

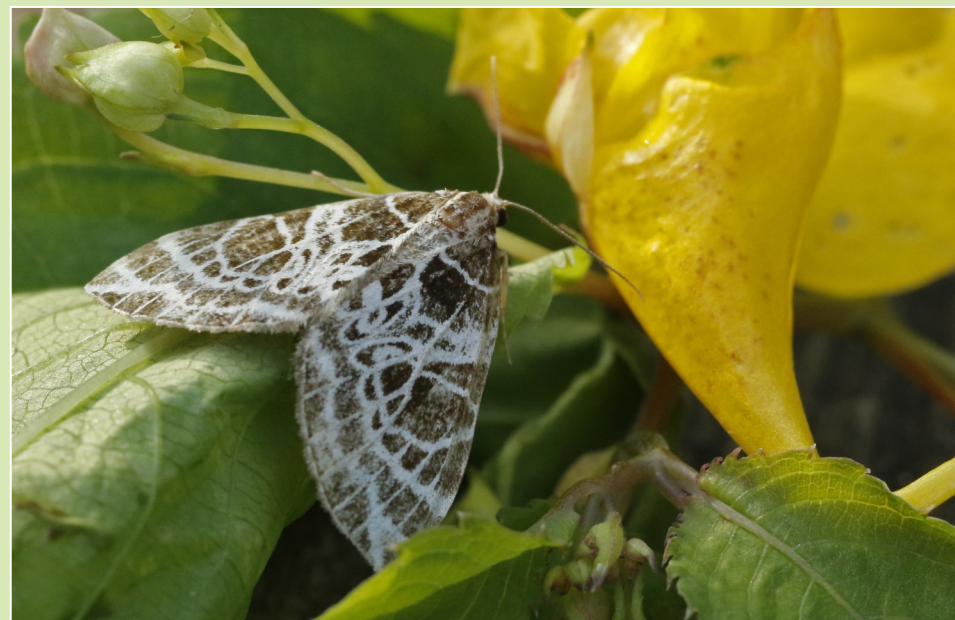
Wildlife Reports: March 2017 – August 2017	41
Field Meeting reports:	
17 June 2017: Swindale	47
15 July 2017: Wetheral	48
Notes & Records	
An instance of inland passage of Purple Sandpiper on the North Pennines — <i>Stephen Hewitt</i>	50
Spotted Sandpiper (<i>Actitis macularia</i>) at Buttermere, 2017 — <i>Nick Franklin</i>	51
Fence-post entomology: unusual finds from north Cumbria in 2017 — <i>Paul Kennedy</i>	52
<i>Drapetis assimilis</i> Fallén (Diptera; Hybotidae) new to Cumbria — <i>Stephen Hewitt</i>	54
Northern Arches Moth (<i>Apamea exulis</i>) in Brampton, new to Cumbria — <i>Rob Pickett</i>	54
The Netted Carpet Moth (<i>Eustroma reticulata</i>): encounters with an iconic species — <i>Guy Broome</i>	55
Maps, data and a small hairy fungus — <i>David Clarke</i>	57
Nettle Clustercup Rust (<i>Puccinia urticae</i>) in 2017 — <i>David Clarke</i>	57
Articles	
Insects associated with old ash pollards in Borrowdale — <i>Stephen Hewitt, Maurice Pankhurst, John Parker & John Read</i>	59
Re-examination of two nineteenth century records of the Rough-legged Buzzard in Cumbria — <i>Robin Sellers</i>	75
Erratum - re fig. 2 in Walker & Walker (2017) 'Squirrels in Naddle Forest' in <i>Lakeland Naturalist</i> , 5 (1), p.36.	76

Lakeland Naturalist

— a journal of Cumbrian Natural History



Autumn 2017



Lakeland Naturalist publishes material on all aspects of the natural history of the Lake District, the wider county of Cumbria and its immediate environs

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Notes for authors:

General articles, results of personal research, news items, records and items of relevance to Cumbrian natural history and naturalists, present and past, are welcomed. Material accepted for publication must not be submitted in a similar form to any other journal or magazine.

Material offered for publication should be in the formats used in this issue. Computer files should be in rich text format or Microsoft Word and e-mailed to the Editor, or submitted on CD/DVD accompanied by a paper copy. **Bold** and *italic* may be applied to text, but no other formatting should be applied. References should be given in full at the end of the article or note, and authors are responsible for their accuracy. Authority names for species, where given, should be in full. Line illustrations should be in black ink and must be originals. Good quality photographs are welcomed where these relate to submitted text. Each photograph, figure or table should be submitted as a separate file. Whilst every care will be taken of original artwork, the Editor can not be held responsible for any loss or damage. Authors of papers will be provided with PDF format copies on request. The Editor reserves the right to submit papers to a referee, and to reject items.

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Next issues: deadlines for final copy

1st February 2018 & 1st September 2018

Cover:

Netted Carpet Moth (*Eustromia reticulata*) on its larval food-plant Touch-me-not Balsam (*Impatiens noli-tangere*). St Catherine's Wood, Windermere © *Guy Broome*

(Wednesdays at 7.15pm., except where stated)

4th October: 'Pink-footed Geese on the Solway'

An illustrated talk by Frank Mawby

18th October: 'Wild Tenerife'

An illustrated talk by Dr Philip Ashmole

1st November: 'Derek Ratcliffe – Nature's polymath, polyglot and friend'

An illustrated talk by Professor Des Thompson, Scottish Natural Heritage with introduction from Geoff Horne

15th November: 'Nature in Towns and Cities'

An illustrated talk by Professor David Goode

29th November: Members' Night: Contributions from the membership

13th December: 'Deadly, Delightful or a whole lot of Rot - Fungi that grow on Trees'. An illustrated talk by Paul Nichol

10th January 2018 : 'Disappearing Swifts – What we can do'

An illustrated talk by Edmund & Tanya Hoare
(Joint Meeting with the Cumbria Bird Club)

24th January: 'Cumbrian Limestone Pavements – Helleborines to Kamenitzas'

An illustrated talk by Dr Peter Standing FRGS, Westmorland Geological Society
(Joint Meeting with Cumberland Geological Society) (NB start at 7.30pm)

7th February: 'Bat swarming and hibernation in North Cumbria'

An illustrated talk by Tina Wiffen, Northumberland Bat Group

18th February (Sunday): Field Meeting – Wild Goose Chase in Dumfries and Galloway

Leader: Frank Mawby (016973 51301)

Meet by Carlisle College, Victoria Place, Carlisle at 9am.

21st February: 'The Dragonflies of Dumfries & Galloway'

An illustrated talk by Barbara Mearns

7th March: AGM & Members' Night

AGM followed by contributions from the membership



1. (p. 50)

Purple Sandpiper
with Golden Plover
and Dunlin

N. Pennines,
22 April 2017

© Stephen Hewitt



4. (p. 45)

Mountain Ringlet

Honister,
2 July 2017

© Guy Broome

2. (p. 51)

Spotted Sandpiper

Buttermere,
16 May 2017

© Nick Franklin

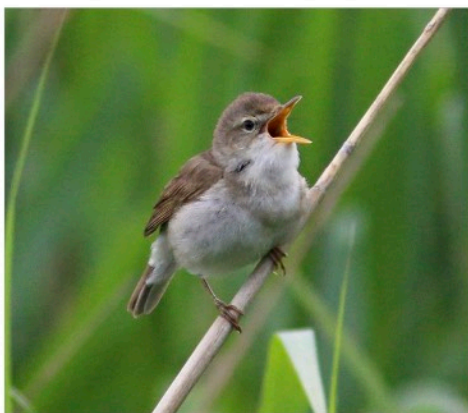


5. (p. 45)

Red-veined Darter

North Plain Reserve
(RSPB), Solway,
9 June 2017

© Judith Rogers

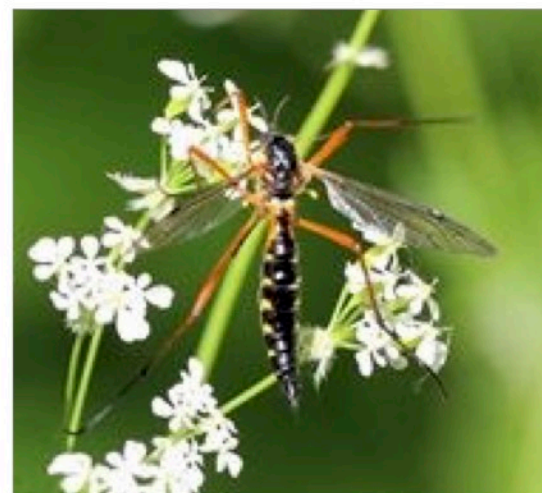


3. (p. 43)

Blyth's Reed Warbler

Siddick Pond,
Workington,
15 June 2017

© Nick Franklin



6. (p. 45)

The cranelfly
Ctenophora pectinicornis

Broughton-in-Furness,
25 May 2017

© Nigel Gilligan

7. (p. 45)

The hoverfly
Volucella zonaria

Skinburness, Solway,
21 August 2017

© Vivian Russell



8. (p. 55)

Northern Arches moth

Brampton,
8 July 2017

© Rob Pickett

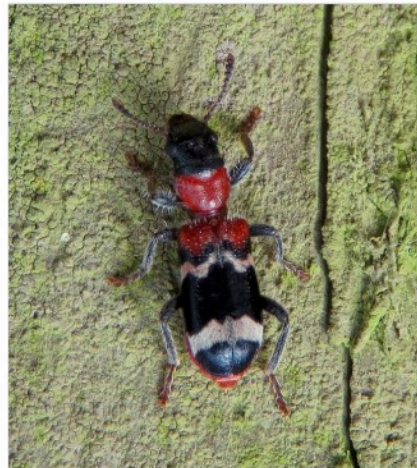


9. (p. 52)

Ant Beetle
Thanasimus formicarius

Finglandrigg NNR,
28 March 2017

© Paul Kennedy



10. (p. 53)

The snakefly
Xanthostigma xanthostigma

Finglandrigg Wood,
14 June 2017

© Paul Kennedy



11. (p. 53)

The net-winged beetle
Pyropterus nigroruber

Talkin Tarn,
11 July 2017

© Paul Kennedy



12. (p. 57)

The fungus
Marasmius hudsonii
on fallen Holly leaf
Scale bar: 1cm

Great Wood, Keswick,
14 September 2017

© David Clarke



Wildlife Reports, March to August 2017

The following are based on records submitted by CNHS members and have been forwarded to CBDC at Tullie House. Uncredited records are usually my own.

