Biological Recording in 2023

Discovering our Natural Heritage

Outer Hebrides Biological Recording

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Cover photograph, Dark Green Fritillary (*Speyeria aglaja*) - 30th July 2023

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Foreword

It is a little over a decade since we began documenting the biodiversity of our islands, and I am still surprised by the variation in the number and range of records we receive. We are fortunate to have a small group of experienced and dedicated recorders who provide a core set of records each year. Depending on their interests they may concentrate on a single or small number of sites, or, at the other extreme, range more widely, collecting records from the length and breadth of the archipelago. There are specialists who concentrate on a single taxon, such as moths or desmids, and the generalists whose interests and knowledge are wide and ever expanding. Their efforts have produced an impressive bank of data that provide information on the distribution, abundance and phenology of our wildlife. There are still surprises, each year we add new species to our island biodiversity lists. Sometimes they are species that may occur in an area or habitat that has not been well surveyed, they may be migratory species or records that have been submitted after a visit by a group of specialists, or just a chance encounter. Sometimes these species may not have been recorded in Scotland or the British Isles, but more rarely we may find a species that is new to the western Palearctic, thought to have been previously extinct in the UK or species that are new to science. If you thought new species were only found in remote areas of the tropics or in the depths of the oceans, just consider the significance of two new species of algae found in two small lochs in South Uist. It seems the more we discover, the more questions there are to solve and the more fieldwork we have to do.

There is, however, another component to our data collection, the large number of records supplied by a network of observers throughout the islands. The number of records from each individual may be small, but together they provide an impressive amount of information about our biodiversity. There may be a preponderance of common species observed in gardens, when walking the dog on the local beach or seeing something interest when out and about. The value of these records should not be underestimated, they give breadth and depth to our database, and make a significant contribution to our understanding of our natural environment.

The importance of the data collected by amateur naturalists, is acknowledged in the Scottish Biodiversity Strategy to 2045 and the draft Natural Environment Bill. The information we collect provides the evidence for nature restoration projects, the establishment of nature networks, the ability to monitor changes in our biodiversity through habitat loss, pollution and climate change. The focus is firmly on looking at our biodiversity on a landscape scale, and not just on designated sites. Therefore, what you record in your garden, on your croft or on your local beach is just as important as the wildlife found in nature reserves or on SSSIs. You can make a difference, provided that you tell us about what you see, preferably on a regular basis, even it is the most common of species.

We appreciate and value all your contributions. Remember, it is often the small things which make a difference.

Christine Johnson, February 2024

Ardnamonie road, South Uist - late afternoon January 17th 2024, I'm trying to write the 2023 report but am too easily distracted by the endless beauty of where we live, and the first records of 2024 will already have started to accumulate, the cycle continues ….

Introduction

Biological Recording in the Outer Hebrides

Biological recording in the Outer Hebrides is organised by a small group of local amateur naturalists. The main task of Outer Hebrides Biological Recording (OHBR) is to develop and maintain a database of information about the animals, plants, fungi, and micro-organisms which are found in the islands and to map their distribution. This information is made publicly available on the National Biodiversity Network Atlas Scotland[1] and on the OHBR wildlife website hub[2]. By making the information we hold available to everyone; we hope that decisions that may affect the biodiversity and quality of our natural environment are made with the best available knowledge. OHBR may be small, but by working together with a range of academic and conservation bodies, professional biologists and other amateur naturalists, we can make a difference.

We encourage individuals and communities to enjoy and engage with nature, to appreciate their natural environment and to learn about the island's wonderful and diverse wildlife. You don't have to be a scientist or an expert to take part in biological recording. Observations of common and easily recognisable species are as important as records of the more difficult groups. A single record can be as important as hundreds, and the wildlife in your garden can be as fascinating as the flora and fauna of a remote off-shore island.

Information about biological recording, how to submit records and participate in surveys is available on the OHBR website[3]. There are copies of our Wildlife of the Outer Hebrides leaflets, species checklists and previous issues of *Working Together - Discovering Our Natural Heritage, Biological Recording in the Outer Hebrides* to download[4] and a list of on-line resources to help with species identification[6]. You can share your observations and also ask for help with identification on our social medial group page[5].
Our friends at Outer Hebrides Birds[7] aim to bring together people with an interest in birds and birding in the Outer Hebrides. The County Bird Recorder is responsible for collating records of birds and information on where to submit records is available on their website[8].

Links

1. National Biodiversity Network Atlas Scotland – https://scotland.nbnatlas.org
2. OHBR hub of wildlife websites - https://www.hebridensis.org/
3. OHBR Website - https://www.ohbr.org.uk
4. OHBR Publications - https://www.ohbr.org.uk/publications.php
5. OHBR Facebook page - https://www.facebook.com/groups/286293481746505/
6. OHBR Resources - https://www.ohbr.org.uk/identification.php
7. Outer Hebrides Birds website - https://www.outerhebridesbirds.org.uk

Loch Bee, South Uist - just before dawn, 28th November 2023, 8:34am

Summary

Species	Records
Moss Carder Bee	658
White-tailed Bumblebee	316
Great Yellow Bumblebee	197
Common Carder Bee	164
Small Garden Bumble Bee	93
Red Admiral	92
Flame Carpet	68
Magpie Moth	68
Large Yellow Underwing	63
Dark Arches	63
Heath Bumblebee	59
Green-veined White	55
Silver Y	51
Meadow Brown	50
Gold Spot	49
Small Wainscot	49
Rosy Rustic	47
Garden Tiger	47
Smoky Wainscot	45
Small Tortoiseshell	44
Ear Moth agg.	43
Flame Shoulder	42
Square-spot Rustic	41
White Ermine	40
Small Square-spot	40
Bright-line Brown-eye	38
Common Rustic agg.	36
Dark-barred Twin-spot Carpet	35
True Lover's Knot	34
Limnephilus marmoratus	34
Hoary Belle	34
Dotted Clay	33
Drinker	33
Purple Bar	32
Burnished Brass	31

Records were received from 102 people who submitted 7,967 records of 1,262 taxa, including a large, and late, tranche of bumblebee records dated 2021. Records were mostly of full species with a few sub-species, varieties and so on. Sixty-eight of the taxa found were new to the Outer Hebrides. Half of these were desmids, a poorly recorded group of algae where extensive surveying of freshwater bodies is generating many interesting records included some species that are thought to be new to science.

Most species weren't recorded very often; 962 (76%) were recorded five or fewer times and 517 of these were seen just once. Thirty-five species were recorded more than 30 times and 25 of these were moths. The remaining ten species included, six species of bumblebee, three butterflies and a single caddisfly. Bumblebees featured strongly in the 2023 charts, the five most frequently recorded species in 2023 submissions were bumblebees. Of the 1,494 bumblebee records 95% came from just three visiting entomologists including one who submitted a late tranche of 1,186 records from survey work he carried out in 2021. In direct contrast 96% of the 3,714 Lepidoptera records in 2023 came from resident recorders.

Island	No. of records	of species	from recorders
Lewis	2019	567	54
Great Bernera	51	42	7
Harris	258	111	15
Scalpay	30	29	3
Berneray	11	8	7
North Uist	428	248	21
St Kilda	62	24	4
Grimsay	1	1	1
Benbecula	105	80	10
South Uist	4300	803	41
Eriskay	57	54	7
Barra	400	8	5
Vatersay	160	8	3
Sandray	31	21	8
Grianamul	10	7	2
Lingeigh	1	1	1
Pabbay	25	25	10
Mingulay	14	14	5
Berneray (Barra Head)	3	3	3
Total	**7967**		

The activities of the the two groups of recorders also varied geographically.Many of the records from Lewis, Harris, Barra and Vatersay were of bumblebees, in fact virtually all of the records from Barra (99.5%) and Vatersay (98.8%) were of bumblebees record by just one of the visiting entomologists who visited in 2021 but only sent in their records in 2023.

Until about 20 years ago the majority of records of plant and animal species in the Outer Hebrides resulted from visits by naturalists from outside of the islands. Since the inception of Outer Hebrides Biological Recording (OHBR) and a recent resurgence in Curracag's activity more and more records come from a group of recorders resident in the Outer Hebrides. South Uist has a number of very active recorders whilst very few records come in each year from Barra and the other southern islands or from Lewis and Harris. As we have seen in 2023 visits by experienced naturalists from elsewhere are important in adding to the taxonomic and geographic coverage of these islands.

Increasing the pool of resident recorders remains vital too. Many of the 68 species new to the Outer Hebrides in 2023 were recorded as the result of repeated visits to locations well known to the recorder. There is still a lot we don't know about the distribution, phenology and ecology of common species. Some species will become less common as an inevitable consequence of climate change. Others may increase in their abundance. Two migratory species of Lepidoptera, Red Admiral and Silver Y, seem to have had a good year in 2023, will this become the norm? We will only know by having a network of local enthusiasts actively involved in biological recording in the Outer Hebrides.

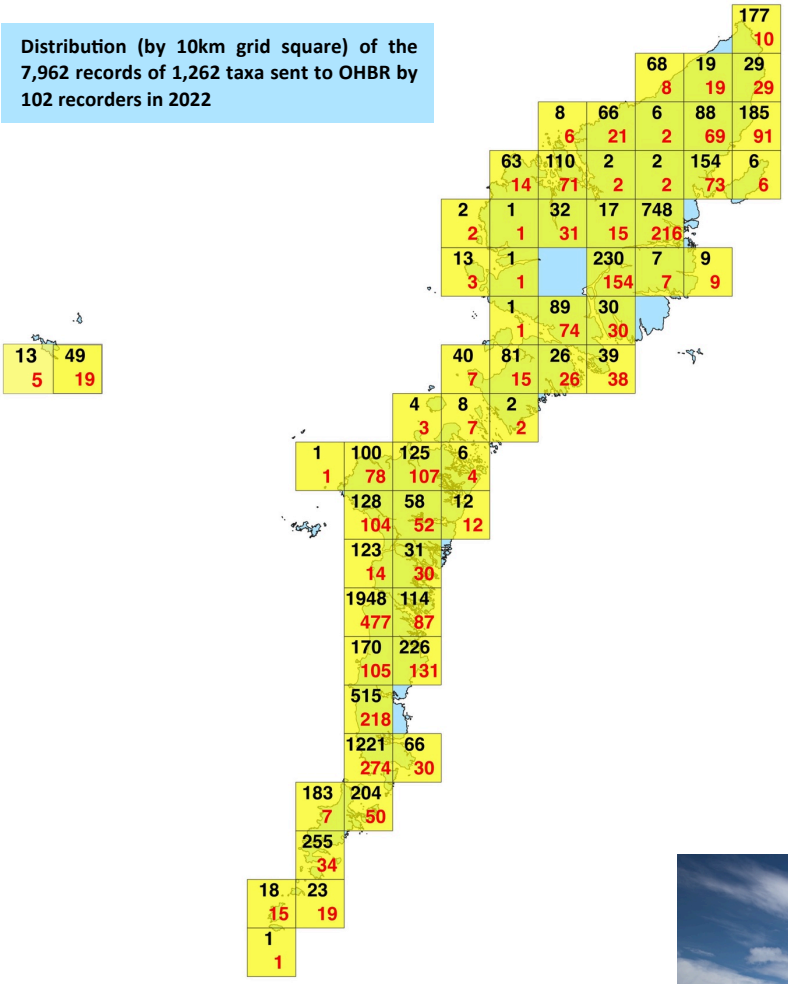
Summary

Records came from 59 of the 88 10km grid squares that cover the Outer Hebrides. Our maps exclude squares covering North Rona, Sula Sgeir and the Flannan Isles which are very remote and rarely visited by naturalists.

We include the St Kilda archipelago on some maps as these are regularly visited nowadays and have short term resident and/or seasonal inhabitants. There were 62 records of 24 species from St. Kilda in 2023 but none from the Monach Isles or Shiants. Most of the other unrecorded squares are very remote, difficult to access or contain just a few very small offshore islands or tiny parts of the main islands.

Looking down to Village Bay, Hirta, part of the St. Kilda archipelago

Distribution (by 10km grid square) of the 7,962 records of 1,262 taxa sent to OHBR by 102 recorders in 2022



The maps generally show both the total number of records by 10km square and also the number of species (richness) found in each of those squares.

Key

1948 Number of records

477 Number of taxa

Some squares have very high numbers of both records and species whilst others may have just a single record of one species. Distribution atlases for various taxonomic groups often map at a 10km square scale (a hectad).

Where there is a close match between the number of records and the number of species for a particular hectad it is a sign that an experienced recorder, or group of recorders, has been "square bashing"; trying to fill in a gap in the known distribution of a taxonomic group. Hectads which show a big difference between records and species are often those where records have been taken over an extended time period. Moth trap locations will show this pattern as will squares where a number of different recorders are active, perhaps where an important or interesting habitat is present.

Eilean Glas Lighthouse, Scalpay - first established in 1789 by Thomas Smith, the current tower dates from 1824 and was erected by his son-in-law Robert Stevenson, chief engineer to the Northern Lighthouse Board 1797-1842

Summary

			[1]VC110	2023
Vertebrates	**Class**	**Common Names**	**No. of Species**	**No. of Species (records)**
	Aves*	Birds*	409	3 (13)*
	Actinopterygii	Bony Fish	64	3 (4)
	Mammalia	Mammals	36	15 (87)
	Ascidiacea & Thaliacea	Sea Squirts, Salps etc	34	1 (1)
	Elasmobranchii	Sharks, Rays & Skates	6	1 (1)
	Reptilia	Reptiles	5	1 (4)
	Amphibia	Frogs, Toads & Newts	3	2 (21)
	Cephalaspidomorphi	Jawless Fish (Lampreys)	1	-
		Total	**578**	**26 (131)**

* Records of bird sightings – not collated by OHBR but through the Outer Hebrides Birds website and the BTO local recorder. The records noted here came through the OHBR Spring Survey and are reported here for completeness.

Invertebrates	**Class**	**Common Names**	**No. of Species**	**No. of Species (records)**
	Arthropoda	Insects (except Lepidoptera)	1650	286(2388)
		Lepidoptera	553	340 (3733)
		Other Arthropods e.g. Crustaceans, Spiders, Millipedes etc.	221	34 (53)
	Mollusca	Snails, Slugs, Bivalves, Octopuses etc.	412	25 (36)
	Annelida	True Worms	160	4 (4)
	Cnidaria	Corals, Jellyfish, Hydra etc.	89	7 (23)
	Porifera	Sponges	50	2 (3)
	Bryozoa	Sea Mats (Moss Animalcules)	47	-
	Echinodermata	Sea Urchins, Starfish, Brittlestars, Sea Potatoes etc.	41	2 (2)
	Nemertea	Ribbon Worms	5	-
	Platyhelminthes	Flatworms	3	1 (1)
	Sipuncula	Peanut (or Star) Worms	3	-
	Brachiopoda	Lamp Shells	2	-
	Ctenophora	Comb Jellies e.g. Sea Gooseberry	2	-
	Others	Small soil, marine or freshwater animals eg Rotifera, Echiura, Phoronida, Nematoda, Myzozoa,	11	3 (3)
		Total	**3172**	**704 (6246)**

Plants	**Division**	**Common Names**	**No. of Species**	**No. of Species (records)**
	Magnoliopsida	Flowering Plants	950	28 (93)
	Bryophyta*	Mosses	348	91 (252)
	Marchantiophyta*	Liverworts	169	35 (96)
	Rhodophyta	Red Algae	149	1 (1)
	Chlorophyta	Green Algae	72	1 (1)
	Charophyta	Stoneworts and Desmids	Awaiting revision	333 (1074)
	Pteridophyta	Ferns & Horsetails	45	4 (11)
	Pinopsida	Conifers	23	-
	Lycopodiopsida	Clubmosses & Quillworts	9	-
	Anthocerotophyta*	Hornworts	2	-
		Total	**1767**	**493 (1528)**

* No. of species from British Bryological Society's Interim Census Catalogue 2018 by T.L. Blockeel and N.G. Hodgetts

Fungi	**Phylum**	**Common Names**	**No. of Species**	**No. of Species (records)**
	Ascomycota	Non-lichen forming Sac fungi e.g Orange Peel Fungus	354	8 (14)
		Lichen forming Ascomycota	627	1 (3)
	Basidiomycota	Larger mushroom type species, and Rusts	563	22 (33)
		Lichen forming Basidiomycota e.g. *Lichenomphalia* spp.	5	-
	Chytridiomycota	Chytrids (fungi with flagellate spores)	5	-
	Zygomycota	Moulds	8	-
	Oomycota*	Filamentous protists (Downy Mildews)	16	-
	Myxomycota*	Slimemoulds	8	1 (4)
		Total	**1586**	**32 (54)**

*Oomycota (Kingdom Chromista) and Myxomycota (K. Protozoa) are traditionally studied by mycologists hence their inclusion here.

Others	**Kingdom/Sub Kingdom**	**Common Names**	**No. of Species**	**No. of Species (records)**
	Bacteria	Includes Blue-green Bacteria	24	-
	Chromista	Brown Seaweeds, Diatoms etc.	118	7 (8)
	Protozoa		22	
		Total	**164**	**7 (8)**

[1] Unless stated otherwise, No. of species for VC110 are from current OHBR checklists or NBN Atlas Scotland checklists as of 1/2/22. For some groups the later are "best guess estimates" as up to date data from some recording schemes can be slow to reach NBN.

Invertebrates - insects

2023 in figures - 6,246 records of invertebrates were submitted to OHBR in 2023, the highest number of records of invertebrates received since 2017, c.60% of these records were of Lepidoptera, compared to values of 75% - 85% in the years 2017-2021.

Within the Order Lepidoptera the bulk of the records are of species of moths. Most years we receive over 3,300 records of about 320 species of moth. There is considerable year by year fluctuation in the number of butterfly records (105 in 2020 but 290 in 2023). The number of butterfly species found each year shows little fluctuation.

In terms of the number of species recorded, Lepidoptera accounted for 48% of all invertebrate records in 2023. In the last three years it has become clear that increases in records from other orders of insects have become increasingly important.

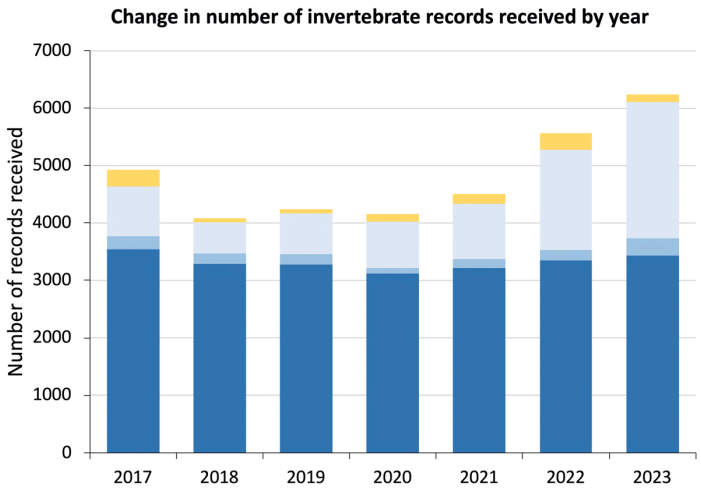
The number of records of insects from orders other than Lepidoptera showed a dramatic increase in 2022 and 2023, between 2017 and 2021 an average of c.770 records of "other insects" were received. The data for 2022 (1,794 records) and 2023 (2,378 records) showed more than double that average number.

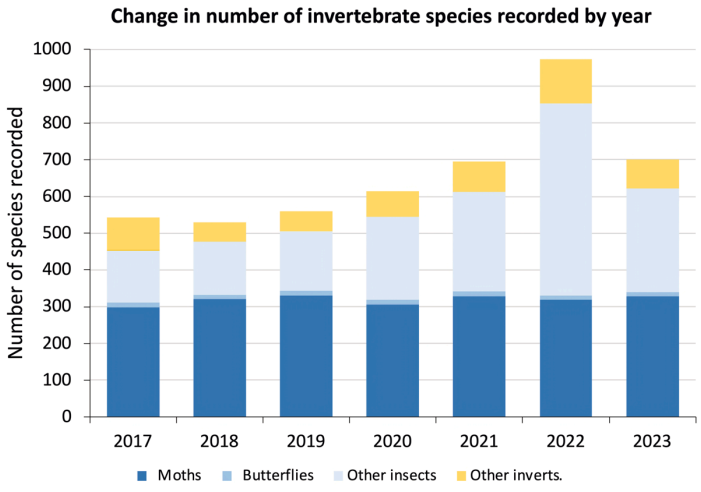
Changes in the number of species of "other insects" showed a big increase in 2022 with the number of species dropping back to more average levels in 2023.

There is little recording of invertebrates other than insects with an average of 3.5% of all invertebrate records and 12% of all invertebrate species being from other taxonomic groups. There is certainly no systematic survey work being undertaken on non-insect invertebrates.

Records	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Lepidoptera	3768	3473	3461	3221	3369	3527	3733
	77%	85%	82%	77%	75%	63%	60%
Moths	3546	3287	3274	3116	3215	3343	3438
Butterflies	222	186	187	105	154	184	290
Other insects	864	533	703	806	960	1749	2388
	18%	13%	17%	19%	21%	31%	38%
All Insects	**4632**	**4006**	**4164**	**4027**	**4329**	**5276**	**6121**
Other inverts.	**287**	**77**	**75**	**131**	**177**	**288**	**125**
	6%	2%	2%	3%	4%	5%	2%
All Inverts.	**4919**	**4083**	**4239**	**4158**	**4506**	**5564**	**6246**

Species	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Lepidoptera	312	333	343	319	342	331	340
	58%	63%	61%	52%	49%	34%	48%
Moths	299	320	330	306	329	319	329
Butterflies	13	13	13	13	13	12	11
Other insects	141	144	163	225	270	523	286
	26%	27%	29%	37%	39%	54%	41%
All Insects	**453**	**477**	**506**	**544**	**612**	**854**	**626**
Other inverts.	**89**	**53**	**53**	**70**	**83**	**120**	**78**
	16%	10%	9%	11%	12 %	12%	11%
All Inverts.	**542**	**530**	**559**	**614**	**695**	**974**	**704**





Invertebrates - insects

It is estimated that there is something in the region of 24,000 species of insect in Britain. So far, approximately 9% of the UK insect species have been recorded from the Outer Hebrides. Of the 2,000 or so species featuring in the VC110 records, 626 (c.27%) of them were recorded in 2023. That is appreciably lower than the 854 recorded in 2022 when the presence of two entomologists on the islands with particular expertise in Diptera and Coleoptera boosted the records of those two groups. Visiting entomologists come along most years and in 2023 they were mainly interested in bumblebees, all the species known to be here are recorded by resident naturalists in most years so they didn't increase the number of Hymenoptera species recorded in 2023. They did though visit areas less well covered by our resident recorders.

		Britain	VC110		Number of species recorded							
Order	**Common Name**	**Species[1]**	**Species[2]**	**%[3]**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**%[4]**
Diptera	Flies	7,000	835	11.9	74	69	55	71	92	223	**135**	**16.2**
Hymenoptera	Bees, Wasps etc.	7,000	118	1.7	26	22	28	29	34	43	**46**	**39.0**
Coleoptera	Beetles	4,000	506	12.7	18	19	32	68	76	176	**51**	**10.1**
Lepidoptera	Butterflies & Moths	2,570	569	22.1	312	333	343	319	342	340	**331**	**59.8**
Hemiptera	Bugs	1,830	85	4.6	11	6	10	16	21	35	**12**	**14.1**
Phthiraptera	Biting lice & Sucking lice	540	1	0.2								**0.0**
Collembola[5]	Springtails	250	10	4.0					2	3	**3**	**30.0**
Trichoptera	Caddisflies	198	75	37.9		14	22	25	24	25	**22**	**29.3**
Thysanoptera	Thrips	179										
Psocoptera	Barkflies	100	4	4.0			1		3	3	**2**	**50.0**
Neuroptera	Lacewinges & Ant Lions	69	6	8.7			1	1	2		**1**	**16.7**
Siphonaptera	Fleas	62	16	25.8				1	2			
Ephemeroptera	Mayflies	51	12	23.5		1	2	2	1	3	**3**	**25.0**
Odonata	Dragonflies	49	12	24.5	9	9	8	8	8	8	**8**	**66.7**
Plecoptera	Stoneflies	34	10	29.4			1	1	2	1	**1**	**10.0**
Orthoptera	Grasshoppers & Crickets	33	3	9.1	1	2	1	1	2		**1**	**33.3**
Protura[5]	Simpletails	15										
Diplura[5]	2-pronged bristle-tails	11										
Dictyoptera	Cockroaches, Termites etc.	11										
Strepsiptera	Stylops	10										
Archaeognatha	Bristle-tails	7	2	28.6	1	1	1		1	1		
Dermaptera	Earwigs	7	1	14.3	1	1	1	1	1	1	**1**	**100.0**
Mecoptera	Scorpionflies	4										
Rhaphidioptera	Snakeflies	4										
Megaloptera	Alderflies	3	1	33.3				1	1			
Zygentoma (Thysanura)	Silverfish & Firebrats	2										
Total		**24,039**	**2,266**	**9.2**	**453**	**477**	**506**	**544**	**614**	**853**	**626**	**27.6**

[1] The Royal Entomological Society Book of British Insects, Peter C Barnard, 2011, Willey-Blackwell

[2] From current OHBR or NBN Atlas Scotland checklists as of 1st January 2024

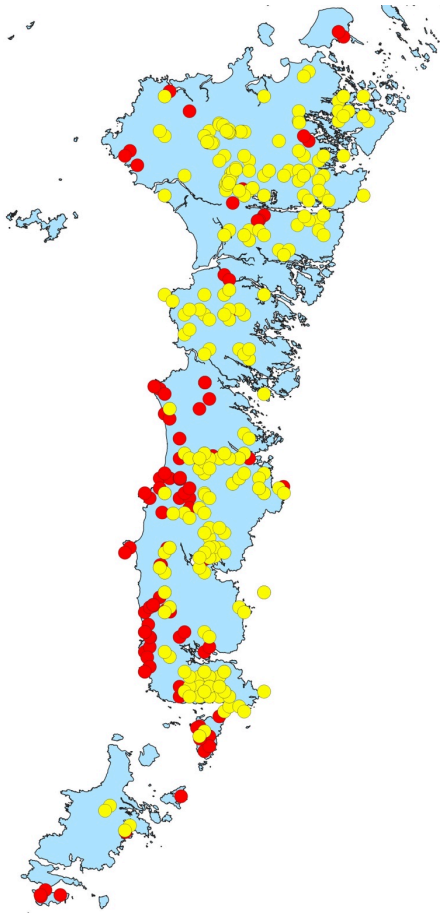
[3] As percentage of total British species, [4] As percentage of VC110 (Outer Hebrides) species, [5] No longer considered as Insects

Insects – Lepidoptera

Butterflies

The 290 butterfly records submitted in 2023 made it a good year for butterfly recording though there were no sightings of some of the less common species. There were just two records of Small Heath and one of Large Heath. Small Heath isn't rare here but seems to be largely overlooked in recent years, both records in 2023 were in early June. Records of both species in 2023 are in line with the number of records received during the 2020 – 2022 period when all the NBN records are from OHBR recorders. The larger number of records for both species for the period 2017 – 2019 reflects the influence of records from Butterfly Conservation up to 2019 being added into the NBN data base in 2023.

Large Heath is probably one of the target species for visiting entomologists. It is a fast-flying species of open heather moorland and can be difficult to spot. Most records are inland away from the machair of the west coast. The Small Heath prefers drier, more grassy but still slightly acidic, areas typically found in the "blacklands" zone between the machair and the heather moors to the east.



Distribution of NBN records of:

Large Heath ● and Small Heath ●
on Uist & Barra

		Number of records						
Species	**NBN[1]**	**2017[2]**	**2018[2]**	**2019[2]**	**2020**	**2021**	**2022**	**2023**
Green-veined White	2564	54	58	67	16	36	48	50
Meadow Brown	2447	35	71	57	18	21	34	50
Common Blue	1660	18	49	35	18	13	21	21
Red Admiral	1368	48	42	93	28	38	39	92
Painted Lady	1013	13	28	146	9	4	4	5
Small Tortoiseshell	920	9	8	17	6	17	17	44
Large Heath	748	11	19	15		2	1	1
Dark Green Fritillary	600	9	6	8	5	6	9	14
Small Heath	542	17	21	21	5	2	4	2
Large White	397	1	5	10	2	1	3	5
Grayling	273	3	3	3	2	2		
Peacock	148	4	2	9	2	5	1	6
Small White	54			3	1			
Speckled Wood	67	1			1	2		
Ringlet	31	2						
Clouded Yellow	30							
Orange-tip	10		2	1				
Pieris sp.							1	
Long-tailed Blue[3]	1							
Small Pearl-bordered Fritillary[4]	1							
Monarch[5]	1							
Total	**12875**	**225**	**314**	**485**	**113**	**149**	**182**	**290**

[1] as of 15/1/2024

[2] data for 2017-2019 are from NBN and include data from Butterfly Conservation in addition to OHBR records

[3] a record of this rare vagrant species from Butterfly Conservation of an individual recorded at NF85E on 16/12/2015

[4] a preserved specimen from the British Museum collection dated 1936 with a Lat 57.8634 Long -6.672 ref. locating it from Scalpay

[5] a record of this rare vagrant species from Butterfly Conservation of an individual recorded at NF75 on 4/10/1951

Insects – Lepidoptera

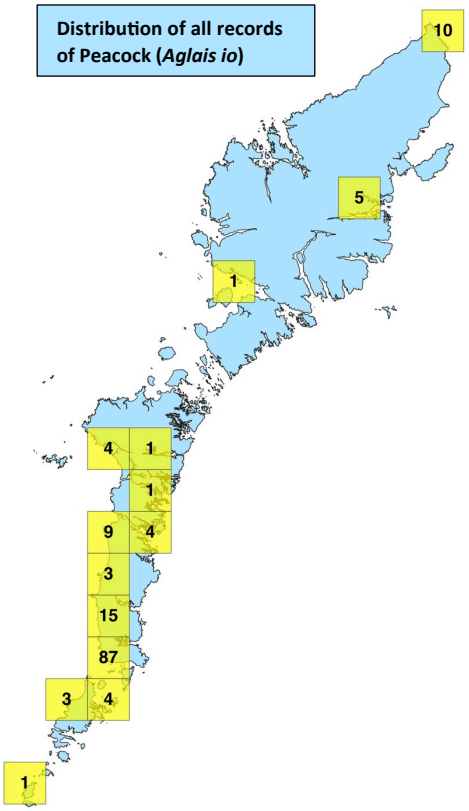
There had been hopes that odd records of Ringlet, Orange-tip and Speckled Wood suggested colonisation of the Outer Hebrides by these species was a possibility and that the small colony of Grayling on South Uist might become better established. A lack of records for all these species in the last couple of years would seem to show that this is unlikely. If occasional individuals continue make their way here from time to time then future colonisation by some of these species may still be a possibility.

