



# **Whole Plant Sustainable Management Plan 2018–22**

For the commercial harvest,  
salvage and propagation of  
protected whole plants

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## Foreword

This Whole Plant Sustainable Management Plan 2018–22 is intended to replace the *Commercial harvest, salvage and propagation of protected whole plants – Sustainable management plan 2013–17*.

The 2018-22 plan has been exhibited for public consultation in accordance with the *Biodiversity Conservation Act 2016* (NSW) and Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) and updated based on submissions received.

Key changes from the 2013–17 Plan are outlined below.

## New legislation

References to the *Biodiversity Conservation Act 2016* and Biodiversity Conservation Regulation 2017 have been inserted in place of references to former legislation including the *National Parks and Wildlife Act 1974* and *Threatened Species Conservation Act 1995*.

## No multiple licences per site

The 2013–17 plan provided multiple licences would not be issued for the same site within any five-year period. The 2018–22 plan has clarified this requirement to allow new or renewed licences to be issued for a particular site in cases where the sustainable harvest level for the site has not been exceeded (see section 4.10.4).

## *Xanthorrhoea* size classes

The class sizes for *Xanthorrhoea* have been revised to include sustainable harvest of plants between 20 centimetres and two metres.

Existing requirements for population assessments and determining harvest levels will apply to ensure harvesting of plants is sustainable (see Appendices H and K).

## Increased protection for orchid species

As foreshadowed in the 2013–17 plan, several orchid species have been moved from Group 2 (approved harvest – sustainable) to Group 3 (only approved harvest – salvage).

## Tagging requirements for licensed growers

The 2018–22 plan retains the requirement for all plants cultivated under a grower licence to be traced to a legal source throughout the supply chain. The method of demonstrating compliance with this requirement have been clarified in the 2018-2022 plan, as follows:

- grower tags must be attached to individual plants when offered or displayed for retail sale (see section 4.11.2).
- for plants sold in batches to wholesalers and landscapers, evidence of their source may be provided to the buyer, rather than individually tagging each plant (see section 4.11.2).
- the species and size limits for plants that require National Parks and Wildlife Service (NPWS) tags have been revised to enable consumers to distinguish between wild harvested and cultivated plants (see Appendix K).

## Terms and definitions

Approved harvester	A person licensed under the <i>Biodiversity Conservation Act 2016</i> (BC Act) to undertake the sustainable or salvage harvest of whole protected plants on land not owned by the licensee.
Artificially propagated	A plant grown from seeds, cuttings, callus tissue, spores or other propagules under controlled conditions. The resulting plant is cultivated in soil or pots of growing media.
AP	An artificial propagation program approved under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
Authorised officer	A person authorised by the Environment Agency Head to exercise the powers of an authorised officer under the <i>Biodiversity Conservation Act 2016</i> .
Bare root	The condition of the root ball (or equivalent) of plants. When referring to species such as grass trees and tree ferns, 'bare root' refers to transporting plants that are not in a pot or other container. At harvest, the minimum necessary volume of soil and root material must be removed to ensure the plant's survival. For orchids, 'bare root' refers to plants sold that are not attached to and/or growing on a growing media such as a tree-fern slab or pot.
BC Act	<i>Biodiversity Conservation Act 2016</i> .
CFMP	The <i>Protected and threatened plants in the cut-flower industry: sustainable management plan 2018–22</i> . This plan provides management protocols for species in Part 1 of Schedule 6 of the BC Act in relation to commercial cut-flower use.
Club	A club, society or formal group (incorporated or otherwise) involved in growing protected native plants as a hobby and who may, from time to time, sell protected plants.
Commercial	Of or engaged in all forms of the purchase and sale of goods and services.
Cultivate	To plant, tend, harvest or improve plants.
Cut-flower	Any plant part that is sold in the commercial cut-flower industry, including flowers, stems, foliage, fruit and seed heads.
DoEE	Commonwealth Department of Environment and Energy.
Destroy and destruction	The destruction of the plant with no subsequent use of the plant or its parts.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> .
Environment Agency Head	Chief Executive of the Office of Environment and Heritage.
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwlth).
Extractive use or licence	Either a wild harvester or approved harvester licence, where the material in trade is sourced from the wild.
Grower	A person or company licensed under the BC Act who propagates, cultivates or harvests material from artificial sources, protected or threatened native plants on land that they own or occupy. A grower may be either the land owner or occupier.
Harvest and harvesting	Removal of plants for horticulture, or to extract chemicals, or for food, or for other purposes involving the use of parts of plants. It encompasses plants or plant parts removed by pickers, wild harvesters, approved harvesters and growers.

In the wild and from the wild	In relation to native plants, an independent state of natural liberty.
LLS Act	<i>Local Land Services Act 2013.</i>
Local area office	The OEH office responsible for administering and issuing protected plant licences under the BC Act.
Native plant	Any tree, shrub, fern, creeper, vine, palm or plant that is native to Australia, and includes the flower and any other part thereof.
NPW Act	<i>National Parks and Wildlife Act 1974.</i>
NPWS	National Parks and Wildlife Service NSW, part of the Office of Environment and Heritage.
OEH	Office of Environment and Heritage, which includes the National Parks and Wildlife Service NSW.
Pick	To gather, take, cut, remove from the ground, destroy, poison, crush or injure the plant or any part of the plant.
PBR Act	<i>Plant Breeders Rights Act 1994 (Cwlth).</i>
Plant parts	Parts of a plant which are collected for purposes other than propagation, such as for cut-foliage or cut-flowers, but does not include divisions of plants which are taken for propagation.
Pot	A container in which plants may be grown and offered for sale, which contains growing media suitable for the species. A pot may include but not be limited to pots, bags, cells, punnets, flasks, tubes or tubs. For epiphytes or lithophytes, a pot may be a slab, board or other appropriate substrate to which the plant is attached.
PR Act	<i>Plantations and Reafforestation Act 1999.</i>
Private land	Freehold land and land leased, held under licence or permit from a natural person, company or the Crown under a tenure that grants an exclusive right of occupancy, or which is in the course of alienation by the Crown under any Act.
Productive use or licence	A grower licence or material produced under a grower licence where the source of the material in trade is not from the wild.
Propagate	See artificially propagated.
Propagule	Any part of a plant capable of forming a new individual when separated from the original plant.
Protected plant	A species or other taxon listed in Schedule 6 of the BC Act. These species may be common in the wild but are listed to enable monitoring and regulation of activities associated with them.
Salvage	Removal of plants from an area that is being, or is to be, drastically altered by approved urban and rural development, forestry activities, mining or infrastructure development, where the plants would otherwise be destroyed.
Seed	For the purposes of this plan, this includes a fertilised ovule produced by a seed plant and the asexual reproductive cell produced by the sporophyte phase of ferns and other non-seed plants. A seed does not include vegetative propagules such as cuttings or division.
Seed harvester	A person or company licensed under the BC Act to harvest seeds from protected plants for the purpose of selling the seeds.
Sell	As defined in the BC Act, includes to advertise or hold out as being prepared to sell plants, and to deliver or receive plants for the purpose of their sale.
Site	A single property held under individual title or a specific parcel of land managed by a public authority. For example, a specific state forest is a single

site but may include several picking locations. However, state forests with different names, even though they may adjoin, or adjoining parcels of private land with separate titles are regarded as separate sites. In the case of roadside picking, a site is a five kilometre stretch of road.

Taxon (plural taxa)	Any living thing described by a genus name or any other name or description. Taxonomic units are formatted in a nested hierarchy (i.e. variety or cultivar, species, genus, family, order, class, phylum, kingdom).
Threatened ecological community	An assemblage of species occupying a particular area as listed Schedule 2 of the BC Act.
Threatened species	A species listed in Schedule 1 of the BC Act.
Wild harvest	Any harvest from naturally occurring wild stands of protected or threatened plants on property of which the licensee is the owner.
Wild harvester	A person or company, licensed under of the BC Act to harvest from naturally occurring stands of native vegetation on property owned by the licensee. Harvest from land where the person occupies the land under lease is to be dealt with as for an approved harvester licence.
WTMP	Wildlife Trade Management Plan approved under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .



# 1. Introduction

While the proportion of protected plants sourced from artificially propagated sources is rising, many protected plants are still collected from the wild. For many species, this poses little threat to their ongoing conservation. However, for some species in high demand such as grass trees (*Xanthorrhoea* species), wild harvest is of concern due to potential overharvesting and illegal collection from the wild.

Harvesting plants from the wild can pose risks to both the harvest site itself and the conservation of *in situ* native plant populations including the:

- removal of soil, nutrients, biomass and animal habitat
- introduction of pathogens and weeds
- reduction in genetic diversity within harvested populations
- introduction of threats to non-target species or populations through habitat modification
- decreased reproduction or recruitment of species through the removal of plant reproductive parts
- modification of abiotic (non-living) factors that influence a species or population.

Illegal harvesting practices can also reduce the viability of legitimate harvesters in the industry, compromising plant quality and undermining consumer confidence in native plant products.

As the lead environmental agency in NSW, the Office of Environment and Heritage (OEH) works with industry, other agencies and the community to protect and manage the commercial use of whole protected native plants through licensing and other credible regulatory tools.

OEH issues licences under the *Biodiversity Conservation Act 2016* (BC Act) to persons seeking to harvest or grow whole protected plants for commercial purposes.

This management plan refines and consolidates the existing licensing framework to deliver on two objectives: first that regulation is targeted toward species at risk from unsustainable harvesting and second that best practice management is applied consistently across NSW.

This plan describes the legislative framework, including:

- how it fulfils Australian Government requirements for a wildlife trade management plan (section 3)
- the types of licences that can be issued for the harvest and cultivation of plants and how and where they may operate (section 4)
- the factors governing the placement of protected whole plants into Schedule 6 of the BC Act and how they apply to each licence type (section 5)
- an outline of all the detailed operational matters that need to be taken into consideration by licensees (Appendices B to K).

The plan is an educational resource designed to raise awareness among industry stakeholders and the broader community of the range of issues affecting the management and conservation of protected and threatened plant species that are used commercially.

Fundamental to this plan's success is correctly identifying any species being traded. Licensees, OEH staff and the broader industry are encouraged to seek professional assistance in identifying any plants subject to this plan.

Throughout this plan the nomenclature is consistent with that published on the PlantNET website, New South Wales FLORA online and is current at the date of publication (see PlantNET – NSW FloraOnline).

This plan supersedes the Commercial Harvest, Salvage and Propagation of Protected Whole Plants: Sustainable Management Plan 2013–17 that was approved by the Australian Government in 2013.

