



Seed collection

MOUTERE CATCHMENT

This resource is a summary of native seed collection tailored to the Moutere catchment. The Moutere catchment has a goal of planting native corridors along water ways to improve water quality and link biodiversity pockets in the Moutere catchment. It also has the goal of having one wetland on each property. Please ask for our vision document for more information.

This is a resource developed to support an online workshop run by our local nurseries. For more comprehensive coverage on the topic see the references at the end of the document.



WHY WOULD YOU WANT TO COLLECT NATIVE SEED AND GROW YOUR OWN PLANTS?

- Because you learn about your plants and you become more invested in planting waterways, wetlands and erodible slopes. And it is fun.
- It may save you money. But you are not likely to recoup your time costs! For instance, you can buy plants in root trainers from \$2-\$3 per plant from one of your local nurseries.
- It can make your 1BT funding go further.
- Constructing a wetland is relatively cheap, the planting of it is not if you buy plants retail. Wetland plants can be very easy to grow.
- Your piece of land will become a haven for insects, birds and lizards.
- We are exploring options of sending plants off to Nga Ruakau for germination and return for growing on in community nurseries at DOC Motueka, Whenua ITI and local schools. Involving young people is part of our multi-generational plan.
- You get lots of plants, probably more than you wanted and you can share them with others in the Moutere group building community involvement. You can provide seedlings for the community nurseries.
- We may be able to sell plants to help fund other expenditure such as covers for the catchment project.
- You can reuse your pots and root trainers.
- 200 people (<10% of catchment) growing 200 plants surplus to their needs for the catchment would give us 40,000 plants a year to plant.
- In the interim NZ probably does not have the capacity to grow all the plants needed in NZ to protect our waterways and reduce our carbon footprint. We can help by growing the plants that are simple to grow and purchasing the more complicated ones from the nurseries.
- We can plant trees to offset our own personal carbon foot print [calculator](#).

WHAT TREES TO TARGET FOR SEED COLLECTION?

- Ideally seeds from local original bush, local ecotype and suitable for the conditions where you want to plant (e.g. wetland, hill slopes, coastal, wetness/ dry conditions).
- If the area is open with no shading, then the plants will need to be hardy and require full sun to survive (primary colonisers). If planting in the shade then you can pick trees that like shade (secondary colonisers). It is important to plan to include secondary colonisers into your primary colonising planting in the future. We want tall trees along our waterways for maximum shading and longevity.
- We are very lucky in Top of the South because Shanel Courtney has produced for DOC a native planting lists for all these different conditions. He has 3 for the Moutere catchment. These were produced from his extensive knowledge of what grew in Moutere stands of native bush.
- He has indicated which plants can be grown in different colonisation stages. He has also ranked them for their ability to cope with wet, moist, dry, sun, shade and frost.
- He has also indicated what type of food each plant provides for native birds or lizards.
- For this workshop we have shown which of the three Moutere environments, namely: Moutere Downland Valleys; Moutere Downlands hill country; Moutere Inland hills, fall into each of our Moutere subcatchments.
- We have taken the PDF version of the planting list and converted them into EXCEL spread sheets so you can filter the list based on stage, wetness, dryness etc. to get a planting list easily for your conditions.
- We have also compiled a list which combines all three Moutere environments. This can be used to determine which plants are common to all three environments and therefore could be a target plant to produce in local community nurseries.
- On the same spreadsheet we have compiled a *first stage Moutere riparian planting list* which is composed of hardy plants that are tolerant of extremes in temperature, soil type and drainage and which local experience has shown do well. And these can be easily grown from seed. Most of these will produce seedlings that can be planted within a year. We have included a calendar of when these seed can be collected, what the seed looks like and how they can be propagated and included photos of the seeds and leaves of the plants.

- For more information on timing of seed collection for other plants see ([DOC seed collection calendar](#)) and the references included in the spreadsheet and at the end of the document.
- Remember “right tree for right place”. Target seed on plants growing in a similar micro-climate that you want to plant them. Consider including species likely to attract native birds as they will bring in seed of a wider variety of plants.