Annual records of vanessid species

	Painted Lady	Peacock	Red Admiral	Small Tortoiseshell
Pre 2000	160	6	164	259
2000	12		13	4
2001	9			8
2002	2		5	4
2003	44		15	20
2004	11	2	19	17
2005	9		9	25
2006	45	14	85	24
2007	52	8	48	33
2008	2	4	22	26
2009	359	27	168	127
2010	13	24	58	31
2011	5	24	64	28
2012	1	1	93	35
2013	13	5	103	83
2014	20	6	155	76
2015	8	3	13	27
2016	44	1	46	19
2017	13	4	48	9
2018	28	2	42	8
2019	146	9	93	17
2020	9	2	28	6
2021	4	5	38	17
2022	4	1	39	17
2023	5	6	92	44

Some of the larger butterflies, especially the vanessids (Painted Lady, Peacock, Red Admiral and Small Tortoiseshell, are renowned long-distance travellers. 2023 was a good year for Red Admiral and Small Tortoiseshell but less good for Painted Lady and Peacock. The last "invasion year" for Painted Lady was in 2019 and an even bigger invasion in occurred in 2009.

Peacock seems to have been a recent colonist of the Outer Hebrides. Prior to 2000 there had been just 6 records but since 2006 they have been recorded annually. Most records come from South Uist where the species may have become established. Odd, short- lived, clusters of records elsewhere don't seem to have led to persistent breeding.



Prior to 2000 Small Tortoiseshell seemed the most established of the vanessid butterflies. Like the Peacock it overwinters as an adult, often inside buildings. The other two were always thought of as migrants with large scale multi-generational migrations towards the UK from North Africa and Southern Europe during the summer. After successfully breeding many thousands would then migrate back south in the Autumn.

Weekly totals of records of Red Admiral and Small Tortoiseshell in 2023

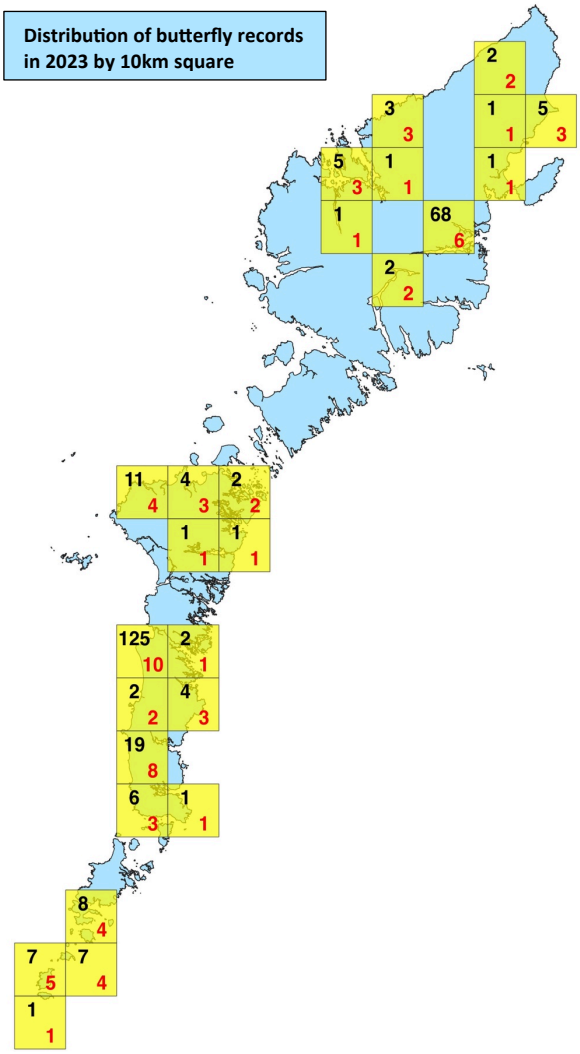
Month	April			May				June				July					August					September					October		
Week	15	16	17	18	19	20	21	23	24	25	26	27	28	29	30	31	31	32	33	34	35	35	36	37	38	39	40	41	42
Red Admiral				1	3	1	1	8	14	8	4	1	3	3		3	3	2	6	4	5	5	7	6	1	1	1		1
Small Tortoiseshell	1	3			1			6		3	5		3	5	2	4	3	5				2		1					

Red Admiral (*Vanessa atalanta*) 8th September 2023

The weekly counts of records of Red Admiral and Small Tortoiseshell in 2023 show the difference between the two vanessid strategies. Overwintering Small Tortoiseshell adults emerge in spring to lay eggs which lead to subsequent emergence of new adults later in the season. In contrast migrating Red Admiral butterflies arrived in late May/June, mated and laid eggs that gave rise to a second generation of adults in August/September. Adults of this second generation could be seen nectaring on late flowering Asters well into the autumn; fuelling up before their return migration south.

Insects – Lepidoptera

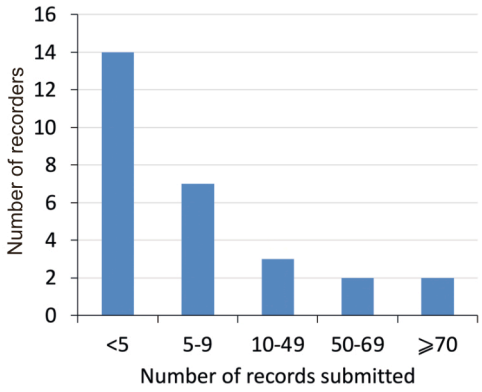
Order	Recorders	Species	Records	Records /species
Lepidoptera	54	340	3733	11.0
Moths	42	329	3438	10.4
Butterflies	**28**	**11**	**290**	**26.4**
Hymenoptera	21	46	1582	34.4
Diptera	17	135	382	2.8
Coleoptera	15	51	123	2.4
Odonata	12	8	87	10.9
Hemiptera	6	12	25	2.1
Orthoptera	4	1	1	1.0
Dermaptera	3	1	6	6.0
Trichoptera	2	22	165	7.5
Ephemeroptera	1	3	10	3.3
Neuroptera	1	1	1	1.0
Plecoptera	1	1	3	3.0
Psocoptera	1	2	4	2.0



Butterflies are probably the most charismatic insect group; they are attractive, easy to spot and easy to identify. Even though there were only eleven species recorded in 2023, twenty-eight recorders were involved.

An average of 26.4 records per butterfly species were submitted. Only the Hympenoptera have a higher number of records per species and the data for that group are distorted by a single observer who sent in a late (2021) tranche of 1,186 records of just seven species of bumblebee.

Butterfly records were spread over much of the islands but twenty-one of the twenty-eight recorders submitted fewer than ten records. Encouraging more recorders to submit records of more species would be very helpful, especially on Harris and Lewis.



Small Tortoiseshell (*Aglais urticae*) - 18th July 2023

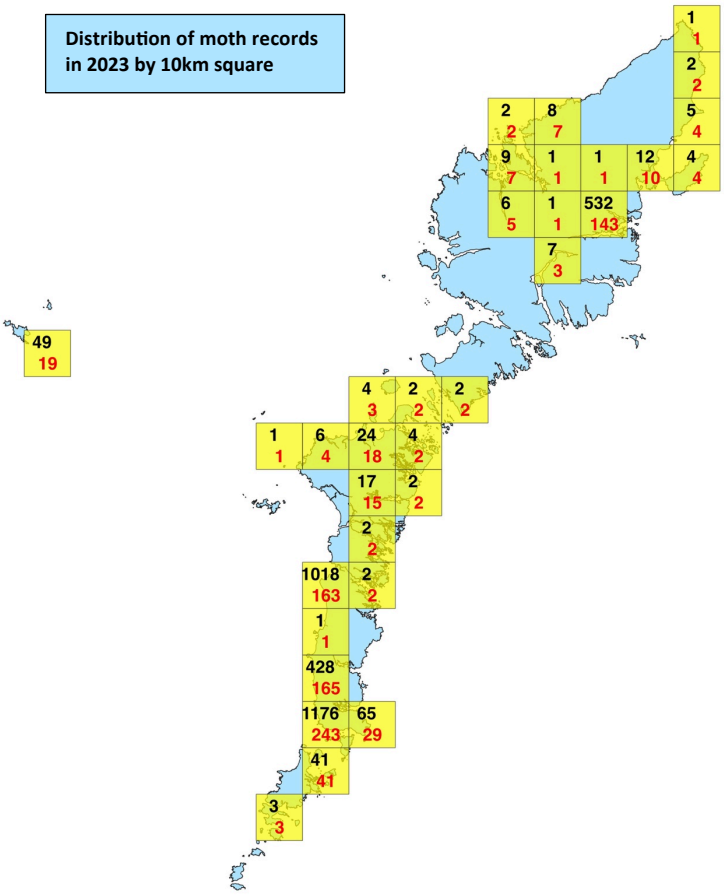
Dark Green Fritillary (*Speyeria aglaja*) - 30th July 2023

Moths

In 2023, forty-three people sent in records of moths. Thirteen of them recorded both macro and micro moths whilst thirty only supplied records of macro-moths.

A total of 3,438 moths records have been added to the OHBR data base and, hence, into the NBN Atlas system. 2,680 records were of 201 species of macro-moth and 758 records were of 128 species of micro moth. 95% of all records came from just four recorders who run moth traps; three at locations on South Uist and one on Lewis.

Distribution of moth records in 2023 by 10km square



2024 moth records by island	
Island	**No. of records**
Lewis[1]	580
Great Bernera	11
Harris	2
Berneray	6
North Uist[1]	53
Grimsay	1
St Kilda[1]	49
Benbecula	1
South Uist[1]	2685
Eriskay[1]	47
Vatersay	2
Sandray	1
Island marked thus, Lewis[1], are ones where moth traps were operated in 2024 for at least some nights	

2023 moth records from islands where no moth trapping took place			
Species	**Common Name**	**Stage**	**Total**
Acronicta psi/tridens	Grey/Dark Dagger	Adult	1
Acronicta rumicis	Knot Grass	Larvae	1
Arctia caja	Garden Tiger	Larvae	2
Cabera exanthemata	Common Wave	Adult	1
Camptogramma bilineata atlantica	Yellow Shell	Not recorded	1
Ceramica pisi	Broom Moth	Larvae	1
Deilephila elpenor	Elephant Hawk-moth	Not recorded	1
Lacanobia oleracea	Bright-line Brown-eye	Larvae	2
Laothoe populi	Poplar Hawk-moth	Larvae	1
Macroglossum stellatarum	Humming-bird Hawk-moth	Adult	1
Macrothylacia rubi	Fox Moth	Larvae	1
Notocelia cynosbatella	Yellow-faced Bell	Adult	1
Phalera bucephala	Buff-tip	Larvae	3
Plusia festucae	Gold Spot	Adult	1

The number of moth species recorded on islands where no moth trapping took place totalled just fourteen. Seven species were recorded as larvae, all have large and/or conspicuous caterpillars that are easily identified. One of the Bright-line Brown-eye records was of caterpillar being eaten by a Roller (a rare insect feeding bird seldom seen in the Outer Hebrides). Two Humming-bird Hawk-moths were recorded in 2023, one on Benbecula (a no moth trap island), the second on St. Kilda where a small amount of trapping takes place though this record was of one seen briefly whilst a visiting group was listening to the visitor introduction. Casual records are important and will often be of species that are not attracted to moth traps.

Bright-line Brown-eye (*Lacanobia oleracea*) – the conspicuous caterpillars come in two forms, green and brown. One recorded in 2023 on Vatersay was in the process of being eaten by a Roller (*Coracias garrulus*)

Insects – Lepidoptera

Macro-moths

In 2023 forty-three recorders sent in 2,680 records of 201 species of macro-moth. Thirty-three of those species were recorded just once, a further fifty were seen between two and five times, whilst forty-one species were seen more than twenty-five times. The recorded macro-moths belong to ten different families with the Noctuidae and Geometridae having the most recorded species with 90 and 81 respectively.

Family	**Number of species**	**Records**	**Example** - most frerquent species in family in 2023	**Records**
Drepanidae	2	2	*Achlya flavicornis* (Yellow Horned)	1
Erebidae	11	187	*Arctia caja* (Garden Tiger)	47
Geometridae	81	795	*Abraxas grossulariata* (Magpie Moth)	68
Hepialidae	2	27	*Korscheltellus fusconebulosa* (Map-winged Swift)	24
Lasiocampidae	3	59	*Euthrix potatoria* (Drinker)	33
Noctuidae	90	1493	*Apamea monoglypha* (Dark Arches)	63
Notodontidae	6	55	*Notodonta ziczac* (Pebble Prominent)	25
Saturniidae	1	8	*Saturnia pavonia* (Emperor Moth)	8
Sphingidae	4	43	*Laothoe populi* (Poplar Hawk-moth)	28
Zygaenidae	1	11	*Zygaena filipendulae* (Six-spot Burnet)	11
Total	**201**	**2680**		

Yellow Horned (*Achlya flavicornis*)

Map-winged Swift (*Korscheltellus fusconebulosa*)

Garden Tiger (*Arctia caja*)

Drinker (*Euthrix potatoria*)

Magpie Moth (*Abraxas grossulariata*)

Dark Arches (*Apamea monoglypha*)

Insects – Lepidoptera

Pebble Prominent (*Notodonta ziczac*)

Emperor Moth (*Saturnia pavonia*)

Poplar Hawk-moth (*Laothoe populi*)

Species of macro-moth recorded 25 or more times in 2023		
Common name	**Family**	**Records**
Magpie Moth	Geometridae	6 8
Flame Carpet	Geometridae	68
Large Yellow Underwing	Noctuidae	6 3
Dark Arches	Noctuidae	6 3
Silver Y	Noctuidae	5 1
Gold Spot	Noctuidae	4 9
Small Wainscot	Noctuidae	4 9
Garden Tiger	Erebidae	4 7
Rosy Rustic	Noctuidae	4 7
Smoky Wainscot	Noctuidae	4 5
Ear Moth agg.	Noctuidae	4 3
Flame Shoulder	Noctuidae	4 2
Square-spot Rustic	Noctuidae	4 1
Small Square-spot	Noctuidae	4 0
White Ermine	Erebidae	4 0
Bright-line Brown-eye	Noctuidae	38

Species recorded 25 or more times in 2023 continued		
Common name	**Family**	**Records**
Common Rustic agg.	Noctuidae	3 6
Dark-barred Twin-spot Carpet	Geometridae	35
True Lover's Knot	Noctuidae	3 4
Dotted Clay	Noctuidae	3 3
Drinker	Lasiocampidae	3 3
Purple Bar	Geometridae	3 2
Burnished Brass	Noctuidae	3 1
Ingrailed Clay	Noctuidae	3 0
Straw Dot	Erebidae	3 0
Chevron	Geometridae	3 0
Hebrew Character	Noctuidae	2 9
Knot Grass	Noctuidae	2 9
Autumnal Rustic	Noctuidae	2 9
Dusky Brocade	Noctuidae	2 9
Poplar Hawk-moth	Sphingidae	2 8
Antler Moth	Noctuidae	2 8
Ling Pug	Geometridae	2 7
Mottled Beauty	Geometridae	2 7
Middle-barred Minor	Noctuidae	2 6
July Highflyer	Geometridae	2 6
Snout	Erebidae	2 6
Pink-barred Sallow	Noctuidae	2 5
Narrow-winged Pug	Geometridae	2 5
Spectacle	Noctuidae	2 5
Pebble Prominent	Notodontidae	25

Six-spot Burnet (*Zygaena filipendulae*)

There are three locations where light traps are run on a regular basis; on more than 50 days per year. A light trap is run regularly at a fourth site on South Uist but on less than 30 dates in 2023 and traps are also run at other locations on a few days each year. The three main locations provide most of the moth records each year.

Ten most frequently recorded species in 2023 by site

Species / Trap location	S. Uist (S)	S. Uist (N)	Lewis
Flame Carpet	**21**	**24**	**13**
Small Wainscot	**21**	**21**	2
Square-spot Rustic	**18**	13	7
Purple Bar	**17**	7	5
Dark Arches	**16**	**19**	**13**
Dark-barred Twin-spot Carpet	**16**	**17**	-
Ear Moth agg.	**16**	14	5
Narrow-winged Pug	**16**	4	2
Rosy Rustic	**15**	15	**10**
Striped Twin-spot Carpet	**15**	-	2
Flame Shoulder	9	**27**	1
Gold Spot	14	**20**	4
Small Square-spot	11	**20**	5
Large Yellow Underwing	14	**19**	**17**
Bright-line Brown-eye	10	**18**	-
Smoky Wainscot	11	**17**	6
Magpie Moth	13	9	**20**
Mottled Beauty	7	5	**1 4**
Snout	8	2	**1 3**
White Ermine	5	10	**1 2**
Garden Carpet	9	3	**9**
Middle-barred Minor	2	10	**9**

Even though a species may not have been on the list of top ten most frequently recorded (**shown in black**) at a location it may still have been recorded there. Figures in red show the number of times those species was recorded at each site.

By looking at the ten most frequently caught species at each location we can get an idea of how the moth fauna varies between the three sites. In the table below the data are ordered initially by the frequency of each species at the southernmost site on South Uist, these species are shown in **bold black** type. Most of the species occur at the other two sites but are not equally frequently recorded.

Purple Bar and Narrow-winged Pug are in the top ten at the South Uist (S) site but not at the other two sites. Dark-barred Twin-spot Carpet is frequently caught at the two South Uist sites but not at all on Lewis. There is a block of six species in the table (Flame Shoulder to Smoky Wainscot) that are very frequently caught at the South Uist (N) location but much less often at the other two sites. Six species in the top ten on Lewis (Magpie Moth to Middle-barred Minor) are all found at the two South Uist sites but on rather fewer occasions.

Purple Bar (*Cosmorhoe ocellata*) – commonly caught at the South Uist (S) location but less so at the other two moth trap sites

Flame Shoulder (*Ochropleura plecta*) - frequently caught in light trap at the north end of South Uist but less frequently at traps at the south end of South Uist and on Lewis

White Ermine (*Spilosoma lubricipeda*) - often caught on Lewis but less so at South Uist (N) and, and particularly, at South Uist (S) in 2023.

Encouraging moth trapping at other locations would be invaluable in expanding our understanding of the VC110 moth fauna - locations on Lewis at Ness, Bernera, Harris, North Uist & Barra would be good. Finding people with the commitment to run the traps is likely to be the problem.Helping newcomers with identification is relatively simple given online access to OHBR and Curracag facebook groups.

Insects – Lepidoptera

Micro-moths

In 2023 fourteen recorders sent in 758 records of 128 species of micro-moth. Forty-two of those species were recorded just once, a further thirty-nine were seen between two and five times, whilst just seven species were seen more than twenty times. The recorded micro-moths belong to twenty-two different families with the Tortricidae and Crambidae having the most recorded species with 50 and 23 respectively.

Family	**Number of species**	**Records**	**Example** - most frequent species in family in 2023	**Records**
Argyresthiidae	4	6	Cherry Fruit Moth *(Argyresthia pruniella)*	3
Blastobasidae	2	38	Wakely's Dowd *(Blastobasis lacticolella)*	21
Choreutidae	1	6	Common Nettle-tap *(Anthophila fabriciana)*	6
Coleophoridae	4	4	Ling Case-bearer *(Coleophora pyrrhulipennella)*	1
Crambidae	23	234	Pale Straw Pearl *(Udea lutealis)*	29
Depressariidae	9	24	Large Carrot Flat-body *(Agonopterix ciliella)*	7
Elachistidae	2	5	Swan-feather Dwarf *(Elachista argentella)*	4
Gelechiidae	4	8	Heather Groundling *(Neofaculta ericetella)*	4
Glyphipterigidae	4	11	Cocksfoot Moth *(Glyphipterix simpliciella)*	5
Gracillariidae	6	18	Common Slender *(Gracillaria syringella)*	7
Lyonetiidae	1	1	Broom Bent-wing *(Leucoptera spartifoliella)*	1
Momphidae	3	3	Red Cosmet *(Mompha locupletella)*	1
Nepticulidae	2	3	Nut-tree Pigmy *(Stigmella microtheriella)*	2
Oecophoridae	3	40	White-shouldered House-moth *(Endrosis sarcitrella)*	24
Opostegidae	1	2	Sorrel Bent-wing *(Opostega salaciella)*	2
Plutellidae	1	15	Diamond-back Moth *(Plutella xylostella)*	15
Pterophoridae	2	14	Hoary Plume *(Platyptilia isodactylus)*	13
Pyralidae	3	5	Brown Knot-horn *(Matilella fusca)*	3
Tineidae	1	6	Carrion Moth *(Monopis weaverella)*	6
Tortricidae	50	311	Hoary Belle *(Eucosma cana)*	34
Yponomeutidae	1	3	Birch Ermel *(Swammerdamia caesiella)*	3
Ypsolophidae	1	1	White-shouldered Smudge *(Ypsolopha parenthesella)*	1
Total	128	758		

Wakely's Dowd (*Blastobasis lacticolella*)

Pale Straw Pearl (*Udea lutealis*)

Common Nettle-tap (*Anthophila fabriciana*)

Large Carrot Flat-body (*Agonopterix ciliella*) – can only reliably be told from the Common Flat-body (shown here) by dissection

Insects – Lepidoptera

Heather Groundling (*Neofaculta ericetella)*

Diamond-back Moth (*Plutella xylostella*)

Common Slender (*Gracillaria syringella*)

Hoary Plume (P*latyptilia isodactylus*)

Common Slender (*Gracillaria syringella*) – leaf mine on Privet, sometime micro-moths are easier to identify by looking for mines and other signs

Brown Knot-horn (*Matilella fusca*)

Red Cosmet (*Mompha locupletella*) - a very variable species and to confirm identification the genitalia (inset) may need to be examined

Carrion Moth (*Monopis weaverella*)

Insects – Lepidoptera

Garden Grass-veneer (*Chrysoteuchia culmella*)

Species of micro-moth recorded 5 or more times in 2023		
Species	**Common Name**	**Rec.**
Eucosma cana	Hoary Belle	34
Udea lutealis	Pale Straw Pearl	29
Bactra lancealana	Rush Marble	26
Catoptria margaritella	Silver-stripe Grass-veneer	25
Endrosis sarcitrella	White-shouldered House-moth	24
Eucosma campoliliana	Marbled Bell	22
Blastobasis lacticolella	Wakely's Dowd	21
Crambus pascuella	Inlaid Grass-veneer	20
Blastobasis adustella	Furness Dowd	17
Celypha lacunana	Common Marble	17
Acleris aspersana	Ginger Button	17
Eudonia truncicolella	Ground-moss Grey	16
Eudonia angustea	Narrow-winged Grey	15
Plutella xylostella	Diamond-back Moth	15
Hofmannophila pseudospretella	Brown House-moth	14
Eudonia mercurella	Small Grey	14
Agriphila tristella	Common Grass-veneer	14
Platyptilia isodactylus	Hoary Plume	13
Chrysoteuchia culmella	Garden Grass-veneer	13
Eana osseana	Dotted Shade	11
Crambus lathoniellus	Hook-streak Grass-veneer	11
Eudonia murana	Moorland Grey	11
Clepsis senecionana	Obscure Twist	11
Epinotia caprana	Large Sallow Bell	11
Acleris variegana	Garden Rose Tortrix	10
Notocelia cynosbatella	Yellow-faced Bell	10
Evergestis pallidata	Chequered Pearl	10
Epinotia immundana	Common Birch Bell	10
Agriphila straminella	Straw Grass-veneer	10
Eudonia pallida	Marsh Grey	9
Acleris effractana	Northern Scalloped Tortrix	9
Bactra furfurana	Mottled Marble	8
Crambus perlella	Satin Grass-veneer	8
Aphelia viburnana	Bilberry Tortrix	8
Scoparia ambigualis	Common Grey	7
Aspilapteryx tringipennella	Ribwort Slender	7
Notocelia uddmanniana	Bramble Shoot Moth	7
Agonopterix ciliella	Large Carrot Flat-body	7
Anania fuscalis	Cinerous Pearl	7
Acleris hyemana	Heath Button	7
Cnephasia conspersana	Coast Shade	7
Gracillaria syringella	Common Slender	7
Eana penziana	Large Mottled Shade	7
Zelotherses paleana	Timothy Tortrix	6
Anthophila fabriciana	Common Nettle-tap	6
Monopis weaverella	Carrion Moth	6
Ancylis geminana	Festooned Roller	6

Silver-stripe Grass-veneer (*Catoptria margaritella*)

Marbled Bell (*Eucosma campoliliana*)

Chequered Pearl (*Evergestis pallidata*)

Northern Scalloped Tortrix (*Acleris effractana*)

Cinerous Pearl (*Anania fuscalis*)

Some interesting new or migratory moths from 2023

Species	Common name	2023	NBN[1]	Notes
Family Geometridae				
Geometra papilionaria	Large Emerald	1	1	Second record for VC110, first was one seen in 2007
Rhodometra sacraria	Vestal[2]	1	12	2006 - 3, 2011 - 2, 2016 - 4, 2020 - 3
Family Glyphipterigidae				
Orthotelia sparganella	Reed Smudge	1	-	New species for VC110
Family Noctuidae				
Agrotis ipsilon	Dark Sword-grass[2]	7	306	Most years up to 40 seen
Autographa gamma	Silver Y[2]	51	756	Just 8 in 2022, peak no. 107 in 2009
Nonagria typhae	Bulrush Wainscot	1	-	New species for VC110
Phlogophora meticulosa	Angle Shades[2]	22	513	Range: 10 in 2021 - 58 in 2017
Xylena vetusta	Red Sword-grass[2]	4	119	Between 2009 & 2014 10 to 20 per year
Family Plutellidae				
Plutella xylostella	Diamond-back Moth[2]	15	273	Most years up to 50 seen
Family Sphingidae				
Agrius convolvuli	Convolvulus Hawk-moth[2]	8	32	Peak no. 2019 - 16, no more than 5 any other year
Macroglossum stellatarum	Humming-bird Hawk-moth[2]	2	38	Peak nos. 2011 - 7, 2016 - 7, 2019 - 6
Family Tortricidae				
Cydia nigricana	Pea Moth	1	-	New species for VC110

[1] NBN data as of 15th January 2023. Species marked thus (Vestal[2]) are migratory species that can occur in variable numbers each year

Three new species for the Outer Hebrides were seen in 2023, two micro-moths - Pea Moth (*Cydia nigricana*) and Reed Smudge (*Orthotelia sparganella*), the third new one was a macro-moth, Bulrush Wainscot (*Nonagria typhae*). All three were found at the south end of South Uist.

There was a second record of Large Emerald (*Geometra papilionaria*) from Stornoway. The only previous record was one from a remote moorland location on Lewis well away from the shrubby cover of Downy Birch, Silver Birch, Hazel and Alder normally associated with this species.

Silver Y (*Autographa gamma*) - South Uist, 23rd Sept. 2023

A number of migratory species were recorded; Silver Y, Angle Shades and Diamond-back Moth are seen in reasonable numbers most years but the 2023 totals are back to normal levels after a poor year in 2022. Eight Convolvulus Hawk-moths was the second highest year total after 2019 when sixteen were seen. Two Humming-bird Hawk-moths were recorded, one on Benbecula in July being followed by another on St. Kilda in mid September. A Vestal is always a good sighting, one was seen in late September on South Uist. Numbers of Dark Sword-grass and Red Sword-grass were low when compared to earlier years.

Vestal (*Rhodometra sacraria*) - South Uist, 29th Sept. 2023

Convolvulus Hawk-moth (*Agrius convolvuli*) - South Uist, 6th Sept. 2023

Insects other than Lepidoptera

Recording summary

Thirty-eight people submitted 2,373 of insects other than Lepidoptera in 2023, approximately the same number as in 2022 when thirty-nine sent in sightings. The total number of records was c.25% more than in 2022 and is easily the largest number of records submitted to OHBR since these annual reports started in 2017.

In 2022 the high level of records submitted was attributable, mostly, to two very experienced entomologists who specialised in Diptera and Coleoptera and were very efficiently able to add records over their relatively short stays on the islands. In 2023 the records include sightings from research entomologists who were recording the buzzing sounds of bumblebees in an attempt to see whether those sounds would be useful in identifying bumblebees to species level. In addition, a third entomologist submitted a late tranche of 1,186 bumblebee records from survey work he carried out in 2021. Their effect on the total number of records received in 2023 is clear but they didn't add much in terms of the overall diversity recorded.

