceptibility	Resistant.
Fire	Shoots after fire from aerial terminal buds.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Kingia australis

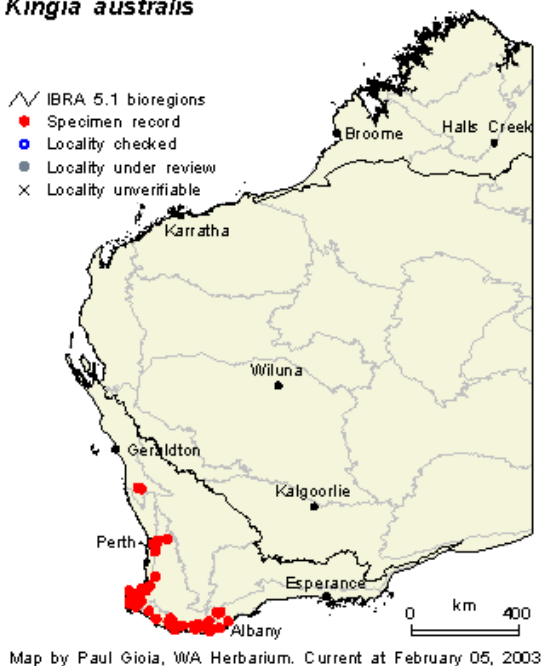


Photo by Ken Atkins/Liesl Rohl

Kunzea ericifolia

Family:	Myrtaceae
Plant Description:	Erect shrub, (0.4) 1-4 m high. Flowers yellow, cream, white.
Habitat:	Found on peaty sand, grey sand, quartzite soils in seasonally wet swamps, moist situations, amongst rocks on summit.
Flowering Time:	July-December
Part Harvested/Specifications:	Foliage 70+cm, and stems with flowers + foliage.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Kunzea ericifolia

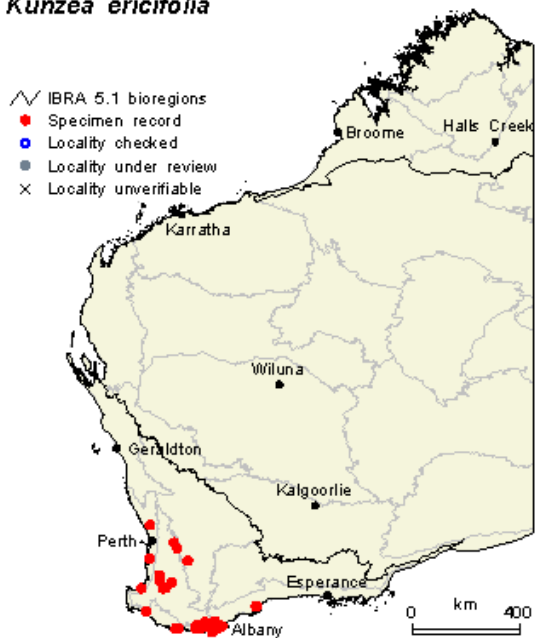


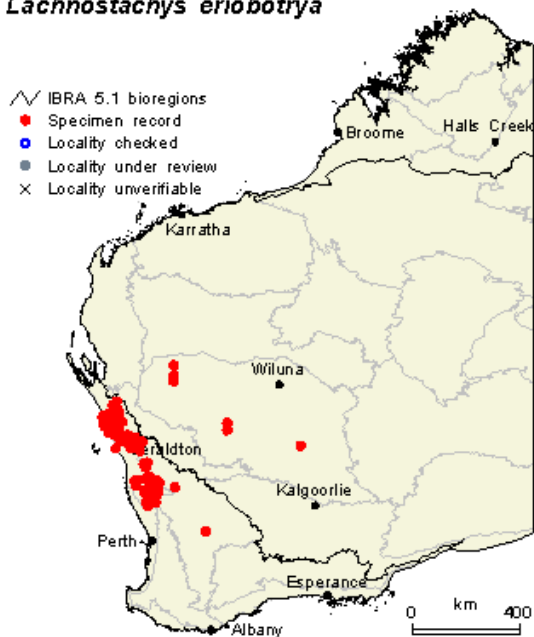
Photo by Ken Atkins

Lachnostachys eriobotrya

(Sago conospermum)

Family:	Chloanthaceae
Plant Description:	Erect or spreading shrub, (0.3) 0.5–2 (3) m high, leaves linear, flower spikes several to many, inside corolla tube glabrous except near base. Flowers white, purple.
Habitat:	Grows on white, grey or yellow sand, often over laterite, in low to tall shrublands or woodlands.
Flowering Time:	August-December
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	August-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed
<i>Phytophthora</i> susceptibility	Unknown
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Lachnostachys eriobotrya



Lachnostachys verbascifolia

(Lambstail and ears)

Family:	Chloanthaceae
Plant Description:	Shrub, 0.3-1.3 m high, leaves usually obtuse, bracts with white indumentum. Flowers purple, white.
Habitat:	Grows on sandy soils, rarely with laterite, shrublands and woodlands.
Flowering Time:	June-November
Part Harvested/Specifications:	Flowering stems, some in bud, 40+cm, preferably 70+cm.
Peak Harvesting Period:	July-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts from lignotuber.
Harvesting	Sprouts after harvesting.

Lachnostachys verbascifolia

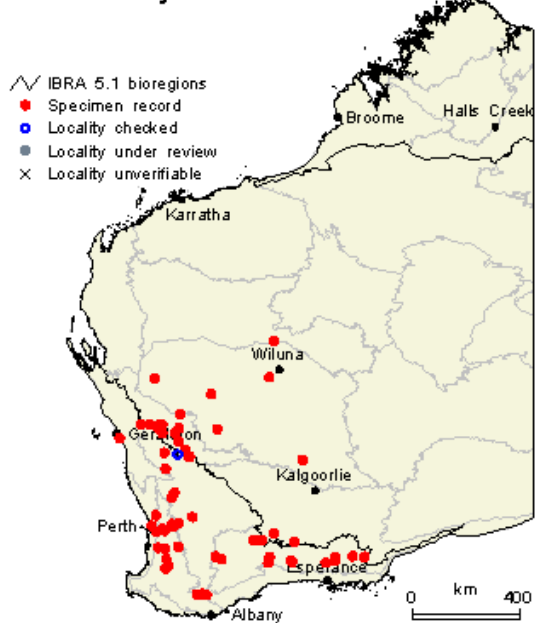


Photo by FECA

Lawrencia helmsii

(Long fingers, Dunna Dunna)

Family:	Malvaceae
Plant Description:	Erect, cactus-like shrub, (0.1) 0.3-1.5 m high. Flowers yellow, green.
Habitat:	Grows on sandy soils, clay, gypsum & limestone ridges, near salt lakes.
Flowering Time:	July-December
Part Harvested/Specifications:	Flowering stems, no brown flowers, 60+cm.
Peak Harvesting Period:	October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	This species does not occur within the area affected by <i>Phytophthora</i> .
Fire	N/A
Harvesting	Sprouts after harvesting.

Lawrencia helmsii

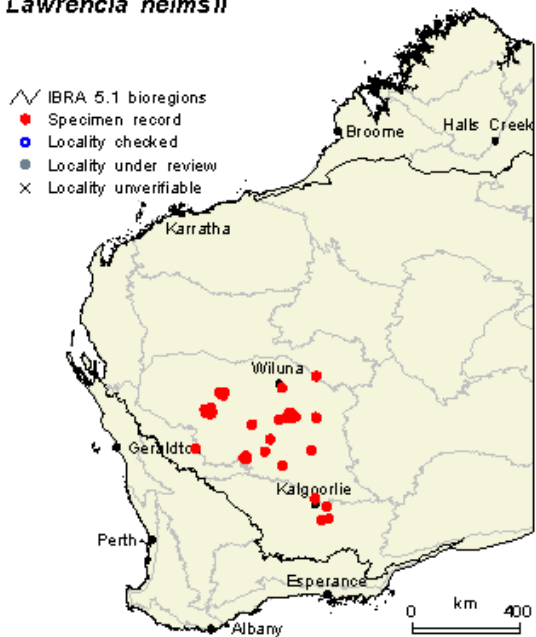


Photo by Penny Hussey

Lechenaultia biloba

(Blue leschenaultia)

Family:	Goodeniaceae
Plant Description:	0.15-1 (1.6) m high with distinctive large corolla wings. Flowers blue.
Habitat:	Grows on lateritic or granitic soils on hills, outcrops, and flats.
Flowering Time:	July-December
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	September-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Lechenaultia biloba

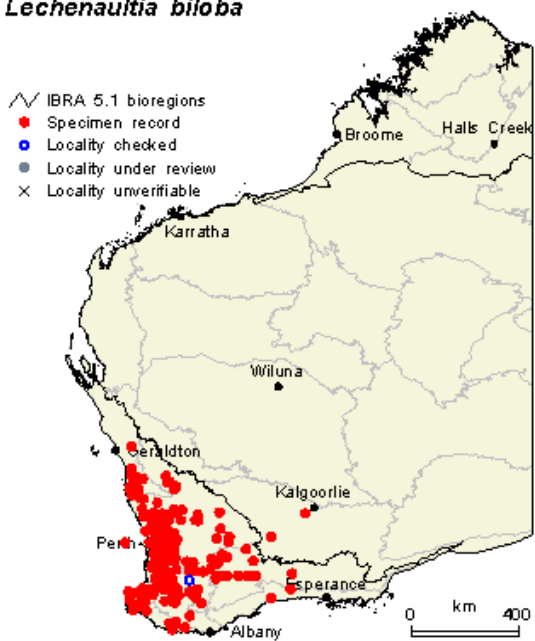


Photo by Ken Atkins

Lepidosperma effusum

Family:	Cyperaceae
Plant Description:	Rhizomatous, tufted robust perennial, grass-like or herb (sedge), 2.5 m high, clumps to 2 m wide. Flowers brown, dull grey.
Habitat:	Grows on white sand, and brown loam in creeks and river edges, and swamps (occasionally tidal).
Flowering Time:	April-June/September-November
Part Harvested/Specifications:	Stems with seeds.
Peak Harvesting Period:	March-July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Not killed by fire. Sprouts from rhizome after fire.
Harvesting	Sprouts after harvesting.

Lepidosperma effusum

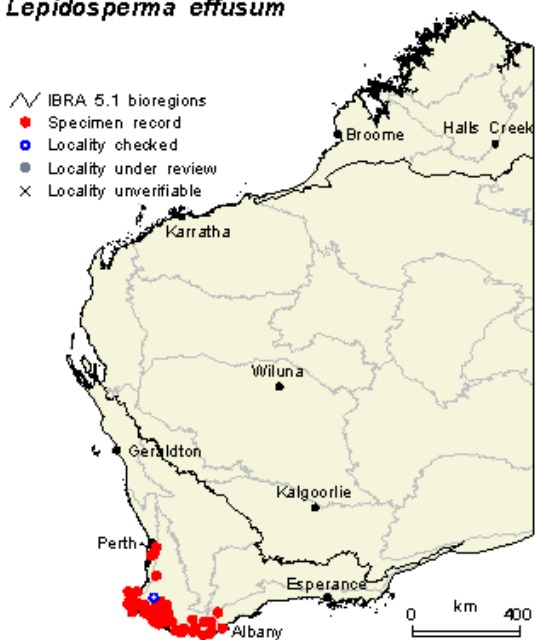
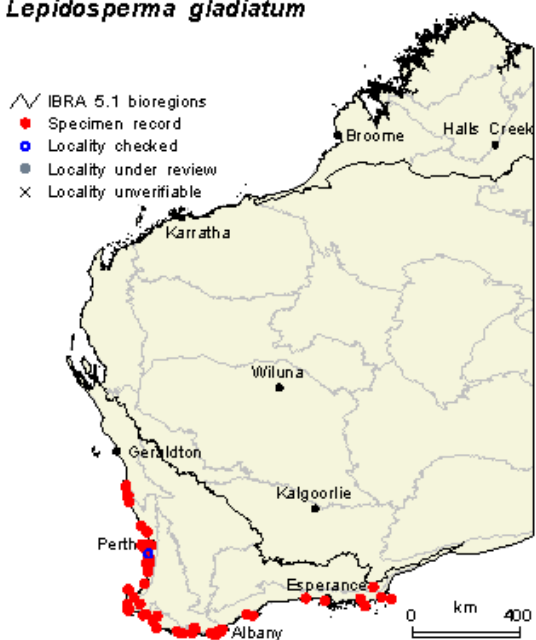


Photo by Penny Hussey

Lepidosperma gladiatum

Family:	Cyperaceae
Plant Description:	Rhizomatous, tufted robust perennial grass-like or herb (sedge), 0.5–1.5 (3) m high. Clumps to 1.5 m wide. Flowers brown.
Habitat:	Grows on white, grey or clacareous sand, limestone, loam on dunes and in creeklines.
Flowering Time:	November-May
Part Harvested/Specifications:	Flowering stems, in full flower and little bud, 90+ cm.
Peak Harvesting Period:	May
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Not killed by fire. Sprouts from rhizome after fire.
Harvesting	Sprouts after harvesting.

Lepidosperma gladiatum

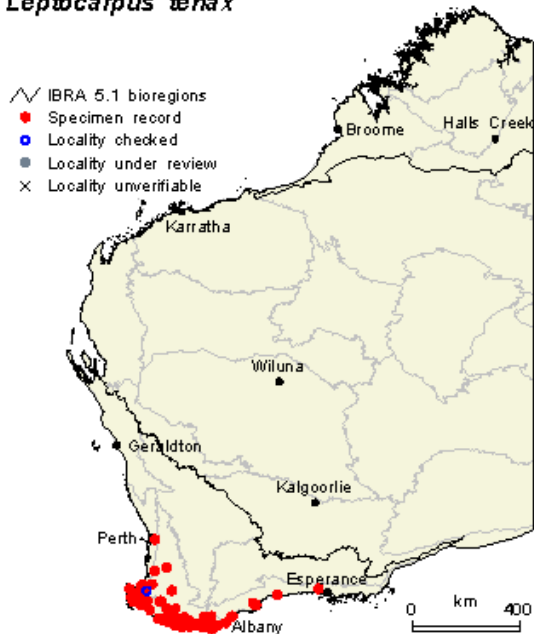


Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Leptocarpus tenax

Family:	Restionaceae
Plant Description:	Rhizomatous, perennial, herb (rush-like), 0.4-1m thigh. Flowers brown, red.
Habitat:	Grows on white, grey or black sand, and clay in swamps.
Flowering Time:	November-January
Part Harvested/Specifications:	Stems with seeds, 70+ cm. Stems-foliage.
Peak Harvesting Period:	September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Fire kills the plant including the rhizome.
Harvesting	To encourage regeneration harvesting should occur a minimum of 30 cm above ground level.

