

CALEDONIA

Spring
2013

Wild!

**STRAWBERRY
SPIDER**
species profile

Scottish Wildcats
the conservation challenge

**TREE NURSERY
DEVELOPMENT**



TREES FOR LIFE Members' Magazine

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Strawberry spider



TREES FOR LIFE

Trees for Life is one of the leading conservation volunteering charities in the UK. Together with our members, supporters and volunteers, we work to restore the Caledonian Forest and its unique wildlife to a spectacular wilderness region of 1,000 square miles in the Scottish Highlands.

join – plant a tree – volunteer

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Standard Life

First words



2013, the Year of Natural Scotland, got off to a great start for Trees for Life, when, on my first day at work on 3rd January, we received a donation of £10,000 from one of our supporters. All donations are important to us, but this one was particularly affirming for me, coming at the beginning of a year that holds great potential for our project. Over the winter we've been doing a lot of planning for how to achieve our goal of a Million More Trees in five years, and that ambitious target necessitates an expansion of our work, in 2013 and beyond. That in turn requires increased support, so this generous gift is a very positive sign, and an important contribution that helps us on our way.

Another significant start to the year was provided by the enthusiasm of Gordon Buchanan in agreeing to become a patron of



Film-maker Gordon Buchanan is our new patron.

our charity. Gordon had already planted our Millionth Tree last May, and now, because of his public profile and association with wild nature from his nature documentaries on television, his role as a patron should give us greater visibility and increased support.

Looking back, 2012 was in many ways a pivotal year for us, with the Millionth Tree planting in May being a celebration of all that we've accomplished so far, and the Million More Trees initiative representing our ambition for the next five years. The success and significance of our work was acknowledged in two events in October and November. In the first of those, Steve Morris and I met Princess Anne at an event in Edinburgh, where our participation in the Woodland Trust's Jubilee Woods project, through our designation of 2012's planting at Dundreggan as one of the Diamond Jubilee Woods, was acknowledged.

Then, in November, as a result of voting by members of the public (including many Trees for Life supporters!), I won the 2012 Glenfiddich Spirit of Scotland Environment Award. In accepting this, I dedicated the award to all the supporters and staff of Trees for Life, past and present. It is your commitment and contributions over the years that has made our success possible, and will continue to do so as we move forward – thank you for making it all possible!

Alan Watson Featherstone



Receiving the 2012 Glenfiddich Spirit of Scotland Award from writer, broadcaster and journalist Lesley Riddoch in Edinburgh in November. Photo by John Paul.

Please support the next stage of OUR WORK AT DUNDREGGAN



2013 marks the fifth anniversary of Trees for Life's ownership of Dundreggan. This 10,000 acre expanse of wild land near Loch Ness is now at the centre of our conservation work to restore the Caledonian Forest in the Scottish Highlands.

During the past five years, thanks to the support of our members, we have begun work to create new woodlands and improve natural habitats from the banks of the River Moriston to the higher mountain slopes.

Now, in the next phase of our work, we're planning to develop and expand these exciting initiatives at Dundreggan, to help restore the Caledonian Forest on a landscape scale:

- A further series of biodiversity surveys – these have already found over 60 species that are priorities for conservation in the UK Biodiversity Action Plan, and 10 species never recorded in the UK before.
- Research to monitor the use of wild boar to control bracken and aid the regeneration of trees.
- An innovative combination of deer management techniques that aims to reduce grazing pressure, so that

Dundreggan's ancient woodlands can regenerate naturally.

- In partnership with the Mountain Woodland Restoration Project, we will be protecting and expanding one of the largest areas in Scotland of dwarf birch, a nationally rare species.
- Trialling different techniques for the conversion of the commercial plantation of non-native trees to natural forest, that could prove invaluable for other conservation land managers.

We need your help to succeed with this ambitious project

You can make a personal contribution to this inspiring work by sponsoring an acre of Dundreggan from just £5 per month, or £60 per annum. When you sponsor an acre, you'll receive a beautiful print of Dundreggan and regular updates about the conservation work you are supporting.

To sponsor an acre, please visit www.treesforlife.org.uk/tfl.appeal_sponsor_an_acre or phone us on 0845 458 3505. Thank you for your support!

Alan Watson Featherstone



Top left: This Scots pine seedling regenerating naturally near the summit of Binnilidh Bheag shows the potential for forest restoration on Dundreggan. Top right: Blooming brilliant – Lapland marsh orchid (Dactylorhiza traunsteinerioides) at Dundreggan. Above: Wild boar in the birchwood at Dundreggan.



on occasional days in recent years when we've replanted oaks grown on at our nursery from local acorns; I'm waiting for a good acorn year to collect more from here and other sites. This year, in May, we'll be running two Conservation Weeks based in nearby Contin, working at the oakwood to remove further non-native trees and perhaps plant a few more oak. FCS are also keen for us to hit some areas of bracken early in the season, to allow violets to flourish as part of their management for the Pearl-bordered Fritillary butterfly (*Boloria euphrosyne*). Additionally these weeks will include planting on the nearby Scatwell Estate, where we are helping to restore another ancient woodland site; the planting will include a high proportion of aspen trees grown on at our nursery from locally collected root cuttings.