Records of insects other than Lepidoptera, 2023 - by order

Order	Records	Species
Hymenoptera	1577[1]	46
Diptera	382	135
Trichoptera	165	22
Coleoptera	123	51
Odonata	87	8
Hemiptera	25	12
Ephemeroptera	10	3
Dermaptera	6	1
Psocoptera	4	2
Entomobryomorpha	3	2
Plecoptera	3	1
Collembola	1	1
Neuroptera	1	1
Orthoptera	1	1
Total	**2388**	**286**

[1] This total includes a late set of 1,186 bumblebee records from 2021 surveys

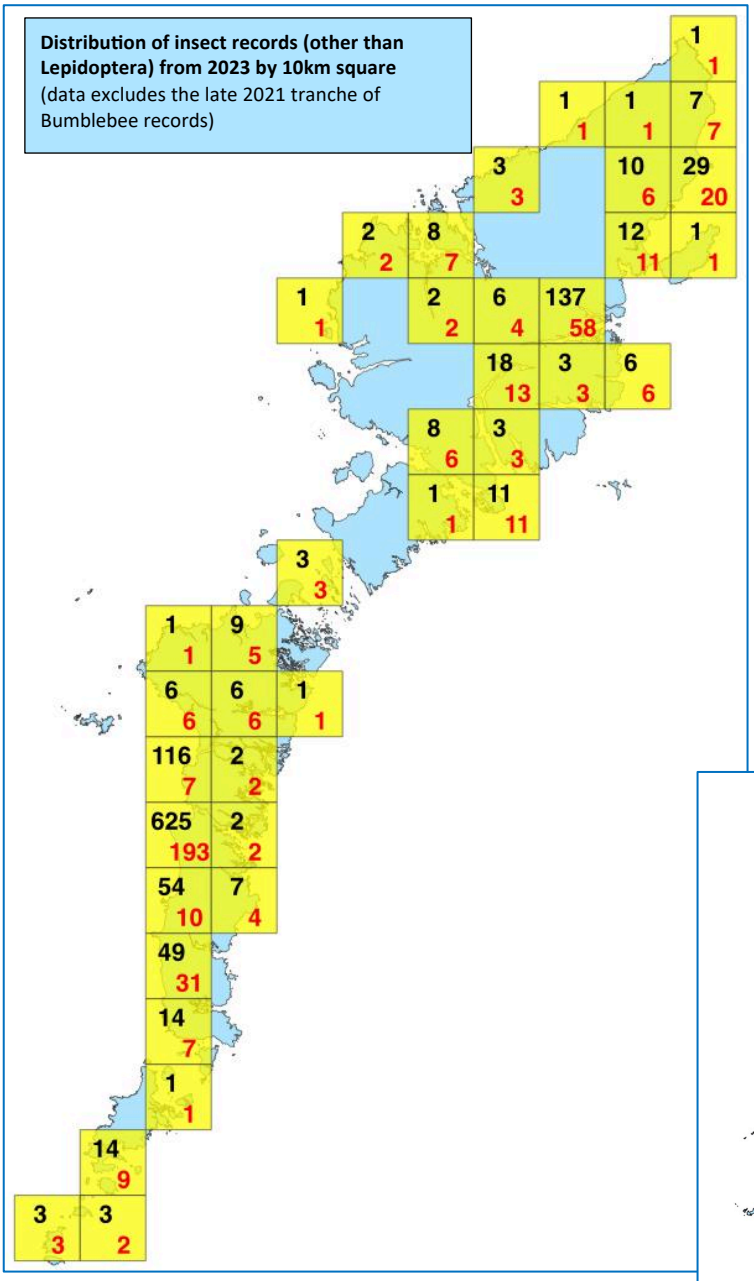
Having visiting naturalists, and by including a late submission of 2021 survey records, we ended up with a much more even spread of records across the archipelago than usual. The most active resident recorders live on South Uist and their sightings tended to dominate the numbers especially in the COVID years (2020/21). Until we get more locals interested in insect recording, we will always depend on visiting naturalists to provide geographical breadth to our coverage.

Insect records (other than Lepidoptera) received in 2023 by island

Island	2017	%	2018	%	2019	%	2020	%	2021	%	2022	%	2023	%
Lewis, Harris etc.	**179**	**20.1**	**99**	**17.6**	**80**	**11.4**	**37**	**4.1**	**114**	**12**	**400**	**22.9**	**906**	**38.2**
Lewis	141		24		54		34		97		73		766	
Great Bernera					2						34		7	
Harris	38		75		20		3		17		251		122	
Scalpay					4						15		11	
Pabbay											27			
North Uist etc.	**66**	**7.4**	**103**	**18.3**	**85**	**12.1**	**23**	**2.9**	**57**	**6**	**528**	**30.2**	**26**	**1.1**
Berneray	1		8		4		4		1		179		3	
North Uist	65		78		77		19		56		349		23	
Grimsay			17		4									
Benbecula	**77**	**8.6**	**56**	**9.9**	**3**	**0.4**	**7**	**0.9**	**24**	**2.5**	**72**	**4.1**	**7**	**0.3**
South Uist etc.	**506**	**56.7**	**284**	**50.4**	**483**	**68.7**	**734**	**91.5**	**734**	**77.1**	**740**	**42.3**	**860**	**36.2**
South Uist	485		277		481		732		729		732		860	
Eriskay	21		7		2		2		5		8			
Barra etc.	**64**	**7.2**	**22**	**3.9**	**52**	**7.4**	**5**	**0.6**	**23**	**2.4**	**9**	**0.5**	**574**	**24.2**
Barra	63		18		42		5		23		7		399	
Vatersay	1		2		10								158	
Sandray													11	
Lingeigh													1	
Pabbay													2	
Mingulay			2								2		3	
Total	**892**		**564**		**703**		**806**		**952**		**1749**		**2373**	

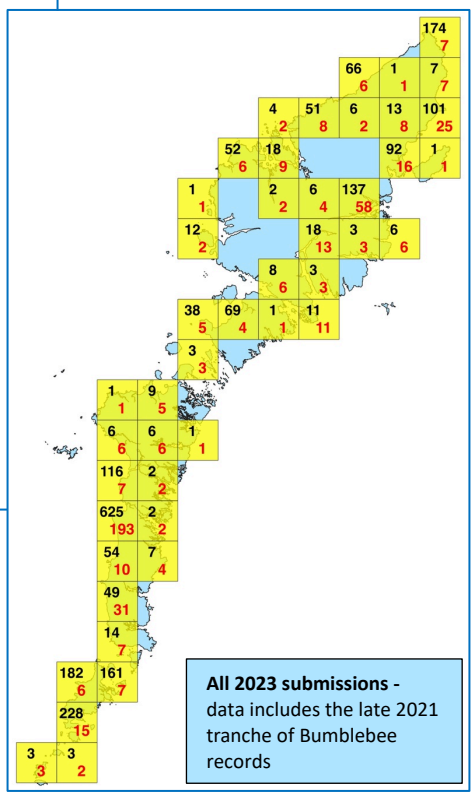
In most years we get a few late records from previous years included data sent to us. The large tranche of bumblebee records from a 2021 survey of the islands is an extreme case but one where we felt those observations needed to be include somehow.

Insects other than Lepidoptera



Submissions just for 2023 show a fairly typical pattern for records, mainly, from island residents. There is a strong showing along the western fringe of South Uist, the area around Culla bay on Benbecula is always a popular recording area as is the area running up the east of Lewis from the Lochs area, through Stornoway to Tolsta. Scalpay (Harris) and Great Bernera (Lewis) also often feature well.In the south Barra and some of the South Barra Isles (Bishop's Isle) was slightly better recorded than is the norm.

The inclusion of the late submitted 2021 bumblebee records creates a different picture with large number of records from Ness and NE Lewis, Uig, Luskentyre and Northton on Harris, and Barra and Vatersay in the south.



Species	Type	Total
Bombus muscorum	Bumblebee	75
Bombus distinguendus	Bumblebee	71
Bombus lucorum etc. group	Bumblebee	63
Bombus pascuorum	Bumblebee	62
Limnephilus marmoratus	Caddisfly	34
Bombus hortorum	Bumblebee	25
Plectrocnemia conspersa	Caddisfly	20
Pyrrhosoma nymphula	Damselfly	20
Tipula oleracea	Cranefly	20

Nine species of insects other than Lepidoptera were recorded more than 20 times in 2023. These included:

- five bumblebees,
- the two most commonly recorded caddisflies (often recorded as bycatch in moth traps),
- a large and conspicuous cranefly that often enters homes and is found fluttering against window panes
- and the commonest of the damselfies (the Large Red Damselfly)

Insects other than Lepidoptera

A further eighteen species were recorded between ten and nineteen times. This group include:

- a further four caddisflies, again usually as moth trap bycatch
- a dung beetle and carrion beetle that are also often attracted to light traps
- a dragonfly and another two damselflies, always well recorded
- four conspicuous hoverflies
- two more craneflies, one of which (*Tipula rufina*) is commonly found resting up on pale coloured walls in the morning
- also often identified by it's typical resting pose is the Downlooker Snipe-fly (*Rhagio scolopaceus)*
- 2023 was a good year for the Northern Colletes (*Colletes floralis*), which choses to nest conspicuously alongside eroding tracks on sand dunes
- Completing the common species was our most frequently seen ant (*Myrmica ruginodis*), the good summer weather led to lots of "flying ant" days involving this species.

Species	Type	Total
Limnephilus sparsus	Caddisfly	19
Acrossus rufipes	Dung Beetle	18
Sympetrum danae	Dragonfly	17
Ischnura elegans	Damselfly	17
Colletes floralis	Solitary Bee	17
Tipula rufina	Cranefly	16
Enallagma cyathigerum	Damselfly	15
Eristalis intricaria	Hoverfly	14
Limnephilus elegans	Caddisfly	14
Platycheirus albimanus	Hoverfly	13
Limnephilus affinis	Caddisfly	13
Limonia nubeculosa	Cranefly	12
Melanostoma scalare	Hoverfly	12
Rhagio scolopaceus	Snipefly	11
Eristalis pertinax	Hoverfly	11
Myrmica ruginodis	Ant	11
Nicrophorus investigator	Carrion Beetle	11
Limnephilus lunatus	Caddisfly	10

The species of non-lepidopteran insects that tend to be well recorded are those that belong to the more charismatic groups; bumblebees, hoverflies, dragonflies or damselflies. Ones that are noticeable for other reasons - a characteristic pose or dramatic swarming behaviour like ants show. Or ones that are found whilst doing more systematic survey work, such as caddisflies and certain beetles found as bycatch in moth traps.

A cranefly (*Tipula rufina*) – often seen in the morning resting, with wings closed, on outside walls

Downlooker Snipefly (*Rhagio scolopaceus*) – characteristically seen resting on solid surfaces looking, as the name suggests, downwards

Insects other than Lepidoptera

Order Hymenoptera – Bees, wasps, ants etc.

Recording synopsis

7000 British species, 123 VC110 species, 1.8% of British list. **2023**, 396 records of 45 species, 37% of VC List,

Family	Species (*new to VC110)	Common Name	Total
Braconidae	*Aleiodes unipunctator*		1
	Homolobus infumator		2
	Meteorus		2
	Zele albiditarsus		1
	Zele deceptor		1
Chrysididae	*Chrysis*	Ruby-tailed Wasp	1
Eurytomidae	*Tetramesa hyalipennis**	a seed chalcid	1
Ichneumonidae	*Cidaphus atricillus*		4
	*Diplazon tetragonus**		2
	Enicospilus ramidulus		2
	Ichneumon oblongus		1
	Ichneumon primatorius		4
	*Iseropus stercorator**		2
	*Lissonota biguttata**		1
	*Netelia cristata**		1
	Ophion		2
	Ophion autumnalis		1
	Ophion inclinans		1
	Ophion obscuratus agg.		1
	Ophion variegatus		3
	*Pimpla flavicoxis**		1
	*Promethes sulcator**		1
	*Stilpnus**		1
Total			**37**

Diplazon tetragonus - an ichneumon new to VC110

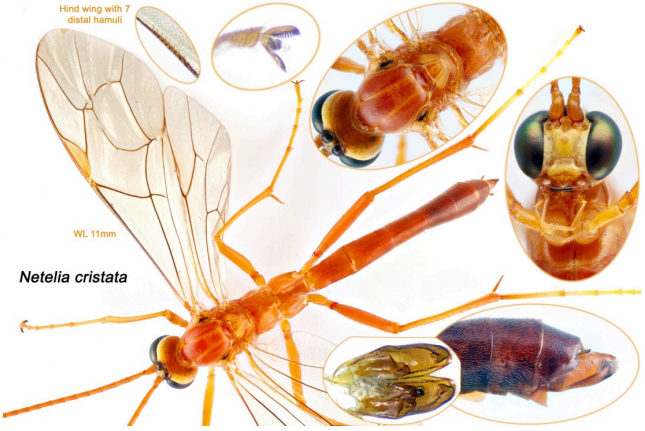
Iseropus stercorator - an ichneumon new to VC110

Braconidae, Ichneumonidae, Chrysididae & Eurytomidae

A single recorder on South Uist submitted 32 of the 37 records submitted in 2023, a further six recorders were involved in collecting the remaining sightings. Five species of the family Braconidae were recorded. There were also sixteen species of ichneumon (two of which could only be identified to genus). Seven of the ichneumons were new species for VC110 as was a seed chalcid *Tetramesa hyalipennis* (a gall former found on the flower heads of Sand Couch Grass). Finally, there was a single record of a Ruby-tailed Wasp, another identified just to genus.

Identification to species level within these families is a specialist activity and most can't be identified without detailed examination.

Lissonota biguttata - an ichneumon new to VC110



Netelia cristata – an ichneumon showing the level of detail needed for a successful identification to species.

Pimpla flavicoxis – an ichneumon new to VC110

Promethes sulcator – an ichneumon new to VC110

Ichneumon oblongus – a relatively easy ichneumon to identify because of the very short (brachypterous) wings

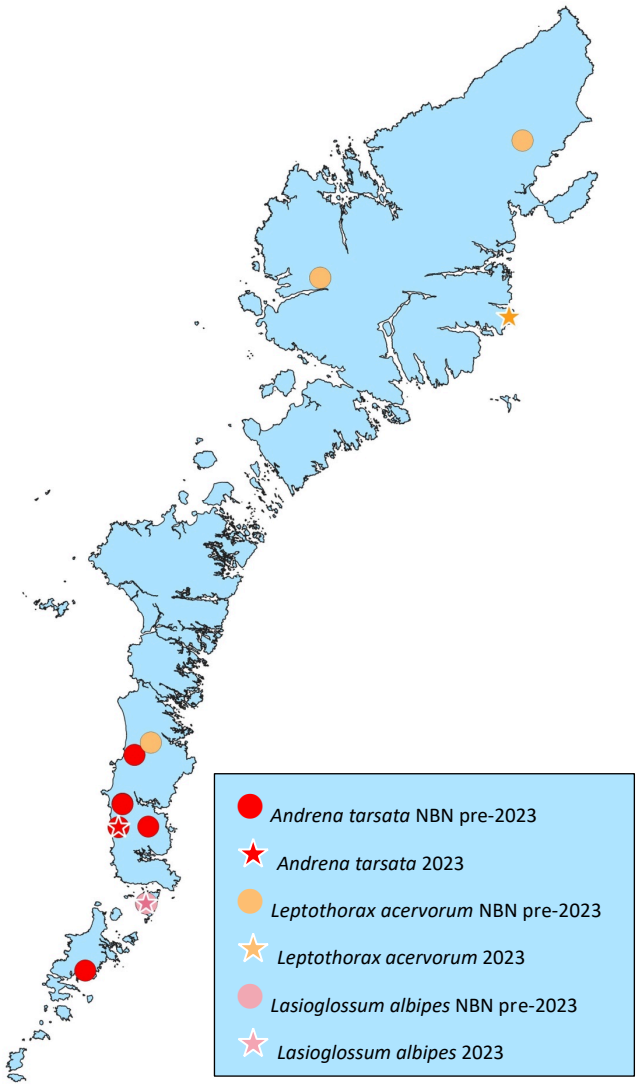
Stilpnus sp. - an ichneumon new to VC110 but only identified to genus.

Ichneumon primatorius – whilst many ichneumons are small this one is a bit of a monster with a body length of c.23mm and wings of c.17mm.

Insects other than Lepidoptera

Bees, wasps & ants

Family	Species (* notable as few previous NBN records)	Common Name	Records	NBN
Solitary bees				
Andrenidae	*Andrena tarsata**	Tormentil Mining Bee	1	7
Colletidae	*Colletes floralis*	Northern Colletes	17	444
Halictidae	*Lasioglossum albipes**	Bloomed Furrow Bee	1	2
Social bees				
Apidae	*Bombus*	Bumblebee	3	-
	Bombus distinguendus	Great Yellow Bumblebee	71	440
	Bombus hortorum	Small Garden Bumble Bee	25	290
	Bombus jonellus	Heath Bumblebee	9	279
	Bombus lucorum/terrestris/magnus/cryptarum	White-tailed Bumblebee	63	446
	Bombus muscorum	Moss Carder Bee	75	1000
	Bombus pascuorum	Common Carder Bee	62	162
Potter wasps & Social wasps				
Vespidae	*Ancistrocerus oviventris*	a potter wasp	4	40
	Ancistrocerus scoticus	a potter wasp	1	45
	Dolichovespula sylvestris	Tree Wasp	2	36
	Vespula rufa	Red Wasp	3	49
Ants				
Formicidae	*Leptothorax acervorum**	Slender Ant	1	3
	Myrmica ruginodis	a red ant	11	270
Total (data excludes the late tranche of records from 2021 that were submitted to OHBR in 2023)			**349**	



Three species recorded in 2023 stand out as they have very few previous NBN records.

There are seven prior sightings of the Tormentil Mining Bee (*Andrena tarsata*) from the period 2005 to 2021 ranging from Barra to Howmore. The specimen found in 2023 was within its known range here.

A single record of the Bloomed Furrow Bee (*Lasioglossum albipes*) came from Eriskay. The two previous sightings came from the same location.

There was a single record of a Slender Ant (*Leptothorax acervorum*). This was in a different location to the three previous sightings.

2023 seems to have been a good year for Northern Colletes (*Colletes floralis*). In recent years there have usually been less than 10 annual records, there were 12 seen in 2022, so 17 in 2023 is a good count. The number of records of the various Vespidae species are in line with those of recent years; counts of 1 to 8 per year are the usual range for the two potter wasps *Ancistrocerus oviventris* and *Ancistrocerus scoticus*, and the two social wasps *Dolichovespula sylvestris* and *Vespula rufa.*

Insects other than Lepidoptera

Two species (labelled with superscript[1] below) have reasonable numbers of NBN records and we might have expected to have seen them in 2023. Heather Colletes (*Colletes succinctus,* 42 NBN records) and the ant (*Myrmica scabrinodis*, 45 NBN records) were not recorded at all in 2023, in fact, there have been no records of Heather Colletes since 2013.

Records of species not recorded in 2023 and with an uncertain current status				
Species	**Common name**	**NBN records**	**First recorded**	**Last recorded**
Colletes succinctus[1]	Heather (Girdled) Colletes	42	1997	2013
Myrmica scabrinodis[1]	an ant	45	2004	2021
Apis mellifera[2]	Western Honey Bee	5	2006	2022
Myrmica sabuleti[2]	an ant	4	2014	2016
Andrena clarkella[2]	Clarke's Mining Bee	4	2015	2016
Andrena ruficrus[2]	Northern Mining Bee	11	2015	2022
Andrena coitana[2]	Small Flecked Mining Bee	2	2022	2022
Lasius flavus[2]	Yellow Meadow Ant	1	2022	2022
Dolichovespula saxonica[2]	Saxon Wasp	2	2022	2022
Dolichovespula norwegica[3]	Norwegian Wasp	3	1993	2019
Vespula vulgaris[3]	Common Wasp	8	1950	2011
Vespula austriaca[4]	Cuckoo Wasp	1	1900	1900
[1]>40 records, not seen in 2023; [2]<12 records, first recorded after 2000, not seen in 2023; [3] <12 records, first seen pre 2000, not seen in 2023; [4] not seen since 1900				

Then there is group of seven species[2] which have less than 12 NBN records in total. They were first recorded after 2000 were also unrecorded in 2023. Two more[3] have record histories going further back; into the 1990s for Norwegian Wasp and back even further there is the Common Wasp which was first recorded in 1950 and last noted in 2011.

Northern Colletes (*Colletes floralis*)

There was an enthusiastic flush of recording of some of these species from about 2006 to 2014, perhaps arising from the same enthusiasm that led to the creation of OHBR and the reinvigoration of Curracag.

For those species not seen in 2023, and especially those whose only records are from 2022, we need more records before we can be certain of their status.

Finally, we've a cuckoo wasp (*Vespula austriaca*) where the only evidence that it has ever been found in the Outer Hebrides comes from a dot in a 1979 distribution atlas: Archer, M.E. (1979). *Provisional Atlas of the Insects of the British Isles, part 9, Hymenoptera: Vespidae*.

Ancistrocerus scoticus - a potter wasp

Tree Wasp (*Dolichovespula sylvestris*) – photographs of wasps for identification really need to show the wasp from a variety of angles, as a first shot try to get a front on view of the head

Insects other than Lepidoptera

Sawflies

Family	Scientific name	Common name	NBN	2023
Argidae	*Arge rustica*		1	
Cimbicidae	*Cimbex femoratus*		1	
Siricidae	*Urocerus gigas*	Greater Horntail Wasp	8	
Tenthredinidae	*Dineura testaceipes*		2	
	Dolerus		1	
	Dolerus aeneus		3	2
	Dolerus aericeps	Larvae feed on Horsetails	5	
	Dolerus varispinus		1	
	Euura		1	
	Euura atra		1	
	Euura auritae		2	
	Euura bridgmanii		3	3
	Euura collectanea	Forms galls on *Salix*	23	
	Euura pavida		3	1
	Euura pedunculi	Forms galls on *Salix*	56	
	Euura ribesii		2	
	Euura weiffenbachii		7	
	Hemichroa crocea		3	
	Phyllocolpa		1	
	Platycampus luridiventris		2	
	Pontania		1	1
	Rhogogaster			1
	Rhogogaster scalaris	Larvae free living, polyphagous	1	
	Strongylogaster multifasciata		1	
	Tenthredinidae		3	
	Tenthredo arcuata		4	2
	Tenthredo atra	Larvae free living, polyphagous	4	
	Tenthredo brevicornis		9	
	Tenthredo ferruginea		1	
	Tenthredo mesomela		1	
	Tenthredo moniliata		1	
	Tenthredopsis		1	
	Tenthredopsis coquebertii		4	
Total			**157**	**10**

Cynipidae (Gall Wasps)			NBN	2023
	Andricus kollari f. agamic	Marble Gall Causer	4	
	Cynips divisa f. agamic	Red-pea Gall Causer	1	
	Neuroterus numismalis	Silk-Button Spangle Gall	2	
	Neuroterus quercusbaccarum	Common Spangle Gall	2	
Total			**9**	

As of 14th January 2023, there were 157 records of 32 taxa of sawflies recorded from the Outer Hebrides. Seven of these taxa were at the genus level. OHBR recorders added ten records of five species and one extra at genus level. None were new to VC110

Two of the species recorded were gall formers found on various willlows (*Salix* spp.). Of the other four sawfly records one species (*Dolerus aericeps*) is found on horsetails and the final ones have free living caterpillars that may be found on a variety of plants.

No gall wasps of the family Cynipidae were found in 2023. As areas of recently planted woodland mature it may be worth searching for galls formed by by some of these insects.

Dolerus aericeps – adult (above) and larva (right)

Insects other than Lepidoptera

Order Trichoptera – Caddisflies or sedges

Recording synopsis

198 British species, 75 VC110 species, 39.3% of British list. **2023**, 165 records of 21 species, 28% of VC List

Family	Species	Larvae	Adults	Total
Hydropsychidae	*Hydropsyche siltalai*		1	1
Leptoceridae	*Athripsodes cinereus*		1	1
	Ceraclea fulva		8	8
	Oecetis furva		3	3
	Oecetis lacustris		1	1
	Oecetis ochracea		7	7
Limnephilidae	*Halesus radiatus*		1	1
	Limnephilus	1		1
	Limnephilus affinis		13	13
	Limnephilus elegans		14	14
	Limnephilus hirsutus		2	2
	Limnephilus lunatus		10	10
	Limnephilus marmoratus	1	33	34
	Limnephilus pati		4	4
	Limnephilus sparsus		19	19
	Limnephilus vittatus		2	2
	Stenophylax permistus		5	5
Phryganeidae	*Agrypnia varia*		3	3
	Phryganea grandis		7	7
Polycentropodidae	*Plectrocnemia conspersa*	2	18	20
	Polycentropus irroratus		2	2
Psychomyiidae	*Tinodes waeneri*		7	7
Total		**4**	**161**	**165**

In 2023, two recorders sent in 165 records of 21 species of caddisfly. Most were of adult insects but there were three species recorded as larvae and a fourth larva that was only identified to genus. All of the adult caddisfly records came from one of the two recorders who operated a moth trap on 44 nights at a site on South Uist. Records of larval caddisflies came from bycatch from the ongoing VC110 Desmid study carried out by the second recorder.

The 2023 caddisfly season was fairly poor partly due to a prolonged dry spell in early summer which seemed to reduce the number of caddisflies being caught in the light trap. Two species that are usually caught in small numbers each year *Lepidostoma hirtum* and *Mystacides azurea* were not caught at all. There was, however, a first record of *Hydropsyche siltalai* for the site and four further records of *Limnephilus pati*.

This species had been thought to be extinct in mainland GB until it was found in the South Uist light trap in 2020 – causing a bit of a stir leading a number of articles in the national press. The specimens of *L. pati* in 2023 turned out to be two males and two females which seems to indicate that there is a breeding population fairly close by.

Hydropsyche siltalai - there are 42 previous records on NBN, most are of larvae sampled by various biologists doing RIVPACS stream and river monitoring. The last adult record was from 2008 at Rodel on Harris.

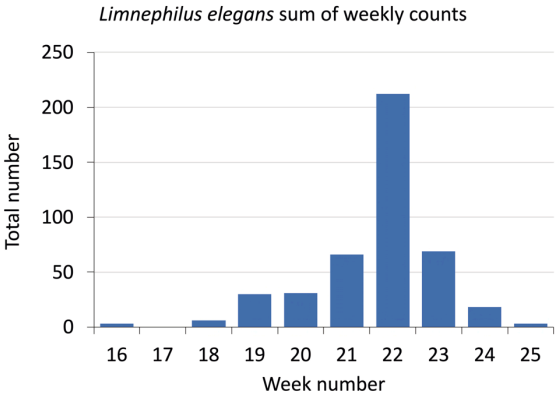
Limnephilus pati (female) - this species was thought to have been extinct in mainland Great Britain for over 100 years until rediscovered on South Uist in 2020. Finding four adults in 2023 (2 male and 2 female) is evidence of a breeding population nearby to the South Uist site.

Since the start of the South Uist caddisfly monitoring work, 885 records of 28 species have been added to the NBN data base. The species found include a number with no or few recent previous records, recent here means post 2000:

- *Limnephilus pati* had never been seen in Scotland before,
- *Limnephilus elegans* had been last recorded in 1901,
- *Limnephilus* auricula in 1906,
- there are a few more species with last sightings in 1960s, 1970s and 1980s.

Insects other than Lepidoptera

Limnephilus elegans – an early season species with a short flight period, usually peaking around the last week in May (week 22)



Perhaps the most surprising species on the list is *L. elegans*, there had been no record of it since 1901 yet it is a frequently recorded species at the South Uist site and can be found in the moth trap in large numbers (82 were present on the morning of 28th May 2021). It has a short and early flight period, at the South Uist site numbers usually peak around the last week in May. It is likely that this species wasn't well recorded in the Outer Hebrides as it would be flying before the usual influx of naturalists visiting the island began in early summer. Caddisfly monitoring started on South Uist on 17th June 2018 after the usual flight period of *L. elegans* hence there are no records of *L. elegans* for that year.

Number of records of caddisfly found as moth trap bycatch at South Uist monitoring site by year

Family	Species	2018	2019	2020	2021	2022	2023	Total	[1]Last seen
Hydropsychidae	*Hydropsyche siltalai*						1	1	
Lepidostomatidae	*Lepidostoma hirtum*	1	2	3	1	2		9	
Leptoceridae	*Athripsodes aterrimus*			1				1	1968
	Athripsodes cinereus		1	3	1	4	1	10	
	Ceraclea fulva	1	2	3	2	6	8	22	
	Mystacides azurea	1	2	1	1	3		8	
	Oecetis furva		1	5	1	6	3	16	1971
	Oecetis lacustris			1	2		1	4	1960
	Oecetis ochracea	1	6	3	6	12	7	35	
Limnephilidae	*Halesus radiatus*	1	3	2	1	1	1	9	
	Limnephilus affinis	3	18	18	13	20	13	85	
	Limnephilus auricula					1		1	1906
	Limnephilus elegans		12	15	11	9	14	61	1901
	Limnephilus griseus		1					1	
	Limnephilus hirsutus	2	5	4	2	7	2	22	1988
	Limnephilus lunatus	3	13	14	11	8	10	59	
	Limnephilus luridus		3	3	2			8	1962
	Limnephilus marmoratus	4	29	37	28	32	33	163	
	Limnephilus pati			1		1	4	6	Never
	Limnephilus sparsus	1	13	17	11	22	19	83	
	Limnephilus vittatus		1	2	1	1	2	7	
	Stenophylax permistus	1	6	11	8	8	5	39	
Phryganeidae	*Agrypnia varia*		2	4	7	9	3	25	
	Phryganea grandis	1	6	8	8	9	7	39	
Polycentropodidae	*Plectrocnemia conspersa*	2	24	25	24	24	18	117	
	Polycentropus flavomaculatus		3	7	1	2		13	
	Polycentropus irroratus				1	2	2	5	
Psychomyiidae	*Tinodes waeneri*	2	7	5	7	8	7	36	
Total		**24**	**160**	**193**	**150**	**197**	**161**	**885**	
Number of species		**14**	**22**	**24**	**23**	**23**	**21**	**28**	

[1]**Last seen** – South Uist caddisfly monitoring started in 2018, last seen refers to the year of the last record on NBN prior to that date, undated species have all been recorded post 2000.
Nºs. in red mark the first year a species was found after the scheme started in 2018

Order Diptera – True Flies

Recording synopsis

7000 British species, 835 VC110 species, 11.9% of British list. **2023**, 382 records of 135 species, 16% of VC List

Family	Type	Species	Records	Recorders
Syrphidae	Hoverflies	37	125	9
Tipulidae	Long-palped craneflies	12	68	8
Limoniidae	Short-palped craneflies	9	28	3
Cecidomyiidae	Gall-midges	8	23	5
Anisopodidae	Window-gnats	2	18	1
Scathophagidae	Dungflies	5	16	2
Rhagionidae	Snipeflies	1	11	5
Coelopidae	Kelp flies	3	9	1
Dolichopodidae	Long-legged flies	7	9	1
Muscidae	House flies	5	8	2
Tabanidae	Horseflies	3	7	2
Tephritidae	Picture-winged flies	3	7	1
Tachinidae	Parasite-flies	4	6	3
Calliphoridae	Blow flies	3	4	2
Agromyzidae	Leaf-miner flies	3	3	1
Anthomyiidae	Root-maggot flies	2	3	2
Ceratopogonidae	Miting-midges	1	3	2
Heleomyzidae		3	3	3
Pediciidae	Hairy-eyed craneflies	2	3	1
Psilidae	Rust flies	3	3	1
Ptychopteridae	Phantom craneflies	1	3	2
Stratiomyidae	Soldier flies	2	3	2
Trichoceridae	Winter gnats	3	3	1
Bibionidae	St Mark's flies	1	2	1
Chironomidae	Non-biting midges	1	2	1
Sciaridae	Black fungus-gnats	1	2	1
Sphaeroceridae	Lesser-dungflies	2	2	1
Chaoboridae	Phantom midges	1	1	1
Chloropidae	Grass flies	1	1	1
Empididae	Dance flies	1	1	1
Heterocheilidae		1	1	1
Mycetophilidae	Fungus gnats	1	1	1
Sciomyzidae	Snail-killing flies	1	1	1
Sepsidae	Ensign flies	1	1	1
Simuliidae	Blackflies	1	1	1
Total		**135**	**382**	**18**

Rhagoletis alternata – a picture-wing fly, they use their patterned wings in a display dance to attract mates, new to Outer Hebrides in 2023

Eighteen recorders sent in 385 records of 135 species of Diptera in 2023. In 2022, the islands were visited by an experienced dipterist who contributed about 60% of all the Diptera records sent in that year. The situation was very different in 2023 when local people contributed c.88% of all Diptera records.