Weather: a very wet, mild March was followed by a dry April (driest since 1995) with average temperatures. May was generally warm and mostly dry (twenty days with no rain) although there were two very wet days on 15th and 27th, accounting for more than half the 55mm of rainfall. June started with promise but soon deteriorated to mostly wet but mild followed by a very wet July, the second wettest for Drumburgh weather station records. August rainfall was about average (83.5mm). Temperatures were mainly around average but perhaps felt cooler in the often windy and cloudy conditions (TM).

General

After a very pleasant spring it seemed that many species were doing well and migrating birds seemed to arrive earlier than usual and got off to a good start. However, moth recorders were often noting low numbers in March and April. Early **Painted Lady** and **Red Admiral** butterflies were quite abundant. The good May weather was a boost for the **Marsh Fritillary** with some exceptional brood counts in August and September. The wet summer no doubt had adverse effects on later-flying insects. However, birds seem to have done well and there are now some large flocks of **Goldfinch**, **House Sparrow** and **Starling**. **Barn Owls** generally bred early and brood size has been good, with the possibility of some having second broods – the result of high vole numbers. From my ringing and nest recording observations, it seems to me that **Great Tits** and **Long-tailed Tit** numbers are low, especially after a very good fledging success and I wonder if they suffered after fledging into a wet June. Autumn and winter records of these species would be most welcome. From reports it seems the migrant warblers have done well on the whole. I have received mixed reports about the hirundines, although from my own observations **Swallows** have done well, some starting early in May. I have a record for third broods where I nest-record and ring near Bowness-on-Solway. On our house, **House Martins** recovered to twelve nests after last year's crash, with five going on to rear second broods. As I write (in early September), there is still one nest with chicks. However, other members say they have fewer and the dry May had some impact on nest-building and nests falling down.

Birds

A flock of 150 **Whooper Swans** was still at Whitrigglees, by the R. Wampool on 25 March (FJM) but my last record was of five on 22 April feeding on algae on the mud flats at Port Carlisle. 30 **Pink-footed Geese** were still present on Skinburness Marsh on 14 May. There were 1400 **Barnacle Geese** on Skinburness Marsh on 19 April

(FJM) and 26 April (RH). **Garganey** are uncommon: three were on Wedholme Flow, 2 May (RH). **Gadwall** reared two ducklings to fledging at Watchtree. A **Greater Scaup** male was at Longtown on 5 March (DJ). A very unusual record is of a **Common Scoter** found unable to fly on Shap Fell at 1500ft by a group including DH. It was captured by JP and released on the R. Petteril at Penrith. A female **Smew** was at Siddick for a few days on 7 March (DAI and PW).

Little Egret are now well established and probably breed locally; they do venture inland, as recorded by DH at Dalston on 15 March.

A **Red Kite** was seen at Watchtree on 1 June (RH); DJ saw one over R. Esk at Longtown on 24 March and QC had one at Low Crosby on 30 April. A **Merlin** was at Geltsdale on 12 April (RH). An **Osprey** was seen by DJ over Longtown on 18 April; I was especially delighted to see one catch a fish at Siddick Pond on 18 June; RA had two sightings over Carlisle University campus – 23 May and 20 June. A **Short-eared Owl** on 7 May at Haresceugh Fell (DC) was one of many in the northern Pennines this summer.

Grey Partridge are quite scarce. Records came from SG at Blitterlees 19 April, Lessonhall 26 March (FJM), two at Woolsty Banks on 7 May (JC) and LC had one at Dalston 10 June. I had a covey of 14 juveniles on the road by Watchtree on 22 July, where there are two pairs. A **Water Rail** was at Rogersceugh on 17 May (RH).

A **Little Ringed Plover** was on the R. Esk at Longtown on 19 April (DJ). Successful breeding pairs were noted in hectads NY25, NY37 and NY35. Six **Green Sandpiper** were seen regularly on floods near Wetheral up to 14 March (BJ, RH) and on 8 August RH recorded one at Wilkins Pool by the R. Esk near Longtown. SH was suprised to find a **Purple Sandpiper** migrating with **Golden Plover** and **Dunlin** on the Pennines on 22 April (plate 1 and page 50). **Whimbrel** produced several reports: DJ saw 18 in a field at Blackford on 22 March, RH had 15 at Grune on 23 March, and BJ saw 15 at the east end on Burgh Marsh on 26 April; JC reported a flock of 120 at Allonby on 2 May and 75 at Woolsty on 4 May. **Woodcock** is not often recorded: DC saw one on Haresceugh Fell on 22 April; RH noted three roding at High Stand 27 May and I recorded roding males at Finglandrigg Wood NNR and Watchtree for the BTO breeding survey. **Jack Snipe** is another elusive species, usually flushed when nearly trodden on, which is how I flushed singles on Wedholme Flow on 4 and 14 May. An American vagrant, a **Spotted Sandpiper**, was found on Buttermere Shore by NF on 14 May and stayed for some time (plate 2 and page 51). **Mediterranean Gulls** are commonly seen between Allonby and Workington where DAI and PW recorded one on 7 March. A single **Little Gull** was at Longtown on 31 March (DJ).

The **Great Grey Shrike** that wintered around Soddy Gap was seen again on 5 March by KH. The last **Waxwing** record for the spring was from RH of 18 at Crown Street in Carlisle on 28 April. **Cuckoos** were well reported this year, the first at Wetheral viaduct on 27 April (FJR). An exceptional record was of one calling in

Miltonrigg Wood on 30 May (RH) who also recorded three calling at Buttermere on 18 May. Other records were from: Wedholme Flow (FJM) 14 May, Glasson Moss 17 May (RH), Seatoller 31 May (DS), Ullswater 7 May (GH), Skinburness 3 May (VR) and Askwell Bridge 6 May (GH). **Swifts** were seen at Longtown on 26 April (DJ) and Longlands Lake, Cleator (SG). A **Kingfisher** was present at Wilkins Pool, Longtown on 8 August (RH). **Green Woodpecker** reports increase steadily: KH reported sighting at Wythop Hall 6 March, Glenridding 26 March and at Guardhouse 30 May; RH heard one in High Stand on 3 March.

Sand Martins arrived quite early and DAI noted two along the Allonby shore and DJ saw six over R. Esk at Longtown on 23 March. By 31 March there were 150 at Longtown (DJ). Other first-sightings included a **Swallow** seen at Longtown on 31 March (DJ) and DAI had another on 1 April in Carlisle, where **House Martins** were seen by HB on 23 April.

Lesser Whitethroat is being seen more frequently in recent years and three records are all of singing males, the first on 26 April from RH of one in hedgerow just to south of Wiggonby, one at Watchtree on 27 April (JC) and I heard one singing in gorse at the back of Calvo Marsh on 14 May. **Garden Warbler**: a singing male was at Watchtree on 27 April (JC). An early **Blackcap** was heard at Finglandrigg Wood NNR on 6 April (DJ). I found a nest with chicks on 6 May and the nest was empty on 12 May. **Whitethroat** was seen at Watchtree on 27 April (JC) and Rogersceugh on 17 May (RH). A **Sedge Warbler** was back at Watchtree on 17 April (LS) and on the same day RH had one at Rogersceugh. At Watchtree two male **Reed Warblers** were singing on 7 May; later in the season I captured one that had been ringed in 2015. A male **Wood Warbler** was singing in Finglandrigg Wood on 27 April (CA) but was only passing through. Two were heard by RH in Folly Wood (near Miltonrigg Wood) on 30 May and DAI reported one from Holme Wood, Loweswater on 11 March. A singing **Chiffchaff** was in Finglandrigg Wood on 12 March and on 15 March DH had five along a quarter of a mile of the Caldew at Dalston. JM had one at Jockey Shield on 17 March. **Willow Warblers** were in early and on 3 April I counted nine singing males at Watchtree. A **Grasshopper Warbler** briefly called at Skinburness on 18 April (FJM) and another was reeling near Durdar on 30 April (FJR). An eastern European visitor, **Blyth's Reed Warbler**, was at Siddick Pond in mid-June, singing lustily and well captured on camera by NF (plate 3).

Redstarts were seen by RH at Talkin Tarn 12 April, Miltonrigg Wood 24 April and 30 May, Buttermere on 18 May, at Greystoke on 28 May and Holme Wood on 11 May (DAI). CA also had three singing males in Finglandrigg Wood in May. A **Wheatear** was by the Campfield Marsh scrape on 23 March (DJ). A flock of 50 **Fieldfares** was seen at High Heskett on 21 April (AE). SH reported a **Blackbird** feeding chicks in Penrith on 4 April. **Ring Ouzels** were noted on Carrock Fell on 6 April (DJ); a pair on Newbiggin Fell 18 April (RH) and one on summit of Robinson on 22 April (DS).

A **Spotted Flycatcher** nest at Cumwhitton was the first for decades here, but predated by 26 May (DC). Other reports were of one at Dalston on 10 July (LC); one on 17 July in Finglandrigg Wood feeding young at a nest (RH); RS had a bird on a nest at his Broadwath home on 21 July; JM had two adults and a juvenile at Jockey Shield. Two **Pied Flycatchers** were seen by RH in Miltonrigg Wood on 24 April and two at Buttermere on 18 May. One was seen at Holme Wood on 11 May (DAI).

Two **Tree Pipits** were singing on territories in Greystoke Forest on 28 May (RH). A pair of **Grey Wagtails** were at Watchtree on 18 March, but just passing through as they commonly breed by streams and rivers. The **White Wagtail** passage gets more attention nowadays and DAI saw one on 28 March at Allonby; later in the month there were several on Wedholme Flow. **Yellow Wagtails** were near Longtown on 28 April and probably breeding in NY37 on 10 May (DJ). A pair of **Dippers** were seen nest-building by the R. Caldew on 15 March (DH).

Brambling were regularly seen at Talkin Tarn where DAI counted 20 on 6 March. **Siskin** are regular visitors to feeders in March and three cards recorded them at Great Orton (J & JS), Oaker Gill, Sowerby Row (CW) and at my own feeders in Kirkbride.

Butterflies

Two species in particular, **Small Skipper** and **Speckled Wood**, have become quite widespread in north Cumbria in recent years and are now very often reported. The three 'Whites' on the other hand tend to be the least recorded, so giving a probably false impression of scarcity. Low numbers of **Small Tortoiseshell** were remarked on by several recorders, and there was a scarcity of the summer generation during July and August, with very few records received.

