

A close-up photograph of a moth resting on a pile of autumn leaves. The moth has a patterned body with shades of brown, tan, and dark green. The leaves are in various stages of decay, showing brown, tan, and some green hues. The text is overlaid on the image.

# Biological Recording in 2022

Discovering our Natural Heritage

Outer Hebrides Biological Recording



# Outer Hebrides Biological Recording

## Discovering our Natural Heritage Biological Recording in 2022

Robin D Sutton

This publication should be cited as:

Sutton, Robin D. *Discovering our Natural Heritage - Biological Recording in 2022*. Outer Hebrides Biological Recording, 2023

© Outer Hebrides Biological Recording 2023

© Photographs and illustrations copyright Robin Sutton (unless otherwise credited) 2023

Published by Outer Hebrides Biological Recording, South Uist, Outer Hebrides

ISSN: 2632-3060

OHBR are grateful for the continued support of NatureScot



Cover photograph, *Phlogophora meticulosa* - Angle Shades, 23<sup>rd</sup> October 2022

# Contents

<b>Introduction</b>	<b>3</b>
<b>Summary of Records</b>	<b>5</b>
<b>Insects and other Invertebrates</b>	<b>8</b>
Lepidoptera	9
Butterflies	10
Moths	11
Insects other than Lepidoptera	16
Hymenoptera (bees, wasps etc)	18
Trichoptera (caddisflies)	23
Diptera (true flies)	26
Coleoptera (beetles)	32
Odonata (dragonflies & damselflies)	35
Hemiptera (bugs)	37
Other Insect Orders	39
<b>Invertebrates other than Insects</b>	<b>42</b>
Terrestrial	43
Freshwater Invertebrates	45
Marine Invertebrates	46
<b>Vertebrates</b>	<b>50</b>
Cetaceans	51
Other Mammals	53
Amphibians & Reptiles	56
Fish	59
<b>Fungi &amp; Lichens</b>	<b>60</b>
<b>Plants etc.</b>	<b>64</b>
Ferns	65
Flowering Plants	66
Clubmosses	71
Conifers	71
Mosses, Liverworts & Hornworts	72
Algae	75
<b>Island recording visits</b>	<b>77</b>
<b>Phenology of spring events</b>	<b>80</b>

## Introduction

### Foreword

Lying off the north-west coast of Britain, the islands of the Outer Hebrides are exposed to the full force of Atlantic gales and northerly air flows from the arctic. Yet, the influence of the Gulf Stream keeps our maritime climate relatively mild for its geographic position. Our weather has shaped our landscapes and biodiversity and given our islands a distinctive natural character. The weather also influences the number and range of species we record each year. The summer of 2022 will be remembered as cool, extremely dreich and with a notable absence of sunshine. Anecdotally we commented on the paucity of insects and this was reflected in the number of records submitted. The wet weather also had a dampening effect on recording activity, limiting the number of days spent in the field and time when it was possible to operate moth and insect traps.

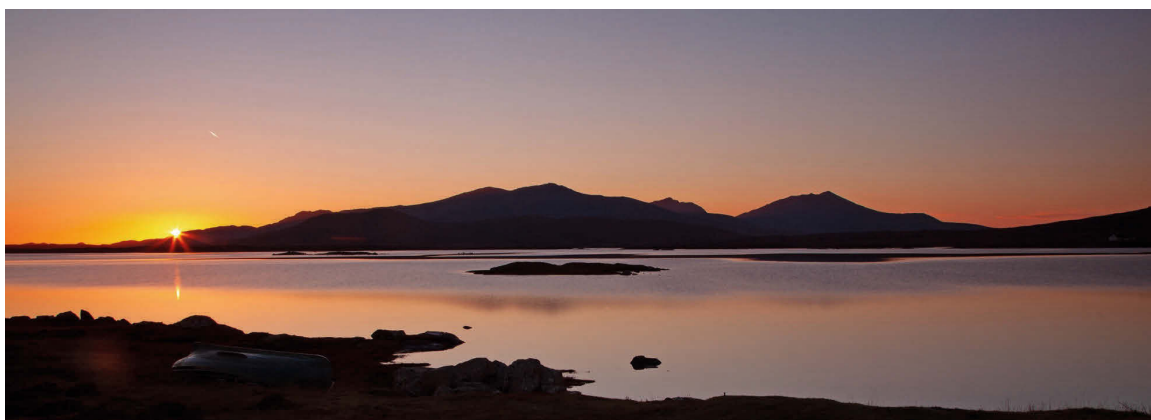
The weather is only one of the factors which affects the number and composition of the annual records. With such a small local recording community, we know that their recording effort and interests can have a significant effect on the statistics. Despite the difficult conditions, the resident recorders produced a diverse and interesting array of records and managed to find a number of new species. The presence of visiting specialist recorders usually has a major influence on the results. Although three visiting entomologists were present for only three weeks in the summer, they contributed a significant number of records and observed an impressive number of new species.

Until the formation of OHBR in 2012, almost all the information on the islands' biodiversity had been gathered by either visiting amateur naturalist or professional scientists engaged in academic research or conducting surveys for various government agencies. Their work has provided the backbone for our species lists and when a potential new species is found on the islands, it is their published scientific reports and papers which are often consulted. In some ways it is reassuring that we can often find a previous record of the species in question, even though there may be a significant period of time between the observations. It is equally true, that there are some species of the more infrequently studied groups e.g. fungi, which have not been recorded since the original record was made. This does not necessarily mean that these species are no longer present, but it emphasises the importance of continuing recording to establish our biodiversity baselines. Without this information we are unable to monitor changes and understand the effects of climate change and habitat loss.

The work of generations of enthusiastic, dedicated and skilled amateur naturalists has given us an important legacy, and it is important that we continue to add to this treasury of knowledge. Every time you send us a record you are adding to this wonderful information repository. Individually each observation may appear insignificant, but together they provide the evidence-base that we can use to safeguard our natural environment.

To the team of OHBR volunteers who have turned OHBR from an idea to a successful voluntary organisation and everyone who submits records – thank you. We would also like to thank Robin Sutton for compiling the 2022 report and helping to illustrate how important your records are.

Christine Johnson



Sunrise over Loch Bee, completing the 2022 Annual Report in January 2023 starts the beginning of the next cycle of observation and recording. I hope you get to see a range of wildlife to amaze, enthrall and intrigue you in 2023, we look forward to seeing your records.



## 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<sup>1</sup> and on the OHBR wildlife website hub<sup>2</sup>. 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<sup>3</sup>. 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<sup>4</sup> and a list of on-line resources to help with species identification<sup>6</sup>. You can share your observations and also ask for help with identification on our social media group page<sup>5</sup>.

Our friends at Outer Hebrides Birds<sup>7</sup> 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<sup>8</sup>.

#### 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>
8. Outer Hebrides Birds recording - <https://www.outerhebridesbirds.org.uk/index>



Stinky Bay, Benbecula with the hills of South Uist in background 10<sup>th</sup> December 2022

## Summary of records

### Summary

Species	Records
Dark Arches	73
Large Yellow Underwing	68
Bright-line Brown-eye	57
Flame Shoulder	56
Magpie Moth	53
True Lover's Knot	52
Small Wainscot	51
Smoky Wainscot	51
Gold Spot	50
Green-veined White	48
Flame Carpet	47
Garden Tiger	44
Ear Moth agg.	43
Moss Carder Bee	43
Hebrew Character	43
Square-spot Rustic	42
White-tailed Bumblebee agg.	41
Ingrailed Clay	41
Drinker	41
Common Rustic agg.	41
Red Admiral	41
Antler Moth	39
Dotted Clay	39
Burnished Brass	38
Dark-barred Twin-spot Carpet	37
Clouded-bordered Brindle	34
Meadow Brown	34
Hoary Belle	33
Rosy Rustic	33
Wakely's Dowd	32
Ling Pug	32
<i>Limnephilus marmoratus</i>	32
Knot Grass	31
Autumnal Rustic	31

Records were received from 101 people who submitted 8,847 records of over 1,800 taxa (mostly full species but a few sub-species, varieties and so on). Over twenty of the species found were new ones for the Outer Hebrides. Most species weren't recorded very often; 1,379 (76%) were recorded five or fewer times of which 676 were seen just once.

Thirty-four species were recorded more than 30 times and 28 of these most frequently recorded species were moths. Only six non-moth species (shown in red left) make it to the top 34, Green-veined White (48 records), Red Admiral (41), Moss Carder Bee (43), White-tailed Bumblebee (41), Meadow Brown butterfly (34) and a caddisfly, *Limnephilus marmoratus* (32). Moth recorders always submit huge number of records each year as their records come mostly from light traps. In terms of records and species **South Uist** comes out as the “**best recorded island**”, partly because three of the most prolific moth-trappers live there. The award for the “**most charismatic species**” is shared

Island	Records	Species
Lewis	1659	640
Great Bernera	306	181
Lewis/Harris	111	111
Harris	810	500
Scalpay	24	24
Taransay	1	1
Pabbay	377	172
North Uist	686	373
Berneray	192	118
Hirta	1	1
Grimsay	2	2
Benbecula	314	258
South Uist	4142	765
Eriskay	149	101
Barra	8	4
Mingulay	65	46
<b>Total</b>	<b>8847</b>	<b>1809</b>

between **Moss Carder Bee**, **Otter**, **Meadow Brown** butterfly and **Common Blue** butterfly; all were recorded from eight of the sixteen islands looked at (the boundary between Harris and Lewis can be hard to spot on the ground so Lewis/Harris is used as an additional recording area).

The third most prolific recorder looked almost exclusively at mosses and

Taxonomic group	Total records	Recorders
Arthropoda	5344	63
Vertebrates	157	44
Flowering plants & ferns	521	21
Fungi	82	16
Other Invertebrates	59	14
Algae (inc. seaweeds)	1175	5
Mosses & liverworts	1509	4

liverworts and the fourth is an algae specialist. They tend to work by doing very detailed surveys at a range of locations across the islands. It is specialised recording; only four people sent in records of mosses and liverworts and five submitted algae records.

Many of the more generalist recorders will send in sightings of mammals and other vertebrates (44 recorders). In 2022 the top two most frequently recorded species were Common Frog (28 records) and Hedgehog (26 records). As we've already seen butterflies and bumblebees tend to be well recorded as do dragonflies, many of our more general naturalists send in records of these species. A group of local naturalists carried out survey work on Pabbay in June and generated good records of various arthropods, algae, and flowering plants and ferns. Two of our specialists spent time recording on Great Bernera; a visiting entomologist recorded lots of insect of various taxonomic groups there in August and an island-based bryologist looked at mosses and liverworts there in April.

Recording of some groups of organisms will always depend on experts. Either visitors, coming to look at their interest group in our unique environment, or our own resident experts who between them cover many of the taxonomic groups. On the other-hand there are some groups where everyone can contribute. There is still an awful lot we don't know about the distribution and status of common and charismatic species. Lots of people can supply valuable records of mammals, amphibians, butterflies, bees, dragonflies and flowering plants. Their status will change with changing ways of managing and using land and, inevitably, there will be changes induced by global warming that need to be documented.