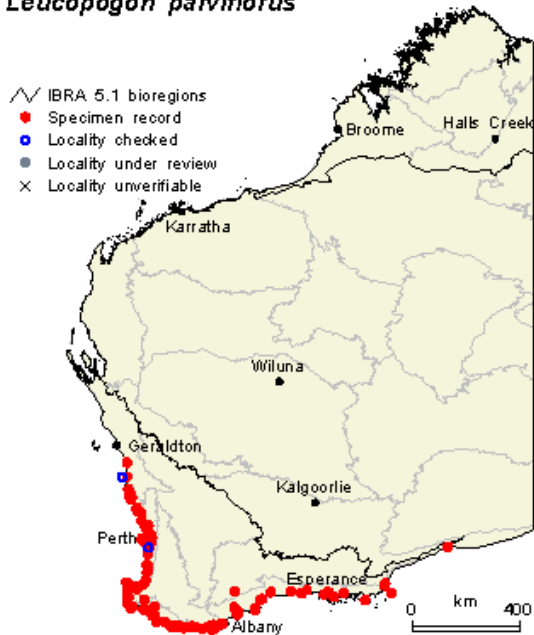
Leptocarpus tenax



Leucopogon parviflorus

Family:	Epacridaceae
Plant Description:	Erect, densely branched shrub or tree, (0.2) 0.3-3 (5) m high. Flowers white.
Habitat:	Grows on sandy soils over limestone or granite on coastal dunes and limestone.
Flowering Time:	February-March/June-October
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	February
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Variable reports.
Fire	Not killed by fire. Sprouts from rhizome after fire.
Harvesting	Sprouts after harvesting.

Leucopogon parviflorus



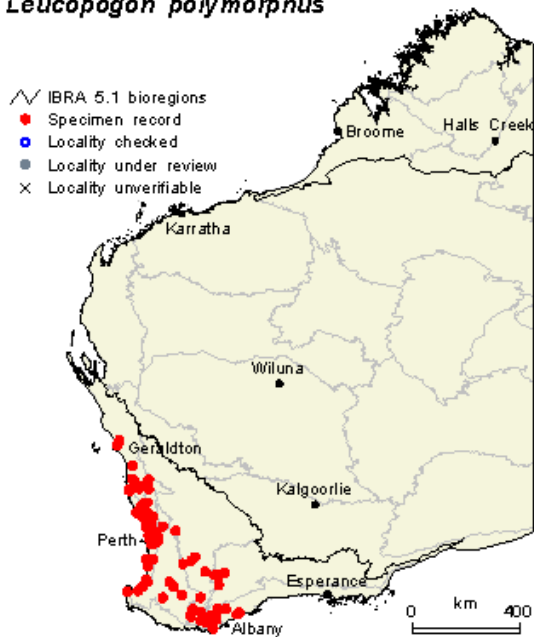
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Leucopogon polymorphus

(Baeckea)

Family:	Epacridaceae
Plant Description:	Shrub, 0.2-1 m high. Flowers white.
Habitat:	Sandy soils over limestone or granite, coastal dunes and limestone.
Flowering Time:	February -March / June -October
Part Harvested/Specifications:	Flowering stems, some in bud, 50-70 cm.
Peak Harvesting Period:	August-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Variable reports
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

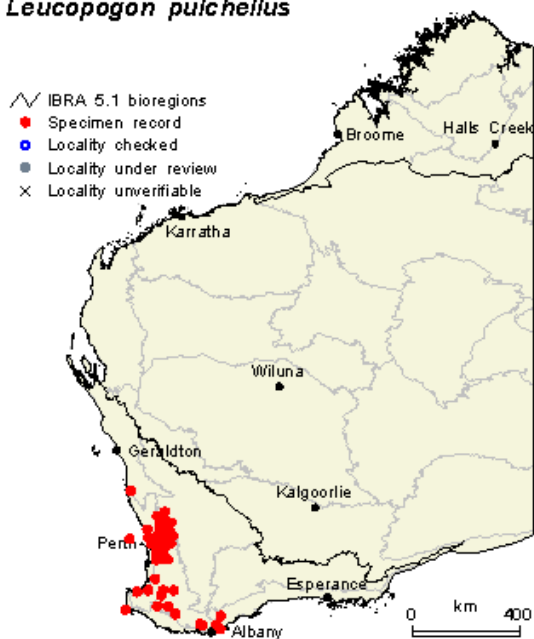
Leucopogon polymorphus



Leucopogon pulchellus

Family:	Epacridaceae
Plant Description:	Erect or straggling shrub, 0.15 –1 (1.5) m high. Flowers white.
Habitat:	Grows on lateritic or granitic soils.
Flowering Time:	June-February
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Variable reports.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Leucopogon pulchellus

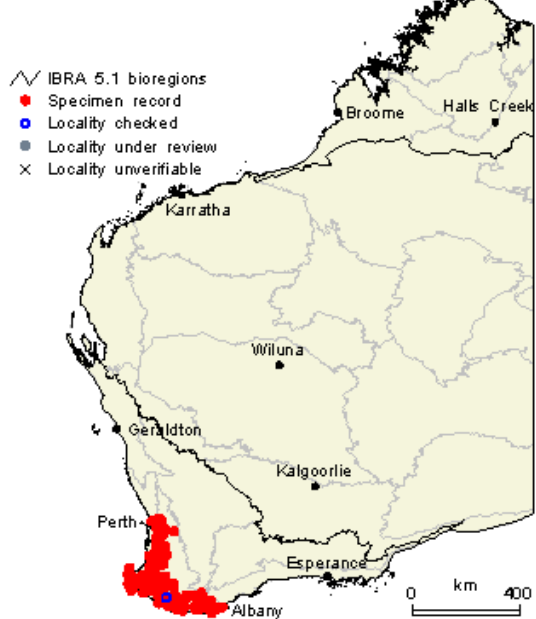


Leucopogon verticillatus

(Native bamboo)

Family:	Epacridaceae
Plant Description:	Erect, bamboo-like shrub, 0.8-4 m high. Flowers pink, red.
Habitat:	Frequently occurs on gravelly lateritic or granitic soils, often in wet situations.
Flowering Time:	August-November
Part Harvested/Specifications:	Foliage stems, clean leaves, 60+ cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Not killed by fire. Sprouts from rhizome after fire.
Harvesting	Sprouts after harvesting.

Leucopogon verticillatus



Lomandra hastilis

(Kojaneerup rush)

Family:	Dasypogonaceae
Plant Description:	Dioecious rhizomatous, caespitose, robust, perennial herb, 0.45–1.5 m high. Flowers purple, black.
Habitat:	Grows on grey, yellow, red or lateritic sand.
Flowering Time:	July-November
Part Harvested/Specifications:	Stems in bud, silver white colour, 70+cm.
Peak Harvesting Period:	October-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Not killed by fire. Sprouts from rhizome after fire.
Harvesting	Sprouts after harvesting.

Lomandra hastilis

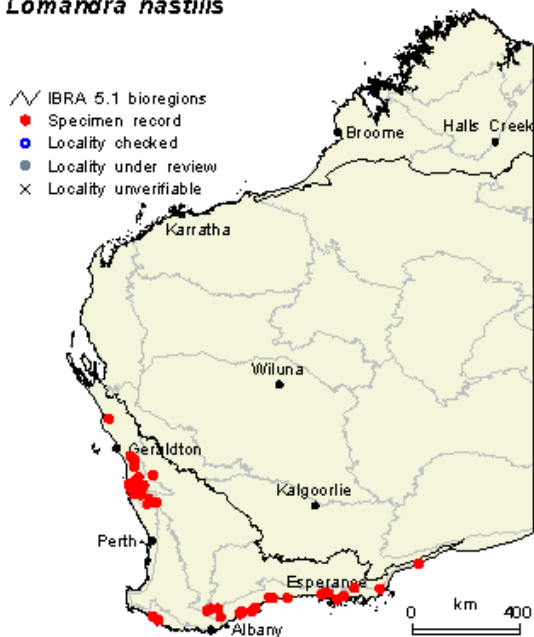


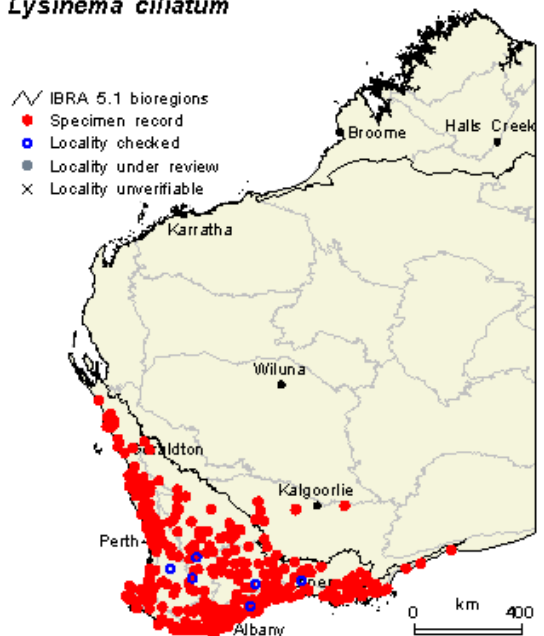
Photo by Ken Atkins/Liesl Rohl

Lysinema ciliatum

(Curry and rice)

Family:	Epacridaceae
Plant Description:	Erect shrub, 0.1–1.6 m high. Flowers cream, white, pink, brown.
Habitat:	Grows on sandy clayey soils, gravel, laterite, limestone soils, coastal sand dunes, plains, flats, breakaways, disturbed sites.
Flowering Time:	May-January
Part Harvested/Specifications:	Flowering stems, some in bud, lush leaves, 40+cm.
Peak Harvesting Period:	June-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Lysinema ciliatum



Lomandra hastilis



Macrozamia riedlei

(Zamia palm)

Family:	Zamiaceae
Plant Description:	Tree (cycad), 0.5–3 m high, small, usually trunkless, leaves few, glossy, flat or openly keeled, narrow leaflets, short cones.
Habitat:	Grows on laterite soils in the Jarrah forests.
Flowering Time:	September-October
Part Harvested/Specifications:	Foliage clean leaves, 70+cm. Seeds and fronds.
Peak Harvesting Period:	January-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shooting.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Not killed by fire. Shoots after fire.
Harvesting	Shoots after harvesting.

Macrozamia riedlei

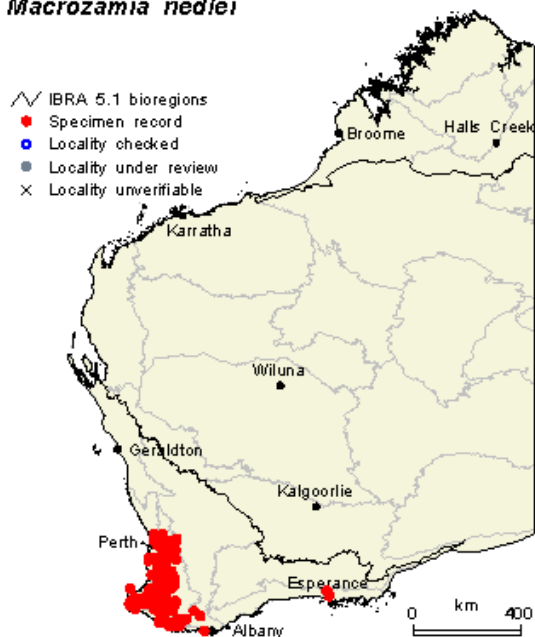
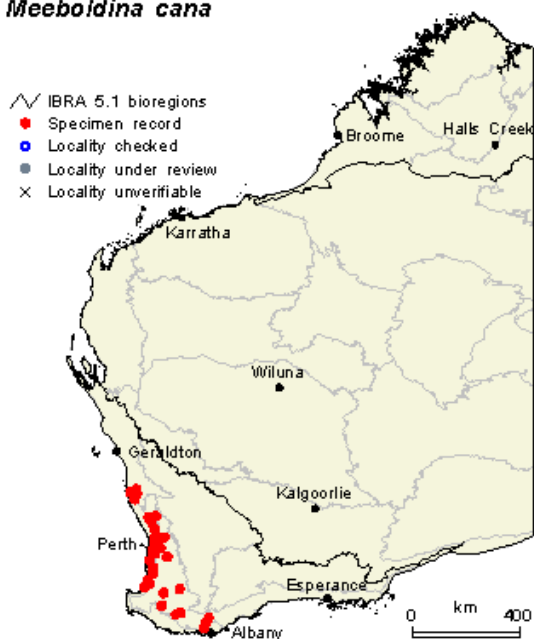


Photo by Ken Atkins/Liesl Rohl

Meeboldina cana

Family:	Restionaceae
Plant Description:	Rhizomatous, tufted perennial, herb (rush-like), forming dense base clumps, dioecious, 0.35-1.2 m high. Flowers brown.
Habitat:	Found on grey sand, sandy clay, clay, swamps, winter-wet depressions.
Flowering Time:	July-October
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	June and September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant including the rhizome.
Harvesting	To encourage regeneration harvesting should occur a minimum of 30 cm above ground level.

Meeboldina cana



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Meeboldina scariosa

(Velvet or Seeded rush)

Family:	Restionaceae
Plant Description:	Rhizomatous, perennial herb (rush-like) 0.6-1.5 (2)m high. Flowers red, brown.
Habitat:	Grows on grey or black peaty sand, sandy clay, winter-wet swamps, creek beds, seasonally wet depressions.
Flowering Time:	Summer
Part Harvested/Specifications:	Flowering stems in full flower, 70+cm.
Peak Harvesting Period:	April-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Fire kills the plant including the rhizome.
Harvesting	To encourage regeneration harvesting should occur a minimum of 30 cm above ground level.

Meeboldina scariosa

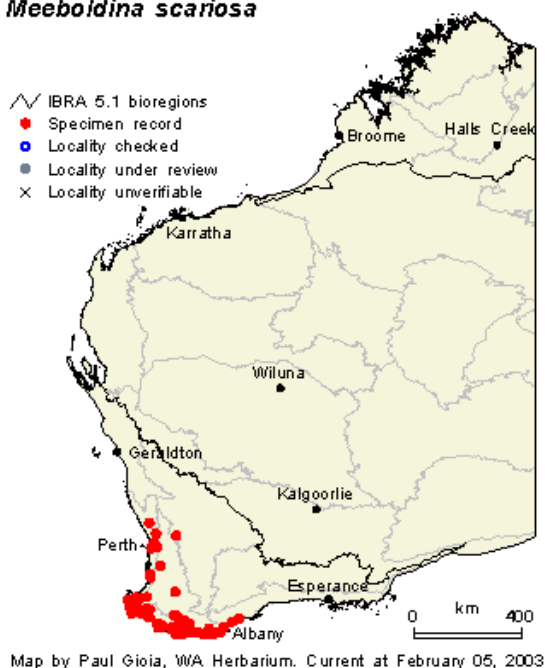


Photo by Chris Robinson

Melaleuca megacephala

Family:	Myrtaceae
Plant Description:	Erect shrub, 0.5-3 m high. Flowers yellow, cream.
Habitat:	Found on sand, sandplains, rocky hills, sandstone rocks.
Flowering Time:	August-December
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Shoots after harvesting. Green leaves must be left below the harvest cut.

