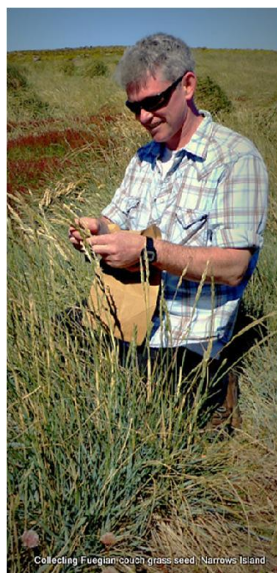


# How to collect and store seeds in the Falkland Islands

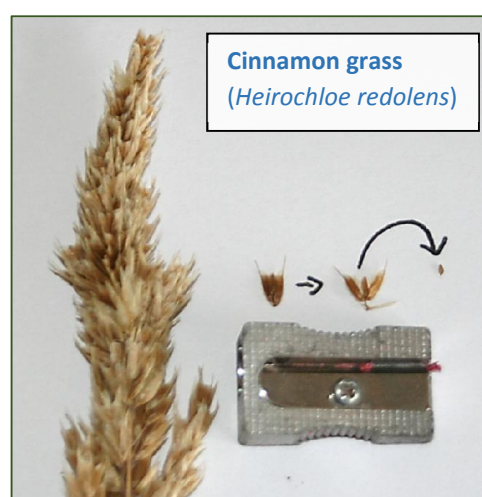
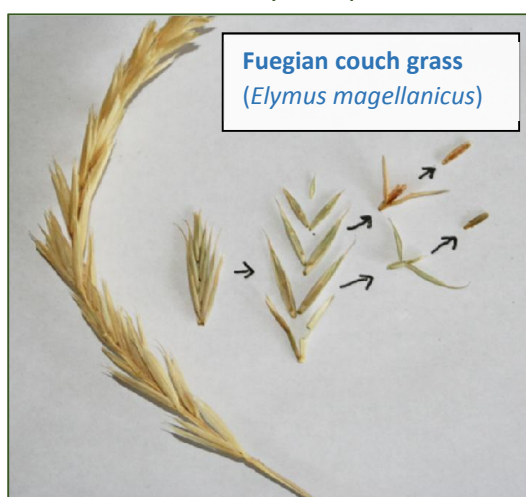


A brief summary of information from Native Plant seed courses held by Falklands Conservation (FC) and the Millennium Seed Bank (Kew Gardens) in 2016.



## Collection

- 1) Know your plant.** Some species, like blue grass (*Poa alopecurus*) have separate male and female plants – only the female will have seeds. Seeds of blue grass and *Festuca magellanica* can begin to grow on their parent plant - you need to collect them before this happens. Know where plants keep their seeds so that you can check them for ripeness (this is not always as obvious as it sounds).
- 2) Know when and where to collect.** It's very useful to keep notes (including date and location) for future reference. You probably have an idea of when the seeds of your chosen plant are ripe, aim to collect them just before they start to fall (20-30 days after flowering for grasses - these ripen from the top of a flower head downwards). Try to avoid collecting in the rain.
- 3) Don't collect** protected species without permission  
<http://www.falklandsconservation.com/wildlife/plants/native-vascular-plant-checklist>.  
Collect a maximum of 20 % of the seeds from any small area. **Avoid contamination with insects or seeds from invasive species.**
- 4) Label** your collections and transport in **paper or cloth bags** so that moisture can escape.
- 5) Cut test.** Ideally you should check for ripeness and empty or infested seeds with a *cut test* in the field. Cut up to 30 seeds in half lengthways and check that the white inside is firm (like the seeds of a ripe apple), not squidgy (however some grasses and sedges do not harden completely – there will be an element of trial and error). *Cut tests* can be very difficult with small seeds in the wind, a hand lens, penknife and sticky tape help - but in many cases you will go by experience. Sometimes you may need to collect seeds a little before they are ripe (e.g. if you have travelled a long way) as long as they are fully formed these seeds can usually be ripened at home.