Dingy Skipper is doing well at Watchtree and **Large Skipper** was reported to be abundant (LS). **Orange-tips** were on the wing early, DC recording them on 3 April along the Fishgarth to Brockleworth stretch of the R. Eden; the last one noted was on 21 June at Greystoke Castle (DH). The most notable records were of **White-letter Hairstreak** from Wetheral, where several were seen by FJR on Elm by the pumping station on 16 and 17 July; two were recorded at Lower Gelt, 17/18 July (DJ, JM) and GB photographed one at Lanercost Bridge on 26 July. The only record for **Purple Hairstreak** was from Finglandrigg Wood NNR on 10 July (DJ). Both generations of **Small Copper** were reported: Bowness Gravel Pits 24 May (DJ), Grune 6 May (VR) and Watchtree 4 August (FJM); DC noted several at Cumwhitton on 8 May and then again from 17 August. **Common Blue** is not well-recorded but is widespread and present in good numbers. **Holly Blue** produced two Carlisle reports: DAI noted one in her Stanwix garden on 11 May and GH saw one in Denton Holme on 23 April. In contrast, it has been a very good year for **Painted Lady** and the first on our records is from VR in her garden on Grune Point on 25 May. Thereafter they were regularly seen with a seemingly good hatch with lots of fresh specimens in July and August. Another

abundant species was **Red Admiral**. The first-recorded was at Fishgarth Wood on 4 March (DC) – a possibly overwintering individual; thereafter there were numerous records, especially in August when many fresh specimens emerged. **Peacock** was another well-recorded species, both in the spring and late summer. An early **Small Pearl-bordered Fritillary** was seen by DJ on 26 April at Silver Hill near Longtown. The colonies at Finglandrigg NNR and Thornhill Moss NNR are thriving. **Comma** were reported from Ravensbeck, Kirkoswald 4 May (MT), three by the R. Eden by Wetheral, 15 July (FJR), Watchtree 17 July, Jockey Shield, 31 August (JM). A record of a **Gatekeeper** at Duddon Mosses NNR on 8 August was from NG, who counted about 160 on a short walk near Kirksanton on 25 August; **Wall Brown** seemed widespread and recorders reported good numbers from several localities, including well inland in the Eden valley. **Grayling** were widely reported from coastal sites from Silloth southwards during July (NG, DJ, DH, JM). Members on the Honister Field Meeting were delighted to see a **Mountain Ringlet** (plate 4) despite the dull, cool and windy conditions on 2 July. I recorded **Large Heath** on 1 June on Glasson Moss, and 17 in a 400m stretch of the Kirkbride Awards, Wedholme Flow on 26 June.

Other insects (DC)

A **Hummingbird Hawk-moth** seen in the Silloth Bee Garden by RH on 26 March was an interestingly early record; there were several others on the CNHS Facebook website at more usual dates (DJ, DH, RA, NG, KaH, DC). The same source includes a number of good insect finds, such as NG's of the old-woodland crane-fly **Ctenophora pectinicornis** (plate 6) at Broughton-in-Furness and Nick Franklin's solitary bee **Osmia leaiana** at Skinburness; VR reported the first ever Cumbria occurrence of the large wasp-mimic hoverfly **Volucella zonaria** at Silloth (plate 7). The Honister Field Meeting noted **Bilberry Bumblebee** (*Bombus monticola*) on 2 July and DC recorded the species new to hectad NY64 at Loo Gill, Hartside on 11 July. A **Birch Sawfly** (*Cimbex femoratus*) near Tindale Tarn on 21 July (DC) was a rare sighting and new to the RSPB Geltsdale Reserve; 2017 was a UK invasion year for the **Red-veined Darter** dragonfly: a mature male reached the RSPB North Plain Reserve on the Solway on 9 June – verified by DC (plate 5). A male **Broad-bodied Chaser** was present at Melkinthorpe for several days in early June (verified by DC). AM chased, but did not manage to photograph, a male **Beautiful Demoiselle** near Brampton on 1 June – a tantalising record. **Banded Demoiselles** continue to be found at sites well away from the lower Solway rivers and seem to be expanding into increasingly marginal habitats: these have included the R. Eamont, where DC noted the species near Eamont Bridge 31 July, and also near the head of the river at Pooley Bridge, 7 August. He also saw it on the R. Derwent near Keswick on 17 July and had two sightings in the R. Petteril valley – at Hutton-in-the-Forest, 28 July and Low Grounds near Plumpton, 4 August.

Reptiles and Amphibians

Slow-worms were active in Dalston Churchyard on 13 March (DH), who also recorded six on 25 March. **Adders** were active on The Common in Finglandrigg Wood NNR on 26 February and 24 March (CM and NF), and on 17 July (RH). Other sightings came from Wedholme Flow and Glasson Moss.

Mammals

Hedgehogs have been well-reported, sadly though several are of road casualties. DH had three at the Garden Nursery in Dalston. **Red Squirrel** records came from Greystoke on 28 May (RH) and Croglin, 24 April (DC). **Otters** were seen on the R. Eden at Rockcliffe on 17 July (RH), and by SamG at Williamsgate 10 April, and Wavergillhead on 11 April. An **American Mink** was seen in the R. Esk at Longtown on 4 April, carrying a large gull as prey (per DC – see below); also one at Galleny Force, Stonethwaite on 21 June (DS).

Recorders

RA: Roy Armstrong, CA: Colin Auld, GB: Guy Broome, HB: Helen Brown, DC: David Clarke, LC: Lindsay Cowan, QC: Quentin Cox, AE: Anita Evans, NF: Nick Franklin, NG: Nigel Gilligan, SG: Sara Gomm, SamG: Sam Griffin, KH: Keith Hamilton, GH: Gary Hedges, SH: Steve Hewitt, DH: David Hickson, KaH: Karen Hodgson, RH: Robin Hodgson, DAI: Dorothy Iveson, DJ: David Johnston, BJ: Bob Jones, TM: Tony Matthews (Drumburgh Meteorological Station), FJM: Frank Mawby, JM: John Miles, AM: Adam Moan, JP: John Parker, FJR: Jeremy Roberts, VR: Vivian Russell, DS: Donna Salter, RS: Rob Shaw, LS: Liz Still, J&JS: John & Joanne Stoddart, MT: Martin Thomas, CW: Chris Wilson, PW: Peter Wilson.

Frank Mawby



© Shaun Donockley

17 June 2017, Swindale

Leader, Lee Schofield

Continuously blue skies and temperatures in the high 20s made the natural beauty of Swindale all the more vivid. The persistent breeze was very welcome. Twenty-three CNHS members were led by Lee Schofield of the RSPB, who gave us a comprehensive tour and introduction to the project that has been carried out jointly with United Utilities in the past few years. It is based around principles of integrating management of water flow and quality, flood alleviation, upland farming and a high quality natural environment – which includes SSSI status flood-plain hay meadows – all in a wonderful, and secluded, Lakeland valley.

A Small Pearl-bordered Fritillary and Golden-ringed Dragonfly where we parked below Bewbarrow Crag gave a good start to the day. *En route* to our first stop, we paused to view Chives (*Allium schoenoprasum*) in full flower in roadside flushes. Though not considered native here, it looked remarkably ‘settled’. We called in at the state-of-the-art water abstraction plant, complete with fish pass. This clever, if rather ‘visible’ piece of engineering enables automatic rapid response to changes in water flow, whilst allowing fish such as salmon and trout to access the upstream spawning grounds.

Thereafter we moved through the riverside meadows, golden with buttercups. The flora of the SSSI here is being encouraged by appropriate grazing regimes. Magnificent stands of Melancholy Thistle (*Cirsium heterophyllum*) and an abundance of the eyebright *Euphrasia arctica* and Great Burnet (*Sanguisorba officinalis*) are a feature. Saw-wort (*Serratula tinctoria*), another ‘old meadow’ species occurs, though we did not visit its site. The longer term plans are to further enhance the flora with typical species such as Globeflower (*Trollius europaeus*) and Wood Crane’s-bill (*Geranium sylvaticum*) – both rare or scarce at present. This will no doubt encourage a more diverse invertebrate fauna, as will the extensive plantings of native trees on the adjacent hillsides.

The restorative changes to the river course have already proved valuable. The more natural erosion and deposition features have ensured Salmon, Trout and Minnows already use it, and we saw Common Sandpiper here. Beyond the SSSI, the grassy meadows are now fenced against grazing by Red Deer. Blocking of water-courses has enhanced the transition to mire habitats: we noted some large stands of Heath Spotted Orchid (*Dactylorhiza maculata*).

We stopped for lunch on one of the ‘*roche moutonnée*’ features (formed by long-gone glaciers), offering a fine view of the valley head. The lichen *Lasallia pustulata* here indicated a regular bird perch! Afterwards, we followed the track on along the east side of the valley to our final destinations, noting Butterwort (*Pinguicula vulgaris*) and Yellow Saxifrage (*Saxifraga aizoides*) flowering in the flushes. The Swindale Beck descends from the hanging valley of Mosedale via a splendid series of waterfalls. The rocky sides had some good patches of Mountain Everlasting

(*Antennaria dioica*), Wood Crane's-bill and Alpine Lady's-mantle (*Alchemilla alpina*). Bird's-eye Primrose (*Primula farinosa*), a rarity in 'The Lakes', also occurs hereabouts. A small patch of the uncommon green dog-lichen *Peltigera leucophlebia* was one of several of this species in this area.

Our final call was to the mires and flushes at the valley-head. Perhaps because of the early date, we did not manage to find the small population of Bog Orchid (*Hammarbya paludosa*). We were more successful in our search for the Keeled Skimmer dragonfly. The several individuals encountered were all very freshly emerged, giving little doubt that the species is breeding at this site (at the quite high altitude of 275 metres a.s.l.), though in the short time remaining we found no exuviae or larvae. Large Red Damselflies, and Four-spot Chaser and Golden-ringed Dragonflies were the other species present.

It had been a relatively 'quiet' day for birds: Reed Buntings were a feature of the lower ground, Tree Pipits were doing well on the hillside plantings, Redstarts were seen several times. Buzzards circled, but the Peregrines that formerly bred have now, sadly, moved to richer feeding grounds. A Brown Hare put in a brief appearance in the meadows, but the Red Deer were safely up in the hills.

Swindale is a special place. It will surely get even better over the years, and readily repay further visits.

David Clarke

[An overview of the project is given in *British Wildlife*, **28** (5), pp. 326–7. Ed.]