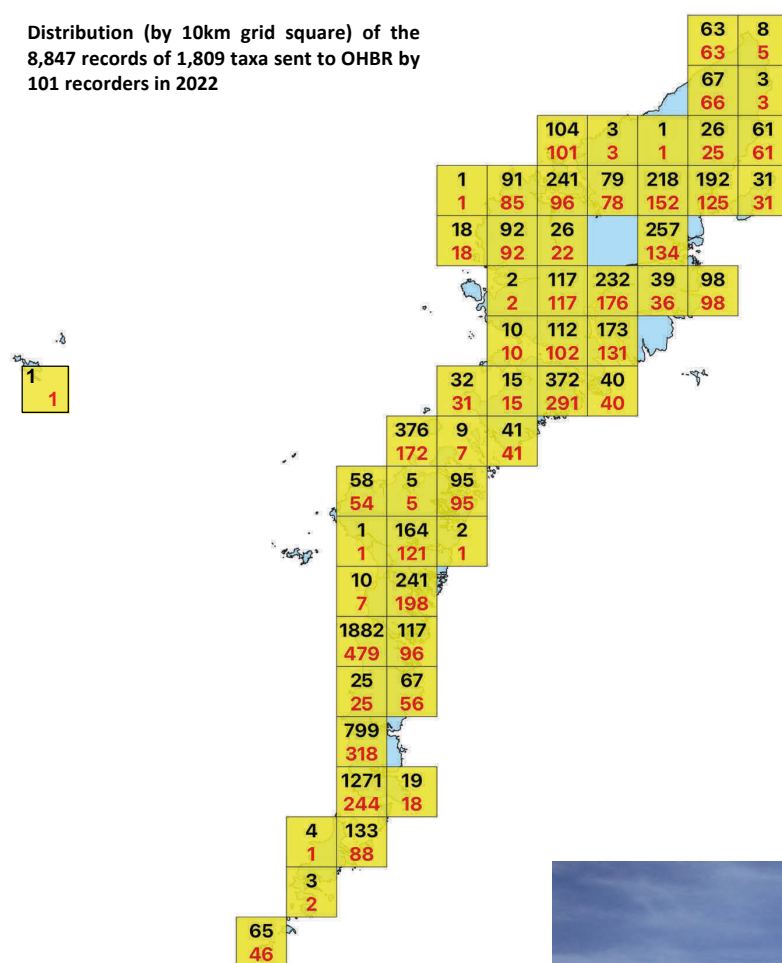


## Summary of records

Records came from 54 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 and we sometimes receive records from there. There was a single record from St. Kilda in 2022 and none from the Monach Isles or Shiantis in 2022. Most of the other un-recorded squares are very remote, difficult to access or contain just a few very small offshore islands or tiny parts of the main islands.

Distribution (by 10km grid square) of the 8,847 records of 1,809 taxa sent to OHBR by 101 recorders in 2022



## Summary of records

Vertebrates	Class	Common Names	<sup>1</sup> VC110	2021
			No. of Species	No. of Species (records)
	Aves*	Birds*	409	3 (8)*
	Actinopterygii	Bony Fish	64	2 (7)
	Mammalia	Mammals	36	21 (107)
	Ascidacea & Thaliacea	Sea Squirts, Salps etc	34	-
	Elasmobranchii	Sharks, Rays & Skates	6	4 (7)
	Reptilia	Reptiles	5	1 (2)
	Amphibia	Frogs, Toads & Newts	3	2 (31)
	Cephalaspidomorphi	Jawless Fish (Lampreys)	1	-
	<b>Total</b>		<b>578</b>	<b>33 (157)</b>

\* 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	523 (1749)
		Lepidoptera	553	331 (3527)
		Other Arthropods e.g. Crustaceans, Spiders, Millipedes etc.	221	44 (68)
	Mollusca	Snails, Slugs, Bivalves, Octopuses etc.	412	26 (42)
	Annelida	True Worms	160	-
	Cnidaria	Corals, Jellyfish, Hydra etc.	89	5 (8)
	Porifera	Sponges	50	-
	Bryozoa	Sea Mats (Moss Animalcules)	47	-
	Echinodermata	Sea Urchins, Starfish, Brittlestars, Sea Potatoes etc.	41	2 (3)
	Nemertea	Ribbon Worms	5	-
	Platyhelminthes	Flatworms	3	-
	Sipuncula	Peanut (or Star) Worms	3	-
	Brachiopoda	Lamp Shells	2	-
	Ctenophora	Comb Jellies e.g. Sea Gooseberry	2	-
	Others	Small marine or freshwater animals eg Cephalorhyncha, Echiura, Phoronida, Gastrotricha, Myxozoa	11	6 (6)
	<b>Total</b>		<b>3172</b>	<b>937 (5403)</b>

Plants	Division	Common Names	No. of Species	No. of Species (records)
	Magnoliopsida	Flowering Plants	950	134 (491)
	Bryophyta*	Mosses	348	200 (1086)
	Marchantiophyta*	Liverworts	169	93 (423)
	Rhodophyta	Red Algae	149	2 (2)
	Chlorophyta	Green Algae	72	5 (5)
	Charophyta	Stoneworts and Desmids	Awaiting revision	330 (1160)
	Pteridophyta	Ferns & Horsetails	45	11 (23)
	Pinopsida	Conifers	23	1 (1)
	Lycopodiopsida	Clubmosses & Quillworts	9	1 (6)
	Anthocerotophyta*	Hornworts	2	-
	<b>Total</b>		<b>1767</b>	<b>777 (3197)</b>

\* 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	9 (18)
		Lichen forming Ascomycota	627	7 (11)
	Basidiomycota	Larger mushroom type species, and Rusts	563	36 (47)
		Lichen forming Basidiomycota e.g. <i>Lichenomphalia</i> spp.	5	-
	Chytridiomycota	Chytrids (fungi with flagellate spores)	5	-
	Zygomycota	Moulds	8	-
	Oomycota*	Filamentous protists (Downy Mildews)	16	1 (2)
	Myxomycota*	Slimemoulds	8	3 (3)
	<b>Total</b>		<b>1586</b>	<b>56 (81)</b>

\*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	5 (8)
	Protozoa		22	1 (1)
	<b>Total</b>		<b>164</b>	<b>6 (9)</b>

<sup>1</sup> 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.



## 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, 853 (c.40%) of them were recorded in 2022. There appears to be a rising trend in the number and percentage of VC110 species recorded each year.

Order	Common Name	Britain	VC110		Number of species recorded						
		Species <sup>1</sup>	Species <sup>2</sup>	% <sup>3</sup>	2017	2018	2019	2020	2021	2022	% <sup>4</sup>
Diptera	Flies	7,000	835	11.9	74	69	55	71	92	223	26.7
Hymenoptera	Bees, Wasps etc.	7,000	123	1.8	26	22	28	29	34	43	35.0
Coleoptera	Beetles	4,000	474	11.9	18	19	32	68	76	176	37.1
Lepidoptera	Butterflies & Moths	2,570	553	21.5	312	333	343	319	342	331	59.9
Hemiptera	Bugs	1,830	75	4.1	11	6	10	16	21	35	46.7
Phthiraptera	Biting lice & Sucking lice	540	1								
Collembola <sup>5</sup>	Springtails	250	10	4.0					2	3	30.0
Trichoptera	Caddisflies	198	78	39.4		14	22	25	24	25	32.1
Thysanoptera	Thrips	179									
Psocoptera	Barkflies	100	3	3.0			1		3	3	100
Neuroptera	Lacewings & Ant Lions	69	5	7.2			1	1	2		
Siphonaptera	Fleas	62	16	25.8				1	2		
Ephemeroptera	Mayflies	51	11	21.6		1	2	2	1	3	27.3
Odonata	Dragonflies	49	11	22.4	9	9	8	8	8	8	72.7
Plecoptera	Stoneflies	34	11	32.4			1	1	2	1	9.1
Orthoptera	Grasshoppers & Crickets	33	3	9.1	1	2	1	1	2		
Protura <sup>5</sup>	Simpletails	15									
Diplura <sup>5</sup>	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	50.0
Dermaptera	Earwigs	7	1	14.3	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									
<b>Total</b>		<b>24,039</b>	<b>2,213</b>	<b>9.2</b>	<b>453</b>	<b>477</b>	<b>506</b>	<b>544</b>	<b>614</b>	<b>854</b>	<b>38.6</b>

<sup>1</sup> The Royal Entomological Society Book of British Insects, Peter C Barnard, 2011, Wiley-Blackwell

<sup>2</sup> From current OHBR or NBN Atlas Scotland checklists as of 1st February 2022

<sup>3</sup> As percentage of total British species, <sup>4</sup> As percentage of VC110 (Outer Hebrides) species, <sup>5</sup> No longer considered as Insects

## Insects - Lepidoptera

### Insects – Lepidoptera

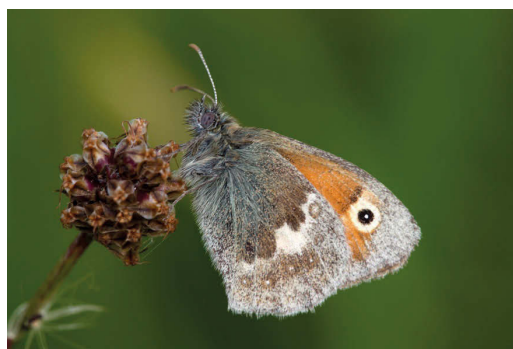
Group	2017			2018			2019			2020			2021			2022		
	Recs.	%	Spp.	Recs.	%	Spp.	Recs.	%	Spp.	Recs.	%	Spp.	Recs.	%	Spp.	Recs.	%	Spp.
Lepidoptera	3768	77%	312	3473	85%	333	3461	82%	343	3221	77%	319	3369	75%	342	3527	63.4%	331
Moths	3546		299	3287		320	3274		330	3116		306	3215		329	3343		319
Butterflies	222		13	186		13	187		13	105		13	154		13	184		12
Other insects	864	18%	141	533	13%	144	703	17%	163	806	19%	225	960	21%	270	1749	31.4%	523
<b>All Insects</b>	<b>4632</b>		<b>453</b>	<b>4006</b>		<b>477</b>	<b>4164</b>		<b>506</b>	<b>4027</b>		<b>544</b>	<b>4329</b>		<b>612</b>	<b>5276</b>		<b>854</b>
<b>Other inverts.</b>	<b>287</b>	6%	<b>89</b>	<b>77</b>	2%	<b>53</b>	<b>75</b>	2%	<b>53</b>	<b>131</b>	3%	<b>70</b>	<b>177</b>	4%	<b>83</b>	<b>288</b>	5.2%	<b>120</b>
<b>All Inverts.</b>	<b>4919</b>		<b>542</b>	<b>4083</b>		<b>530</b>	<b>4239</b>		<b>559</b>	<b>4158</b>		<b>614</b>	<b>4506</b>		<b>695</b>	<b>5564</b>		<b>974</b>