Melaleuca megacephala

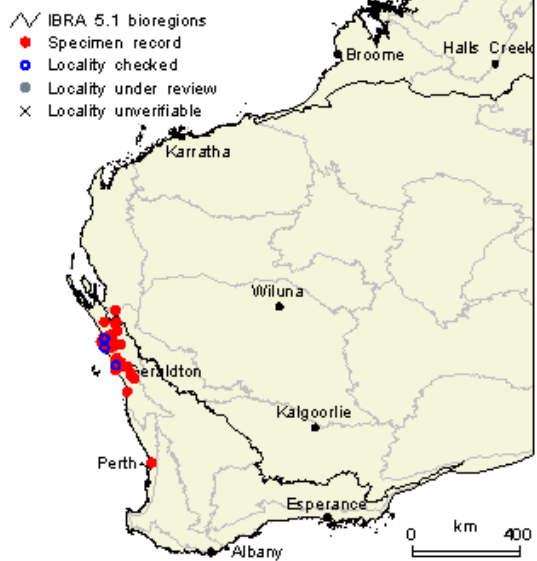


Photo by Ken Atkins

Melaleuca nesophila

Family:	Myrtaceae
Plant Description:	Shrub, 0.6-2.5 (5) m high. Flowers pink, purple.
Habitat:	Grows on sandy soils.
Flowering Time:	September-January
Part Harvested/Specifications:	Foliage.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed, lignotuber/epicormic shoots.
<i>Phytophthora</i> susceptibility	Variable - not known to susceptible in its natural distribution. However, it has been recorded in artificial situations.
Fire	Will sprout from lignotuber/epicormic shoots after fire. Hot fires will kill the plant.
Harvesting	Sprouts after harvesting.

Melaleuca nesophila

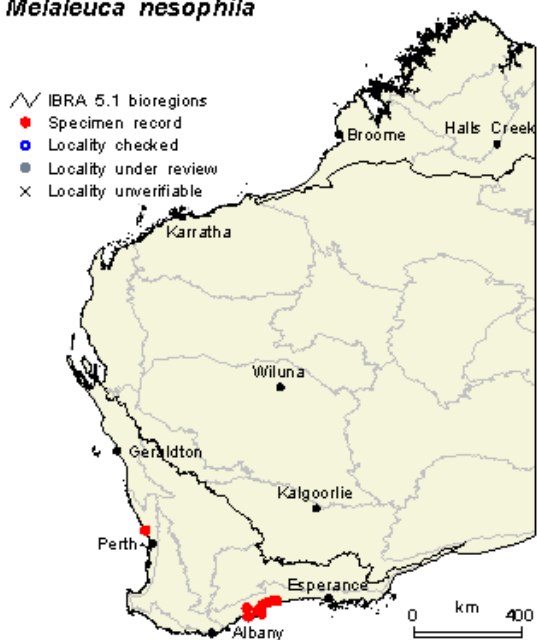


Photo by Ken Atkins

Melaleuca raphiophylla

(Swamp paper bark)

Family:	Myrtaceae
Plant Description:	Tree or shrub, 0.2 to 10 m high. Flowers white, cream.
Distinctive Features:	Able to withstand very long periods of inundation in freshwater swamps.
Habitat:	Grows on white or grey sand, clay soils, limestone. Salt marshes, swamps, along watercourses.
Flowering Time:	July-January
Part Harvested/Specifications:	Paperbark
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire may kill the plant, regeneration is by seed.
Harvesting	Only the top layers of bark should be removed to reduce the risk of ringbarking this species.

Melaleuca raphiophylla

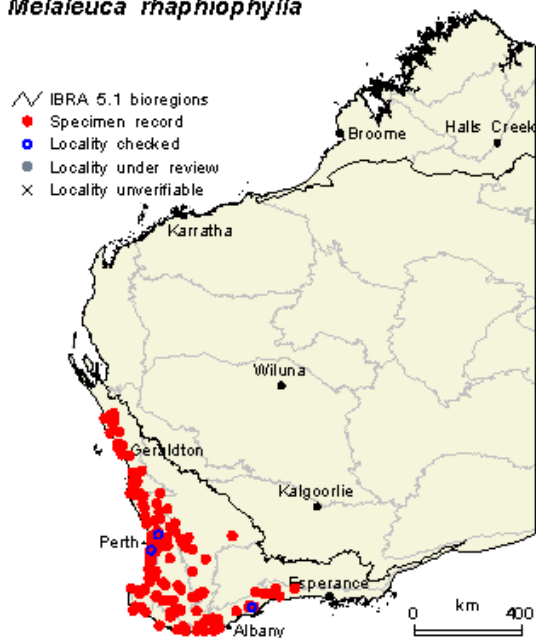
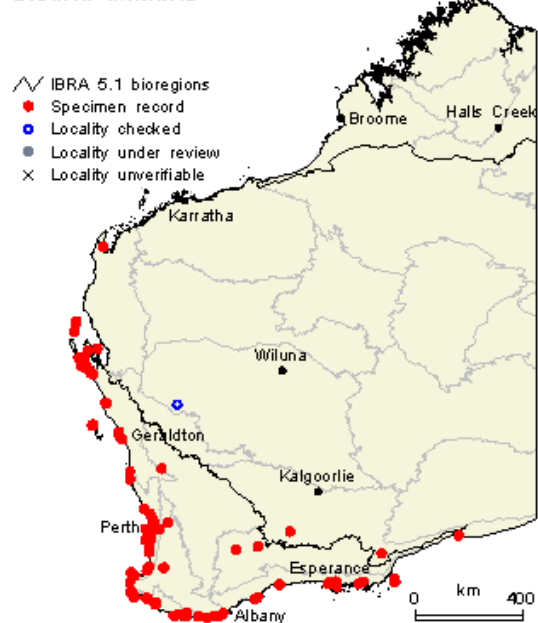


Photo by DCLM

Olearia axillaris

Family:	Asteraceae
Plant Description:	Erect, much branched shrub, (0.2) 0.5 – 3 m high. Flowers white, cream, yellow.
Habitat:	Grows on white/grey or red sand, loam, coastal limestone and sand dunes, rocky hillsides.
Flowering Time:	January-June/November-December
Part Harvested/Specifications:	Flowering stems and leaves.
Peak Harvesting Period:	May
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Low.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Olearia axillaris



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

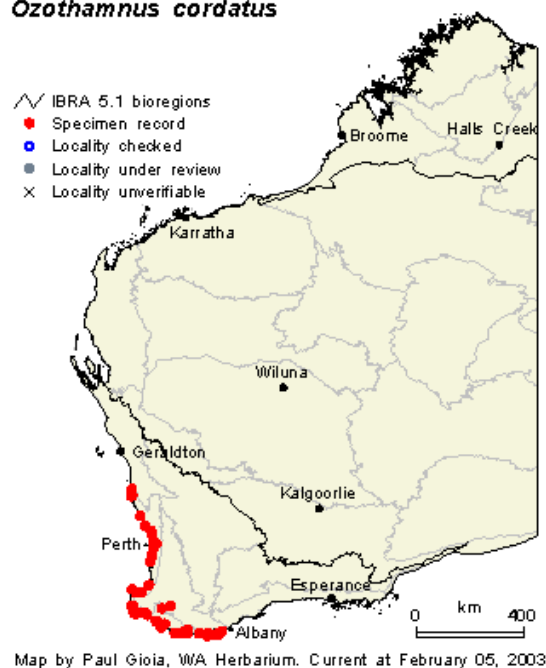


Ozothamnus cordatus

(Seacrest)

Family:	Asteraceae
Plant Description:	Erect, ascending or sprawling shrub, 0.5–1.5m high. Flowers white, yellow.
Habitat:	Found on white/grey sand, coastal dunes and limestone.
Flowering Time:	October-April
Part Harvested/Specifications:	Flowering stems, mainly in bud, some in flower, straight stems, 60+ cm.
Peak Harvesting Period:	September-February
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

Ozothamnus cordatus

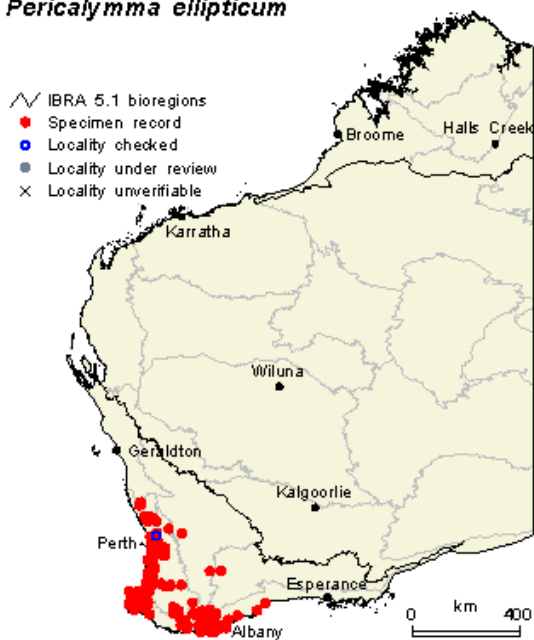


Pericalymma ellipticum

(Swamp tea-tree)

Family:	Myrtaceae
Plant Description:	Erect shrub to 3 m high. Flowers white, pink.
Habitat:	Grows on leached sand with some clayey sands, lateritic soils. In elevated areas on seasonally swampy platforms.
Flowering Time:	October-January
Part Harvested/Specifications:	Flowering stems, some in bud, clean leaves, 60+cm.
Peak Harvesting Period:	February-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed?
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	This species is killed by fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Pericalymma ellipticum



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Persoonia longifolia

(Snottygobble, cherry bush)

Family:	Proteaceae
Plant Description:	Erect, lignotuberosus shrub or tree, 1-5 m high. Flowers yellow.
Habitat:	Grows on grey or yellow sand, sandy loam or laterite.
Flowering Time:	November-February
Part Harvested/Specifications:	Foliage stems, clean leaves, stripped at bottom, 70+ cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

Persoonia longifolia

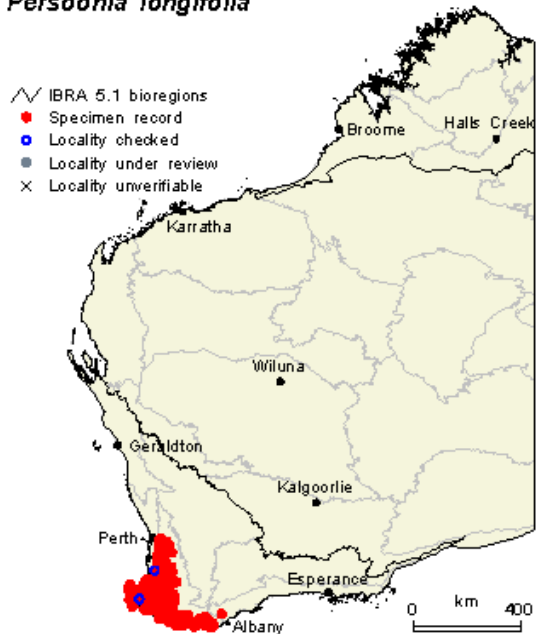
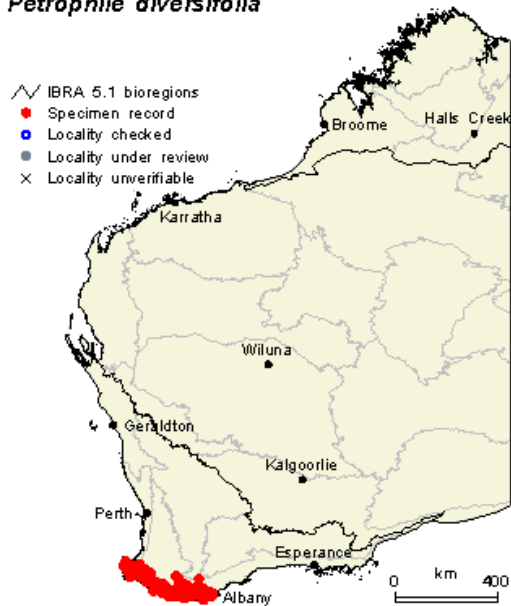


Photo by Ken Atkins

Petrophile diversifolia

Family:	Proteaceae
Plant Description:	Slender, generally single-stemmed, non-lignotuberous shrub, 0.7–3 m high. Flowers cream, white, pink.
Habitat:	Laterite, gravelly sandy soils, clay.
Flowering Time:	September –December.
Part Harvested/Specifications:	new growth stems, 50-60cm.
Peak Harvesting Period:	all year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	seed.
<i>Phytophthora</i> susceptibility	susceptible.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Petrophile diversifolia



Physopsis spicata.

(Hill River lambstail)

Family:	Chloanthaceae
Plant Description:	Erect, spreading shrub, 0.2-0.6 (1) high. Flowers white, yellow.
Habitat:	Grows on sandy soils, sometimes with laterite.
Flowering Time:	July-April
Part Harvested/Specifications:	Flowering stems, some in bud, 40+ cm, preferably 60+cm.
Peak Harvesting Period:	October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Fire kills the plant.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Physopsis spicata

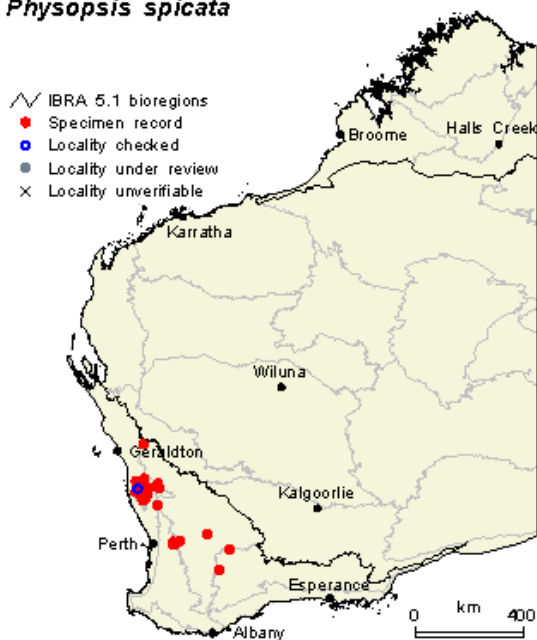
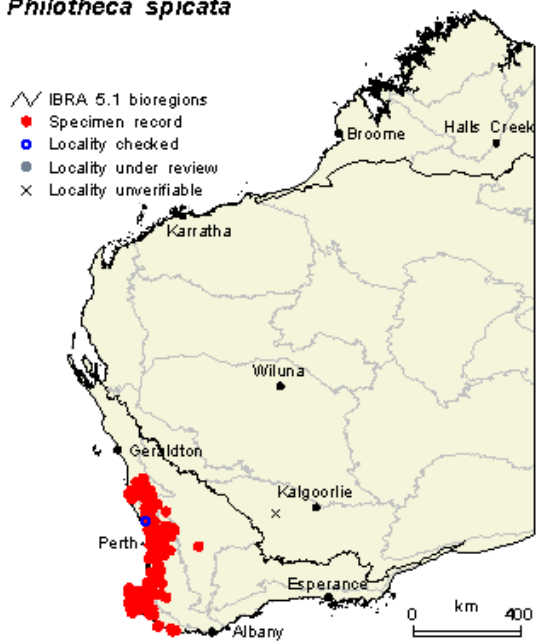


Photo by Penny Hussey

Philotheca spicata

Family:	Rutaceae
Plant Description:	Slender erect shrub, 0.2 to 0.6 (1.2) m high. Flowers pink, purple, blue, white.
Habitat:	Grows on a variety of soils in its distribution areas.
Flowering Time:	June-November
Part Harvested/Specifications:	Flowering stems, some in bud, 60+ cm.
Peak Harvesting Period:	September-January
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Sprouts after fire.
Harvesting	Sprouts after harvesting.

