GLASGOW NATURAL HISTORY SOCIETY NEWSLETTER

November 2020

David Palmar
(Newsletter Editor)

newsletter@gnhs.org.uk

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Winter activities — David Palmar

On looking back at the 2019 November newsletter, it was a bumper edition of 22 pages, full of excursion reports, student research, winter meetings and Bob Gray's inimitable reports on trees! I thought at first that this November's edition would be a poor specimen in comparison, but I hadn't reckoned with the last minute flurry of articles, so thank you to those who have contributed. It shows how much nature is still going on out there, and I hope that you enjoy this edition of the newsletter.

The society held its first Zoom meeting on Tuesday 15th September, when our President Chris McInerny gave an excellent talk on Honey Buzzards.

On October 13th I gave a talk about West End Wildlife, postponed from the spring when there was supposed to have been a real meeting!

Amongst the thank-you emails we received, some members and non-member guests regretted not being able to attend for various reasons (like lack of the promised Wi-Fi in a camp site!). There was also an issue with space on the university's server, so we couldn't record the two talks and we have therefore summarised them in separate articles (after the Winter Talks programme).

Winter Talks Programme — Roger Downie

Tuesday 3rd November: Isla Myers-Smith, University of Edinburgh 'Plants and climate change' N.B. NOT on the second Tuesday. Isla may be speaking from Canada! A Zoom joining link will be issued by email, but in the meantime, here is her talk summary:

The Greening of the Arctic

The Arctic is warming rapidly with far-reaching consequences for the Earth's climate. Sea ice is melting, permafrost is thawing, and carbon is being released to the atmosphere and accelerating climate warming.

Photo Credit: Sandra Angers-Blondin

As the tundra warms, the plants are responding by leafing out earlier, growing taller and expanding in cover and tundra shrubs are expanding in cover. Arctic vegetation change is influencing tundra carbon storage and climate feedbacks. Yet, questions remain about what mechanisms are driving Arctic greening on the ground and what impacts this vegetation change will have on tundra ecosystems. In this talk, I will combine photography from my Arctic fieldwork with evidence from ecological monitoring, drone surveys and data synthesis to explore the causes and consequences of Arctic greening and what it means for tundra life and the planet as a whole

Bio: Dr. Isla Myers-Smith is global change ecologist and the leader of the Team Shrub research group at the University of Edinburgh. Isla's research aims to understand the specific drivers of tundra vegetation change and the resulting impacts for the global climate system. She has been studying Arctic climate change for over a decade, integrating data from new technologies including drones, satellites and hyperspectral sensors in her collaborative science.

Photo credit: Gergana Daskalova, National Geographic Society

For more information: https://teamshrub.com/

Tuesday 8th December: Shaun Killen, Professor of Ecophysiology, University of Glasgow 'Social behaviour of fishes' Here is Professor Killen's talk summary:

'Follow the Leader: Exploring the Social Lives of Fish'
Individuals within species show tremendous variation in behaviour. Over the last decade there has been a surge of interest in the ecological and evolutionary importance of this diversity, but the vast majority of this work has been performed on isolated animals. In reality, however, most animals - from insects to mammals - do not live in a vacuum, but instead live within complex social structures. Social influences may override links between traits that exist in solitary animals. Conversely, an individual's standing within a group may be an important factor generating intraspecific variation. In this talk I will review some of our recent work on fish, examining the interplay between social behaviours and aspects of animal physiology and how these factors are affected by the environment.

Tuesday 12th January:
(1) Louisa Maddison, South Lanarkshire Council 'Local nature sites in South Lanarkshire'
(2) Chris Waltho, South Lanarkshire Council 'Eider on the Clyde'

Tuesday 9th February: Photographic night

Tuesday 9th March: AGM, and Apithanny Bourne 'Records on Rooftops'

Honey-buzzards in central Scotland **Chris McInerny**

Chris McInerny, as his Presidential address to the Society, gave the first talk of the autumn and winter GNHS programme through Zoom. It described long-term studies of Honey-buzzards (*Pernis apivorus*) in central Scotland by a team of observers which has monitored the species for about 20 years.

The talk started by describing the history of this rare and elusive summer breeding visitor to Scotland. Currently there are thought to be about 50 pairs present across the country, although more intensive work over the past 10 years indicates that more birds are present that previously realised with concentrations in central Scotland.

The next part of the talk outlined the identification of Honey-buzzards, emphasising their differences from Common Buzzard both in plumage (Fig 1) and behaviour, particularly their unique wing-clapping butterfly display flight (Fig 2). The display is performed during flights over breeding territories where birds raise their wings temporarily above their body, almost touching, during which the wings quiver. This distinctive movement can be repeated, and is diagnostic for the species.

Fig. 1. Male Honey-buzzard, central Scotland (© John Anderson).

Fig. 2. Male Honey-buzzard performing the unique wing-clapping butterfly display, central Scotland (© Keith Hoey).

The main part of the talk described the results of intensive monitoring of Honey-buzzard populations in central Scotland, at two study areas, named SA1 and SA2, with observations from 2016-2020 presented. These studies revealed significant numbers of breeding pairs and much information about breeding biology and behaviour some of which was summarised graphically (Fig 3).