### 2022 in figures

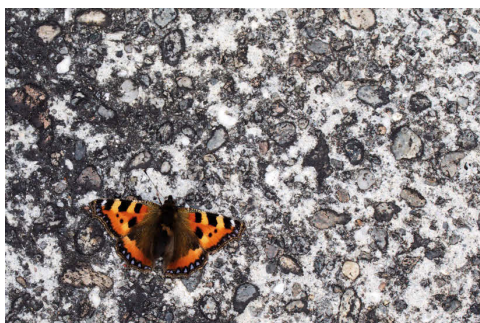
- 5,564 records of 974 species of invertebrate were recorded in 2022, the highest number of records of invertebrates received since 2017
- Lepidoptera records (3527) made up 63% of the total invertebrate records, this percentage has been dropping in recent years as interest in other groups of invertebrates has increased
- In 2021 just under half (49%) of all invertebrate species recorded were of Lepidoptera, 342 species out of a total of 695 invertebrates
- In 2022 this dropped to 39%, 331 species out of a total 854 invertebrate species
- For the first time since 2017 the number of “other insect” species (523) exceeded that of Lepidoptera (331)
- Forty-four recorders in total contributed Lepidoptera records in 2022, butterfly records came from 22 people and moth records from 36

### Butterflies

Family	Species	Common Name	Records
Lycaenidae	<i>Polyommatus icarus</i>	Common Blue	21
Nymphalidae	<i>Vanessa atalanta</i>	Red Admiral	40
	<i>Maniola jurtina</i>	Meadow Brown	34
	<i>Aglais urticae</i>	Small Tortoiseshell	18
	<i>Speyeria aglaja</i>	Dark Green Fritillary	9
	<i>Coenonympha pamphilus</i>	Small Heath	4
	<i>Vanessa cardui</i>	Painted Lady	4
	<i>Aglais io</i>	Peacock	1
	<i>Coenonympha tullia</i>	Large Heath	1
	<i>Pieris napi</i>	Green-veined White	48
Pieridae	<i>Pieris brassicae</i>	Large White	3
	<i>Pieris brassica/rapae</i>		1
<b>Total</b>			<b>184</b>



*Coenonympha pamphilus* - Small Heath, a poor year with just 4 records



A good year for Small Tortoiseshell (*Aglais urticae*) with 18 records, the highest number since 2017



Another poor year for Painted Lady (*Vanessa cardui*) with just 4 records the lowest number since 2017



## Insects - Lepidoptera

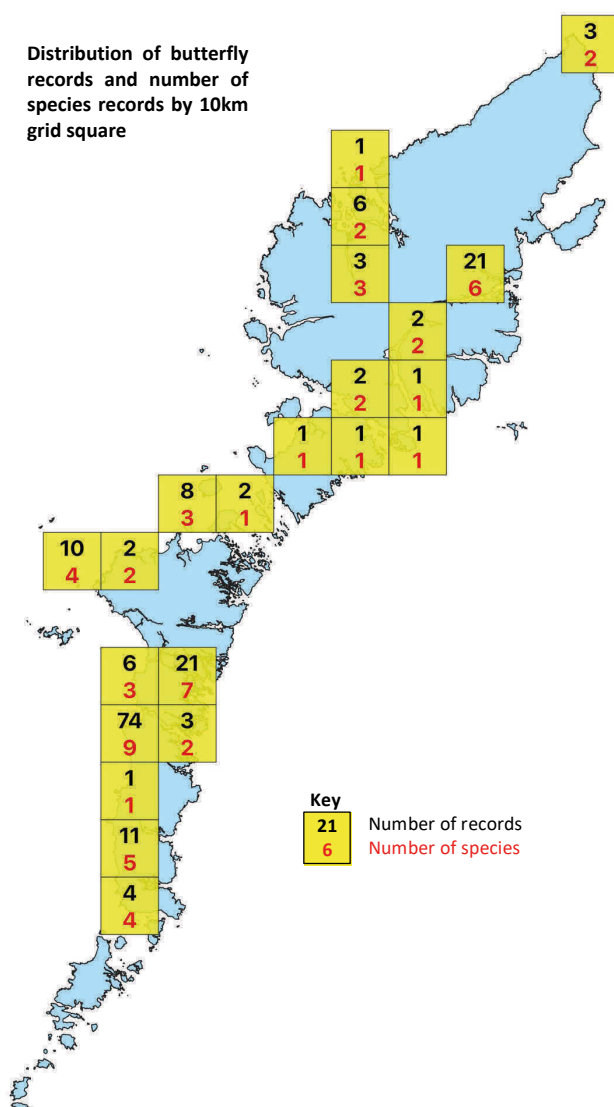
A generally poor year for butterfly recording. Whilst the total number of records (185) was an improvement on the previous two years it still fell well short of the numbers shown in the 2017 report. It was also the first year we can't report that thirteen species of butterfly had been recorded, we only managed eleven (plus one record that was identified as *Pieris* sp. *brassicae/rapae*). There were no records of Grayling (*Hipparchia semele*) or of any of the other rarely recorded and potentially recent colonists; Speckled Wood (*Pararge aegeria*) and Orange-tip (*Anthocharis cardamines*).

The mid-season species, Small Heath (*Coenonympha pamphilus*) and Common Blue (*Polyommatus icarus*) seemed particularly scarce and a predicted invasion of Painted Lady (*Vanessa cardui*) failed to materialise even though good numbers were being seen in southern Britain.

Species	NBN <sup>1</sup>	Number of records					
		2017	2018	2019	2020	2021	2022
Green-veined White	1643	54	27	31	11	41	48
Meadow Brown	1536	41	47	27	18	20	34
Common Blue	1042	30	36	15	17	14	21
Red Admiral	801	31	24	27	27	38	40
Painted Lady	602	20	20	62	9	4	4
Small Tortoiseshell	545	11	5	6	6	16	18
Large Heath	421	6	4			2	1
Dark Green Fritillary	383	9	6	2	5	6	9
Small Heath	347	13	11	6	5	2	4
Large White	241	1	3	4	1	2	3
Grayling	173	3	1	1	2	2	
Peacock	86	2	1	2	2	5	1
Small White	41			3	1		
Speckled Wood	37	1			1	2	
Ringlet	16						
Clouded Yellow	16						
Orange-tip	7		1	1			
<i>Pieris</i> sp.							1
<b>Total</b>	<b>7937</b>	<b>222</b>	<b>186</b>	<b>187</b>	<b>105</b>	<b>154</b>	<b>184</b>

<sup>1</sup>as of 18/1/2022

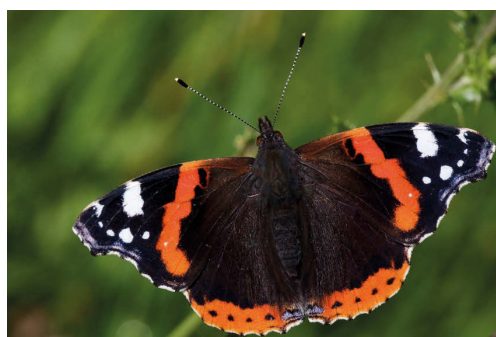
Distribution of butterfly records and number of species records by 10km grid square



Predictably Red Admiral (*Vanessa atalanta*) and Green-veined White (*Pieris napi*) were the two most frequently recorded species.

Species	Mar	Apr	May	Jun	Jul	Aug	Sep
Green-veined White		10	13	5	7	12	1
Red Admiral		5	4	8	8	4	11

They show very different life cycles and habits. Green-veined White is a resident species which has two generations here per year. There is an early spring one and caterpillars from that generation give rise to a second flush of adults in late summer. Red Admiral recolonises our islands each year. Early sightings are of ones which bred, probably, somewhere in southern Europe or North Africa and arrived here in April/May. These give rise to a home-grown generation of adults later in the summer and these may be joined by further migrants from further south in the UK or continental Europe.



*Vanessa atalanta* - Red Admiral, many of the ones seen here, especially early in the year, may have migrated from as far away as North Africa

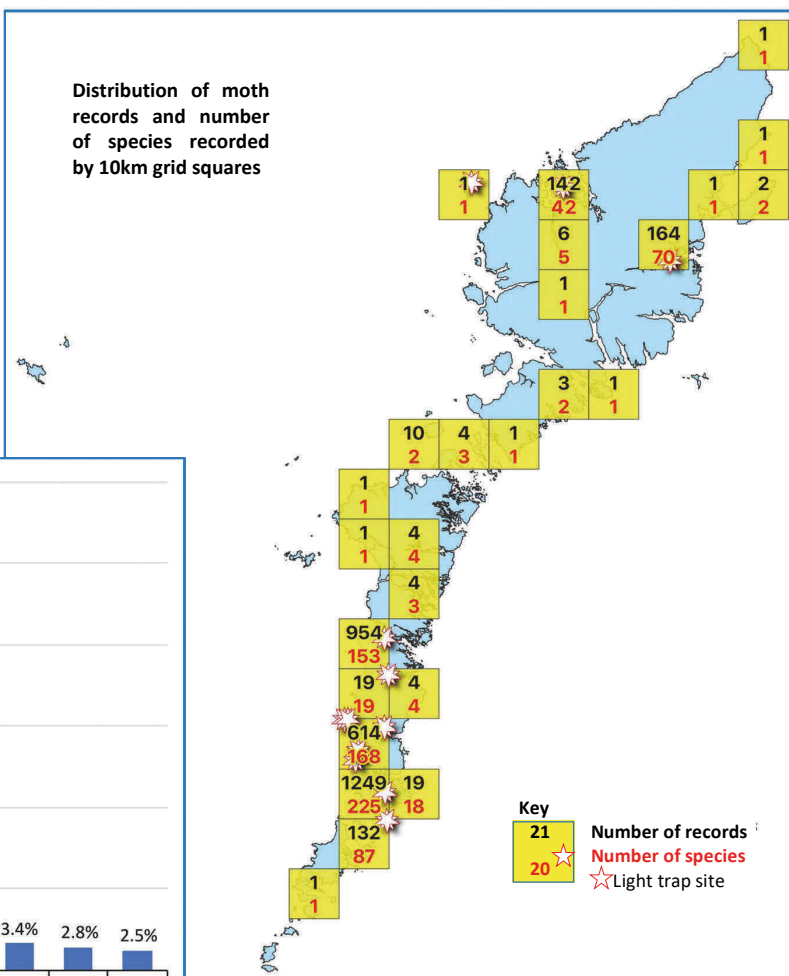
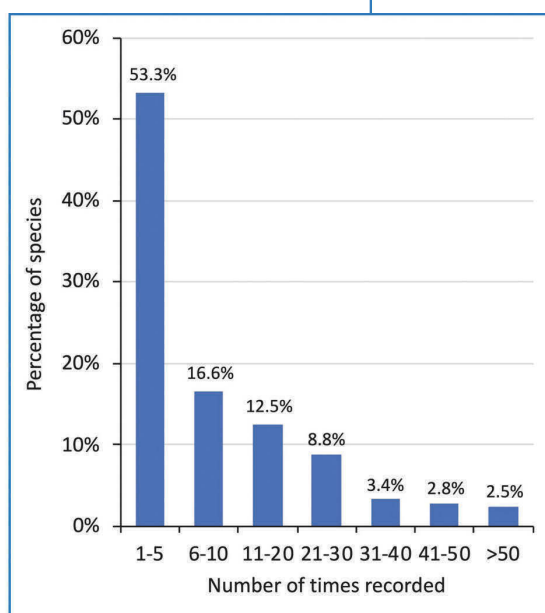
## Insects - Lepidoptera

### Moths

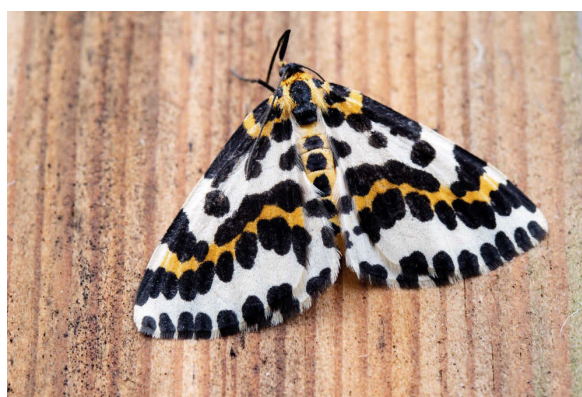
On the ground it felt like a disappointing season, it started late after cold weather early on. Much of the summer was cold and wet and trapping in autumn was curtailed quickly by high winds and rain. Nevertheless, the number of species of moths recorded and the total number of records sent in by OHBR recorders was broadly similar to previous years. As usual most records came from light traps of various sorts used at trapping locations, mostly on South Uist.