Otherwise, if you live locally, we will again be running our days out this year, with the possibility of occasional overnight stays, working at a range of sites in the Project Area. Thanks to all those who worked with us during 2012.

RESTORING THE FOREST

BY MICK DRURY

Trees for Life carries out its forest restoration work in a 1,000 square mile Project Area to the west of Loch Ness. As part of our Million More Trees initiative, we are expanding our Conservation Week programme by returning to three of our former planting sites.

As I write it's a mild new year, with long starry nights; time to catch up on the desk work and make plans for the spring. I'm organising our first day out in Strathfarrar before January ends, collecting Scots pine cones to extract seed for future replanting. By the time you read this we'll be out and about again more frequently with site surveys, and collecting aspen root cuttings for the nursery. Plans will be developing for our return to work at three former project sites this year, at West Affric, Grudie Oakwood and within the Achnashellach Pinewood.

West Affric

The National Trust for Scotland's (NTS) West Affric Estate covers a wild, remote area of land, reached by a long walk from whichever direction you choose ... from the east through Glen Affric, the south

Main photo: The new planting site on Scatwell Estate. Photo by Mick Drury.

Left: Birches planted by our volunteers at Carnach Mor on West Affric.

from Glen Shiel, or across the hills from Morvich to the west. I was out there last summer for two nights, walking in from the east and then out south to Cluanie, Glen Shiel. Here the boggy land rises slowly, with the stumps of 4-5,000 year old pines scattered through the eroding peat, to the watershed at around 400m. From there a good track descends, with the loch and some newly planted forest visible far below. I was struck by the potential this route would have as a forest

This is challenging country for establishing trees, with very exposed conditions and poor soils.

network link, with old rowans and birches clinging to the craggy sides of burns and some better looking land towards Cluanie; hopefully, one day.

TfL worked on the Estate with NTS

on a series of new woodland projects in the late 90's, with ten fenced exclosures erected for regeneration or planting. We've returned to do some maintenance occasionally in recent years, and will be back for a Conservation Week in

It's heartening to see the new woodland growing in places where patches of ground flora still survive.

early September. This is challenging country for establishing trees, with very exposed conditions and poor soils, and the exclosures have had variable success. However, it's heartening to see the new woodland growing in places where patches of ground flora, such as anemones, bugle and globeflower still survive; doubtless the first trees here for many centuries. We hope to improve on this with further tree planting, fertilising and undertaking some fence repairs.

Grudie Oakwood

Forestry Commission Scotland's (FCS) Grudie Oakwood lies above Loch a'Chuilinn, between Garve and Achnasheen, on the northern boundary of our Project Area. It's an ancient woodland site with some stunning veteran oaks, although very few young trees. The site was partly planted up with plantation trees, e.g. sitka spruce, in the past, and around ten years ago TfL did a lot of work there helping to remove them. We also organised some surveys and protected small areas of new aspen planting. I've been back with the trusty local volunteers

Achnashellach

Further west, we also return for a Conservation Week to the FCS Achnashellach Pinewood, another site where the commercial crop is being felled and plans are to restructure the forest around the remaining old pinewood fragments. This is one of the original areas featured on the Caledonian pinewood inventory and an important location for potential future forest links north towards Beinne Eighe. We've planted some 46,000 trees here in the past and done a lot of felling of the regenerating sitka spruce and lodgepole pine. This latter task will be the focus for the week, so if felling rather than planting is your favourite task then do come along and join us.

How can I help?

To help with forest restoration at these sites please visit our website at www.treesforlife.org.uk/conservationweeks to book a place on a Conservation Week:
West Affric: 31st August;
Grudie Oakwood: 11th May & 18th May
Achnashellach: 12th October

Top left: An old pine stump in the peat at West Affric. Top right: Volunteer removing rhododendron at Achnashellach in 2009. Photo by Rosie Black. Below: Oaks and birches growing by the loch at Grudie Oakwood. Photo by Mick Drury.



THE FOREST FRONTLINE | BY COLIN HALL

Trees for Life runs a twice-yearly volunteer programme of Conservation Weeks. To enable us to expand our programme of forest restoration we have increased the number of weeks that we are running, and have also introduced three special Wildlife Weeks, to enable people to learn more about the fascinating species that inhabit the Caledonian Forest.



We are grateful for the continued generous support of Scottish Natural Heritage, the Royal Society for the Protection of Birds, Forestry Commission Scotland and a number of individual Trusts for our volunteer programme.

How can I help?

To participate in a Wildlife Week or Conservation Week please visit our website at www.treesforlife.org.uk/conservationweeks or contact us on 0845 602 7386.

Our 2012 volunteer programme was a great success, with volunteer groups planting over 52,000 native trees, plus carrying out other valuable tasks such as removing non-native species and working in our tree nursery at Dundreggan. Through our expanded programme of weeks we plan to plant even more this year, in line with our strategy to establish a Million More Trees in the next five years.

