

Butterfly Conservation in Scotland 2018

Golden Moths - as Good as Gold!

This is a golden year for Butterfly Conservation (BC). It is our 50th anniversary as the British Butterfly Conservation Society, as BC was originally named, was founded and registered as a charity on 7 March 1968. So what better way of celebrating this momentous occasion than looking at some of our wonderful golden moths?

There are eight species of commonly occurring macro-moths in Scotland with gold or golden in their title. However, two of these, Golden-rod Pug and Golden-rod Brindle, are predominantly brown and grey and named after their foodplant, or supposed foodplant at the time they were named, rather than the adult's appearance, hence they do not meet our current requirements.

The first candidate is Gold Swift. This is one of the very few moths whose caterpillars feed on bracken. The moth also exhibits interesting mating behaviour with both sexes luring the other using different scents. That of the male smells faintly of pineapples!

The remaining five golden moths are all members of the Plusiinae family. All the Plusiinae hold their wings at a steep angle like a steeply pitched roof and are often adorned with tufts and crests. The word 'plusia' derives from the Greek word for rich, referring to the gold, or silver, markings on their forewing.



Gold Swift – Nick Picozzi

Two very widespread plusias are Beautiful Golden Y and Plain Golden Y – species whose caterpillars feed predominantly on nettles. The ‘Y’ in their name refers to the Y mark on their forewing, although in most specimens this is more like a ‘V’ with a full stop.

Gold Spangle is a fabulous moth that is very similar to the previous species but has a large square blob of metallic gold in the middle of its forewing, giving it a striking appearance as well as making it instantly recognisable. It is widespread in Scotland but is absent across much of England.

The final two plusias are the magnificent Gold Spot and Lempke’s Gold Spot. These two species are so similar that they were only recognised as being separate species in the 1960s. So very aptly, BC and Lempke’s Gold Spot have both only been known in Britain for about the same length of time - clearly it is a golden age for Lepidoptera!



Beautiful Golden Y – David Green



Plain Golden Y – David Green



Lempke's Gold Spot – Mark Parsons



Gold Spot – Mark Parsons

PROJECT NEWS

FOR PEAT'S SAKE!

Once again this year BC Scotland's 'Bog Squad' team of volunteers led by David Hill have been working hard to transform the fortunes of our lowland peat bogs. This year we are working on lowland peatlands in Renfrewshire, West Lothian, Dunbartonshire, Galloway and Islay.

Our volunteers have been successfully using a new technique to tackle scrub which involves removing the whole sapling including roots to prevent any new growth occurring. This alongside ditch-damming helps to re-wet bogs and improves the condition of these important habitats. We are grateful for the support of the SNH Peatland Action programme, charitable trusts and our members for the Bog Squad <http://bogsquad.weebly.com>



Volunteers at Glen Affric – Melissa Shaw



Last year our new project 'Lanarkshire's Large Heaths and Mosses' got underway. Our first landscape-scale project in Scotland is aimed at revitalising several large peatlands lying to the northeast of Lanark. Huge interconnected peatlands once covered large swathes of the lowland landscape in the area. However, over time much of this has been drained and converted into pasture, stripped for peat or planted with alien conifers.

Specialist contractors have been working away with four hectares of former plantation forest at Blacklaw Moss nature reserve returned to bog habitat through a new technique called 'trench-bunding'. This involves excavating a deep trench that is refilled with compressed peat that forms a barrier to water movement. The result is quick re-wetting of the bog allowing specialist plants such as Hare's-tail Cottongrass (the Large Heath caterpillar foodplant) to recolonise.

At Braehead Moss nature reserve one hectare of former peat cuttings have been re-profiled by contractors to improve the habitat, and a boardwalk has been built to allow access for people to see and enjoy the special flora and fauna of the moss without damaging the bog's sensitive surface.

The Lanarkshire's Large Heaths and Mosses project is kindly funded by EcoCoLIFE +, Peatland Action and WREN's FCC Scottish Action Fund, through the Scottish Landfill Communities Fund. For more, go to <http://bit.ly/2Gf0Q5x>



Boardwalk – David Hill



Emperor Moth – Iain H Leach



Paper moths – Rebecca Crawford

Peatlands for People

In September, Rebecca Crawford joined us to run our new Peatlands Outreach project to spread the message of why our peatlands are so important and the things we can do to protect and restore them.

The project has already delivered 20 events, from talks to societies and stalls at family events and conferences, to craft sessions for young people through collaborations with schools and local community groups. The sessions have generally focused on moths, especially the stunning day-flying Emperor moth which is commonly found on peatlands. The children love its striking markings and have been making their own moth models to take home.