Method	Records
Robinson MV Trap (125W)	2494
Actinic trap	445
Trapped at light	106
Netted	44
Field observation	254
<b>Total</b>	<b>3343</b>

Most moth species weren't found very often, over half (53%) were found five or fewer times. Of these nearly 20% were recorded just once. There were eight species found more than fifty times. These species almost always feature as most frequently recorded species and quickly become familiar to moth trappers.



Species	Common Name	Records
<i>Apamea monoglypha</i>	Dark Arches	73
<i>Noctua pronuba</i>	Large Yellow Underwing	68
<i>Lacanobia oleracea</i>	Bright-line Brown-eye	57
<i>Ochropleura plecta</i>	Flame Shoulder	56
<i>Abraxas grossulariata</i>	Magpie Moth	53
<i>Lycophotia porphyrea</i>	True Lover's Knot	52
<i>Mythimna impura</i>	Smoky Wainscot	51
<i>Denticucullus pygmina</i>	Small Wainscot	51



*Abraxas grossulariata* – Magpie Moth, also flies by day which helps to explain why it is so frequently recorded



## Insects - Lepidoptera

### Moths not or rarely found in light traps

Moth traps are efficient at catching moths and give a very good picture of the moth fauna of the area around the trap location. Not every species of moth is attracted to light though. The distinctive adults of *Zygaena filipendulae* (Six-spot Burnet) are rarely found in moth traps, but they are day flying and often seen in rough grassland and dunes. Others such as *Macrothylacia rubi* (Fox Moth), *Lasiocampa quercus* (Oak Eggar), *Saturnia pavonia* (Emperor Moth) and *Euthrix potatoria* (Drinker) do come to light but are as likely to be recorded after spotting their distinctive caterpillars in the field as they are to be found at a light trap.

Two other species in the table below that are as likely to be seen through direct observation as caught in a light trap are *Hofmannophila pseudospretella* (Brown House-moth) and *Endrosis sarcitrella* (White-shouldered House-moth). Both are strongly associated with human habitation and are frequently found indoors.

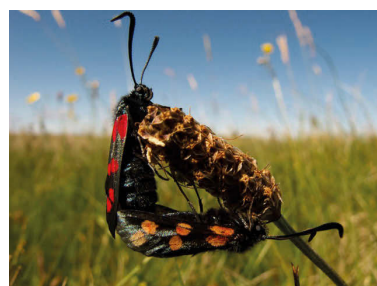
Species	Common Name	Field Obs.	Netted	Moth Trap
<b>Species only found through direct observation or netting in 2022</b>				
<i>Zygaena filipendulae</i>	Six-spot Burnet	10		
<i>Lycia zonaria</i>	Belted Beauty	9		
<i>Anthophila fabriciana</i>	Common Nettle-tap	7		
<i>Camptogramma bilineata</i>	Yellow Shell	6		
<i>Phragmatobia fuliginosa</i>	Ruby Tiger	5		
<i>Anarta myrtili</i>	Beautiful Yellow Underwing	4		
<i>Ematurga atomaria</i>	Common Heath	4		
<i>Acronicta menyanthidis</i>	Light Knot Grass	2		
<i>Glyphipterix simplicella</i>	Cocksfoot Moth	2		
<i>Operophtera brumata</i>	Winter Moth	2		
<i>Rheumaptera hastata</i>	Argent & Sable	2		
<i>Dichrorampha alpestrana</i>	Spike-marked Drill	1	3	
<i>Acronicta psi</i>	Grey Dagger	1		
<i>Epipotia</i>	Epipotia	1		
<i>Epiphyas postvittana</i>	Light Brown Apple Moth	1		
<i>Macroglossum stellatarum</i>	Humming-bird Hawk-moth	1		
<i>Stenoptilia bipunctidactyla</i>	Twin-spot Plume	1		
<i>Stigmella aurella</i>	Golden Pigmy	1		
<i>Stigmella microtheriella</i>	Nut-tree Pigmy	1		
<i>Swammerdamia caesiella</i>	Birch Ermel	1		
<i>Argyresthia retinella</i>	Netted Argent		2	
<i>Glyphipterix schoenicolella</i>	Bog-rush Fanner		2	
<i>Argyresthia brockeella</i>	Gold-ribbon Argent		1	
<i>Argyresthia pygmaeella</i>	Sallow Argent		1	
<i>Clepsia senecionana</i>	Obscure Twist		1	
<i>Glyphipterix thrasonella</i>	Speckled Fanner		1	
<i>Incurvaria praelatella</i>	Strawberry Bright		1	
<i>Leucoptera spartifoliella</i>	Broom Bent-wing		1	
<i>Micropterix aruncella</i>	White-barred Gold		1	
<i>Philedonides lunana</i>	Heath Twist		1	
<b>Species as likely to be found by direct observation as caught in moth trap</b>				
<i>Macrothylacia rubi</i>	Fox Moth	5		1
<i>Hofmannophila pseudospretella</i>	Brown House-moth	5		2
<i>Lasiocampa quercus</i>	Oak Eggar	5		3
<i>Saturnia pavonia</i>	Emperor Moth	6		7
<i>Arctia caja</i>	Garden Tiger	8		36
<i>Endrosis sarcitrella</i>	White-shouldered House-moth	10		15
<i>Euthrix potatoria</i>	Drinker	16		26
<i>Abraxas grossulariata</i>	Magpie Moth	18	1	34



*Euthrix potatoria* - Drinker



*Saturnia pavonia* – Emperor Moth



*Zygaena filipendulae* - Six-spot Burnet

## Insects - Lepidoptera

### Macro-moths

Family	Recorders	Records	Species	Most frequently recorded in family	Common Name	Records
Noctuidae	16	1575	91	<i>Apamea monoglypha</i>	Dark Arches	73
Geometridae	16	738	74	<i>Abraxas grossulariata</i>	Magpie Moth	53
Erebidae	11	167	9	<i>Arctia caja</i>	Garden Tiger	44
Notodontidae	6	49	6	<i>Notodonta ziczac</i>	Pebble Prominent	29
Sphingidae	6	34	4	<i>Laothoe populi</i>	Poplar Hawk-moth	22
Lasiocampidae	10	56	3	<i>Euthrix potatoria</i>	Drinker	42
Drepanidae	2	6	3	<i>Tethea or</i>	Poplar Lutestring	3
Hepialidae	4	17	2	<i>Korscheltellus fusconebulosa</i>	Map-winged Swift	16
Saturniidae	9	13	1	<i>Saturnia pavonia</i>	Emperor Moth	13
Zygaenidae	5	10	1	<i>Zygaena filipendulae</i>	Six-spot Burnet	10
<b>Total Macro-moths</b>		<b>2665</b>	<b>194</b>			

### Most frequently recorded macro-moths

Species	Common Name	Records
<i>Apamea monoglypha</i>	Dark Arches	73
<i>Noctua pronuba</i>	Large Yellow Underwing	68
<i>Lacanobia oleracea</i>	Bright-line Brown-eye	57
<i>Ochropleura plecta</i>	Flame Shoulder	56
<i>Abraxas grossulariata</i>	Magpie Moth	53
<i>Lycophotia porphyrea</i>	True Lover's Knot	52
<i>Denticucullus pygmina</i>	Small Wainscot	51
<i>Mythimna impura</i>	Smoky Wainscot	51
<i>Plusia festucae</i>	Gold Spot	50
<i>Xanthorhoe designata</i>	Flame Carpet	47
<i>Arctia caja</i>	Garden Tiger	44
<i>Amphipoea oculate agg.</i>	Ear Moth agg.	43
<i>Orthosia gothica</i>	Hebrew Character	43
<i>Euthrix potatoria</i>	Drinker	42
<i>Xestia xanthographa</i>	Square-spot Rustic	42
<i>Diarsia mendica</i>	Ingrailed Clay	41
<i>Mesapamea secalis agg.</i>	Common Rustic agg.	41
<i>Cerapteryx graminis</i>	Antler Moth	39
<i>Xestia baja</i>	Dotted Clay	39
<i>Diachrysis chrysis</i>	Burnished Brass	38
<i>Xanthorhoe ferrugata</i>	Dark-barred Twin-spot Carpet	37
<i>Apamea crenata</i>	Clouded-bordered Brindle	34
<i>Hydraecia micacea</i>	Rosy Rustic	33
<i>Eupithecia absinthiata</i>	Ling Pug	32
<i>Acronicta rumicis</i>	Knot Grass	31
<i>Eugnorisma glareosa</i>	Autumnal Rustic	31
<i>Apamea remissa</i>	Dusky Brocade	29
<i>Notodonta ziczac</i>	Pebble Prominent	29
<i>Rivula sericealis</i>	Straw Dot	29
<i>Spilosoma lutea</i>	Buff Ermine	29
<i>Abrostola tripartita</i>	Spectacle	28
<i>Autographa pulchrina</i>	Beautiful Golden Y	28
<i>Cerastis rubricosa</i>	Red Chestnut	28
<i>Cosmorhoe ocellata</i>	Purple Bar	28
<i>Eupithecia nanata</i>	Narrow-winged Pug	28
<i>Noctua janthe</i>	Lesser Broad-bordered Yellow Underwing	28
<i>Spilosoma lubricipeda</i>	White Ermine	28
<i>Xanthorhoe montanata</i>	Silver-ground Carpet	27
<i>Diarsia rubi</i>	Small Square-spot	25
<i>Eulithis testata</i>	Chevron	25
<i>Euxoa tritici</i>	White-line Dart	25

2,665 records of 194 species of macro-moth were recorded in 2022. Fifty-three of these were recorded more than 20 times. There were representatives of ten moth families with the two big macro families dominating the data; 1,575 records of 91 species of Noctuidae and 738 records of 74 species of Geometridae.