The Caledonian Forest has a distinct assemblage of species which are critical to the health of the ecosystem, and the long term aim of our work is to create a mature forest which supports these. Our Wildlife Weeks are split 50:50 between wildlife-watching and practical conservation work to benefit native species - a great opportunity to volunteer in The Year of Natural Scotland.

Iconic Birds of the Highlands: May 25th
A chance to observe some of the rare and charismatic birds of the region. We will take a trip to Skye to see sea eagles,

and visit Glen Affric National Nature Reserve to look for crested tits, crossbills, ospreys, golden eagles and others. We will watch a black grouse lek and learn about management of these and capercaillie.

Caledonian Forest Mammals: September 14th

Wildlife watching will include red squirrels, pine martens, wild boar and red deer. We will take a trip to Aigas Field Centre to watch beavers on the loch and learn about their Scottish wildcat captive breeding programme. There will be talks on the challenges of reintroducing large carnivores and on deer management in The Highlands.

Up Close to Nature: September 7th

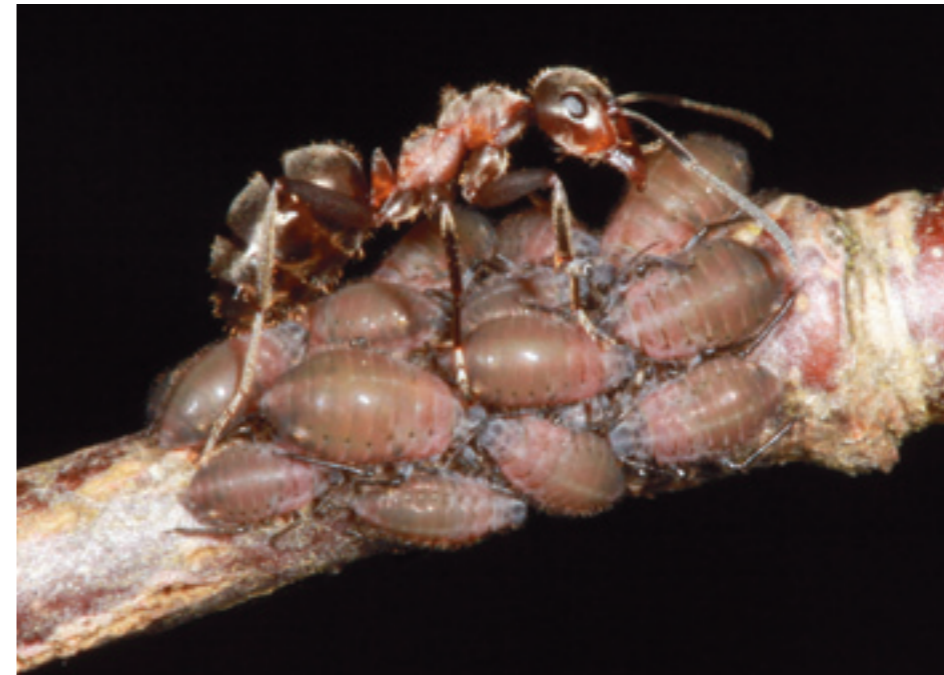
From wood ants to fungi, strawberry spiders to aphids, and everything in between, this week will be led by our founder, Alan Watson Featherstone, who will share his enthusiasm and knowledge of the smaller components of the Caledonian Forest ecosystem.



Main photo: Red deer (*Cervus elaphus*) are one of the main species that we will observe and learn about on the Caledonian Forest Mammals week. **Above:** The fascinating breeding display of black grouse (*Tetrao tetrix*), known as lekking, will be one of the highlights of the Iconic Birds of The Highlands week. **Photos by Laurie Campbell.**



THE ECOLOGY OF APHIDS | BY EDWARD BAKER



In June of last year, naturalist Ed Baker carried out a survey of aphids at Dundreggan. Aphids have a fascinating ecological relationship with wood ants and produce honeydew that is harvested by bumblebees. Here Ed describes how there is much more to these insects than their standard image as pests.

There are approximately 600 species of aphids in Britain, most of which are adapted to feed on a single genus or species of plant, and are not pests. They evolved to feed on trees but have since diversified to colonise herbaceous plants, mosses and ferns. Diversity is highest on trees, where more feeding niches are available. For example, in Britain, silver birch (*Betula pendula*) supports 13 species, each feeding on a different part of the tree.

Three factors enable aphids to multiply quickly:

- 1) Parthenogenesis, where the development and growth of embryos occurs without fertilisation.
- 2) Viviparity, where embryos develop inside the mother and are born live.
- 3) Telescoping of generations, where a young aphid inside its mother's body already contains a developing embryo.

Aphid colonies on wild plants are usually small and short-lived. This may be due to competition and natural enemies, but aphids are also 'self-regulating', so when their population outstrips resources, reproduction slows and winged morphs are produced that migrate to find more suitable hosts.

Many predators, pathogens and parasitoids (parasites that kill their host) target aphids. Ladybirds, hoverfly larvae and lacewing larvae are the dominant predators. Primary parasitoids (mainly wasps) lay eggs inside aphids and their larvae eat the aphids from the inside, before pupating inside the mummified bodies. The primary parasitoid larva may then be targeted by secondary parasitoids.