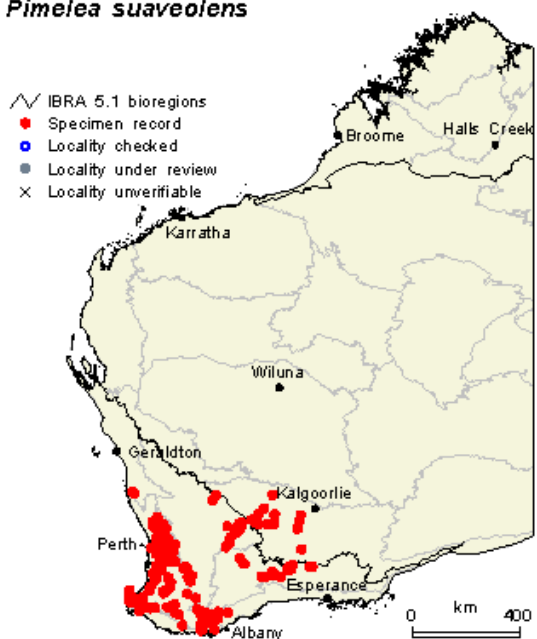
Philotheca spicata



Pimelea suaveolens

Family:	Thymelaeaceae
Plant Description:	Erect, spindly shrub, 0.2 – 1.5 m high. Flowers yellow, green.
Habitat:	Grows on sand, sandy clay, gravel, laterite soils. Undulating plains, flats, ridges, roadsides.
Flowering Time:	June-October
Part Harvested/Specifications:	Flowering stems, some in bud, 60+ cm.
Peak Harvesting Period:	August-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Pimelea suaveolens



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

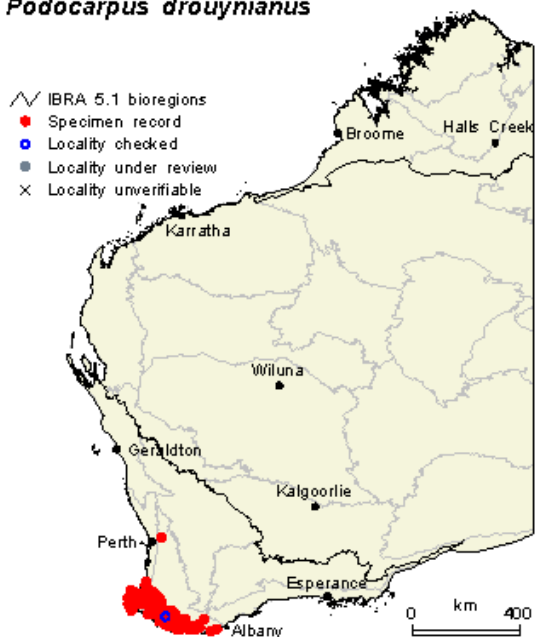


Podocarpus drouynianus

(Emu bush)

Family:	Podocarpaceae
Plant Description:	Tree or shrub (conifer), 0.75-3m high, dioecious: Female cone solitary, with 2 separate ovules, seed 1 with flashy receptacle.
Habitat:	Grows on white or grey sand, sandy loam or gravelly loam, lower slopes or lowlands, near creeks.
Flowering Time:	August-April
Part Harvested/Specifications:	Foliage stems, clean dark green leaves, 60+ cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Sprouting.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts from the base after fire.
Harvesting	Sprouts after harvesting.

Podocarpus drouynianus

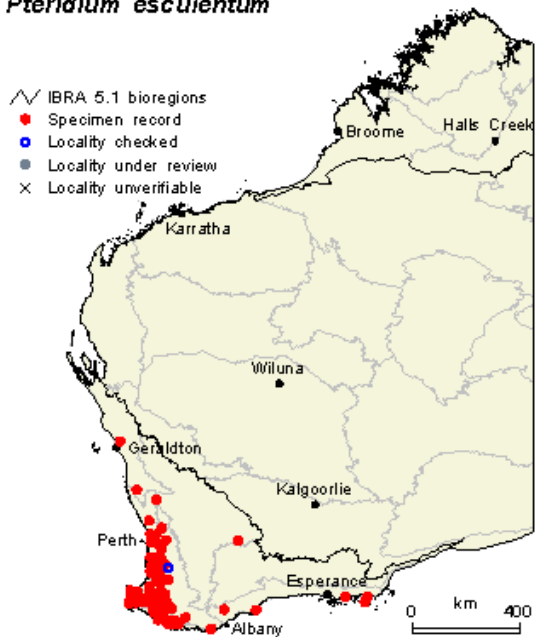


Pteridium esculentum

(Bracken fern)

Family:	Dennstaedtiaceae
Plant Description:	Rhizomatous, perennial herb (fern), 0.5 – 2 m high. Fronds 3-4, pinnate basally, circular nectary at base of each pinna, sori linear, marginal.
Habitat:	Grows on laterite gravel, white sand, red loam, brown clay, moist sandy soils, along creeks in Eucalypt forest.
Flowering Time:	N/A
Part Harvested/Specifications:	Leaves, 40+ cm.
Peak Harvesting Period:	November-December + March-May
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from rhizome after fire.
Harvesting	Sprouts after harvesting.

Pteridium esculentum

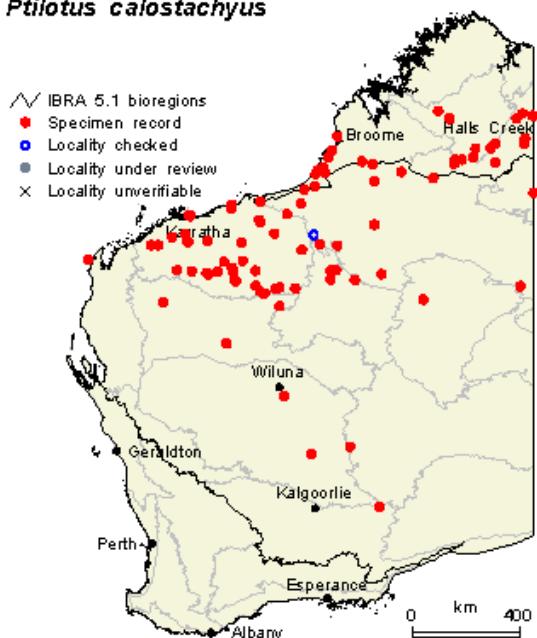


Ptilotus calostachyus

(Weeping mulla mulla)

Family:	Amaranthaceae
Plant Description:	Erect or spreading perennial, herb or shrub, 0.2 to 2m high. Flowers pink, white.
Habitat:	Found on red sand, stony sand in a variety of habitats.
Flowering Time:	March-October
Part Harvested/Specifications:	Flowering stems, no blown flowers, 70+cm.
Peak Harvesting Period:	July-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	This species does not occur within the area affected by <i>Phytophthora</i> .
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Ptilotus calostachyus



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

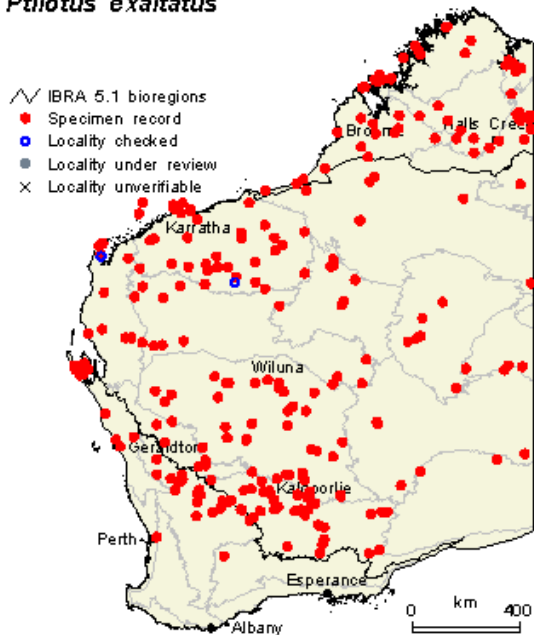


Ptilotus exaltatus

(Tall mulla mulla)

Family:	Amaranthaceae
Plant Description:	Erect annual, herb, 0.1-1.2 m high. Flowers pink, purple.
Habitat:	Grows on a variety of soils including clay and loam.
Flowering Time:	April-November
Part Harvested/Specifications:	Flowering stems, no blown flowers, 70+cm.
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	This species generally does not occur within the area affected by <i>Phytophthora</i> .
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Ptilotus exaltatus



Ptilotus manglesii

Family:	Amaranthaceae
Plant Description:	Prostrate to ascending perennial, herb 0.05-0.3 m high. Flowers pink.
Habitat:	Often found on gravelly soils.
Flowering Time:	September-January
Part Harvested/Specifications:	Flowering stems
Peak Harvesting Period:	October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Tuber.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Sprouts from tuber after fire.
Harvesting	Sprouts after harvesting.

Ptilotus manglesii

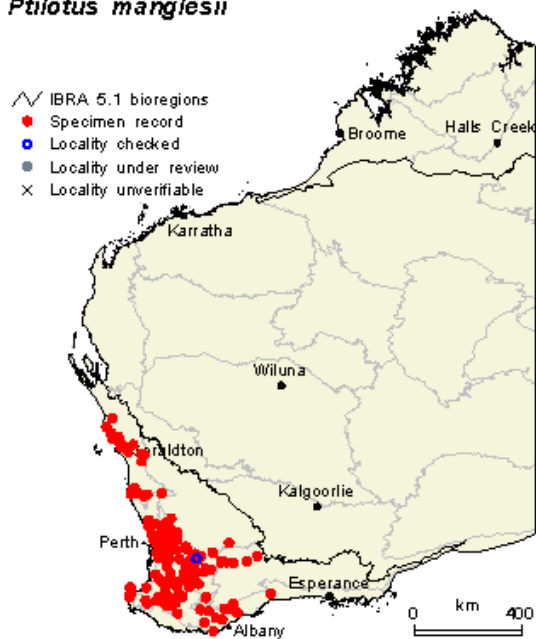
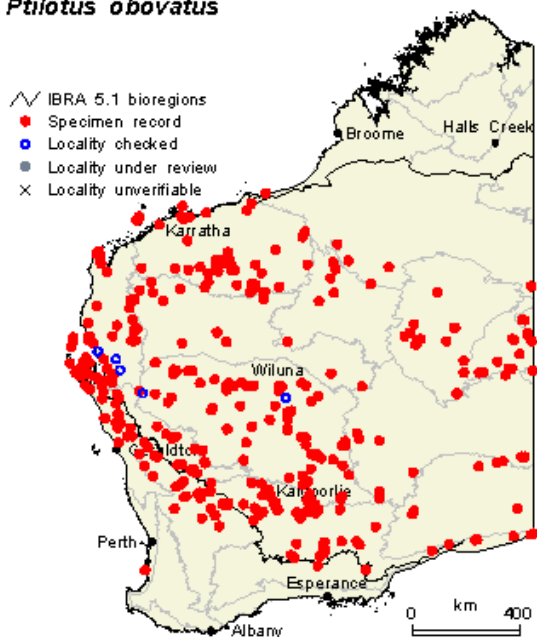


Photo by Caroline Brocx

Ptilotus obovatus

Family:	Amaranthaceae
Plant Description:	Shrub, 0.1-1.4 m high. Flowers pink, white, grey
Habitat:	Grows on a variety of soils including red sand and gravelly hills.
Flowering Time:	June-December
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	August-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	This species generally does not occur within the area affected by <i>Phytophthora</i> .
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Ptilotus obovatus



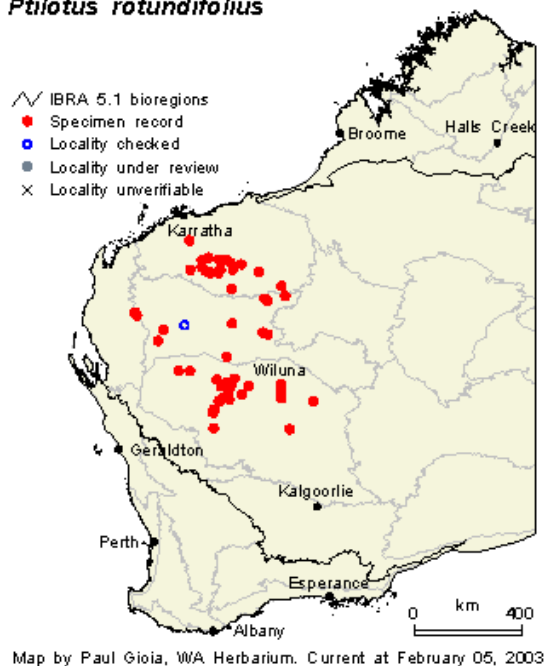
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Ptilotus rotundifolius

Family:	Amaranthaceae
Plant Description:	Shrub, 0.4-2 m high. Flowers pink, purple.
Habitat:	Grows on a variety of soils on rocky hills and rises.
Flowering Time:	July-October
Part Harvested/Specifications:	Flowering stems, no blown flowers, 70+ cm.
Peak Harvesting Period:	August-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
Phytophthora susceptibility	This species does not occur within the area affected by <i>Phytophthora</i> .
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Ptilotus rotundifolius

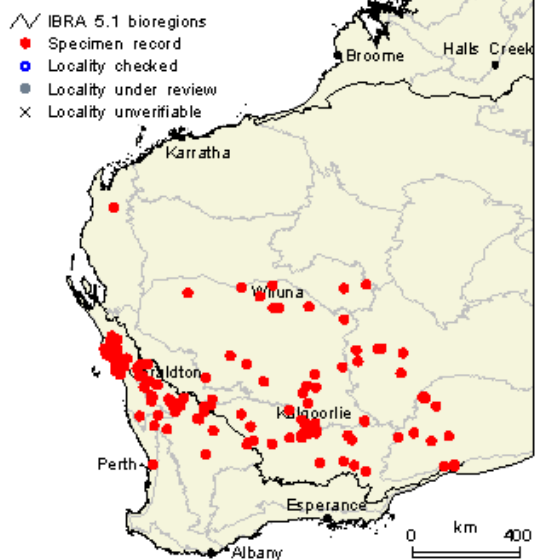


Rhodanthe chlorocephala subsp. *rosea*

(Roseum everlasting)

Family:	Asteraceae
Plant Description:	Erect annual, herb, (0.03) 0.05-0.5 m high. Flowers white, pink, yellow.
Habitat:	Often grows on sandy soils
Flowering Time:	June-November
Part Harvested/Specifications:	Flowering stems, some in bud, 50+ cm.
Peak Harvesting Period:	August-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed are required for regeneration after fire.
Harvesting	Only 20% of the population should be harvested in any one year to ensure sustainability.