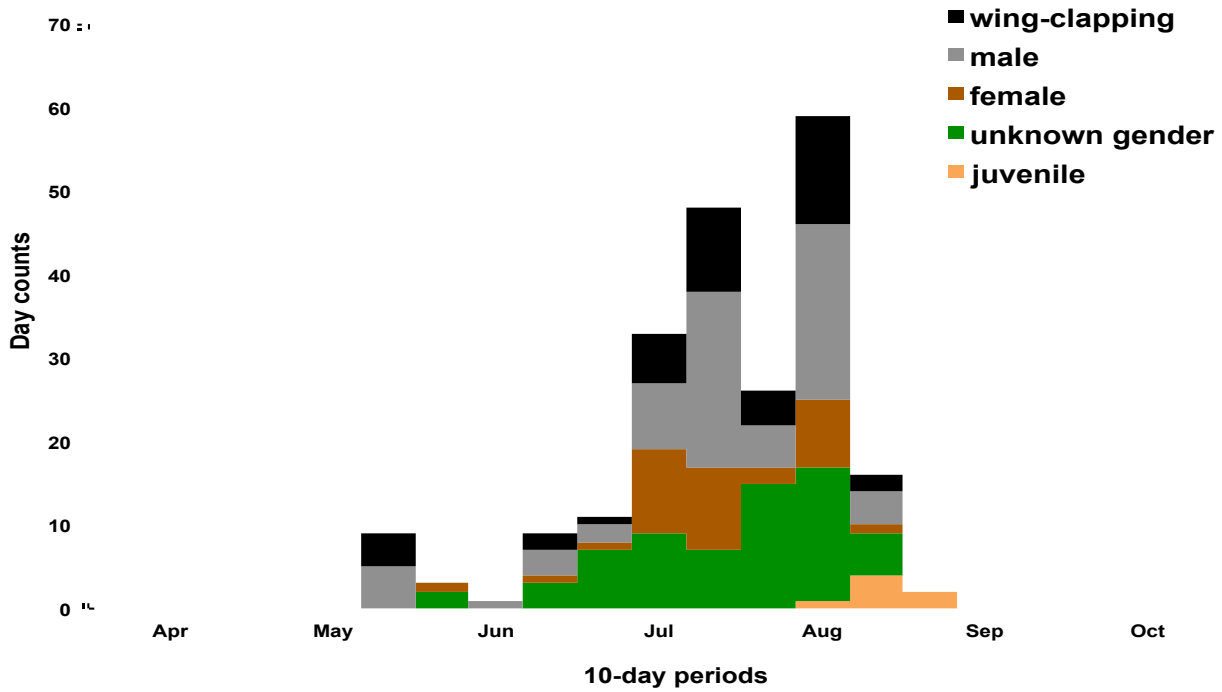


Fig. 3. Numbers and behaviour of Honey-buzzards in central Scotland during 2017 at Study Area 1.

Another result of the monitoring was the discovery of at least three nests. In some cases camera-traps were placed to reveal interesting breeding activity (Fig. 4).

Fig. 4. Nesting Honey-buzzards in central Scotland during 2019 (© Gareth Mason).

The talk finished by describing future projects including satellite-tagging and a national survey which is being run during 2020 and 2021 to estimate the numbers of breeding Honey-buzzards across Scotland and the UK.

The work described in the talk is very much a team effort, with thanks and acknowledgments given to all the collaborators, particularly Ken Shaw. The project has been supported by a number of grants from the Professor Blodwen Lloyd Binns Bequest and the SOC.

Finally, a review paper describing some of these studies has been published in *The Glasgow Naturalist* which is available free online.

McInerny, C.J. & Shaw, K.D. (2019). The Honey-buzzard in Scotland: a rare, secretive and elusive summer visitor and breeder. *The Glasgow Naturalist* 27(1), 20-26. https://doi.org/10.37208/tgn27103

Another paper will be published in *The Glasgow Naturalist* to formally record this talk as a Presidential address to the Society.

Glasgow's West End Wildlife **David Palmar**

This talk was supposed to have been delivered live in the spring, but at least the Zoom talk provided an opportunity for more people to attend, and for later photos to be included. There was a good attendance of about 70 people.

I began with a photo of "Grandpa's Museum" as our children called it - showing where my father's office as Curator of Natural History in Kelvingrove was and describing growing up with a strong natural history background.

Waxwing in Kelvindale
26th November 2010
© David Palmar

The first part of the talk was a tour round a number of west end locations.
Starting in winter, we visited the Forth and Clyde Canal and River Kelvin, with Goosanders, Heron and Dipper, which is unique in a passerine for swimming underwater.

Moving on to garden birds in Kelvindale, winters have brought many species into city gardens to be fed over the years, including residents such as the Robin and Blackbird (but these might actually be migrant individuals), but also more exotic species such as Brambling (like a Chaffinch but more orangey), and Waxwing, irruptions of which occur every few years when there is a hard winter in Scandinavia, and they come here in large flocks to eat our berries of Rowan, Rose and Cotoneaster.

Amongst garden invertebrates were several species of moths (caught using a moth trap on loan from Butterfly Conservation SW Scotland). For several years these have been reported to Richard Weddle who submits them to the National Moth Recording Scheme.

Dawsholm Park Local Nature Reserve was visited, where the Friends of Glasgow's Local Nature Reserves were seen putting up one of many nest boxes. Introduced grey squirrels are common, and have had such a bad effect on the red squirrels through squirrel pox and competition that they no longer occupy the city, or indeed large parts of the central lowlands. Glasgow City Council had removed Rhododendrons and replanted with native trees.

Bingham's Pond, also now becoming a Local Nature Reserve, has Mallard, Black-headed Gull, Moorhen and Coot, and was being kept in order by the Friends of Glasgow's Local Nature Reserves.

Victoria Park held a Kingfisher which was seen with a fish in its beak.

Glasgow University, in conjunction with the RSPB, was running a House Sparrow project researching where they lived and confirming their liking for thick tall hedges, which should enable better conservation practices to combat their decline.

Glasgow University students in ZooSoc and Froglife combined to create a new pond in 2011. Frogs were rescued from old small pond and put back into a new pond.

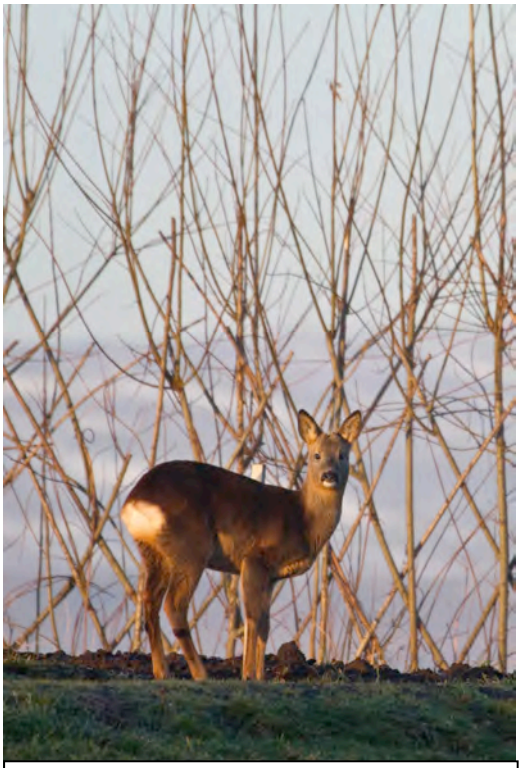
Glasgow's Botanic Gardens, introduced by a picture of the Kibble Palace before renovation in 2006, can provide great experiences with wildlife, with Soldier Beetles, ladybirds, Purple Toothwort, and propagation by staff of Northern Marsh Orchids.

Broomhill Allotments are good for bumblebees and their food plants, and for native, Spanish and hybrid bluebells.

At Millichen, the RSPB Glasgow group did a winter feeding project for several years to benefit Tree Sparrows and Yellowhammers, because of the decline in farmland birds as farming has become more efficient and less grain is left on the fields.

Possil Marsh, the only Scottish Wildlife Trust reserve in Glasgow, had Reed Mace (or Bulrushes), Reed Bunting and Roe Deer.

GNHS and Buglife were involved in a bioblitz at Govan Graving Docks – organised by Ruth Olden



Roe Deer at Possil Marsh
© David Palmar

when she was doing a Geography PhD on a site which was threatened with development. There were pictures of Buddleia, one of the many Hawkweeds, and a table of specimens was collected and identified.