Aphids excrete a sugary 'sap' known as honeydew, which is an important energy source for many organisms, including bumblebees. It also drives the mutualism between some ant and aphid species, whereby aphids supply honeydew to

ants in return for their protection from predators and parasites.

Results from Dundreggan

In the woodland at Dundreggan, I found 35 aphid species and over 20 parasitoid species, involved in 64 trophic associations. Two parasitoids were new to Britain and an aphid (*Cinara smolandiae*) feeding on juniper is also new to Britain. The survey was especially useful in identifying the key tree feeding aphids, including those involved in mutualism with wood ants.

Clockwise from top left: 1. Wood ant (*Formica lugubris*) tending aphids (*Pterocomma tremulae*) that are sucking sap from an aspen twig on Dundreggan. 2. Mummified aphid (*Cinara juniperi*) on a juniper bush on Dundreggan, showing the exit hole made by the parasitoid wasp that had grown inside it. 3. Aphids (*Cinara smolandiae*) feeding on juniper. This species was unknown in the UK until Ed found it on two bushes at Dundreggan.

DUNDREGGAN NEWS



Dundreggan is a spectacular 10,000 acre region of wild land near Loch Ness. Our vision is to turn it into one of Scotland's finest native woodlands, abundant in wildlife, and protected for generations to come. Much of our forest restoration work is carried out here, and it will be the planting site for many of our Million More Trees.

The winter months were relatively quiet at Dundreggan and gave me time to plan the next phase of tree planting at Allt Fearnna, one of our main planting sites. Over the past two years we have planted 84,000 trees there across 33 hectares. This spring we will plant an additional 20,000 trees, as well as fertilising all the trees planted last autumn.

In the summer the machines will be back to prepare the ground for

the final phase of planting, which will be carried out this autumn and next spring. The planting has been steadily creeping up the hill and now reaches 370m. The next phase of planting will be at 350m – 420m, which is significant not only because it means a further walk for volunteers, but also in terms of planting density and location. In this part of Scotland, these elevations form a transition between woodland and montane habitats; an area referred to as mountain woodland. This zone is defined as being “above the altitude where trees can be grown commercially (the timberline) and below the height where scrub can no longer survive. Mountain woodlands form a soft upper edge that feathers out from the denser forests below and gradually transforms into the windswept heath and rock of the mountain top.”

There are very few examples (if any)

of the natural gradation of woodland through mountain woodland to montane scrub in Scotland, and we have the exciting challenge of creating this missing link at Dundreggan.

The planting has been steadily creeping up the hill.

Immediately to the East of Allt Fearnna lies the 400 Ha Bhlaraidh native woodland scheme which was established by the previous owner in 2002. Now over ten years old, distinct differences are appearing in the growth of the trees relating to soils, altitude and exposure. Towards the upper margins of the planted areas are examples of dwarf birch (*Betula nana*) growing amongst planted Scots pine (*Pinus*

sylvestris), as well as twisted stunted pines demonstrating the development of krumholtz (a German term meaning twisted) growth forms.

We will be continuing to plant trees and shrubs at high elevations.

As a partner of the Mountain Woodland Project we will be continuing to plant trees and shrubs at high elevations and monitoring how they grow. We also plan to carry out a number of research projects and to increase propagation of species such as dwarf birch and woolly willows in our tree nursery, which you can read more about in the article on pages 10-11.

Steve Morris

How can I help?

Sponsor an acre and help to conserve Dundreggan at www.treesforlife.org.uk/tfl.appeal_sponsor_an_acre

Main photo: Scots pines amongst birches just coming into new leaf in spring on the lower slopes of Binnlìdh Mhor at Dundreggan. **Below:** Here at Creag Fiaclach in the Cairngorms National Park, this juniper and the krumholtz Scots pines behind are in one of the best examples of healthy tree-line scrub in Scotland. This is what we're hoping to restore at Dundreggan. **Bottom left:** Rowan and aspen seedlings planted by volunteers in the Allt Fearnna enclosure in 2012.



Caledonia Wild! Spring 2013



Biodiversity news

Winter is a quiet time for biodiversity work, as most life is dormant and inconspicuous then. However, it's the season when reports are written up from the previous summer and these have produced interesting results from the surveys that were carried out at Dundreggan in 2012. They covered a diverse range of organisms, from sawflies and aphids to fungus gnats, slime moulds and mites, and have resulted in the discovery of a number of species not previously recorded in the UK.

These findings reinforce the importance of Dundreggan as a special site for biological diversity, and also illustrate how little research there has been done on lesser-known groups of organisms in the Caledonian Forest. The species lists for each group add significantly to the total number of species recorded on Dundreggan, and are summarised below.