If you are interested in a workshop/craft session, a talk or any other peatland-related events please get in touch

rcrawford@butterfly-conservation.org

Urban Butterflies

The Urban Butterfly Project has been running for just over two years, and in our second year we received twice as many butterfly records as in 2016, and we recruited dozens more volunteers to get involved in our conservation work.

Volunteers were trained to identify and record butterflies in a series of eight events in May. Some of the attendees at the workshops knew a little about butterflies, but most were complete beginners. Although several events were affected by poor weather, over 70 people came along to learn about butterflies.

In all, almost 2000 individual butterflies were reported, including scarce species such as Clouded Yellow and Holly Blue. The most numerous was Red Admiral, found at almost half the sites, and making up one fifth of the butterfly records. This is in line with what many said, that it was one of the best years for Red Admirals they can remember.

One remarkable finding is that the elusive Grayling - known for its excellent camouflage - is found in very good numbers in the heart of Edinburgh, at Calton Hill, where they happily nectar on buddleia.



Grayling – Iain H Leach

At Holyrood Park we have run several volunteer work parties to cut back the gorse which is encroaching onto habitat used by Grayling and Northern Brown Argus, both species of conservation concern. Work parties on other sites have planted wildflower plugs and cut and removed rank grass and invasive scrub from greenspace meadows

Many of the records we receive are from people who were trained the year before, and who have kept up their involvement and even increased the numbers of records they sent.

We are very involved with the 'Flower Power' wildflower nursery at Glasgow's Pollok Country Park, where we have been working with the Ranger Service. Volunteers sow the seeds and maintain the plants through the summer, and we then plant them out around the city. There is a particular focus on Common Bird's-foot-trefoil, the foodplant of the Common Blue and Six-spot Burnet moth.

In Edinburgh we are working with the Royal Botanic Garden to grow caterpillar foodplants, which are then planted on the green roofs of Edinburgh. Even the Scottish Parliament has them now! One of the most rewarding sites has been at the offices of Edinburgh City Council at Waverly Court, where in addition to planting new wildflowers, we advised a new mowing regime. This has allowed many wildflowers to bloom, where they had previously been mown too frequently.

In 2018 there will be butterfly identification workshops in Perth, Dundee, Dunfermline, Hamilton, Motherwell and Edinburgh. If you are interested contact Anthony McCluskey (see back page) or visit

butterfly-conservation.org/urbanbutterflies

BC successes across the UK



RECORDING

we run three of the world's largest butterfly and moth recording schemes which together have gathered more than 60 million records.

ENGAGING

more than 250,000 people have taken part in our Big Butterfly Count – the largest insect citizen science project in the world.



COMMUNICATING

we have successfully raised public awareness of the plight of butterflies and moths by talking to more than 100,000 people every day through our social media channels.



REVEALING

our butterfly and moth atlases and 'State of' reports have revealed the extent of species declines and where conservation effort should be focussed to help species recover.



RESTORING

we played a key role in reintroducing the UK's rarest butterfly – the Large Blue – after it became extinct. Working in partnership with conservation professionals and agencies the butterfly is continuing to thrive.



COLLABORATING

We are partners in the most groundbreaking conservation project in the UK's history - Back from the Brink will save 20 species from extinction and protect a further 200 threatened species.



WORKING

we have delivered conservation projects across more than 90 key landscapes.

CONSERVING

our reserves have saved 700 hectares of habitat for butterflies and moths, providing valuable places for people and wildlife.



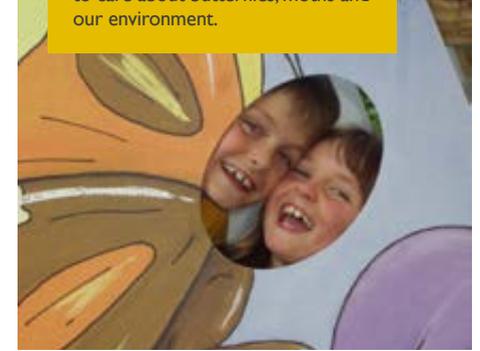
ADVOCATING

we have persuaded Government to accept butterflies and moths as official biodiversity indicators. Our data has informed and influenced environmental and agricultural policy.



EDUCATING

our education campaign Munching Caterpillars has reached more than 18,000 children and is empowering and engaging the next generation to care about butterflies, moths and our environment.