Mute Swan family on the canal
© Rita Basto

Starting with a picture of a particularly quiet Maryhill Road, the second part showed pictures of wildlife taken on lockdown walks between March and June.
In the bathroom was a Mayfly on the shower curtain.

In the garage was a wasp's nest, and in the garden hoverflies and bees, especially Tree Bumblebees, notable firstly as they nested in a Schwegler nest box put up for birds, and secondly as one stung me while I was photographing them!

Elder was flowering in our driveway. My wife Janet made Elderflower juice, and later Elderberry jelly. Peacock and Red Admiral butterflies were still to be seen in mid October, having a very long flight period, probably with more than one generation. We walked frequently to the allotment. Ladybirds were emerging there when we should have been in Shetland.

Along the Kelvin Walkway and Forth and Clyde Canal were Primroses, Hart's Tongue Fern, and a Red Fox family. Witches' Broom was seen at Garscube and Ring-necked Parakeets shrieked and nested in Dawsholm Park.

On the Canal near Maryhill were Marsh Marigolds, a Kingfisher, a Moorhen nesting, with three chicks, and a lovely picture of a Mute Swan family with cygnets was taken by Rita Basto, who also provided a cute picture of two Red Fox cubs at Kelvinbridge.

Goosander family on the Kelvin in Maryhill © Pat Thomson

Along the bank of the Kelvin below Maryhill Station is an Ash Tree with *Chalara* (Ash Dieback). The ends of the twigs have lost their leaves. This can be seen all across the west end and it is feared that up to 80% of the Ash trees in Britain will be lost.

Few-flowered Leek, Kelvin Walkway
© David Palmar

Invasive not-native species (INNS) such as Few-flowered Leek carpet the floor of the woods next to the Kelvin, and crowd out native vegetation.

White Butterbur does much the same across a smaller area near the Maryhill Aqueduct. Finally for invasives, Giant Hogweed, which can burn your skin if the sap gets on it, grows in patches along the Kelvin.

Back Home again - "Life in the Gutter" was shown - thanks to the Council for not cleaning the gutters.
Pineapple Weed, which I associate more with the Outer Hebrides than with Glasgow, Sticky Willy, Willowherb, Wood Avens and Prickly Sow Thistle were also shown.

Finally, many of the plant pictures are available on the photoscot website with a link on the updates page at: http://www.photoscot.co.uk/Info/Updates.aspx

NBN Conference Wednesday 18th November 2020
This year's NBN Conference will be held on line, which will make it easier for more people to take part. GNHS members are eligible for the NBN Members rate (there is also a generous student discount).
The theme is 'NBN at 20 – Changing Times'; the programme details with a link to the booking site can be found at: https://nbn.org.uk/news-events-publications/nbn-conference-2/nbn-conference-2020/

2021 Subscriptions **Richard Weddle**
Subscriptions fall due on January 1st 2021 (except for those who have joined since June 2020). Members who pay by standing order need take no action; others will receive a subscription renewal form either as an email attachment or in the envelope containing this newsletter.

More Lockdown Recording **Richard Weddle**
GNHS Members and others have continued to send in sightings since my report in the last newsletter, and though perhaps fewer in number, there have been some really interesting sightings – and several of the sightings mentioned below came from non-members.

Can I remind (and encourage) you to send any sightings to richard@canto.plus.com or info@gnhs.org.uk for now, as the usual Biological Records address is not available during lockdown; some may also be featured on our Facebook page.

Water Ladybird
© Davie Abraham

Water Ladybird This pale red or yellow ladybird with nineteen black spots on the elytra is found on emergent vegetation in fens and marshes. It was only recorded in Scotland from the southern part of Dumfries and Galloway, until Bruce Philp found one at Ardeer in August this year, and shortly afterwards several were seen by Davie Abraham at Baron's Haugh;
the record shown at Balloch CP on the NBN Atlas for Scotland has been found to be an error, so Baron's Haugh is the most northerly sighting. This is encouraging seeing that the species is generally regarded as decreasing in the UK.

Ectemnius cephalotes © Davie Abraham

Solitary wasps
Also at Baron's Haugh, Davie drew my attention to a number of solitary wasps nesting in a fallen tree at the foot of Chestnut Walk. I captured a number of them: the largest was *Ectemnius cephalotes*, the others were rather smaller and completely black to the naked eye: *Crossocerus annulipes* and *Pemphredon lugubris* (the 'Mournful Wasp'), and the smallest *Crossocerus megacephalus*. These so-called digger-wasps are much under-recorded in most parts of Scotland, and I thought they'd not been recorded before in the Greater Glasgow area, until I read a draft of Scott Shanks's article elsewhere in this newsletter.

Bronze Shieldbug


Bronze Shieldbug
© Pat Thompson

Staying with RSPB Reserves, Pat Thomson sent a photo of a Bronze Shieldbug (*Troilus luridus*) nymph from near the dipping-pond at the Lochwinnoch Reserve, and a few weeks later Richard Sutcliffe reported another sitting on brambles on Old Drymen Road about 2 km south of Dalmary. This is another relative newcomer to the area: I found the first in the Clyde area at Malls Mire in 2014, and a second there in 2015, since then it has been seen at Dalzell Estate, Redmoss Grassland (on a GNHS excursion), South Haugh at Hamilton, and near Renton.


Sabre Wasp
© A King

Giant Sabre Wasp (*Rhyssa persuasoria*)
This imposing Ichneumon, known as the Sabre Wasp on account of the long ovipositor (though its scientific name means 'persuasive burglar') is occasionally seen in gardens and never fails to excite interest. This one is from a garden in Craigendoran; the solar light in the photo is 85 mm wide. The ovipositor is used to drill through wood to lay eggs inside the larvae of wood wasps such as *Urocerus gigas* (the giant wood wasp).

Knopper Galls© Richard Weddle

Knopper gall
On one of my visits to the Botanic Gardens, I made a point of visiting an oak tree because I'd noticed that there were no recent records of galls typical of oak. I found no spangle or pincushion galls, but was surprised to find a few knopper galls. These were not recorded in the Clyde area before the 21st century, and Norman Tait wrote an account in The Glasgow Naturalist about his sightings of them in a number of locations in 2002 – so it seems likely that they had been around, though unrecorded, for least a few years before that. The sexual stage of the life-cycle is associated with Turkey oak, though it is not always clear where the associated Turkey oak is situated, so it may be that the tiny wasp can travel a fair distance.

Saffron Milkcap (*Lactarius deliciosus*)

I found three or four of these fungi growing under a pine alongside the Clyde Walkway at Hamilton.
As the name implies, they are good to eat, though I didn't test that out. Thanks to Myles O'Reilly for the ID.