A group of visiting naturalists provided the majority of the gall-midge (family Cecidomyiidae) records and added two new species (*Exorista larvarum,* a parasite-fly and *Dicranota claripennis,* a cranefly) to the VC110 list.

As in most years, the most frequently recorded family of Diptera was the Hoverflies (Syrphidae). Three new hoverflies (*Merodon equestris, Epistrophe grossulariae*, *Cheilosia vernalis*) were found in 2023 and there were two more new species of cranefly (*Limonia nigropunctata, Limonia phragmitidis*). One of the remaining new species (*Phytomyza petoei*) was found as leaf mine on mint. The kelp fly (*Malacomyia sciomyzina*) was bycatch in one of the South Uist moth traps and the final one (*Rhagoletis alternata*) was simply spotted in the garden whilst the author was doing a spot of weeding.

Diptera new to Outer Hebrides in 2023	
Family	**Species**
Agromyzidae	*Phytomyza petoei*
Coelopidae	*Malacomyia sciomyzina*
Limoniidae	*Limonia nigropunctata*
Limoniidae	*Limonia phragmitidis*
Pediciidae	*Dicranota claripennis*
Syrphidae	*Merodon equestris*
Syrphidae	*Epistrophe grossulariae*
Syrphidae	*Cheilosia vernalis*
Tachinidae	*Exorista larvarum*
Tephritidae	*Rhagoletis alternata*

Knowing when a species is new to a particular area is not as simple as looking for records on the NBN Atlas Scotland website. There are often records in literature that haven't made it onto NBN.

Species	Family	Records OHBR 2023	Records NBN
Argyra perplexa	Dolichopodidae	2	None[1]
Chrysotoxum arcuatum	Syrphidae	1	None[1]
Chrysotus gramineus	Dolichopodidae	1	None[1]
Copromyza nigrina	Sphaeroceridae	1	1
Culicoides impunctatus	Ceratopogonidae	3	1
Eriothrix rufomaculata	Tachinidae	1	1
Sphaerophoria scripta	Syrphidae	2	1
Sphenella marginata	Tephritidae	2	1
Tipula lunata	Tipulidae	4	1
Chlorops calceatus	Chloropidae	1	2
Dasineura galiicola	Cecidomyiidae	2	2
Platycheirus scutatus	Syrphidae	1	2
Tetanocera robusta	Sciomyzidae	1	2
Campsicnemus scambus	Dolichopodidae	1	3
Clinocera stagnalis	Empididae	1	3
Prionocera turcica	Tipulidae	3	3
Schwenckfeldina carbonaria	Sciaridae	2	3
Tipula luteipennis	Tipulidae	1	3
Chamaepsila rosae	Psilidae	1	4
Dasineura affinis	Cecidomyiidae	2	4
Dasineura pustulans	Cecidomyiidae	6	4
Erioptera squalida	Limoniidae	3	4
Hydrotaea armipes	Muscidae	1	4
Linnaemya vulpina	Tachinidae	1	4
Sericomyia lappona	Syrphidae	1	4
Trichocera hiemalis	Trichoceridae	1	4
Gymnocheta viridis	Tachinidae	2	5
Meliscaeva cinctella	Syrphidae	1	5
Phaonia errans	Muscidae	3	5

None[1] - no records on NBN but OHBR Diptera checklist notes that they are mentioned in: Skidmore, P., 2008. A review of the Diptera of the Western Isles of Scotland. *Dipterists Digest*, 15(2), 99-194.

Malacomyia sciomyzina - a kelp fly, new to VC110 in 2023

There is still work to be done on the Diptera of the Outer Hebrides. Three species found in 2023 had no previous records on NBN but featured on the OHBR Diptera Checklist. Quite a lot of species recorded in 2023 had fewer than five previous records. A number of 2023 records were at a higher taxonomic level than species usually because the identification of species in certain fly families can be just too difficult or that user friendly keys were not easily available.

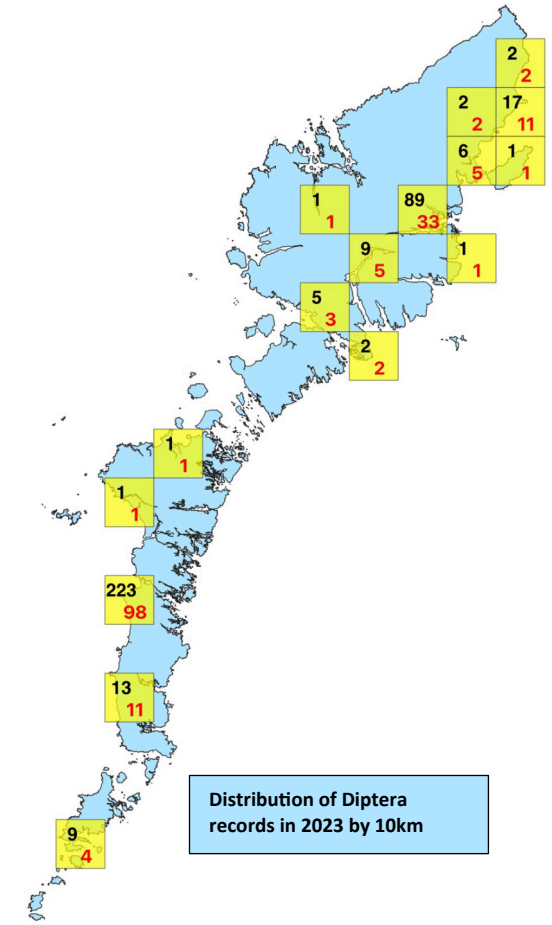
Argyra perplexa – no previous records on NBN but noted as being present in the Outer Hebrides in OHBR checklist, reference Skidmore 2008

Chrysotus gramineus – no previous records on NBN but noted as being present in the Outer Hebrides in OHBR checklist, reference Skidmore 2008

A *Simulium* sp. - too difficult to identity to species

Insects other than Lepidoptera

The number of island-based naturalists willing to take on the identification of Diptera is small. Most records in 2023 came from just two 10km squares. One at the north end of South Uist and the other in the Lochs area of Lewis.



Trypeta zoe - a Tephritidae showing off its dance moves, the success or otherwise of the routine was not recorded

Developing the skills needed to identify some of smaller and less well marked Diptera is time consuming. Initially we tend to look at the more interesting and colourful families, hoverflies (Syrphidae), the larger craneflies (Tipulidae) and some of the horseflies (Tabanidae) and so on. It takes time and effort to "get into "the other groups.

There is a telling comparison of the records from 2022, expert dipterist in area 25th June – 1st July and 6th – 12th August, and 2023, when most of the records came from two keen but certainly not expert local moth trapping naturalists.

For most families (shaded in green) the expert was clearly much more efficient and found more species and made many more records of them. There were a few families where visitor and locals recorded similar numbers (shaded orange). There were just a couple where the locals won (shaded red). Interestingly they were both cranefly families where attraction to light and a greater seasonality in their activity periods were likely to have helped boost numbers.

Comparison of Diptera recording 2022 (1 visiting dipterist) and 2023 (all 18 recorders)				
	Number of records		Number of species	
Family	2022	2023	2022	2023
Muscidae	238	8	33	5
Syrphidae	144	125	33	37
Anthomyiidae	124	3	22	2
Scathophagidae	56	16	8	5
Calliphoridae	53	4	10	3
Coelopidae	42	9	2	3
Tipulidae	31	68	11	12
Dolichopodidae	26	9	14	7
Anisopodidae	19	18	3	2
Bibionidae	17	2	3	1
Rhagionidae	17	11	2	1
Sphaeroceridae	17	2	3	2
Heterocheilidae	16	1	1	1
Stratiomyidae	16	3	3	2
Hybotidae	13		5	
Tachinidae	13	6	6	4
Cecidomyiidae	12	23	7	8
Chamaemyiidae	12		2	
Heleomyzidae	12	3	4	3
Sepsidae	12	1	3	1
Therevidae	12		1	
Opomyzidae	11		2	
Empididae	10	1	3	1
Sciomyzidae	10	1	2	1
Lauxaniidae	9		3	
Tephritidae	9	7	4	3
Ephydridae	7		3	
Limoniidae	7	28	3	9
Trichoceridae	7	3	2	3
Tabanidae	6	7	2	3
Chloropidae	5	1	3	1
Pediciidae	5	3	2	2
Total (all families)	**1020**	**382**	**223**	**135**

Local recorders are adding new species of Diptera to the vice-county list each year but occasional visits from experts can add an awful lot of records very quickly.

Insects other than Lepidoptera

Order Coleoptera – Beetles

Recording synopsis

4000 British species, 506 VC110 species, 11.9% of British list. **2023**, 123 records of 51 species, 10% of VC Lis

Fifteen recorders sent in 123 records of 51 species of Coleoptera in 2023. Few species were recorded by more than one recorder. These tended to be large, colourful or otherwise distinctive species.

Family	Species	Records	Recorders
Cantharidae	*Rhagonycha fulva*	4	2
	Rhagonycha nigriventris	2	1
Carabidae	*Amara familiaris*	1	1
	Carabus glabratus	7	3
	Carabus granulatus	7	6
	Cicindela campestris	1	1
	Curtonotus aulicus	1	1
	Notiophilus biguttatus	1	1
	Pterostichus niger	4	3
	Pterostichus strenuus	2	2
Chrysomelidae	*Donacia obscura*	1	1
	Phratora vitellinae	1	1
	Plateumaris discolor	1	1
Coccinellidae	*Coccinella undecimpunctata*	5	3
Curculionidae	*Otiorhynchus atroapterus*	2	2
	Otiorhynchus sulcatus	1	1
Dascillidae	*Dascillus cervinus*	3	1
Dytiscidae	*Agabus bipustulatus*	2	1
	Agabus nebulosus	3	1
	Colymbetes fuscus	2	1
	Dytiscidae	1	1
	Dytiscus marginalis	3	2
	Dytiscus semisulcatus	2	2
	Hydroporus memnonius	1	1
	Hydroporus obscurus	2	1
Elateridae	*Athous haemorrhoidalis*	1	1
Geotrupidae	*Geotrupes spiniger*	1	1
Gyrinidae	*Gyrinus minutus*	1	1
Haliplidae	*Haliplus lineatocollis*	1	1
Hydrophilidae	*Cercyon littoralis*	1	1
	Megasternum concinnum/immaculatum	2	1
	Paracymus scutellaris	1	1
Leiodidae	*Sciodrepoides watsoni*	1	1
Meloidae	*Meloe brevicollis*	2	1
Scarabaeidae	*Acrossus rufipes*	18	2
	Bodilopsis rufa	2	1
	Serica brunnea	1	1
Scirtidae	*Contacyphon padi*	1	1
Silphidae	*Necrodes littoralis*	1	1
	Nicrophorus humator	4	3
	Nicrophorus investigator	11	3
	Nicrophorus vespilloides	1	1
	Oiceoptoma thoracicum	1	1
	Phosphuga atrata	2	2
Staphylinidae	*Aleochara funebris*	1	1
	Creophilus maxillosus	4	3
	Philonthus succicola	1	1
	Quedius cinctus	1	1
	Quedius mesomelinus	1	1
	Staphylinus erythropterus	1	1
	Stenus similis	1	1
Total		**123**	

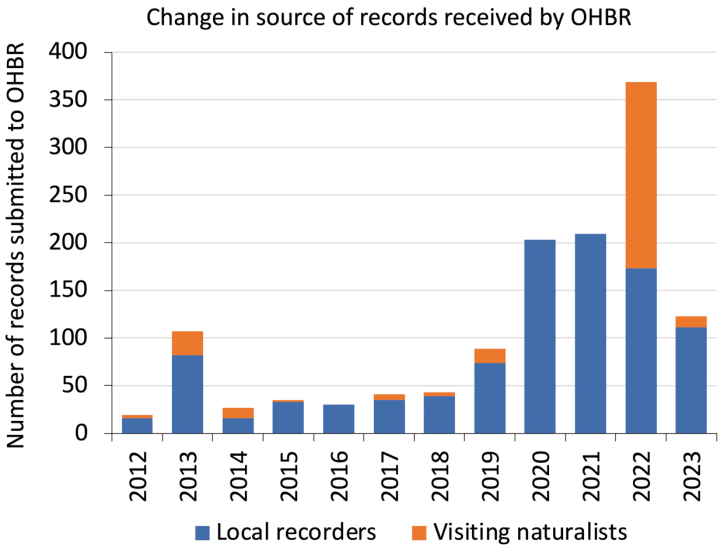
Carabus granulatus - a large and distinctive ground beetle recorded by 6 observers in 2023

Nicrophorus investigator - a burying beetle often attracted to light traps, recorded by three people in 2023

Creophilus maxillosus - a large odd looking and very hairy rove beetle, sometimes found inside houses

Rhagonycha fulva – sometimes beetles are conspicuous by their activity, this is popularly known as the “bonking beetle”

Insects other than Lepidoptera



The number of records received by OHBR in 2023 fell considerably when compared to 2022.

From its inception in about 2012 there had been a slowly rising trend in the number of Coleoptera records being submitted to OHBR each year. In 2019 that rise accelerated as some of the more active local recorders started taking more of an interest and had begun more systematic pitfall trapping of beetles. The number of Coleoptera records in 2022 was supplemented by the presence of an experienced coleopterist for a short while in the summer.

A prolonged dry period in the early summer of 2023 created hard ground and very dry soils that were not really suitable for pitfall trapping and the drop in the records submitted by local recorders, first seen in 2022, was exacerbated. It is hoped that some more systematic beetle recording will be resumed by some of the resident recorders in 2024. There would still seem to be a lot we need to know about the Coleoptera of the Outer Hebrides.

New species of Coleoptera recorded in 2023	
Family	**Species**
Chrysomelidae	*Donacia obscura*
	Phratora vitellinae
Silphidae	*Oiceoptoma thoracicum*
Staphylinidae	*Aleochara funebris*

Four species of beetle new to the Outer Hebrides were recorded in 2023. Three were found on Lewis by a visiting naturalist, two were leaf-beetles from the family Chrysomelidae; *Donacia obscura* and *Phratora vitellinae*, and the third, *Oiceoptoma thoracicum*, was one of the carrion or burying beetles (family Silphidae).

All three have a number of records from other parts of Scotland and it is likely that these species may have been here for a while and simple missed in previous recording.

The fourth beetle, *Aleochara funebris*, was one of the smaller rove beetles (Staphylinidae) and was found on South Uist. There are 50 previous records on NBN but only three for Scotland. There were a further six species of rove beetle found in 2023.

Two of them were the relatively common *Creophilus maxillosus* and *Staphylinus erythropterus* that are large and very distinctive. The other three species of staphylinid have been much less frequently recorded here.

There are currently 175 species of rove beetle recorded from the Outer Hebrides. With over 1,000 known from the UK there are probably more to find.

Aleochara funebris – a small (length c.3mm) rove beetle recorded in the Outer Hebrides for the first time in 2023

			Records
Family	**Species**	**2023**	**VC110 NBN**
Staphylinidae	*Aleochara funebris*	1	none
	Creophilus maxillosus	4	34
	Philonthus succicola	1	3
	Quedius cinctus	1	1
	Quedius mesomelinus	1	3
	Staphylinus erythropterus	1	41
	Stenus similis	1	2

Insects other than Lepidoptera

Comparative sizes of the seven species of rove-beetles (family Staphylinidae) found in 2023

Insects other than Lepidoptera

Order Odonata – Dragonflies & Damselflies

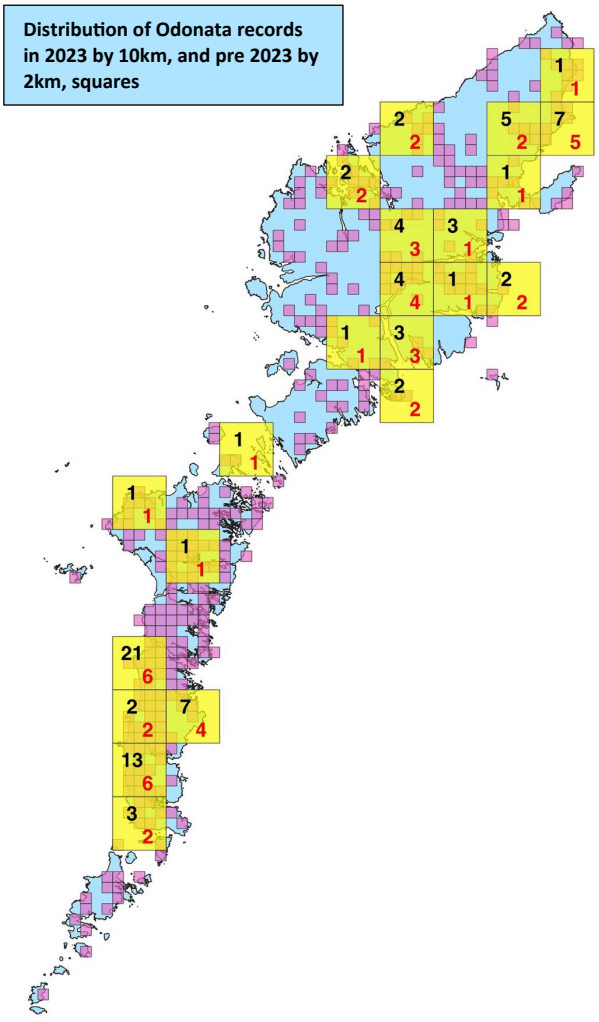
Recording synopsis

49 British species, 12 VC110 species, 24.5% of British list. **2023**, 87 records of 8 species, 67% of VC List

The eight regularly seen species were all recorded in 2023. For all species, except Common Darter, the number of records was slightly higher than in the last few years and the total number of records was higher than it has been since 2018.

Species	Common Name	2017	2018	2019	2020	2021	2022	2023
Aeshna juncea	Common Hawker	11	11	10	3	9	4	7
Enallagma cyathigerum	Common Blue Damselfly	23	18	13	5	6	5	15
Ischnura elegans	Blue-tailed Damselfly	22	13	12	9	11	11	17
Pyrrhosoma nymphula	Large Red Damselfly	35	25	8	10	16	10	20
Lestes sponsa	Emerald Damselfly	11	5	7	2	6	2	1
Libellula quadrimaculata	Four-spotted Chaser	17	18	8	3	6	1	5
Sympetrum sp.	Darter Dragonfly					4	1	
Sympetrum danae	Black Darter	9	8	10	6	8	12	17
Sympetrum striolatum	Common Darter	20	11	17	11	9	10	5
Total		**148**	**109**	**85**	**49**	**72**	**56**	**87**

Distribution of Odonata records in 2023 by 10km, and pre 2023 by 2km, squares



The Odonata have been well recorded in the past. As well as the eight commonly recorded species there are historic records for four other species shown in red below. Three of the four have just single sightings and the year of that sighting is shown in brackets. There have been fourteen records of Golden-ringed Dragonfly dated between 1899 and 2018 and located from Mingulay in the south to Stornoway in the north.

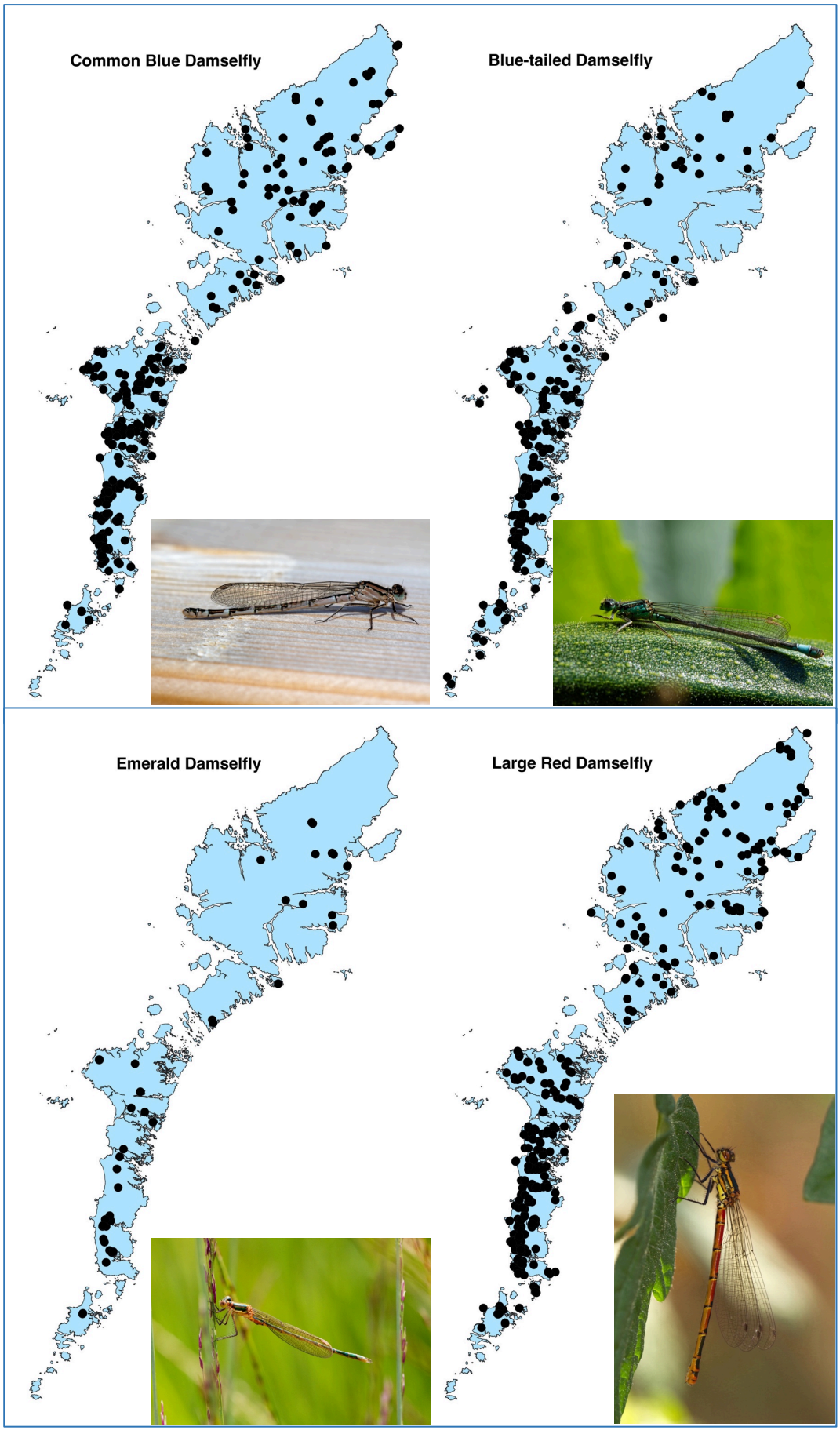
Species	Common name	Total
Aeshna juncea	Common Hawker	331
Aeshna mixta	Migrant Hawker (2011)	1
Anax ephippiger	Vagrant Emperor (2011)	1
Enallagma cyathigerum	Common Blue Damselfly	400
Ischnura elegans	Blue-tailed Damselfly	351
Pyrrhosoma nymphula	Large Red Damselfly	478
Cordulegaster boltonii	Golden-ringed Dragonfly	14
Lestes sponsa	Emerald Damselfly	66
Libellula quadrimaculata	Four-spotted Chaser	252
Orthetrum coerulescens	Keeled Skimmer (2013)	1
Sympetrum danae	Black Darter	261
Sympetrum striolatum	Common Darter	463
Total		**2619**

The 2,619 NBN records are shown as mauve squares at 2km square resolution on the map left. They are well spread across the Outer Hebrides apart from the in deep interior of Harris and Lewis.

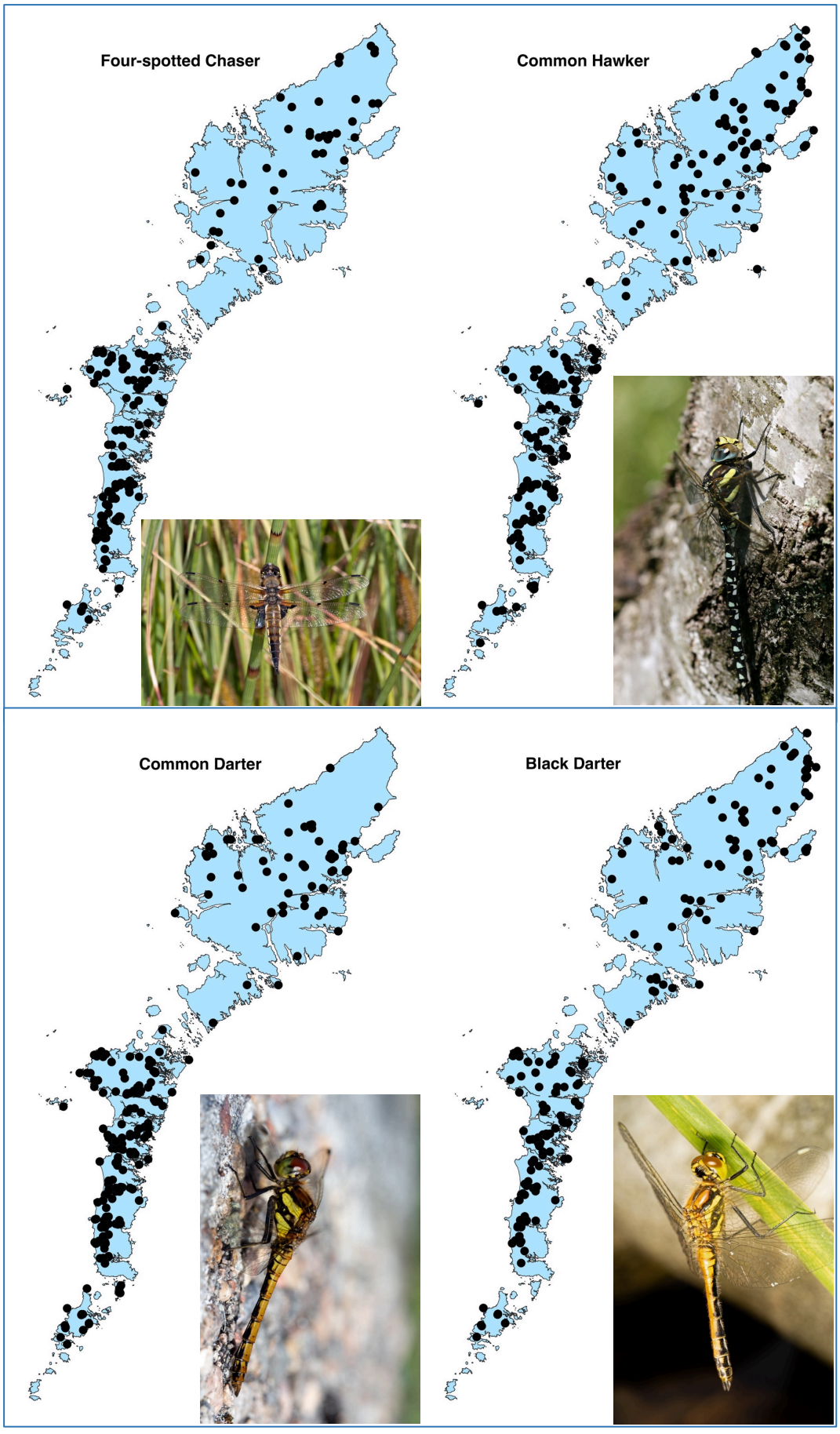
Individual distribution maps for the eight regularly seen Odonata show that many of them become patchily distributed on Harris and Lewis.

As ever it is hard to know whether there is a real restriction on the distribution of some of these species in terms of habitat or climate, or is it a result of less easily accessible sites and less recording taking place? It does seem clear that the Emerald Damselfly is less common than the others and this is a consequence of it having rather more specific habitat requirements.

Insects other than Lepidoptera



Insects other than Lepidoptera



Insects other than Lepidoptera

Order Hemimptera – True Bugs

Recording synopsis

1830 British species, 75 VC110 species, 4.0% of British list. **2023**, 38 records of 12 species, 16% of VC List

Family	Species	Common Name	Records
Homoptera			
Aphididae	*Brachycolus cerastii*		2
	Hayhurstia atriplicis		1
Psyllidae	*Livia juncorum*		3
Aphrophoridae	*Philaenus spumarius*	Cuckoo-spit Insect	11
Heteroptera - terrestrial			
Miridae	*Closterotomus norwegicus*	Potato Capsid	4
	Leptopterna ferrugata		4
	Stenodema (Brachystira) calcarata		2
Pentatomidae	*Piezodorus lituratus*	Gorse Shieldbug	1
Heteroptera - aquatic			
Corixidae	*Corixidae*		1
	Corixa iberica		1
	Hesperocorixa castanea		5
	Sigara (Subsigara) scotti		3
Total			**38**

A relatively poor year compared to 2022 when there were 72 records of 35 species. The Cuckoo-spit Insect was, as usual the most frequently recorded species. The Gorse Shieldbug (*Piezodorus lituratus*) was a new species for the Outer Hebrides.

Cuckoo-spit Insect - (*Philaenus spumarius*), easily identified and very common

Potato Capsid - (*Closterotomus norwegicus*)

Three species of Lesser Waterboatman - *Corixa iberica* (large, middle), *Sigara (Subsigara) scotti* (small, middle) and *Hesperocorixa castanea* (two specimens, small, lowest middle & top right)

A grass bug - *Leptopterna ferrugata*

Insects other than Lepidoptera

Minor Orders

Twenty-nine species of insects (including Collembola even though they are now considered a separate Class of Arthropod) were recorded in 2023 by eight recorders. No records of Megaloptera (alderflies) and Siphonaptera (fleas) were received.