REBUILDING

our Landscape-scale Conservation report revealed how to tackle butterfly and moth declines by linking habitats across the countryside.



INSPIRING

we are the largest insect conservation organisation in the world with more than 140,000 supporters.

VOLUNTEERING

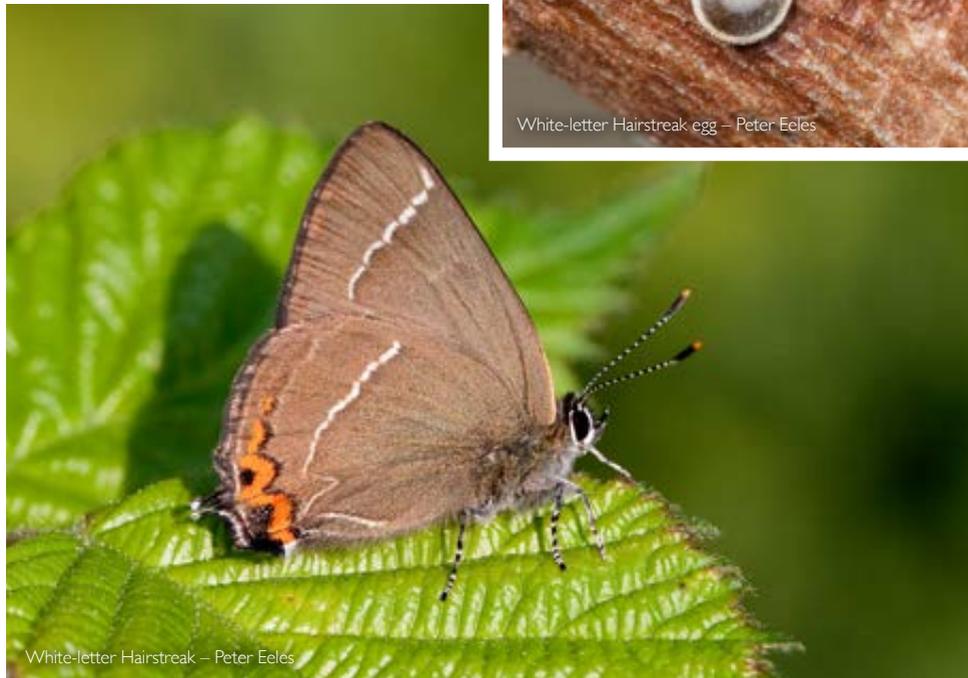
more than 15,000 volunteers from our 31 regional Branches, plus other supporters who give up their time for free, carry out work worth £10 million per year.

OUR VOLUNTEERS

White-letter Hairstreak: New to Scotland

The start of the year saw confirmation of a new breeding species for Scotland, the White-letter Hairstreak. Although one individual was seen near Paxton last summer by Iain Cowe, this wasn't proof that it was a breeding species. But on February 4 Ken Haydock and Jill Mills found eggs on elm trees in the Borders near Coldstream.

The White-letter Hairstreak has suffered a 72% decline in the UK over the last decade due to the loss of English Elm through Dutch Elm disease. However, despite these losses, the butterfly has been slowly expanding its range northwards, and a group of BC volunteers have been monitoring its spread, which experts think is probably the result of a warming climate.



Two of these dedicated volunteers, 70-year-old Ken Haydock and 69-year-old Jill Mills, found the White-letter Hairstreak eggs after being asked to check the elm trees at Paxton following last year's butterfly sighting.

It was Butterfly Conservation volunteers Liz Goodyear and Andrew Middleton who set up the nationwide White-letter Hairstreak recording project back in 2006 and have been monitoring the butterfly and its distribution ever since. Ken and Jill are still assisting with this project. For more on this story, go to <http://butrfli.es/whiteletter130>