## 2. Objectives

The objectives of this plan are to:

- establish a risk-based framework of regulation that focuses effort on higher risk activities and reduces or removes the regulatory burden on low-risk activities or industries
- provide guidance to OEH staff, people working in the whole plant industry and the public about the management protocols for harvesting, storing, propagating and selling protected whole plants
- manage the sustainable harvest of protected whole plant species by land owners for commercial use, where the species, age or size classes are not readily available in cultivation
- manage the commercial use of whole plants obtained from sustainable harvest and salvage situations, where the species are not available in cultivation, and limit the commercial use of salvage material where equivalent material is available in cultivation
- provide protocols for collecting and using the seeds from protected plants for commercial purposes
- facilitate the reuse of vegetation resources within development approvals
- support the transition to artificial propagation of protected plant species thereby maintaining wild populations of high-value products and reducing long-term incremental loss
- provide guidelines and protocols which allow sustainable commercial use of protected whole plants
- support research by providing access to data collected through the licensing system
- establish a management regime in NSW that complies with the Australian Government requirements for a wildlife trade management plan (WTMP) and an artificial propagation (AP) program.

## 3. Legislative framework

### 3.1 Commonwealth legislation

#### 3.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework for protecting and managing nationally and internationally important plants, animals, ecological communities and heritage places.

It allows management arrangements to be established that protect, conserve and manage a plant or animal under a wildlife trade management plan (WTMP) or an artificial propagation (AP) program where there is commercial use of native species. Species or products sourced under these plans and programs are eligible for an export permit.

This management plan meets the EPBC Act requirements for a WTMP and the proposed regime for BC Act grower licences meets the requirements for an AP program. Approval of this plan by the Commonwealth Department of Environment and Energy (DoEE) means the export requirements for both wild harvested and propagated plants will be reduced on providing a copy of the appropriate NSW licence. Further information on the commercial export of regulated plants is available on the [DoEE website](#).

#### 3.1.2 Plant Breeders Rights Act 1994

The *Plant Breeders Rights Act 1994* (PBR Act) allows Australia-wide proprietary rights to be granted to breeders of new varieties or cultivars of plants and fungi.

A licence under this plan will not be required for growing plant material that has been accepted under the PBR Act. However, it will be the responsibility of the applicant to demonstrate the status of PBR Act material. It is an offence under this Act to use material without the approval of the owner of the property. It is also an offence for anyone to claim PBR Act protection when they do not have such protection.

### 3.2 NSW Legislation

#### 3.2.1 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) commenced on the 25 August 2017 and replaced the *Threatened Species Conservation Act 1995* and parts of the *National Parks and Wildlife Act 1974* relating to native plant and animal protection and licensing.

Under the BC Act, it is an offence to pick and sell plants that are threatened species, or protected plants, unless it is authorised by an exemption in the Act or Biodiversity Conservation Regulation 2017 (BC Regulation), or authorised under a licence issued by Office of Environment and Heritage (OEH).

Threatened species are listed in Schedule 1 of the BC Act and protected plants are listed in Schedule 6 of the BC Act. Schedule 6 is divided into plants used in the cut-flower industry (Part 1) and whole plants (Part 2).

Under the BC Act, there are no restrictions on the commercial use of plants not listed in Schedules 1 or 6, or on the non-commercial use of plants listed in the schedules.

Under clause 2.31 of the BC Regulation, OEH may prepare management plans for commercial use of protected plants to ensure both their sustainable use and the preservation

of wild populations. When preparing a management plan, the following matters must be taken into consideration:

- ecology of the species
- sustainability of the proposed management regime
- Aboriginal cultural practices in relation to the species
- whether limits need to be placed on the number of licences that may be granted for a commercial activity if a licence is required for that activity
- whether it is necessary to monitor the commercial activity
- any other matters that the Environment Agency Head considers relevant.

### **3.2.2 Local Land Service Act 2013**

Part 5A of the *Local Land Services Act 2013* (LLS Act) regulates the management of native vegetation in rural lands. It commenced on 25 August 2017 and replaced the *Native Vegetation Act 2003*.

The LLS Act specifies native vegetation clearing activities that may be undertaken without approval ('allowable activities'), activities that may be undertaken in accordance with a land management code and activities that require approval.

### **3.2.3 Forestry Act 2012**

This Act provides for timber harvesting on crown-timber lands, including state forests and timber reserves, and on private land in accordance with private native forestry property vegetation plans.

This management plan provides for the commercial harvesting of whole protected plants and threatened species in state and private native forests.

### **3.2.4 Plantations and Reafforestation Act 1999**

Under the *Plantations and Reafforestation Act 1999* (P&R Act), plantations with an area over 30 hectares, or with environmental plantings which exceed the exempted area of 30 hectares, require approval from the Department of Industry.

The harvest of whole protected plants in timber plantations may be regulated under this plan.

### **3.2.5 Environmental Planning and Assessment Act 1979**

The *Environmental Planning and Assessment Act 1979* (EP&A Act) regulates planning and development in NSW. Some local environmental plans prepared under this Act may regulate horticultural activities. Growers need to contact their local council to check what is permissible in their area.

The State Environmental Planning Policy (Vegetation in non-rural areas) provides protection for trees in areas where the LLS Act does not apply. Under this Policy, councils may authorise the clearing of native vegetation in non-rural areas.

### **3.2.6 Western Lands Act 1901**

Holders of leases under this Act may have additional restrictions placed on growing and/or picking native vegetation on their lands.

### 3.3 Penalties

The BC Act has significantly increased penalties for offences relating to protected and threatened native plants. The maximum penalties for the BC Act offences of picking or selling plants that are threatened species and protected plants are:

- For threatened species, other than vulnerable species: \$330,000 for individuals, \$1,650,000 for corporations and/or imprisonment for two years.
- For vulnerable species: \$88,000 for individuals or \$440,000 for corporations.
- For protected plants: \$22,000 for individuals or \$110,000 for corporations.

The BC Act also provides that additional penalties may apply to these offences, including;

- an additional daily penalty of up to 10% of the maximum penalty for each day the offence continues
- an additional penalty of up to 10% of the maximum penalty for each whole plant to which the offence relates.

These offences may also be dealt with by penalty notices (on-the-spot fines). In addition to monetary penalties, offenders may be required by OEH to undertake specified remediation work.

The BC Act also provides that OEH may cancel or suspend licences and enables the licensee to appeal to the Land and Environment Court.

The BC Regulation applies penalties for non-compliance with requirements relating to the tagging of protected plants and the keeping or production of records relating to dealing in protected plants. The maximum penalty is \$5500.

## 4. Policy and administrative framework

### 4.1 Licensing for whole plants

This plan regulates the commercial use of whole protected and threatened plant species under four licence types. Three of these regulate activities that extract plants from the wild. They are referred to as 'wild harvester', 'approved harvester' and 'seed harvester' licences. The fourth licence type relates to artificially propagating protected whole plants and is termed a 'grower' licence.

Licensing in this plan only applies to the primary source of plant material. Those persons or businesses that buy and on-sell protected whole plants that have been acquired from a legal source will not be subject to the requirements of this plan. Wholesalers and retailers should be able to demonstrate that materials are legally obtained and are tagged where required.

### 4.2 Wild harvester licence

A wild harvester licence authorises a freehold landowner to undertake sustainable harvest from naturally occurring stands of native plants on their property. Only species in Group 1 of Part 2 of Schedule 6 may be taken under this licence type (see section 5.1). Tagging (see section 4.11) and record keeping requirements (see section 4.13) will apply.

Licence application requirements and procedures for wild harvester licences are outlined in Appendix B. Harvest site controls must be provided with licence applications as indicated in Appendix D.

### 4.3 Approved harvester licence

An approved harvester licence permits harvesting from naturally occurring stands of native plants on land not owned by the licensee. It falls into two categories – 'sustainable harvest' and 'salvage harvest'.

Applicants for this licence type are required to demonstrate a minimum level of experience, equipment and facilities before a licence will be issued. Once an approved harvester licence has been issued, the licensee must apply for separate site approvals for the sites on which harvest is proposed. A single approved harvester licence may cover harvest at multiple sites and under both 'sustainable' and 'salvage' situations.

A landowner may apply for this licence to harvest species in Groups 1, 2 or 3 of Part 2 of Schedule 6. This distinction is required to demonstrate higher levels of experience and expertise necessary to harvest species in these groups.

Detailed information on licence application requirements and procedures is provided in Appendix C. Harvest site and stockpile site controls must be provided with licence applications as indicated in Appendices D and E. Tagging (see section 4.11) and record keeping requirements (see section 4.13) will apply.

#### 4.3.1 Sustainable harvest

An approved harvester may sustainably harvest some protected whole plants from stands of native vegetation on private lands. This plan defines sustainable harvest as harvesting at a rate which allows the population of the target species to persist indefinitely.

Sustainable harvest activities act as an incentive for landowners to maintain vegetation on their property and are only permitted when the plant species proposed for extraction are not

readily replaced by cultivated material and the likely impacts on the harvest site are assessed as acceptable or can be mitigated.

Sustainable harvest is restricted to species in Groups 1 and 2 of Part 2, Schedule 6. As stated, the harvest site, stockpile site and transport controls must be provided with the licence application.

Applicants seeking a site approval to undertake sustainable harvest must demonstrate in their application that the proposed harvest is, or is likely to be, sustainable for each species. This requirement will apply only to the initial application. However, where a licensee reapplies for land under a previous application, OEHL may request additional information to aid its assessment process.

### 4.3.2 Salvage harvest

Approved harvesters may salvage certain protected plants, where construction, mining, forestry or infrastructure development will result in their destruction. The plants of interest to salvage operators in this context are usually those offering a financial return.

Salvage harvest will only apply to an approved development under the *Environmental Planning and Assessment Act 1979* (EP&A Act). It will not be considered for activities that are deemed 'exempt development'. Salvage harvesting does not limit or mitigate land-clearing impacts.

For forestry operations, salvage will only be permitted from that area of an approved plantation that is currently being harvested (see 4.8.5).

Only protected whole plants in Groups 1 to 3 of Part 2, Schedule 6 can be the subject of salvage harvest. Also, restrictions apply to the size class of plant that can be harvested (see Appendix K for further detail). Unharvested products of an unsuitable size class will either be destroyed or left to decompose on site. Otherwise they may be reused onsite as part of site-specific revegetation works or landscaping where appropriate. These restrictions aim to support a transition to cultivated material by reducing access to cheaper salvaged material where equivalent material is commercially cultivated.

Allowable activities under Part 5A of the *Local Land Services Act 2013* (LLS Act) do not qualify for salvage harvest. An application to harvest protected plants from areas subject to allowable activities will be considered as sustainable harvest and all applicable restrictions will apply.