2012 was the third year that staff from Liverpool Museums have carried out work for sawflies at Dundreggan, and the Malaise traps they used caught

a wide range of other insects as well. They passed the non-sawfly specimens on to other specialists, which contributed substantially to the numbers of aphids and fungus gnats in the totals below. I'm hoping that both Ed Baker, who did the aphid survey, and Peter Chandler, the fungus gnat specialist, will return in 2013 to do further surveys, as it's likely there are considerably more aphid and fungus gnat species at Dundreggan.

The Liverpool Museum staff also collected some soil samples on the estate, and they passed those on to Frank Monson, who specialises in some groups of mites. These are small, soil-dwelling invertebrates that are related to spiders, and he's come up with a good list of almost 100 species to date.

Currently we've got two biodiversity-related projects underway at Dundreggan, with camera traps deployed by Kerry Kilshaw, as part of her PhD project on the distribution of wildcats in Scotland, and Scott Newey from the James Hutton Institute in Aberdeen carrying out research on the utilisation of deer carcasses by a range of organisms..

Alan Watson Featherstone

Group	No. of species	Notes
Sawflies	125	3 species are new records for the UK
Aphids	42	1 species is a new record for the UK
Aphid parasitoids	17	2 species new to the UK, others awaiting identification
Fungus gnats	168	3 species are new records for the UK
Slime moulds	77	Second highest number of slime mould species recorded in any of the Caledonian Forest remnants
Mites	96	1 species is a new record for the UK
Total	525 species	10 species new to the UK



Above: Winged birch aphids (*Euceraphis punctipennis*) and smaller aspen-feeding aphids (*Chaitophorus tremulae*) on the leaf of an aspen tree on Dundreggan. The large aphid on the right has been parasitised by a wasp, whose exit hole can be seen at the bottom of the aphid's abdomen. **Left:** Slime mould (*Dianema corticatum*) fruiting on a fallen Scots pine trunk on Dundreggan.



TREE NURSERY DEVELOPMENT | BY JILL HODGE

Last year, Trees for Life established a new tree nursery at Dundreggan. Project Co-ordinator Jill Hodge talks about its progress so far and our exciting plans for its future development.

The tree nursery developed rapidly throughout 2012, from a single polytunnel at the beginning of the year, to three polytunnels and a hard outside standing area all ready for the spring/summer growing season. This enabled us to propagate over 22,000 new native trees during 2012. At the end of the year, thanks to a grant from the People's Postcode Trust, we were able to expand further with the purchase of a much larger polytunnel measuring 7m x 19m, together with new rootrainer trays, the ideal containers in which to grow young plug trees. We also purchased an all-terrain pallet truck which will hopefully transform handling of nursery supplies and plants, so that they can be easily moved around!

During 2013 we are planning to increase our production and hope to propagate 30,000 trees for planting in our Allt Fearnha site at Dundreggan; mainly downy birch and rowan from Dundreggan seeds. These will be

grown-on in the new large polytunnel, giving us space to expand our work with aspen in the smaller tunnels. As well as propagating aspen from root cuttings collected from stands of wild trees, using the misting unit in the polytunnel, we plan to extend our experiments with mini-root cuttings from nursery stock

During 2013 we are planning to increase our production and hope to propagate 30,000 trees.

plants. If successful, this will enable us to grow more aspen in a less labour-intensive way. We will also be doing some grafting, which is experimental work to prepare plants for an aspen gene bank being set up by the charity Coille Alba. This may lead to the exciting possibility in the future of aspen being grown from seed

from trees which are induced to flower in a seed orchard.

We are also planning to expand our propagation of montane species such as dwarf birch and dwarf willows. There are an increasing number of projects, both on our own land and elsewhere, that are working to restore the montane scrub ecosystem, which supports species that grow at higher altitudes than most



Caledonian Forest trees. Many of these specialist species are not profitable for commercial nurseries to grow, so through grants and the generosity of our supporters we hope to be able to propagate these at cost, to enable wider planting and restoration of this unique and critically endangered habitat. We will be sowing Dundreggan dwarf birch seeds this spring and we will also be increasing our stocks of downy and woolly willow, from cuttings collected from plants growing high up on mountain slopes.

Many specialist species are not profitable for commercial nurseries to grow.

2012 was a fabulous year for the tree nursery, and I would like to give special thanks to all the volunteers who've sown seeds, pricked out seedlings, taken cuttings, weeded nursery beds, and dug and packed trees ready for planting – you helped to make the season a real success. I look forward to the continued expansion that 2013 will bring!

How can I help?

We are running Tree Nursery Conservation Weeks on 6th April, 4th May and 1st and 29th June. To book a place please visit our website at www.treesforlife.org.uk/conservationweeks or contact us on 0845 602 7386.

Main photo: Volunteers digging the trenches to put the polythene cover on polytunnel number two in March 2012. **Left:** Becky with downy birch trees in rootrainer containers in August 2012. **Photo by Ken Brown.** **Above:** The tree nursery at the end of November 2012 with large new polytunnel just completed. **Photo by Jill Hodge.**

Fay tending beds in the nursery. Photo by Jill Hodge.

A FOCALISER EXPERIENCE BY FAY BLACKBURN

Each Trees for Life Conservation Week has two group leaders, or focalisers. Fay Blackburn has focalised many of our Tree Nursery Weeks. Here she describes the activities our volunteers carry out in the nursery and why she enjoys leading these weeks.