Saffron Milkcap
© Richard Weddle

Northern Bottlenose Whale
© Stevie Finnegan

Northern Bottlenose Whales

There were a number of reports on social media, some with videos, of a pair of whales first seen in Greenock Harbour, and later at the mouth of the Gareloch, and then some days later in Millport Bay, Cumbrae. They may well have been different pairs, as there was a pod of them in Gareloch at the time, as widely reported in the media because of attempts to move them in advance of military exercises in the loch. The earliest report we know of in the Clyde was a single male at Russell's Shipyard, Port Glasgow in 1896 reported at the time in the *Greenock Telegraph*.

Northern Bottlenose Whale, Millport
© Eddie Williams

Dead Wood Biodiversity in Yorkhill Park — Scott Shanks

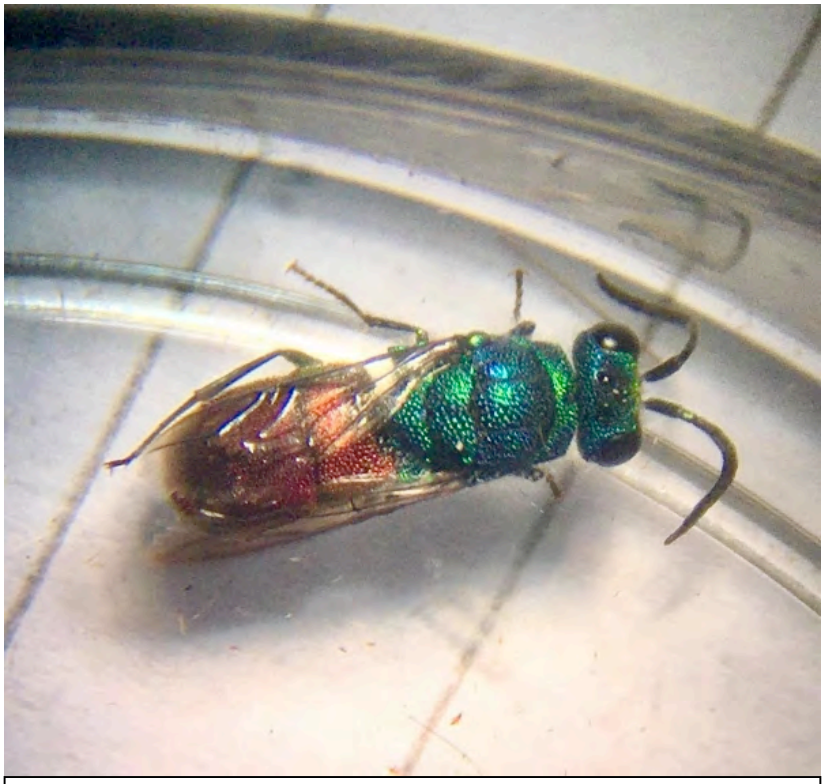
Like many others I spent much of the spring lock-down walking a circuit of my local green spaces, recording the wildlife I encountered. Living close to Yorkhill Park it was one of the sites I visited each day. Around 11 years ago half of the park was cleared for housing, a play park and a small allotment, but a good mix of native woodland, shrubs and south-facing grassy slopes remain. One of the most interesting habitats present in the park is a dead standing tree at the top of a south-facing slope. The top half of the tree (species unknown), was brought down a number of years ago, but approximately 3.5 m of the trunk remains standing. Bark still covers much of the trunk, which is full of holes and cracks. For a number of years a bloom of Dryad's Saddle fungus (*Polyporus squamosus*) brackets has appeared on the trunk.

Dead wood Ruby-tailed wasp (*Chrysis ignita*) Mournful wasp (*Pemphredon lugubris*) and Digger wasp (*Ectemnius cavifrons*)
© Scott Shanks

Perithous scurra parasitic wasp
© Scott Shanks

Deadwood is an important habitat and resource for many species including lichens, fungi, invertebrates, amphibians, birds and mammals. Saproxylic species feed directly on the decaying wood and associated microbial communities, while others will use it for shelter or as a nest site. Fallen branches and tree trunks in shade, or direct sunshine, in water or buried underground can all provide microhabitats which support unique species. Standing dead wood provides a number of habitat niches that aren't found in fallen deadwood. Dead branches and rot holes can also be found on otherwise healthy living trees and is one of the reasons ancient veteran trees support so much biodiversity. Despite this dead wood is often hard to find in managed woodlands and parks, as it's often perceived as a risk to the public, diseased or as a source of 'pests', and so has long been felled, tidied-up or burnt.

In April 2020 I recorded Red mason bees (*Osmia bicornis*) nesting in holes and cracks in the standing dead tree in Yorkhill Park. Females were observe collecting pollen from sallow catkins and dandelions within the park. This hole-nesting solitary bee is now very widespread across the Central Belt, and is spreading further north each year.



Ruby-tailed wasp (*Chrysis ignita*)
© Scott Shanks

A number of solitary wasp species were recorded nesting in the same

dead tree this year. In June, a female Wall mason wasp (*Ancistrocerus parietinus*) was recorded basking on the trunk. This species will nest in hollow plant stems, gaps in walls and possibly also holes in dead wood. Females collect small caterpillars to stock their nests. Like mason bees, mason wasps use mud to seal each nesting cell once she's filled it and laid an egg. This species and the related *Ancistrocerus gazella* were recorded at other sites around Yorkhill this summer. Interestingly, a number of Ruby-tailed wasps were recorded on the dead wood during June and July. I was only able to capture and identify one individual, which was a female *Chrysis ignita.* This species is known to be a nest kleptoparasite/cuckoo of *Ancistrocerus* wasps.

Three species of *Ectemnius* digger wasps were recorded excavating nesting burrows in the dead tree between June and October. A single female *Ectemnius sexcinctus* was recorded in June, while multiple females and males of *Ectemnius lapidarius* and the larger *Ectemnius cavifrons* were recorded during the summer and autumn. These solitary wasps stock their nest burrows with hoverflies and other 'medium-sized' flies. *Ectemnius* wasps were the most abundant species of Hymenoptera present during 2020. Despite their size and impressive wood-excavating jaws these wasps were remarkably docile when handled.

Another abundant species nesting in the tree was the Mournful wasp (*Pemphredon lugubris*). This species was first recorded in July, but individuals were still present in early October. Females collect aphids and possibly also plant-hoppers to stock their nests.

Yorkhill Broad-leaved Helleborines © Scott Shanks

The small Box-headed digger wasp (*Crossocerus megacephalus*) was recorded twice on the dead tree during June 2020. It was also recorded at a brownfield site at the mouth of the Kelvin in May 2020. This species collects a wide range of small flies to stock their nests. The related *Crossocerus elongatulus* was recorded from Overnewton Park in Yorkhill in August 2020. The parasitic wasp *Perithous scurra* was recorded investigating and ovipositing into holes and cracks in the wood in June 2020. This species is known to parasitise

mason bees, but it's difficult to be certain who was being targeted in this complex of nesting species.