The clearing of native vegetation authorised or approved under the LLS Act (and unexpired property vegetation plans made under the former *Native Vegetation Act 2003*) does not provide an explicit defence to selling protected or threatened native plants.

Harvesting protected or threatened native plants for sale must therefore be undertaken with a licence issued under the BC Act and only activities authorised under the *Cut-flower Sustainable Management Plan 2018-22; Protected and threatened plants in the cut-flower industry* (the CFMP) and this plan are permitted.

OEHL encourages consent authorities to incorporate the reuse and salvage of on-site vegetation resources into planning approvals that propose clearing or modifying native vegetation. This may include the on-site reuse of protected plants that cannot be utilised commercially under this plan, the re-use of non-protected species or collecting local seed and other propagules prior to clearing.

## 4.4 Seed harvester licence

A seed harvester licence is required for the harvest of seeds from wild protected plants for the purpose of selling the seeds. Application requirements for a seed harvester licence are



provided in Appendix F. Harvesting seed for sale from material in cultivation (see 4.8.7) will be licensed under a grower licence.

This licence type can be issued for any species in any part of Schedule 6 except for individually listed threatened species. Harvest from threatened ecological communities or areas of outstanding biodiversity values may only be undertaken in a salvage situation (see Appendix F).

However, individual licences may have limits or restrictions imposed on the species and quantities that may be harvested. Collection of vegetative material, e.g. cuttings or plant divisions, is not permitted under this type of licence as the impacts from these actions are significantly greater than from seed collection.

## 4.5 Grower licence

A grower licence is required to grow protected plants for the purpose of sale. Grower licences may permit the propagation and sale of threatened species. The application requirements and procedures for a grower licence are explained in Appendix G. Tag requirements may apply (see section 4.11). Growers may access propagating material from several sources including stock plants or through other licensing provisions under this plan (see sections 4.8 and 4.9).

Growers fall into distinct sectors within the industry, such as tube-stock and production nurseries, and societies and species interest groups. The management requirements for each differ slightly to balance the needs of different licensees. A summary of these sectors is described in the following sections.

The plan recognises that some businesses may overlap between the sectors described below. Only a single grower licence will be required where the business undertakes growing activities across more than one of these sectors.

### 4.5.1 Tube-stock nurseries

Tube-stock nurseries propagate a range of protected plants with seed obtained from seed merchants or wild stands. Despite some questions about the source of seed material, this sector supports sustainable use of material through low-impact methods. Products are generally sold in tubes or similarly small size classes.

### 4.5.2 Production nurseries

Most plants in production nurseries are propagated but some may 'grow on' smaller-sized wild harvested or salvaged material. Nurseries producing protected plants tend to specialise in specific taxa such as orchids, palms, ferns and increasingly, high-risk plants such as *Xanthorrhoea* species.

### 4.5.3 Societies and special interest groups

Picking of protected whole plants for non-commercial hobby purposes has a specific defence in the BC Act under Section 2.8(l). There has been some confusion surrounding the extent of this defence and how it applies.

Societies and special interest groups may pick, possess and trade protected plants between members and small-scale growers without the requirement for a licence when:

- the trade occurs at a society meeting at their nominal meeting venue, or between members of the society at any time

- the material has been obtained according to this plan or is lawfully in the possession of the person supplying it (see section 4.9).

Societies and special interest groups will require a grower licence to sell to the public where the material has not been sourced under this plan. They may apply for a licence to sell plants donated by members for sale at shows and other events. A society may produce a grower tag (see section 4.11) and must record the source of all donated material. Where the material is purchased from licensed growers for sale at society events, it should already be tagged.

#### **4.5.4 Small-scale and hobby growers**

Without limiting the application of sections 4.5.1 to 4.5.3, individuals who propagate and sell protected native plants to the public, or to wholesalers or retail outlets require a grower licence.

### **4.6 Traditional use of whole protected plants**

Australia's Aboriginal people possess significant knowledge of native plants which extends to the specific use and broad management of wild native plants. Land management and nursery practices may be informed and improved through cooperation with traditional owners and by applying traditional knowledge.

Section 2.8(k) of the BC Act provides an exemption so that Aboriginal people and their dependants may gather or harvest from certain lands and have in their possession the fruit, flowers or other parts of protected native plants for domestic purposes.

This exemption does not extend to the commercial use of protected whole plants or plant parts.

### **4.7 Commercial harvest for bush tucker and other purposes**

There are many circumstances other than those included in this plan and the CFMP that utilise protected native plants for commercial purposes such as bush tucker production and paperbark harvesting. To ensure the long-term sustainability of these industries, OEH encourages establishing plantations of these materials.

These industries are not regulated by this plan except where the intention is to collect seed material from protected native plants from the wild to either:

- establish a bush-tucker crop in cultivation
- supplement an existing crop by collecting material for propagation.

Further details can be found in section 4.9.

### **4.8 Location of harvest**

The extraction of whole protected plants for commercial purposes is permissible from a range of land tenures. However, specific limitations on harvesting may apply to each of these tenures and in locations where species or habitat of high-conservation significance are known to occur.

#### **4.8.1 Private land**

Most plant material is sourced from private land. Applicants must obtain written permission from the landowner to access the land and its plants before lodging a licence application.

#### **4.8.2 Land held under the *National Parks and Wildlife Act 1974***

Wild harvester, approved harvester or seed harvester licences will not be issued to harvest from any lands managed under the NPW Act (the NPWS estate). However, a scientific licence under the BC Act may be issued under certain circumstances for the harvest of seed or other propagation material from these areas for scientific or conservation purposes (see section 4.9).

#### **4.8.3 State forests**

Harvest of whole plants from state forests requires an approved harvester licence from OEH and a forest products licence from Forestry Corporation of NSW.

An approved harvester licence will only be issued on receipt of written approval of the proposed harvest by Forestry Corporation of NSW. It must state the harvest location, target species and quantities and include a statement that Forestry Corporation of NSW believes the proposal is sustainable. The harvest level endorsed by Forestry Corporation of NSW may be further limited by OEH.

Seed may also be harvested from state forests under a seed-harvester licence.

Should Forestry Corporation of NSW require harvested material to be tagged with Forestry Corporation of NSW tags, these must be applied in addition to any other tagging requirements specified under this plan.

#### **4.8.4 Other public land**

For leased public land, applicants must obtain written permission from the lessee before applying for a licence. For unleased land, applicants must obtain permission from the authority responsible for the land. Authorities may impose access restrictions or limit the use of native plants on land that they manage.

#### **4.8.5 Private forestry operations**

Where protected native plants colonise an approved plantation, harvesting of the plants will be licensed according to this plan. OEH will set harvest rates for approved plantations except during salvage operations. Harvest will not be permitted from buffer zones or specified exclusion areas, such as habitat areas, drainage lines or streams as described in the *Plantations and Reafforestation Act 1999*. During selective logging only those plants directly impacted will be available for harvest.

#### **4.8.6 Fruit orchards or precious timber production**

Protected and threatened plant species, predominantly epiphytes, can colonise trees in some agricultural production settings such as macadamia and avocado orchards. Where such colonisation has occurred on crop or timber trees and, where the species may be harvested under either a wild harvest or approved harvest licence, OEH may issue a licence. In such cases OEH may choose not to impose harvest limits.

#### **4.8.7 Seed orchards**

The term 'seed orchard' refers to the cultivation of plant material to produce seed for a specified purpose. This practice is well established in the forestry industry and is becoming more widespread to produce seed for revegetation and rehabilitation projects.

The material to establish a seed orchard must be lawfully sourced as described in sections 4.2 to 4.4 or section 4.9. As the species used in seed orchards may be derived from threatened species, areas of outstanding biodiversity value or threatened ecological communities, seed orchards, once established, will be licensed under the grower provisions in this plan.

#### **4.8.8 Areas of outstanding biodiversity diversity values and threatened ecological communities**

Harvest is prohibited from areas of outstanding biodiversity diversity value declared under the BC Act (formerly known as critical habitats under the TSC Act) or the habitat of threatened species.

Harvest from threatened ecological communities is only permitted if the proposed harvest is a salvage operation.

#### **4.8.9 Threatened species**

Applicants are responsible for determining the presence or likely presence of threatened species at the proposed site.

This plan does not permit the commercial harvest of threatened species from the wild, unless individually listed in Schedule 6 of the BC Act. Threatened species may only be picked from the wild to establish artificial propagation programs and only if the applicant meets the licence requirements for a threatened species licence or a scientific licence under the BC Act. See also section 4.9.

### **4.9 Sourcing seeds and other propagating material**

This management plan permits sourcing seeds and other propagating material from various land tenures. Restrictions or exclusions may apply in some situations.

On land other than the NPWS estate, a seed harvester licence can be issued for species in both Part 1 and Part 2 of Schedule 6, excluding threatened species as identified earlier in section 4.4.

A seed harvester licence will not be issued for seed harvesting from land managed under the NPW Act. Harvest of seed material from the NPWS estate may be considered for authorisation under a scientific licence, with the concurrent approval of the relevant NPWS area manager, and in situations where:

- it assists in establishing a commercial crop, or identified variants of existing crops, and where propagules are not available, or are very limited from other sources, and where the establishment of a cultivated population contribute to the conservation of the species
- the NPWS estate is the only, or most appropriate, source of seed material and the seed is to be used for planting activities in, surrounding or adjacent to the NPWS estate
- the collection is for legitimate research purposes.

## 4.10 Managing harvest impacts

The harvest of whole protected native plants from the wild can impose some risk to the harvest site and local populations of target and non-target species. Licensees need to be aware of these risks and set up management practices that reduce the potential impacts. Key elements of a damage mitigation strategy are described below.

### 4.10.1 Maximising survivorship

Plants which are harvested incorrectly often die. Digging up or otherwise harvesting a plant places it under considerable stress by potentially damaging the root system, trunk and/or foliage. Changes to watering and fertilising regimes, altered drainage and soil conditions can also affect the plant.

This plan specifies minimum holding periods for some harvested materials. In addition, harvest and stockpile site requirements and product specifications may apply to maximise post-harvest survival. See Appendices D and E for more information.

### 4.10.2 Population estimates

These will be required to help assess harvest sustainability for all extractive licences. For example, applications for a wild harvester licence or an approved harvester site approval, must include an estimate of the target species population at each proposed harvest site. Also, a harvest plan must be included with the application. It must describe the condition of the site, including access points, and the capacity of the population to recover from harvesting.