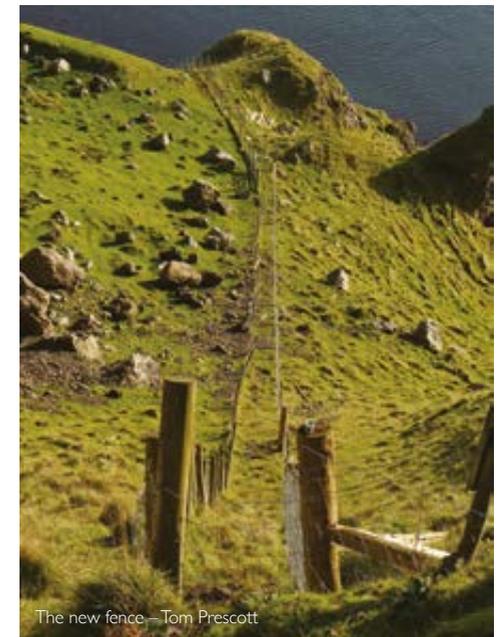
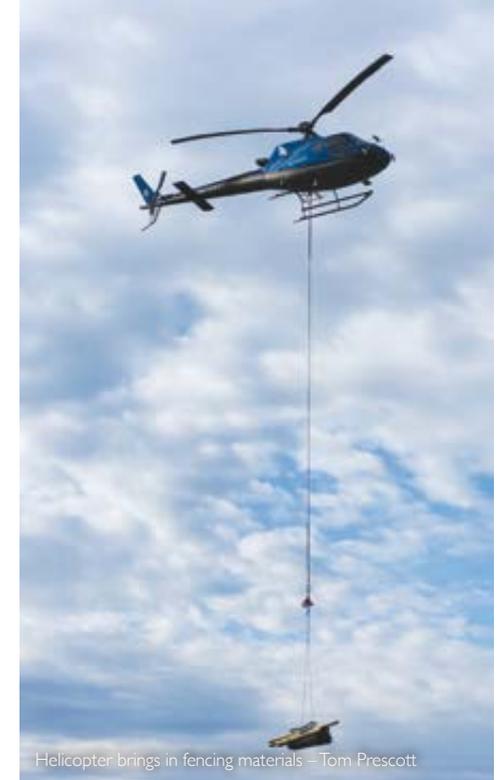
New Forest Burnet: New Fence

The New Forest Burnet only occurs at a single site on the west coast of Scotland, following its extinction in England in 1927. Past conservation efforts have focused on excluding sheep which eat the caterpillar's foodplants, Meadow Vetchling and Common Bird's-foot-trefoil, and resulted in the population increasing from a low of 20 in the 1990s to more than 12,000 in 2012.

However, in the winter of 2014/2015 the fence surrounding the site was breached by land-slips that enabled sheep access once again. Emergency fence repairs were undertaken by BC volunteers, only for further damage to the fence the following winter. Moreover the original fence was in very poor state and it was decided that a new fence was required.

However, on this very remote and steep terrain, even finding a fencing contractor to provide a quote to do the work proved difficult, until Tom Prescott found local fencer Seumas MacNeil. The materials had to be transported to the site by helicopter. The new fence has been erected on the inside of the existing one, so that it has some protection from future landslips. We hope the fence will last for many years and thus safeguard one of the UK's rarest moths.

We would like to thank Seumas for his outstanding work, as well as the co-operation of the landowner and their neighbours. We are also very grateful to EB Scotland who part-funded the fence via the Scottish Communities Landfill Fund, and the BC volunteers who helped by repairing the fence, monitoring the moth, and contributing funds.



Small Blue Week: 1-10 June 2018

We held our first 'Small Blue Week' last year to promote the plight of this tiny butterfly and all of the work going on around the country to safeguard its last colonies. It is organized in conjunction with the Tayside Biodiversity Partnership and will take place again this year, with a launch in Carnoustie by Woodlands School.

A re-survey of Small Blue sites along the Angus coastline confirmed significant losses with a only a few still present. Fortunately the large colony on Barry Buddon dunes still seems secure. Twenty years ago there were also several colonies on the disused railway lines around Frickhiem, but these too have gone, with only one remaining.

Elsewhere Iain Cowe and his team of volunteers continue to do an amazingly thorough job of surveying colonies in the Borders following its rediscovery 10 years ago near Burnmouth. A project organised by the Caithness Biodiversity Group is improving the habitat of colonies near Castletown and at Dunnet Bay, while the North East Biodiversity Partnership is continuing to assess its status along the Moray coast.

The success of the reintroduction near Irvine in North Ayrshire still seems in doubt, but we need more volunteers here to locate Small Blues and see where they are breeding. Indeed we need volunteers at all sites to help survey and monitor, and carry out practical work such as scrub control. Please get in touch if you can help, thank you.



Small Blue – Iain Cowe

Moths and Butterflies as Pollinators

Moths and butterflies are often regarded as less important pollinators than, for example, bees. However, there is a growing body of research on the role of nocturnal moths as pollinators, and of butterflies and moths as pollinators of particular plants, for example, orchids.