Three species of social wasps were recorded in Yorkhill Park during 2020, including the Common wasp (*Vespula vulgaris*), German wasp (*Vespula germanica)* and Tree wasp (*Dolichovespula sylvestris*). No nests of these species were found.
Other interesting records from Yorkhill Park during 2020: Stoat (*Mustela erminea*), Sowerby's keeled slug (*Tandonia sowerbyi*), Common green grasshopper (*Omocestus viridulus*) - not recorded from site previously, abundant Broad leaved Helleborines (*Epipactis helleborine*), and the woodland hoverflies *Meligramma trianguliferum* and *Dasysyrphus albostriatus*. In late June, I recorded a number of Cork moths (*Nemapogon cloacella*) apparently egg-laying on the Dryad's saddle fungus brackets on the dead tree.

A Strange Year **Paul Cobb**

It's certainly been a strange year, and not just because of the virus. After the wettest February on record we had a drought in April followed by some savage late frosts in May. Admittedly I live in a bit of a frost hollow here in Catrine, but in my garden those frosts did a lot of damage to plants which came out early in the April heatwave. And then of course autumn came along in mid-summer, with several weeks of cold wet weather in June and July.

None of this can be good for our wildlife, and many species of which I normally see plenty have been scarce or absent. Surprisingly though there have been many other species that seemed to like this topsy-turvy weather.

So what has it been a good year for? From my observations in Ayrshire these, among others, have all had a good year. Red Admiral (including as many as 20 on my garden Buddleia bush in mid September), Scotch Argus (including about 60 on Benbeoch Farm on 12 August), Broad-leaved Helleborine, Black Darter dragonfly *Sympetrum danae*, gall-midge galls of *Jaapiella veronicae* on Germander Speedwell, leafmines on Wood Avens of the sawfly *Metallus lanceolatus* (which is not rare, despite what you might read online), and (sadly) Grey Squirrel.

The various *Neuroterus* spangle galls on Oak and galls of the Nettle Gnat *Dasineura urticae* are at last recovering after the drought of two years ago, and leafmines on Rosebay of the moth *Mompha raschkiella* are nearly back to their normal abundance.

The two micromoths that mine Enchanter's Nightshade leaves, *Mompha langiella* and *M. terminella* have either had a good year or, more likely, I'm getting better at finding them, and I even managed to find mines of both species on the same leaf by the River Ayr near Craighall Wood between Tarholm and Oswald's bridges. They are both supposed to be pretty scarce in Scotland, but I'm finding them readily enough, albeit in low numbers.

Mompha langiella © Paul Cobb

Likewise, leaf-mines of the supposedly rare micromoth *Stigmella pretiosa*, which I have been deliberately searching for this year since first finding it last year, is turning out to be widespread along the River Ayr, with one site on its tributary the Lugar Water, but again only in small numbers. Although it has been given the English name of Water Avens Pygmy, all but one of my records have been on Wood Avens.

Mompha terminella © Paul Cobb

I have managed to find three micromoth species this year which appear to be firsts for Ayrshire. *Apotomis sauciana* was among its Bilbery foodplant at about 380 m on Benbeoch on 9 July; I wonder if this one might prove to be common if searched for at altitude. *Ancylis subarcuana* larvae were on Creeping Willow at Ardeer on 31 August; they roll the leaves into little tubes that look like vetch seedpods. Spun shoot tips on Bog Myrtle by larvae of *Hedya atropunctana* were common at various spots around Loch Doon and along Carrick Forest Drive on 17 September.

Something I'd never seen before was not a mine but a complete cut-out in an Alder leaf, the work of the larva of the sawfly *Hemichroa australis*, by the River Ayr near Sorn on 3 August. The larva took umbrage at its leaf being picked, and went walkabout, which is why it does not feature in the image.

And a strange sighting to complete a strange year - at Ochiltree there is a Roe deer that seems to think it's a cow. I have seen it several times in the same field among a herd of cows; when they cows are grazing the deer is grazing, when the cows are lying down the deer is lying down with them. I'm guessing it's a young one which lost its mother, and adopted the cows as a surrogate.

Hemichroa australis © Paul Cobb

New sites for Purple Hairstreak butterflies in Glasgow, 2020

Chris McInerny and Scott Shanks

In west and south Scotland Purple Hairstreak butterflies are a widespread but easily overlooked Oak woodland species. In Glasgow they were first recorded at Garscadden Wood in the north of the city in 1990. They have since been found at a number of other sites across the city including Bull Wood (1998), Gartloch Woods (2006), Dawsholm Park (2010), Shaw Wood (2011), Kelvingrove Park (2014) and Linn Park (2018). Their presence has been suspected elsewhere in more central Glasgow locations where Oak trees are present, but this had not been confirmed until this year.

Purple Hairstreak caterpillars use Oak buds and leaves as their food plant, while adults mainly feed on aphid honeydew on Oak and Ash leaves. Thus woodlands with mature Oak and Ash with sparse ground flora may indicate the site is suitable for Purple Hairstreak. However, observing the species can present a challenge.

Purple Hairstreak, Ruchill Park, Glasgow, 8th August 2020. © Chris McInerny

Ruchill Park

CJM used his spring COVID-19 lockdown walk to locate apparently suitable Oak and Ash trees in parks and along the Kelvin River near his home in the West End of the Glasgow. He returned to the trees in August when the adult butterflies fly and found Purple Hairstreaks at two different trees in Ruchill Park: the first on 6th August on an Oak in the wooded area at the top of the park, with the second on 8th August on another tree near the ponds (see photo). CJM informed SS of his observations and subsequently SS visited Ruchill Park on the 11th August and observed adults displaying above Oaks in another area. So, it appears that the species is widespread in Ruchill Park, a new location for Purple Hairstreaks in Glasgow.

Cathkin Braes

Following the discovery at Ruchill Park, Tam Stewart the Butterfly Recorder for Glasgow and Lanarkshire (VC77) visited Cathkin Braes on the 11th August to look for Purple Hairstreaks. He recorded adults around a number of Oaks at the site, including trees just across the Local Authority line into South Lanarkshire. This was

the first record of Purple Hairstreak at Cathkin Braes (Glasgow side), and the first record of the species in South Lanarkshire for 175 years! Tam later also recorded Purple Hairstreak at South Haugh in Hamilton, South Lanarkshire.