*Korscheltellus fusconebulosa*- Map-winged Swift



*Notodonta ziczac* - Pebble Prominent



*Laothoe populi* - Poplar Hawk-moth

## Insects - Lepidoptera

### Micro-moths

Family	Recorders	Records	Species	Most frequently recorded in family	Common Name	Records
Tortricidae	6	267	49	<i>Eucosma cana</i>	Hoary Belle	33
Crambidae	6	211	23	<i>Catoptria margaritella</i>	Silver-stripe Grass-veneer	22
Depressariidae	4	26	8	<i>Agonopterix cnicella</i>	Sea-holly Flat-body	10
Coleophoridae	1	10	5	<i>Coleophora alticolella</i>	Common Rush Case-bearer	3
Gracillariidae	2	13	4	<i>Gracillaria syringella</i>	Common Slender	4
Pyrilidae	2	10	4	<i>Matilella fusca</i>	Brown Knot-horn	5
Pterophoridae	3	9	4	<i>Platyptilia isodactylus</i>	Hoary Plume	4
Argyresthiidae	1	6	4	<i>Argyresthia retinella</i>	Netted Argent	2
Oecophoridae	6	34	3	<i>Endrosis sarcitrella</i>	White-shouldered House-moth	25
Elachistidae	1	7	3	<i>Elachista canapennella</i>	Little Dwarf	4
Glyphipterigidae	2	5	3	<i>Glyphipterix schoenicolella</i>	Bog-rush Fanner	2
Blastobasidae	3	42	2	<i>Blastobasis lacticolella</i>	Wakely's Dowd	32
Gelechiidae	2	11	2	<i>Neofaculta ericetella</i>	Heather Groundling	7
Tineidae	3	9	2	<i>Monopis weaverella</i>	Carion Moth	8
Nepticulidae	1	2	2	<i>Stigmella microtheriella</i>	Nut-tree Pigmy	1
Choreutidae	3	7	1	<i>Anthophila fabriciana</i>	Common Nettle-tap	7
Plutellidae	2	2	1	<i>Plutella xylostella</i>	Diamond-back Moth	2
Epermeniidae	1	1	1	<i>Epermenia chaerophyllella</i>	Garden Lance-wing	1
Incurvariidae	1	1	1	<i>Incurvaria praelatella</i>	Strawberry Bright	1
Lyonetiidae	1	1	1	<i>Leucoptera spartifoliella</i>	Broom Bent-wing	1
Micropterigidae	1	1	1	<i>Micropterix aruncella</i>	White-barred Gold	1
Yponomeutidae	1	1	1	<i>Swammerdamia caesiella</i>	Birch Ermel	1
<b>Total</b>		<b>676</b>	<b>125</b>			

### Most frequently recorded micro-moths

Species	Common Name	Records
<i>Eucosma cana</i>	Hoary Belle	33
<i>Blastobasis lacticolella</i>	Wakely's Dowd	32
<i>Eucosma campoliliana</i>	Marbled Bell	26
<i>Endrosis sarcitrella</i>	White-shouldered House-moth	25
<i>Catoptria margaritella</i>	Silver-stripe Grass-veneer	22
<i>Udea lutealis</i>	Pale Straw Pearl	21
<i>Celypha lacunana</i>	Common Marble	19
<i>Crambus pascuella</i>	Inlaid Grass-veneer	19
<i>Chrysoteuchia culmella</i>	Garden Grass-veneer	15
<i>Acleris aspersana</i>	Ginger Button	13
<i>Eudonia angustea</i>	Narrow-winged Grey	13
<i>Epinotia immundana</i>	Common Birch Bell	12
<i>Anania fuscalis</i>	Cinerosus Pearl	11
<i>Eana osseana</i>	Dotted Shade	11
<i>Eana penziana</i>	Large Mottled Shade	11
<i>Eudonia pallida</i>	Marsh Grey	11
<i>Evergestis pallidata</i>	Chequered Pearl	11
<i>Acleris effractana</i>	Acleris effractana	10
<i>Agonopterix cnicella</i>	Sea-holly Flat-body	10
<i>Agriphila straminella</i>	Straw Grass-veneer	10
<i>Blastobasis adustella</i>	Furness Dowd	10
<i>Eudonia mercurella</i>	Small Grey	10
<i>Eudonia truncicolella</i>	Ground-moss Grey	10



*Gracillaria syringella* - Common Slender



*Matilella fusca* - Brown Knot-horn



*Platyptilia isodactylus* - Hoary Plume

Identifying micro-moths is more demanding than it is for macro-moths. Many require examination of genitalia before an identification can be confirmed. The dissection skills needed take time to acquire and most moth trappers only slowly move onto the micros. Some of the larger ones can be done by sight and, with experience, the common do become familiar. In 2022 there were 676 records of 125 species of micro-moth. Twenty-three were recorded ten or more times.



## Insects - Lepidoptera

Of the five major orders of insects; Diptera (flies), Hymenoptera (bees, wasps etc.), Coleoptera (beetles), Lepidoptera (butterflies & moths) and Hemiptera (bugs) the Lepidoptera are the best recorded in VC110. Annually about 60% of the 550 or so species known from here are recorded (at the other end of the scale only about 13% of the Diptera are noted).

Despite being a well recorded taxonomic group, most years some new species are recorded in the islands for the first time. In 2022 we had our first records of Yellow Horned (*Achlya flavicornis*), with one at Keose, Lewis on 20<sup>th</sup> March and a second at North Loch Eynort, South Uist on 24<sup>th</sup> March. Later in the year on 26<sup>th</sup> July there was a first record of Swallow-tailed Moth (*Ourapteryx sambucaria*) at South Glendale, South Uist.

Finding a hawk-moth in the light trap is always quite exciting, they're big and very attractive. We are familiar with Elephant Hawk-moth and Poplar Hawk-moth, reasonable numbers of both are seen most years. In July though there was an even more exciting sighting of a Humming-bird Hawk-moth (*Macroglossum stellatarum*) on Grimsay and then on 13<sup>th</sup> August a Convolvulus Hawk-moth (*Agrius convolvuli*) was seen at South Glendale. Two more were seen at the same place on 28<sup>th</sup> August and 13<sup>th</sup> September with another sighted at Askernish, South Uist on 28<sup>th</sup> August and finally, on 18<sup>th</sup> September, one at Eochar, South Uist.

### Records of Hawk-moths – family Sphingidae

Common name	pre 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Death's-head Hawk-moth	2												2
Convolvulus Hawk-moth	3				1				8	1		5	18
Oleander Hawk-moth				1									1
Elephant Hawk-moth	6	12	3	9	9	1	5	12	18	9	6	6	96
Bedstraw Hawk-moth	1	1									1		3
Poplar Hawk-moth	34	31	14	26	17	21	32	23	26	15	31	22	292
Humming-bird Hawk-moth	5	1			1	3		1	2			1	14
<b>Total</b>	<b>51</b>	<b>45</b>	<b>17</b>	<b>36</b>	<b>28</b>	<b>25</b>	<b>37</b>	<b>36</b>	<b>54</b>	<b>25</b>	<b>38</b>		<b>426</b>

The size of Convolvulus Hawk-moths is impressive. The most frequently recorded moth in 2022 was the Dark Arches (*Apamea monoglypha*) which is probably familiar to most of us. Its forewing length is around 19-26mm. The Convolvulus Hawk-moth comes in at 50-55mm, so about twice as long, the montage here shows both species roughly to scale. Persistent southerly winds in late August and early September brought in hundreds of Convolvulus Hawk-moths to the UK with records all over the country.



*Apamea monoglypha* - Dark Arches (L) & *Agrius convolvuli* - Convolvulus Hawk-moth (R)

2019 was the only other really good year for this moth up here. The Humming-bird Hawk-moth seems to be slightly more regular with odd sightings of one or two at regular intervals.

To complete the summary of Sphingidae records for the Outer Hebrides, there are old records of Death's-head Hawkmoths (*Acherontia atropos*) from 1940 and 1950, occasional records of Bedstraw Hawk-moth (*Hyles gallii*), the last in 2021, and a single record of an Oleander Hawk-moth (*Daphnis nerii*) from a visitor to St Kilda in 2015.

## Insects other than Lepidoptera

### Insects other than Lepidoptera

#### Recording summary

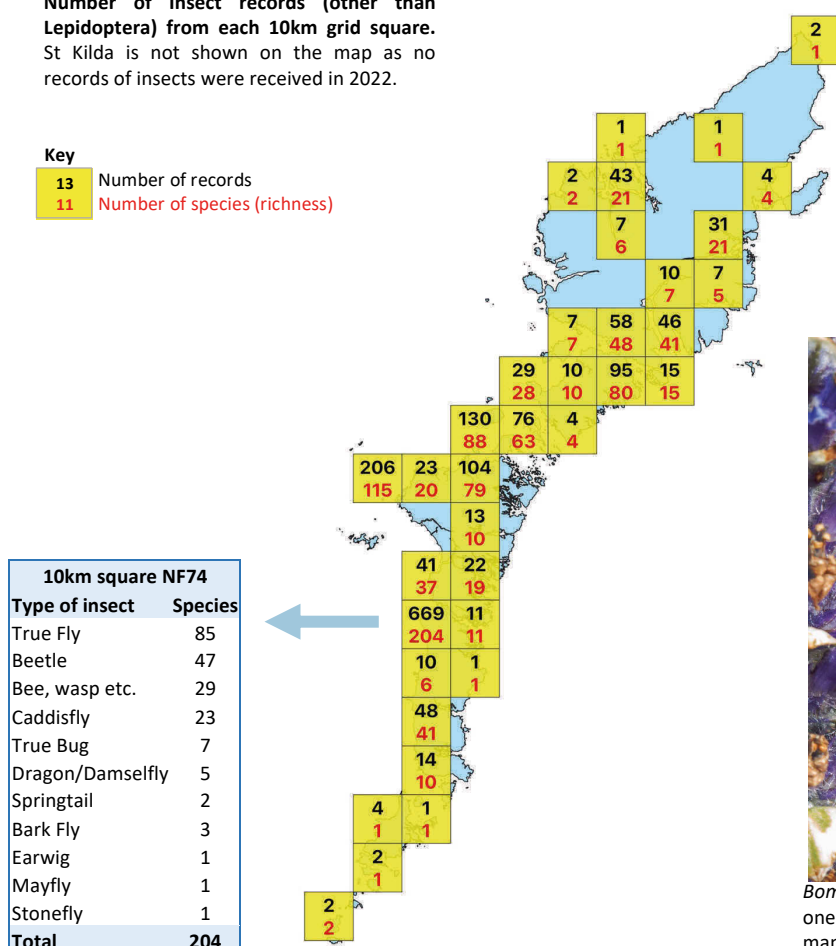
Insects (other than Lepidoptera) records by island												
Island	2017	%	2018	%	2019	%	2020	%	2021	%	2022	%
Lewis, Harris etc.	179	20.1	99	17.6	80	11.4	37	4.1	114	12.0	400	22.9
Lewis	141		24		54		34		97		73	
Great Bernera					2						34	
Harris	38		75		20		3		17		251	
Scalpay					4						15	
Pabbay											27	
North Uist etc.	66	7.4	103	18.3	85	12.1	23	2.9	57	6.0	528	30.2
Berneray	1		8		4		4		1		179	
North Uist	65		78		77		19		56		349	
Grimsay			17		4							
Benbecula	77	8.6	56	9.9	3	0.4	7	0.9	24	2.5	72	4.1
South Uist etc.	506	56.7	284	50.4	483	68.7	734	91.5	734	77.1	740	42.3
South Uist	485		277		481		732		729		732	
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
Barra	63		18		42		5		23		7	
Vatersay	1		2		10							
Mingulay			2								2	
Total	892		564		703		806		952		1749	

Thirty-nine people submitted 1,749 records of insects other than Lepidoptera in 2022 compared to 85 in 2021 (51 of those were participants in a one-off Earwig survey organized through the Curragag and OHBR Facebook pages). The total number of records received was the highest since 2017 when publication of annual reports started. Records were received from 36 (41%) of the 87 10km squares that cover the Outer Hebrides.