Rhodanthe chlorocephala subsp. *rosea*



Rhodanthe chlorocephala subsp. *splendida*

Family:	Asteraceae
Plant Description:	Erect annual, herb 0.1-0.6 m high. Flowers white, cream, yellow.
Habitat:	Sand, clay, sandy clay, loam, flood plains, along rivers and creeks
Flowering Time:	July-October
Part Harvested/Specifications:	Flowering stems, some in bud, 50+ cm.
Peak Harvesting Period:	August-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the population should be harvested in any one year to ensure sustainability.

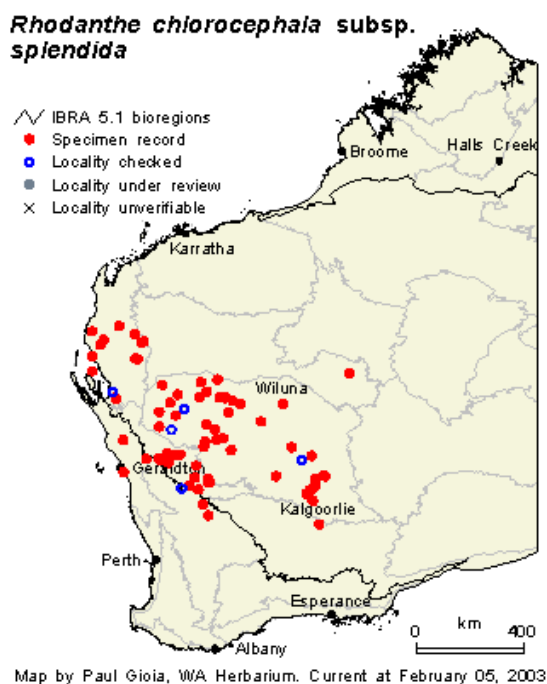


Photo by Penny Hussey

Rhodanthe floribunda

Family:	Asteraceae
Plant Description:	Erect or decumbent annual, herb, 0.5-0.3m high. Flowers white, yellow.
Habitat:	Grows on red sandy, clay or stony soils.
Flowering Time:	August-January
Part Harvested/Specifications:	Flowering stems, some in bud, 50+ cm.
Peak Harvesting Period:	September-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the population should be harvested in any one year to ensure sustainability.

Rhodanthe floribunda

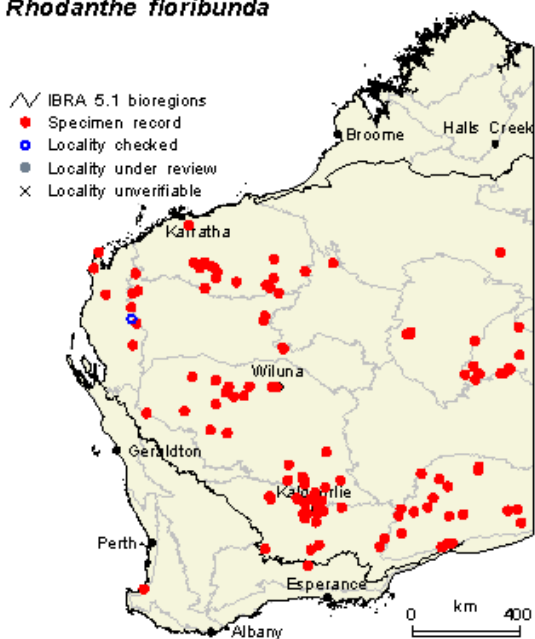
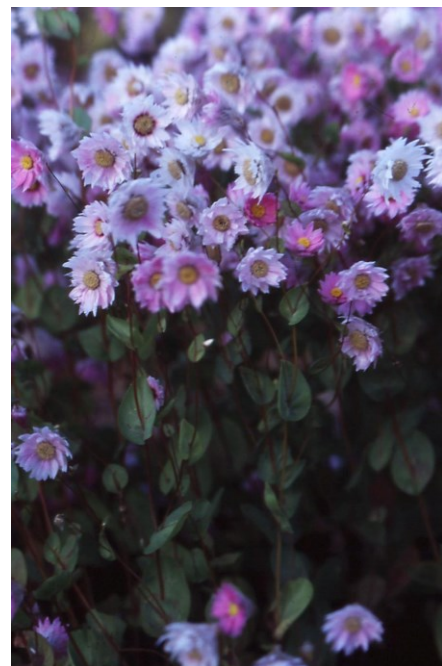
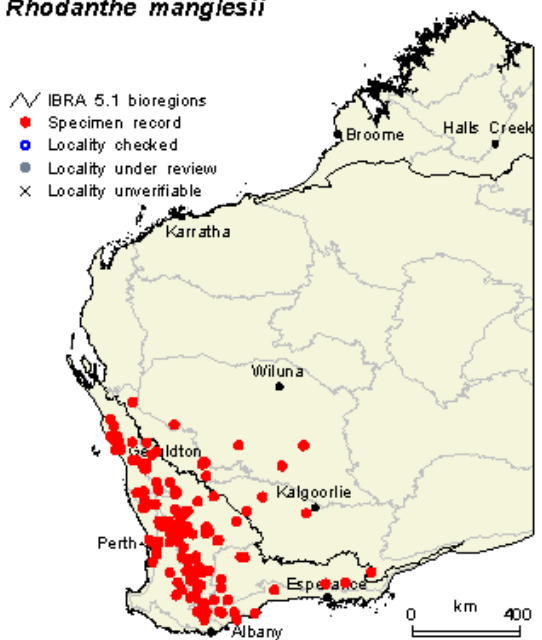


Photo by Penny Hussey

Rhodanthe manglesii

Family:	Asteraceae
Plant Description:	Erect slender annual herb, (0.06) 0.1-0.4 (0.6) m high. Flowers pink, white, yellow.
Habitat:	Grows on sandy, loamy and clayey soils
Flowering Time:	August-October
Part Harvested/Specifications:	Flowering stems, some in bud, 50+ cm.
Peak Harvesting Period:	August
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the population should be harvested in any one year to ensure sustainability.

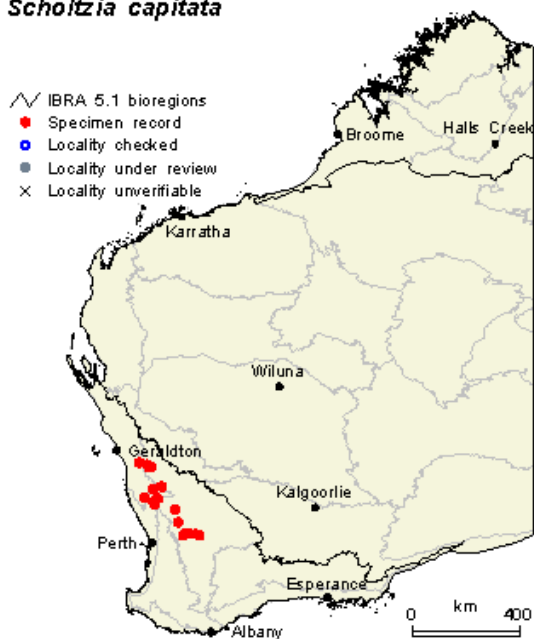
Rhodanthe manglesii



Scholtzia capitata

Family:	Myrtaceae
Plant Description:	Erect, 0.3-2.5 m high. Flowers pink, white.
Habitat:	Grows on white, grey or yellow sand, undulating terrain, winter wet depressions.
Flowering Time:	July-December
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	January-February
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Scholtzia capitata

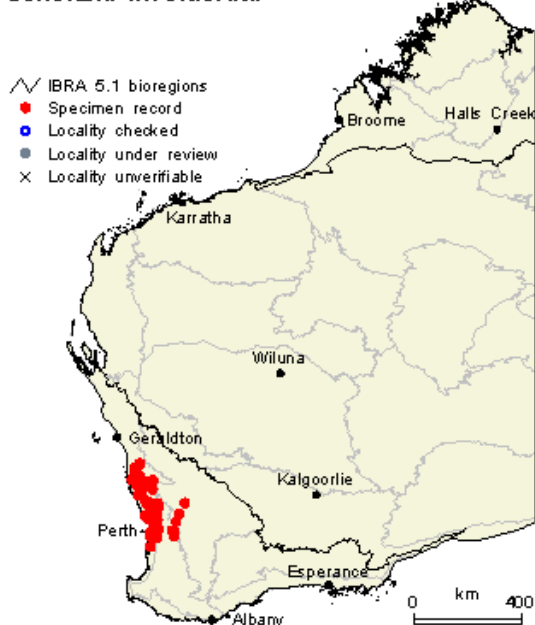


Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Scholtzia involucrata

Family:	Myrtaceae
Plant Description:	Erect spreading to decumbent shrub 0.2-1.5 m high. Flowers pink, white.
Habitat:	Grows on white/grey, yellow or red sand on sandplains and ridges.
Flowering Time:	January-May/August-December
Part Harvested/Specifications:	Flowering stems, no browning off, multi flowered, 60+cm.
Peak Harvesting Period:	November-March
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Scholtzia involucrata



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

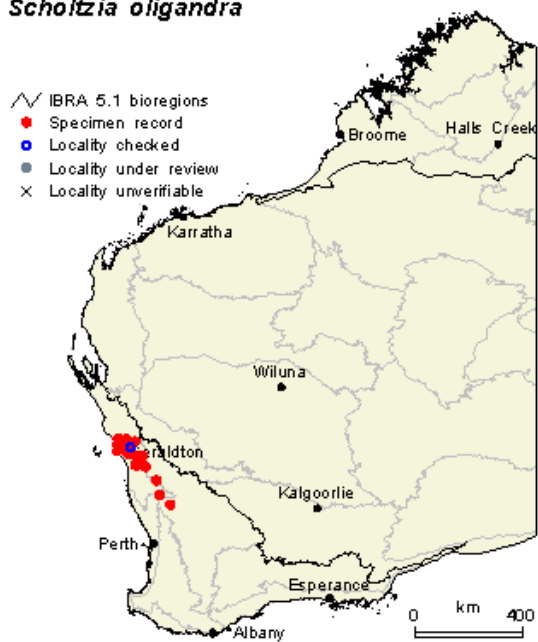


Photo by M. Warnock

Scholtzia oligandra

Family:	Myrtaceae
Plant Description:	Erect shrub, 1-3 m high. Flowers white, pink.
Habitat:	Grows on sandy soils on sandplains, granitic hills.
Flowering Time:	July-October
Part Harvested/Specifications:	Flowering stems, multi flowered, no drop, 70+cm.
Peak Harvesting Period:	December-January
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Scholtzia oligandra



Sphenotoma dracophylloides

Family:	Epacridaceae
Plant Description:	Shrub, 0.15-1 m high. Flowers white.
Habitat:	Grows on sandy, rocky soils over granite, quartzite or laterite on rocky slopes, in rock crevices.
Flowering Time:	August-December
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	September-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Sphenotoma dracophylloides

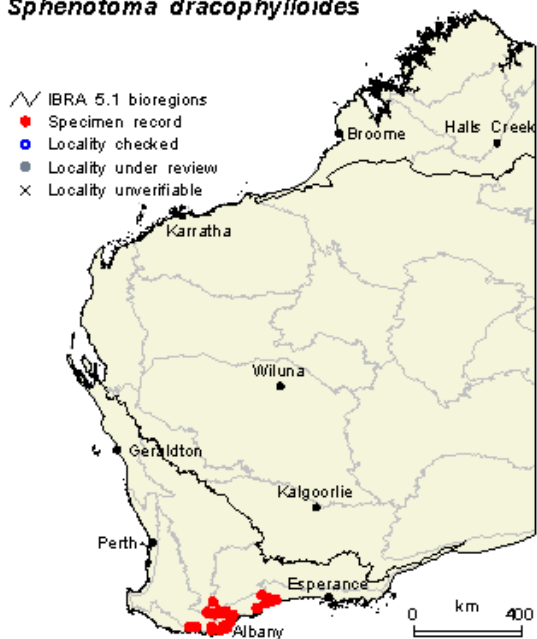


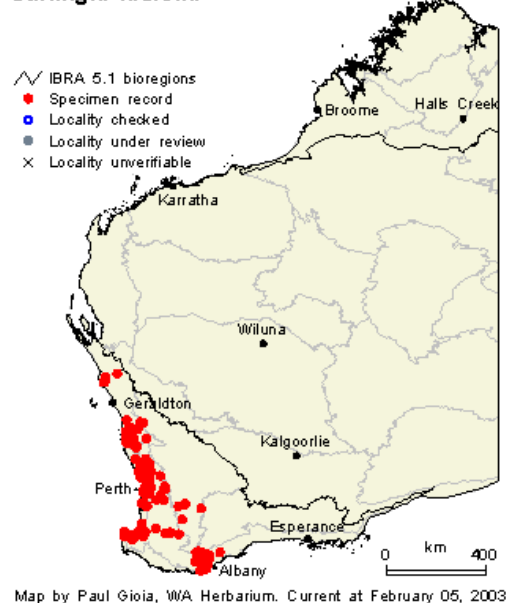
Photo by Penny Hussey

Stirlingia latifolia

(Blueboy, Stirlingia)

Family:	Proteaceae
Plant Description:	Erect, lignotuberous shrub, 0.2-1.5 m high. Flowers yellow, brown, red
Habitat:	Grows on white, grey, yellow/brown or black sand, sometimes with lateritic gravel.
Flowering Time:	August-October
Part Harvested/Specifications:	Stems with seed/flowers, seeded flowers at top, no drop, 70+cm.
Peak Harvesting Period:	October-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

Stirlingia latifolia



Taxandria fragrans

(Coarse tea-tree)

Family:	Myrtaceae
Plant Description:	Shrub to 2 m high.
Habitat:	Seasonally water-logged margins of valleys, swamps and waterways.
Flowering Time:	February-May
Part Harvested/Specifications:	Flowering stems, 60+cm.
Peak Harvesting Period:	March-September
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Sprouts from base after fire.
Harvesting	Sprouts after harvesting.

Taxandria fragrans ms

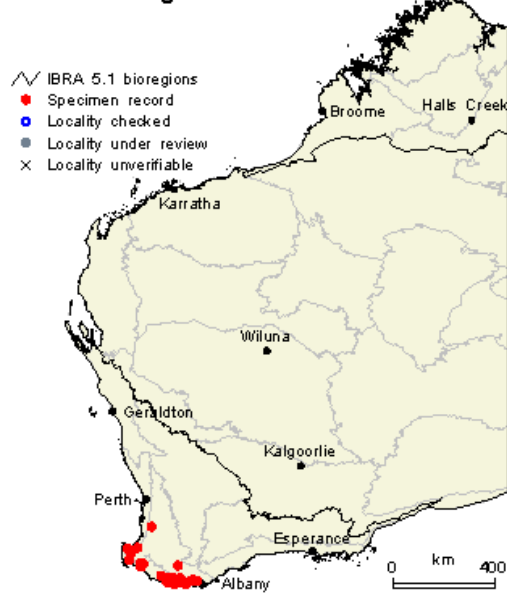


Photo by Chris Robinson

Taxandria juniperina

(Coarse tea-tree)

Family:

Myrtaceae

Plant Description:

Tree or shrub, 2–12 m high with white flowers.