15 July 2017, Wetheral Riverside Walk

Leader, Jeremy Roberts

After an overcast and drizzly morning, our party of twelve enjoyed improving weather. As we ambled along the wooded bank various grasses were pointed out including the Wood Meadow-grass (*Poa nemoralis*), Wood False-brome (*Brachypodium sylvaticum*) and Giant Fescue (*Schedonorus giganteus*). Looking at a Bird Cherry tree we saw the tell-tale white gossamer webs of the caterpillars of the Bird-cherry Ermine Moth (*Yponomeuta evonymella*). Nearby some of the docks had been severely attacked by the glossy Green Dock Beetle (*Gastrophysa viridula*). On the river bank colour was provided by the Yellow Loosestrife (*Lysimachia vulgaris*) and Giant Bellflower (*Campanula latifolia*), whilst the large Wood Club-rush (*Scirpus sylvaticus*) formed a few large patches along the water's edge. Two types of Figwort were growing close together here – the Common and Green (*Scrophularia nodosa* and *S. umbrosa*). After a little encouragement from Jeremy, a single Banded Demoiselle (*Calopteryx splendens*) was seen to rise from amongst the reeds on the water's edge. This species is a relative newcomer to this stretch of the river – though now extends much further upstream. Along this section of the river the bank has been

badly eroded by recent floods. We passed the Old Mill and remains of a mill race before passing under the railway viaduct to walk along a stretch of quiet road. Across on the river were a Goosander with a family of five young and a few Mallard and a Heron.

Passing below Wetheral Church there is a roadside bank where Wild Majoram (*Origanum vulgare*) and plentiful Sand Leek (*Allium scorodoprasum*) grow amongst the grasses. Taking once more to a riverside footpath Jeremy pointed out some large specimens of Welled Thistle (*Carduus crispus*) with their spiny winged stems and swollen 'flower' bases. Nearby was a large Hemlock plant (*Conium maculatum*), an umbel with purple spots on its stem, and a highly poisonous plant. Meadow Crane's-bill (*Geranium pratense*) with violet-blue flowers was in abundance, and also to be found here was a rather unusual bramble, the Dewberry (*Rubus caesius*), with a whitish stem, ternate leaves and fruits consisting of just a few large drupelets. We passed opposite Corby Castle before taking the steps up to follow the path with a field to our right and the steep wooded bank down to the Eden on our left. Along here Jeremy pointed out the Intermediate Polypody (*Polypodium interjectum*) not commonly seen in Cumbria but locally abundant here.

Beyond the kissing gate and standing on the edge of the Eden we saw two Dippers moving among the exposed rocks. While here, we looked across to an island on the opposite side of which ancient salmon fish-traps are to be found. Originally constructed by the monks from the nearby Wetheral Priory they have been in use by the owner of Corby Castle in recent times. Walking on, we reached an area where there are about nine mature specimens of Small-leaved Lime (*Tilia cordata*). It is likely these have been here for many centuries, as mature trunks are seen to come from original boles – possibly the result of being coppiced in earlier times. Jeremy pointed out that the Small-leaved Lime has ginger hairs in the vein axils under the leaf whereas they are white in the Common Lime. Also, the fruit-clusters are held above the leaves in this species, but hang below the leaves in Common Lime, *Tilia × europaea*.

After visiting Constantine's Cells, a series of caves cut out in a rocky sandstone outcrop overlooking the river, we headed back taking the route up to the road. Passing the Wetheral Priory Gatehouse, we saw Black Spleenwort (*Asplenium adiantum-nigrum*) growing on the wall here and Pellitory-of-the-wall (*Parietaria judaica*) nearby. The latter is common in the south of the country but local in Cumbria. After taking a look into the room of the Sanctuary (part of the English Heritage-administered old Monastery Gatehouse) we headed back toward our cars. The sun was shining and two Comma butterflies and a Meadow Brown were seen flitting about on the roadside verge vegetation.

Marie Saag

Notes and Records

An instance of inland passage of Purple Sandpiper on the North Pennines

On 22 April 2017 I was walking on the high Pennines. The day was sunny but with a cold north-westerly wind. I was surprised to see 70 to 80 Golden Plover on a broad area of stony ground in separate groups of up to 30 birds. This is the largest number of Golden Plover I have encountered on these hills. The very black faces, throats and undersides of many of the birds marked them out as belonging to the northern race and so clearly on passage to their breeding grounds further north, possibly in the Highlands of Scotland but more likely in Iceland, Fennoscandia or Russia. I also counted eight to ten Dunlin in company with the plover. Some of these Dunlin were display flighting and giving their reeling courtship song. There were also two pairs of Curlew in the same area. Interestingly, there were some grouse droppings in the grass, which I judged to belong to Black Grouse. This identification was supported by the sight of two Blackcock among block scree on the upper slopes of the fell later on.

Most unexpectedly, a single Purple Sandpiper was in company with one group of three Golden Plover and two Dunlin (plate 1). Purple Sandpipers visit Britain in winter where they are exclusively maritime with a preference for rocky shores (Prater, 1981). Northward movement toward their arctic breeding grounds begins in February and peaks in late April and early May. The Purple Sandpiper is a fairly common winter visitor to Cumbria, almost exclusively confined to the western coastline where Workington harbour is a particularly favoured site (Shackleton, 2017).

Sightings of Purple Sandpiper in the hills are very unusual. The first discovery of a pair nesting on a hill in the Highlands in 1978 was the first time this species had been seen in suitable nesting habitat in Scotland (Dennis, 1983). I am aware of only two previous reports of Purple Sandpiper on English hills: both from one D.A. Ratcliffe. In June 1970 Ratcliffe and Ian Prestt were on the Skiddaw Fells when an unfamiliar small wader flew off peaty ground and away. They decided it could have only been a Purple Sandpiper. Five years later Derek and Jeanette, his wife, were crossing the same ground in late May when they flushed another little wader. This time it landed, and they were able to positively identify it as a Purple Sandpiper. Despite careful searching and several return visits, no sign of breeding was ever found at this English location, where in any case the habitat was hardly optimal (Ratcliffe, 2000). There is some confusion attached to these dates as Ratcliffe (1990) mentions single Purple Sandpipers seen on a hill in northern England in May of 1971 and 1975. (This discrepancy in Ratcliffe's data is possibly more astonishing than the presence of the Purple Sandpiper in the first place).

The north Pennines offer the largest single area of potentially suitable nesting habitat for Purple Sandpiper in England. However, the occurrence of this single bird during the peak period of passage and in company with other migrating waders,

surely indicates that it was itself on passage north. Unsurprisingly, I saw no sign of this bird on a subsequent visit.

My thanks to John Callion for drawing my attention to the article by Roy Dennis.

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Spotted Sandpiper (*Actitis macularia*) at Buttermere, 2017

This summer a Spotted Sandpiper spent over a month on the shore of Buttermere in Cumbria, a place usually noted for its beautiful scenery rather than its rare birds. The bird was first reported on 13 May, and my first reaction was one of scepticism due to the lack of information and the unusual location. A negative report that evening seemed to confirm my thoughts. However, the following afternoon a report came that the bird was still present. Visiting the next day, I met another birder who directed me to a particular 200 metre stretch of the south-western edge of the lake. I spent some 45 minutes finding only Common Sandpipers before a calling Spotted Sandpiper flew across in front of me and landed. It was close enough for good binocular views and could clearly be seen to be in full summer plumage, sporting the most magnificent spotted chest and belly.

Over the next two hours, the bird displayed to Common Sandpipers, calling and wing-fluttering, often only ten metres away (plate 2). It seemed remarkably faithful to this stretch of shoreline, dividing its time between displaying and feeding busily along the lake edge. It was slightly larger than the Common Sandpipers present, with a heavier, 'pot-bellied', shape and an orange, black-tipped bill. It was also calling regularly with a loud 'weet-weet-weet' call reminiscent of Common Sandpiper, but stronger, louder and with a lower pitch. When displaying it would beat its wings and stand very upright, pushing its chest out. I visited the site again on 18 and 23 May. Whilst the bird was still favouring the same length of shoreline, it had started to wander further afield and on my third visit it was elusive.

There have only been three previous records of Spotted Sandpiper in Cumbria. The first of these was on the River Esk at Longtown, from 4–6 June 1986. The second was a long-staying bird at Cavendish Dock, Barrow. First recorded on 3 November 1989, it remained until 1st May the following year. The most recent record was of a bird on 27 September 1998 at South Walney.

The Spotted Sandpiper is the only American wader to have made attempts to breed in the UK. A pair attempted to nest on the Isle of Skye in 1975, laying four eggs, but the nest failed. Then in Yorkshire, a Spotted Sandpiper was seen paired with a Common Sandpiper at Elland Gravel Pits in 1990. In 1991, it was seen accompanying a Common Sandpiper and three fully grown young at Welbeck, raising the possibility that these were hybrid offspring. The paired Spotted and Common Sandpiper were again seen in 1992, this time at New Swillington Ings.

Despite the Buttermere bird displaying almost constantly to Common Sandpipers there was no evidence of pairing or a breeding attempt, and it was last reported on 21 June.

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Fence-post entomology: unusual finds from north Cumbria in 2017

All three of the discoveries detailed here were made in connection with fencepost surveys in or at the edge of broadleaf woodland. For a few years, I have been carrying out surveys of fenceposts in the Finglandrigg Wood Nature Reserve. Initially this was in order to provide data on the life-history of the Forest Bug, as adults and nymphs at all stages of development can be found here on fenceposts under the tree canopy. However, as other more interesting insects were also discovered, the surveys were continued, and in fact increased in both extent and frequency after this project had been completed. Consequently, for the past year or so, checks of 400–500 posts have been carried out on a weekly basis, each survey taking roughly three hours. Two records derive from this, with a third from near Talkin Tarn.

Ant Beetle *Thanasimus formicarius* (plate 9)

I initially found one example of this beetle on 28 March, and later another on 4 May very close to the original find-spot, which was in Finglandrigg Wood at NY274567. There are currently only four Ant Beetle records from Cumbria on the Cumbria Biodiversity Data Centre (CBDC) database. Three are pre-2000 – from Meathop Moss [SD48] in 1965 (Neville Birkett), Scaleby Moss [NY46] in 1981 (David Bilton) and Skinner Pastures, Rusland [SD38] in 1996 (Stephen Hewitt). The fourth record is from Foulshaw Moss [SD48] in 2016 (Pete Akers). This species is a specialist in dead/decaying wood habitats (ecologically, it described as saproxylic). In this species both the adults and larvae are known to feed on bark beetles.

The snakefly *Xanthostigma xanthostigma* (plate 10)

I found an adult of this very distinctive canopy-dwelling predatory species at Finglandrigg Wood at NY274563 on 14 June, and later a snakefly larva (of species unknown) on 12 September, roughly 100m from where the adult had been found. Steve Hewitt agreed with the identification proposed by myself and CBDC. This is the only one of the four British species of the small insect Order Raphidioptera recorded from Cumbria. It is rarely seen, and records for it are only slightly more numerous than those for the Ant Beetle, and all pre-2000. Routledge (1933) reports the species from Eden valley sites, Great Salkeld and Baron Wood, in the early years of the 20th century; records from 1995-1996 by Stephen Hewitt are also from sites in that general area of the county: Fishgarth Wood, Cowraik Quarry and near Morland; there are F. H. Day specimens in the Tullie House Museum collection from two sites near to Carlisle – ‘Gelt’ and Orton Grange, in 1924 and 1936 respectively. The only southerly records are unsourced reports from Witherslack in 1941 and High Wray Bay, Windermere in 1960, and that by Jim Thomas from the Rusland Mosses in 1971.