Mahoe seed

AkeAke and Coprosma Robusta seed



Totara Seed from Bueke Bush



Lacebark seed

COLLECTING SEED

- Collect seed in the Moutere, preferably from within original bush stands of native vegetation.
- We have an agreement from QE11 that we can collect seed from within covenants to revegetate our waterways, wetlands and erodible slopes within the Moutere. Of course, you must ask owner's permission and they are not obliged to say yes. Try to build good community relationships for action.
- Some seeds that are collected could be shared among you.
- Remember you must get a permit to collect seed from DOC land.
- Take a little seed from lots of different trees. Collect when they are ripe. This is often the hardest part to get right. This can be determined by colour (often brown) and propensity to fall off the tree. Collect more than once in a season. Some trees have a 2-year seeding cycle (e.g. Titoki, splits open with a show of red)
- Collect by plucking off the tree or put out tarps, umbrellas or weed matting either on the ground or tie it to lower branches and then shake the tree. Try not to break branches to collect seed. For some you can rake the seed up on the ground.
- Collect seeds in paper bags or envelopes and remember to label them. Include date, where you collected them and name of seed. Keep a diary of dates because most trees will produce seed at a similar time next year.



Coprosma Robusta starting to ripen



Kowhai seed released from pods



Swamp flax

SEED TREATMENT AFTER COLLECTION

- We have three types of native seeds; 1. hard seeds (e.g. Kowhai); 2. fleshy seeds (e.g. coprosma, totara); 3. fine fluffy seed (e.g. Manuka) and they require different processing.
- Hard seeds may require soaking in a container with boiling water, disruption of the seed coat by scarifying or sandpapering or nicking the outer coat with clippers without touching the seed inside.
- The fleshy seeds must have the outer fleshy cover removed before they germinate. This is often done by soaking and then scraping the flesh off in a sieve or pounding in a bucket. It is much easier to do this when it is still fresh. It is generally the brightly coloured seeds (eg red, purple) that are viable. Look for insect damage by cutting open seed to see that it contains an intact embryo. You can treat with fly spray to kill any insects in the seed.
- Fine seeds are often in the pod and then they are put in a bag or tray and placed in a warm area to open and drop out (eg manuka, kanuka). Other fluffy seed can just be plucked directly from plant as starting to fall (e.g. Sectas, Toe Toe).
- Most seed are sieved (cleaned) to remove surplus plant debris.
- Almost all native seeds need to be sown fresh, not dried. But if you do need to store them then store them in paper bags in air-tight container in the fridge. Many seeds are sown in August, so they germinate in warmer spring conditions.
- Some seeds will germinate earlier and at a higher rate if they undergo a Cold Moist Stratification (CMS). Put the seeds in moist peat (3-4 parts peat to 1-part seeds) or wrap in damp Tux multicloth and put in a plastic bag that is wrapped tightly and leave approximately a month. Length of time of stratification will vary between seeds (eg Matai is 2 years).
- However, some will also germinate if sown and left outside over winter to self-stratify (eg Pittosporums).



Hebe

SOWING SEED

- Make up a mixture of 50% potting mix and 50% sand for sowing seeds or buy a commercial seed raising mix.
- Fill your seed tray, pat it down, water it with a fine mist and spread your seed over the tray. Do not spread the seed on too thick. Grasses can be sown thicker. Then spread more sowing mix over it at a depth of the size of the seed times two. Then apply a mist of water.
- If the seed is very tiny do not put mix over it at all (e.g. Manuka). Some put a light layer of pea metal or pumice over the seed to protect it and prevent weed or liverwort growth and insect attack.
- Remember to label with type of seed, where it was collected from and the date.
- You can put the tray on a bench, under a tree, beside the house etc. Try to give it some protection from the local cat or birds. Native plants do not need a lot of cossetting.
- Do not allow the seed trays to get too wet or too dry. In nurseries seeds are under cover so that watering and sometimes temperature can be controlled. Ensure wherever you place the trays they will have good drainage (e.g. bench, or gravel). A bench is ideal because any roots coming out the bottom will air dry. If you are getting heavy moss or liverwort growth you are over watering.



