Rock whitebeam growing out of a crack in a breccia cliff. Photo: Gus Routledge.

Rock whitebeam: a complete unknown

How can a tree found on the Salisbury Crags in Edinburgh be so little known? Phil Knott *looks at the conservation status of this rarity and some of the efforts to ensure its long-term place in Scotland*

Rock whitebeam (*Aria rupicola*, formerly *Sorbus*) tends to grow with its roots in base-rich escarpments and cliffs. Indeed, the vast majority of trees I have seen in the wild have been growing straight out of cliffs. One might assume they would do better in flatter areas, but, by some accounts, the seedlings start off straight up and then often take a sharp turn anyway and take on an 'L' shape, giving them a big advantage in cliff environments.

The species can also grow in well-drained slopes and nutrient-rich cliffs. It is never abundant, likely kept in check by browsing. In many cases, it is the only tree for many hundred metres, and so will invariably be targeted for its nutrients by any animals on the hill. Despite the challenges of growing on crags across Scotland, it does seem to have a robust constitution, and the species would be considered stable across its range.

However, base-rich areas (usually dominated by limestone) also offer some of the best grazing: they tend to be free-draining and much more fertile so in turn can sustain more animals for a longer season. This is certainly true in the west, with very few places being a solid sanctuary for rock whitebeam. Lismore, the long fertile island in Loch Linnhe, has a number of rock whitebeam on its cliffs and appears to be the best refugium we have. All the examples here are very close to sea level, but rock whitebeam also has great potential as a montane species and has been recorded up to 635 metres altitude so far.

In theory, it should not need much help as the majority of its remaining growing sites are inaccessible to stock and free of other threats. The ones on slightly more accessible slopes are generally impractical to fence off. It is a slow-growing tree though and does not seem to be as easy to multiply in the wild as others in its family.

Champions of the species include Forestry and Land Scotland, the Woodland Trust and Trees for Life with a seed stand project by Innes Manders and Julia Stewart at Catkin Ecology (see article on pages 10–11). There was also a recent appeal for sightings in Dumfries and Galloway through Dumfries and Galloway Woodlands that has kept it in conversations at least.

Peter Livingstone of Eadha Enterprises has been selling rock whitebeam of Scottish west coast provenance for a number of years, but otherwise it is almost unknown. That is hardly surprising, as demand for the tree would be pretty low, with most folk not even aware of it. Trees for Life has likely done more than others, and made a special boat trip out on to Loch Ness to collect seed from the remote crags and shoreline specimens a few years back.

Status review

First step in its conservation is a full review of its status and field expeditions, ideally with the help of drones. Many of the records on the inventories are over 50 years old and new finds do not occur very often. I was excited to hear of some found in the Aigas Gorge on the River Beauly in the last few years though. Former RS Director Gus Routledge, who writes about mountain birch on page 22, has also followed up on many records and added some significant data on to the maps.

The reality is, as with all scarce upland plants, surveys are very labour-intensive and could easily involve whole field days with little to no reward. The tree is not easy to identify out of leaf and relies on close-quarter views for winter identification, due to its resemblance to its relatively abundant cousin, the rowan. It is very easy to identify in the summer with its large oval blue-green leaves standing out when viewed from below. In autumn, the species holds its leaves for quite a while and it can be obvious from quite a distance.

Once found, trees would have to be checked throughout the season for signs of fruiting and then berries would need to be collected when fully ripe. A good harvest would often be just a few handfuls of the large red berries, collected with a long pole or by skilled climbers.

Rock whitebeam is an apomictic species which means it often reproduces asexually without the need for fertilisation. However, it

Left to right: Bright red rock whitebeam berries. A cutting grafted onto rowan rootstock. Potted-up young seedling. All photos: Phil Knott.

does need to be pollinated to set seeds, which is not a given when trees can be on remote crags far from pollinator habitats.

Conservation efforts

Rock whitebeam has several champions in Scotland, but there has not been a concerted effort across the country that other montane trees such as the various willows have benefitted from. A seed orchard for the different zones of Scotland would the best conservation solution, getting all of the different genes in one place for easy propagation and for cross-pollination. With good local melting pots and careful management there would be abundant seed, plus scions for cuttings.

Once there is an abundance of seed, it could be distributed to tree nurseries of all sizes for propagation, but direct scattering of seeds in suitable habitats with minimal grazing pressure is also possible by either drones or volunteers.

Rock whitebeam has a very small pool of accessible specimens, so the debate is whether there should be regional collections or just a whole Scotland one. Provenance is important for trees, especially in Scotland, but like with other members of its family, rock whitebeam seeds are often spread by birds and so in theory can travel across the country, with seed distribution defying our provenance zone lines.

Our very small seed stand project at the Broadford Community Tree Nursery in Skye started when project officer Phil followed up some old records of rock whitebeam just over the bridge near Balmacara. Finding six trees on the cliffs, right at sea level, Phil returned in October 2024 with volunteer Katy and was able to gather a few bunches of the large berries.

The seeds were individually extracted from the fruit and safely stratified. They were checked for signs of germination from February 2025. Many started showing signs in March and were grown on. Overall, the seedlings were not very robust, but it was a challenging spring for most nurseries with nearly six weeks of sunshine in April and May – not what seedlings need, especially in polytunnels. A handful survived their first summer and are now in pots.

All the challenges and effort to grow out these small batches of hard-to-get seed brought the thoughts of grafting into the mix. The wider *Rosaceae* family often grafts well, and indeed most ornamental rowans and whitebeams are grafts. Grafting has several advantages, as you are providing a cutting with an immediate life support system. A cutting is, of course, a clone, but given that many of the trees have never knowingly flowered (often as they are so exposed, or grow out of tiny cracks and are unable to reach a decent size), this is a good way of capturing their genetics.

I graft several thousand trees a year in my croft-based tree nursery and first efforts at grafting onto rowan rootstock were a great success. Grafts were made in March 2025, using simple whip and tongue grafts, and were wrapped in grafting tape. They had six weeks in the polytunnel until the buds were opening up and the graft healed and then spent the rest of the year outside. There were very few failures at all, but as with all grafts, the test often comes a few years later when the tree is pushing on. For best results in the longer term, the graft line may need to be buried so that the rock whitebeam is on its own roots.

With proof of concept complete, we can now look to take cuttings from as many rock whitebeam as possible and have these clones in a much more accessible location. Hopefully we can find a stock- and deer-proof site for a seed orchard for all the local cuttings.

***Phil Knott** is an RS Director and crofter on the Isle of Skye. He is a proud advocate for small-scale tree nurseries, woodland crofting, agroforestry and nature-friendly farming.*

Grow involved

Please get in touch with Phil at philknott@hotmail.com if you are keen to help with the rock whitebeam project.