The net-winged beetle *Pyropterus nigroruber* (plate 11)

Another saproxylic species, this beetle was found on 11 July on a farm gate at NY542588 after completing a survey of the fenceposts at the edge of a block of woodland to the west of Talkin Tarn. Although superficially like the Black-headed Cardinal Beetle (*Pyrochroa coccinea*), the deeply ridged elytra are distinctive. Unlike the Ant Beetle, it is only the larvae which are predatory. The identification was initially proposed by Sarah Nicholson at CBDC and later confirmed by Keith Alexander, who runs the relevant section of the Coleoptera Recording Scheme. His response gives an interesting perspective on the record: ‘... *the image is consistent with Pyropterus nigroruber, as is the time of year. This is a high summer species. But Cumbria is way outside its known range. The main concentration in GB is Yorkshire and the East Midlands, with a separate population in the Scottish Highlands. It will be interesting to see if there are further records locally over the coming years. It could conceivably be a small overlooked population or just a casual record from an accidental introduction with a load of firewood, etc. ... There are a number of saproxylics that have been spread in this way in recent years*’. I have revisited this area on several occasions but without further sightings.

I am grateful for the help of Sarah Nicholson whilst she was a temporary member of staff at Cumbria Biodiversity Data Centre, Carlisle. Her permanent successor, Stuart Colgate, provided details of CBDC records holdings and David Clarke kindly helped with inclusion of this information.

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***Drapetis assimilis* Fallén (Diptera; Hybotidae) new to Cumbria**

On 17 July 2017 I noticed several small (2mm long) black flies running about on the trunk of a Himalayan Birch (*Betula utilis*) in my Penrith garden (NY5129). I 'pooted' a few specimens and later used a microscope to identify them as *Drapetis assimilis*, a species previously unrecorded in Cumbria (Hewitt, 2016). *Drapetis* species belong to the sub-family Tachydrominae, the adults of which are predaceous, running over leaves and bare surfaces in search of tiny insects and springtails on which they feed. The prey is gripped in the front legs, pierced by the proboscis and sucked dry (Chvála, 1975). Collin (1961) reported that *D. assimilis* is often common on tree trunks, running in and out of cracks in the bark. He knew of the species only from Kent, London, Cambridgeshire, Suffolk, Herford and Hampshire, but considered it likely to be much more widely distributed.

The NBN Atlas website (National Biodiversity Network, 2017) indicates this species is widespread south of a line drawn from the Mersey to the Humber estuary, but with no records shown north of this. The database of the national Empid and Dolichopodid Recording Scheme (which is not presently uploaded to the NBN Atlas) has 100 records of *D. assimilis*, the most northerly of which come from vice-county 63 (South-west Yorkshire). The only exception to this is a record from Martin Drake of a single male from an old channel of the River Coquet at Sharperton, Northumberland (NT957034, VC 68) on 14 July 2006.

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Northern Arches Moth (*Apamea exulis*) in Brampton, new to Cumbria

On the morning of 8 July 2017 whilst opening the garden moth trap, one particular moth caught my eye as being one I did not recognise. It brought to mind a very small, very dark Dark Arches (*Apamea monoglypha*), but with orange cross lines across the forewings and a shaggy thorax. I did wonder about Northern Arches but as it was known from just a single English site, I considered this extremely unlikely. After consulting Waring & Townsend (2017), where the Northern Arches drawing was a poor match for my moth, I decided it was more likely a Dark Brocade (*Mniotype adusta*), which I had occasionally trapped before. The moth's identity kept nagging at me however, so I kept it in the fridge just in case! I then discovered a photo of Northern Arches on the UKMoths website – a near-perfect match for my moth, so I uploaded a photo (plate 8) to the Cumbria Moth Group Facebook group. Liz Still kindly sent my photo to Scottish expert Roy Leverton who confirmed that it was indeed a Northern Arches and thus a first for Cumbria.

Northern Arches is found in upland moorland throughout Scotland, usually higher than 200m a.s.l., where the larvae (still unknown in the wild) are thought to feed on grasses. There have only been four previous records in England and all from the same site in Kielder Forest: singletons at Belling Burn (NY694912) in 1992, 1993 and 2005 and three in 2016. This raises an obvious question of why the moth appeared in our garden on the edge of Brampton. The species is not known to migrate, so was this moth merely a wanderer or is there a breeding population nearby? Our garden is at ca. 80m a.s.l. and although there is a small area of rough grassland 100m away, it is certainly not obvious breeding habitat. The nearest moorland higher than 200m a.s.l. is six kilometres away at Geltsdale. Given the location of the Kielder records, perhaps the most likely place in Cumbria for Northern Arches would be in the Border Forests area, around Kershope or Spadeadam, at least 10km away. An interesting mystery, it shows what can turn up if a site is intensively monitored (I have been trapping our garden about three times a week for four years), and the importance of following up an interesting specimen using multiple identification resources.

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The Netted Carpet Moth (*Eustroma reticulata*): encounters with an iconic species

This rare and iconic moth species is almost confined in the UK to the Cumbrian Lake District. It is one of the very few UK moth species that is restricted by rarity of its food plant – in this case Touch-me-not Balsam (*Impatiens noli-tangere*). John Hooson of the National Trust has given a comprehensive account of the species in our journal (Hooson, 2007), and more recent account of habitat management techniques elsewhere (Hooson, 2014). He gave an excellent talk on the topic at the CBDC 2016 Recorders Conference. Inspired by all of this, I approached the National Trust regarding access to sites for photography.

The Trust are enthusiastic and welcoming to anyone taking an interest in the moth and its local conservation. NT Ranger Roland Wicksteed kindly helped me light-trap and photograph two adults at the St. Catherine's Wood site near Windermere. It has proved difficult to photograph adults on the flowering food plant, as emergence of the moth and flowering period only minimally overlap. Selecting a cold night (which makes the moths less 'flighty'), and targeting the end of the flight season proved successful. The moths fly at dusk and pre-dawn and come to light, so are difficult to observe without a light trap. Our two came to light pre-dawn rather than the more usual time of dusk. Placing remote lithium-powered actinic traps deep within the Balsam paid dividends (see cover picture). The two moths settled on the outside of the trap and needed gentle coaxing back onto the Balsam with a twig. Carpet moths are notoriously jumpy, and a team of NT helpers acted as 'slip fielders' to spot the moths as they dived into the Balsam. The first headed straight for the roots, but we were luckier with the second. The unusually cold morning probably helped to slow it down. The more usual technique of potting the moths up and refrigerating them was avoided for fear of harm to a rare species.

Monitoring of the moth population is carried out using caterpillar counts, which are more reliable than trying to record adult moths. I was lucky to attend the annual count of the east Coniston Water sites at the end of August. The inclusion of sharp-sighted younger volunteers enabled the detection of small early instar larvae as well as the more visible later instars. John would welcome willing volunteers to assist with future larval counts. (Contact: johnhooson@nationaltrust.org.uk.)

Acknowledgements

I am grateful for the help of John Hooson (Wildlife and Countryside Advisor, National Trust, Northern Region), Roland Wicksteed (National Trust Ranger, St. Catherine's Wood, Windermere) and Brian Hancock (Arnside and Silverdale AONB Moths lead recorder).

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Maps, data and a small hairy fungus

When the Cumbria Fungi Recording Group met at Whinlatter on 6 September 2017, we found a few caps of the 'hairy' Holly Parachute (*Marasmius hudsonii*), a saprobic mushroom specific to fallen Holly leaves (plate 12). The dearth of records from Cumbria suggests it is quite uncommon here. On 14 September, we found just two caps on one leaf on damp ground after search of extensive patches of Holly at Great Wood, Keswick. Few fungus books even include this distinctive species, the cap of which is covered with long needle-like hairs: one book describes it as 'probably overlooked'.

A search on NBN maps showed a complete blank for Cumbria, and an odd scatter of UK records, with only one in (northern) Scotland. It turns out that most records for this species on NBN derive from the British Mycological Society's online *Fungal Records Database of Britain & Ireland (FRDBI)* *. When checking further it becomes apparent that NBN is not licensed beyond 2006 by BMS! Searching directly on their FRDBI database showed one Cumbria record – from v.c. 70 at Great Wood in 2014. In reality, the situation is even worse: the other major online fungal database, *CATE2* * – an especially comprehensive and searchable resource maintained by the *Fungus Conservation Trust* – does not provide data to NBN (nor do FRDBI and CATE2 communicate with each other). As it happens, there are no pre-2017 Cumbria records of the *Marasmius* on *CATE2* anyway (and none held by Cumbria Biodiversity Data Centre).

The moral is, as ever in life, check the 'small print' – and especially when using NBN it seems. Many NBN UK Atlas users are unlikely to be aware that the *free* data is not comprehensive and includes unverified and poor quality data that could be used unwisely. Local Record Centres such as CBDC have worked hard to ensure that data they provide is high quality data and users are informed of any shortcomings. Local Records Centres use the data service fees charged to consultants to support their local recorders, but with increasing use of the NBN as a 'one stop shop' there is a serious threat to their future sustainability. Here we can at least be assured that records gathered locally, or via iRecord, *will* be available through CBDC. (And despite everything, our local records will go forward from

CBDC to the National Atlas as part of annual uploads).

*Both national databases accessed 18 September 2017.

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Nettle Clustercup Rust (*Puccinia urticata*) in 2017

On 7 May 2017 I noted this distinctive gall-causing fungus on nettles at a few different locations in the Haresceugh Fell area (NY64). The first of these was at a tiny limestone quarry at 520 metres a.s.l. I was unaware at the time of the sparsity of Cumbrian records. Our local expert Paul Nichol subsequently told me that he knew of only two previous ones – from Sandscale in the southwest, and Haweswater area Mardale in 2014/2015 – and that he had not seen it in the county himself. I took more notice of nettles thereafter, and found one example much closer to home – in this case a single infection on one plant in a hedgerow on 21 May at Moorhouse, Cumwhitton (NY55). Subsequently, the CNHS Field Meeting to Waitby Greenriggs and Smardale Cumbria Wildlife Trust Reserves (NY70) on 21 June brought records from each site, though only on a few plants at each (plate 12). I also noted it near Tindale Tarn (NY55) on 6 July. Given the ubiquity of nettles, and the obviousness of the fungus, it is not easy to explain the Cumbria records situation, especially in a species widely reported in the UK: under-recording alone may not be the explanation.