Number of Insect records (other than Lepidoptera) from each 10km grid square. St Kilda is not shown on the map as no records of insects were received in 2022.

#### Key

13 Number of records  
11 Number of species (richness)



*Bombus muscorum* – Moss Carder Bee  
one of our iconic species on the tick list of many visiting naturalists

## Insects other than Lepidoptera

Species	Type	Records
<i>Bombus muscorum</i>	Moss Carder Bee	43
<i>Bombus lucorum</i> agg.	White-tailed Bumblebee agg.	41
<i>Limnephilus marmoratus</i>	a caddisfly	32
<i>Coelopa frigida</i>	a kelp fly	27
<i>Plectrocnemia conspersa</i>	a caddisfly	25
<i>Scathophaga stercoraria</i>	a dungfly	25
<i>Bombus distinguendus</i>	Great Yellow Bumblebee	23
<i>Limnephilus sparsus</i>	a caddisfly	22
<i>Bombus pascuorum</i>	Common Carder Bee	22
<i>Limnephilus affinis</i>	a caddisfly	20
<i>Acrossus rufipes</i>	a dung beetle	19
<i>Calliphora vicina</i>	Common Bluebottle	16
<i>Myrmica ruginodis</i>	a red ant	15
<i>Sylvicola punctatus</i>	a window gnat	14
<i>Nicrophorus investigator</i>	a carrion beetle	14
<i>Bombus hortorum</i>	Small Garden Bumble Bee	14
<i>Forficula auricularia</i>	Common Earwig	14
<i>Bombus jonellus</i>	Heath Bumblebee	14
<i>Platycheirus manicatus</i>	a hoverfly	12
<i>Oecetis ochracea</i>	a caddisfly	12
<i>Sympetrum danae</i>	Black Darter	12
<i>Sympetrum striolatum</i>	Common Darter	11
<i>Philaenus spumarius</i>	Cuckoo-Spit Insect	11
<i>Helina evecta</i>	a muscid fly	11
<i>Bombus magnus</i>	Northern White-tailed Bumblebee	11
<i>Ischnura elegans</i>	Blue-tailed Damselfly	11

523 species of insect, excluding Lepidoptera (butterflies & moths) were recorded in 2022. Most species weren't recorded very often. 231 (44%) of species were recorded just once and only 26 (5%) more than ten times.

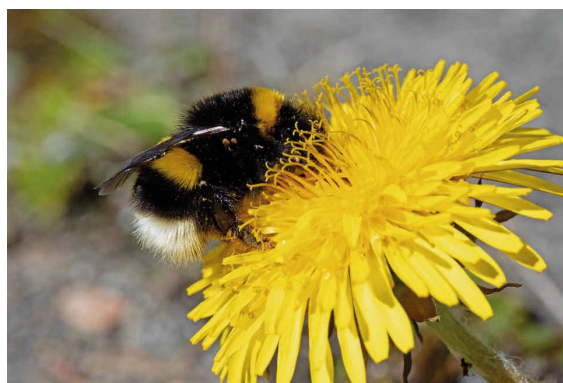
No. of times recorded	Number of species
1	231
2	97
3	60
4	34
5	24
6	12
7	12
8	12
9	5
10	10
>10	26
<b>Total</b>	<b>523</b>

Moss Carder Bee (*Bombus muscorum*)

was the species most frequently recorded with 43 records. Most of the remaining species were either charismatic species, such as bumblebees (six species) or damselflies/dragonflies (three species), or things like caddisflies and beetles which were caught during regular entomological surveys. Two species were just interesting things that people noticed, the Cuckoo-spit Insect (*Philaenus spumarius*) and the near ubiquitous Yellow Dung Fly (*Scathophaga stercoraria*).



*Sympetrum danae* - Black Darter, newly emerging



*Bombus lucorum* agg. - White-tailed Bumblebee



*Coelopa frigida* - a kelp fly



## Insects other than Lepidoptera

### Order Hymenoptera – Bees, wasps, ants etc.

#### Recording synopsis

7000 British species, 123 VC110 species, 1.8% of British list. **2022**, 252 records of 43 species, 35.0% of VC List

Family	Species (* indicates not on NBN)	Common Name	Records
Braconidae	<i>Aleiodes pictus</i> *		1
	<i>Clinocentrus</i> *		1
	<i>Homolobus infumator</i>		1
	<i>Macrocentrus nitidus</i>		1
	<i>Syntretus splendidus</i> *		1
	<i>Zele albiditarsus</i>		2
Chrysididae	<i>Chrysis</i>	Ruby-tailed Wasp	1
Eulophidae	<i>Chrysocharis</i>		1
Ichneumonidae	<i>Banchus volutatorius</i>		1
	<i>Enicospilus ramidulus</i>		2
	<i>Ichneumon oblongus</i>		1
	<i>Limerodops elongatus</i> *		1
	<i>Netelia testacea</i> *		1
	<i>Netelia vinulae</i>		1
	<i>Ophion inclinans</i>		3
	<i>Ophion obscuratus</i> agg.		5
	<i>Ophion perkinsi</i> agg.*		1
	<i>Ophion variegatus</i> *		1
<b>Total</b>			<b>26</b>

Some progress was made in 2022 in terms of developing identification skills necessary for specimens of **Braconidae**, **Ichneumonidae** and a couple of other Hymenoptera families. Six of us managed to submit 26 records of 16 specimens identified down to species or species aggregate level. A further two specimens have, as of January 2023, only been identified so far to the family level.



*Limerodops elongatus* – an ichneumon



*Ichneumon oblongus* – an ichneumon



*Netelia testacea* – an ichneumon



*Banchus volutatorius* – an ichneumon



*Syntretus splendidus* – a braconid



*Zele albiditarsus* – a braconid



*Clinocentrus* sp. – a braconid

## Insects other than Lepidoptera

The Ichneumonidae and Braconidae remain poorly studied in the Outer Hebrides. Three of the braconids and four ichneumonids found in 2022 are not on the NBN database for VC110. There are doubtless other new species for the islands still to be found. A number of other specimens were examined but identifications remain tentative at best.

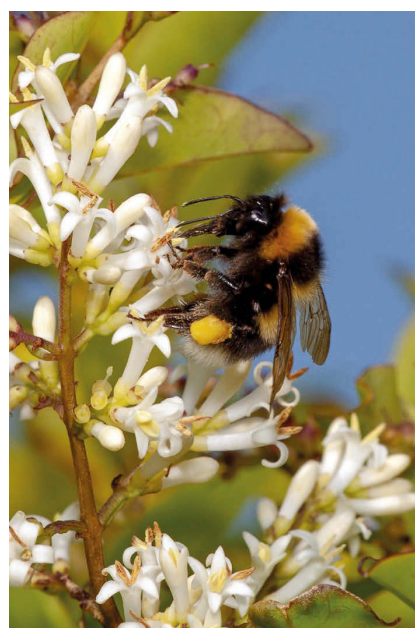
### Bees, wasps, ants etc

The situation with other Hymenoptera is rather better defined though *Andrena coitana* (Small Flecked Mining Bee) is new to VC110 and a specimen which may be *Lasius flavus* (Yellow Meadow Ant) has been taken by a visitor for confirmation on the mainland.

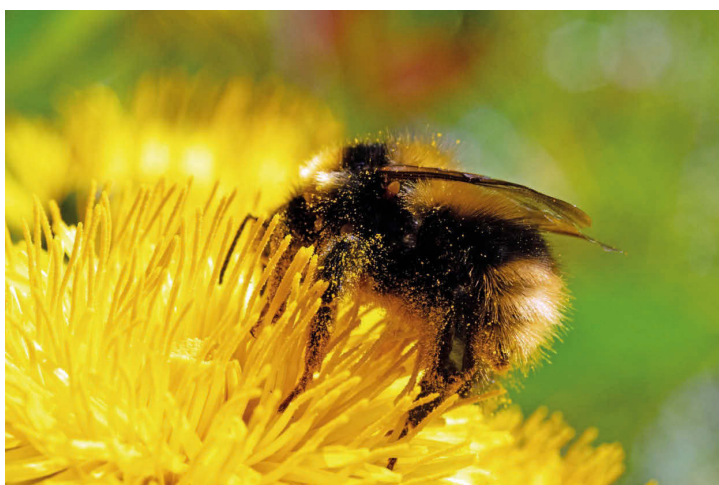
Family	Species	Common Name	Records
<b>Solitary bees</b>			
Andrenidae	<i>Andrena coitana</i> *	Small Flecked Mining Bee	2
	<i>Andrena ruficrus</i>	Northern Mining Bee	1
Colletidae	<i>Colletes floralis</i>	Northern Colletes	7
<b>Social bees</b>			
Apidae	<i>Apis mellifera</i>	Western Honey Bee	1
	<i>Bombus distinguendus</i>	Great Yellow Bumblebee	22
	<i>Bombus hortorum</i>	Small Garden Bumblebee	14
	<i>Bombus jonellus</i>	Heath Bumblebee	14
	<i>Bombus lucorum agg.</i>	White-tailed Bumblebee	37
	<i>Bombus magnus</i>	Northern White-tailed Bumblebee	11
	<i>Bombus muscorum</i>	Moss Carder Bee	43
	<i>Bombus pascuorum</i>	Common Carder Bee	22
	<i>Bombus terrestris</i>	Buff-tailed Bumblebee	4
<b>Potter wasps &amp; Social wasps</b>			
Vespidae	<i>Ancistrocerus oviventris</i>	a potter wasp	4
	<i>Ancistrocerus scoticus</i>	a potter wasp	2
	<i>Dolichovespula saxonica</i>	Saxon Wasp	2
	<i>Dolichovespula sylvestris</i>	Tree Wasp	4
	<i>Vespula rufa</i>	Red Wasp	4
<b>Ants</b>			
Formicidae	<i>Lasius flavus</i> *	Yellow Meadow Ant	1
	<i>Myrmica ruginodis</i>	a red ant	15
<b>Total</b>			<b>210</b>
*Not on NBN and awaiting confirmation			



*Bombus muscorum* - Moss Carder Bee, 3<sup>rd</sup> May



*Bombus hortorum* - Small Garden Bumblebee, 24<sup>th</sup> August



*Bombus jonellus* - Heath Bumblebee, April 25<sup>th</sup>

Trying to ensure good sources of nectar and pollen in a garden early in the year is important for bumblebees. Dandelion can be very important as it flowers early and continues for much of the summer. Many see them simply as weeds but it is well worth letting them flower and even to run to seed, later in the summer Goldfinch, Linnet and Twite may be seen picking off the developing seeds.