Habitat:

Swampy flats along water courses.

Flowering Time:

February–May/September–November

Part Harvested/Specifications:

Full flower, well covered, 50-70cm, straight but branched.

Peak Harvesting Period:

March–September

Conservation status:

Not threatened

Conservation issues:

Regeneration

Seed.

***Phytophthora* susceptibility**

Appears to be resistant.

Fire

Killed by high intensity fires. Regenerates from seed.

Harvesting

Sprouts after harvesting.

Taxandria juniperina ms

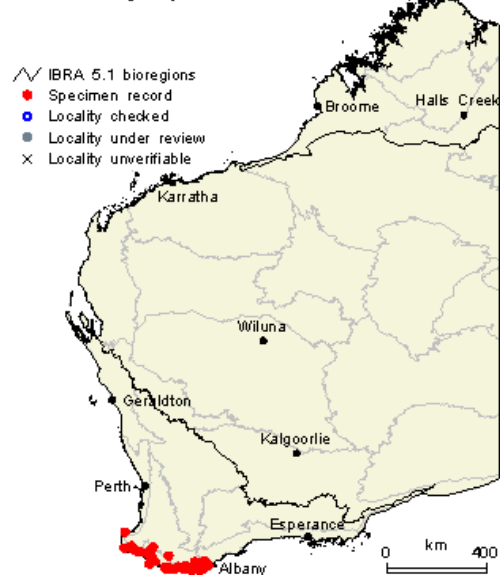


Photo by Chris Robinson

Taxandria linearifolia

(Rosa tea-tree)

Family:	Myrtaceae
Plant Description:	Shrub 1–4 m with white flowers.
Habitat:	Granite outcrops, swamps, creeks.
Flowering Time:	January–December
Part Harvested/Specifications:	Flowering stems, 70+cm.
Peak Harvesting Period:	August–December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Low.
Fire	Sprouts from base after fire.
Harvesting	Sprouts after harvesting.

Taxandria linearifolia ms

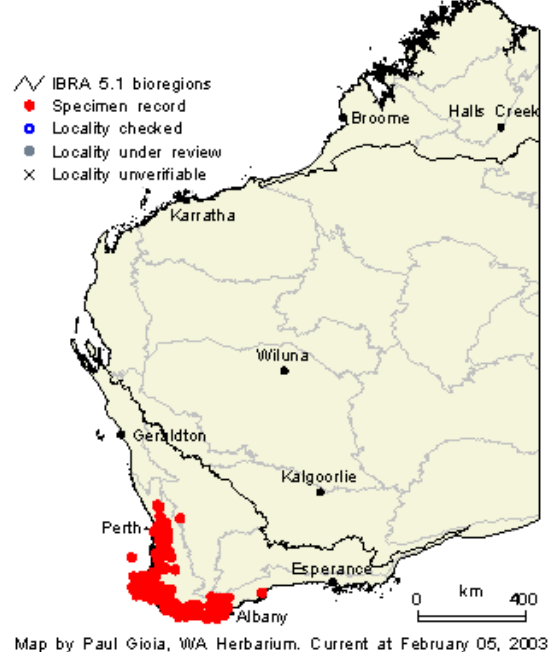


Photo by Chris Robinson

Taxandria parviceps

(Fine tea-tree)

Family:	Myrtaceae
Plant Description:	Perennial shrub 1–4 m tall with white flowers.
Habitat:	Granite outcrops, rocky hills, swampy flats.
Flowering Time:	February–December
Part Harvested/Specifications:	Full flower well covered, straight branched stems 50–75 cm.
Peak Harvesting Period:	July - December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Low.
Fire	Sprouts from base after fire.
Harvesting	Sprouts after harvesting.

Taxandria parviceps ms

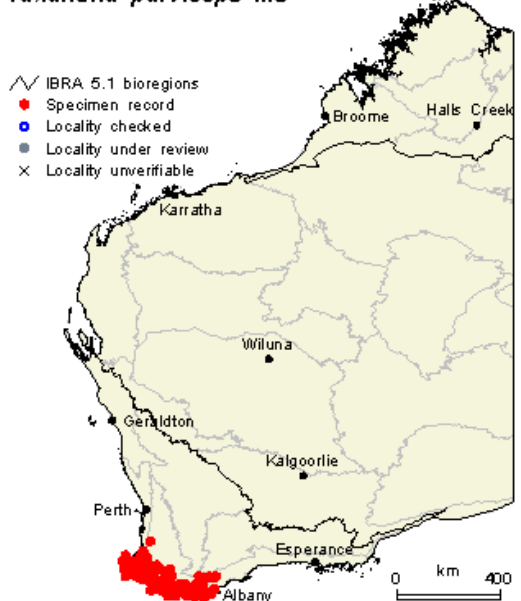
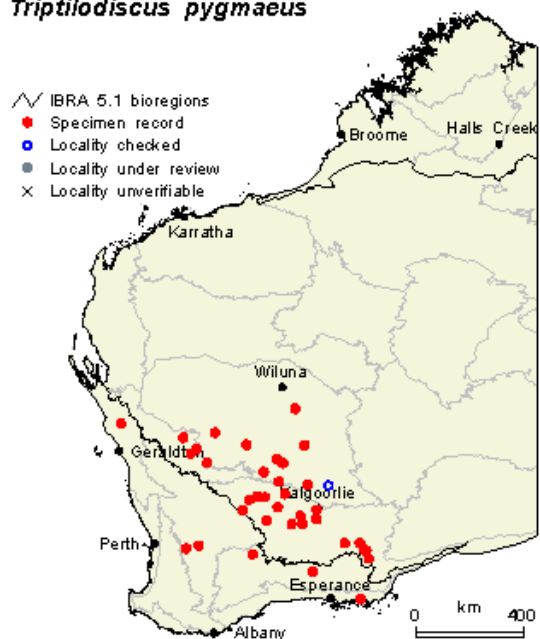


Photo by Chris Robinson

Triptilodiscus pygmaeus

Family:	Asteraceae
Plant Description:	Erect annual, herb, 0.01-0.12 m high. Flowers yellow.
Habitat:	Wide range of soils. Granite outcrops, margins, margins of salt lakes, amongst rocks.
Flowering Time:	Aug-Oct
Part Harvested/Specifications:	Flowering stems
Peak Harvesting Period:	August to October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed
<i>Phytophthora</i> susceptibility	Not known to be susceptible
Fire	Fire kills the plant. Soil stored seed are required for regeneration after fire.
Harvesting	Only 20% of the population should be harvested in any one year to ensure sustainability.

Triptilodiscus pygmaeus



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Trymalium venustum

(Karri hazel)

Family:	Rhamnaceae
Plant Description:	Erect shrub, 1.5 – 4 (6) m high. Flowers white, cream.
Habitat:	Grows on sandy soils, often over laterite or with lateritic gravel.
Flowering Time:	January-February/July-September
Part Harvested/Specifications:	Flowering stems, clean leaves, no drop, 70+cm.
Peak Harvesting Period:	June-July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Trymalium venustum

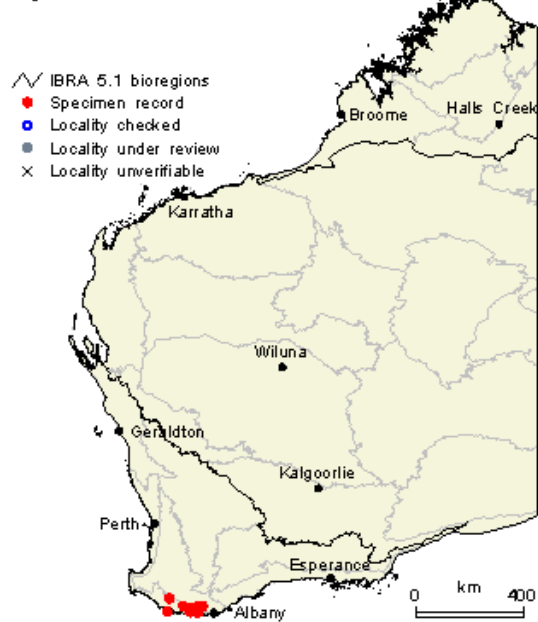


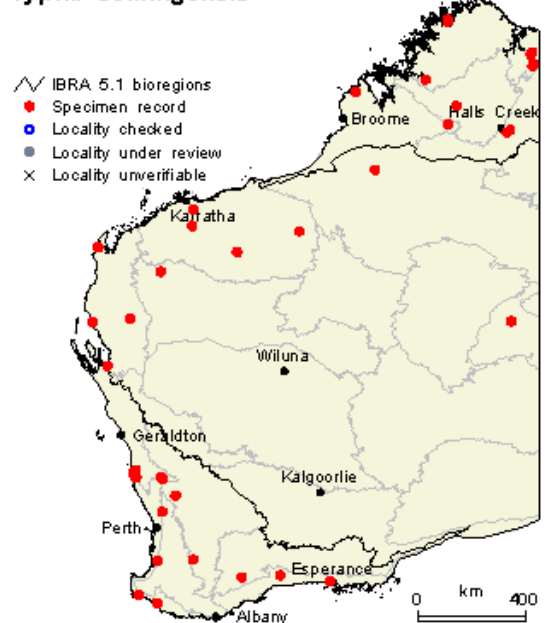
Photo by Andrew Horan

Typha domingensis

(Bullrush)

Family:	Typhaceae
Plant Description:	Rhizomatous, monoecious, emergent perennial herb, 1.5-3 m high. Flowers brown.
Habitat:	Grows on clay or sand substrate in freshwater swamps, creeks and rivers.
Flowering Time:	May-September
Part Harvested/Specifications:	Flowering stems, young flowers, 60 cm, preferably 90+cm.
Peak Harvesting Period:	July
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Rhizome.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Sprouts from rhizome after fire. Hot fires can kill this species.
Harvesting	Sprouts after harvesting.

Typha domingensis



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Verticordia densiflora

(Densaflora)

Family:

Myrtaceae

Plant Description:

Erect to spreading shrub, 0.25-2 m high with or without lignotuber. Flowers pink, purple, white, cream, yellow.

Habitat:

Grows on sand, clay, loam and gravelly soils, sandplains, low-lying flats and winter wet areas.

Flowering Time:

September-February

Part Harvested/Specifications:

Flowering stems, some bud, 50+cm.

Peak Harvesting Period:

November-December

Conservation status:

Not threatened

Conservation issues:

Regeneration

Lignotuber and seed.

***Phytophthora* susceptibility**

Appears to be resistant.

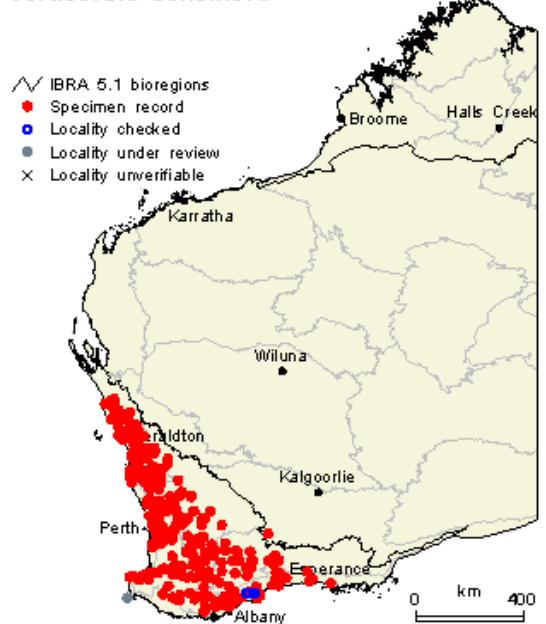
Fire

Some plants sprout after fire others require soil stored seed for regeneration.

Harvesting

Plants shoots after fire.

Verticordia densiflora



Verticordia drummondii

Family:	Myrtaceae
Plant Description:	Erect shrub, 0.3-1.5 m high. Flowers pink, purple.
Habitat:	Grows on white/grey or yellow sand, winter-wet depressions.
Flowering Time:	December-April
Part Harvested/Specifications:	Flowering stems, some bud, 50+ cm.
Peak Harvesting Period:	December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Verticordia drummondii

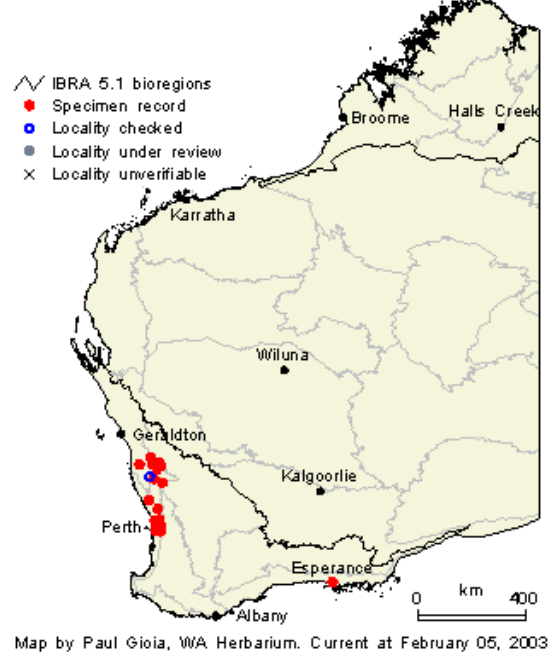


Photo by Kevin Seaton

Verticordia eriocephala

(Cauliflower bush, Brownii)

Family:	Myrtaceae
Plant Description:	Erect shrub, 0.3-1(1.5) m high. Flowers white, cream.
Habitat:	Grows on grey or yellow sand, gravel, sandplains, sandhills.
Flowering Time:	June/September-January
Part Harvested/Specifications:	flowering stems, some in bud, 50+cm.
Conservation status:	Not threatened
Peak Harvesting Period:	October-January
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	Green leaves must be left below the harvest cut. No more than 20 % of a population should be harvested in any one year.

Verticordia eriocephala

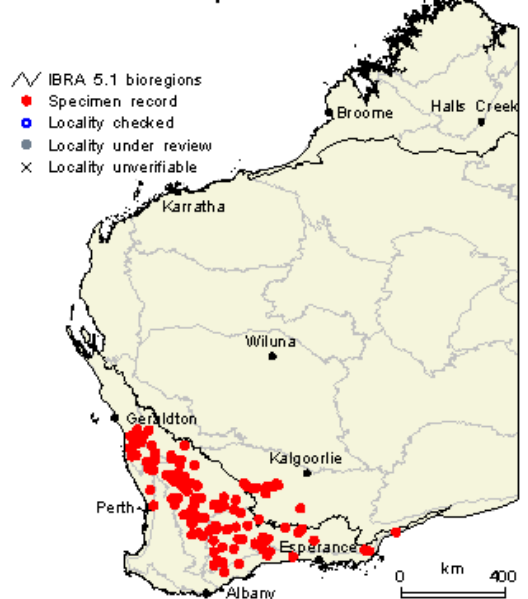


Photo by DCLM

Verticordia grandis

Family:	Myrtaceae
Plant Description:	Straggly, slender shrub (0.3) 0.6-3.5 m high. Flowers red.
Habitat:	Grows on white, grey or yellow sand, sandplains.
Flowering Time:	August-March
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	June-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Lignotuber.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	Sprouts from lignotuber after fire.
Harvesting	Sprouts after harvesting.