Wild harvester and approved harvester (sustainable harvest) licensees must also maintain a map of the area identifying each harvest event to help manage harvest effort and intensity over time. Further information is provided in Appendix J.

### 4.10.3 Setting harvest levels

Restricting the number of plants that can be harvested limits the impact of harvesting and helps ensure the sustainability of the harvest activities.

OEH may restrict the number of plants that can be harvested. This may include imposing quotas or setting licence conditions. Restrictions may be varied according to criteria such as rainfall, effects of fire, impacts on non-target species and on the overall ecosystem and/or other land use considerations. OEH may also set a lower rate of harvest for new licensees. In some circumstances, there may be a ban on harvesting a species for a specified period or from a specified area.

Minimum population thresholds apply for wild harvesting, particularly where there is doubt about the sustainability of harvesting or the proposed level of harvest. The following criteria may be used for guidance when setting harvest levels:

- harvest no more than ten per cent (10%) of the available population of approved size classes for Group 1 species
- where available and appropriate, national harvest guidelines will apply
- harvest no more than one per cent (1%) of the available population of an approved size class (see Appendix K) for Group 2 species
- all individuals of an approved size class for species in Groups 1, 2 or 3 may be available for salvage harvesting (see Appendix K).

OEH may further restrict harvest rates where the current rates impact or are likely to impact on the sustainability of the target product.

#### **4.10.4 No multiple licences per site**

This plan seeks to manage the intensity of wild harvesting at a site. To this effect, only a single wild harvester licence or approved harvester (sustainable harvest) site approval per species will be issued for a specified harvest site within any five-year period. This does not limit the renewal of an existing licence but precludes additional licences being issued, other than a grower licence.

For example, if a wild harvester licence has been issued for a species in Part 2 Group 1, an approved harvester licence (sustainable harvest) site approval will not be issued for the same site and species within five years. In addition, only one site approval will be granted to an approved harvester for the sustainable harvest of a species at a specified harvest site in any five-year period, unless the quota for the site approval was below the sustainable harvest level or was not filled. In these cases, additional site approvals may be granted to allow the harvest of the remainder of the quota.

Should a site subject to licensing – under either a wild harvester or approved harvester (sustainable harvest) licence – be approved for salvage harvest, the wild harvester or approved harvester licence will cease to have effect over that section of the site subject to the clearing works. The salvage harvest will be subject to the size class limitations in Appendix K.

Should a site subject to licensing be sold, the licence is not transferable. Should the new owners wish to harvest or grow protected plants, a new licence application will be required and it will be assessed on its merits. Any new licences issued will be limited to the same or lesser activities as permitted under the previous licence.

Where a site that is subject to harvest by an approved harvester is sold, harvesting must cease until the approved harvester can demonstrate written permission from the new owner. Where this is done within six months of the date of sale, no new site approval fees will apply. Any notifications outside this period will be subject to a new site approval application and associated fees.

A grower licence may be issued in conjunction with any wild harvest or approved harvester licence on the same property.

#### **4.10.5 Hygiene management**

The wild harvest of plants may facilitate the transfer of weeds or pathogens between localities. For example, some taxa such as grass trees (*Xanthorrhoea* species) are susceptible to *Phytophthora*, a contagious and damaging soil-borne infection. The sustainability of harvesting will be jeopardised should a site become infected and landowners and licensees should report all possible outbreaks.

Precautions such as cleaning tools and washing shoes between visits to different sites must be taken, particularly for approved harvesters who often work and travel between different areas.

OEH will not issue a licence, and may cancel existing licences, for sites affected by pathogens or weeds where such invasions are likely to have significant conservation impacts. Further information on hygiene procedures is provided in Appendix D.

## 4.11 Whole plant tagging requirements

Under the BC Regulation it is an offence to contravene a requirement of a licence to affix tags to a protected plant.

This plan requires plant species at high conservation risk, in high demand or at significant risk of illegal harvest, to have tags attached.

Tagging is a useful way to ensure continuity of lawful possession throughout the supply chain, from harvest site to end user, particularly when they are on-sold many times. The use of tags eliminates the need for all parties in the supply chain to be licensed. Tags also identify legally sourced plants, making it easier for consumers to preferentially select cultivated specimens.

Tags attached legally to protected plants from interstate are recognised under this plan.

Sellers should ensure that suppliers (whether in NSW or elsewhere) are appropriately licensed and that products comply with the tagging requirements set down in a relevant plant management plan.

Two types of tags referred to as 'NPWS tags' and 'grower tags' are specified in this plan and their use will vary according to licence type and species.

### 4.11.1 NPWS tags

These are prefixed and numbered tags produced by OEH that enable plants to be traced to both a specific licence and harvest site. Each NPWS tag will include the NPWS logo and a brief description of plant origin or species.

NPWS tags are required for all plants acquired from extractive sources under wild harvester and approved harvester licences. Tags will be issued for the number of plants approved – either in bulk on licence approval and payment, or periodically on request throughout the licence period. Tags will be issued from local area offices directly to licensees or an approved nominee. These must be signed for on receipt by the licensee. Alternatively, tags may be sent to licensees via registered mail. The licensee will be responsible for postage costs should tags be delivered via registered post.

NPWS tags are single use and must be attached to individual plants at the harvest site or managed in such a way that tags are immediately allocated to harvested plants. Transporting harvested plants that are not appropriately tagged is a breach of licence conditions (Appendix D). NPWS tags must not be cut down or modified. They must be permanently attached, as issued, in a manner appropriate for the product. This might be done using staples, nails or string. Alternatively, if the tag design allows it, loop the tag around the product.

If plants that are tagged are lost or die at any time prior to sale, the tags must not be reused on replacement plants. Lost or damaged tags may be replaced if OEH is provided with both satisfactory evidence for their replacement and any damaged ones that remain. Replacement tags must be paid for by the licensee.

OEH will charge a fee for each tag. NPWS tags for most products will be charged at cost-recovery rates only. The current fee is approximately 20 cents per tag. These fees are current at the time of publication but may alter in the future.

For medium- to high-risk plants, such as those species listed in Schedule 6, Part 2 Groups 2 to 3 (see sections 5.1.2 and 5.1.3), a premium fee on tags may be charged. This is to provide additional incentive to reduce levels of wild harvest and to encourage the use of material grown from cultivated sources. The proposed tag fee for these premium species is likely to be set at \$3 to \$5 per plant.

Funds from tag fees over and above cost recovery will be used to support compliance and research activities.

Tags are only issued for the term of a licence. If tags are not used within the term of the licence they must either be returned to OEH or destroyed, and a record of the tag numbers noted.

Unused tags from an expired licence may be reallocated by OEH on renewal of the licence. OEH may charge a fee to cover costs of tag production but will not charge an additional processing fee.

Licensees must report which tags were used and the survivorship status of the harvested plants to OEH.

### **NPWS tags for grower licences**

Persons with a grower licence may require an NPWS tag for some plants such as *Xanthorrhoea*, however, this will not apply to all size classes of plant (see Appendix K).

A grower licensee may choose to use NPWS tags for their products, including those species and size classes where it is not mandatory. These tags will be produced on request and will be charged at cost recovery rates.

#### **4.11.2 Grower tags**

All growers will be required to attach a grower tag to any plant they produce under their licence that is intended to be publicly displayed or offered for retail sale. In circumstances where certain species reach prescribed size classes in artificial production, such as described above for *Xanthorrhoea* species, an NPWS tag will be required.

Grower tags may take the form of a sticker, label or sleeve and must be attached to the plant or container directly. They must have sufficient information to trace the product to its origin, for example, the species' scientific name with the term 'plantation grown' and the supplier's name.

If possible, it is recommended that grower tags comply with the [National Plant Labelling Guidelines](#) produced by the Nursery and Garden Industry Australia, but they may be attached separately if required.

Grower tags must not be placed on a plant harvested under an approved harvester or wild harvester licence.

Where a (secondary) licensed grower purchases juvenile plants (such as *Asplenium* species seedlings or orchids in flasks) from another (primary) licensed grower with the intent of dividing and/or growing the material to a saleable size, the secondary grower must ensure each new individual plant is appropriately tagged prior to being displayed or offered for retail sale.

In circumstances where licensed growers are selling protected plants in batches to the wholesale or landscape sectors and it is not practicable to tag individual plants, the grower must provide adequate records to the buyer containing the same information as required on a grower tag (for example, species scientific name, 'plantation grown' and supplier name). This is particularly relevant when batches of protected plants may be on sold many times.

#### **4.11.3 Tags for plant hybrids**

Because plant species have been intentionally hybridised, many recognised varieties and cultivars have been developed that are now registered under the *Plant Breeders Rights Act*



1994 (PBR Act). Many hybrids cannot be readily distinguished from the parent stock until flowering occurs, making identification of hybrids very difficult without flowering parts.

For this reason, in the absence of a reliable method to identify hybrid plants, licensing and associated grower tags are required for protected plant hybrids. Grower tags must include the word 'hybrid' and identify the parent material.

However, material that has been accepted under the PBR Act will not be subject to tagging or licensing requirements under the BC Act. It is the licensee's responsibility to demonstrate the status of varieties under the PBR Act, should an exemption be required.

## **4.12 Monitoring requirements for wild harvesters and approved harvesters**

Wild harvesters and approved harvesters (excluding salvage sites) must establish monitoring plots to help them monitor harvest sustainability. All licensees, excluding growers, must provide harvest data to OEH, which can be analysed to monitor harvesting levels. Specific requirements are provided in Appendices D and E.

Licensees must clearly identify the locations where harvest is undertaken. This may be achieved by either:

1. Establishing a clearly defined photographic monitoring point at wild harvest and approved harvest sites (excluding salvage harvest sites). The photo point must be permanently marked with the licence number and clearly identified on the site plan submitted with the licence application.
2. Providing accurate (+/- 10 m) geographical coordinates of harvest sites. The boundaries of harvest sites must also be mapped and provided to OEH when harvest return sheets are submitted.

## **4.13 Record-keeping requirements**

Record keeping assists in monitoring harvest rates and supports consumer confidence in legally harvested products. It also provides clear, accurate data on where, when, what and how much is being harvested.

This plan requires records to be maintained by all licensees. Differences in requirements between the licence types is described below.

OEH will maintain a database of all licences and tags issued, including details of plant species, harvest activities, numbers picked and grown. This information will be used to report to DoEE on how this management plan is implemented and will also inform future management decisions.

Harvest return sheets must be made available for inspection on request and must be sent annually to OEH in an electronic format. No new licences or renewals will be granted until all documentation is returned.

Records provided to OEH by licensees will remain confidential. However, aggregated data will be made publicly available. Records may also be analysed to monitor overall harvesting levels.