My personal passion for focalising Nursery Weeks stems mainly from the fact that anyone of any ability and level of fitness can join in and make a valuable contribution to the restoration of the Caledonian Forest. I came to lead these weeks exclusively because I no longer have the stamina for tree planting on the higher hillsides every day! Although I enjoyed it 15 years ago, I can only do one or two days at that pace now!

It is always exciting for me to welcome new participants and to help them find their way of contributing to the group. Jill Hodge, the nursery manager, and her assistant Abbey, are wonderful at finding tasks of all kinds to keep everyone happy, busy and feeling valued.

As we work, we learn about the different species of trees we grow to create a new diverse ecosystem, about 12 varieties of trees in all, and flowers

too – mainly bluebells and primroses and even the rare twinflower. There are also opportunities to visit parts of Dundreggan to see where the trees are planted out, so that we can appreciate and understand the wider picture.

I will never tire of the feeling of satisfaction I get at the end of a week when we look at what ten of us have done: 4,000 baby trees all now in their own pots, and hundreds of young trees liberated from a blanket of weeds: brilliant! We have made a real difference.

And it is not all about work; there is plenty of time to chat, read, play games or enjoy the silence, solitude and beauty of the ancient woodlands at Dundreggan. Enjoying home-made food – delicious and healthy, and making new friends whilst giving something back to nature – this is what keeps me going back to the tree nursery, year after year.



Restoring Missing Species

THE SCOTTISH WILDCAT

BY BECKY PRIESTLEY

The Scottish wildcat is the only native species of cat still living wild in Britain today. There are believed to be fewer than 400 remaining in the wild and trying to conserve the species is a major challenge for wildlife conservationists.

Ecology
The elusive and charismatic Scottish wildcat (*Felis silvestris grampia*) is one of the UK's few remaining mammalian predators. It is larger in size than the domestic cat and feeds on rabbits, rodents and occasionally birds. It is an important

Caledonian Forest species, denning within the forest and often foraging around the edge, in fields and scrub. A litter of 3-4 kittens is born in May. It represents the most northerly population of European wildcats and is a significant part of Scotland's natural and cultural heritage.

The threats to wildcats
The Scottish wildcat was once found across Britain but is now confined to isolated populations in Scotland, predominantly in the Highlands, where it faces a number of major threats. Habitat loss has massively decreased its numbers and led to

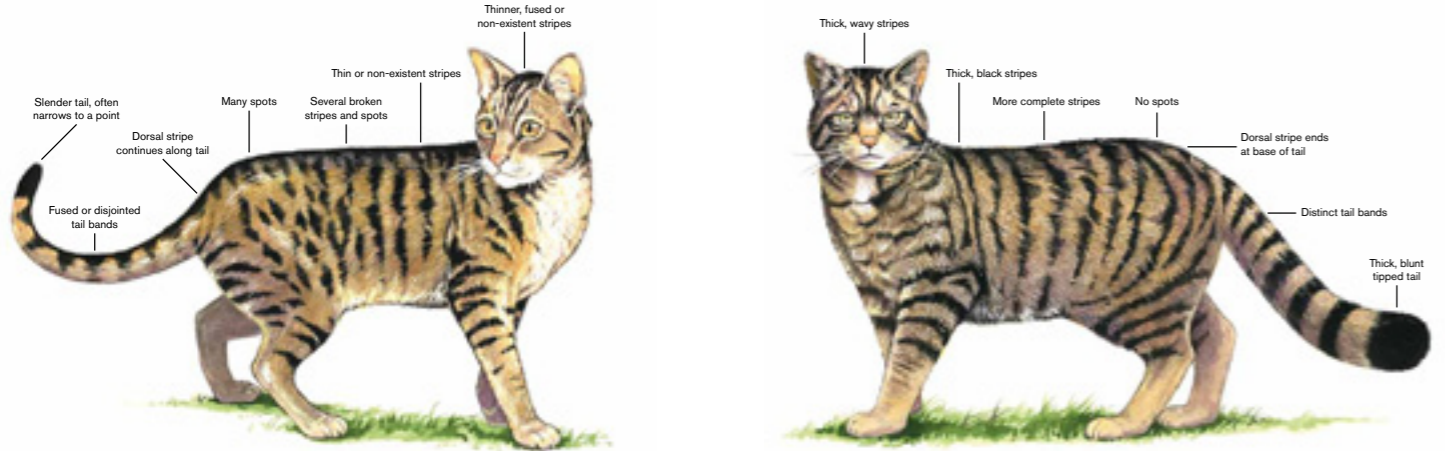


Illustration showing the difference between a hybrid domestic cat (left) and a wildcat (right). Pure Scottish wildcats have a thick, blunt-tipped tail with distinct rings, a dorsal stripe that does not continue onto the tail, and more complete body stripes than hybrids, with no spots on the coat. From *Scottish wildcats: Naturally Scottish* by Kerry Kilshaw (Scottish Natural Heritage 2011).

fragmentation of remaining populations; feral cats have introduced domestic feline diseases into the population; and, sadly, persecution still occurs, with up to a quarter of the population believed to be killed annually by shooting and snaring. However, perhaps the main threat faced by the species is hybridisation with domestic and feral cats. Wildcats will freely breed with domestic cats and produce hybrids, reducing the genetic integrity of the species. The diagram below opposite illustrates the differences between a hybrid (left) and a true Scottish wildcat (right).

