



Carrifran Wildwood and ecological restoration in the Southern Uplands

Over the last ten years, a glen in the Moffat Hills has been transformed from a denuded sheep walk to an emerging woodland providing habitats for a diversity of animal and plant species. Philip Ashmole tells the remarkable story of Carrifran's first decade.

Beside me is my article in *Reforestation Scotland*, autumn 1996, entitled 'Borders Wildwood'. We had not then secured a place to create the Wildwood, but the vision was already crystal clear. The aim was to "re-create an extensive tract of mainly forested wilderness, with most of the rich diversity of native wildlife present in the area before human activities became dominant." We were seeking a site of at least 1,000 acres, with a large range in altitude so that a wide variety of habitats would develop in due course.

In the end, fate led us to Carrifran. It is a magnificent 665 hectare (1,650 acre) glen in the Moffat Hills, rising from 160m in Moffatdale to 821m at the summit of White Coomb, the fourth highest hill in southern Scotland. In 1996 it was almost entirely denuded and was populated only by sheep, cattle and feral goats. Heavily grazed for many centuries, biological diversity was severely limited, although a few tiny scraps of woodland in precipitous places provided refuges for some species and evidence of greater potential.

Wildwood Group volunteers negotiated for Carrifran and then raised the money by public subscription, finding more than 600 people to give £250, £500 or more in time to complete the purchase on Millennium Day. The

two-year fundraising period was also used by the group for communal development of a plan for ecological restoration of Carrifran.

Once we owned Carrifran, it became possible to access public funds for tree planting (from the Forestry Commission), for management (from Scottish Natural Heritage) and for fencing and interpretation (from the National Lottery). Before the end of January 2000 our Environmental Statement was formally approved, a Woodland Grant Scheme contract was signed and a Project Officer had taken up his post. Furthermore, a private donor had agreed to pay for propagation of half a million trees.

Since the purchase, the project has been led by the Wildwood Steering Group consisting of about ten volunteers – some of whom are also Trustees of Borders Forest Trust (BFT) – along with relevant BFT staff members. Subgroups, each convened by a member of the Steering Group, cover fundraising, ecological planning, seed collection and other tasks. A Site Operations Team, comprising the volunteer Project Co-ordinator, the Project Officer and the Director of BFT, supervises the day-to-day work. Most of the main planting has been done by contractors, but a major role is played by volunteers working with the Project Officer every Tuesday, as well as by those who come on special

planting days or as members of groups from other organisations, or who monitor the boundary fence.

Nearly natural woodland

Phased removal of grazing animals (finishing in autumn 2004) quickly produced a more luxuriant sward, but it is tree planting that has produced the greatest change. Most of the 500,000 trees – more than 50,000 of them planted by volunteers – are still only knee-high, creating a hazy stubble on the distant slopes, but in some places it is now possible to hide among birch, rowan and aspen up to six metres tall.

No planted woodland can look natural in the short run, but we do our best. Avoidance of mechanical ground preparation and drainage – and generally also of fertiliser use – ensures that natural variation in the soils is reflected in the growth of the trees in different areas. There is no planting in rows and the spacing between trees is highly irregular. Temporary tree shelters (60cm high) are largely confined to bracken-infested areas; elsewhere we use only 20cm vole guards, ensuring that trees can develop sturdily, spreading into the space available; any that fall over are left to regrow or decay. Some foresters look askance at our young trees, noting generally slow growth in this tough environment, but close monitoring and rigorous deer control is ensuring high survival, with healthy establishment of diverse woodland that could almost be mistaken for natural regeneration.

Photos clockwise from top: Volunteers and tents, Firth Hope; Carrifran from Bodesbeck; Firth Hope Linn. All photos courtesy of Carrifran Wildwood Group.

Our vision is to enhance the sense of a wild and relatively natural countryside, while promoting a wide range of human activities.

In the long run, the greater part of Carrifran glen will probably be clothed with woodland dominated by sessile oak, but our initial planting has a majority of downy birch, a tree that often dominates young regenerating woodland. We also plant rowan, alder, ash and holly, bird cherry, wych elm and gean, trying to distribute the species according to their known likes and dislikes.



Montane goat willow and aspen are planted mainly high up, with juniper as the most abundant shrub, and an array of scrub willow species is included in the understorey at all levels, along with hazel (which probably played a major role in the past), hawthorn, blackthorn, roses, elder and guelder rose.

Ensuring genetic and biological diversity

The seed for almost all the trees and shrubs has been gathered by volunteers, in places as close to and as similar to Carrifran as possible. Collection of seed of each species from several different sites, and from many trees within each site, should ensure the presence of much genetic variation within the planted stock. As these trees grow and compete with each other, the best suited individuals will have the greatest reproductive output, and natural selection among the offspring will further adapt the populations to conditions in different parts of the glen. Furthermore, the high genetic diversity will enable evolution to occur over the long term in response to changes in climate.

This page: Fi Martynoga, George Moffat and Hugh Chalmers. Opposite page: Treeline woodland establishment. All photos courtesy of Carrifran Wildwood Group.

The Wildwood Group was keen that the changes we brought about should be monitored. A grant from the WWF funded professional surveys of initial vegetation patterns at low and high levels at Carrifran, and also a 'control' survey in the neighbouring valley of Black Hope, which remains as sheep walk. Biological groups studied by volunteers near the start of the project include vascular plant species, bryophytes, birds, fish, molluscs, spiders, butterflies and other insects. Fungus forays led by professional mycologists were organised in 1998-99 and 2009 and a formal survey of mammals in 2010 will complement the observations already made.