Tray of seedlings at DOC community nursery in Motueka



Side of the house nursery

PRICKING OUT

- Seed are pricked out when the seedlings are 2-5 cm in height into either pots or root trainers. As soon as you can pick them up.
- Water the plants before pricking out.
- Care must be taken not to disturb the roots and to plant the roots straight and not bent back on themselves. If the roots are too long you can trim them back.
- Two techniques are used. In one (root trainers) a hole is made, and the seedling is gently manoeuvred in and then gently pressed. In pots fill the pot half full. Hold the seedling in the pot and drop potting mix around the seedling. Press soil gently.
- Use a bark based potting mix, ideally 40% bark, 40% pumice and fibre. The media must drain well. Include fertiliser or use a liquid fertiliser regularly. Include native mycorrhiza (duff under leaf litter) on top of plants to inoculate them. You can use duff from pine plantations as well.
- Put the transplanted seedlings in shade in your homemade nursery, under a tree or alongside the house. Treat for slugs and snails.

CUTTINGS

- You can also grow many natives from cuttings. They will have the same genetic make-up as the parent tree, so too many in your planting will reduce genetic biodiversity.
- Cuttings will not have the same root growth as a tree grown from seed. Some may lack a tap root. This this method is more suited for shrubs (e.g. Hebe and not trees).
- To learn more about native plants from cuttings <https://www.naturespace.org.nz/sites/default/files/u4/LinkClick.pdf>



Tray of manuka seedlings

REFERENCES

Above is a general overview to support the webinar for the seed collection workshop.

Recommended other references

<https://www.doc.govt.nz/get-involved/run-a-project/restoration-advice/native-plant-restoration/ecosource-seeds/collection-and-propagation-guide-trees/>

<https://www.naturespace.org.nz/sites/default/files/u4/LinkClick.pdf>

https://www.tanestrees.org.nz/site/assets/files/1069/8_1_planting_techniques_for_natives-1.pdf

<https://www.tasman.govt.nz/document/serve/Go%20Wild%20Native%20Restoration%20Manual.pdf?path=/E/DMS/Public/Other/Council/Publications/000000889247>

<https://www.surveyingthebay.co.nz/wp-content/uploads/Propagation-Guidelines-III.pdf>

<http://www.wildfruitsofwellington.com/propagation.html>

<https://www.surveyingthebay.co.nz/wp-content/uploads/Propagation-Guidelines-III.pdf>

<https://www.southlandcommunitynursery.org.nz/restoring-your-patch/>

<http://www.nelson.govt.nz/assets/Environment/Downloads/Nelson-Biodiversity-Forum-Eco-sourcing-brochure-A154167.pdf>

Building a nursery

<https://www.doc.govt.nz/get-involved/run-a-project/restoration-advice/native-plant-restoration/establish-a-community-nursery/>

Growing on plants

<https://www.epa.govt.nz/assets/FileAPI/proposal/NSP000033/Hearings/da8855d333/11-Mahurangi-Action-Inc-Planting-and-Managing-Trees-Tech-Article-no5.3.pdf>

Useful videos on seed collection - from Red Earth Native plants

Manuka and Kanuka Part 1

<https://www.youtube.com/watch?v=EYDABsH1tmc>

Manuka and Kanuka Part 2

<https://www.youtube.com/watch?v=NrC1jdelf44>

Puriri seed

<https://www.youtube.com/watch?v=793KoqeVPpo>

Kowhai Part 1

<https://www.youtube.com/watch?v=O5kedUWq8JM>

Kowhai part 2

<https://www.youtube.com/watch?v=9KpM702Yk3I>

Totara Part1

<https://www.youtube.com/watch?v=O5kedUWq8JM>

Cabbage Tree Part 1

<https://www.youtube.com/watch?v=gCQuYBgCo54>

Totara Cuttings

https://www.youtube.com/watch?v=10_ZS5V6Sog