Class	Order	Family	Species	Common name/type	Records
Insecta	Dermaptera	Forficulidae	*Forficula auricularia*	Common Earwig	6
	Ephemeroptera	Baetidae	*Cloeon simile*	Sepia Dun	1
		Caenidae	*Caenis luctuosa*	Angler's Curse	7
		Leptophlebiidae	*Leptophlebia vespertina*	a mayfly	2
	Megaloptera			Alderflies	none
	Neuroptera	Hemerobiidae	*Micromus paganus*	Lacewings	1
	Orthoptera	Acrididae	*Myrmeleotettix maculatus*	Mottled grasshopper	1
	Plecoptera	Nemouridae	*Nemoura cinerea*	a stonefly	3
	Psocoptera	Paracaeciliidae	*Chilenocaecilius ornatipennis*	a barkfly	2
		Trogiidae	*Cerobasis guestfalica*	a barkfly	2
	Siphonaptera			Fleas	none
Collembola	Collembola	Neanuridae	*Anurida maritima*	a springtail	1
	Entomobryomorpha	Entomobryidae	*Orchesella cincta*	a springtail	2
		Tomoceridae	*Pogonognathellus longicornis*	a springtail	1
Total					**29**

Order Dermaptera – Earwigs & Cockroaches

Recording synopsis

7 British species, 1 VC110 species, 14.3% of British list. **2023**, 6 records of 1 species, 100% of VC List

The Common Earwig lost its customary position as the "most frequently recorded of all insects belonging to the minor orders" to the Angler's Curse mayfly (*Caenis luctuosa*) and has dropped down the league table of "most frequently recorded organism". After it's heady fame of 2021, where it topped the table, in 2022 it fell to joint 137th and in 2023 has dropped to equal 244th, finishing alongside the Brown Rat (*Rattus norvegicus*), Flounced Rustic moth (*Luperina testacea*) and Peacock butterfly (*Aglais io*) on 6 records

Order Ephemeroptera – Mayflies

Recording synopsis

51 British species, 11 VC110 species, 19.6% of British list. **2023**, 10 records of 3 species, 27.3% of VC List

Taking over from the Common Earwig as top of the minor orders table in 2023 was the Angler's Curse (*Caenis luctuosa*) a mayfly renowned for its mass emergence events. Attracted to light they are often found in huge numbers inside moth traps.

A newly emerged sub-imago (an intermediate stage between aquatic larva and full adult unique to mayflies) Sepia Dun (*Leptophlebia marginata*) was found a sample pot having emerged from a larvae caught as by catch during regular desmid sampling.

Angler's Curse (*Caenis luctuosa)* – mass emergence events noted on 18th June, 20th June and 10th July 2023

Sepia Dun (*Leptophlebia marginata)* - a newly emerged sub-imago

Insects other than Lepidoptera

Order Plecoptera – Stoneflies

Recording synopsis

34 British species, 11 VC110 species, 26.5% of British list. **2023**, 3 records of 1 species, 9% of VC List

Three records of the common stonefly *Nemoura cinerea* were the only records of stoneflies received in 2023. The majority of stonefly records on NBN come from water quality assessments carried out by SEPA (Scottish Environment Protection Agency). Whilst the data they pass to NBN doesn't state the life stage of the indiviuals caught they are almost certainly larvae from kick samples of streams and rivers and most are recorded simply at family level. Over half of the 42 NBN records for VC110 at species level are of *Nemoura cinerea* submitted by OHBR. There is a lot of scope for more detail stream invertebrate sampling taking the larvae of various aquatic insect orders down to species level.

Nemoura cinerea – a stonefly, adult with wings spread

Order Neuroptera – Lacewings

Recording synopsis

69 British species, 5 VC110 species, 7.2% of British list. **2023**, 1 record of 1 species, 20.0% of VC List

On NBN there are sixteen records of six species of lacewing from the Outer Hebrides.

Family *Species*	**NBN Records**
Chrysopidae Green Lacewings)	
Chrysoperla carnea group	2
Hemerobiidae (Brown Lascewings)	
Hemerobius humulinus	1
Hemerobius lutescens	3
Micromus paganus	3
Micromus variegatus	4
Sisyridae (Spongeflies)	
Sisyra nigra	3
Total	**16**

A single sighting of one of the brown lacewings, *Micromus paganus*, in a moth trap on South Uist, 16th June 2023, was the only record.

Micromus paganus – a brown lacewing

Order Orthoptera – Grasshoppers, crickets etc.

Recording synopsis

100 British species, 3 VC110 species, 9% of British list. **2023**, 1 record of 1 species, 33% of VC List

NBN has 143 records of three species of Orthoptera. One of them, Common Ground Hopper, is only known from two locations; Barra (1936-1937) and Loch Druidibeg (July 2007). There are no records of any Orthoptera species from Lewis.

Family *Species*	**Common name**	**Rec.**
Acrididae		
Myrmeleotettix maculatus	Mottled Grasshopper	93
Omocestus viridulus	Common Green Grasshopper	42
Tetrigidae		
Tetrix undulata	Common Ground-hopper	8
Total		**143**

A single sighting of Mottled Grasshopper on Flodaigh (an island lying to the south of Barra) on the 6th August 2023 was the only record in 2023.

Mottled Grasshopper (*Myrmeleotettix maculatus*)

Insects other than Lepidoptera

Order Psocoptera - Barkflies

Recording synopsis

100 British species, 4 VC110 species, 3% of British list. **2022**, 4 records of 3 species, 75% of VC List

Species	NBN Records
Ectopsocus petersi	1
Chilenocaecilius ornatipennis	4
Cerobasis guestfalica	3
Lepinotus patruelis	1
Total	**9**

On NBN there are just nine records of four species of Psocoptera from the Outer Hebrides. All are from OHBR recorders and the very first record was of a *Chilenocaecilius ornatipennis* specimen seen in a South Uist garden on 6thSeptember 2019. It was a recent coloniser of the UK (first noted in Ireland in 2015) that has since spread to most of the UK. It is recorded here most years.

Chilenocaecilius ornatipennis – photograph of the very first Psocptera species found in the Outer Hebrides

Lepinotus patruelis – first Outer Hebrides specimen 12th September 2021

Two other species *Cerobasis guestfalica* and *Lepinotus patruelis* were first seen in 2021 and the fourth (*Ectopsocus petersi*) came along in 2022.

Cerobasis guestfalica - first Outer Hebrides specimen 9th March 2021

Ectopsocus petersi first Outer Hebrides specimen 18th April 2022

There were two records in 2023 with two specimens of *Chilenocaecilius ornatipennis* and two of *Cerobasis guestfalica.*

As a taxonomic group they have been ignored and are surely still under represented in our sampling. Three of the four species here seem to be associated with human habitation. There are, in the UK, many that are found on natural vegetation, especially on the trunks of trees. Searching some of the more mature woodland area may yield some new species.

Class Collembola – Springtails

Recording synopsis

250 British species, 10 VC110 species, 28.6% of British list. **2023**, 3 records of 3 species 1 new to NBN, 30.0% of VC List

Three species of springtail were recorded in 2023. Two, *Anurida maritima* (Sea Springtail) and *Pogonognathellus longicornis,* the largest UK springtail, have been recorded previously. *Orchesella cincta* is a new species for the Outer Hebrides.

Other Invertebrates

Invertebrates other than Insects

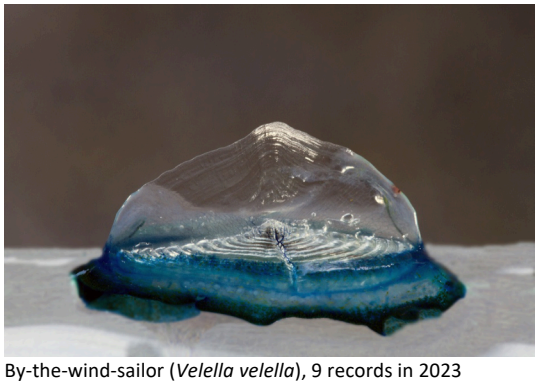
Phylum	Common Name	Number of species							Number of records						
		2017	2018	2019	2020	2021	2022	2023	2017	2018	2019	2020	2021	2022	2023
Mollusca	Slugs, Snails, Limpets, Mussels etc.	43	28	20	22	34	26	25	139	31	27	34	67	42	36
Arthropoda	Spiders, Mites, Woodlice, Millipedes, Crabs etc.	22	16	15	32	28	44	34	74	24	19	68	63	68	53
Cnidaria	Corals, Jellyfish, Hydra etc.	10	5	7	6	4	5	7	48	18	15	14	15	8	23
Echinodermata	Sea Urchins, Starfish, Brittlestars, Sea etc.	5	1	3	2	2	2	2	14	1	3	3	3	3	2
Amoebozoa	Amoeba	1			1	5		1	3			1	10	1	1
Cercoza	Testate amoeba						1							1	
Annelida	Marine Polychaete and other worms	3	1		1	2		4	3	1		1	2		4
Ctenophora	Comb Jellies e.g. Sea Gooseberry	1		1	1		1		2		1	2		1	
Porifera	Sponges	2		2				2	2		2				3
Bryozoa	Sea Mats, Moss Animalcules	1	1						1	1					
Chordata	Sea Squirts etc.	1	1	3	3				1	1	6	4			
Rotifera	Rotifers			2		5	3	1			2		8	3	1
Platyhelminthes	Flatworms				2	3		1				4	9		1
Nematoda	Round worms							1							1
Total		**89**	**53**	**53**	**70**	**83**	**83**	**78**	**287**	**77**	**75**	**131**	**177**	**127**	**125**

No. of species recorded by each recorder by habitat			
Recorder	**Freshwater**	**Marine**	**Terrestrial**
1		3	18
2	15		
3		12	3
4		7	1
5	1	1	6
6		2	3
7			4
8			3
9		3	
10		2	
11		2	
12		1	
13		1	
14		1	
15		1	
16		1	
17		1	
18		1	
19			1
20		1	
21		1	
22		1	
23	1		
24		1	
25		1	
26		1	
27		1	
28			1
29			1
30			1
31		1	
32			1
33		1	
Recorders	**3**	**24**	**12**
Total species	**17**	**32**	**32**
Total records	**22**	**51**	**56**

Thirty-three recorders sent in 125 records of 78 different species of invertebrates other than insects in 2023. These figures are roughly on par with the last couple of years but well below the 287 records of 89 species seen in 2017.

Records came from three broad habitat types, freshwater, marine and terrestrial. Looking at the total number of recorders working in the three habitat types we can see that recording of freshwater invertebrates and, to a lesser extent, of terrestrial invertebrates are specialist activities. Recorder 2 was the main supplier of records of freshwater invertebrates, 15 of the 17 species recorded came from that single person. Recorder 1 recorded 18 of the 32 invertebrate species found in terrestrial habitats.

Of the 12 people involved in sampling terrestrial habitats six reported just one species each.In contrast in marine locations 17 out of 24 people sent in records of just one species. Most of these records were of a very casual nature; somebody walking along a beach somewhere noticed a By-the-wind Sailor or a Barrel Jellyfish and sent us the record. These types of records are often geographically widespread telling us a lot about distribution. Casual recorders add breadth to our records.



By-the-wind-sailor (*Velella velella*), 9 records in 2023

Other Invertebrates

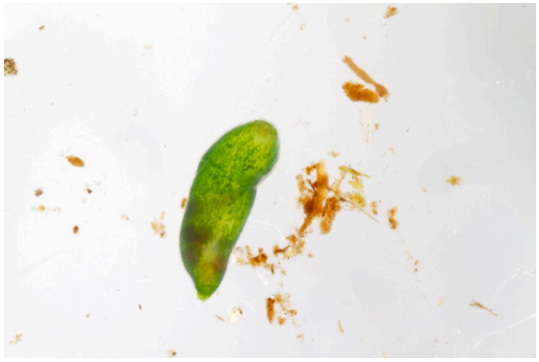
Freshwater invertebrates

Phylum	Class	Order	Species	Common name / type	Records
Amoebozoa	Tubulinea	**Arcellinida**	*Planocarina carinata*	a testate amoeba	1
Annelida	Clitellata	**Arhynchobdellida**	*Haemopis sanguisuga*	Horse Leech	1
		Haplotaxida	*Stylaria**	a freshwater naidid	1
		Rhynchobdellida	*Helobdella stagnalis*	a leech	1
Arthropoda	Branchiopoda	**Diplostraca**	*Alonopsis elongata*	a water flea	1
			Chydorus sphaericus	a water flea	1
			Eurycercus lamellatus	a water flea	1
			*Rhynchotalona falcata**	a water flea	1
	Maxillopoda	**Cyclopoida**	*Cyclopoida*	a water flea	1
	Ostracoda	**(blank)**	*Ostracoda*	a water flea	2
Mollusca	Bivalvia	**Veneroida**	*Pisidium*	Pea Mussel	1
	Gastropoda	**Hygrophila**	*Ampullaceana balthica*	Wandering Snail	1
			Aplexa hypnorum	Moss Bladder Snail	4
			Galba truncatula	Dwarf Pond Snail	2
		Littorinimorpha	*Potamopyrgus antipodarum*	Jenkins' Spire Snail	1
Platyhelminthes	Rhabditophora	**Rhabdocoela**	*Dalyellia viridis*	a flatworm	1
Rotifera	Eurotatoria	**Ploima**	*Keratella serrulata*	a rotifer	1
Freshwater Total			* Indicates a new species for VC110		**22**

Helobdella stagnalis - a leech

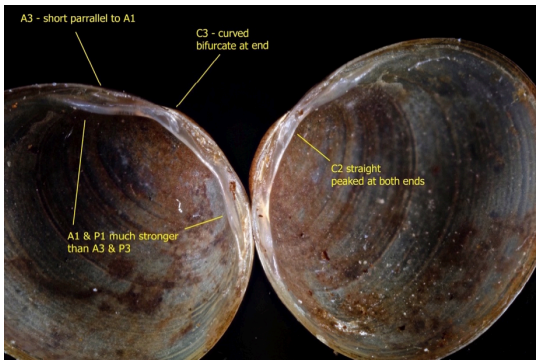
Moss Bladder Snail (*Aplexa hypnorum*) – the most frequently record non-insect freshwater invertebrate in 2023

Three people sent in 22 records of 17 species in 2023. All bar two of of the species were bycatch from regular freshwater sampling that took place at a number of sites. The main subject of the sampling was Desmids, a group of freshwater algae. Most species were recorded just once.



Dalyellia viridis – a micro-turbellarian flatworm, the green colour comes from a symbiotic green alga (zoochlorellae) that lives within its body

It is likely that most non-insect invertebrates from freshwater habitats will continue to be found as bycatch unless more systematic survey work of freshwater sites takes place.



Pisidium sp. – a pea mussel, these are small freshwater bivalves that are notoriously difficult to identify, requiring detailed examination of the hinge area and ideally access to a reference collection of named specimens.

Other Invertebrates

Marine invertebrates

Phylum	Class	Order	Species	Common name / type	Records
Arthropoda	Collembola	**Collembola**	*Anurida maritima*	a springtail	1
	Malacostraca	**Decapoda**	*Cancer pagurus*	Edible crab	1
			Carcinus maenas	Green Shore Crab	1
			Liocarcinus marmoreus	Marbled Swimming Crab	1
		Isopoda	*Ligia oceanica*	Common Sea Slater	1
	Maxillopoda	**Lepadiformes**	*Dosima fascicularis*	Buoy Barnacle	2
			Lepas (Anatifa) anatifera	Common Goose Barnacle	1
Cnidaria	Anthozoa	**Actiniaria**	*Urticina felina*	Dahlia anemone	1
	Hydrozoa	**Anthoathecata**	*Velella velella*	By-the-wind-sailor	9
		Leptothecata	*Dynamena pumila*	a sea fir	1
	Scyphozoa	**Rhizostomeae**	*Rhizostoma octopus*	Barrel Jellyfish	8
		Semaeostomeae	*Aurelia aurita*	Moon jellyfish	1
			Cyanea capillata	Lion's Mane Jellyfish	2
	Staurozoa	**Stauromedusae**	*Depastrum cyathiforme*	a stalked jelly fish	1
Echinodermata	Echinoidea	**Spatangoida**	*Echinocardium cordatum*	Sea potato	1
	Ophiuroidea	**Ophiurida**	*Ophiura ophiura*	a brittlestar	1
Mollusca	Bivalvia	**Veneroida**	*Cerastoderma edule*	Common Cockle	1
			Macoma balthica	Baltic Tellin	1
	Gastropoda	**Caenogastropoda**	*Janthina janthina*	Violet Snail	1
		Littorinimorpha	*Littorina littorea*	Common Periwinkle	1
			Littorina obtusata/fabalis	a periwinkle	1
			Trivia arctica	Arctic Cowrie	1
			Trivia monacha	Spotted Cowrie	1
		Neogastropoda	*Nucella lapillus*	Dog Whelk	1
		Nudibranchia	*Cadlina laevis*	Cadlina laevis	1
		Patellogastropoda	*Patella pellucida*	Blue Rayed Limpet	1
			Patella vulgata	Common Limpet	1
		Vetigastropoda	*Calliostoma zizyphinum*	Painted top shell	1
			Steromphala cineraria	Grey Top Shell	2
			Steromphala umbilicalis	Flat Top Shell	1
Porifera	Calcarea	**Leucosolenida**	*Grantia compressa*	Purse Sponge	2
	Demospongiae	**Halichondrida**	*Hymeniacidon perlevis*	Crumb-of-bread sponge	1
Marine Total					**51**

Common Goose Barnacle (*Lepas (Anatifa) anatifera*

Jellyfish and other members of the Phylum Cnidaria were the most frequently spotted marine invertebrates with 18 of the 24 recorders noting at least one species of cnidarian. By-the-wind Sailor (*Velella velella*) and Barrel Jellyfish (*Rhizostoma octopus*) with nine and eight records respectively being the most frequently recorded.

OHBR recorders covered marine invertebrates fairly well in 2023 producing 51 records of 32 species from 24 recorders. Many of the records would appear to be casual records of something interesting looking found stranded on a beach.

There is surely much more scope for casual records of this type to be collected.

Common Sea Slater (*Ligia oceanica*)

Other Invertebrates

Terrestrial invertebrates

Phylum	Class	Order	Species	Common name / type	Records
Annelida	Oligochaeta	**Crassiclitellata**	*Octolasion cyaneum*	Blue-Grey Worm	1
Arthropoda	Arachnida	**Araneae**	*Araneus diadematus*	Garden Spider	1
			Arctosa perita	a wolf spider	1
			Metellina merianae	a spider	2
			Metellina segmentata	a spider	1
			Pholcus phalangioides	Cobweb Spider	1
			Tegenaria domestica	Common House Spider	2
			Tetragnatha extensa	a stretch spider	1
			Textrix denticulata	a spider	4
			Xysticus cristatus	a crab spider	1
		Opiliones	*Lacinius ephippiatus*	a harvestman	1
			Megabunus diadema	a harvestman	1
			Phalangium opilio	a harvestman	1
		Trombidiformes	*Aceria galiobia*	a gall mite	1
			Aceria nalepai	a gall mite	1
			Aceria thomasi	a gall mite	4
			*Aculops pedicularis**	a gall mite	1
			*Aculus anthobius**	a gall mite	1
	Chilopoda	**Lithobiomorpha**	*Lithobius (Lithobius) forficatus*	a centipdede	1
			Lithobius (Lithobius) melanops	a centipdede	1
	Collembola	**Entomobryomorpha**	*Orchesella cincta*	a springtail	2
			Pogonognathellus longicornis	a springtail	1
	Diplopoda	**Julida**	*Ophyiulus pilosus*	a millipede	1
	Malacostraca	**Isopoda**	*Oniscus asellus*	Common Shiny Woodlouse	7
			Porcellio scaber	Common Rough Woodlouse	4
Mollusca	Gastropoda	**Pulmonata**	*Cornu aspersum*	Common Garden Snail	6
			Deroceras (Deroceras) invadens	Tramp Slug	1
			Deroceras (Deroceras) reticulatum	Netted Field Slug	1
			Limax maximus	Leopard Slug	1
			Oxychilus (Oxychilus) cellarius	Cellar Snail	1
			Vertigo (Vertigo) pusilla	Wall Whorl Snail	2
Nematoda	Secernentea	**Rhabditida**	*Subanguina graminophila*	a gall forming nematode	1
Terrestrial total			* Indicates a new species for VC110		**56**

Blue-Grey Worm (*Octolasion cyaneum*) – the first record of an earthworm sonce 2015 and only the second ever of this species.

The number of terrestrial species of non-insect invertebrates collected in 2023 was 32, the same as for marine invertebrates. The total number of records was very similar too, 56 records of terrestrial compared to 51 of marine invertebrates. However, the number of recorders was 12, just half the number of marine recorders, and a single recorder found over half of all 32 species found.

2024 was notable in that there was an earthworm record, the first since 2015. There were two new species of gall mite recorded by a visiting naturalist who's particularly interested in gall forming organisms. There was also a harvestman, *Lacinius ephippiatus*, for which there was no previous NBN record but a 2021 record is present on the British Arachnalogical Society Recording Scheme site.

Lacinius ephippiatus – a harvestman, just the second record for VC110

Other Invertebrates

Cobweb Spider (*Pholcus phalangioides*) - feeding on a Common Rough Woodlouse (*Porcellio scaber*), which lasted for at least four days until the spider discarded it

Garden Spider (*Araneus diadematus*) - a male showing its palps nicely

Metellina merianae

Common Shiny Woodlouse (*Oniscus asellus*)

Textrix denticulate - a spider (male)

Netted Field Slug (*Deroceras (Deroceras) reticulatum*)

Lithobius (Lithobius) melanops - a centipede

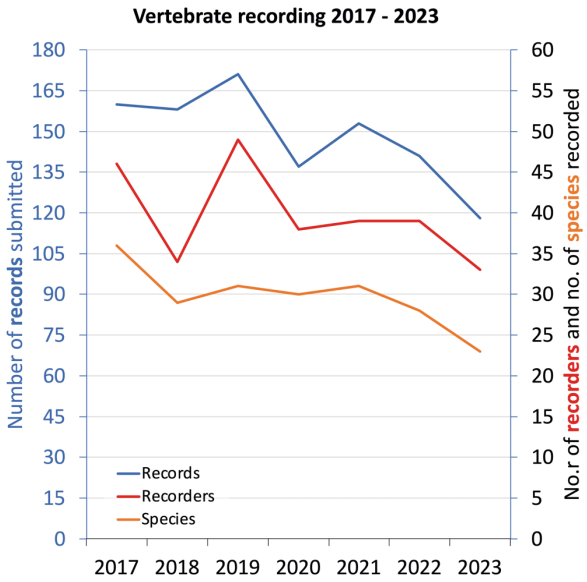
Vertebrates

The overall level of recording was disappointingly low compared to previous years. There were fewer recorders making fewer records of fewer species than in any previous year.

Summary - fish to reptiles

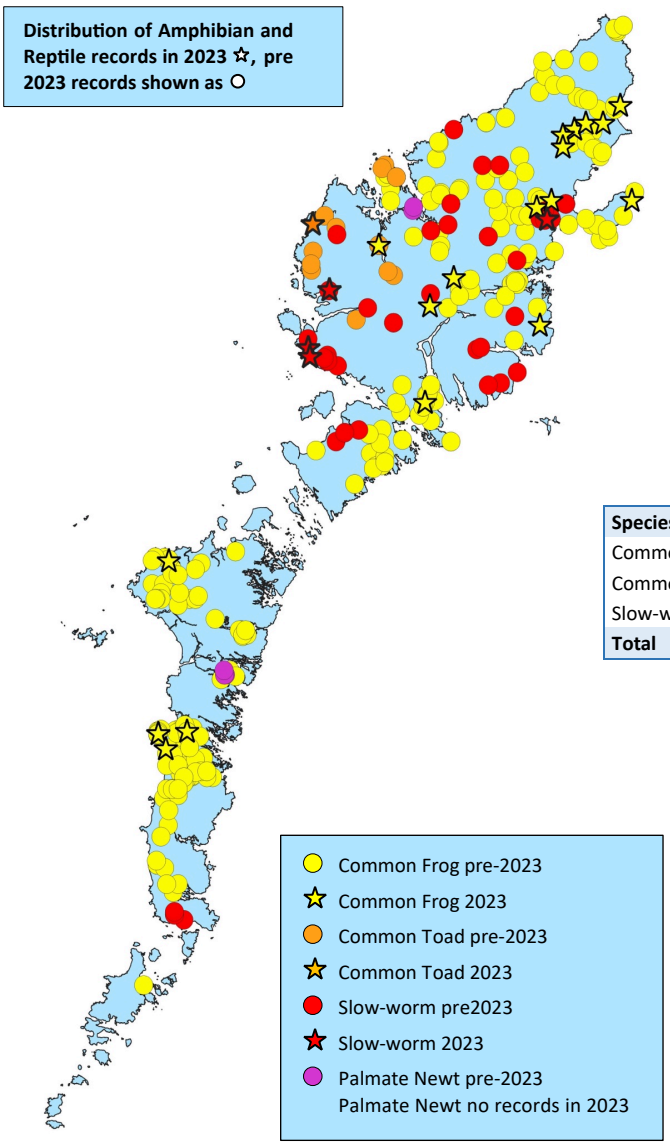
Some species that were recorded, Three- spined Stickleback, Common Toad, Common Frog and Slow-worm were seen at similar levels to previou

What we were missing were any of the less typical fish, the sort of fish that might be found dead on the beach or seen occasionally by coast watchers. The only Elasmobranch (sharks, rays etc.) record was a single Spurdog. Despite reports of huge shoals of *Rhizostoma octopus* (Barrel Jellyfish) we received no records of any turtle strandings.



Type of animal	Species	Common name	2017	2018	2019	2020	2021	2022	2023
Fish									
Bony fish	*Anguilla anguilla*	European Eel	1	3					
	Belone belone	Garfish				1			
	Gasterosteus aculeatus	Three-spined Stickleback	1		1	4	3	2	2
	Spinachia spinachia	Fifteen-spined Stickleback			1				
	Ammodytes	Sandeel							1
	Callionymus lyra	Common Dragonet	1						
	Pholis gunnellus	Butterfish		1					
	Thunnus thynnus	Blue-fin Tuna			1				
	Salmo salar	Atlantic Salmon			1				
	Salmo trutta	Brown/Sea Trout	1						1
	Cyclopterus lumpus	Lumpsucker			1	3			
	Balistes capriscus	Grey Trigger-fish	1			1	3		
	Mola mola	Sun-fish					1		
Sharks, rays etc.	*Galeorhinus galeus*	Tope					1		
	Scyliorhinus canicula	Lesser Spotted Dogfish	2	1	3	7	2	3	
	Scyliorhinus stellaris	Nursehound	1						
	Cetorhinus maximus	Basking Shark		8	9	2			
	Dipturus batis	Skate					2		
	Dipturus intermedia	Flapper Skate						2	
	Leucoraja naevus	Cuckoo Ray	1						
	Raja brachyura	Blonde Ray	1						
	Raja montagui	Spotted Ray	1						
	Squalus acanthias	Spurdog						1	1
Amphibians									
Toads, frogs & newts	*Bufo bufo*	Common Toad						3	1
	Rana temporaria	Common Frog	27	12	18	7	26	27	20
	Lissotriton helveticus	Palmate Newt	3	1			1		
Reptiles									
Lizard	*Anguis fragilis*	Slow-worm	4	4	2	11	4	1	4
Turtles	*Caretta caretta*	Loggerhead Turtle			1				
	Chelonia mydas	Green Turtle			1				
	Dermochelys coriacea	Leathery Turtle	1			1	1		
	Lepidochelys kempii	Kemp's Ridley					2		

Vertebrates



The only records of Three-spined Stickleback came from a small garden pond on South Uist. In previous years there have been a few recorded as bycatch from samples taken at various locations during the ongoing Desmid survey.

Twenty records of Common Frog (*Rana temporaria*) were received in 2023 all from areas with previous records.

Just one record of Common Toad (*Bufo bufo*) was received. This was from Mangersta, an area of Lewis where the species has previously been recorded.

Species	Harris	Lewis	N. Uist	S. Uist	Total
Common Frog	1	13	1	5	20
Common Toad		1			1
Slow-worm	2	2			4
Total	**3**	**16**	**1**	**5**	**25**

Of the four records of Slow-worm (*Anguis fragilis*), two were from Harris and two from Lewis. These too were from areas where the species had been previously recorded.

There were no records of Palmate Newt (*Lissotriton helveticus*) in 2023. The only previous sightings had been from Grimsay (last seen 2017) and Great Bernera (recorded in 2018 & 2021). Further sightings are needed to confirm the long-term persistence of these colonies.