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Insects associated with old ash pollards in Borrowdale

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Introduction

Wood-pasture and parkland is recognised as a Priority Habitat in the UK Biodiversity Action Plan. (Biodiversity Reporting and Information Group, 2011). These mosaic habitats with open grown, mature trees are created and maintained through traditional practices involved in the farming of livestock stretching back several centuries. Veteran trees are home to a wide range of native species, particularly insects, lichens and fungi which depend on dead and decaying wood, many of which are restricted to this habitat.

The presence of wood-pasture, pollards and old coppice woodland forms a significant element of the cultural landscape of the Lake District National Park. Ash pollards in particular, provide visible evidence of a traditional wood-pasture system of winter fodder production. While coppice stools are cut at ground level, pollard branches are cut at a height of about 2m. This keeps the new shoots safely out of reach of cattle and sheep. Regular pollarding rejuvenates the tree, creating a flush of new growth which can be cropped and also greatly extends the life of the tree. Borrowdale is distinctive in having a large number of surviving pollard trees, many of which are of great age, certainly more than 300 years (Quelch, 2012).

One of the main purposes of pollards was to provide farmers with leafy twigs cut in mid-summer after the hay crop had been gathered. The sprays of branches with leaves attached were dried on racks, on walls or on the cut trees themselves, and then gathered and stored in barns as leaf fodder (Quelch, 2012). Lopping at 2–6 years produced the leafy branches that could be harvested for winter fodder. Lopping on a longer cycle provided poles for other uses around the farm and by other craftsmen. (Ancient Tree Forum, 2015). By counting the rings on pollard branches in Borrowdale it seems there was a 30-year cycle of cutting, but that only selected branches were taken and not all were removed at a single time (Read, 2000). The National Trust presently pollards around 1500 trees in the valley on a regular cycle of around fifteen years to prevent them from collapsing and to retain their biodiversity and landscape value.

Throughout Europe, dead wood (saproxylic) insects have been identified as the

most threatened community of invertebrates (Davies *et al.*, 2006). Speight (1989) defined saproxylic invertebrates as species which are dependent on dead wood during some stage of their lifecycle. Some 1800 invertebrate species in Britain are dependent on wood decay (Alexander, 2002). Saproxylic invertebrates include not only those that feed on the wood itself, but also predatory and parasitoid species, species feeding on dead wood fungi, species using sap runs on trees and even species that use empty insect borings in which to nest (Key, 1993). The adult stages of many of these insects do not live in dead wood but are pollen or nectar feeders, or are predatory on other insects. These additional resources are an important consideration in conservation management for saproxylic invertebrates. In Britain, the rarest and most threatened saproxylic invertebrates are concentrated in historic parklands and open wood-pasture (where livestock are grazed in areas with trees present). The majority of the endangered fauna are specialists associated with the later stages of wood decomposition and, in particular, the decay of veteran trees (Davies *et al.*, 2006).

The single most important dead wood resource for invertebrates is a large standing tree with columns of decay in the heartwood (Alexander, 1999). As a tree ages, its inner annual rings of xylem become moribund. Eventually this dead heartwood tissue is broken down by specialist fungi, releasing nutrients and creating conditions for a succession of saproxylic invertebrates. Different fungi preferentially break down lignin or cellulose in the heartwood and so create different types of rot which in turn support different invertebrate communities. Soft 'white-rot' is created where the lignin is digested and brittle 'red-rot' where the cellulose is removed. Thus, the practice of pollarding trees in the Lake District valleys has produced a rich and temporally continuous resource of ancient trees which might be expected to support a rich invertebrate fauna. Borrowdale, with its high concentration of ancient ash pollards, may therefore support a significant community of saproxylic insects.

In 2014 the National Trust (NT) conducted a survey of the insects associated with old ash pollards in the valley.

Method

Flight interceptor traps were built and installed by NT staff at two locations: at Watendlath (NY2715) and Seathwaite Wood (NY2312). Seathwaite Wood is a SSSI rich in veteran trees, with numerous ash and oak pollards, supporting important communities of mosses and liverworts, lichens and invertebrates. The wood-pasture at Watendlath has an internationally important assemblage of round 500 ash and other pollarded species including oak, sycamore and birch. Each trap consisted of four large clear plastic drinks bottles screwed by their tops to a square sheet of plywood. The plywood, with the bottles hanging below, was then suspended among the branches of a pollard ash and secured with guy ropes. The outward facing side of each bottle was cut away so that flying insects colliding with the bottle would drop into the bottom of

the bottle where a little liquid preservative was placed to preserve the catch.

Samples from the traps were recovered by NT staff on a roughly monthly basis from May to October and delivered to SMH. Samples were rough-sorted and specimens of beetles and various families of flies were extracted by JP. Beetles were identified by JR, craneflies were identified by JP and other families of flies and other insect orders were identified by SMH.

The first attempt to provide a standardised framework for site assessment of saproxylic beetles in Britain was the Index of Ecological Continuity (IEC), developed by Keith Alexander (2004). The IEC scores each species in relation to their known association with historic wood-pasture. The scores are summed, and the IEC score is cumulative with continued recording; all surveyed sites can be compared and the sites which are most species-rich in this old-growth fauna are thereby identified for conservation attention (Alexander, 2014). An alternative analysis, the Saproxylic Quality Index, which attempts to account for recording effort, was first suggested for saproxylic beetles by Fowles (1997). By factoring in recording effort, the Saproxylic Quality Index is stronger than the IEC at assessing site condition, but the IEC is a stronger assessment of site quality as it is led by species-richness of the old-growth fauna (Alexander, 2014). In this study, analysis of the results was undertaken using *Pantheon*, an online analytical tool for invertebrates developed by Natural England and the Centre for Ecology and Hydrology, which takes the same approach as the Saproxylic Quality Index but includes a wider range of species in addition to beetles in its calculations (see below).

Results

331 occurrences of 154 different species have been recorded from the following orders of arthropods: Diptera (103 species: 64% of the total); Coleoptera (40 spp: 25%), Hemiptera (6 spp: 3%), Mecoptera (2 spp: 1%), Neuroptera (1 sp: <1%) Dermaptera (1 sp: <1%), Isopoda (1 sp: <1%).

Nineteen nationally threatened, rare or scarce species have been identified: five Coleoptera and fourteen Diptera. Of these, one species is classified as Endangered (RDB 1), one is Vulnerable (RDB 2), two are Rare (RDB 3), one is Nationally Rare (NR), one is Near Threatened (NT) and twelve are Nationally Scarce (NS)/Notable/Lower Risk (LR).

Pantheon includes an assessment of the conservation importance of a sample based on species rarity and threat status, with each species assigned a Species Quality Score (SQS) from which a Species Quality Index (SQI) is calculated by summing the SQS for each species present in the sample. The sum of the SQS values is then divided by the total number of species recorded in the sample to compensate for recording effort and multiplied by 100 to give a three figure SQI value. The SQI can be calculated for a general list of species, or be more focused on species associated with specific habitat

types, such as dead wood. The SQI value can then be compared with those for other sites to provide a relative assessment of conservation interest. Table 1 shows the SQI for the broad biotopes covered by the combined Borrowdale samples and Table 2 breaks the data down for specific habitats indicated by the species assemblage.

Table 1

Broad habitat types (biotopes) represented by invertebrates recorded during the survey and associated with that biotope in the Pantheon package; showing the number of associated species identified for each biotope, the Species Quality Index (SQI) for each biotope represented and the number of nationally threatened, rare and scarce species associated with each biotope in the survey.

Broad biotope	No. of species	SQI	Species with conservation status
tree-associated	80	164	13
open habitats	52	106	1
wetland	37	178	7

Table 2

Habitats represented by invertebrates recorded during the survey and associated with that habitat in the Pantheon package; showing the number of associated species identified for each habitat, the percentage of the full list of associated species for each habitat that these results represent, the Species Quality Index (SQI) for each habitat represented and the number of nationally threatened, rare and scarce species associated with each habitat in the survey.

Habitat	No. of species	% representation	SQI	Species with conservation status
decaying wood	35	3	191	8
running water	22	2	173	4
wet woodland	13	5	154	1
peatland	14	1	150	1
marshland	7	<1	143	1
shaded woodland floor	40	4	140	4
arboreal	8	<1	138	1
tall sward & scrub	45	2	107	1
short sward & bare ground	1	<1	100	
upland	1	<1	100	

Of the total 154 species recognised by *Pantheon*, 81 are associated with trees, giving

an SQI of 164 for that broad habitat; 52 species are associated with open habitats, giving an SQI of 106 and 37 wetland species deliver a SQI of 178 for that biotope. Drilling down to habitat level generates SQIs of 191 for decaying wood, 173 for running water, 140 for shaded woodland floor and 107 for tall sward and scrub. Other habitats are represented by fewer than fifteen associated species and so their SQI results are below the reliability threshold. Decaying wood has the highest SQI value and the greatest number of species with a conservation status. Thus decaying wood is flagged as the most significant habitat for insect conservation interest in this study. Appendix 1 lists the saproxylic invertebrates identified from the Borrowdale samples and Appendix 2 lists the species with conservation status identified from the survey samples. Thirteen of the nineteen species with a conservation status are associated with trees and eight of these are saproxylic species requiring dead wood at some stage of their lifecycle. Six of these species were recorded from the Watendlath pollards, whilst fifteen species were identified from Seathwaite Wood.

At a more detailed level, *Pantheon* provides information on invertebrate assemblages associated with specific habitats. These Specific Assemblage Types (SATs) are characterised by ecologically restricted species and are generally only expressed in lists from sites with conservation value. The name labels applied to SATs relate to the favoured habitats of the species concerned in order to make them accessible to non-specialists. *Pantheon* reporting tables for SATs show whether or not any of the SATs represented in a sample are sufficiently species-rich to reach 'Favourable Condition' status. A threshold of the presence of a given number of specialist species is set for each SAT in order for it to be reported as being in favourable condition. However, the reported condition can only be considered reliable if the survey methodology complies with standard guidelines. The *Pantheon* analysis is designed to be compliant with Natural England's Common Standards Monitoring system for assessing the condition of SSSIs and to provide an invertebrate assessment element of that process. Using the Borrowdale 2014 data study data, *Pantheon* reports the SAT for heartwood decay is in favourable condition. No other SATs meet the required thresholds for favourable condition using these data. However, the methodology used in the 2014 Borrowdale study is only partially compliant with *Pantheon* standards and so there can be only moderate confidence in the reported condition status.