### **4.13.1 Wild and approved harvest returns**

Wild harvester and approved harvester licensees must complete both a harvest site condition sheet and a harvest return sheet.

- Harvest return sheets must include information for each day of harvest, including:
  - the date and site of the harvest, including the time spent on site
  - the number of plants harvested (and their relevant size classes, if appropriate)
  - the NPWS tag numbers allocated to the plants from the site
  - any other relevant comments, including product-specific requirements. Copies of these forms will be available on the OEH website.

Approved harvesters must also maintain records for each plant at the stockpile site which detail the location of harvest and the time since harvest.

Details of NPWS tags used or lost must also be forwarded to OEH annually or as requested by an authorised officer.

#### **4.13.2 Grower returns**

Grower licensees must complete a harvest return sheet and maintain records of the source of all propagating material. The harvest return sheet must include:

- the date and site of the harvest(s)
- the number of plants harvested (and their relevant size classes, if appropriate)
- the NPWS tag numbers allocated to the plants from the site (if appropriate)
- any other relevant comments, including product-specific requirements.

### **4.14 Licence fees**

Licence fees vary depending on the cost incurred by OEH to assess, regulate and monitor the various licensed activities. A schedule of fees is published on the OEH website. People seeking licences to undertake multiple activities at the same location will pay a single licence fee, which is based on the activity with the highest fee. The term will be that of the shortest licence.

### **4.15 Public listing of licensees on the OEH website**

The BC Act requires that a public register of all biodiversity conservation licences issued under the Act will be published on the OEH website. This register will not include any personal information or information about the location of harvesting activities.

To assist the public and nurseries in sourcing legally harvested and grown protected plants, licensees may request their details be included in a listing on the OEH website.

### **4.16 Importing and exporting protected plants**

OEH is not directly involved in approving the international trade of plant products. However, as this plan meets the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* as both wildlife trade management plan (WTMP) and AP programs, the materials produced under NSW licences may be eligible for international trade.

Under the BC Regulation (clause 2.19), the interstate import and export of protected plants does not require a licence, as long as the plants comply with any applicable tagging requirements.

## 5. Management protocols

### 5.1 Managing risk through plant groupings in Schedule 6 Part 2

Under the BC Act, Part 2 of Schedule 6 comprises five separate groups of whole plants. These plants/groups are subject to different regulatory requirements depending on their risk from unsustainable harvest practices.

The schedule and groupings are dynamic. Over time species may be included or removed, or existing species moved between groups.

Plants in higher numbered groups are considered to be at greater risk of illegal harvest or of greater conservation concern. The strategy of grouping plants according to risk enables OEH to better direct compliance and regulation activities to those species where illegal harvest operations may impact on the conservation of these species in the wild.

A description of each group on the schedule and the requirements for commercially harvesting component species is described in the following sections.

#### 5.1.1 Part 2 Group 1

Plants in this group are those known to be harvested from the wild to support current market demand, are relatively fast growing and commercial sales are, in part, supplemented by cultivated material.

Harvesting and post-harvest management of these species is considered to be relatively simple and survivorship of harvested material is reported to be high. Overall, these species are considered to be at low to moderate risk from unsustainable management practices. However, harvesting should be monitored to ensure that it is sustainable.

Plants currently listed in this group include various fern, elkhorn and staghorn species.

In summary, the requirements to commercially harvest or grow any species in Part 2, Group 1 are:

- a wild harvester, approved harvester or grower licence will be required
- harvest site protocols apply for wild harvester and approved harvester licensees (see Appendix D)
- OEH may impose restrictions on the quantities that can be harvested, except for material produced under a grower licence
- NPWS tags must be applied to wild harvester and approved harvester products
- grower tags must be applied to grower products when plants are individually offered or displayed for retail sale
- a DoEE export permit will be required (unless the species is in the DoEE list of exempt native species).

#### 5.1.2 Part 2 Group 2

Plants in this group are known to be harvested from the wild to support current market demand. They are slow growing and are only just beginning to be supplemented by cultivated material. Harvesting and post-harvest management can be difficult. Survivorship of harvested material can be low when not undertaken by experienced harvesters. These species are considered to be at risk from overharvesting. Strict harvest limits will be imposed for extractive licences.

Plants currently listed in this group are grass trees (*Xanthorrhoea* species) and cycads.

In summary, the requirements to commercially harvest or grow any species in Part 2, Group 2 are:

- only approved harvester or grower licences will be issued for species in this group to ensure product quality and survivorship (see Appendices C and G)
- harvest site and stockpile site requirements must be complied with for approved harvester licensees (see Appendices D and E)
- OEH may impose restrictions on the quantities that can be harvested, except for material produced under a grower licence (see Appendices H and K)
- NPWS tags are required for approved harvester products
- grower tags must be used for grower products when plants are individually offered or displayed for retail sale
- a DoEE export permit will be required (unless the species is in the DoEE list of exempt native species).

### 5.1.3 Part 2 Group 3

Plants in this group are known to be harvested from the wild to support current market demand. These products are slow growing and they are unlikely to be directly supplemented by cultivated material. Harvesting and post-harvest management can be difficult, and survivorship of harvested material can be low when not undertaken by experienced harvesters.

Part 2, Group 3 currently includes palms (Arecaceae family), all species of *pandanus*, the king fern and some orchid species.

In summary, the requirements to commercially harvest or grow any species in Part 2, Group 3 are:

- only approved harvest (salvage only) or grower licences will be issued for species in this group
- harvest site and stockpile site requirements must be complied with for approved harvester licensees (see Appendices D and E)
- OEH may impose restrictions on the quantities that can be harvested, except for material produced under a grower licence
- NPWS tags are required for approved harvester (salvage-only) products
- grower tags to be used for grower products when plants are individually offered or displayed for retail sale
- a DoEE export permit will be required (unless the species is in the DoEE list of exempt native species).

### 5.1.4 Part 2 Group 4

Plants in this group are those species that are well established in cultivation but where the cultivated material is not readily discernible from wild harvested material and the species maybe subject to illegal wild harvest. This currently includes NSW endemic orchids (Orchidaceae) other than those individually listed in Part 2, Group 3.

The requirements to cultivate any species in Part 2, Group 4 are provided in Appendix I and summarised here:

- only a grower licence will be issued for species in this group
- no production limits will be imposed
- grower tags are to be used for this group when plants are individually offered or displayed for retail sale
- a DoEE export permit will be required (unless the species is in the DoEE list of exempt native species).

### 5.1.5 Part 2 Group 5

Plants in this group include those that are identified as having special requirements. The group currently has only one species, the Wollemi pine (*Wollemia nobilis*), but in future may include other listed threatened species or other species that are of particular concern to other jurisdictions.

To support the conservation of species within this group, OEH may impose specific restrictions or tagging requirements on these products, such as these:

- only a grower licence will be issued for species in this group
- grower tags are to be used for this group when plants are individually offered or displayed for retail sale
- no production limits will be imposed
- a DoEE export permit will be required (unless the species is in the DoEE list of exempt native species).

## 5.2 Education

All relevant forms, procedures and fact sheets supporting the plan's implementation will be available via the OEH website.

A targeted education strategy will be prepared in consultation with stakeholders to deliver information to those involved in the whole plant industry. This includes government agencies, harvesters, growers, wholesalers, retailers and the broader community. It will raise awareness of the legislative and management requirements outlined in this plan, reinforce the impacts of illegal harvesting and identify species at high risk of exploitation.

Information will be delivered via direct contact, presentations at conferences or meetings and fact sheets. OEH will engage with the industry to help develop guidance material where they can assist with industry compliance. OEH will work with industry associations to help them advise their respective industry sectors of the changes and likely impacts.

### 5.2.1 Foster cooperation

OEH encourages the whole-plant industry to be self-sustaining and self-regulating through improved awareness of biodiversity and ecological sustainability. To this effect, OEH will encourage and develop partnerships with the industry to promote the use of cultivated or sustainably harvested products. Members of the public and the industry at large will be encouraged to report suspected illegal plant sales to OEH.

## 5.3 Compliance

Compliance is essential to preserve wild plant populations, promote the use of cultivated and sustainably harvested material and support legitimate operators. Compliance is enhanced by fostering industry collaboration through regular communication and encouraging the cooperation of industry stakeholders and the public in reporting suspected unlawful activities.

There is a close link between education, effective licensing and compliance in controlling commercial harvesting. Monitoring and regulation is designed to ensure legislative compliance, and investigations are necessary to prevent illegally produced plants entering commercial sectors.

Industry-developed and supported best practice is an important strategy alongside government regulation. OEH encourages the industry to be self-sustaining and self-regulating through improved awareness of biodiversity and ecological sustainability. OEH will encourage and develop partnerships with the industry to promote the use of cultivated or sustainably harvested products.

OEH will implement the following compliance actions as part of the implementation of this plan.

Penalties for offences relating to protected plants are described in Section 3.3.

### 5.3.1 Property inspections

OEH will inspect properties that are subject to wild harvester and approved harvester licence applications to verify the availability of species. There will also be random inspections of properties for which licences have been granted to ensure harvesting complies with this management plan and licence conditions. Records maintained by licensees may also be inspected.

OEH officers will report on random inspections of wholesale and retail outlets, and any investigations of tagged and untagged plants. A summary of all inspections will be provided by each local area office to OEH and included in an annual report.

### 5.3.2 Monitoring tag use

OEH will monitor the use of tags and follow up reports of protected plant species displayed or offered for retail sale without the appropriate tags attached. Breaches of the legislation, licence conditions or the requirements of this management plan will be investigated.

## 5.4 Research

OEH will seek to foster research that:

- monitors long-term impacts on populations of target taxa
- identifies species and community changes associated with harvesting
- investigates strategies for improving post-harvest survival by modifying harvest practices, post-harvest handling and consumer education.

OEH will also encourage the whole-plant industry to introduce programs that monitor post-harvest survival of target taxa through to the consumer and invest in ex-situ propagation to encourage a shift from harvesting wild plants to grower cultivation.

The proposed research will be used to inform OEH management strategies and future revisions of this plan.

## 5.5 Review of plan

This plan will be reviewed at least every four years in line with *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requirements or as directed by the Chief Executive should significant changes be identified in the industry. To facilitate consistency with other Australian states and territories, national codes or guidelines will be incorporated into the review where required.

The next scheduled review is in 2022.

## 6. References

Borsboom A 2005, *Xanthorrhoea: A review of current knowledge with a focus on X. johnsonii and X. latifolia, two Queensland protected plants-in-trade*, Environment Protection Agency (Queensland), Brisbane.