Kelvingrove Park

In May 2014 a Purple Hairstreak caterpillar was discovered under an Oak tree in Kelvingrove Park during a Bioblitz. The caterpillar was found by Paul Mapplebeck and identified by SS and Richard Sutcliffe. SS has subsequently visited Kelvingrove Park annually during the flight season to look for adult Purple Hairstreak without success, until this summer. On the 12th August five individuals were recorded flying above the Oaks where the caterpillar had been found previously. They were still active on the 22nd August. The grass beneath the trees is normally managed as short amenity grassland with frequent cuts. This year mowing regimes were relaxed during the COVID-19 lockdown, which may have allowed more Purple Hairstreak caterpillars to successfully pupate at ground level.

Tips for finding Purple Hairstreaks

We hope that these notes inspire others to search for Purple Hairstreaks in Glasgow and in other parts of Scotland. This beautiful and distinctive butterfly is very inconspicuous and consequently under recorded. Adults fly above the canopies of Oak trees and are rarely seen nectaring at flowers at ground level. At a distance, displaying adults can appear like "brown moths". Hence, the species is likely present and undetected at other sites in the city and elsewhere.

A few tips for finding Purple Hairstreaks:

- Locate mature Oak trees with adjacent Ash trees.
- Use binoculars to search sheltered, sunlit areas of the Oak canopy on sunny, warm afternoons and evenings (5-8pm) between mid-July and early September (especially mid-August). The butterflies are often inactive for long periods, particularly through the middle of day, but are more active later.
- The "brown moths" (their underwings are silvery-brown with only the upperwings purple) sit for long periods on Oak leaves and fly briefly, often around the highest leaves at the apex of trees, or the ends of branches.
- Persevere, and good luck!

Tam Stewart's sighting of Purple Hairstreak at South Haugh - well into S Lanarkshire - hit the local press in September:
www.whatsonlanarkshire.co.uk/news/2020/09/03/first-purple-hairstreak-butterfly-recorded-in-south-lanarkshire-for-175-years/

Autumn wildlife at Glenloy – and a mystery **Tony Payne**

At the beginning of October, Ruth and I spent a few days at Glenloy Lodge just a short way north of Fort William on the road past "Neptune's Staircase". Jon and Angela specialise in short seasonal wildlife trips and this one concentrated on deer and eagles. We were especially keen to see Sika deer (*Cervus nippon*) which can usually be found in Glen Roy by stopping where folk park to see the "parallel roads" – the visible scars of successive shorelines of a prehistoric lake - and looking down into the wooded valley to the south. Sika are woodland deer rather than open hillside deer like our native red deer (*Cervus elephas*) but the two species inter-breed. The Sika stags we saw were in dark winter coats, but one or two hinds still showed their reddish brown summer coat with white spots.

Sika deer
© Tony Payne

Red deer © Tony Payne

Red deer were seen in many places and an early start (6a.m.) found them down by the roadside along Glen Garry to escape the night cold. Golden eagles and Merlins were fairly plentiful and a couple of Sea eagles were seen at different locations.

The early evening is Pine marten time at Glenloy as they come each day for peanut butter sandwiches. However, this did produce a puzzle.

A pine marten has been seen a few times with a blue-green collar. Nobody seems to know where it is from or what the collar means. Does anybody have sufficient knowledge to say whether it is a transmitter collar (either intact or with some part fallen off)?

Pine marten © Tony Payne

Biorecording Apps **Richard Weddle and David Palmar**

In the recent Zoom talk on West End Wildlife, David mentioned two mobile phone apps called 'Seek' and iNaturalist', and we have since been discussing the plethora of apps that are currently available to wildlife recorders; no doubt many readers will already have their favourite, but we hope nevertheless that the following discussion of the topic will be helpful to all.
Mobile apps form an important part of many of the 'citizen science' initiatives which have been contributing so much to our knowledge of the natural world in recent years. However Seek and iNaturalist do need to be used with care as both have a distinct US bias. Both apps use AI (artificial intelligence) to suggest a likely ID, and though iNaturalist records are scrutinised by a 'real' person, neither method seems to be rigorous enough to satisfy UK (NBN) standards.
Seek is still an extremely useful learning tool because it will identify many species, particularly plants, simply by pointing the camera of your mobile phone at them, so you can learn a lot of common species very quickly; but the less common species need to be treated with care - so if it (or iNaturalist) tells you that you've found something new and unusual you should have the identification confirmed by a UK expert, preferably one locally such as a BSBI Recorder (if a plant), a curator or through a local Biological Records Centre, but perhaps the simplest option is to use the UK app, iRecord to get such sightings verified by a UK expert.

The important features of iRecord in this context are that verification is done by an accredited UK expert, not by 'majority vote' as in some other apps, and that person has a name (not an alias); it is these attributes that make the resulting ID acceptable to the National Biodiversity Network (NBN). This is to be expected as iRecord is produced by CEH (UK Centre for Ecology and Hydrology) which incorporates the former BRC (UK Biological Records Centre) which of course has close links with NBN. It seems that many people prefer to use iNaturalist because it is currently less 'clunky' than iRecord, so we'd suggest submitting to iRecord only those records that seem to require UK verification, and to use iNaturalist for the common species. It is easy - once you know how - to download your own records from both apps – the procedure is very similar in both - and you can then submit them to your local biological records centre – we'll come to why you should do this in the following paragraphs.

To summarise:

- Seek is useful as an aid to identification, but isn't a recording app. Watch for American names - e.g. click on "View Species" to find the UK names
- iNaturalist is a social network which encourages citizen science internationally through biological recording
- Use iRecord for records destined for NBN as records will be compatible and properly verified

Of course, these are only three of the many apps available, and it seems many people naturally find all this choice rather confusing, particularly as to how these apps interrelate with: national recording schemes (many of which have their own dedicated app), local biological records centres, and ultimately the NBN. Most of the apps promoted by UK recording schemes do in fact use the same database as that

used by iRecord, and those records that pass the verification tests will automatically be uploaded to NBN.

However, as things currently stand, the data-sharing arrangements between regional and UK recording schemes, and other interested parties such as conservation organisations, local councils, and local biological records centres (LRCs) are rather haphazard, and this matters because it is at the local level that many conservation initiatives – such conserving the habitat of a rare butterfly – are initiated and implemented.

The issues of dataflow and verification, along with many others, were discussed at great length in the process of producing recommendations for setting up a Scottish Biodiversity Information Forum (SBIF). These proposals emphasise the importance of 'local verification' in the whole system, and outline a connected data-flow system. In the meantime however, the LRCs need to cope as best they can. The report was published two years ago but, though accepted by the Scottish Government, the proposals haven't yet been acted on, partly because of the intervention of a pandemic; nevertheless the plan would seem to constitute a necessary part of any 'green recovery' from that.
Full details of SBIF can be found at: https://nbn.org.uk/about-us/where-we-are/in-scotland/the-sbif-review/

Blodwen Lloyd Binns Prize 2020 **Iain Wilkie**

The BLB Prize is awarded annually for the best article published in *The Glasgow Naturalist* and authored by a young/ early-career scientist. The BLB Prize for 2020 has been awarded to Alex Fitzpatrick for her paper "A brief consideration of the later prehistoric appearance and possible significance of the great auk (*Pinguinus impennis*) in the Covesea Caves of north-east Scotland. A. Fitzpatrick, J. Bond, L. Büster & I. Armit". Alex is a zooarchaeologist and Ph.D. candidate at the University of Bradford, Department of Archaeology, Geography and Environmental Science.