Common Frog (*Rana temporaria*) - 20 records in 2023, mostly on Lewis and South Uist with one each from Harris and North Uist

Common Toad (*Bufo bufo*) - just a single record in 2023 from Mangersta, Lewis

Vertebrates

Summary - mammals

Type of animal	Species	Common name	2017	2018	2019	2020	2021	2022	2023
Mammals									
Deer	*Cervus elaphus*	Red Deer	12	16	2	1	2	6	12
Carnivores	*Halichoerus grypus*	Grey Seal	10	2	9	3	9	2	1
	Lutra lutra	Eurasian Otter	40	31	28	40	16	19	15
	Mustela putorius subsp. furo	Feral Ferret	1	10				2	
	Neovison vison	American Mink	1						
	Phoca vitulina	Harbour Seal	2	2	6	1	2		1
Whales & dolphins	*Balaenoptera acutorostrata*	Minke Whale	2	10	11	1	5	1	1
	Balaenoptera physalus	Fin Whale				1			
	Delphinus delphis	Common Dolphin	5	11	9	3	14	7	2
	Globicephala melas	Long-finned Pilot Whale	1	2	3	2	1		
	Grampus griseus	Risso's Dolphin	2	4	1	1	3	1	
	Hyperoodon ampullatus	Northern Bottlenose Whale		1					
	Lagenorhynchus acutus	Atlantic White-sided Dolphin			1	1		2	
	Lagenorhynchus albirostris	White-beaked Dolphin	1	5		2	1	1	
	Mesoplodon bidens	Sowerby's Beaked Whale	2						
	Orcinus orca	Killer Whale			2		1		
	Phocoena phocoena	Common Porpoise	2	5	9	1	9	4	2
	Physeter macrocephalus	Sperm Whale	1	1	2	3	1		
	Stenella coeruleoalba	Striped Dolphin		1	3	1		2	
	Tursiops truncatus	Bottle-nosed Dolphin	2	1	2	2	1	1	1
	Ziphius cavirostris	Cuvier's Beaked Whale	1	10		1			
Bats	*Pipistrellus*	Pipistrelle Bat species				1	1		
Insectivores	*Erinaceus europaeus*	West European Hedgehog	9	10	32	18	21	26	28
	Sorex minutus	Eurasian Pygmy Shrew	4		8	5	4	4	5
Rabbits & hares	*Lepus europaeus*	Brown Hare	1					1	
	Lepus timidus	Mountain Hare	1	1	6			1	3
	Oryctolagus cuniculus	European Rabbit	18	6	5	6	6	8	5
Rodents	*Apodemus sylvaticus*	Wood Mouse				2	1	1	1
	Microtus agrestis	Field Vole	6	3	5	8	6	6	4
	Mus musculus	House Mouse					1	1	
	Rattus norvegicus	Brown Rat	1	7	9	7	9	5	6

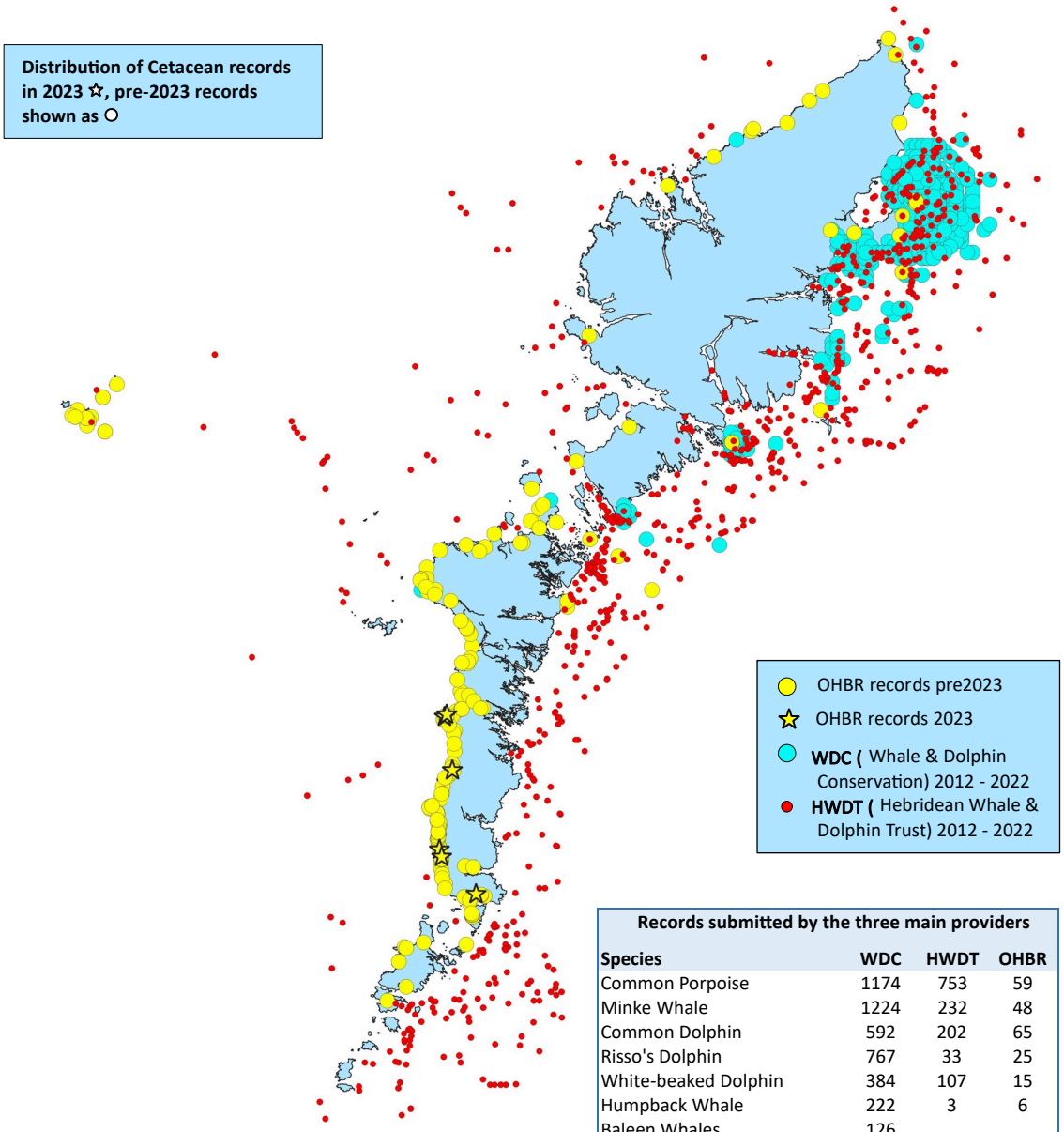
Suppliers of Cetacean records to NBN Scotland Atlas 2017 - 2023							
Rights holder	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Whale & Dolphin Conservation (WDC)	1133	617	778	373	246	382	na
% of records provided by WDC	87.6%	76.3%	87.0%	87.1%	70.3%	95.3%	
Hebridean Whale & Dolphin Trust	142	140	66	36	61		na
Outer Hebrides Biological Recording	19	51	44	19	36	19	6
Others		1	6		7		na

Suppliers of records of non-cetacean mammals to NBN Scotland Atlas 2017 - 2023							
Rights holder	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Outer Hebrides Biological Recording	106	88	110	92	78	81	82
% of records provided by OHBR	23.9%	30.8%	34.4%	53.5%	35.8%	64.3%	
Hebridean Whale & Dolphin Trust*	104	96	73	29	48		na
Marine Biological Association*	181						na
BTO	33	32	67	1	25		na
WDC*	4	22	39	34	26	30	na
The Mammal Society and BRC	15	47	25	2	35	13	na
People's Trust for Endangered Species	1	1	1	14	4	12	na
Others			5		2	2	na
Organisations marked * submitted almost entirely records of various seal species							

Perhaps the biggest change in mammal recording since 2017, when the first annual recording summary was produced, is the decline in the number of cetaceans seen by OHBR recorders.

The vast majority (70% - 95% annually) of cetacean records for the Outer Hebrides come from WDC Shorewatchers. In 2023 just six records of four species came from OHBR recorders.

In contrast OHBR was the major supplier of non-cetacean mammal records each year accounting for 24% - 64% of all such records annually. The records from Hebridean Whale and Dolphin Trust, Marine Biological Association and WDC were, apart from one record of an otter, all of various seal species. So, whilst the number of mammal records, especially of cetaceans, submitted by OHBR is declining it remains an important source of information about the distribution and status of mammals in the Outer Hebrides.



Records submitted by the three main providers

Species	WDC	HWDT	OHBR
Common Porpoise	1174	753	59
Minke Whale	1224	232	48
Common Dolphin	592	202	65
Risso's Dolphin	767	33	25
White-beaked Dolphin	384	107	15
Humpback Whale	222	3	6
Baleen Whales	126		
Bottle-nosed Dolphin	39	18	22
Killer Whale	32	6	7
Fin Whale	40		1
Atlantic White-sided Dolphin	30	1	6
Long-finned Pilot Whale	4		17
Cuvier's Beaked Whale	1		16
Sperm Whale	2		12
Striped Dolphin			11
Fin/Sei Whale	6		
Northern Bottlenose Whale	5		1
Sowerby's Beaked Whale	3		2
Sei Whale	4		
Beaked Whales	1		
Northern Right Whale	1		
Pygmy Sperm Whale	1		
Records	**4658**	**1355**	**313**
No. of species	**21**	**9**	**16**

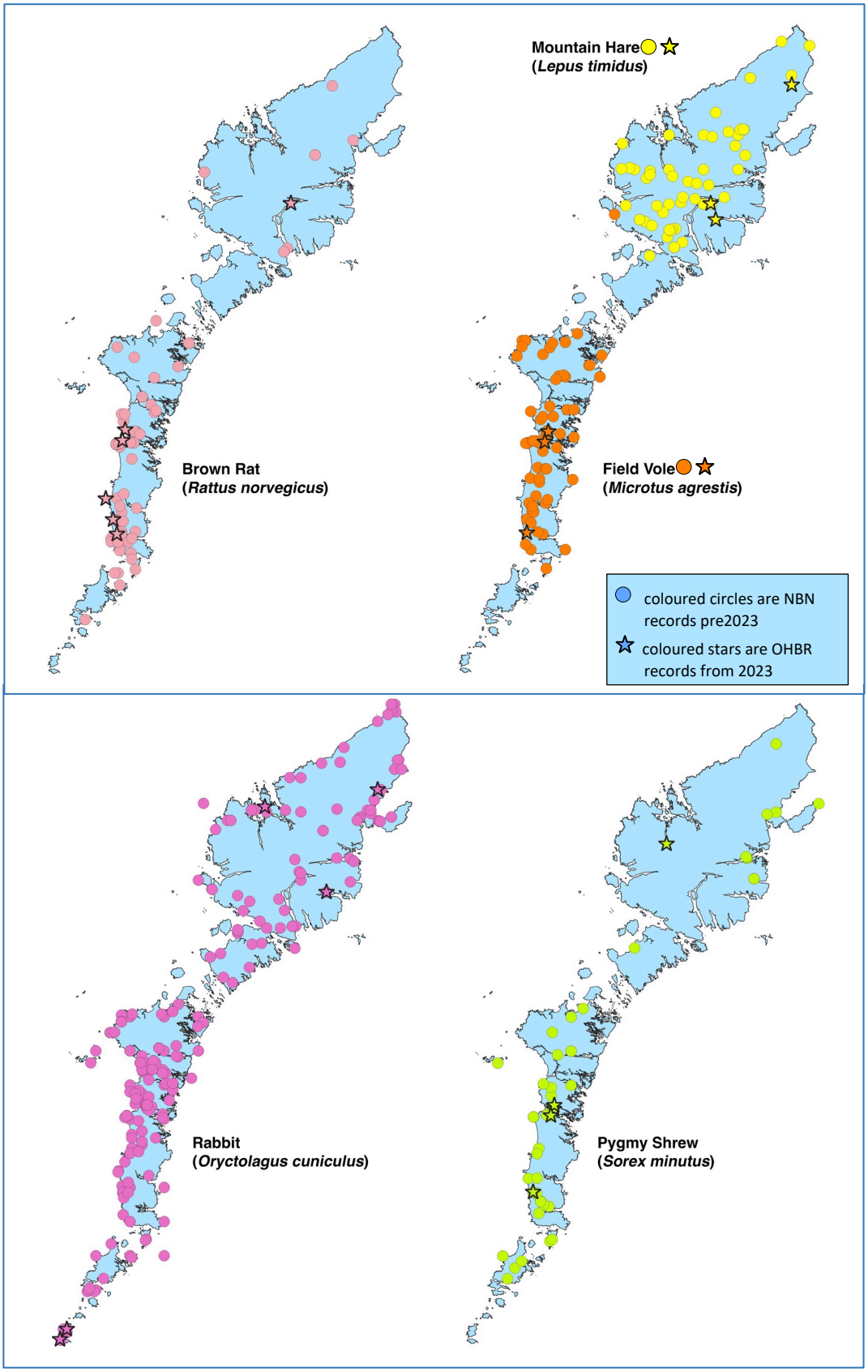
Records from the three chief suppliers of cetacean records show complementary coverage of the Outer Hebrides. Those of the Whale and Dolphin Conservation (WDC) are from land-based observers using vantage points such as those Tiumpan Head, Lewis; Scalpay, Harris and Rodel, Harris. Of all the cetacean records on NBN for the period 2012-2022,73% came from WDC Shorewatchers at Tiumpan Head, 7% from those watching from Rodel, and about 1% from those at Eilean Glas lighthouse on Scalpay.

Records submitted by Hebridean Whale & Dolphin Trust (HWDT) were largely offshore and came from observers on boat trips in the Minch and Little Minch.

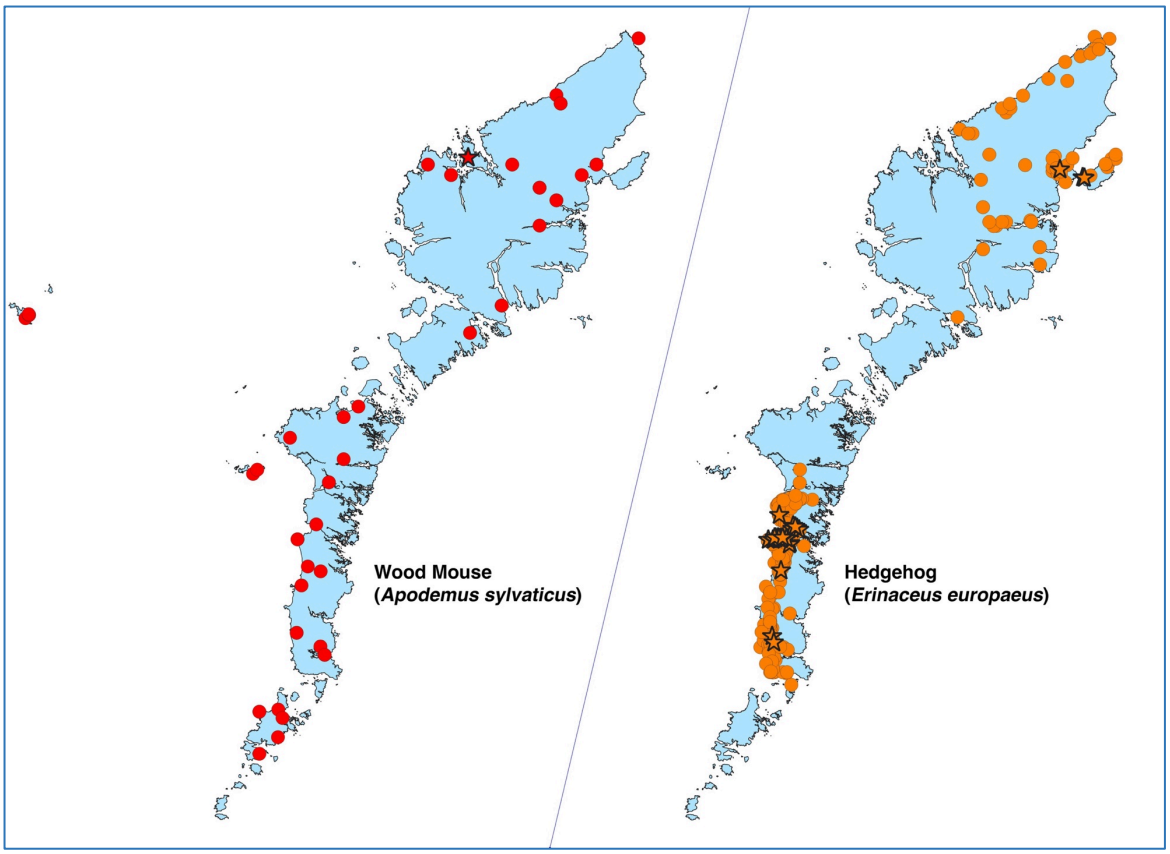
In complete contrast to the other two organisations, OHBR recorders sent in records mainly from the west coast of the islands many of which were of stranded animals. They accounted for most of the records of Long-finned Pilot Whale, Cuvier's Beaked Whale, Sperm Whale and Striped Dolphin. Perhaps the shallow west coast favours the retention and hence recording of beached specimens of these species.

Vertebrates

Mammal distribution maps - the following maps present distribution data for some of the smaller mammal species found on the Outer Hebrides. Data are a combination of records from NBN and from the OHBR database. NBN data is based on a data download on 31st January 2024 and includes records up to the end of 2022. The only data for 2023 that were available were those submitted by OHBR in January 2024.



Vertebrates



Hedgehog (*Erinaceus europaeus*) - most 2023 sightings were of road casualties, a strong population exists on South Uist and Benbecula and on Lewis

Harbour (Common) Seal (*Phoca vitulina*) - with only one record in 2023 grossly under recorded

Rabbit (*Oryctolagus cuniculus*) - present throughout the islands, very large populations were noticed, but not recorded, around many of the South Uist machair lochs

Red Deer (*Cervus elaphus*) - the twelve records received in 2023 is higher than in recent years

Fungi, lichens and slime moulds

Thirteen recorders sent in 54 sightings of 32 species of fungi in 2023. Three of these were new species for the Outer Hebrides *Ophiocordyceps gracilis*, *Psathyrella corrugis* and *Taphrina sadebeckii;* which forms leaf galls on Alder (*Alnus* spp.).

The number of records is lower than in 2022 and far lower than the peak of 1,229 records which was the result of an intense recording visit by members of the British Lichen Society.

Eight of the 13 recorders in 2023 were resident naturalists who supplied 29 of the 54 records, the remaining 25 records came from a group of five visiting naturalists. At the moment, there isn't any systematic recording of fungi by any of the resident naturalists. The records that come in are the result of casual observations of striking or interesting looking species. Most species (23 out of 32) were recorded just once.

OHBR fungi records (including slime moulds) 2017 - 2023

	2017	2018	2019	2020	2021	2022	2023
Ascomycota	370	454	1143	222	52	25	17
Basidiomycota	160	225	84	103	59	40	33
Myxogastrea			2	2	1	3	4
Total	**530**	**679**	**1229**	**327**	**112**	**68**	**54**

Red Edge Brittlestem (*Psathyrella corrugis*) - a new fungus for the Outer Hebrides in 2023

Phylum	Class	Species	Common Name	Records
Ascomycota	Lecanoromycetes	*Lobaria pulmonaria*	Lungwort Lichen	3
	Leotiomycetes	*Podosphaera epilobii*		1
		Rhytisma acerinum	Sycamore Tarspot	1
	Pezizomycetes	*Peziza ammophila*	Dune Cup	1
	Sordariomycetes	*Claviceps purpurea*	Ergot	6
		*Ophiocordyceps gracilis**		1
	Taphrinomycetes	*Taphrina alni*	Alder Tongue	2
		*Taphrina sadebeckii**		1
		Taphrina tosquinetii	Alder Wrinkle	1
Basidiomycota	Agaricomycetes	*Lycoperdon nigrescens*	Dusky Puffball	3
		Panaeolina foenisecii	Brown Mottlegill	1
		Auricularia auricula-judae	Jelly Ear	2
		Bolbitius titubans	Yellow Fieldcap	1
		Clavaria fragilis	White Spindles	1
		Clavaria fumosa	Smoky Spindles	1
		Clavaria zollingeri	Violet Coral	5
		Clavulinopsis corniculata	Meadow Coral	1
		Clavulinopsis fusiformis	Golden Spindles	1
		Cuphophyllus pratensis var. pratensis	Meadow Waxcap	1
		Hygrocybe acutoconica	Persistant Waxcap	1
		Hygrocybe cantharellus	Goblet Waxcap	1
		Hygrocybe coccinea	Scarlet Waxcap	1
		Hygrocybe conica	Blackening Waxcap	2
		Hygrocybe insipida	Spangle Waxcap	1
		Coprinopsis nivea	Snowy Inkcap	1
		*Psathyrella corrugis**	Red Edge Brittlestem	1
		Schizophyllum commune	Splitgill	1
		Stereum rugosum	Bleeding Broadleaf Crust	1
	Pucciniomycetes	*Phragmidium violaceum*	Violet Bramble Rust	1
		Puccinia urticata	Nettle Clustercup Rust	4
	Ustilaginomycetes	*Anthracoidea scirpi*		1
Protozoa	Myxogastrea	*Badhamia lilacina*		4
Total		*New species** for VC110		**54**

Fungi, lichens and slime moulds

Sycamore Tarspot (*Rhytisma acerinum*)

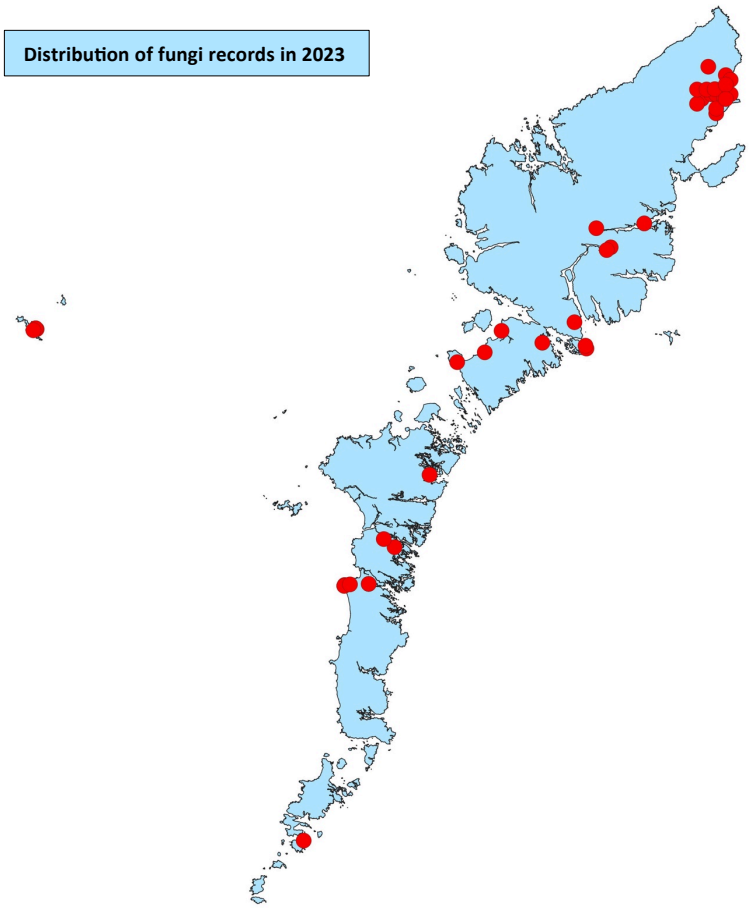
Meadow Coral (*Clavulinopsis corniculata*)

Ergot (*Claviceps purpurea*)

Golden Spindles (*Clavulinopsis fusiformis*)

Yellow Fieldcap (*Bolbitius titubans*)

Violet Bramble Rust (*Phragmidium violaceum*)



Whilst many of the records are spread thinly across the islands from Sandray northwards there is a cluster around Tolsta, Lewis, which was the main recording location of the visiting group of naturalists mentioned above.

There were records of three species from St. Kilda, Violet Coral (*Clavaria zollingeri*), Smoky Spindles (*Clavaria fumosa*), and *Ophiocordyceps gracilis*. The last mentioned species is parasitic on moth larvae particularly those of the family Hepialidae, the Swifts. It is thought that the most likely host is the Map-winged Swift (*Korscheltellus fusconebulosa*).


Violet Coral (*Clavaria zollingeri*)

The most southerly species found in 2023 was Persistant Waxcap (*Hygrocybe acutoconica*). Waxcaps are an attractive and popular group that yields lots of casual records. Five other species of waxcap were recorded in 2023.

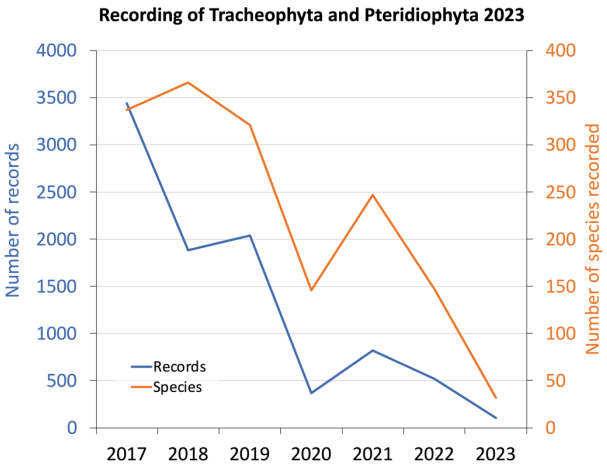
Also recorded were various species of rust, tar spot and gall former, including two other species of *Taphrina* which are also associated with Alder.


Blackening Waxcap (*Hygrocybe conica*)


Scarlet Waxcap (*Hygrocybe coccinea*)

Plantae - Pteridophyta and Tracheophyta

PHYLA - **Pteridophyta** (Horsetails & Ferns) **and Tracheophyta** (Flowering plants)

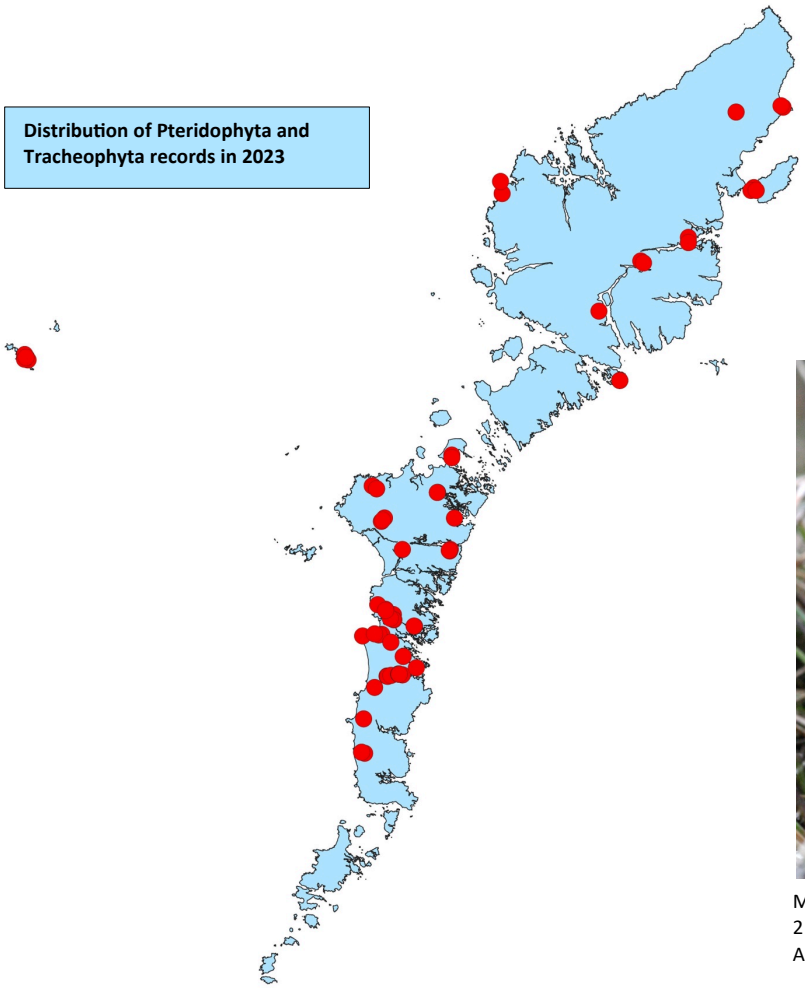


There were 104 records of 32 species of flowering plants, ferns and horsetails sent in by 13 recorders in 2023. This is by far the lowest level of recording of these groups since the inception of the annual OHBR recording summaries in 2017.

Records were scattered across most of the Outer Hebrides but with no records from Eriskay or the islands further south and few from Berneray and Harris.

Island	Species	Records
Lewis	11	14
Harris	2	2
Scalpay	6	6
Berneray	1	1
North Uist	12	22
St Kilda	2	7
Benbecula	9	12
South Uist	16	40
	Total	**104**

Distribution of Pteridophyta and Tracheophyta records in 2023



Moonwort (*Botrychium lunaria*) - one of 2 fern species found on St. Kilda in 2023, Adder's-tongue was the other

KINGDOM	Type of Plant	Species							Records						
Phylum		2017	2018	2019	2020	2021	2022	2023	2017	2018	2019	2020	2021	2022	2023
PLANTAE															
Pteridophyta	Horsetails	4	3	3	2	3	2	1	65	14	20	4	7	9	3
	Ferns	21	16	15	1	12	9	3	145	67	59	1	32	14	8
Tracheophyta	Clubmosses & Quillworts	2	2	2	1	1	1	-	2	7	3	1	1	6	-
	Flowering Plants	304	342	298	141	230	134	28	3213	1789	1949	359	781	491	93
	Conifers	6	3	3	1	1	1	-	17	7	7	2	1	1	-
	Total	**337**	**366**	**321**	**146**	**247**	**147**	**32**	**3442**	**1884**	**2038**	**367**	**822**	**521**	**104**

Plantae - Pteridophyta and Tracheophyta

Phylum	Class	Family	Species	Common name	Records
Pteridophyta	Equisetopsida	Equisetaceae	*Equisetum fluviatile*	[1]Water Horsetail	3
	Polypodiopsida	Osmundaceae	*Osmunda regalis*	Royal Fern	1
	Psilotopsida	Ophioglossaceae	*Botrychium lunaria*	Moonwort	4
			Ophioglossum vulgatum	Adder's-tongue	3
Tracheophyta	Magnoliopsida	Apiaceae	*Crithmum maritimum*	Rock Samphire	1
		Asteraceae	*Achillea ptarmica*	Sneezewort	5
			Pilosella aurantiaca	Fox-and-cubs	1
			Tanacetum vulgare	Tansy	2
		Brassicaceae	*Cardamine pratensis*	Cuckooflower	4
		Campanulaceae	*Lobelia dortmanna*	[1]Water Lobelia	11
		Caryophyllaceae	*Silene acaulis*	Moss Campion	1
		Cyperaceae	*Eleocharis palustris*	[1]Common Spike-rush	5
		Droseraceae	*Drosera rotundifolia*	Round-leaved Sundew	1
		Fabaceae	*Trifolium hybridum*	Alsike Clover	1
		Gunneraceae	*Gunnera*	Gunnera	1
		Haloragaceae	*Myriophyllum alterniflorum*	[1]Alternate Water-milfoil	7
		Iridaceae	*Iris pseudacorus*	Yellow Iris	4
		Juncaceae	*Juncus bulbosus*	[1]Bulbous Rush	2
		Lamiaceae	*Stachys palustris*	Marsh Woundwort	2
		Lentibulariaceae	*Pinguicula lusitanica*	Pale Butterwort	1
		Menyanthaceae	*Menyanthes trifoliata*	[1]Bogbean	4
		Nymphaeaceae	*Nymphaea alba*	[1]White Water-lily	4
		Orchidaceae	*Hammarbya paludosa*	Bog Orchid	1
			Platanthera bifolia	Lesser Butterfly-orchid	1
			Spiranthes romanzoffiana	Irish Lady's-tresses	1
		Plantaginaceae	*Callitriche*	[1]Water-Starwort	2
		Potamogetonaceae	*Potamogeton natans*	[1]Broad-leaved Pondweed	4
			Potamogeton polygonifolius	[1]Bog Pondweed	9
		Ranunculaceae	*Ficaria verna*	Lesser Celandine	5
			Ranunculus flammula	[1]Lesser Spearwort	10
		Rosaceae	*Alchemilla mollis*	Garden Lady's-mantle	1
		Solanaceae	*Solanum dulcamara*	Bittersweet	2
Total	[1]species recorded at Desmid sampling sites				**104**

Pteridophyta - horsetails and ferns

There were seven records of two species of fern on St Kilda, Moonwort (*Botrychium lunaria*) and Adder's-tongue (*Ophioglossum vulgatum*). This was the only site where these two species were found in 2023.