# Insects other than Lepidoptera



*Bombus distinguendus* - Great Yellow Bumblebee, 22<sup>nd</sup> July



*Bombus pascuorum* - Common Carder Bee (L) and *Bombus muscorum* - Moss Carder Bee (R), 7<sup>th</sup> May

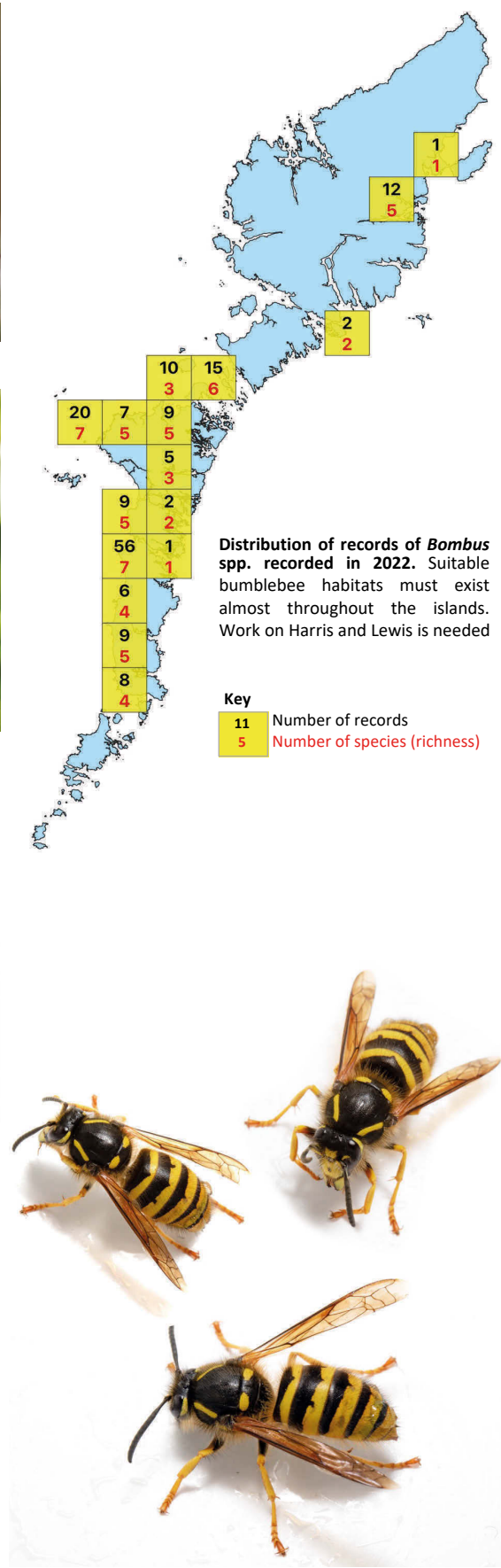
## Other Hymenoptera - gallery



*Myrmica ruginodis* - a red ant queen



*Ancistrocerus scoticus* - a potter wasp



*Dolichovespula sylvestris* - Tree Wasp



## Insects other than Lepidoptera

### Sawflies

Waterston (1981)<sup>3</sup> lists 26 species of sawfly for the Outer Hebrides. Sixteen of those “Waterston” species (✓ in red below) have no subsequent records on NBN but an additional 15 species have been recorded since then. As of January 2023 then, NBN has 137 records of 25 species of sawfly.

Family	Species	Waterston 1981	1988	1992	2006	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
		✓																		
Cimbicidae	<i>Trichiosoma laterale</i>	✓																		
	<i>Trichiosoma sorbi</i>	✓																		
Tenthredinidae	<i>Cladius pectinicornis</i>	✓																		
	<i>Dolerus aeneus</i>	✓										1		1				1		3
	<i>Dolerus aericeps</i>	✓														2	1	1	1	4
	<i>Euura atra</i>	✓								1										1
	<i>Euura bridgmanii</i>	✓												1		1		1		3
	<i>Euura clitellata</i>	✓																		
	<i>Euura collactanea</i>	✓						1		6	1		3	5	1	3		1	2	21
	<i>Euura leucostica</i>	✓																		
	<i>Euura lichtwardti</i>	✓																		
	<i>Euura nigricornis</i>	✓																		
	<i>Euura obductus</i>	✓																		
	<i>Euura oblita</i>	✓																		
	<i>Euura pavida</i>	✓									2	1								3
	<i>Euura pedunculi</i>	✓								6	6	6	1	14	13	1		4	5	51
	<i>Euura proxima</i>	✓																		
	<i>Euura ribesii</i>	✓													1		1			2
	<i>Nematus latipes</i>	✓																		
	<i>Nematus septentrionalis</i>	✓																		
	<i>Pristiphora staudingeri</i>	✓																		
	<i>Rhogogaster viridis</i>	✓																		
	<i>Tenthredo atra</i>	✓				1		1				1							1	3
	<i>Tenthredo brevicornis</i>	✓				1	4	1		1		1	1							9
	<i>Tenthredo schaefferi</i>	✓																		
	<i>Tenthredopsis nassata</i>	✓																		
Tenthredinidae	<i>Tenthredopsis coquebertii</i>		1													2			1	3
Tenthredinidae	<i>Euura weiffenbachii</i>			1						1	2	1	1		1					7
Tenthredinidae	<i>Tenthredo moniliata</i>				1															1
Argidae	<i>Arge rustica</i>						1													1
Tenthredinidae	<i>Tenthredo arcuata</i>						2				1	1								4
Siricidae	<i>Urocerus gigas</i>							2	1								3	1		7
Tenthredinidae	<i>Rhogogaster scalaris</i>								1											1
Tenthredinidae	<i>Hemichroa crocea</i>										1			1	1					3
Tenthredinidae	<i>Tenthredo ferruginea</i>										1									1
Tenthredinidae	<i>Platycampus luridiventris</i>												1					1		2
Tenthredinidae	<i>Dolerus varispinus</i>													1						1
Tenthredinidae	<i>Euura auritae</i>													1	1					2
Tenthredinidae	<i>Dineura testaceipes</i>															2				2
Cimbicidae	<i>Cimbex femoratus</i>																	1		1
Tenthredinidae	<i>Strongylogaster multifasciata</i>																	1		1

In 2022, 11 records of five species of sawfly were collected by OHBR contributors, in addition there was a single record of a specimen of *Euura* that couldn't be identified further.

Over 90% of the records of Sawflies on NBN since 2012 come into the system through OHBR. A number of sawfly species are gall formers and are often host-specific which can make identification easier; it's worth looking out for them.

Family	Species	Records
Tenthredinidae	<i>Dolerus aericeps</i>	1
	<i>Euura</i>	1
	<i>Euura collactanea</i>	2
	<i>Euura pedunculi</i>	5
	<i>Tenthredo atra</i>	1
	<i>Tenthredopsis coquebertii</i>	1
Total		11

## Insects other than Lepidoptera



*Dolerus aericeps* – a sawfly, larvae feed on horsetails, *Equisetum* sp. One of the Waterston species confirmed on Outer Hebrides in 2019



*Dolerus* sp. (possibly *D. aericeps*) – caterpillar found on *Equisetum* sp. (Horsetail)



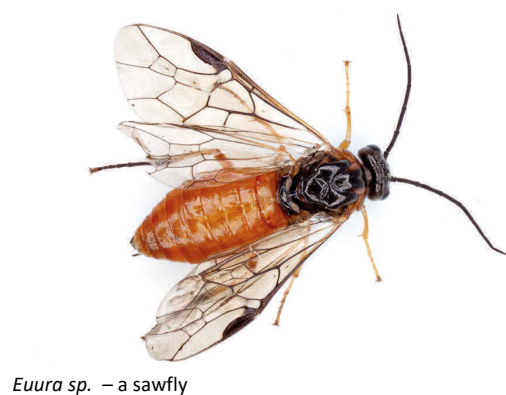
*Dolerus aeneus* – a sawfly



*Tenthredopsis coquebertii* – a sawfly



*Dineura testaceipes* – a sawfly, first recorded from VC110 in 2021 it was only the third record for Scotland



*Euura* sp. – a sawfly

## Insects other than Lepidoptera

### Order Trichoptera – Caddisflies or sedges

#### Recording synopsis

198 British species, 78 VC110 species, 39.3% of British list. **2022**, 205 records of 25 species, 32.1% of VC List

As in previous years almost all the caddisfly records come from bycatch of a moth trap run at a site on South Uist. One of the highlights in 2022, the first record of *Limnephilus auricula* since 1900, came from another light trap run at a site on Lewis. A second specimen of the same species was found in the South Uist trap in August. There was a second record of *Limnephilus pati* – a species that caused nationwide excitement as it was thought to be extinct in Great Britain. Two more examples of *Polycentropus irroratus*, found in the moth trap on South Uist, were just the 5<sup>th</sup> and 6<sup>th</sup> from the Outer Hebrides.

Species	NBN records	2018	2019	2020	2021	2022	Comments
<i>Limnephilus marmoratus</i>	212	5	30	37	32	32	
<i>Plectrocnemia conspersa</i>	158	2	24	25	26	25	
<i>Limnephilus sparsus</i>	131	1	14	17	12	22	
<i>Limnephilus affinis</i>	109	5	18	18	13	20	
<i>Limnephilus lunatus</i>	84	3	13	15	13	8	
<i>Stenophylax permistus</i>	72	1	6	11	9	8	
<i>Limnephilus elegans</i>	69		12*	15	11	9	*First since 1901
<i>Polycentropus flavomaculatus</i>	56		3	7	1	3	
<i>Tinodes waeneri</i>	59	3	7	5	7	8	
<i>Phryganea grandis</i>	51	1	7	8	8	10	
<i>Oecetis ochracea</i>	48	2	7	3	6	12	
<i>Lepidostoma hirtum</i>	38	1	2	3	1	2	
<i>Limnephilus hirsutus</i>	38	2	5	4	3	7	
<i>Agrypnia varia</i>	40		2	4	8	9	
<i>Halesus radiatus</i>	31	1	3	2	1	1	
<i>Limnephilus griseus</i>	30		1				
<i>Athripsodes cinereus</i>	27		3	3	1	4	
<i>Mystacides azurea</i>	24	1	2	1	1	3	
<i>Oecetis furva</i>	21		1*	5	2	7	*First since 1971
<i>Ceraclea fulva</i>	19	1	2	3	2	6	
<i>Limnephilus luridus</i>	18		3*	3	2		*First since 1962
<i>*Triaenodes bicolor</i>	16			2	1		*Only recorded as larva
<i>Limnephilus vittatus</i>	11		1	2	1	1	
<i>Athripsodes aterrimus</i>	5			1*			*Only 4 <sup>th</sup> record
<i>Oecetis lacustris</i>	5			1*	2		*Last recorded Stornoway 1960
<i>Polycentropus irroratus</i>	4				1	2	
<i>Limnephilus auricula</i>	6					2 <sup>1</sup>	First records since 1900
<i>Limnephilus pati</i>	2			1*		1	*1st in Scotland
<i>Sericostoma personatum</i>	21					1	Larva in water sample
<b>Number of species</b>		<b>14</b>	<b>22</b>	<b>25</b>	<b>24</b>	<b>24</b>	
<b>Number of records</b>		<b>29</b>	<b>166</b>	<b>196</b>	<b>166*</b>	<b>205*</b>	*Includes 2 records of <i>Limnephilus</i> sp.