The conservation challenge
Although conservation of any species with low numbers is difficult, the wildcat provides a particular challenge. The issue of hybridisation means that of the estimated 400 remaining cats, we do not know how pure they are. There is a chance that the completely pure Scottish wildcat does not exist at all, and that all remaining wildcats have some proportion of domestic genes in them. If this is the case, should valuable funds be used to try to conserve a species which may technically already be extinct?

function, and so is a critical part of a healthy forest ecosystem.

What is being done to conserve the species?
The Cairngorms Wildcat Project, led by Trees for Life board member David Hetherington, has recently come to an end. It involved extensive camera trap surveys across the Cairngorms National Park, working with gamekeepers to reduce the numbers of wildcats that are shot, and encouraging people to neuter domestic cats to reduce the incidences

Kerry Kilshaw, of Oxford University's WildCRU, is carrying out across Scotland in an attempt to gain a clear picture of the numbers, distribution and estimated degree of purity of wildcats.

Scottish wildcats are one of the real bastions of the Caledonian Forest. One of the prime threats faced by the species is habitat loss, so the work done by Trees for Life in creating new swathes of suitable woodland could be imperative for the future of the species in the Highlands. Although Scotland has many plantation forests, these offer very little diversity and it is the habitat provided by mature mixed woodland such as the Caledonian Forest, that wildcats require. For a predator to thrive there needs to be an adequate prey base, and the creation of new forest will provide habitat for many of the species that the wildcat feeds on, as well as suitable den sites for wildcats themselves.

"If we lose the Scottish wildcat (which is worryingly possible), future generations will ask why in the 21st century did the people who could save this iconic animal let it disappear. We are the ones who can save this animal and if we care and do enough we easily can."
Gordon Buchanan

However, another school of thought believes that it is not important whether a wildcat is 100% pure or if it is perhaps only 85% – if it appears outwardly (phenotypically) to be a wildcat, i.e. it has the typical pelage and markings of a wildcat, and it occupies the same niche in the ecosystem, that is sufficient, and that the ecological role it fulfils as a medium-sized predator is more important than its absolute genetic purity.

of cross-breeding. Similar work is being carried out in Ardnamurchan by The Scottish Wildcat Association.

Another important strategy is captive breeding. A number of facilities breed wildcats in captivity, and there is hope that in the future, with good management, genetically strong captive wildcats could be released into areas of good habitat to bolster the wild genetic pool.

Trees for Life's work for wildcats
There have been a few potential sightings of wildcats across our Project Area, however nothing has been confirmed. To gain some accurate data we are currently carrying out a survey on our estate at Dundreggan, using baited camera traps. This is part of a three year survey that

How can I help?
Please neuter your cat if you live in Scotland and report any potential wildcat sightings: www.scottishwildcats.co.uk/sightings.html. You can learn more about Scottish wildcats by attending our Caledonian Mammals Wildlife Week in September – www.treesforlife.org.uk/conservationweeks.



Main photo: Scottish wildcats have a thick ringed tail and sharp claws to help them climb trees. **Top right:** The Scottish wildcat occupies an important role in the Caledonian Forest ecosystem. **Photos by Peter Cairns. Right:** Project assistant Roo Campbell checking camera traps at Dundreggan.

FUNDING THE FOREST



Dundreggan Biodiversity Day on July 14th

Join us at Dundreggan on the 14th July to explore and discover the rare and wonderful wildlife of the Caledonian Forest in the 2013 Year of Natural Scotland. Our event is part of the British Ecological Society's centenary Festival of Ecology. It will also celebrate five years of biodiversity conservation by Trees for Life at Dundreggan, who took ownership in 2008.

Our Biodiversity Day will offer a wonderful opportunity to get up close to nature and learn more about the Caledonian Forest and its rare wildlife.

You are invited to join our staff and enthusiastic experts to experience, enjoy and observe wildlife through guided nature walks and a host of fascinating biodiversity activities. All are welcome and the event is ideal for families.

Dundreggan, near Loch Ness, encompasses 10,000 acres of wild land, and is home to many rare species. Lovely ancient woodlands, streams and



The beautiful mixed woodland at Dundreggan. Photo by Rob Pedley.

waterfalls are accessible by a network of tracks and paths, including an all-ability trail.

Sunday 14th July, 10.30 am – 5.00 pm
Free entry and parking, refreshments available.

Dundreggan Estate, Invermoriston, (Near Loch Ness) Highland, IV30 6YJ.

Small change adds up to big change

Customer donations from three companies are helping to grow the Caledonian Forest with a Million More Trees.