Breeding bird surveys modelled on those organised by the British Trust for Ornithology have been done by volunteers in almost every year, starting in 1998. They show accelerating change, with woodland species now flooding back into the valley. In summer, reed buntings occupy the willow scrub, willow warblers abound in the birches, and blackcaps, grasshopper warblers, siskins and redpolls can be heard or seen. Wheatears have declined at Carrifran as open ground areas gain taller vegetation, but stonechats have increased, making full use of the new abundance of perches.

In contrast, the control valley of Black Hope still lacks the woodland birds; it has maintained high wheatear numbers, but stonechats remain scarce. In winter, Carrifran now has robins and dunnocks as well as the wrens and dippers that were always there, the robins foraging in flushes where snow does not lie, while migrant thrushes such as fieldfares are exploiting the ever-increasing crops on the berry-bearing bushes and trees planted in the glen.

Black grouse are flourishing at Carrifran in spite of the abundance of predators such as foxes and badgers. Our main lek is among the largest in Dumfriesshire and a small one recently discovered at over 700m may be the highest in Scotland. Ravens, peregrines, buzzards and kestrels breed on and around Carrifran and golden eagle and osprey have been sighted.

Restoring the natural treeline

From the start we were keen to restore a natural treeline. This is the gradual altitudinal transition from high forest in the valleys to dwarf woodland and montane scrub on higher slopes and thence to wind-clipped, prostrate moss-heath near exposed summits. Such habitats are extensive in Scandinavia but have been almost entirely lost from British mountains, so that their past extent and composition are largely unknown. However, about 30 species of trees and shrubs occur naturally at over 600m in Britain; some are found only on calcareous sites very different from ours, but there is clear potential for establishment of diverse though patchy woody vegetation on the high ground at Carrifran.

A small trial enclosure constructed at 690m in 2002 has provided clues as to which species would grow under the harsh conditions at that height. February 2007 saw the first of a series of high planting camps at 650m in the hanging valley of Firth Hope, led by Hugh Chalmers and planned to span four years. So far some 9,000 trees and shrubs have been planted by dedicated (and hardy!) volunteers and 2,000 by contractors; a further 1,000 should go in during the camp in March 2010.

It is too early to see the effects of our treeline planting on the wildlife, since the trees and shrubs are still tiny. It will be decades before substantial clumps of stunted trees and low clumps of willows make much impact on the landscape, but each of the species is potentially a host to an array of invertebrates. And we know that black grouse frequent Firth Hope, so we hope that they will soon benefit from the extra cover and new sources of food.

As our second decade dawns, we are reasonably confident that Carrifran Wildwood will provide a long-term demonstration of the power of practical people with a bit of vision, acting together and gaining the support of people from far afield, to reverse on a local scale the tide of environmental devastation currently engulfing so much of the world.



Corehead and the new Ettrick Forest

However, this is not enough. We can gradually allow nature to take over at Carrifran, but within BFT we are keenly aware that it is only a tiny, partially re-clothed element in a denuded landscape; we need to focus on the wider scene. In 2003 – a decade after the first annual gathering of Reforesting Scotland stimulated our group to launch woodland restoration efforts in the Borders – we organised a second conference, under the title of Restoring Borders Woodland: the vision and the task. The themes of the meeting were woodlands and the community, the return of the natives and the restoration of the Ettrick Forest.

We do not envisage continuous woodland cover in our part of Scotland, but rather a diverse and vibrant landscape. Remote core areas can be allowed to develop gradually into semi-natural ecosystems where the needs of wild plants and animals take precedence and where conditions may eventually allow reinstatement of key missing species such as beavers and lynx. Such areas will be surrounded by a rich

variety of interconnected woodland, moorland and wetland habitats, along with agricultural land. Our vision is to enhance the sense of a wild and relatively natural countryside, while promoting a wide range of human activities.

BFT's deep roots in the community gave us the chance to take the next big step: the purchase last year of the Devil's Beef Tub and all of Corehead, north of Moffat. This is an area the same size as Carrifran and separated from it by less than three kilometres. It occupies a pivotal position in the Southern Uplands since the River Annan rises on the farm, its northern boundary is at the watershed with the Tweed and the Beef Tub adjoins the headwaters of the Clyde. Corehead might thus provide a key element in a network of restored natural habitats linking three great river catchments.

BFT does not underestimate the challenge offered by Corehead. The management plan is still under development and we are only now able to recruit a Site Manager. However, there is already strong community involvement, substantial funding has been secured and an ambitious programme is under

consideration for grant aid under the Scotland Rural Development Programme (SRDP). This envisages some 200ha of new native woodland and nearly 400ha of moorland grazing management, together with development of wet grassland and hay meadows.

Further to the east, BFT is following a different route, making the most of the confidence shown by landowners in our ability to manage programmes funded by SRDP or special schemes such as black grouse habitat improvement. This should lead to restoration of several hundred hectares of new native woodland, mainly in the Ettrick Valley. So, in early 2010, the nature of the new Ettrick Forest is starting to become clear, but it is obvious that there is work for several lifetimes.

www.carrifran.org.uk
www.bordersforesttrust.org

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