## Storage

- 1) **Storage conditions.** Keep seeds **dry** (at or below 50% relative humidity), **cool** (ideally below 15°C), and **aerated** (turned or spread out with good air flow). Most seeds can tolerate short-term storage in slightly wetter or warmer conditions but their viability will decrease. Do not use strong heat (e.g. radiators, strong sunlight) to dry collections, – this will cook the seeds.



Initial seed drying, beware of mice!

- 2) **Initial drying.** Dry storage is more important than low temperatures. Spread seeds out so that they can finish ripening, if necessary, and dry. Seeds should dry to ambient relative humidity in one to two weeks. To further dry seeds desiccants will be necessary to reduce the ambient relative humidity below that of the seeds.

The table below gives information on the effect of RH on seed viability. Relative humidity (RH) decreases with increasing temperature but if possible seeds should be kept below 15°C. For reference the (RH) of our heated FC office fluctuates around 55% while outside average RH is around 80%. For short-term storage (less than a year) around 50% RH should be ok.

85 -100% RH	OK? - repair if seeds are aerated, but high risk of mould
70-85% RH	Bad - seeds at risk of rapid loss in viability
50-70% RH	OK? - rate of deterioration slower, seeds may survive for 1-2 yrs
30-50% RH	Better - seeds could survive for several years
10-30% RH	Best - seeds can be kept alive for decades
< 10% RH	Risky - best avoided

The effect of Relative Humidity (RH) on longevity of seeds.

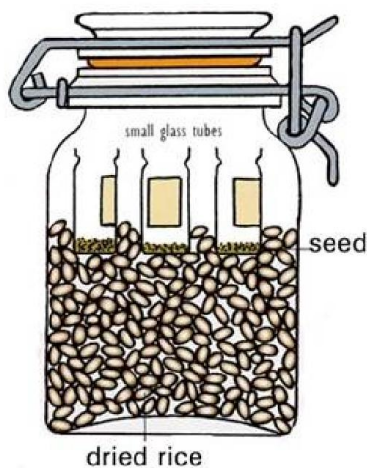
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- 3) **Cleaning.** Once seeds are dry remove as much non-seed matter as possible because this traps moisture and pests. Dry seeds and berries can be gently rubbed through a wire sieve to remove their outer seed coats (we use large rubber bungs to rub the seeds).



Using a sieve to clean seeds.

- 4) **Final drying for long-term storage** (i.e. more than a year). Try to reduce seed relative humidity (RH) to below 50% (ideally to below 30% RH). To do this place seeds in an airtight container with desiccant (e.g. silica beads or dried rice) for around a month. The volume of desiccant should at least equal that of the seeds. Once dry, the seeds can be left in this container or carefully resealed in an airtight container without a large volume of desiccant (e.g. in a Kilner jar or sealed foil bag), and kept in a cool place (ideally the fridge). It is best to seal seeds with self-indicating silica gel beads (these can be bought on-line) which change colour, alerting you to any damaging changes in humidity. The seeds should now keep for a number of years.



Drying seeds in a Kilner jar. If possible use silica beads instead of rice, and add indicator beads to show when the desiccant needs refreshing.

A cheap humidity meter is useful, this one cost around £2. Measure the relative humidity of your seed collection by sealing the seeds and dial inside of a transparent airtight container.

## More information

- These notes are written for folks wishing to collect seed for planting. Additional information and samples are required if collecting for surveys or seed banking (see factsheets below).
- Some seeds need special conditions before they germinate (e.g. fire, frost, to pass through a digestive system); this is not recorded for Falkland's seeds but we are still learning.
- Good, detailed factsheets on all of the subjects covered here are available from Kew: <http://www.kew.org/science-conservation/collections/millennium-seed-bank/collecting>.
- Or contact Frin Ross ([habitatsrestore@conservation.org.fk](mailto:habitatsrestore@conservation.org.fk)) for more information on drying equipment or individual species, including the approximate times at which common species ripen, and bulk methods.