When the Watendlath and Seathwaite Wood samples are analysed separately Seathwaite Wood broad biotope SQI values are 171 for tree associated species, 111 for open habitats and 225 for wetland species. Those for Watendlath are 146 for wetland, 123 for tree-associated and 100 for open habitats. Seathwaite Wood habitat SQIs are 197 for decaying wood, 138 for shaded woodland floor and 113 for tall sward and scrub. Other habitats are represented by fewer than fifteen associated species and so their SQI results are below the reliability threshold. For Watendlath habitat SQIs

are 123 for shaded woodland floor and 100 for tall sward and scrub. The SQI for decaying wood is 121 and that for running water is 143 but both these values are generated from just fourteen specialist species each. Additionally, Seathwaite Wood is reported to be in favourable condition for the heartwood decay SAT.

Discussion

Threatened, Rare and Scarce species identified

The following information on the rare and scarce species recognised by *Pantheon* from the survey data is taken from the relevant national reviews of Coleoptera (Hyman & Parsons, 1992) and Diptera (Falk, 1991; Falk & Crossley, 2004). Additional information from the Recorder 3 software is also included where available.

Five beetles of conservation interest were identified: *Cantharis obscura* is a soldier beetle of damp, open woodland. The species is predominantly northern and western, occurring in broad-leaved and mixed woodland, particularly wood-edges, woodland rides and hedgerows. The larvae and adults are probably predatory. *Orchesia minor* is found in bracket fungi on trees, usually in old woodland. *Hydrocyphon deflexicollis*, a marsh beetle, is one of a number of small, brown, hairy beetles seen in and around marshland vegetation or at the edges of streams and lakes. This beetle lives under bark and around streamside willows or under stones on the river bank. *Elodes pseudominuta* is another marsh beetle, generally found in wetland situations such as marshes and riversides. *Quedius xanthopus* is a rove beetle associated with upland oak woodland, where it is usually found in wood mould in hollow trees and under bark.

Fourteen species of threatened, rare or scarce flies were recorded, of which seven are craneflies: *Ctenophora flaveolata* is a large and spectacular black and yellow banded cranefly which breeds in dead wood, especially beech. It was until recently recorded only from a few sites in southern England, but it was found in an oak wood in Wales in the mid-1980s and also in Yorkshire. There have been two reports of this species in Cumbria in the last ten years, suggesting that it may be spreading northwards. The first was a teneral female photographed by Mo Richards at Little Langdale (NY3202) in 2009 (Hewitt, 2009) and the second, a pair captured by Dorothy Iveson in Brandlehow Wood, Borrowdale (NY2520) in 2011. This cranefly requires dead wood and old or diseased trees in which the larvae develop. Old trees and stumps of particularly large girth are probably essential for this species. Adults visit blossoms such as hawthorn, which may also be important to their survival. *Ctenophora pectinicornis* is another spectacular cranefly of broadleaved woodland. Larvae again develop in decaying wood, especially of beech, though other species such as oak are apparently also used. The larvae use a range of sites including shattered ends of trunks and branches, and beneath bark, from ground level to some height. It is widely distributed but with a strong southern bias and again there have been an increase in the number of Cumbrian records in recent years (Hewitt, 2017). *Tipula*

cheethami has a clumped distribution in Scotland and north-west England and Wales. It occurs in lowland woods and on open moorland where its larvae develop in mosses or occasionally liverworts on wet rock faces and by streams and waterfalls. *Rhipidia uniseriata* is a cranefly of old broad-leaved woodland and hedgerows, its larvae develop in dead and decaying wood. Widely distributed in southern England north to Yorkshire, this is the first Cumbrian and most northerly British record of this species to date. *Molophilus lackschewitzianus* is found in woods usually in heavily shaded, stream-cut gullies on clay where the larvae are thought to develop in wet soil. The few records are widely scattered in Wales and England, north to Lancashire and Yorkshire. The two previous Cumbrian records of this species are from Hutton Roof Crag (SD5477) [Liverpool Museum, 2002] and Johnby Moor (NY4133) [JP, 2011]. *Tasiocera fuscescens* is another cranefly of wet areas in woodland, preferring acid sites. An increase in the number of recent records nationally, including some Cumbrian finds, indicates that this species is not as rare as its status suggests. *Eloeophila verralli* occurs along alder-lined streams and its larvae are aquatic.

Five of the remaining flies of conservation interest belong to the family Dolichopodidae: *Dolichopus rupestris* is a local upland fly found in northern Britain. Species of *Medetera* are tiny flies which run about on the vertical surfaces of tree trunks and rocks. Three notable species were identified in the study: *M. muralis*, *M. impigra* and *M. tristis*. The latter two species are new to the Cumbria list (Hewitt, 2016). *Thrypticus pollinosus* is a small metallic green fly, the larvae of which bore in the stems of monocotyledons.

The dance fly *Rhamphomyia micropyga* is widely scattered in old broad-leaved woodland. Larvae of this genus develop in a range of situations including soil, leafy-earth and rotting wood, where they are probably predatory. Finally, the Black-fringed Moss-snipefly (*Ptiolina obscura*) is widely recorded in damp broadleaved woodland, especially beside streams and rivers. Larvae are thought to develop in mosses such as *Hypnum* on stones and trees and adults have been observed flying about the trunks of beech and on a colony of the Smokey Bracket Fungus (*Bjerkandera adusta*) on fallen branches.

Other species new to Cumbria

In addition to the species new to the Cumbria list mentioned above, the dance fly *Rhamphomyia nitidula* can also be added. This uncommon fly has an apparent northern and western distribution and males have been reported swarming around willow and birch bushes in boggy situations.

Taxonomic representation

The two most important invertebrate orders represented in the Borrowdale trap data are beetles and flies, accounting for a combined total of 90% of the total number of

species identified. This is in part an artefact of the trapping methodology which targeted flying insects, and other trapping methods would perhaps have resulted in a different representation of invertebrate orders being reported. Also, identification of species was selective, and Hymenoptera, for example, were not identified. Nonetheless, it is true that beetles and flies account for the majority of saproxylic invertebrate species, with around 700 beetles and 730 flies dependent on dead wood in Britain out of a total of some 1800 saproxylic invertebrate species (Alexander, 2002). All of the saproxylic species identified in this study are either Coleoptera (15 species) or Diptera (20 species).

Comparison with other woodland sites

Comparison can be made with two other woodland sites in Cumbria that have had their invertebrate fauna investigated: Glenamara Park, Patterdale (Hewitt & Parker, 2004) and Yewbarrow Woods, Rusland (Hewitt *et al.*, 2004). These surveys relied on active searching of adult and larval microhabitats and no form of passive trapping was used.

The invertebrate fauna of 143 species identified from Glenamara Park comprised 53% Diptera, 12% Coleoptera, 6% Hemiptera. 19 saproxylic species were recorded giving a SQI for wood decay of 175, three of these species have a conservation status. Of the 571 species identified from Yewbarrow Woods, 37% were Diptera, 29% Coleoptera, 8% Lepidoptera and 7% Hemiptera. Decaying wood was again the highest-scoring habitat, with 95 wood decay species giving a SQI value of 146, of which twelve species have a conservation status. The site also registers as being in favourable condition for the bark and sapwood decay SAT and the heartwood decay SAT.

Thus the 35 wood-decay species recorded from this Borrowdale study, including eight species with a conservation status and giving a SQI of 191, compares well with other studies in Cumbria. Furthermore, with a decaying wood SQI of 197, Seathwaite Wood has the highest value of the sites analysed here and is shown to be of significant value to saproxylic invertebrates.

Drewitt & Webb (2017) analysed a Windsor Forest invertebrate dataset using *Pantheon*. Windsor Forest is recognised as the richest site in Britain for its wood decay beetle fauna. They calculated a decaying wood SQI of 239 using just the saproxylic beetles included in their Windsor Forest dataset. The scores using only saproxylic beetles for the three Cumbrian sites analysed here fall well below this, with a SQI of 140 for the Borrowdale dataset and 132 for Yewbarrow Woods. The SQI for saproxylic beetles at Glenamara Park is calculated as 150, but this is based on just six wood-decay species and so fails to meet the threshold of 15 qualifying species below which results are considered unreliable. An analysis of specialist wood decay beetles in the Seathwaite Wood sub-dataset gives a SQI of 143 but this is based on just fourteen specialist species. That for the Watendlath ash pollards is 150 but based on

only six wood decay species.

The specific habitat preferences of saproxylic beetles are generally rather different from those of dead-wood flies. Many wood-decay Coleoptera require large, old trees found in wood-pasture and parkland, whereas the majority of saproxylic Diptera larvae need wet microhabitats – generally found in closed canopy woodland. Although veteran trees often have more wet microhabitats than young trees, they are not essential for many saproxylic Diptera. Rotheray *et al.* (2001) repeatedly found red-listed saproxylic Diptera breeding in small, young trees. Moreover, the warmer, drier climate of southern Britain favours Coleoptera, whilst several families of flies are better represented in the cooler, wetter northern and western regions.

It is interesting to see how the SQIs at these sites compare between wood-decay species of beetles and flies. 43 species of saproxylic flies are recorded from Yewbarrow Woods, giving a SQI for decaying wood Diptera of 163. At Glenamara Park the SQI for dead wood flies is 182, but is based on just ten saproxylic species and again falls below the threshold of fifteen qualifying species. The SQI for saproxylic flies in the 2014 Borrowdale study is an impressive 230, but with just twenty qualifying species, this is not far above the threshold and the score may have a significant margin of error. For Seathwaite Wood the wood-decay flies SQI is 237 calculated from nineteen specialist species, whilst that for Watendlath is 100 but based on just eight qualifying species. There appears to be a trend for the decaying wood SQIs for these Cumbrian sites to be higher for saproxylic Diptera than Coleoptera. If genuine, it is unclear whether this is related to environmental factors such as climate or woodland structure, or is an artefact of the methodology used.

Whilst flight interceptor traps are an efficient method of sampling saproxylic insects, the present data on dead wood insects in Borrowdale and at other Cumbrian sites is far from complete. Rotheray *et al.* (2001) showed that searching for larvae of saproxylic Diptera in various specific microhabitats is an effective method of surveying these assemblages. Fowles (1997) showed that increased recording effort at a site is likely to result in higher SQI values as scarce, specialist and rarely-recorded species are gradually added to the site list. Further study will no doubt add additional species to the known fauna of woodland sites in Cumbria and will develop our understanding of the value of Cumbrian woodlands for the conservation of invertebrates.

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Ash pollards at Seathwaite, Borrowdale. © Stephen Hewitt

Appendices – see overleaf

Appendix 1

List of wood decay associated species recorded from Borrowdale ash pollards showing adult and larval diets, niches utilised and niche/species associations.