Lamont BB & Downes S 1979, 'The longevity, flowering and fire history of the grasstrees *Xanthorrhoea preissii* and *Kingia australis*', *Journal of Applied Ecology*, vol. 16, pp. 893–99.



## Appendix A: Schedule of Protected plants

(Note: Subject to approval of this plan, Schedule 6 Part 2 of the BC Act will be amended to align with the schedule set out below)

### Part 2: Whole plants

Scientific name	Common name(s)
Group 1	Wild harvester, approved harvester and grower licence
<i>Asplenium australasicum</i>	Bird's nest fern
<i>Asplenium polyodon</i>	Sickle spleenwort, mare's tail fern
<i>Asplenium harmanii</i>	Fern
<i>Cyathea</i> species	Tree ferns
<i>Dicksonia</i> species	Tree ferns
<i>Platycerium</i> species native to NSW	Elkhorn and staghorn ferns
Group 2	Approved harvester and grower licence
<i>Xanthorrhoea</i> species	Grass trees
Zamiaceae native to NSW	Cycads
Group 3	Approved harvester (salvage only) and grower licence
Arecaceae native to NSW	Palms
<i>Cymbidium suave</i>	Snake orchid
<i>Dendrobium aemulum</i>	Ironbark orchid, white feather orchid
<i>Dendrobium gracilicaule</i>	
<i>Dendrobium linguiforme</i>	Tongue orchid
<i>Dendrobium speciosum var hillii</i>	King orchid, rock lily, tar-beri
<i>Oberonia complanata</i>	
<i>Oberonia titania</i>	
<i>Pandanus</i> species native to NSW	Pandanus

<i>Taeniophyllum muelleri</i>	
<i>Todea barbara</i>	King fern
Group 4	Grower licence only
Orchidaceae native to NSW	Orchids unless otherwise listed
Group 5	Grower licence only - special requirements
<i>Wollemia nobilis</i>	Wollemi pine

With the exception of seed harvester licences, Part 1 of Schedule 6 of the BC Act is not relevant to the whole-plant industry so it is not reproduced in this plan. For guidance for harvest of cut-flowers please refer to the *Cut-flower Sustainable Management Plan 2018-22* (CFMP).

## Appendix B: Wild harvester licence application requirements

A wild harvester licence may be issued under Section 2.11 of the *Biodiversity Conservation Act 2016* (BC Act) to the freehold owner of a property to harvest from naturally occurring stands of native plants on their property.

The licence may permit the harvest of species listed in Part 2, Group 1 of Schedule 6 only. No threatened species (species listed under Schedule 1 of the BC Act) may be taken under a wild harvest licence and no harvest is permitted from areas of outstanding biodiversity value or threatened ecological communities.

Applications must be lodged through the local area office that oversees the proposed harvest location. Applicants for a wild harvester licence must provide or be able to demonstrate the following at the time of application:

1. Confirmation of the applicant's status as the land owner.
2. Documentation of procedures identified in the harvest site controls (Appendix D).
3. Maps identifying the general and specific location of the proposed harvest site and identifying discrete harvest blocks on the land.
4. Ability to identify the target material to species level.
5. Capacity to undertake population assessments (Appendix J).
6. A count of the target species (and size classes where required) present within each harvest block.
7. A description of the habitat from which the harvest will be undertaken.
8. A list of any threatened species that may occur in the harvest area.
9. A declaration that the proposed harvest site is neither an area of outstanding biodiversity value nor a currently listed threatened ecological community.
10. All other information requested on the application form.
11. The relevant fee for the application.

Where plants are sold directly to the public, OEH recommends providing purchasers with post-planting care sheets.

Where available, applicants may be directed to relevant guidelines or similar material.

## Appendix C: Approved harvester licence application requirements

An approved harvester licence may be issued under Section 2.11 of the *Biodiversity Conservation Act 2016* (BC Act) where the applicant intends to harvest plant material from natural stands of native plants on land not owned by the applicant, and where a minimum level of experience, infrastructure and equipment, and holding facilities can be demonstrated.

Once authorised, approved harvester licensees are required to seek individual site approvals for each salvage or sustainable harvest location. Site approvals may be issued either for sustainable harvest or salvage harvest (but not both from a single location). Written permission is required from the landowner before an approved harvester site approval can be issued.

Sustainable harvesting is restricted to those species listed in Part 2 Groups 1 and 2 of Schedule 6 (see Appendix A). Harvesting plants listed in Part 2 Group 3 may be approved as a salvage operation.

Picking species listed in Groups 4 or 5 of Schedule 6 is not permitted. No threatened species listed under Schedule 1 of the BC Act may be taken under an approved harvester licence unless individually listed in Groups 1 – 3, within Schedule 6. Harvest is not permitted from areas of outstanding biodiversity value or threatened ecological communities unless approved in a salvage situation.

Applicants for an approved harvester licence must demonstrate or supply the following requirements at the time of application:

1. A current Australian Business Number (ABN).
2. Summary of experience and expertise in the harvest of the target taxon and any relevant qualifications.
3. Demonstrated ability to identify the target material to species level.
4. Demonstrated capacity to undertake population assessments (Appendix J).
5. Identify the stockpile site as an address or location on a map.
6. Documented procedures identified in the harvest site controls (Appendix D) and stockpile site controls (Appendix E).
7. Documented quality assurance procedures to maximise survival of harvested material.

### Hygiene

1. Hygiene procedures must be developed and documented for all equipment, machinery, tools and personnel involved. A copy of the hygiene procedures must be submitted with any harvest licence application.
2. Hygiene procedures must include but not be limited to:
  - vehicle and machinery cleaning
  - cleaning hand tools and other equipment that comes into contact with in situ material
  - personal equipment management (clothing, footwear)
  - nominated wash-down sites (commercial or otherwise)
  - a record sheet for recording cleaning/hygiene activities
  - any other factors the applicant considers relevant.

3. Documented hygiene procedures must be carried by, or be available to, all parties authorised under the licence at all harvest sites, and must be made available to any land owner on whose property harvest activities may be undertaken.
4. Documented hygiene procedures must be made available to an authorised officer on request.
5. All contact tools and equipment must be cleaned prior to accessing and leaving the harvest site.
6. Records of cleaning and hygiene activities must be kept and made available on request to an authorised officer. (This requirement does not apply to wild harvester licensees unless third parties are assisting with the harvest activity.)
7. Approved harvester licensees must nominate a dedicated site (nominally the stockpile site) where suitable cleaning and wash-down facilities are available.

## Sustainable harvest

The following additional information must be supplied to the local area office to consider each sustainable harvest site approval proposed by the approved harvester:

- contact details for the land owner/manager
- written confirmation from the land owner agreeing to the harvest, and proof of ownership of the land
- a map or maps identifying the general and specific location of the proposed harvest site
- a map identifying discrete harvest blocks on the land
- other required information as identified in the harvest site protocols (Appendix D)
- a count of the species (and size classes where required) present within each harvest block
- a list of any threatened species that may occur in the harvest area
- a declaration that the proposed harvest site is neither an area of outstanding biodiversity value nor a currently listed threatened ecological community
- the relevant fee for the application
- fees for any tags required (these must be paid prior to tags being issued).

## Salvage harvest

The following additional information must be supplied to the local area office for consideration of each salvage operation proposed by the approved harvester:

- contact details for the land owner/manager
- written confirmation from the land owner and where necessary, the consent authority, approving the salvage operation
- a copy of the final/approved development application or other consent for the land-clearing operation
- a map or maps identifying the general location and footprint/extent of the land-clearing operation
- the total number and size classes of species targeted by the salvage operation
- other required information as identified in the harvest site controls (Appendix D)
- the relevant fee for the application
- fees for any tags required must be paid prior to tags being issued.

Granting of specific site approvals will be at the discretion of the local area office which may also approve, refuse or otherwise limit the number of plants that may be taken from any sustainable harvest or salvage area.

Where plants are sold directly to the public, OEH recommends providing purchasers with post-planting care sheets.

Approved harvester licensees must produce a copy of their licence at the request of an authorised officer.

## Appendix D: Harvest site controls

All applicants for wild harvester and approved harvester licences must develop and implement a series of controls, which may be subject to inspection and approval by an authorised officer. It is the licensee's responsibility to ensure that any named parties operating under the licence are aware of, and comply with, these requirements. These controls are described below.

### Hygiene

1. Hygiene procedures must be developed and documented for all equipment, machinery, tools and personnel involved. A copy of the hygiene procedures must be submitted with any harvest licence application.
2. Hygiene procedures must include but not be limited to:
  - vehicle and machinery cleaning
  - cleaning hand tools and other equipment that comes into contact with in situ material
  - personal equipment management (clothing, footwear)
  - nominated wash-down sites (commercial or otherwise)
  - a record sheet for recording cleaning/hygiene activities
  - any other factors the applicant considers relevant.
3. Documented hygiene procedures must be carried by, or be available to, all parties authorised under the licence at all harvest sites, and must be made available to any land owner on whose property harvest activities may be undertaken.
4. Documented hygiene procedures must be made available to an authorised officer on request.
5. All contact tools and equipment must be cleaned prior to accessing and leaving the harvest site.
6. Records of cleaning and hygiene activities must be kept and made available on request to an authorised officer. (This requirement does not apply to wild harvester licensees unless third parties are assisting with the harvest activity.)
7. Approved harvester licensees must nominate a dedicated site (nominally the stockpile site) where suitable cleaning and wash-down facilities are available.

### Harvest, handling and transport

8. Documented procedures must be prepared which detail the methods of harvest site selection, harvest and transport for each of the proposed harvest species. These procedures must be submitted with the application form and include, but not be limited to:
  - harvest site selection (site access, abundance of target species and other factors such as weed invasion or fire in the harvest site etc.)
  - method for determining appropriate harvest rate to ensure compliance with the plan (see 4.10.3 and the relevant appendices)
  - harvest target selection (size class, health etc.)
  - pre-harvest treatment (foliage removal, site preparation)
  - extraction procedures
  - strategies for reducing incidental site damage

- preparation for and transport of the harvested material
  - quality control systems
  - a site map identifying the location of the handling and loading areas and proposed access trails
  - any other factors which the applicant considers relevant.
9. All efforts must be made to minimise disturbance to the harvest site.
  10. Clearing vegetation to construct trails or roads must not be undertaken to support harvest activities without permission from the property owner. Note that material damaged through such activities can only be harvested under a salvage approval (see Appendix C).
  11. At harvest the minimum necessary volume of soil and root material must be removed to ensure plant survival.
  12. Harvested material must not be potted with soil from the harvest site. Plants must be transported 'bare rooted' but should be covered in suitable materials to minimise transpiration.
  13. All harvested material must be tagged before transporting it from the harvest site. Where tagging at the harvest site is neither possible or practical, tags must be allocated to harvested material and a record-keeping system must support this. Any record-keeping system must be documented and submitted at the time of application.
  14. Tags must be attached directly to the plant for all species except epiphytes, where tags must be attached to the board or substrate. For tag details see section 4.11.