A Swedish study found 73% of butterflies sampled carrying pollen grains, from plants such as Field Scabious and Devil's-bit Scabious. In the Algarve, Portugal it was found that 76% of 257 moths carried pollen from 27 plant species. In Oxfordshire Calum Macgregor found pollen on 23% of the 609 moths sampled on night-time transects. In contrast, a study in Scottish pine woods found just 3-10% of moths carried pollen. However, pine woodlands support relatively few flowering plant species.

A Swiss study looked at the pollination of Carthusian pink (*Dianthus carthusianorum*) by two butterflies, the Great Sooty Satyr (*Satyrus ferula*) and Marbled White (*Melanargia galathea*). It found a clear relationship between the number of pollen grains deposited by butterflies and the ability of the flowers to set seeds. The researchers concluded that butterfly declines could lower the reproductive success of this species.

Orchids produce 'pollinia', sticky sacs of pollen that become attached to insects when they visit the flowers. In Stirlingshire, Roy Sexton studied the pollination of Greater Butterfly Orchid and frequently found pollinia on individuals of Gold Spangle and other related moths.

A Swedish study of Pyramidal Orchid recorded 24 species of butterfly and moth carrying pollinia of this orchid. More than half the individuals of a burnet moth *Zygaena minos* had pollinia. Interestingly, Pyramidal Orchid is a deceptive species - it produces scent and is brightly coloured to attract pollinating insects, but produces no nectar at all.



Small Skipper – Nick Gates



Silver Y – Roy Sexton



Greater Butterfly orchid – Iain H Leach

Kentish Glory

The Kentish Glory is a large and beautiful moth that, despite its name, is confined in the UK to four localities; Badenoch and Strathspey, Deeside, Culbin Forest (Moray) and Highland Perthshire.

Until now the moth has proved a difficult species to survey, watching for day-flying males or by checking the outer twigs of birches for egg batches. However, this all changed in 2017 when our volunteers successfully trialled pheromone lures developed for the moth by Ashen Oleander from Canterbury Christ Church University. Male moths came to lures in all four areas, including the first record from Perthshire since 2000.



Kentish Glory – Tom Prescott



Kentish Glory eggs, freshly laid – Roy Leverton

Further trials will take place this year to investigate different aspects of the lure including its composition and concentration, working closely with the new Rare Invertebrates in the Cairngorms project, overseen by the RSPB <http://bit.ly/2o5KPri>.

Species Champions: Members of the Scottish Parliament show that they care

Species Champions is an award-winning LINK initiative which started in 2013 www.scotlink.org/work-areas/species-champions. More than two-thirds of our 129 MSPs are now Species Champions, and we were delighted to welcome Rona MacKay as our 11th butterfly or moth champion when she took on Garden Tiger:

The full list is now:

Aileen Campbell	Large Heath
Clare Adamson	Small Pearl-bordered Fritillary
Claudia Beamish	Forester Moth
Elaine Smith	Small Copper
Jenny Marra	Northern Brown Argus
John Scott	Grayling
Kate Forbes	Chequered Skipper
Liz Smith	Slender Scotch Burnet
Richard Lyle	Common Blue
Rona MacKay	Garden Tiger
Ross Greer	Small Blue



Small Copper – Jim Black



Garden Tiger – Shane Farrell

John Knowler 1942 - 2017

John was one of Butterfly Conservation Scotland's most active and respected volunteers, having rekindled his childhood passion for butterflies and moths in his retirement. He was an extremely supportive recorder for three Scottish vice-counties, for which he produced a detailed checklist. John also identified the daily moth catch from the Rothamsted trap at Rowardennan at Loch Lomond, analysing and publishing his findings.

His passion for moths also took him to seek out some of Scotland's and the UK's rarest species. John was great company in the field, and he will be sadly missed.



John Knowler – Tom Prescott

Award-winning Farmer

We are very proud that Malcolm Smith has deservedly won the Cairngorms Nature 2017 Farm Award having been nominated by Butterfly Conservation Scotland for his outstanding work to enhance habitats on his farm for rare lepidoptera.

We have worked with Malcom over many years as his farm has several rare and vulnerable species including Narrow-bordered Bee Hawk-moth, Kentish Glory, and Northern Brown Argus. He has always been a pleasure to work with and more than willing to undertake management to enhance the fortunes of these threatened species.



Narrow-bordered Bee Hawk-moth – David Green

SPREADING THE MESSAGE

Do you want to learn to identify butterflies?