Accounts Administrator Janet Barcis with our donations from Mac's Eco Taxi.

Forres firm driving forest restoration

David MacPherson of Forres-based Mac's Eco Taxi is donating 20 pence from journeys to and from Findhorn Eco-village. The scheme has already notched up more than £250 since July 2012.

David said: "I'd noticed Trees for Life's vehicles and office on many trips to Findhorn, but it was buying the charity's calendar with its stunning photographs of the Caledonian Forest that really inspired me. Our customers know that we are being doubly carbon conscious – with low emissions from our car and with donations supporting the reforestation of the Highlands."

Timberbush turns tours into trees

Timberbush Tours, a 5 Star VisitScotland accredited tour operator, is one of Scotland's longest running tour companies. Travelling throughout the Highlands on a daily basis, they know just how precious Scotland's natural heritage is, and how important it is to conserve it for generations to come. Last year the company achieved a Silver Green Tourism

Award for their on-going commitment to conservation.

By letting all their customers know about our work, and by encouraging them to donate £1 with their bookings, the company has now planted over 530 trees in the Timberbush Corporate Grove!

Ethical Superstore

Online retailer Ethical Superstore offers a wide range of fair trade, organic and eco-friendly products. The company seeks to minimise their impact on the environment and works to make packaging as eco-friendly as possible.

As part of this initiative, the company now offers their customers an 'environmentally conscious' delivery option. When placing an order, customers are asked to add a donation of £1 or more for Trees for Life. These donations are making a positive contribution to restoring the Caledonian Forest, improving the natural environment to benefit our wildlife, our climate, and us all.

Timberbush Tours run sightseeing tours throughout the Scottish Highlands and are helping to grow the Caledonian Forest through their corporate grove. Photo by Timberbush Tours.



Moray Distilleries take action to conserve the forest

Staff from Diageo's Speyside East distilleries have become Life Members of Trees for Life. Pictured here with their certificate, the initiative was developed by Matthew Desmond from Mortlake Distillery to promote the importance of a healthy environment for the Scotch whisky industry.



Spring into 2013

Why not spring into the 2013 Year of Natural Scotland by joining one of our Conservation Weeks between March 16th and June 29th? Better still – bring a friend and you will receive a 20% discount on your double booking. Just enter your friend's name when booking online at www.treesforlife.org.uk, or mention it over the phone on 0845 602 7386.



Eins, Zwei, Drei, Vier!

German students from Bielefeld High School love the Trees for Life Conservation Weeks so much that they returned last October for their fourth year in a row.

Students preparing alder (*Alnus glutinosa*) for transplanting.

Thank You!

We would like to thank the following organisations and individuals who have made significant financial contributions towards our work in recent months:

Charitable Trusts

Audrey and JJ Martindale Foundation, Steel Charitable Trust, The Banister Charitable Trust, The Robertson Trust, The Hamemelis Trust, The Susan H. Guy Charitable Trust, The Margaret Murdoch Charitable Trust, The Tay Charitable Trust.

Individuals

Derek Brown, Nancy Partington, Christian Caduff, Susanne Trier, Gerald Bradley, Penelope Kenrick, Allan Cortéz, Adam Whitmore, Stan & Anne McMillan, Duncan Ford, Geoffrey Oelsner, Dr David Fox, Dave Hilliard, Andrew Carothers, Corrie Cuthbertson, Michael Copperthite, Dr A Musset and Dr Sally Carr.

Groves over £500 each

Trier & Steinacher Wedding Grove, Ken Mills Memorial Grove, Lucy & James Wedding Grove, Friends and Family of Kimberly & Michael Copperthite, Tom Enders.

Companies and Organisations

SECC Glasgow, Paramo, Perfectly Picked, Tree Twist, Timberbush Tours, Jacksons Art Supplies, SeTwo Ltd, AGF, Mozolowski and Murray, Tonbridge School, Haggis Tours, Matthew Desmond/Diageo Speyside East Distilleries, Eradicating Ecocide, CBES, About Argyll Walking Holidays.

New Life Members

Ian McKinnon, Dave Hilliard, Mary Gibbs, Jilly Rosser.



The *ballet of buds* opening in spring



After the dormancy of winter, some of the first signs of returning life are provided by the swelling and opening of the buds on trees and bushes. The new leaves and flowers unfurl with all the grace and fluidity of a ballet in slow motion. Like a dancer who leaps into expressive and dynamic movement from a still poise, the re-emergence of leaves is an annual spectacle that is the original rite of spring.

Clockwise from top left: 1. This female cone (or flower) of a Scots pine (*Pinus sylvestris*) on West Affric is surrounded by new needles that are just emerging from their bud sheaths. **2.** The moment of release – new leaves of an aspen (*Populus tremula*) bursting from their bud in Glen Affric. **3.** New leaves of a hawthorn (*Crataegus monogyna*) opening in spring on Dundreggan. **4.** Male flower buds of bog myrtle (*Myrica gale*) on Dundreggan. Bog myrtle is dioecious, meaning that male and female flowers are produced on separate plants, and the flowers appear before the new leaves in spring.