The only other Pteridiophyta found were Water Horestail (*Equisetum fluviatile*), at locations on Scalpay and South Uist, and Royal Fern (*Osmunda regalis*) at Loch Camas on South Uist.

Adder's-tongue (*Ophioglossum vulgatum*)

Royal Fern (*Osmunda regalis*)

Plantae - Pteridophyta and Tracheophyta

Tracheophyta - flowering plants

Twenty-eight species of flowering plant from twenty-three different families were recorded in 2023. Three species stand out as they have restricted distributions or have limited number of previous records:

- Rock Samphire (*Crithmum maritimum*) - 1 record in 2023, 21 previous records on NBN Atlas Scotland for Outer Hebrides, whilst reasonably common around the coast of England and Wales populations peter out in with increasing latitude in Scotland
- Alsike Clover (*Trifolium hybridum*) - 1 record in 2023, 18 previous records on NBN Atlas Scotland for Outer Hebrides, widely grown as a forage crop in the past but rarely persists once a closed sward has developed
- Bittersweet (*Solanum dulcamara*) - 2 records in 2023, 5 previous records on NBN Atlas Scotland for Outer Hebrides, widespread and common throughout England, Wales and southern Scotland, some recorded sites are associated with human habitation and it is likely to be an introduced alien in the Outer Hebrides

Wetland plant species recorded during desmid sampling		
Species	**Common Name**	**Records**
Lesser Spearwort	*Ranunculus flammula*	10
Water Lobelia	*Lobelia dortmanna*	10
Bog Pondweed	*Potamogeton polygonifolius*	9
Alternate Water-milfoil	*Myriophyllum alterniflorum*	7
Common Spike-rush	*Eleocharis palustris*	5
Bogbean	*Menyanthes trifoliata*	4
Broad-leaved Pondweed	*Potamogeton natans*	4
White Water-lily	*Nymphaea alba*	4
Water Horsetail	*Equisetum fluviatile*	3
Bulbous Rush	*Juncus bulbosus*	2
Water-Starwort	*Callitriche*	2

It seems as if little systematic recording of flowering plants took place in 2023. The exception is a set of 10 species (plus one horsetail) that are wetland species recorded as habitat descriptors at sampling locations used for the ongoing desmid survey.

In the early days of OHBR a lot of records were generated by “square bashing”; visits by groups of recorders to 1km squares that were poorly covered by records. This was very productive but one-off visits invariably only record those species present on that day, often common and conspicuous flowers for example. Perhaps repeat visits to “constant effort” sites would take recording to new levels.

White Water-lily (*Nymphaea alba*)

Bogbean (*Menyanthes trifoliata*)

Water Lobelia (*Lobelia dortmanna*)

There are three other species that feature in survey work. The low number of records for these species indicates a rather poor take up of the annual Signs of Spring survey run by Curracag and OHBR. Lesser Celandine flower early and is an important harbinger of better weather to come. The other two flower later. Cuckooflower appears at about the same time as Green-veined White butterflies are on the wing, Yellow Iris later still.

Plant records from signs of spring survey		
Species	**Common Name**	**Records**
Ficaria verna	Lesser Celandine	5
Cardamine pratensis	Cuckooflower	4
Iris pseudacorus	Yellow Iris	4

Lesser Celandine (*Ficaria verna*)

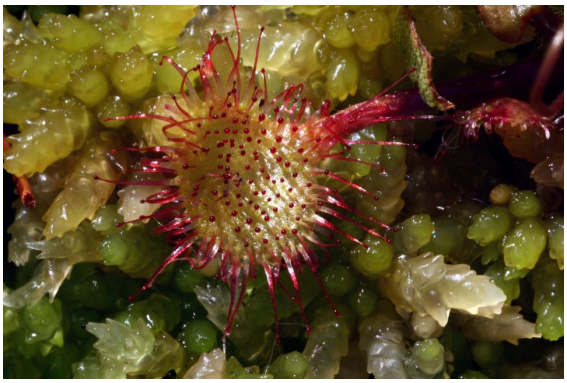
Yellow Iris (*Iris pseudacorus*)

Cuckooflower (*Cardamine pratensis*)

Interesting plants - a number of plants recorded in 2023, e.g Moss Campion (*Silene acaulis*), can be considered as the sort of plants that keen naturalists may want to search out whilst visiting the Outer Hebrides.

Moss Campion (*Silene acaulis*) - an arctic alpine species that grows at sea level in the Outer Hebrides

Interesting plants worth searching out		
Species	**Common Name**	**Records**
Crithmum maritimum	Rock Samphire	1
Silene acaulis	Moss Campion	1
Drosera rotundifolia	Round-leaved Sundew	1
Pinguicula lusitanica	Pale Butterwort	1
Hammarbya paludosa	Bog Orchid	1
Platanthera bifolia	Lesser Butterfly-orchid	1
Spiranthes romanzoffiana	Irish Lady's-tresses	1



Round-leaved Sundew (*Drosera rotundifolia*) - when it first appears it can be hard to spot, a small green leaf with reddish tentacles half hidden amongst mosses

Round-leaved Sundew (*Drosera rotundifolia*) - as it gets bigger it becomes easier to spot

Oblong-leaved Sundew (*Drosera intermedia*)

Round-leaved Sundew (*Drosera rotundifolia*) - it can, in good conditions, form extensive carpets on the top of *Sphagnum* lawns and may produce tall flowering shoots

Round-leaved Sundew (*Drosera rotundifolia*) - the flowers will only open fully in warm sunny conditions

Two other species of sundew are known from the Outer Hebrides, Oblong-leaved Sundew (*Drosera intermedia*), shown left, and Great Sundew (*Drosera anglica*), shown overleaf. Of the 3, *D. rotundifolia* is by far the most frequently recorded (1,421 records on NBN), *D. anglica* the next most frequent (738 records) and *D. intermedia* the least frequent (159 records). To confuse identification there is also a hybrid, *Drosera rotundifolia x anglica = D. x obovate* which has 92 records on NBN Atlas Scotland for the Outer Hebrides.

Great Sundew (*Drosera anglica*)

Lesser Butterfly-orchid (*Platanthera bifolia*)

Pale Butterwort (*Pinguicula lusitanica*)

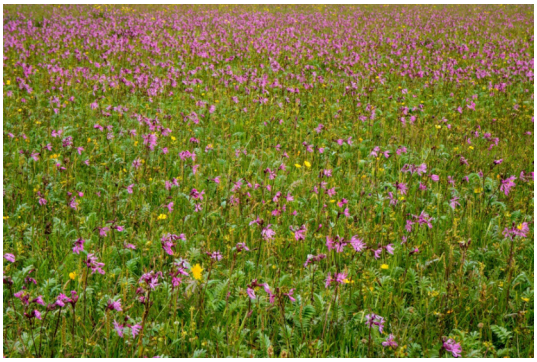
Irish Lady's-tresses (*Spiranthes romanzoffiana*) - the species is Native to North America, Ireland & Britain (all GB records are from western Scotland apart from 1 from Devon)

Flowering plants recorded in 2023 also included two that are considered invasive, Gunnera and Garden Lady's Mantle, and are worth recording to help map future distribution changes. The other four are perhaps just plants that caught someone's eye.

Other plants noted in 2023		
Species	**Common Name**	**Records**
Achillea ptarmica	Sneezewort	5
Tanacetum vulgare	Tansy	2
Stachys palustris	Marsh Woundwort	2
Pilosella aurantiaca	Fox-and-cubs	1
Gunnera	Gunnera	1
Alchemilla mollis	Garden Lady's-mantle	1

That's odd - what was unusual in 2023 was the lack of records of plants associated with machair - these are some you missed, photos from 2021:

Early Marsh Orchid (*Dactylorhiza incarnata*) - Berneray 8th July



Ragged Robin (*Silene flos-cuculi*) - Berneray 8th July

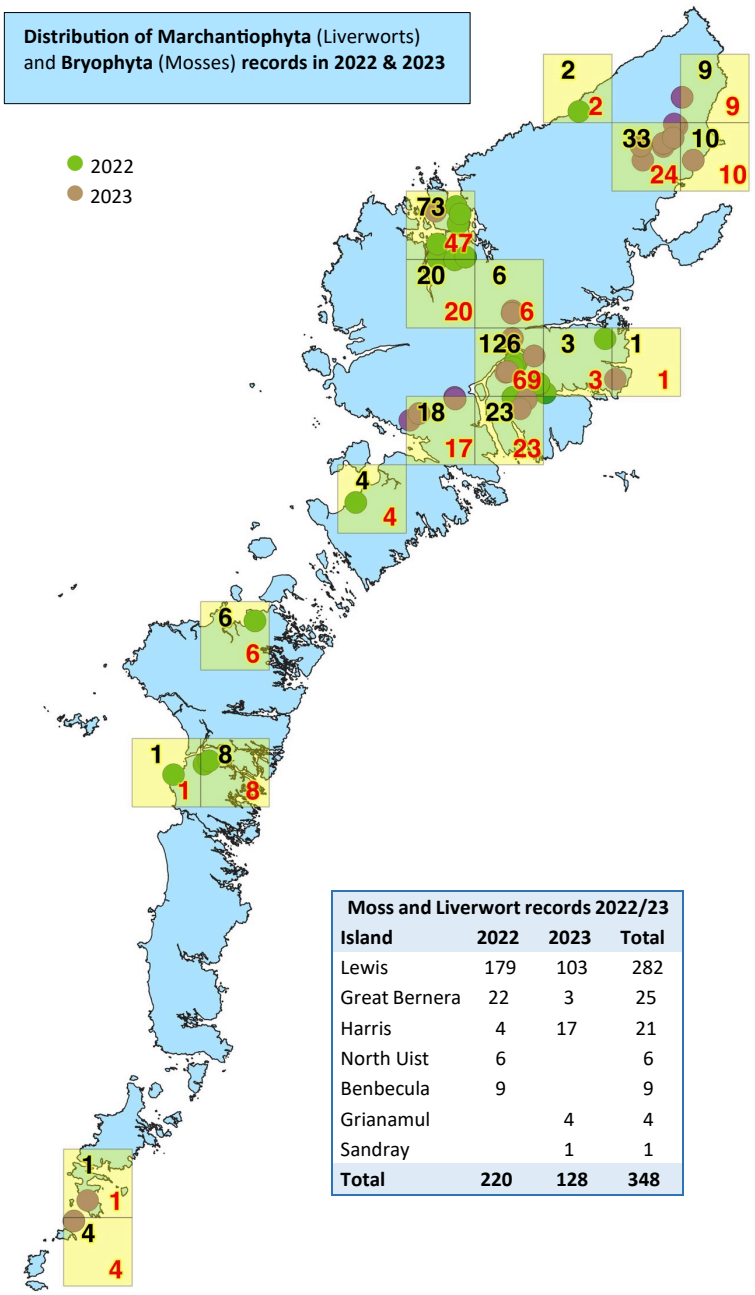
Sneezewort (*Achillea ptarmica*)

Tufted Vetch (*Vicia cracca*) - Berneray 8th July

Six-spot Burnet (*Zygaena filipendulae*) on Pyramidal Orchid (*Anacamptis pyramidalis*) - Berneray 8th July

Mosses and liverworts

PHYLA **Marchantiophyta** (Liverworts) and **Bryophyta** (Mosses)



Moss and Liverwort records 2022/23			
Island	**2022**	**2023**	**Total**
Lewis	179	103	282
Great Bernera	22	3	25
Harris	4	17	21
North Uist	6		6
Benbecula	9		9
Grianamul		4	4
Sandray		1	1
Total	**220**	**128**	**348**

A single recorder was responsible for collecting all the liverwort and moss records in 2022 and all except four in 2023. The majority (80%) of the records came from Lewis, 7% from Great Bernera, and 6% from Harris. Of the larger islands, there were no records at all from South Uist, Barra or Vatersay.

Phylum	Records	Species
Bryophyta (Mosses)	252	91
Marchantiophyta (Liverworts)	96	35
Total	**348**	**126**

In total there were 348 records of 126 species added to the OHBR database. Of these, 252 records were of 91 species of moss and 96 records were of 35 species of liverwort.

Rhytidiadelphus squarrosus - a commonly recorded moss within various habitats including open grassland and lawns

Polytrichum juniperinum (likely ID) - male "flowers"

Polytrichum commune

Polytrichum commune - capsules, when young with golden brown, hairy, calyptra

Mosses and liverworts

Taxonomic summary of 2022 and 2023 records, all submitted to OHBR in 2023.

Phylum	Class	Order	Family	Records	Species
Bryophyta (mosses)	Bryopsida	Bartramiales	Bartramiaceae	8	3
		Bryales	Bryaceae	10	2
			Mniaceae	17	4
		Dicranales	Amphidiaceae	5	1
			Aongstroemiaceae	1	1
			Dicranaceae	15	3
			Fissidentaceae	6	3
			Leucobryaceae	13	3
			Pottiaceae	16	10
		Funariales	Funariaceae	1	1
		Grimmiales	Grimmiaceae	17	6
			Seligeriaceae	6	1
		Hookeriales	Hookeriaceae	1	1
		Hypnales	Amblystegiaceae	6	3
			Brachytheciaceae	8	5
			Calliergonaceae	4	4
			Climaciaceae	1	1
			Hylocomiaceae	23	5
			Hypnaceae	12	4
			Lembophyllaceae	8	2
			Myuriaceae	9	2
			Plagiotheciaceae	5	3
			Pylaisiaceae	9	1
			Stereodontaceae	1	1
			Thuidiaceae	3	1
	Polytrichopsida	Polytrichales	Polytrichaceae	9	5
	Sphagnopsida	Sphagnales	Sphagnaceae	38	15
Mosses total				**252**	**91**

Phylum	Class	Order	Family	Records	Species
Marchantiophyta (liverworts)	Jungermanniopsida	Jungermanniales	Antheliaceae	1	1
			Cephaloziaceae	8	4
			Gymnomitriaceae	6	2
			Herbertaceae	2	1
			Lepidoziaceae	5	3
			Lophocoleaceae	1	1
			Plagiochilaceae	3	2
			Saccogynaceae	7	1
			Scapaniaceae	29	5
		Metzgeriales	Aneuraceae	11	5
			Metzgeriaceae	2	2
		Pleuroziales	Pleuroziaceae	2	1
		Porellales	Frullaniaceae	12	2
			Lejeuneaceae	2	2
	Marchantiopsida	Marchantiales	Conocephalaceae	2	1
			Marchantiaceae	2	1
			Ricciaceae	1	1
Liverworts Total				**96**	**35**

Algae

ALGAE - PHYLA Charophyta, Rhodophyta, Chlorophyta and Ochrophyta

The various organisms we conveniently clump together as algae in reality belong to a number of very different taxonomic groups. There is disagreement between phycologists as to how they are related to, or if they are related to, each other. In practical terms they are all photosynthetic so in practical terms we lump them together as algae. Few people here currently record algae except, sometimes, the large ones found on the seashore.

Phylum	Basic type	Class	Species	Common name / type	Total
KINGDOM Plantae					
Charophyta	Desmids			desmids	1074
Rhodophyta	Red seaweeds	Florideophyceae	*Bonnemaisonia hamifera*	Bonnemaison's Hook Weed	1
KINGDOM Protista					
Chlorophyta	Green algae	Chlorophyceae	*Oedogonium undulatum*	a filamentous, free-living green alga	1
KINGDOM Chromista					
Ochrophyta	Diatoms	Bacillariophyceae	*Eucocconeis flexella*	a diatom	1
			Nitzschia sinuata	a diatom	1
			Rhopalodia gibba	a diatom	1
			Tryblionella debilis	a diatom	1
	Yellow-green algae	Xanthophyceae	*Pseudostaurastrum enorme*	a freshwater yellow-green alga	1
	Brown seaweeds	Phaeophyceae	*Colpomenia peregrina*	Oyster Thief	1
			Sargassum muticum	Wireweed	2
Total					**1084**

Grey Seal (*Halichoerus grypus*) - demonstrating the main types of seaweed

Algae

Algae summary

Virtually all algae in 2023 were either identified by, or identification was confirmed by, one person, 983 of the 1084 records of algae collected this year came from this recorder. The vast majority of algae records were of desmids in the phylum Charophyta.

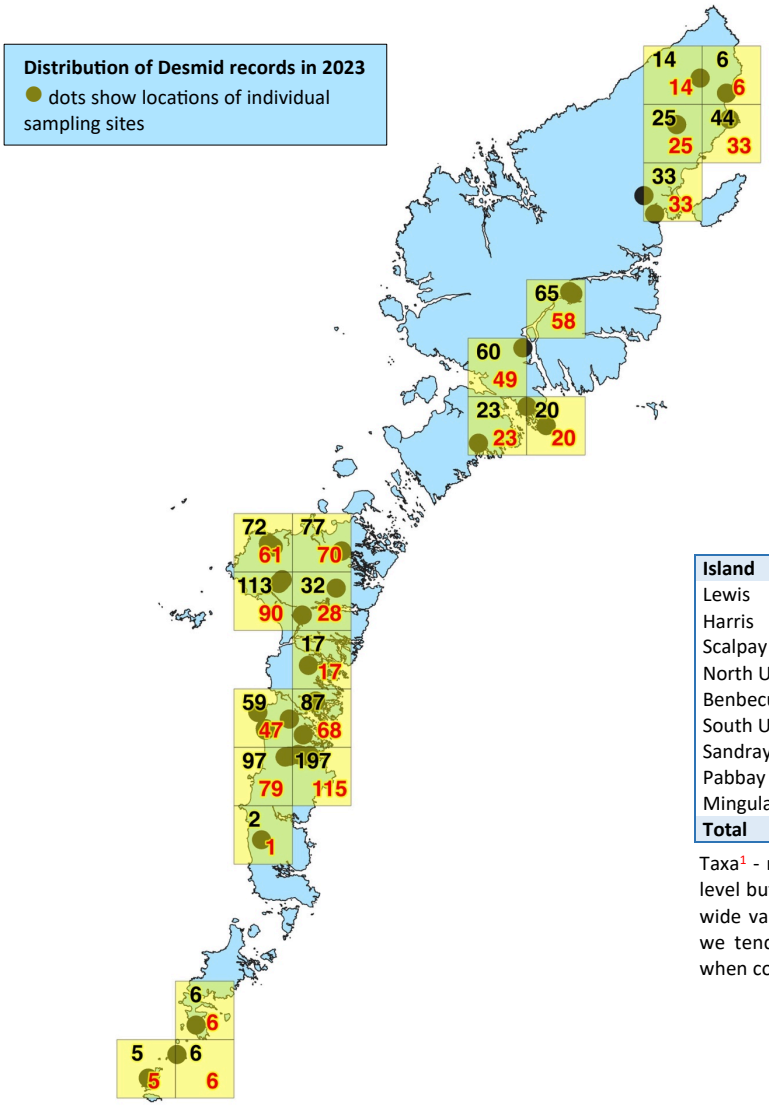
Alagae records 2023 by Phylum					
Recorder	**Charophyta**	**Chlorophyta**	**Ochrophyta**	**Rhodophyta**	**Total**
1	977	1	5		983
2	80				80
3	17				17
4			3	1	4
Total	**1074**	**1**	**8**	**1**	**1084**

The only non-desmid algae found were; four species of diatoms (class Bacillariophyceae), a filamentous green alga (class Chlorophyceae), a yellow-green alga (class Xanthophyceae) and three species of seaweed, one red (phylum Rhodophyta) and two brown (phylum Ochrophyta).

Desmid survey

Sampling visits were made to various freshwater bodies. Across nine islands samples were collected from 44 sites in total. A few sites had repeat visits, they were sampled on two different dates. In 2023, 1,074 records of 333 species of desmid were submitted to OHBR. A few of these records came from earlier years.

Summary of desmid sampling 2023				
Class	**Order**	**Family**	**Taxa**	**Records**
Zygnematophyceae	Desmidiales	Closteriaceae	41	128
		Desmidiaceae	269	861
		Mesotaeniaceae	1	1
		Peniaceae	10	27
	Zygnematales	Mesotaeniaceae	12	57
			333	**1074**



Island	Sites	Taxa[1]	Records
Lewis	8	129	189
Harris	3	66	95
Scalpay	1	11	11
North Uist	11	166	296
Benbecula	2	44	52
South Uist	16	195	412
Sandray	1	7	7
Pabbay	1	6	6
Mingulay	1	6	6
Total	**44**		**1074**

Taxa[1] - most records of desmids are at the species level but studies of the group have always shown a wide variety of morphological forms (varieties), so we tend to use the term taxa instead of species when collating information about the group.

Algae

Records of notable Desmid taxa 2023	
Status *Species name*	**Records**
New to VC110	
Cosmarium contractum var. subglobosum	1
Cosmarium corriense	5
Cosmarium cyclicum	1
Cosmarium galeritum	3
Cosmarium laeve	1
Cosmarium notabile	1
Cosmarium regnesiforme	1
Cosmarium reniforme (elevated form)	1
Cosmarium reniforme (large form)	2
Cosmarium tetragonum	1
Cosmarium vexatum var. lacustre	1
Micrasterias americana	1
Netrium digitus var. rhomboideum	3
Roya obtusa	1
Staurastrum cerastes	1
Staurastrum duacense	1
Staurastrum pentasterias	1
Staurastrum uhtuense	1
Xanthidium impar	2
New to UK	
Cosmarium goniodes var. subturgidum	1
Cosmarium homalodermum	1
Cosmarium magnificum var. italicum	1
Cosmarium neocrenatum	2
Cosmarium palatiniforme	1
Cosmarium pyramidatum subsp. *abnorme*	1
Cosmarium regnellii var. *kerguelense*	2
Cosmarium rostafinskii	1
Cosmarium scutiforme	1
Cosmarium sphagnicoliforme var. *armatium*	1
Netrium minutum	3
Xanthidium antilopaeum f. *dimazum*	1
New to W. Palearctic	
Cosmarium tasiussaqense	1
New species (formal descriptions now published)	
Cosmarium askernishense	2
Cosmarium charnainense	1
Total	**49**

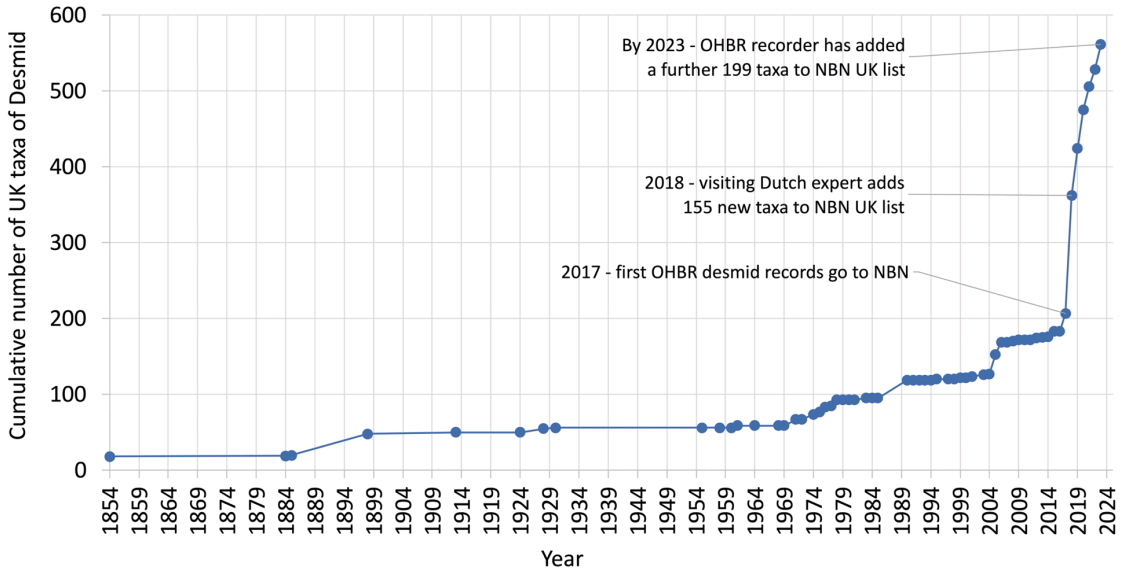
Since 2017, OHBR has been the main source of records of desmids (class Zygnematophyceae) on the NBN database for the whole of the UK. A local naturalist had started work on algae and submitted a few desmid records in 2017. In 2018 a group from the Netherlands, including a leading expert on desmids, visited the Outer Hebrides and ended up sending OHBR over 750 records of desmids from various sites. Contact with this expert led to an increased expertise in the identification of the group and by 2019 our local recorder was the main source of desmid records for the Outer Hebrides. The number of records entering NBN is dominated by those coming from various sites here, as of February 2023, nearly 89% of all NBN desmid records for the whole of the UK originate on the Outer Hebrides.

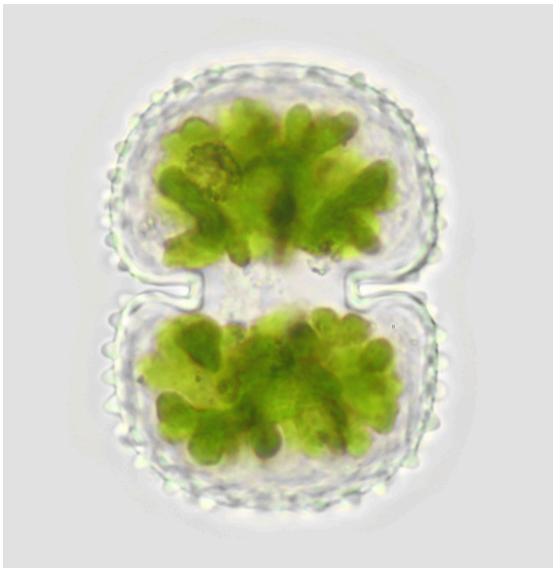
Source of records of desmids on NBN database				
Source of records	**Pre-2017**	**2017 - 2023**	**Total**	**% of total**
OHBR	0	5798	5798	88.57%
Other organisations	711	37	748	11.43%
Total	711	5835	6546	

In 2023 regular desmid sampling by one OHBR recorder led to the discovery of;

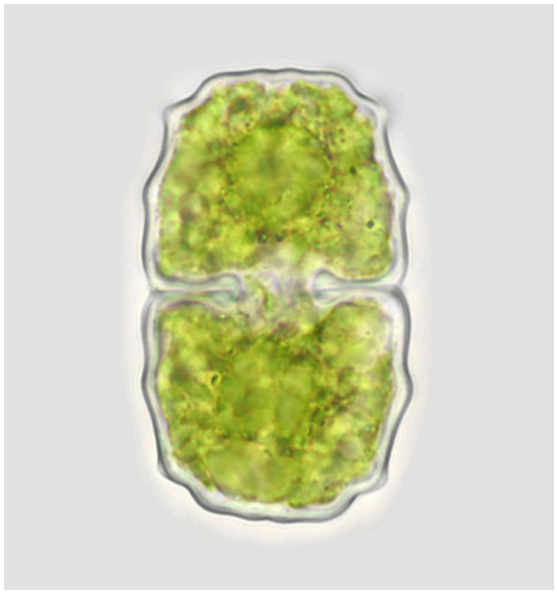
- 18 species new to VC110,
- 12 species new to the UK,
- a new Western Palearctic species,
- and the publication of formal descriptions of two species new to science.

So the records forwarded to NBN from this study have had a huge impact on our understanding of this under recorded group, not just at VC110 level but also at UK and even international level. There is still, however, a lot records in various scientific papers, textbooks, personal diaries etc that still need to make their way onto the NBN database.

