

Propagation, making new ‘natives’.

We have been investigating the best way to propagate our pure native crab apples and keeping them pure..

Grafting is the quickest way of producing a tree. By grafting you are transferring the genetic material as well as the natural specific fungi compatible to that tree.

Some growers are grafting onto domestic apple M106, the resulting fruit being used as a seed source, and growth used for further grafting.

2nd February 2022 Jools had meeting with Rick Worrell and James Renny and together they collected scions from trees previously collected tested and DNA identified as native trees at Craig Farm..

The scions went back to the field research centre where they were expertly grafted onto rootstock of ‘domestic apple’. The results of this experiment are yet unknown.

In Ayrshire Scottish Wildlife Trust Gill Smart and Lynn Bates are grafting native tree scions onto M106 rootstock and keeping the resulting tree as the ‘Mother’ from which to take cuttings.

Some cuttings are being grafted onto M27 dwarfing rootstock, suggested by John Butterworth. and then planted below the graft wound to encourage roots from the graft area, the mother can then be cut away later. We hope to hear how they get on.

According to Markus Ruhsam, if you want to be really sure of purity, then any form of clonal reproductions such as grafting, layering or using suckers and planting on from a pure tree will guarantee purity. However, growing from seeds from a pure tree surrounded by other pure trees (within 100m) with hybrid and domestic trees at least 500m away would be a good bet as well. Most pollination events (75%, Feuerty et al 2017, <https://onlinelibrary.wiley.com/doi/full/10.1111/eva.12441>) seem to come from within 100m of the mother tree, so chances of hybridisation are very small in such a scenario.

So, there is an opportunity to investigate taking root cuttings, cutting suckers or layering, to preserve purity of species as well as our current method which is planting seeds from known mapped trees..

It is said, in the apple world, that if you grow a tree from a pip you don’t know what you will get, but if the pip comes from a tree tested to be pure it should follow that, if the mother tree is at least 500m away from a hybrid or domestic apple, the resulting tree will be as close genetically to *malus sylvestris* as it can be! As Markus Ruhsam said ‘after at least 1000 years of hybridisation we don’t know what a ‘pure’ *malus sylvestris* looks like anyway!’

Old saying: ‘Plant the crab where you will, it will never bear pippins’,

Partnership

In collaboration with Threave Gardens rewilding project a nursery plot was created.

At present in our project, native trees are being grown from seed from identified genotyped true natives, some tested twice, and we choose trees as remote from possible hybridisation as possible. Our first project year pips were grown in 2022 and planted out at Threave. Development of the tree nursery and planting out our young trees grown from the identified ‘Natives’ will take place, to begin with, at three sites

a) Craig Farm, Balmaclellan b) remote Dalry site c) Threave rewilding site Castle Douglas,

Planting Guide - this is unscientific but we had a good success rate last year. Please feel free to experiment with your own methods and report back your successes to us for research purposes.

Old saying – Apples, Pears, Hawthorn-quick, Oak: set them at All hallow-tide (1st Nov) and command them to prosper; set them at Candlemas (2nd Feb) and entreat them to grow.

- 1) Prepare a deep container with sharp sandy loam mixed with leaf mould and a generous helping of cow dung!
- 2) Cut the apple in half and plant flesh side down
- 3) Cover with a couple of inches of loam and press down lightly
- 4) Cover with netting to prevent birds or mice digging them up
- 5) Make sure they stay moist
- 6) When plants are 4-6 inches high pot out into tall pots or into a well protected nursery bed.
- 7) Please make sure your samples are securely labelled and recorded.
- 8) Eventually plant out with good protection from deer, sheep, rabbits and voles, in locations where cross pollination from domestic apples is unlikely.

Please let us know the location of you plantings so we can add them to the map.

www.SWCWT.org website or joolscox80@gmail.com

References

A Handbook of Scotland's Wild Harvests edited by Fi Martynoga

For more info on Crab Apple Project

visit <http://www.reforestingscotland.org/wordpress1/wordpress1/wp-content/uploads/2017/09/Worrell-Crab-Apple.pdf> for the article Rick Worrell wrote in 2017 for Reforesting Scotland;

Ripest Apples by Roy Palmer The Big Apple Association ISBN 0952 9100 04

Verification of Wild Apple (*Malus sylvestris*)nursery stock sold in United Kingdom

Markus Ruhsam, James Renny, Rick Worrel Nov 2022 Plants, People, Planet/Vol. 5 Issue 2/p.203-205

Feuerty et al 2017, <https://onlinelibrary.wiley.com/doi/full/10.1111/eva.12441>)