Helping to record incidences of blue-green algal blooms
Dr Jan Krokowski, SEPA

Excessive algal growths are now very common phenomena in our watercourses. Green is the colour of environmental acceptability, unless it is the colour of rivers, ponds, and lochs.
Especially in summer and throughout autumn, excessive algal growths termed blooms, are visually evident in slow flowing rivers, canals and particularly in lochs, but blooms may be present at other times throughout the year and in all habitats.

The majority of such algal blooms are generally very visible at the water surface, forming under a number of complex environmental conditions and are most likely to be composed of Cyanobacteria. These blooms will concentrate further at the surface and get blown to the shore forming very distinct shore-line scums under the effect of gentle wind action. The colour of the bloom and scum may generally be

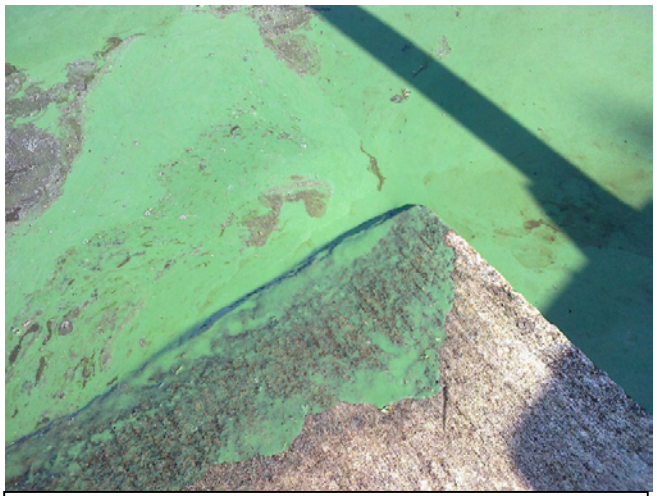
blue-green, although there are many colours of blooms and scums, and hence Cyanobacteria are colloquially known as Blue-green algae.

Warm, sunny weather, high temperatures, gentle wind action so as not to mix the whole water, and high concentrations of nutrients, in particular phosphorus and nitrogen, are the main driving forces giving rise to growths of algae and blue-green algae.

Flakes of blue-green algae (*Aphanizomenon flos-aquae)*

Climate change is undoubtedly going to lead to an increase in the frequency and duration of such blooms. There are many studies highlighting this. There may also be other knock-on effects such as in shifting of seasonal patterns of the start of blooms, and negative impacts on the food web.

Blue-green algae are particularly hazardous to human and animal health, and can also accumulate in terrestrial and aquatic plants. Negative health effects are due to production of a range of cyanotoxins giving rise to short-term and long-term health effects. Cyanotoxins can affect the liver and nervous system, but also give rise to skin rashes, with potential link to neuro-degenerative diseases. Main exposure is through direct skin contact, ingestion and inhalation involving water-based recreational activities.



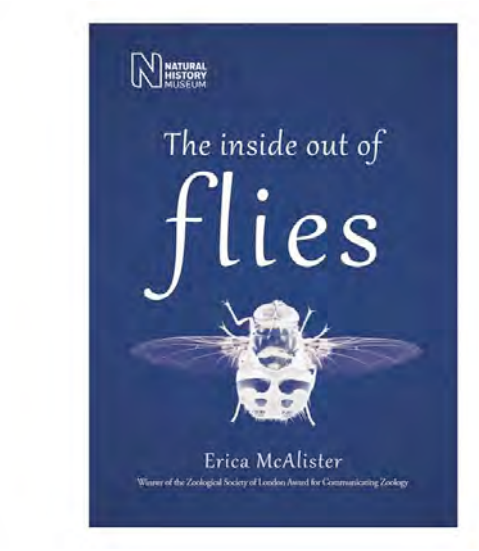
A typical blue-green algal bloom and scum.

Risks in recreational waters are managed with guidance following the World Health Organisation which set action threshold levels based on concentration of total blue-green algae present. In Scotland, recommendations for managing public health risks associated with blue-green algae are provided by Scottish Government (https://www.gov.scot/publications/cyanobacteria-blue-green-algae-inland-inshore-waters-assessment-minimisation-risks-public-health/). These include informing all relevant authorities, posting on-site advisory notices warning public of potential presence and hazards of blue-green algae, discouraging bathing, or at high threshold levels prohibiting swimming with closure of affected water bodies.

Blooms may be reduced primarily through reduction and control of nutrients within catchments, and a number of additional bloom control measures will also be required to reduce events in the short-term.

What can we do? We can all help to monitor these harmful blooms which threaten public health, pets, livestock, birds and fish. As citizen scientists, dog walkers, swimmers, boaters, anglers and walkers near fresh waters, we can record presence of such blooms using an app – 'Bloomin' Algae. This app was created by UK's Centre for Ecology and Hydrology, in collaboration with Scottish Environment Protection Agency (SEPA), and also Health Protection Scotland, the Environment Agency and Public Health England. The app user simply submits a photo of the bloom and lists activities at the location, which is automatically recorded. Local authorities and SEPA receive notification real-time, which help to speed up incident management. All records are verified and can be viewed in an interactive map on the iRecord, Biological Records Centre website (https://www.brc.ac.uk/irecord/). The app is available on Google Play and the App store.

Books received for Review **Anthony Payne**



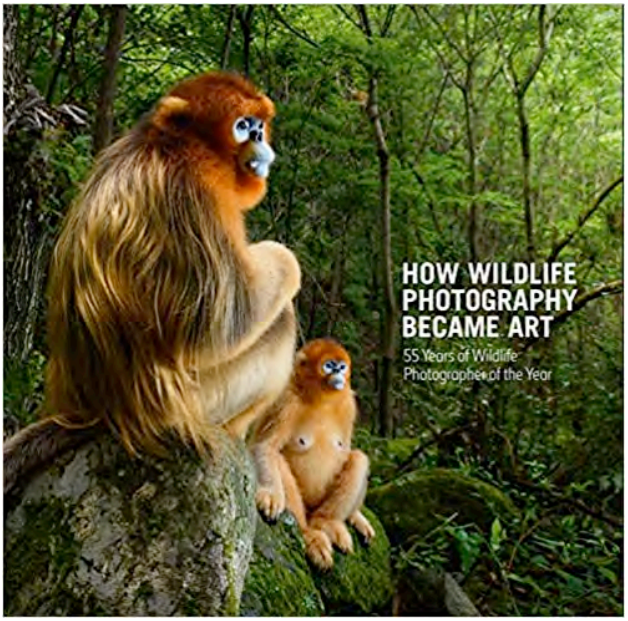
Two books have recently been received from The Natural History Museum Publications. Both would make excellent (if rather different) Christmas presents.