## Record keeping

15. A harvest-site conditions sheet must be completed once for each site and returned to OEH. This sheet includes information on biophysical factors such as slope, aspect, soil type and the amount of time that has elapsed since the last fire.
16. A harvest return must be completed for each day of harvesting. It must include:
  - the date and site of the harvest, including the time spent on site
  - the number of plants harvested (and their relevant size classes, if appropriate)
  - the tag numbers allocated to the plants from the site
  - any other relevant comments, including product-specific requirements.
17. Harvest return sheets must be made available for inspection on request and must be sent annually to OEH in an electronic format. No new licences or site approvals will be granted until all documentation is returned.



## Appendix E: Stockpile site controls

Poor post-harvest management can lead to low plant survivorship when plants are on-sold. This increases the demand for additional plants and undermines consumer confidence.

Licensees must therefore implement stockpile site controls to meet the post-harvest requirements of plants harvested under this management plan. It is the licensee's responsibility to ensure any named parties operating under the licence are aware of, and comply with, these requirements. Stockpile sites may be subject to inspection by OEH officers.

### Stockpile site requirements

1. All licensees harvesting plants under an approved harvester licence must transport products to a designated stockpile site for post-harvest care.
2. All stockpile facilities and care procedures must be documented and submitted as part of an approved harvester application.
3. Plants must be maintained at the stockpile site for a period of not less than 30 days, or as specified under individual species requirements.
4. The stockpile site must meet the minimum requirements for maintaining the products in care until plants are eligible for sale. This may include pest control, irrigation, shade or other protection structures.
5. A stockpile site must be made available on request for inspection and auditing by authorised officers.
6. Harvested plants in Groups 2 and 3 must be sorted and stored in groups according to the site they were harvested from until eligible for sale.
7. For harvested plants in Groups 2 or 3, signage or labelling must be installed at the stockpile site, identifying the harvest site from which the stockpiled plants were harvested.
8. NPWS tags cannot be reused (see 4.11.1).
9. Unused tags and tags attached to plants that subsequently died must be destroyed or returned to OEH.

### Documentation and reporting requirements

10. An applicant for an approved harvester licence must supply documented evidence with their application of stockpile site facilities including but not limited to:
  - the location and size of the stockpile site
  - water and irrigation infrastructure
  - potting and other facilities available at the stockpile site to adequately support the harvested plants.
11. An authorised officer may inspect the nominated stockpile site prior to any licence being issued.
12. An applicant for an approved harvester licence must document and submit with their application the procedures for post-harvest management of harvested material. These procedures must include but are not limited to:
  - potting procedures, including attachment of epiphytes to substrates where applicable
  - irrigation regimes

- fertiliser regimes
  - procedures to manage weeds and soil-borne pathogens such as Phytophthora
  - survivorship monitoring procedures.
13. An annual report must be provided to OEH indicating the tag numbers used and the survivorship status of the harvested plants.

## Appendix F: Seed harvester licence application requirements

A seed harvester licence may be issued under Section 2.11 of the *Biodiversity Conservation Act 2016* (BC Act) to pick and sell seeds or spores of any species in Part 1 or Part 2 of Schedule 6, excluding threatened species (listed under Schedule 1 of the BC Act). Harvest is not permitted from declared areas of outstanding biodiversity value (Part 3 of the BC Act and BC Regulation) or threatened ecological communities (Schedule 2 of the BC Act) unless approved in a salvage situation.

Applications for a seed harvester licence must include or demonstrate the following:

1. Written confirmation from the land owner agreeing to the harvest, and proof of ownership of the land.
2. Ability to identify the target material to species level.
3. A map or maps identifying the general and specific location(s) of the proposed harvest site(s).
4. The species and proposed quantities of seeds of protected plants to be harvested.
5. A list of any threatened species that may occur in the harvest area.
6. A declaration that the proposed harvest site is neither an area of outstanding biodiversity value nor a currently listed threatened ecological community.
7. All other information requested on the application form.
8. The relevant fee for the application.

Applicants seeking to harvest seed from salvage situations must provide the following additional information to the local area office for consideration:

9. Contact details for the land owner/manager.
10. Written confirmation from the land owner and where necessary the consent authority, approving the salvage operation.
11. A copy of the final/approved development application or other consent for the land-clearing operation.

OEH may restrict or limit the species and quantities that may be harvested under the licence.

During the licence term, a seed harvester licensee may request additional sites be included under the licence. The information outlined above will be required for each additional site.

## Appendix G: Grower licence application requirements

A grower licence may be issued under Section 2.11 of the *Biodiversity Conservation Act 2016* (BC Act) for propagating and selling artificially cultivated species listed in all groups of Part 2 of Schedule 6, which includes both protected and threatened species.

In some cases, non-threatened species are restricted to grower licences to facilitate a move away from wild harvest where evidence suggests there are impacts on wild populations.

Applicants for a grower licence must provide or demonstrate the following at the time of application:

1. The legal source of the propagating material.
2. The species and proposed quantities of the protected plants to be grown. Note that no harvest levels will be set for grower licences.
3. A copy of the 'grower tag' or details of the tagging method to be used (see 4.11.2).
4. Growers of *Xanthorrhoea* species must be able to demonstrate compliance with the requirements of this management plan that relate to growing grass trees (Appendix H).
5. Orchid growers must be able to demonstrate compliance with the requirements of this management plan that relate to orchid growing (Appendix I).
6. All other information requested on the application form.
7. The relevant fee for the application.

Growers must keep a copy of their licence at the property where the plants are grown.

Where the grower licensee has a retail or wholesale outlet, a copy of the licence must be available on request by an authorised officer. OEH recommends that the licence be displayed at the point of sale.

Requests for additional species to be grown under licence can be made during the licence term. Although harvest levels may not be set for grower licences, substantial changes to the proposed quantities licensed should also be submitted to OEH.

Upon expiry of a Grower licence, OEH will endeavour to issue licence renewal notices, however, the onus lies with the licensee to ensure licences are renewed.

## Appendix H: Genus *Xanthorrhoea*

The grass tree family Xanthorrhoeaceae is endemic to Australia. It contains a single genus, *Xanthorrhoea*, comprising 28 species with 13 occurring in NSW. The main species harvested in NSW are *X. australis*, *X. glauca* and *X. johnsonii*. Other species are likely to be harvested from time to time due to misidentification.

No species are currently listed under Schedule 1 of the *Biodiversity Conservation Act 2016* (BC Act). However, grass trees form part of 12 threatened ecological communities (TECs) in NSW. Harvesting whole plants from TECs is not permitted under this plan. There are two species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, neither of which naturally occurs in NSW.

Grass trees are renowned for their slow growth, and plant height for arborescent species has a direct correlation to plant age (Borsboom A 2005). Published growth rates vary considerably between species and the most commonly harvested individuals (trunk heights between 50 centimetres and 100 centimetres) are likely to be at least 56 years old, ranging up to at least 113 years old for the larger plants based on an average growth rate of 8.8 millimetres per annum (Borsboom A 2005).

For the purposes of this management plan, calculations of plant age for arborescent species are made at 8.8 millimetres per annum.

The introduction of wild harvest of grass trees from 20 centimetres in this plan is intended as a temporary measure as stock in artificial propagation matures. The size classes available for ongoing wild harvest will be subject to monitoring and review, with the intention to phase out wild harvest of smaller sizes, as equivalent grower produced material becomes available.

### General requirements

The requirements for harvesting and growing *Xanthorrhoea* species are as follows.

1. All whole-plant harvesting of *Xanthorrhoea* species under this plan must be undertaken by an approved harvester.
2. Identify the target plants to at least species level (or subspecies level, where appropriate).
3. Population assessments for harvest estimates must count individuals within the following size classes for arborescent species:
  - non-trunked plant (class 1)
  - plants with a trunk height or length less than 20 centimetres (class 2)
  - plants with a trunk height or length between 20 and 100 centimetres (class 3)
  - plants with a trunk height or length between 100 and 200 centimetres (class 4)
  - plants with a trunk height or length greater than 200 centimetres (class 5)
4. Plants are to be measured from the top of the root ball to the 'flat' of the crown.
5. All harvested material must have the foliage removed at the harvest site. Foliage must be cut to a length not greater than 150 millimetres. Cut foliage must be left at the harvest site.
6. Plants must be maintained at the stockpile site for a minimum period of 120 days.
7. Plants cannot be removed from the stockpile site 'bare rooted'.
8. Plants cannot be moved from the stockpile site or sold, until foliage regrowth of 500 millimetres has occurred (over and above the minimum holding period of 120 days).

9. For wild harvest and salvage, a minimum survivorship of 85% at the stockpile site must be demonstrated. Failure to meet this benchmark will be sufficient grounds for cancellation or non-renewal of a licence.
10. All material harvested from the wild must be tagged with NPWS tags.
11. All *Xanthorrhoea* species whole plants must be sold in a pot including growing media.
12. All plant material which has a trunk and is produced under any licence, including a grower licence, must have NPWS tags.

## Sustainable harvest

The following specific requirements apply to sustainably harvesting *Xanthorrhoea* species.

13. Must demonstrate a minimum population of 10,000 plants on the property to undertake any harvest.
14. Must demonstrate recruitment of plants is occurring to undertake harvest.
15. Must provide count of individuals in size classes to support the recruitment statement.
16. Sustainable harvest is only permitted for plants in size classes 3 and 4.
17. NPWS tag premium will be charged for plants in size class 4.
18. Harvest rates will be set according to section 4.10.3
19. Harvesting is not permitted from rocky terrain as survivorship of material harvested from these situations has been shown to be poor. However, plants within rocky terrain may be included within the overall population and site assessment to establish sustainable harvest rates.
20. The applicant is responsible for ensuring that any other approvals are obtained.

## Salvage harvest

The following specific requirements apply to *Xanthorrhoea* species harvested under a salvage licence:

21. OEH may require salvage plants to be specifically identifiable using salvage-specific tags or similar methods.
22. For salvage harvest, only plants in size classes 3 to 5 may be harvested.
23. NPWS tag premium will be charged for plants in size class 4 and 5 (plants over one metre).