Verticordia grandis

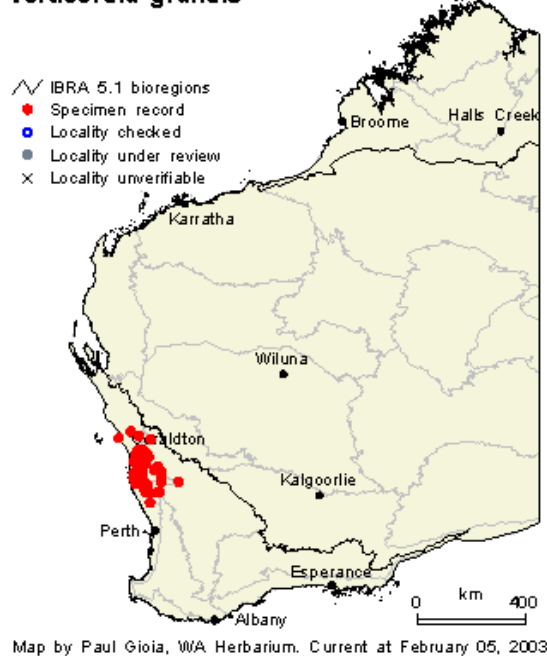
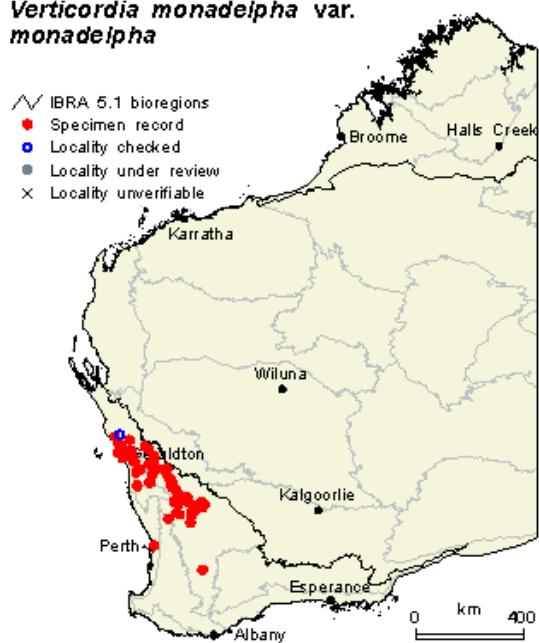


Photo by Ken Atkins

Verticordia monadelpha var. *monadelpha*.

Family:	Myrtaceae
Plant Description:	Openly branched shrub, 0.3-2 m high. Flowers pink.
Habitat:	Grows on yellow or white sand, gravelly soils, undulating plains, low rises.
Flowering Time:	August-December
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Not known to be susceptible.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems can be harvested in any one season.

Verticordia monadelpha var. *monadelpha*



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Photo by Phil Roberts

Verticordia nitens .

(Yellow morrison)

Family:	Myrtaceae
Plant Description:	Erect shrub, 0.5- 2 m high. Flowers yellow, orange.
Habitat:	Grows on grey/white or brown sand.
Flowering Time:	October-February
Part Harvested/Specifications:	Flowering stems, some bud, 70+ cm.
Peak Harvesting Period:	December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Plants sprout after harvesting when green leaves are left below the harvest cut.

Verticordia nitens

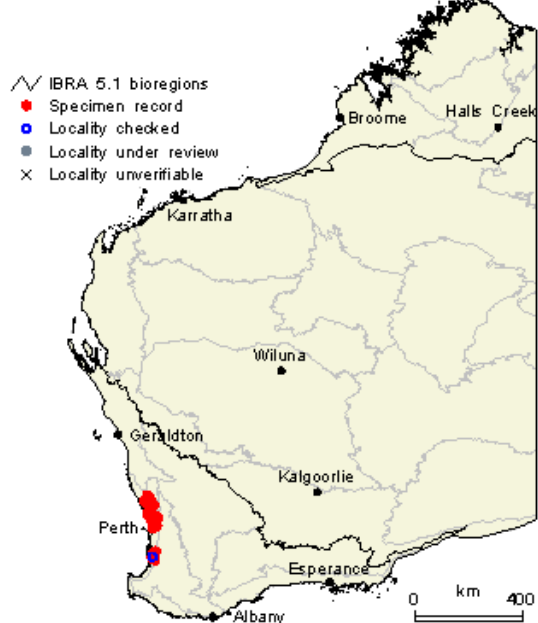
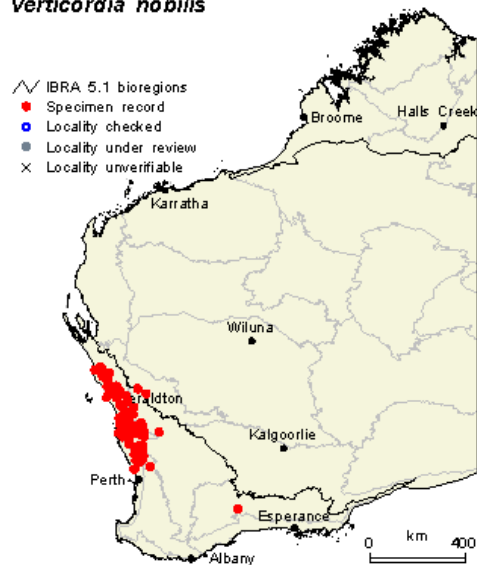


Photo by Penny Hussey

Verticordia nobilis

Family:	Myrtaceae
Plant Description:	Spreading shrub, 0.2-1.7 m high. Flowers yellow, orange, brown, red.
Habitat:	Grows on sandy, often gravelly soils.
Flowering Time:	August-October
Part Harvested/Specifications:	Flowering stems.
Peak Harvesting Period:	September-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Verticordia nobilis

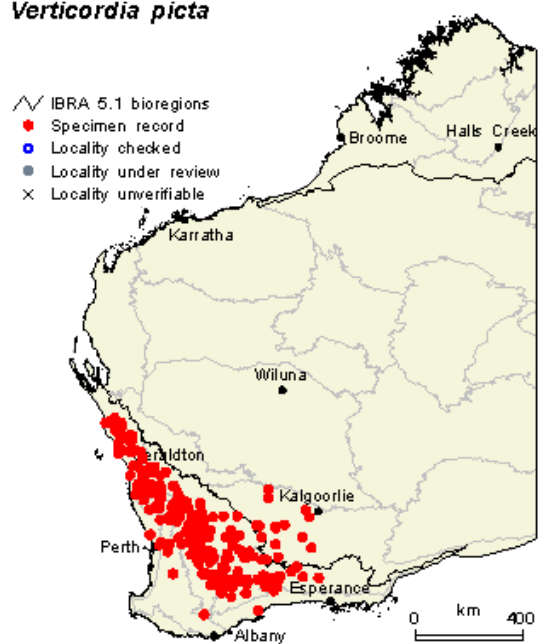


Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Verticordia picta

Family:	Myrtaceae
Plant Description:	Erect shrub, 0.3-1.5 m high. Flowers pink, white.
Habitat:	Grows on sandy or clayey soils.
Flowering Time:	July-November
Part Harvested/Specifications:	Flowering stems, some bud, 50+cm.
Peak Harvesting Period:	October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Verticordia picta



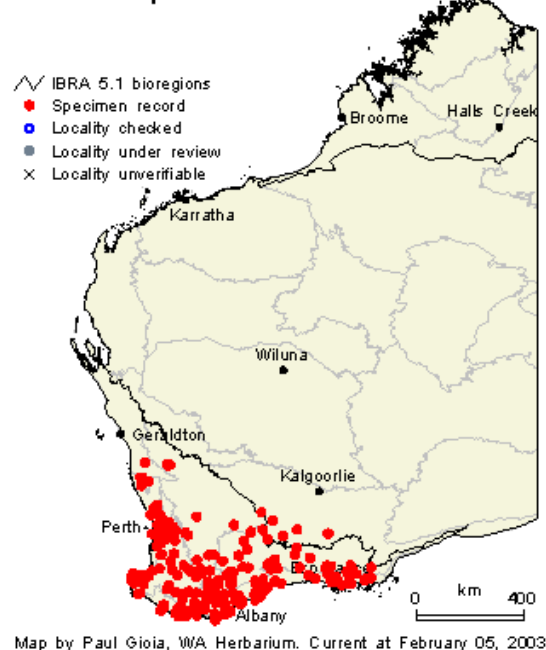
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Verticordia plumosa

Family:	Myrtaceae
Plant Description:	Shrub, 0.2-1.5 m high with or without lignotuber. Flowers pink, blue, purple, red, white.
Habitat:	Grows on sandy or clayey soils, gravel, granite in seasonally wet situations, rock outcrops, undulating plains, hills, road verges.
Flowering Time:	July-February
Part Harvested/Specifications:	Flowering stems, some bud, 50+cm.
Peak Harvesting Period:	October-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Fire kills the plant.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

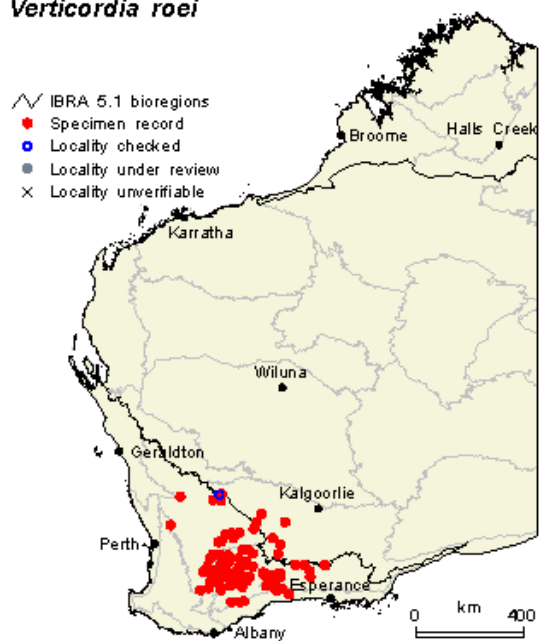
Verticordia plumosa



Verticordia roei

Family:	Myrtaceae
Plant Description:	Corymbose shrub, 0.3-1.3 m high. Flowers white, cream, pink.
Habitat:	Yellow sand, sandy or clay loam, gravel, roadside verges.
Flowering Time:	September-December
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	August-December
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Verticordia roei



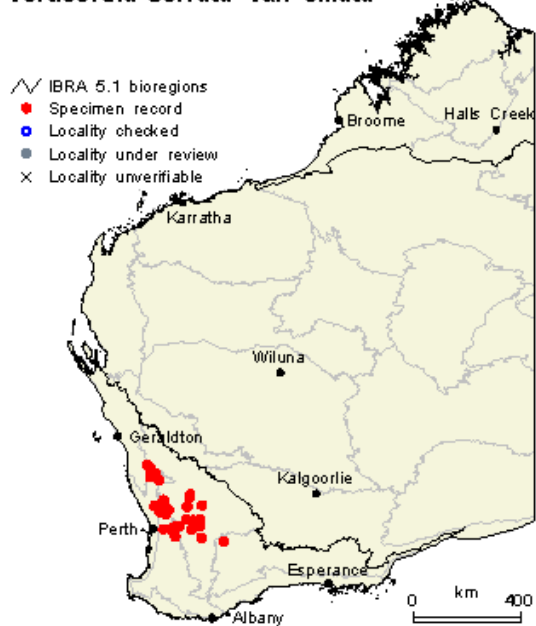
Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Verticordia serrata var. *ciliata*

Family:	Myrtaceae
Plant Description:	Shrub to 1 m high. Flowers golden.
Distinctive Features:	Differs from var. <i>serrata</i> in having leaf cilia 0.5-2mm long and largest peduncle 12-18 mm long.
Habitat:	Grows on sand and gravelly sand, open plains, in heath and open woodland.
Flowering Time:	September-November
Part Harvested/Specifications:	Flowering stems, some bud, 50+ cm.
Peak Harvesting Period:	September-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

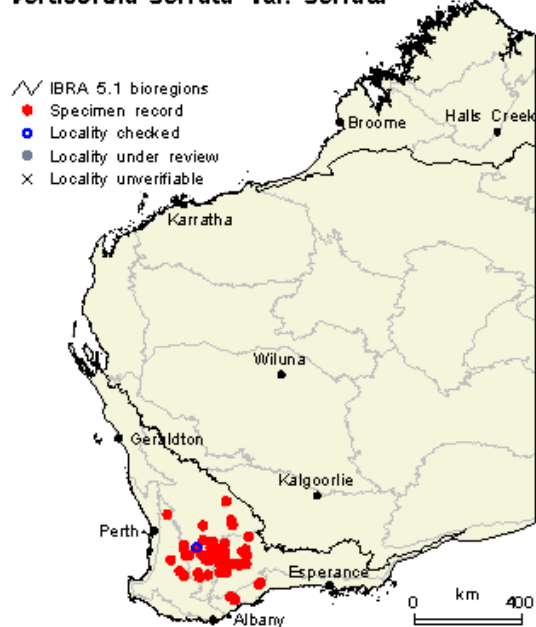
Verticordia serrata var. *ciliata*



Verticordia serrata var. *serrata*

Family:	Myrtaceae
Plant Description:	Shrub to 1 m high. Stem and floral leaves usually obovate 2.4-3 mm long, lowest peduncle ca. 9 mm long. Flowers golden.
Habitat:	Grows on sand and sandy loam in heath and mallee heath.
Flowering Time:	October-November
Part Harvested/Specifications:	Flowering stems, some bud, 50+ cm.
Peak Harvesting Period:	September-October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Unknown.
Fire	This species is killed by fire. Regeneration is by seed stored in the soil.
Harvesting	Only 20% of the plants should be harvested to ensure sustainability.