We want to make it as easy as possible for you to start recording butterflies and moths. If you are a complete beginner try our Big Butterfly Count (next page). If you need more of a challenge and want to record the butterflies and moths that you see out and about, download a copy of one of our free regional guides at

butterfly-conservation.org/2258/butterfly-and-moth-identification-guides.html.



Malcolm Smith Cairngorms Nature Farm Award Winner 2017 – CNPA



big butterfly count

20th July - 12th August

The 2018 Big Butterfly Count starts on Friday, 20 July and runs for three weeks until 12 August. It is so easy to take part – you simply choose a sunny spot and record how many butterflies and moths you see over a 15 minute period, using the downloadable ID chart. You then log your sightings at www.bigbutterflycount.org or use the free Big Butterfly Count app - remember you can do the count as often as you like!

The star of summer 2017 was undoubtedly the Red Admiral as numbers of this powerful, migratory butterfly soared across the UK and it recorded its best ever Big Butterfly Count performance.

Scotland's Top Ten for 2017 were:

- 1 – Small White
- 2 – Green-veined White
- 3 – Ringlet
- 4 – Small Tortoiseshell
- 5 – Meadow Brown
- 6 – Large White
- 7 – Red Admiral
- 8 – Six-spot Burnet
- 9 – Speckled Wood
- 10 – Common Blue



Red Admiral - Iain H Leach



Small White – Peter Eeles



Gardening Scotland 2018

We are excited to be taking a stand at this year's Gardening Scotland. As Scotland's biggest garden show, there are ideas and plants for gardens of all sizes. Come and visit us in the Living Garden area and get some ideas and inspiration for how to attract butterflies to your garden! Gardening Scotland is held at the Royal Highland Centre in Edinburgh from 1-3 June. See www.gardening-scotland.com

Moth Night 2018 will be held 14-16 June. The theme is Pyralid Moths and the aim is to raise awareness of moths with the general public and also to target particular species and habitats. For events in Scotland, go to www.mothnight.info



Social Media

We love our Facebook page and Twitter feed! They are a really great way to keep up with the latest butterfly and moth sightings, conservation news, work parties and events. Please follow us at www.facebook.com/bcscotland and/or www.twitter.com/BC_Scotland

Butterfly e-newsletter

Each quarter we produce a newsletter that we send out by email. It is a round-up of the latest butterfly and moth news, conservation stories and project updates from our volunteers, Branches and staff. It's a really useful way of keeping up to date with what's happening.

If you would like to be added to the mailing list please email Shona at sgreig@butterfly-conservation.org You can of course unsubscribe at any time.

Save 50% in our 50th year!

To celebrate our 50th anniversary, Butterfly Conservation is offering 50% off new single, joint or family membership applications made online by Direct Debit.



That's membership for a whole year from just £1.50 per month, including our fantastic welcome pack, three issues of Butterfly magazine and invitations to walks, talks and social events from your local branch.

Visit www.butterfly-conservation/membership and use the promotional code **HERALD18** to enjoy half price single, joint or family membership.

For more information please contact the Membership Team on **01929 406015**, or head to our website at www.butterfly-conservation.org to discover more ways to support our work, record your sightings, garden for butterflies or shop online.



About us

Butterfly Conservation is the UK charity dedicated to saving butterflies, moths and our environment. Butterflies and moths are important because they respond quickly to change, revealing the health of the countryside. We have 34,000 members in the UK, with over 2000 in Scotland.

Most butterflies in the UK are in decline. This early warning to all wildlife cannot be ignored. We advise landowners, managers and other organisations on conserving and restoring important habitats in the countryside, towns and cities. We carry out surveys, monitoring and research, manage nature reserves and promote wildlife friendly gardening. With your support we can help struggling butterflies and moths recover and thrive.

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We are very grateful to the following for supporting our work:

A E H Salvesen's 1985 Charitable Trust, J & J R Wilson Trust, Forestry Commission Scotland, Heritage Lottery Fund, Life+ (European Community via EcocoLIFE), Margaret Davis Trust, Michael Marks Charitable Trust, Miss K M Harbinson's Charitable Trust, Mrs M A Lascelles Charitable Trust, Mrs Maxwell Stuart Charitable Trust, Orcome Trust, P F Charitable Trust, Plum Trust, Robert O Curle Charitable Trust, RSPB Scotland, Scottish Natural Heritage, The Charles & Ann Fraser Charitable Trust

This newsletter has been compiled by Paul Kirkland with contributions from Iain Cowe, Vicky Fernandes, Shona Greig, David Hill, Anthony McCluskey, Rebecca Crawford and Tom Prescott.

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