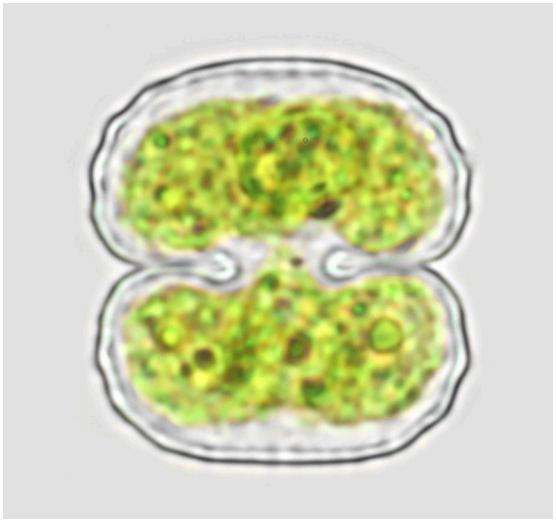




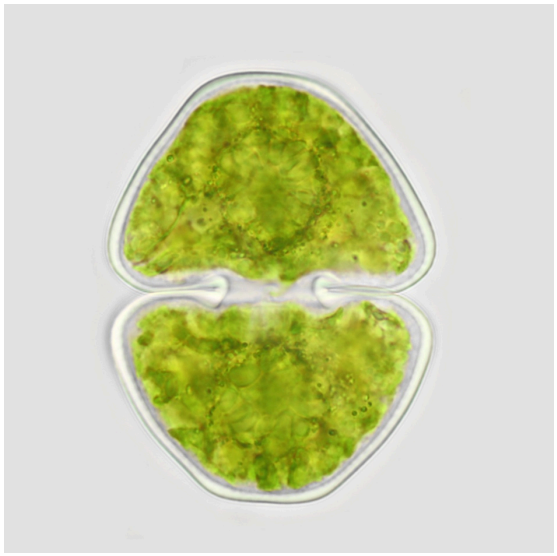
Cosmarium corriense - a desmid new to VC110



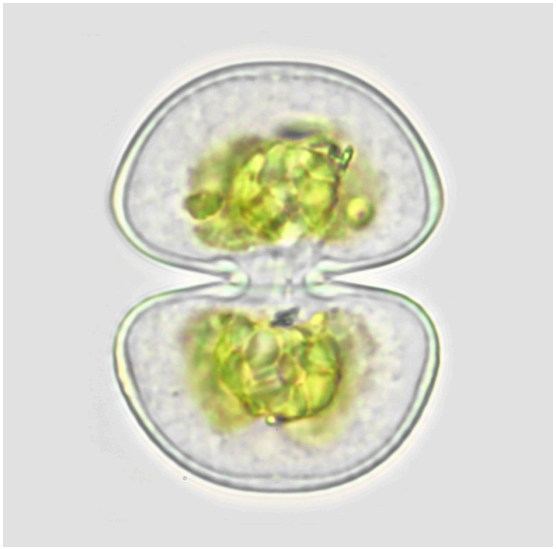
Cosmarium tetragonum - a desmid new to VC110



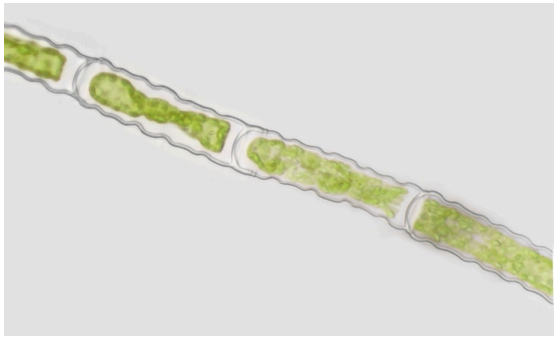
Cosmarium tasiussaqense - a desmid new to Western Palearctic



Cosmarium homalodermum - a desmid new to the UK

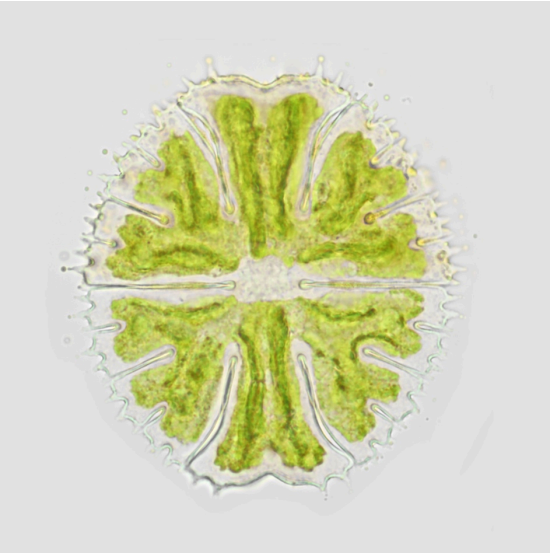


Cosmarium askernishense - a desmid new to science

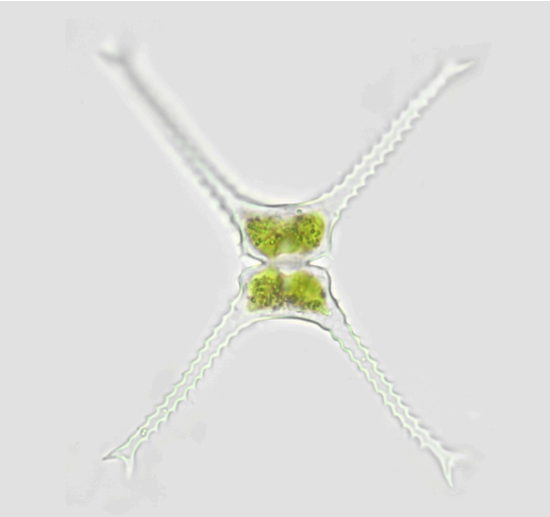


Oedogonium undulatum - a filamentous, free-living green alga

Gallery - all pictures on these two pages are photomicrographs by: © Chris Johnson 2024

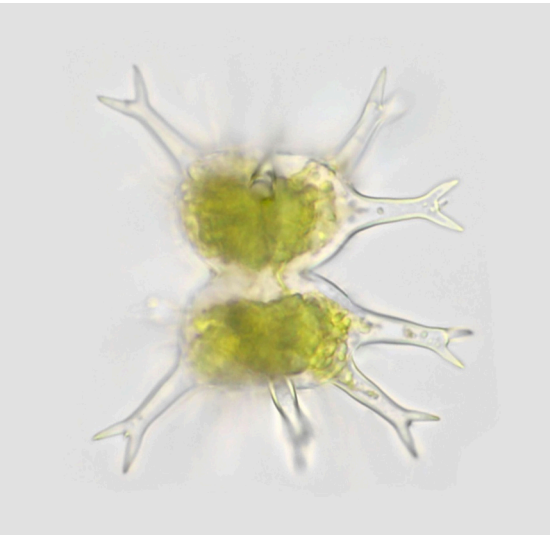


Micrasterias conferta - a desmid new to VC110

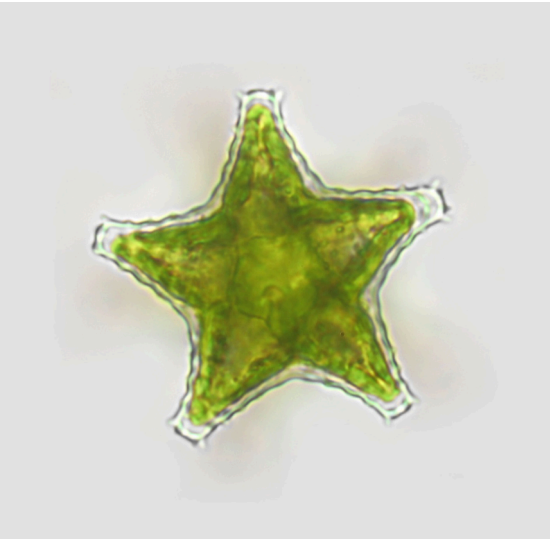


Staurastrum uhtuense - a desmid new to VC110

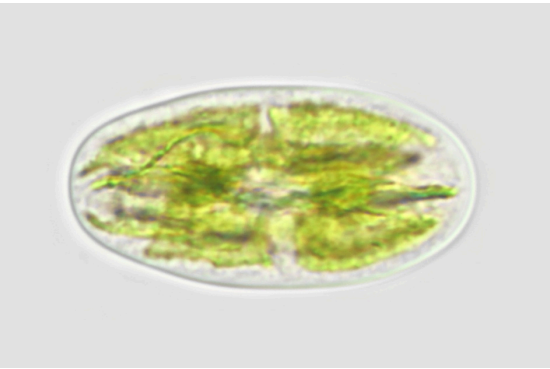
Staurastrum cerastes - a desmid new to VC110



Staurastrum tohopekaligense - a desmid



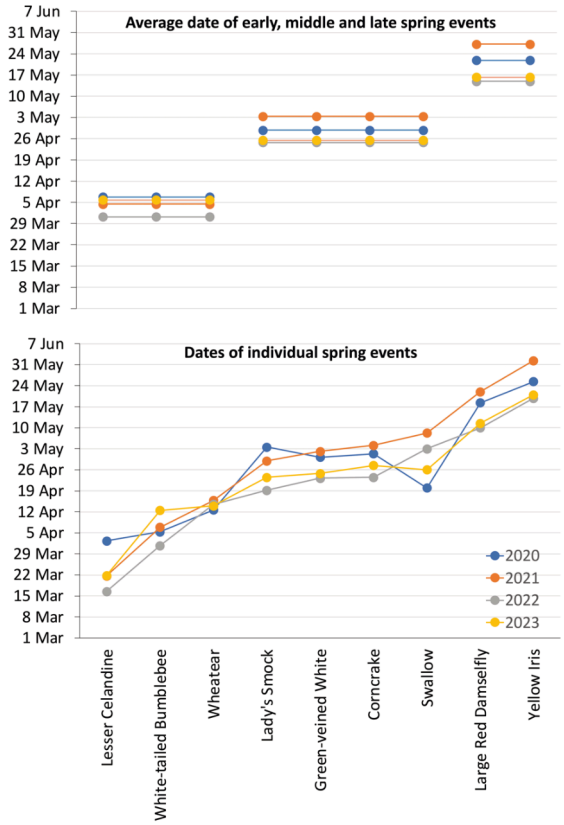
Staurastrum pentasterias - a desmid new to VC110



Netrium pseudactinotaenium - a desmid

Phenology of spring events

Spring events 2020 – 2023 summary



Of the nine spring events that recorders are asked to note, three are indicators of the **early spring period**, the dates of:

- The first Lesser Celandine with a fully open flower,
- The sighting of the first White-tailed Bumblebee, almost always a queen searching for a new nest site or taking on nectar to fuel her search,
- The first Wheatear seen, being a summer visitor the appearance of these is determined to a large extent by weather conditions along their migration route.

The average of these three dates gives an indication of the progression of the first part of spring.

Early spring events

Indicator species	Year	Earliest date	Average date
Lesser Celandine	2020	26 Mar 2020	2 Apr 2020
	2021	6 Mar 2021	22 Mar 2021
	2022	5 Mar 2022	17 Mar 2022
	2023	4 Feb 2023	22 Mar 2023
White-tailed Bumblebee	2020	26 Mar 2020	5 Apr 2020
	2021	21 Mar 2021	7 Apr 2021
	2022	21 Mar 2022	1 Apr 2022
	2023	30 Mar 2023	13 Apr 2023
Wheatear	2020	24 Mar 2020	12 Apr 2020
	2021	2 Apr 2021	16 Apr 2021
	2022	9 Apr 2022	15 Apr 2022
	2023	27 Mar 2023	15 Apr 2023

Lesser Celandine always flowers early. The first fully open Lesser Celandine in 2023 was a very early one on 4th February at Bornais, South Uist, but the average date of all the sightings was 22nd March, the same as in 2021 and five days later than in 2022.

White-tailed Bumblebees are usually active early in the year but the first on 30th March 2023 was nine days later than in 2022 and 2021 and four days later than in 2020. The average date was between 6-12 days later than in previous years.

The first Wheatear was seen on 27th March at the Butt of Lewis earlier than in 2022 and 2021 but a few days later than in 2020. The average date of arrival is very consistent across the year between the 12th and 16th April.

The averages of all the dates were:

- 6th April in 2023,
- 1st April in 2022,
- 6th April in 2021 and
- 5th April in 2020.

The average date of the early spring events is very similar for 2020, 2021 and 2023 (5th or 6th of April) but was 4-5 days earlier in 2022, than in the other years. It was starting to look like 2022 might be an early spring.

Wheatear, earliest 27th March in 2023 at Butt of Lewis

White-tailed Bumblebee, earliest 30th March in 2023, South Uist

Phenology of spring events

As **mid spring events** we use the appearance of:

- Lady's Smock flowers,
- Green-veined White;
- hearing a Corncrake,
- and seeing the first Swallow.

Average dates of all four events were:

- 26th April in 2023,
- 24th April in 2022,
- 4th May in 2021 and
- 28th April in 2020.

In terms of the mid spring events the average date of the four events in 2023 was similar to 2022 and both were a little earlier than in 2020 whilst 2021 stands out as being almost a week later than the other years.

Mid spring events

Indicator species	Year	Earliest date	Average date
Lady's Smock	2020	27 Apr 2020	3 May 2020
	2021	21 Apr 2021	30 Apr 2021
	2022	27 Mar 2022	20 Apr 2022
	2023	16 Apr 2023	24 Apr 2023
Green-veined White	2020	24 Apr 2020	30 Apr 2020
	2021	14 Apr 2021	3 May 2021
	2022	19 Apr 2022	24 Apr 2022
	2023	19 Apr 2023	25 Apr 2023
Corncrake	2020	19 Apr 2020	1 May 2020
	2021	22 Apr 2021	5 May 2021
	2022	22 Apr 2022	24 Apr 2022
	2023	19 Apr 2023	28 Apr 2023
Swallow	2020	11 Apr 2020	20 Apr 2020
	2021	21 Apr 2021	9 May 2021
	2022	3 May 2022	4 May 2022
	2023	17 Apr 2023	27 Apr 2023

Green-veined White, earliest 19th April in 2023 on South Uist

We use two **late events** to mark the final part of spring:

- the first Large Red Damselfly on the wing,
- and the first Yellow Iris fully in flower.

Late spring events

Indicator species	Year	Earliest date	Average date
Large Red Damselfly	2020	30 Apr 2020	18 May 2020
	2021	17 May 2021	23 May 2021
	2022	11 May 2022	11 May 2022
	2023	4 May 2023	12 May 2023
Yellow Iris	2020	20 May 2020	25 May 2020
	2021	29 May 2021	2 Jun 2021
	2022	14 May 2022	20 May 2022
	2023	18 May 2023	22 May 2023

Large Red Damselfly, first seen on 4th May on South Uist in 2023

The Large Red Damselfly appeared, on average, in 2023 at about the same time as in 2022, nearly a week earlier than in 2020 and 11 days earlier than in 2021. It was a similar pattern for Yellow Iris, again about 11 days earlier in 2023 than in 2021.

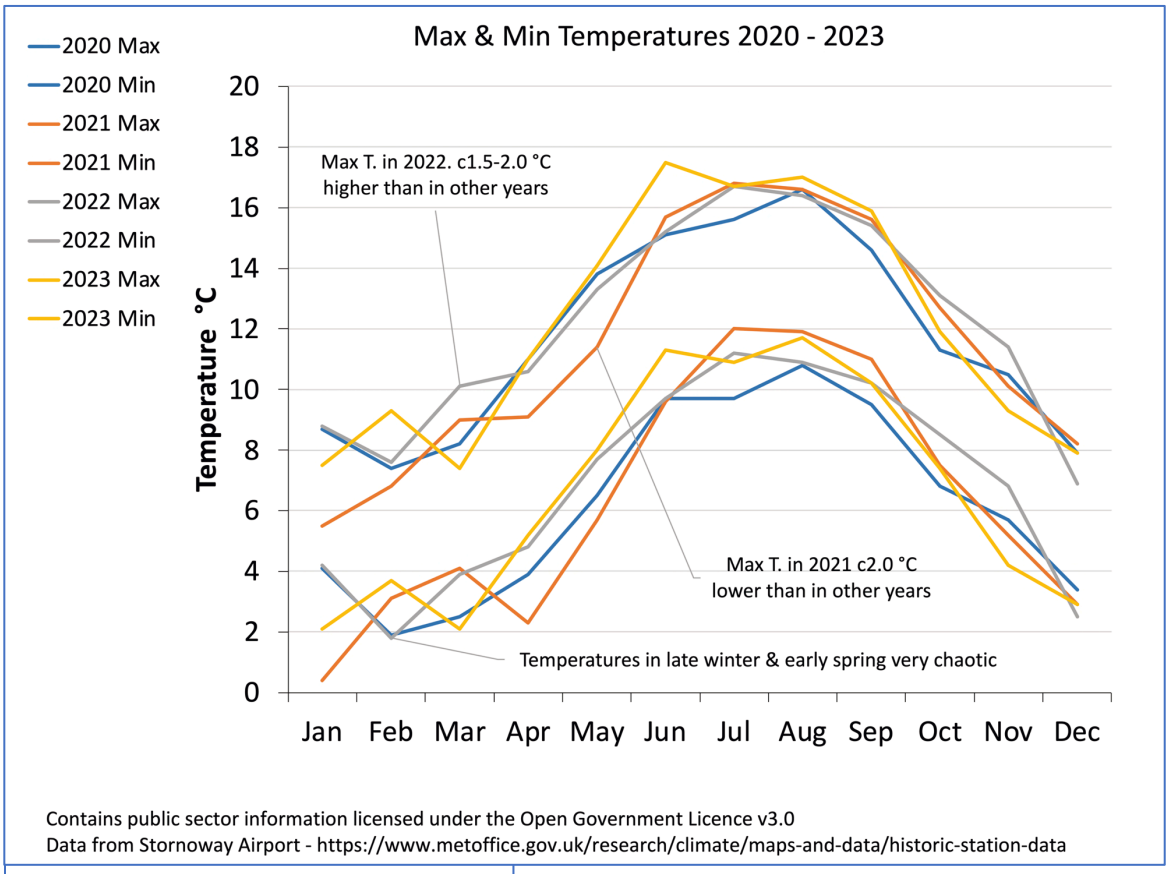
The average dates for the last two events were:

- 17th May in 2023,
- 15th May in 2022,
- 28th May in 2021 and
- 21st May in 2020.

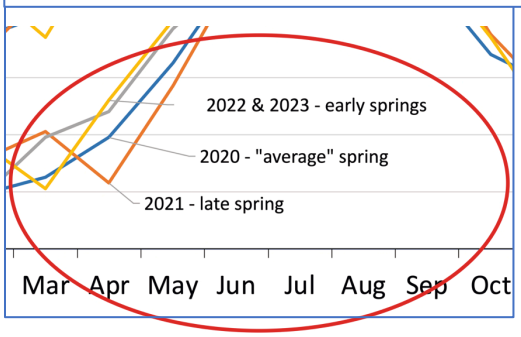
Overall, the last two spring events were 4 - 6 days earlier in 2023 and 2022 than in 2020 and 11-13 days earlier than in 2021. The difference between years seems to become bigger when we look at the mid spring, and particularly, the late spring events.

Phenology of spring events

Mean monthly temperatures were calculated from the Met Office Historic Station dataset for Stornoway Airport, the only available open-licence data for the Outer Hebrides. It is noticeable that the winter to spring (Jan – April) data is more chaotic than the data for the rest of the year. The mean temperatures for March, are higher in 2022 than in the other years, this is the year when the average early spring event indicators are about 4-5days ahead of the other years.



Data from Stornoway Airport - https://www.metoffice.gov.uk/research/climate/maps-and-data/historic-station-data

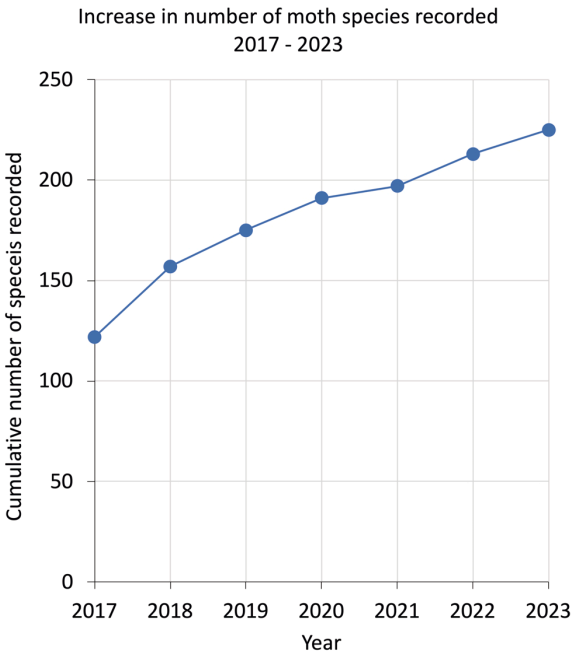


The order of the yearly temperature lines in the April-June period on the graph above (and highlighted left) seems to match closely the order of the average mid and late spring event indicators (shown in the **Spring events 2020 – 2023 summary** graph at the start of this section). In April and May 2021 mean temperatures were about 2-3°C cooler than in 2002 and 2023 and this was the year when spring was much later than the other years. A two-degree difference in mid to late spring temperatures was associated with a roughly two-week delay in the phenological progression of spring in 2021 compared to 2022 and 2023. The 2020 yearly temperature line lies between the 2021 late spring and 2022/23 early spring lines and that gave us what might be considered a more normal “average” spring.

The spring survey data appears to be showing an effective way of describing the progression of spring and hopefully more people will join the survey in future years so that any effect of climate warming on the timing of spring phenological events in the Outer Hebrides can be described.

One small garden

One small garden - I'm an OHBR recorder with a long interest in moths who has run a moth trap at locations around the country at the various places I've worked. I retired and moved to South Uist in 2017 and set up a trap in the back garden to see what was there. In 2017 I recorded 122 species of moth. Each year there will nearly always be new moths, many moths are widespread but not particularly abundant. In any year approximately 25% of species will be recorded just once. So, if you carry on trapping at the same location the total number of species found there will increase year by year. Eventually the increase should plateau. By 2023 I'd found 225 species of moth in total in the garden and there is little sign of the increase slowing. At the same time, I also started to look at some of the commoner, easy to identify, insects using the garden - caddisflies, butterflies, bees, dragonflies and hoverflies started to be examined in more detail.



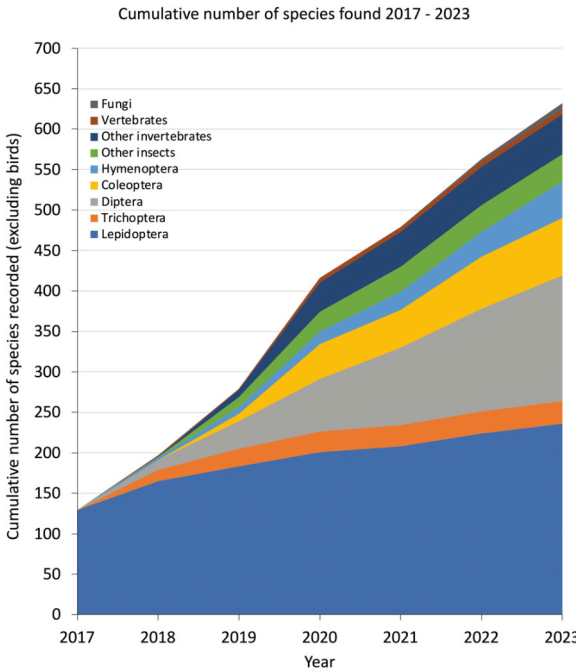
Kingdom	Phylum	Class	Order	Records	Species							
					2017	2018	2019	2020	2021	2022	2023	All years
Animalia	Annelida	Clitellata	Rhynchobdellida	1				1				1
		Oligochaeta	Crassiclitellata	1							1	1
	Arthropoda	Arachnida	Araneae	66			1	12	10	8	8	15
			Opiliones	10			1	3	1	2	1	4
		Chilopoda	Lithobiomorpha	6				1	1	1	2	2
		Collembola	Entomobryomorpha	3					1	1		1
		Diplopoda	Julida	10			1	3	1		1	5
			Polydesmida	6				1		1		1
		Insecta	Coleoptera	300			9	42	17	35	25	71
			Dermaptera	24			1	1	1	1	1	1
			Diptera	714		12	25	53	64	83	96	155
			Ephemeroptera	22			2	2	1	1	1	2
			Hemiptera	43			3	12	7	7	4	17
			Hymenoptera	169		3	7	13	15	24	28	45
			Lepidoptera	6685	122	158	154	155	149	160	170	236
			Moths	6473		151	147	149	140	153	161	225
			Butterflies	248		7	7	6	9	7	9	11
			Neuroptera	6			1	1	2		1	2
			Odonata	66		1	4	5	4	4	5	6
			Plecoptera	21			1	1	1	1	1	1
			Psocoptera	11			1		3	2	2	3
			Siphonaptera	2					2			2
			Trichoptera	884		14	22	24	23	23	21	28
		Malacostraca	Amphipoda	1					1			1
			Isopoda	14			1	2	1	2	2	2
	Chordata	Actinopterygii	Gasterosteiformes	5				1		1	1	1
		Amphibia	Anura	10		1	1		1	1	1	1
		Mammalia	Artiodactyla	1						1		1
			Insectivora	5		1	1	2		1	1	2
			Rodentia	6				2	2	1	1	2
	Mollusca	Bivalvia	Veneroida	1				1				1
		Gastropoda	Hygrophila	3				1		1		2
			Littorinimorpha	1				1				1
			Pulmonata	24			5	5	1	3	3	10
	Platyhelminthes	Rhabditophora	Tricladida	2				1	1			2
Fungi	Ascomycota	Geoglossomycetes	Geoglossales	1		1						1
		Leotiomycetes	Rhytismatales	1						1	1	1
	Basidiomycota	Agaricomycetes	Agaricales	4							4	4
		Pucciniomycetes	Pucciniales	2						1	1	1
Total				**9131**	**122**	**191**	**241**	**346**	**310**	**367**	**383**	**632**

One small garden

In a moth trap there is always a number of other insects that are attracted to light or which just end up accidentally in the trap.

Limnephilus elegans - hadn't been recorded in the Outer Hebrides since 1901 I've been finding them regularly and in quite large numbers since 2018

Limnephilus pati - had been considered extinct in GB for over 100 years until I found one in my light-trap



Perhaps the commonest moth trap intruders were caddisflies and these were the next group of insects to be recorded properly. Like moths they are strongly attracted to light and are relatively easy to identify, certainly anyone who identifies micro- moths would be able to get an identification of the commoner caddisflies.

Caddisflies had been largely ignored in the Outer Hebrides in more recent years and a number of less well recorded species turned up. The first was *Limnephilus elegans*, this species had last been recorded in the Outer Hebrides in 1901, I think it has been missed because it has an early flight period and at a time when most naturalist would have been visiting during the main May to August holiday period they would have been less likely to come across this species. Even more remarkable was finding a caddisfly that had been thought to be extinct in GB until I found one in the garden trap in 2020.

Lockdown year also provided a real opportunity to get to grips with some of other invertebrates in the garden. I sorted out identification of the commoner Diptera, set pitfall traps for Coleoptera, even had a go at spiders, harvestmen, slugs and woodlice. In 2020 there was a definite upturn in the overall number of animals being found in the garden.

Basing a lot of my recording around the light-trap and garden effectively turns it into a constant effort monitoring site. I'm more likely to pick up the less common moths, and now I've got my eye in lots of other species as well, because I'm in there three or four days a week to check the moth trap and can't help noticing other things.

I've spent time over the last couple of years having a go at Ichneumons and some of the less easy Diptera. I need to get back to the beetles with a bit more effort on some of the smaller ones. I've also started having a look at some of the fungi growing in the garden and have stopped cutting the front lawn to allow the orchids and other plants to come through. Last year there were >40 Common Spotted Orchid, a Lesser Butterfly Orchid and a Northern March Orchid on a tiny patch of ex-lawn. I've built a small pond and already have diving beetles visiting and Black Darter dragonflies using it as a breeding site. The species list for what is in reality a small garden is over 630 and if I add in birds seen in, or from, the garden its over 700.

One small garden

The front lawn is now full of orchids since I stopped cutting the grass

Old favourites such as Buddleia really are good for attracting butterflies such as this Dark Green Fritillary

I've used cornfield annuals to make some of the borders more attractive to pollinating insects ….

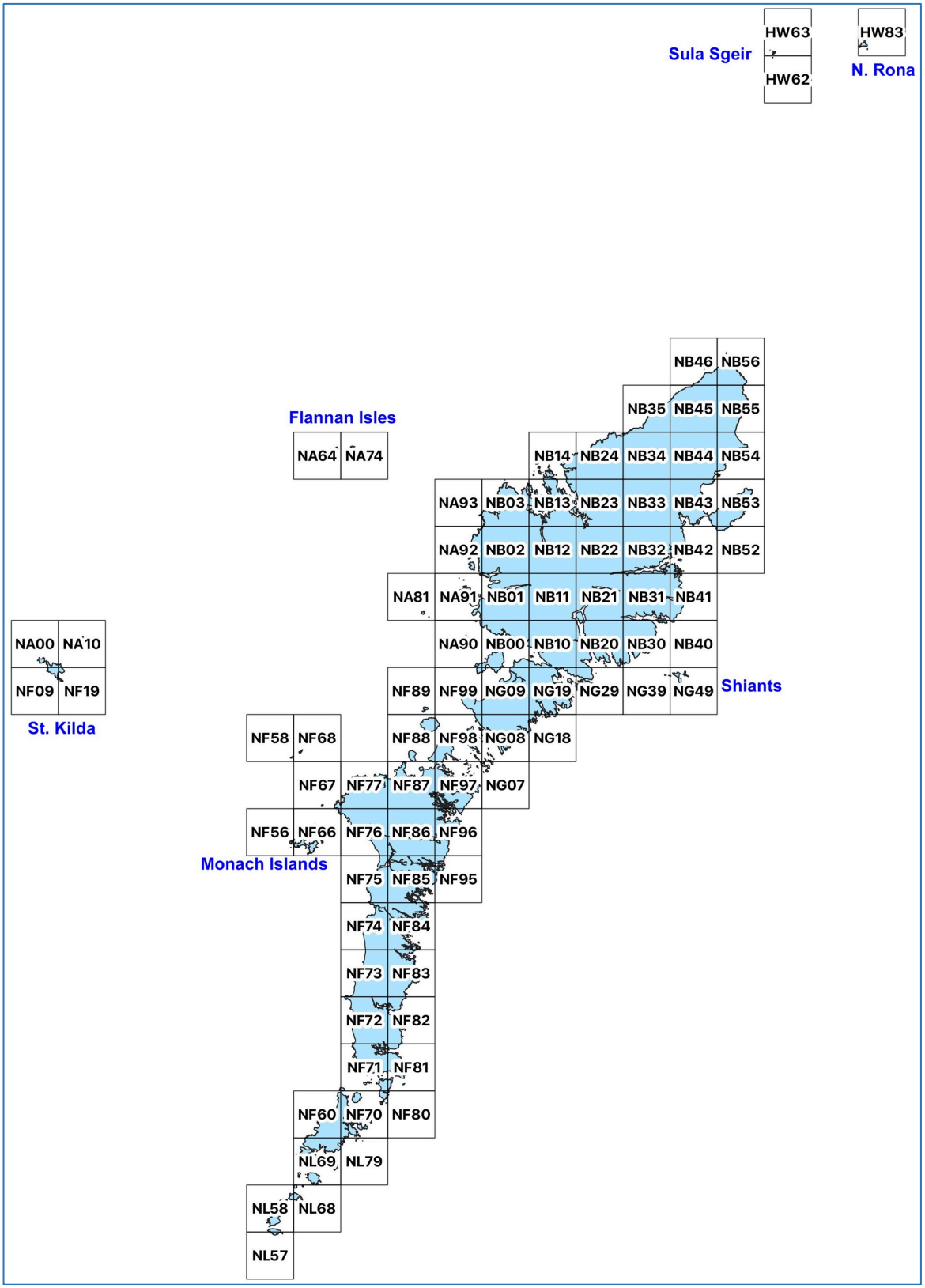
Black Darter dragonflies have bred in the pond even though its only a couple of years old

…. they are already attracting some new hoverflies to the garden like this *Chrysotoxum bicinctum*

I like to keep the garden a bit untidy with late nectar and pollen sources for late bees like this Garden Bumblee worker

VC110 10km grid squares

VC110 - hectad (10km square) coverage of the Outer Hebrides



South Uist - between the machair and the mountains, there's still a lot of work needing to be done to describe the biodiversity of the "middle bits", areas that have been neglected in the past by naturalists who were seduced by the richness of west coast machair grasslands or the romantic remoteness of the east coast moors and mountains.

Working Together

To help to sustain and enhance the biodiversity of the Outer Hebrides to enrich
the lives of local communities and future generations

To increase our knowledge of the wildlife: flora, fauna and fungi, of our islands and make this information available to everyone

To encourage everyone to take an interest in the natural world and provide opportunities to participate in biological recording

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