"*The Inside out of Flies*" by Erica McAlister (2020) 288 pages. £14.99 HB. Erica McAlister describes herself as a "fly-botherer" with "ninja sweeping skills with a collecting net". And why not - flies have had 250 million years to bother everything else. This is a fascinatingly readable and entertaining book which manages to convey reasonably detailed scientific material with a light-hearted and quite personal touch. The book is devoted to Dipteran structure and function and is divided into regional anatomical chapters, but about half the text deals with the front end with separate chapters on the head, antennae and mouth). A further three chapters cover the thorax and its appendages (wings and legs) ; there is a single chapter on the abdomen and one on the terminalia. The illustrations are quite wonderful examples of microphotography as well as some scanning electron micrographs – thus upholding the early opinion that the technique was only good for "flies' eyes and bees' knees".

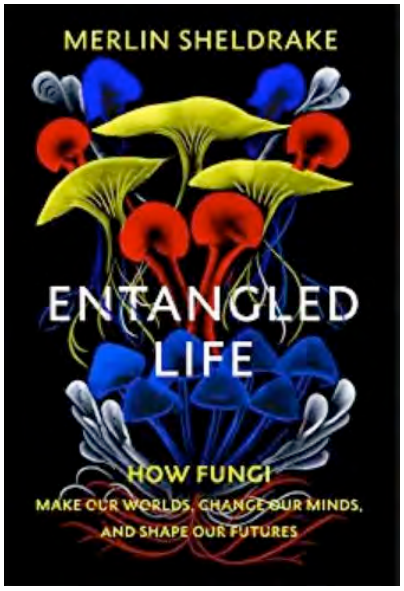
"How Wildlife Photography Became Art. 55 Years of Wildlife Photographer of the Year" by Rosamund Kidman Cox (2020) 291 pages. £35.00 HB.

The title of this book might suggest a historical perspective, but the key is in the subtitle. There are some 20 pages given over to the development of wildlife photography from sepia tones (the poor quagga!) to colour, but the bulk of the book is a celebration of the hugely successful annual competition. However, the sumptuous photographs are divided into categories of theme or technique. To give one example, "A sense of place" shows how a picture of an oryx takes on a whole new perspective if the photograph is a vast expanse of sand dunes with the animal as a tiny dot. There are sections on the importance of getting down to ground level, on geometric patterns, on how to wait for "the moment", and how to freeze motion.

There are more specialist themes such as underwater photography, remote camera capture and microphotography. There are "portraits" which are worthy of Karsh of Ottawa, and some slightly alarming inclusions; an orang-utan in clothes is unsettlingly Man Ray-ish.



A third book has also been received from The Bodley Head.
"Entangled Life" by Merlin Sheldrake (2020) 358 pages. £20 HB. "There is a lifeform so strange and wondrous that it forces us to rethink how life works" is the ambitious claim made for fungi by the author, a tropical ecologist. This is a book of discourses on fungal topics which have mostly been uncovered in the quite recent past. One example is the chapter "Wood Wide Webs" which reviews how mycelial webs in forests are able to link fungi with trees of one (or more) species and the experiments which have shown exchanges of nutrients between them. Are fungi passive plumbing, parasitic "hackers", conductors of the forest orchestra, or a deposit bank? In the chapter "Mycelial Minds" Sheldrake describes the effects of fungal chemicals on the human brain, but reminds us that this is utterly incidental and that the chemicals have probably evolved to modify the behaviour of insect pests. The writing is personal and sometimes rather journalistic (Sheldrake may not just quote a paper, he will chat to the author) and this perhaps explains why the final 100 pages are notes and bibliography; it is, however, a style well-suited to the broad expansive ideas which flow through the book. It is illustrated with a small number of pen-and-ink drawings and a central section of colour photographs. It is hoped that all three books will be fully reviewed in The Glasgow Naturalist.



Film: Nature Networks Matter **Roger Downie**

Last year, Scottish Environment Link (SEL) saw the need for a short film to promote the idea of and need for nature networks. Roger Downie attends SEL Wildlife Group meetings and agreed to approach the Blodwen Lloyd Binns Bequest for a grant to part-fund production of the film. The Bequest provided a grant and the film has now been made. We hope to show it at a GNHS meeting. Below, Dilraj Sokhi Watson, SEL staff member, explains the need for the film.

Why it is needed: The twin emergencies of climate change and biodiversity underscore the need for urgent action. Though protected areas and nature reserves are essential tools for protecting and enhancing nature, the climate and biodiversity crises cannot be addressed through these solutions alone – we must integrate

biodiversity across landscapes. The message that nature needs to be connected is seen as a complex topic where general audiences that have limited knowledge of ecology are unable to relate to how these solutions would look on the ground. LINK has long advocated for the creation of Nature Networks in Scotland, one of the key challenges has been on around the complexity of the topic and the message around it.
The year 2020 has been a landmark year in several ways. It is the year when global targets for biodiversity and climate were meant to be set, a 'super year for nature and biodiversity' and a year when a pandemic struck the planet. Now more than ever there is an urgent need to take action to stem further losses of nature, and for that we need to raise awareness and mobilise action: from the public to the politicians.

Who contributed: This film was commissioned by Scottish Environment LINK. LINK is the forum for Scotland's voluntary sector environmental organisations – with 40 members collectively representing around half a million people. SEL's Wildlife Group members steered the planning, design and development of the film, through contribution in funding, film footage and technical resources.

What it will be used for: This film showcases a very complex message in an accessible manner on what connected nature looks like: from an idea to practice. It will be used to raise awareness with MSPs and policy makers to act on policy areas which meet the objectives of connecting nature and encourage wider public to participate in the dialogue on nature connectivity.

Eadha

Finally, Eadha (old Gaelic for Aspen) is a social enterprise which maintains a tree nursery and conserves and develops Aspen woodlands.
We have received the Eadha newsletter (Issue 7 from August 2020), which can be downloaded from:
http://www.eadha.co.uk/assets/0000/5322/Eadha_Newsletter_Issue7_Aug_2020.pdf

GNHS welcomes contributions to the newsletter from members, without which the newsletter would be a poor production! It would be of enormous help in getting the newsletter out in time if you could please send them either as plain text or in a Word file as Verdana 12 points, which saves them being reformatted by the editor. Scientific names should be italicised if you have time.

Please send photos separately from the text as jpg files, and indicate where you would like them inserted into the text. The more photos, the better!

Thank you - David Palmar, newsletter editor