Verticordia serrata var. *serrata*



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003

Waitzia acuminata

Family:	Asteraceae
Plant Description:	Erect or ascending annual herb, 0.1-0.6 m high. Flowers red, orange, yellow, white, pink. (usually yellow).
Habitat:	Grows on sand, clay, loam, gravel, litter, laterite, sandstone, granite, sand dunes and plains, rocky places, saline depressions.
Flowering Time:	July-January
Part Harvested/Specifications:	Flowering stems, some bud, 50cm.
Peak Harvesting Period:	October-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Waitzia acuminata

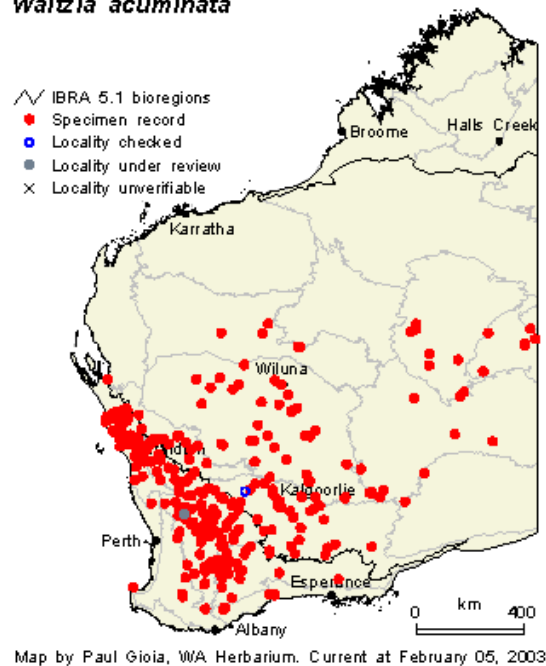


Photo by Penny Hussey

Waitzia suaveolens

Family:	Asteraceae
Plant Description:	Annual herb to 0.6 m high. Flowers white, pink purple, yellow (usually yellow).
Habitat:	Rocky outcrops.
Flowering Time:	September-January
Part Harvested/Specifications:	Flowering stems, some bud, 50cm.
Peak Harvesting Period:	October-November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	Fire kills the plant. Soil stored seed is required for regeneration after fire.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Waitzia suaveolens

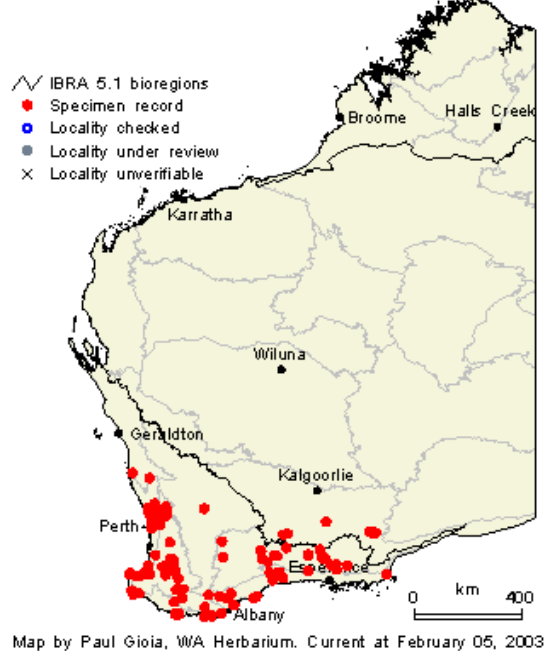


Photo by Penny Hussey

Xanthorrhoea gracilis

(Slender blackboy, Wallaby tails)

Family:	Xanthorrhoeaceae
Plant Description:	Tufted perennial tree-like monocot to 2m high, no trunk, scape length ca. 1.5 m, spike length ca. 0.11m. Flowers white, cream.
Habitat:	Grows on lateritic loam, gravel, and sand.
Flowering Time:	October-January
Part Harvested/Specifications:	Flowering stems, straight stems, 70+cm.
Peak Harvesting Period:	October
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from large apical buds.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Shoots from apical buds after fire.
Harvesting	Shoots after harvesting.

Xanthorrhoea gracilis

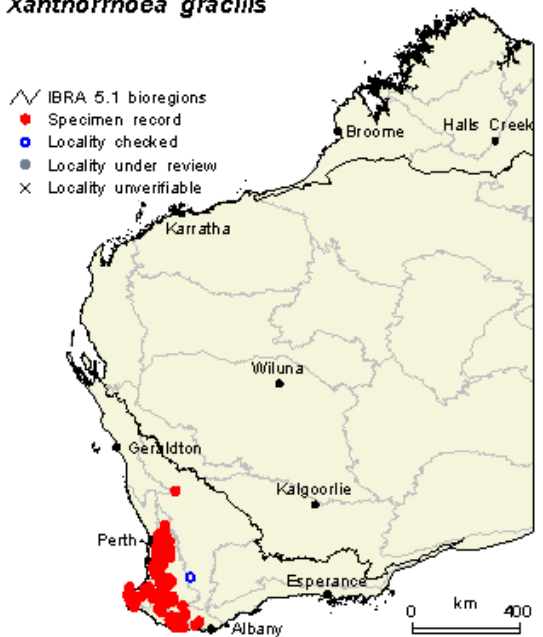


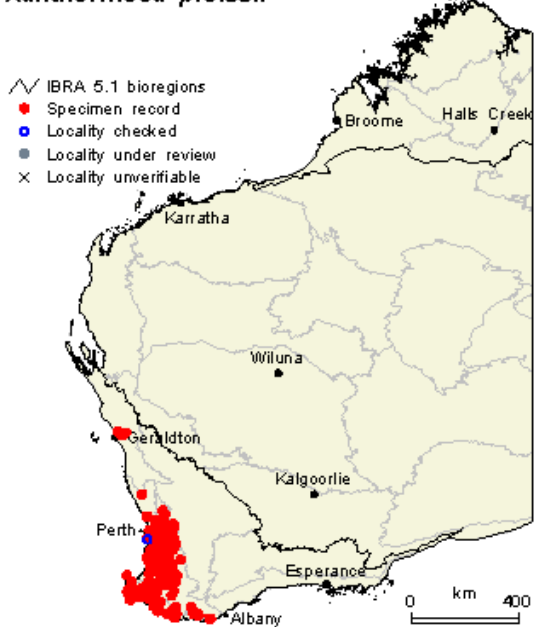
Photo by Ken Atkins

Xanthorrhoea preissii

(Blackboy, Kangaroo tails, steel grass)

Family:	Xanthorrhoeaceae
Plant Description:	Perennial tree-like monocot to 5 m high, spike length 1.5-2.5 m. Flowers white, cream.
Habitat:	Grows on grey sand, and laterite.
Flowering Time:	January-November
Part Harvested/Specifications:	Flowering stems, some bud, 90+cm, leaves, 95+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from large apical buds.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Shoots from apical buds after fire. Fire stimulates growth.
Harvesting	Shoots after harvesting.

Xanthorrhoea preissii



Map by Paul Gioia, WA Herbarium. Current at February 05, 2003



Photo by Ken Atkins

Xanthorrhoea thorntonii

Family:	Xanthorrhoeaceae
Plant Description:	Perennial tree-like monocot, to 5 m high, trunk to 5m, scape length 0.6-0.8 m, spike length 1-1.5 m. Flowers white, cream.
Habitat:	Grows on yellow to red sands.
Flowering Time:	August-December
Part Harvested/Specifications:	Flowering stems
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Shoots from large apical buds.
<i>Phytophthora</i> susceptibility	This species do not occur within the area affected by <i>Phytophthora</i> .
Fire	Shoots from apical buds after fire. Fire stimulates growth.
Harvesting	Shoots after harvesting.

Xanthorrhoea thorntonii

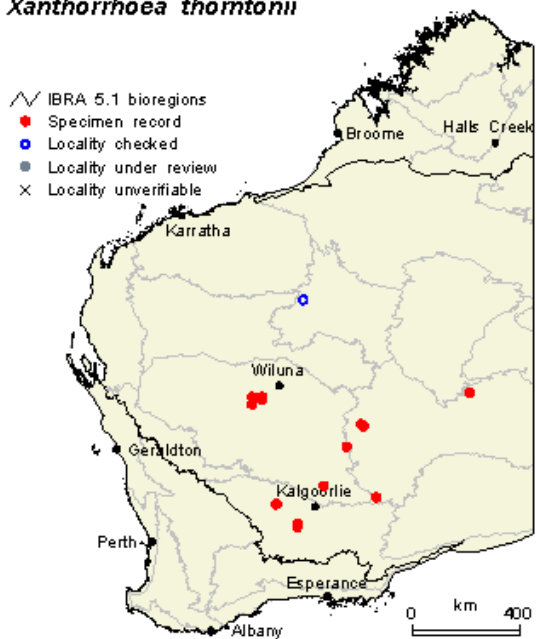


Photo by Penny Hussey

Xerochrysum bracteatum

(Bushy everlasting)

Family:	Asteraceae
Plant Description:	Erect annual herb, 0.3–1.5 m high, flowers white, yellow.
Habitat:	Grows on a variety of soils.
Flowering Time:	August January
Part Harvested/Specifications:	Flowering stems, some in bud, 50+cm.
Peak Harvesting Period:	September-January
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Appears to be resistant.
Fire	This species is killed by fire. Soil stored seed is required for regeneration after fire.
Harvesting	To ensure sustainability a maximum of 20% of stems should be harvested in any one season.

Xerochrysum bracteatum

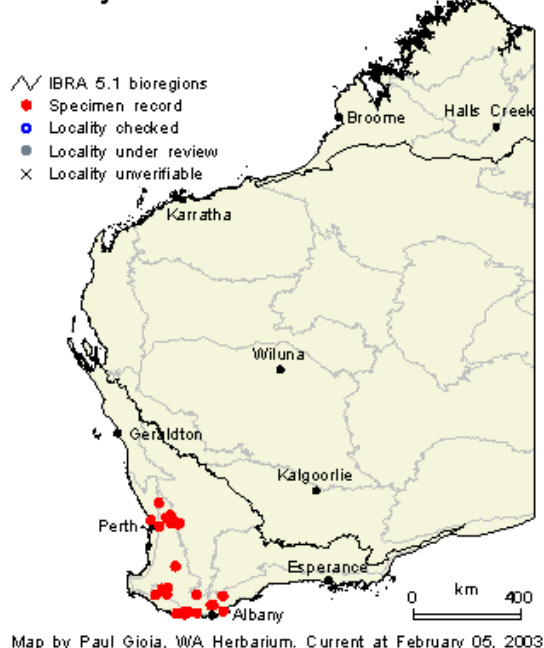


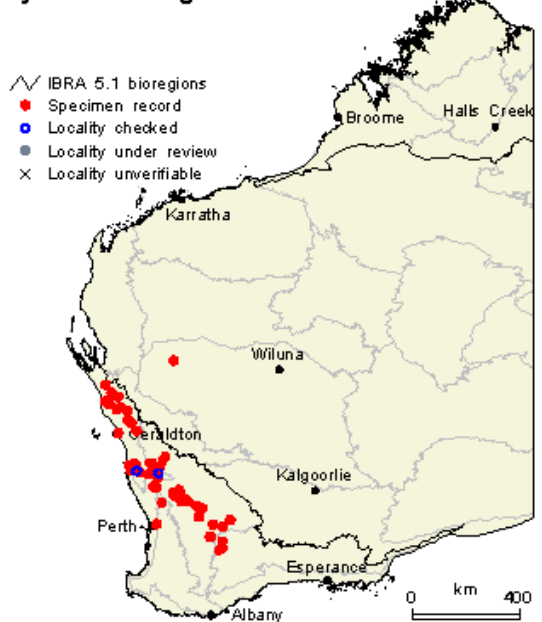
Photo by Penny Hussey

Xylomelum angustifolium

(Woody or Sandplain pear)

Family:	Proteaceae
Plant Description:	Non-lignotuberosus shrub or tree, 2-7 (10) m high. Flowers cream, white.
Habitat:	Grows on white/yellow sand in the northern sandplains.
Flowering Time:	September/December-February
Part Harvested/Specifications:	Stems with nuts, clean leaves and nuts, min of 5 nuts per stem, 60+cm.
Peak Harvesting Period:	November
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Seed.
<i>Phytophthora</i> susceptibility	Does not appear to be susceptible.
Fire	Fire can kill this species. Regeneration after fire is by seed.
Harvesting	Only 20% of the stems should be harvested to ensure sustainability.

Xylomelum angustifolium

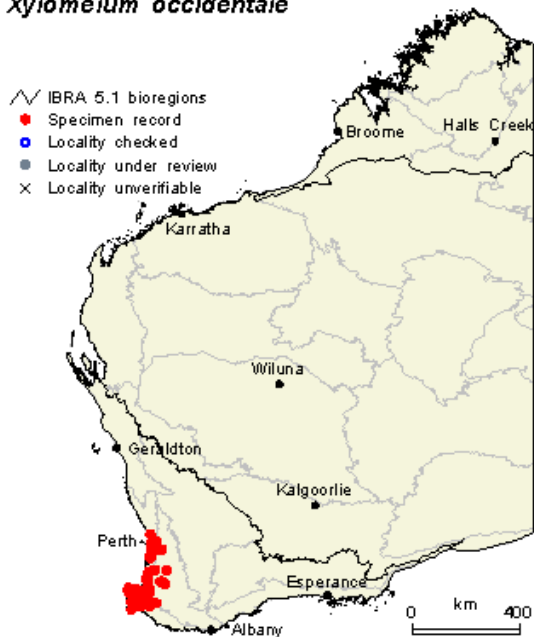


Xylomelum occidentale

(Holly oak)

Family:	Proteaceae
Plant Description:	Tree or shrub, 2-8 m high with epicormic buds. Flowers cream, white.
Habitat:	Grows on white or grey sand.
Flowering Time:	December-February
Part Harvested/Specifications:	Foliage stems, clean leaves, no soft tops, 60+cm.
Peak Harvesting Period:	All year
Conservation status:	Not threatened
Conservation issues:	
Regeneration	Epicormic buds and seed.
<i>Phytophthora</i> susceptibility	Susceptible.
Fire	Sprouts from epicormic buds after fire.
Harvesting	Sprouts after harvesting.

Xylomelum occidentale



References

Denmark Wildflowers, Denmark WA.

George, E.A., and Pieroni, M. (2002) *Verticordia: the turning of hearts*. UWA Press. Crawley, Perth WA

Heritage Wildflowers, Belmont WA.

Hussey, P. (pers. comm.) Department of Conservation and Land Management, Kensington WA.

Meney, K.A., Pate, J.S. and Hickman, E.J. (1999). *Australian Rushes: biology, identification and conservation of Restionaceae and allied families*. UWA Press, Nedlands, WA.

Robinson, C. (pers. comm.) Department of Agriculture, Albany WA.

Rohl, L. (pers. comm.) Department of Conservation and Land Management, Kensington WA.

Seaton, K. (pers. comm.) Department of Agriculture, South Perth WA.

Shivas, R.G. (1989) Fungal and bacterial diseases of plants in Western Australia. *Journal of the Royal Society of Western Australia*, 72 (1&2), 1-62.

Smith, R. (pers. comm.) Department of Conservation and Land Management, Bunbury WA.

Talyor, A. and Hopper, S. (1988) *The Banksia Atlas*. Australia. Bureau of Flora and Fauna Western Australia. Department of Conservation and Land Management.

WAFEX, Swan WA.

Young, J. (2000). *Hakeas of WA: botanical districts of Roe and Eyre: the mallee and the Esperance plains*. Perth, WA.

Young, J. (2000). *Hakeas of WA: Irwin and Darling: the northern sandplains and the south-west forest*. Perth, WA.

Young, J. (1997). *Hakeas of WA: Avon: the Wheatbelt*. Perth, WA.

Department of Environment and Conservation Databases:

- *Florabase* <http://florabase.dec.wa.gov.au/>
- *Flora Industry Database Management System*; and
- *Vegetation Health Service dieback database*.