Species	Cons status	Larval food guild	Adult food guild	sapwood & bark decay	heart-rot	fungi sporocarps	wet hollows	wood decay in soil
COLEOPTERA								
Anobiidae								
<i>Anobium punctatum</i>		Xyl	DNF?	•				
<i>Grynobius planus</i>		Xyl	DNF?	•				
Cerambycidae								
<i>Rhagium bifasciatum</i>		Sap		•				
Curculionidae								
<i>Hylesinus crenatus</i>		Xyl		•				
Elateridae								
<i>Denticollis linearis</i>			DNF?	•				
Leiodidae								
<i>Anisotoma humeralis</i>		Fung	Fung	•				
Lucanidae								
<i>Sinodendron cylindricum</i>		Sap	DNF?		•			
Melandryidae								
<i>Melandrya caraboides</i>		Fung	Fung		•			
<i>Orchesia minor</i>	NS	Fung	Fung	•				
Nitidulidae								
<i>Epuraea biguttata</i>				•		•		
Scaptiidae								
<i>Anaspis frontalis</i>		Pred	Nect					
<i>Anaspis maculata</i>		Pred	Nect	•				
<i>Anaspis rufilabris</i>		Pred	Nect	•				
Staphylinidae								
<i>Quedius xanthopus</i>	Nb	Pred	Pred					
<i>Quedius plagiatus</i>		Pred	Pred	•				

Appendix 1 (continued)

DIPTERA								
Dolichopodidae								
<i>Medetera impigra</i>	NS	Pred	Pred	•		•		
<i>Medetera muralis</i>	NS	Pred	Pred	•				
<i>Medetera tristis</i>	NS	Pred	Pred					
Hybotidae								
<i>Euthyneura halidayi</i>		Pred		•	•		•	
<i>Oedalea flavipes</i>		Pred		•				
<i>Oedalea holmgreni</i>		Pred		•				
<i>Oedalea stigmatella</i>		Pred		•				
<i>Oedalea tibialis</i>		Pred		•				
<i>Oedalea zetterstedti</i>		Pred		•				
<i>Tachypeza nubila</i>		Pred		•	•	•	•	
Limoniidae								
<i>Austrolimnophila ochracea</i>		Xyl	None	•				•
<i>Limonia nubeculosa</i>		Fung	None					•
<i>Neolimonia dumetorum</i>		Sapr	None	•		•		
<i>Rhipidia maculata</i>		Sapr	None	•	•		•	•
<i>Rhipidia uniseriata</i>	RDB 3	Sapr	None		•		•	
Mycetobiidae								
<i>Mycetobia pallipes</i>		Sapr	Sapr	•	•		•	
Syrphidae								
<i>Ferdinandea cuprea</i>		Sapr	Nect	•				
Tipulidae								
<i>Ctenophora flaveolata</i>	RDB 2	Sapr	None		•		•	
<i>Ctenophora pectinicornis</i>	Notable	Sapr	None		•		•	
<i>Dictenidia bimaculata</i>		Sapr	None	•	•		•	

Key to cell entries

DNF = does not feed; DNF? = possibly does not feed; Fung = Fungivore; Nect = Nectivore; Pred = Predator; Sap = Saprophagous; Xyl = Xylophagous. Blank cells in columns 3 and 4 = food guild unknown to *Pantheon*.

Appendix 2:

Nationally threatened, rare and scarce species identified from the flight interceptor traps on pollards, showing broad biotope and habitat associations. *W* = Watendlath; *S* = Seathwaite Wood

Species	Cons status	Broad Biotope	Habitat	W	S
COLEOPTERA					
Cantharidae					
<i>Cantharis obscura</i>	NS	tree-associated	arboreal		●
Melandryidae					
<i>Orchesia minor</i>	NS	tree-associated	decaying wood	●	●
Scirtidae					
<i>Elodes pseudominuta</i>	NS	wetland	marshland	●	●
<i>Hydroscyphon deflexicollis</i>	NT	wetland	running water		
Staphylinidae					
<i>Quedius xanthopus</i>	Nb	tree-associated	decaying wood		●
DIPTERA					
Dolichopodidae					
<i>Dolichopus rupestris</i>	NS	open habitats	tall sward&scrub		●
<i>Medetera impigra</i>	NS	tree-associated	decaying wood		●
<i>Medetera muralis</i>	NS	tree-associated	decaying wood		●
<i>Medetera tristis</i>	NS	tree-associated	decaying wood		●
<i>Thrypticus pollinosus</i>	NR	wetland	peatland		●
Empididae					
<i>Rhamphomyia micropyga</i>	(LR); Ns	wetland	shaded woodland	●	
Limoniidae					
<i>Eleophila verralli</i>	Notable	wetland	running water	●	
<i>Molophilus lackshewitzianus</i>	RDB 3		running water/ wet woodland		●
<i>Tasiocera fuscescens</i>	RDB 1	tree-associated wetland	shaded woodland floor	●	
Rhagionidae					
<i>Ptiolina obscura</i>	NS	tree-associated	shaded woodland		●
Tipulidae					
<i>Ctenophora flaveolata</i>	RDB 2	tree-associated	decaying wood		●
<i>Ctenophora pectinicornis</i>	Notable	tree-associated	decaying wood		●
<i>Tipula cheetami</i>	Notable	wetland	running water	●	

Appendix 3:

Pantheon conservation status is generated from the threat and rarity status from published reviews. The conservation status of species is complicated by the fact that there are two different systems in place – an ‘old’ system, that combines both threat and rarity, and a ‘new’ system that separates these. New reviews replace the old conservation status.

The ‘New’ system is a two-pronged approach that separates rarity from threat. Threat is calculated using internationally recognised post-2001 IUCN criteria:

EX – Extinct;
 RE – Regionally Extinct;
 CR – Critically Endangered;
 CR(PE) – Critically Endangered (Possibly Extinct);
 EN – Endangered;
 VU – Vulnerable;
 NT – Near Threatened;
 DD – Data Deficient;
 LC – Least Concern;
 NA – Not Assessed;
 NE – Not Evaluated.

Rarity is calculated using the Great Britain Rarity Status:

Nationally Rare – those which have been recorded from between one and fifteen British hectads (10 km × 10 km squares) within a given date class where there is reasonable confidence that exhaustive recording would not find them in more hectads;
 Nationally Scarce – those which have been recorded from between sixteen and 100 hectads within a given date class where there is reasonable confidence that exhaustive recording would not find them in more hectads.

The ‘old’ system – species having been evaluated using the pre-1994 criteria:

Extinct – listed as RDB App or Extinct;
 RDB 1 – Endangered;
 RDB 2 – Vulnerable;
 RDB 3 – Rare;
 RDB K – Insufficiently Known;
 RDB I – Indeterminate; Na – Notable A;
 Nb – Notable B;
 Notable – Notable or Nationally Scarce;

NR (marine) – Nationally Rare (marine species);
NS (marine) – Nationally Scarce (marine species);
Unknown – a few micromoths are listed as status Unknown;
None – not rare or scarce;
Not reviewed – the taxon was not assessed for rarity in the review;
New to Britain – recently added to the British list and not yet reviewed, but it is still rare as far as we know;
Not native – the taxon is thought not to be native.

Re-examination of two nineteenth century records of the Rough-legged Buzzard in Cumbria

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The Rough-legged Buzzard (*Buteo lagopus*) is an infrequent visitor to Cumbria with just sixty occurrences on file to the end of 2015. The quality of these records varies, but many from the nineteenth century leave much to be desired, either lacking precise details of when or where seen or the criteria used in identification or ageing. Many of these early records concern birds that had been shot and at least two of them still exist as museum skins. It seemed of interest to re-examine these, firstly to confirm and record the principal identification features but, more importantly, to investigate their ages. Both skins are in the Tullie House Museum collection, details as follows:

Bird 1 (Accession No. 42-1927-9)

Details from label attached to skin (and confirmed in card index):

Collected: Barron Wood, Cumberland, December 1879 [This is presumably the Baron Wood near Armathwaite, shown on the 1: 50,000 OS map at NY5143. Macpherson's *A Vertebrate Fauna of Lakeland* (1892) quotes this incorrectly as 'Barrow Wood'.]

Source: Edenhall Collection (Sir N. C. Musgrave).

Age and sex: not given.

Brief description:

Head: quite light, streaked brown; bill small.

Breast/belly: upper breast creamy white with distinct dark brown blotches; mid-breast dark brown band; belly creamy white, streaked.

Back: dark brown.

Wings: dark brown; tips of coverts edged creamy white, lighter on lesser coverts and scapulars; underwing creamy white, with dark brown area distal to carpal joint.

Tail: broad subterminal band with two narrower bands and a third incomplete band; inner portion of tail white.

Diagnosis: Head, breast, but especially underwing and tail all make this clearly a Rough-legged Buzzard. The two to three bars on the tail indicate that this was an adult bird (Cramp & Simmons, 1979).

Bird 2

Mounted specimen in display case; this is the right-hand bird of the two in the case as viewed from the front. Details from card index:

Collected: Elterwater, Westmorland, ca.1894.

Source: John Robinson bequest (of 1936); Robinson lived at Birds Hill, Elterwater.

Age: immature

Brief description (Being in a sealed glass case it was not possible to view all plumage details):

Breast: no proper dark band across breast.

Tail: difficult to see clearly but appeared to have only a single subterminal dark band, with the inner portion white.

Diagnosis: Breast and tail clearly establish this as a Rough-legged Buzzard, and both features are consistent with it being a juvenile. (The terms ‘juvenile’ and ‘immature’ are often confused; ‘juvenile’ is used here in the sense in which ringers use it, a bird which is still in the plumage it had when it fledged; ‘immature’ implies that it had not reached full maturity, so, whilst it is not wrong to describe this bird as ‘immature’, it is less precise than ‘juvenile’). Rough-legged Buzzards have a complete moult at the end of their first year of life, that is, in their second calendar year (Cramp & Simmons, *op. cit.*); this bird was therefore in its first year of life when obtained.

Acknowledgements

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Reference

Cramp, S. & Simmons, K. E. L. (eds), (1979) *The Birds of the Western Palearctic*, Vol. 2. Oxford: Oxford University Press, p.196.

Erratum

Volume 5.1, page 36, in ‘Squirrels in Mardale’. The authors have pointed out that the caption for Figure 2 differs from the original and their preferred wording is as follows: ‘*Monthly occurrence of Grey Squirrels in Naddle Forest. Solid trace = years 1-6; dotted trace = years 7-12; grey trace = total all years*’. The Editor apologises for this change, which will be corrected in any future versions.