## Grower production

The following specific requirements apply to *Xanthorrhoea* species grown in artificial cultivation:

24. Grower licensees may produce plants in all size classes. As sales are most likely in size classes 1 to 2, material in size classes larger than these should be carefully examined due to the possibility that wild harvested material may be passed off as 'grown'.
25. Foliage length requirements do not apply to products produced under a grower licence.
26. All material produced under a grower licence must have a grower tag that meets the requirement set out in 4.11.2.
27. All material with a trunk produced under a grower licence must also have an NPWS tag in addition to a grower tag.

## Appendix I: Family Orchidaceae

Orchidaceae is one of the largest known plant families, with up to 35,000 species recognised worldwide. There are over 600 recognised species in Australia and over 450 in NSW, including naturally occurring hybrids.

Orchids can generally be divided into two broad groups: epiphytes (those that grow on trees, rocks or in tree hollows, including climbing species) and terrestrials (those that grow on or in the ground). There are approximately 74 species of epiphyte and 390 species of terrestrial orchid in NSW. Many have very restricted geographical ranges and 60 species are listed as threatened under Schedule 1 of the *Biodiversity Conservation Act 2016* (BC Act).

Harvesting and propagating orchids is an established part of the whole-plant industry. The majority of trade focuses on the epiphytes which are renowned for their beautiful flowers. Terrestrial orchids are seldom seen in trade outside of specialist orchid clubs and societies.

While cultivation techniques exist for most orchids, effort is mainly focused on epiphytes with the largest flowers or best perfume. Other species have primarily been supplied through wild harvest, and there is strong anecdotal evidence of significantly reduced populations and local extinctions. Since many of these species can be readily propagated there is little justification for continuing wild harvest.

OEH supports a transition to propagated material through ending wild harvest for all orchids that can be cultivated. All species are restricted to grower licences except for those few epiphytes listed in Part 2 Group 3 (see details below).

The requirements for harvesting and/or growing orchids are described below.

### Salvage harvest

1. Orchid species listed in Part 2, Group 3 may be harvested from the wild by approved harvesters in salvage situations only.
2. Approved harvesters must ensure the assessment of the population is sufficient to cover the harvest proposed.
3. All products must be tagged with NPWS tags. Harvested material cannot be divided and must be tagged as harvested; OEH will not support the subsequent division of material.
4. Plants cannot be offered for sale without being established on a growing media. Specifically, plants cannot be offered for sale in a 'bare root' form.
5. Plants must be sold with a tag attached to each item as harvested; e.g. per stump or log for *Cymbidium suave*.
6. For the purposes of tagging requirements for *Dendrobium aemulum*, *D. gracilicaule* and *D. speciosum* var *hillii*, a 'plant' is considered to be a cluster of not more than 10 pseudobulbs.
7. For the purposes of tagging requirements for *Dendrobium linguiforme*, a 'plant' is considered to be a cluster of not more than three leads.
8. For other species, a 'plant' will be considered to be a single plant or cluster of not more than 20 pseudobulbs.
9. Stockpile site requirements apply and plants may not be on-sold for 120 days following harvest.
10. The applicant is responsible for ensuring that any other approvals are obtained, such as the land owner's permission.

## Grower production

11. Growers producing orchids (in any group) must be able to demonstrate that the species is being cultivated.
12. Vegetative division is acceptable, but divided plants must meet the following requirements:
  - plants cannot be offered for sale without being established on a growing media; that is, plants cannot be offered for sale in a 'bare root' form (this does not apply to material sold in flasks or similar containers)
  - plants cannot be offered for sale attached to an 'endemic' growing media. Selling plants on lengths of branch or other substrate, which can clearly be identified as collected from the wild, is prohibited.

## Societies and special interest groups

Societies require a licence to sell plant material to the public. Societies may apply for a single licence to cover material donated by their members for sale to the public at shows and other events. Where this is the case, the society may produce a 'grower tag'. It will also be necessary for the society to maintain records of the source of all donated material.

Where the material is purchased from other licensed growers for sale at club events, the material should already be tagged according to this plan. Where sales are directed to the public and/or not at the nominal club venue, the material must be produced under a grower licence and tagged according to this plan.



## Appendix J: Tools for assessing population and harvest numbers

Effective data collection provides a basis for monitoring populations and adapting management practices to ensure harvesting whole native plants is sustainable.

Determining a sustainable rate of harvest requires reliable data on factors such as fecundity and growth rate. A method for assessment is described next.

### Determining the number of plants per acre or hectare

#### Step 1: Determine the harvest area

Use a map to determine the total harvesting area.

#### Step 2: Establish at least four plots

OEH recommends choosing four 20 m × 20 m (400 m<sup>2</sup>) plots to represent the proposed harvest area. Mark each plot using tent pegs and tape or similar means.

#### Step 3: Establish the number of plants per hectare or acre

In each 20 m × 20 m plot (column 1 below), record the number of plants proposed for harvest (column 2).

To determine the number of plants per hectare (10,000 m<sup>2</sup>), multiply the number of plants in each plot by 25 (column 3), or to determine the number of plants per acre (one hectare is 2.47 acres), multiply the number of plants per plot by 10.1.

**Table 2 Example record of plants in the harvest area**

Plot # (20 m × 20 m)	Plants per plot (N)	Plants per hectare (N × 25)	Comments
1	11	275	
2	14	350	
3	6	150	Mostly young plants
4	12	300	
Total	43	1,075 (in 4 ha)	268 plants per ha

NB: figures have been rounded to whole numbers.

In this example table, the applicant proposes to harvest from an area of 4.8 ha, giving a population available for harvest of 1286 plants (268 plants per ha × 4.8 ha).

#### Step 4: Calculate the average number of plants per hectare or area

Add the number of plants per hectare for each plot together (275 + 350 + 150 + 300 = 1075) and divide this by the total number of plots (1,075 ÷ 4 = 268 plants per ha).

#### Step 5: Calculate the total number of plants available for harvest from the site

Multiply the average number of plants per hectare by the known harvest area to estimate the total plant population available for harvest (268 plants/ha × 4.8 ha).

## Conversions

Use the next table to calculate the number of plants per acre or hectare. For a 20 m × 20 m (400 m<sup>2</sup>) plot, multiply the number of plants by the number corresponding to the harvest area.

**Table 3 Conversion values**

Harvest area (acres)	Multiply the number of plants in 400 m <sup>2</sup> plots by
1.0	10.1
0.5	5.1
0.25	2.5
0.125	1.3
Harvest area (hectares)	Multiply the number of plants in 400 m <sup>2</sup> plots by
1.0	25.0
0.5	12.5
0.25	6.25
0.125	3.125

## Rotational harvesting

Rotational harvesting is recommended to assist in minimising harvest impacts and improving ecological sustainability. By dividing the harvest area into smaller harvest blocks, a finer scale of population estimate can be achieved. Do this by repeating steps 1 to 5 above for each harvest area. This will help account for plant density across a property.

Also, incorporating rotational harvesting will allow areas surrounding harvest locations to recover and improve the long-term sustainability of harvest operations. Harvest rates will be set for each block based on the population estimate per block. Harvest will only be permitted from one block per year.

Dividing the harvest site into five defined areas, harvesting from only one of the five areas each year and rotating the harvested area annually ensures flowering and seed production can occur and reduces harvest impacts.

**Table 4 Rotational harvesting: area divided into five management areas**

Area 1	Area 2	Area 3	Area 4	Area 5
Area harvested in <b>first</b> harvest year	Area harvested in <b>second</b> harvest year	Area harvested in <b>third</b> harvest year	Area harvested in <b>fourth</b> harvest year	Area harvested in <b>fifth</b> harvest year

## Appendix K: Plant size classes relevant to the whole-plant industry

### NPWS tags applicable for grower licences

Material produced under a grower licence must be tagged with a grower tag. Where this material may be confused with material sourced under an extractive licence, growers must attach an NPWS tag to their products. Certain species produced under a grower licence will require an NPWS tag indicating the plant is produced under a grower licence, when sold in sizes larger than those specified below.

**Table 5** Grower-produced material that requires an NPWS tag

Scientific name	Common name	Minimum plant sizes requiring NPWS tags
<i>Cyathea</i> species	Tree ferns	300 mm trunk height
<i>Dicksonia</i> species	Tree ferns	300 mm trunk height
<i>Livistona australis</i>	Cabbage tree palm	300 mm pot
<i>Platyserium</i> species native to NSW	Elkhorn and staghorn	300–400 mm shield/root ball
<i>Xanthorrhoea</i> species	Grass trees	200 mm trunk height
Zamiaceae native to NSW	Cycads	140 mm pot

### Size classes for inclusion in population assessments

When an applicant for a wild harvester or approved harvester licence is undertaking a population assessment, the following size classes must be used to determine the population size and size distribution.

#### *Dicksonia* and *Cyathea* species

- plants with a trunk height or length less than 30 cm (class 1)
- plants with a trunk height or length 30–50 cm (class 2)
- plants with a trunk height or length 50–100 cm (class 3)
- plants with a trunk height or length 100–150 cm (class 4)
- plants with a trunk height or length greater than 150 cm (class 5).

#### *Livistona australis*

- non-trunked plant with less than 10 leaves (class 1)
- non-trunked plant with more than 10 leaves (class 2)
- plants with a trunk height or length less than 100 cm (class 3)
- plants with a trunk height or length 100–200 cm (class 4)
- plants with a trunk height or length greater than 200 cm (class 5).

### **Macrozamia species**

- non-trunked plant with less than 10 leaves (class 1)
- non-trunked plant with more than 10 leaves (class 2)
- plants with a trunk height or length less than 30 cm (class 3)
- plants with a trunk height or length 30–50 cm (class 4)
- plants with a trunk height or length greater than 50 cm (class 5).

### **Xanthorrhoea species**

- non-trunked plant (class 1)
- plants with a trunk height or length less than 20 cm (class 2)
- plants with a trunk height or length 20–100 cm (class 3)
- plants with a trunk height or length 100–200 cm (class 4)
- plants with a trunk height or length greater than 200 cm (class 5).

## **Size classes and licence types**

The following table sets out which size classes may be harvested under each of the identified harvest situations. All class sizes may be produced under a grower licence.

**Table 6 Size classes applicable to wild and approved harvester licences**

Plant genera	Licence type		
	Wild harvest	Sustainable harvest	Salvage
<i>Dicksonia/Cyathea</i>	Classes 2–3	Classes 2–3	Classes 4–5
<i>Livistona</i>	Nil	Nil	Classes 3–5
<i>Macrozamia</i>	Nil	Classes 2–4	Class 5
<i>Xanthorrhoea</i>	Nil	Classes 3–4	Classes 3–5