

B16. Seed Collection

Only plants from local seed (provenance) should be used to re-establish native plants in bushland areas. The seed for revegetation works should be collected well ahead of the planned planting season to allow time for germination and for seedlings to develop to an appropriate size for planting. For example, planting is planned for June 2009. Seeds collected in spring 2007/summer 2008 will be sent to the nursery to be propagated in spring 2008 for June 2009. To ensure a full complement of species, seed can be collected for several years in advance of the proposed replanting project because some species do not produce much or any seed in some years and many less-common species are unable to produce enough seed for propagation purposes.

Considerations for Seed Collection

- Ensure seed collecting staff are covered by seed collecting licences, which may be sourced through the Department of Environment and Conservation (DEC).
- Ensure correct plant identification. If unsure about the species identification; take a specimen of the plant for later identification or create a voucher specimen for the DEC herbarium to identify.
- Use sharp, clean secateurs to cut off woody fruits or for propagation cuttings as opposed to hand pulling of fruits which may damage the parent plant.
- Use clean bags made of calico or hessian (not plastic as it encourages mould) or envelopes to collect seed.
- Ensure seeds are fully developed to maturity before harvesting. It is a good idea to know what the mature seed of the species being collected looks like. A method of ensuring maturity is to simply cut through the seed capsule to expose the seed/s. This is especially helpful in species with a woody capsule such as *Calothamnus quadrifidus*.
- Collect from only healthy plants.
- Harvest no more than 20% of seed stored on each individual plant.
- Try to harvest seed from as many individual plants as possible to ensure that the plants grown from this seed will contain genetic variety.
- Avoid contamination of seed collections by not mixing species in the same bag.
- Don't collect during or just after rain as the fruit may be affected by fungi.
- Keep seed from different areas separate, especially seed harvested from coastal sites or wetland sites. Plants grown from the seed collected from specific areas should be planted back into the same or nearby areas.
- Record all collections. A good recording and labelling system is invaluable for future reference and to ensure an area is not harvested for the same seed more than once in a season. Some important information to include in recording and labelling seed collections include:
 1. the date;
 2. the species name (scientific);
 3. location (be specific);
 4. collector's name; and
 5. comments (anything which may help in future seed collection).

This information should be recorded on a voucher and attached to the seed bag/container. A duplicate of this information should be recorded (in a seed register) together with all collections for the season. This will ensure that all collections are properly recorded and may be referred to for regular stocktakes. When the required

amount of seed is collected, seed collection for that species can cease for the current seed collecting season. Allocate a separate page for each species.

Nurseries and Seed Collecting Contractors

When contracting nurseries to propagate seeds. Ensure the nursery is accredited and that hygiene practices are of a high standard.

South-West region nurseries specialising in growing and supplying native plants are:

- Geographe Community Landcare Nursery, Busselton; and
- Leschenault Community Nursery, Bunbury.
- Hamel Nursery, Coolup
- Sedgewick Wetland Plants, Capel

Known nurseries in the Perth area that specialise in growing and supplying native plants are (current at the time of printing):

- Apace Community Revegetation Nursery, Fremantle;
- Australian Native Nurseries Group, Oakford;
- Boola Wongin Nursery, Forestdale;
- Carramar Coastal Nursery, Secret Harbour;
- Lullfitz Nursery, Wanneroo;
- Men of the Trees, Rockingham and Hazelmere;
- Muchea Tree Farm, Muchea;
- Zanthorrea Nursery, Maida Vale;
- Yellagonga Community Nursery, Landsdale;
- Naregebup Environment Centre, Rockingham;
- EMS Ecosystem Management Services Plant Production, Noranda; and
- Westralian Plant Farms, Mariginiup.

Some known seed collection contractors include:

- Apace;
- Natural Area Management and Services;
- Seed West;
- Tranen;
- Nindethana;
- Kimseed; and
- Greening Australia.

Cleaning and Pre-treatment

Different species require different cleaning methods. Some cleaning methods include: hand sorting; sieving; threshing; winnowing; milling; floatation; and utilisation of seed cleaning machinery (Apace, 2003).

Some storage considerations include:

- using vermin and water-proof containers;
- clearly labelling containers with date, species name, collection name, collection location and name of collector;
- fumigation of seed against insect and fungal attack;
- storage of seed (in a cool, dark, dry environment);
- viability testing before storage to ascertain how much seed within a small collection is actually viable; and
- varying longevity among different seed species.

Some seeds may require pre-treatment before propagation. For those species where the seed has a natural inhibitor to germination (or dormancy), pre-treatment must be provided before successful germination will occur. There are several pre-treatment methods which can be used: such as boiling water (used commonly for Acacia species), abrasion, smoke, smoke water and leaching. The method used is specific for each species.

More Information

See the following reference for information on many aspects of the biology, collection (including general principles for collecting seeds), cleaning, storage and use of seeds in conservation: Sweedman L. & Merritt D. Australian Seeds – Guide to their Collection, Identification and Biology, 2006, Botanic Gardens and Parks Authority, CSIRO.

Apace offer the course, “Seed Collection of WA Native Plants”.

They also store seed for local governments. Visit: <http://web.argo.net.au/apace/> or ph: (08) 9336 1262 for more information.

Florabank has a suite of online decision-support tools for seed and revegetation professionals. The ‘tools’ are designed to improve planning decisions, assist in planning revegetation projects, growing native plants, collecting seed and ensuring seed is sourced from the right species and locations. The new tools are available at:

http://www.florabank.org.au/default.asp?V_DOC_ID=756

Of particular interest on the Florabank website is a Guidelines and Code of Practice for best practice seed collection and use available at:

http://www.florabank.org.au/default.asp?V_DOC_ID=755

Seedling quality: Making informed choices (Mullan, 2001) is a report about the importance of seedling quality and highlights the key characteristics of quality seedlings. Poor quality seedlings will ultimately limit the success of revegetation projects and is therefore an important consideration. The report is available for download on the DEC website:

http://www.dec.wa.gov.au/component/option,com_docman/Itemid,2123/gid,431/task,doc_download/