<sup>1</sup> first one from Point on Lewis, 16<sup>th</sup> April, second from South Uist 23<sup>rd</sup> August, both from light traps



*Limnephilus pati*, South Uist, June 2022 – the 2<sup>nd</sup> seen in Scotland



*Limnephilus auricula*, South Uist, August 2022



## Insects other than Lepidoptera

### Caddisfly flight periods

**Genus *Limnephilus*** – the caddisfly species recorded in the light trap on South Uist show different life cycle strategies. Some species of caddisflies are known to show a summer diapause, adults emerge in spring but then enter a resting period over the summer before becoming active again later in the year to mate and lay eggs. *Limnephilus affinis* seems to show that type of life cycle. Moderate numbers are found in late May and early June but the peak activity period is in August.

In contrast, *Limnephilus elegans* is an early species with maximum numbers in mid-May to mid-June. Adults, at least those found in the South Uist monitoring site don't reappear later in the year. *Limnephilus lunatus* shows the opposite pattern, adults are absent in the early part of the year and are only generally found in late August and early September. The species account in the Trichoptera Ireland web pages<sup>1</sup> states that "Adults of *Limnephilus lunatus* can be found on the wing in Ireland from April to November, with a probable summer diapause". The situation, at the South Uist monitoring site at least, seems to differ from that.

*Limnephilus sparsus* and *Limnephilus marmoratus* seem to have longer flight periods. *L. sparsus* numbers are high in late May and early June but some are found right through to September. *L. marmoratus* has an even longer flight period from the first which have been found in mid May through to the last ones in October. Both species are said to show a summer diapause.

Counts of adult caddisfly by week	April				May					June				July					August					September					October				
Species	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		
<i>Limnephilus affinis</i>				1	4	6	13	8	11	9	4	2	1	2		1	5	5	28	21	26	25	6	6	3	1							
<i>Limnephilus elegans</i>			2		1	15	30	33	190	68	16	3																					
<i>Limnephilus sparsus</i>							2	7	95	343	22	17	16	1	9	5	28	8	3	7	8	4	1										
<i>Limnephilus luridus</i>								2	1	2	7		1	1																			
<i>Limnephilus marmoratus</i>								1	4	30	22	59	82	92	79	58	120	156	81	89	39	60	59	35	52	23	1	4	1	4			
<i>Limnephilus hirsutus</i>										1	1	1	4	1	1	2	3	1	1	1	1				1								
<i>Limnephilus pati</i>														1			1																
<i>Limnephilus griseus</i>																		1															
<i>Limnephilus lunatus</i>																		5	42	397	497	528	166	86	31	9		2					
<i>Limnephilus vittatus</i>																				1			1		3	1							
<i>Limnephilus auricula</i>																						1											

<sup>1</sup> <https://trichopteraireland.wordpress.com/2017/11/04/species-profile-limnephilus-lunatus/>

## Insects other than Lepidoptera

**Other Caddis genera** – most species seem to fly later than the early *Limnephilus* species with only *Stenophylax permistus* showing any evidence of a summer diapause. *Plectrocnemia conspersa* has one of the longest flight periods of any of the caddisflies looked at, only *L. affinis* and *L. marmoratus* are on the wing for similar lengths of time. Moth trapping ceases due to poor weather by mid October in most years and it is possible that *P. conspersa* is active even later in the year.

Some species, such as *Polycentropus irroratus* and *Athripsodes aterrimus* have been recorded too infrequently for their flight periods to be considered reliable. Hopefully, over time, more reliable data for species like these can be collected.

Counts of adult caddisfly by week	April				May				June				July				August				September				October						
Species	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
Stenophylax permistus					1	1		2									1	7	21	24	13	6	5	1							
Plectrocnemia conspersa						8	30	33	221	366	56	35	16	34	15	3	12	5	1	13	4	2	8	5	7	1	1				2
Halesus radiatus								1													2	1	5								
Polycentropus flavomaculatus									2		1					1	4		2	5	2										
Polycentropus irroratus									1								1							1							
Phryganea grandis										2		3	8	22	48	5	18	2		2											
Athripsodes aterrimus													1																		
Mystacides azurea												1					1	7		3	2										
Oecetis ochracea												14	5	4	10	13	28	7	2	1											
Tinodes waeneri													1				2	3	8	15	25	8	5	11	2	2					
Agrypnia varia														1	6	4	15	8	5	4	2	1			2						
Lepidostoma hirtum														1	2		3		1	2	1										
Athripsodes cinereus																1	4	5	2	3	3	1		1							
Ceraclea fulva																1	1		3	1	6	1	3	3							
Oecetis lacustris																1		2	3												
Oecetis furva																	2	2	6	12	2										

## Insects other than Lepidoptera

### Order Diptera – True Flies

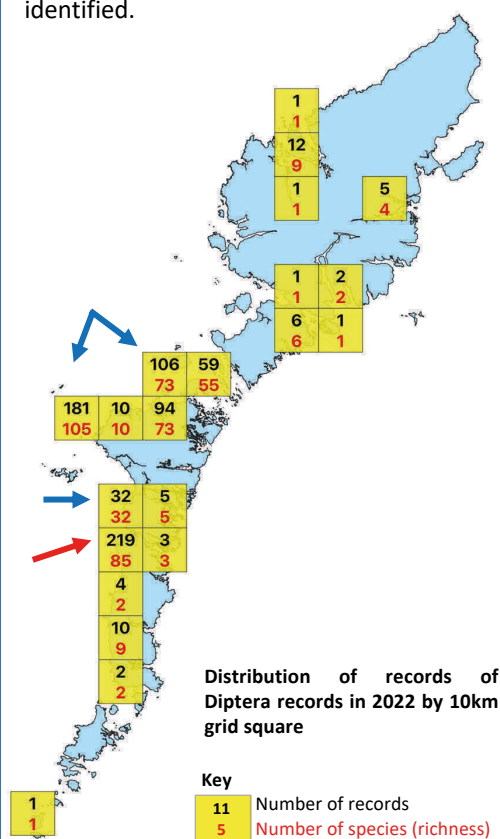
#### Recording synopsis

7000 British species, 835 VC110 species, 11.9% of British list. **2022**, 755 records of 223 species, 26.7% of VC List

Family	Type	Species	Records	Recorders
Syrphidae	Hoverflies	34	147	10
Muscidae	House flies	33	125	4
Anthomyiidae		22	62	2
Dolichopodidae	Long-legged flies	14	26	3
Tipulidae	Long-palped crane flies	11	31	7
Calliphoridae	Blow flies	10	44	4
Scathophagidae	Dung flies	8	56	4
Cecidomyiidae	Gall-midges	7	12	1
Hybotidae	Dance-flies	5	13	1
Tachinidae	Parasite-flies	5	12	3
Heleomyzidae		4	8	2
Tephritidae	Picture-winged flies	4	9	2
Anisopodidae	Window-gnats	3	18	2
Bibionidae	St Mark's flies	3	12	2
Chloropidae	Grass flies	3	5	1
Empididae	Dance flies	3	10	3
Ephyridae	Shoreflies	3	4	2
Lauxaniidae		3	6	3
Limoniidae	Short-palped crane flies	3	7	2
Sepsidae	Ensign flies	3	7	2
Sphaeroceridae	Lesser-dung flies	3	9	2
Stratiomyidae	Soldier flies	3	8	3
Agromyzidae	Leaf-miner flies	2	3	2
Chamaemyiidae	Aphid flies	2	6	1
Chironomidae	Non-biting midges	2	4	3
Coelopidae	Kelp flies	2	29	2
Opomyzidae		2	6	2
Pediciidae	Hairy-eyed crane flies	2	4	3
Psilidae	Rust flies	2	2	2
Rhagionidae	Snipe flies	2	13	4
Sciomyzidae	Snail-killing flies	2	10	2
Tabanidae	Horseflies	2	5	3
Trichoceridae	Winter gnats	2	7	1
Canacidae	Beach flies	1	1	1
Ceratopogonidae	Miting-midges	1	1	1
Fanniidae	Lesser House-flies	1	1	1
Helomyzidae	a beach fly	1	2	1
Heterocheilidae		1	10	2
Hippoboscidae	Birdlice-flies	1	1	1
Lonchopteridae	Pointed-wing flies	1	4	2
Pipunculidae	Big-headed flies	1	1	1
Polleniidae	Cluster flies	1	2	1
Ptychopteridae	Phantom crane flies	1	2	1
Sarcophagidae	Flesh flies	1	1	1
Sciaridae	Black fungus-gnats	1	2	1
Therevidae	Stiletto flies	1	6	1
Ulidiidae	Wing-waving flies	1	1	1
<b>Total</b>		<b>223</b>	<b>755</b>	

Ninety percent of the diptera records came from two people; one a visiting entomologist sent in 63% of the records and a resident naturalist, who has started to take more of an interest in the group, 27% of them. The remaining records came from fifteen other recorders who submitted one to thirteen records each.

Most records from local recorders were of groups such as the Hoverflies (Syrphidae), and Crane flies (Tipulidae) which contain large or colourful species some of which are readily identified.



Most of the diptera records from local recorders are from grid square NF74 (red arrow). The much more experienced visiting entomologists' records come from those squares which show greater recording efficiency on North Uist and Benbecula (blue arrows).

Many of the local records come from one of the moth-trap sites. The diptera recorded are partly bycatch from the trap, some records from interception traps and quite a lot of records of distractions found during the never-ending battle to stop the encroachment of horsetail and ground elder into the vegetable patch. As a result, there are a lot of records of the same species from the same site but on different dates. Records are taken throughout most of the year and reflect the seasonality of species and will record some



## Insects other than Lepidoptera

species likely to be missed during short visits in the summer period. The two types of recording are providing complementary information about the diptera fauna.

### Flight seasons for *Tipula* spp.

A nice example of where data collected throughout a whole year are useful can be seen with the crane flies in the genus *Tipula*. Looking at data (below) collected by OHBR recorders resident on the islands, a distinct seasonality of occurrences for different species can be seen.

	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<i>Tipula lateralis</i>			1				1					1
<i>Tipula rufina</i>			10	1			4					15
<i>Tipula oleracea</i>			3	10	4	1	4	3	1			26
<i>Tipula luna</i>				4	4							8
<i>Tipula paludosa</i>				4	1	7	35	10				57
<i>Tipula lunata</i>					1							1
<i>Tipula varipennis</i>					3							3
<i>Tipula confusa</i>							1	10				11
<i>Tipula pagana</i>								1	5	4		10
<i>Tipula luteipennis</i>									3			3

Short visits by off-island naturalists would probably miss *Tipula rufina*, may not pick up *Tipula oleracea* and *Tipula luna*. They would be likely to see *Tipula paludosa*, *Tipula lunata* and *Tipula varipennis*. At the other end of the year, visiting naturalists are much less likely to come after the end of August and so may miss *Tipula confusa*, *Tipula pagana* and *Tipula luteipennis*. Examining all the NBN data for these last three species shows that this is actually the case; 60% of *T. confusa* records and all of the *T. pagana* and *T. luteipennis* records come from resident recorders.



*Tipula pagana* – female on left, male on right. A late season species where all NBN records originate from naturalists resident in the Outer Hebrides. The species is unusual in that the females are flightless, having very short wings.

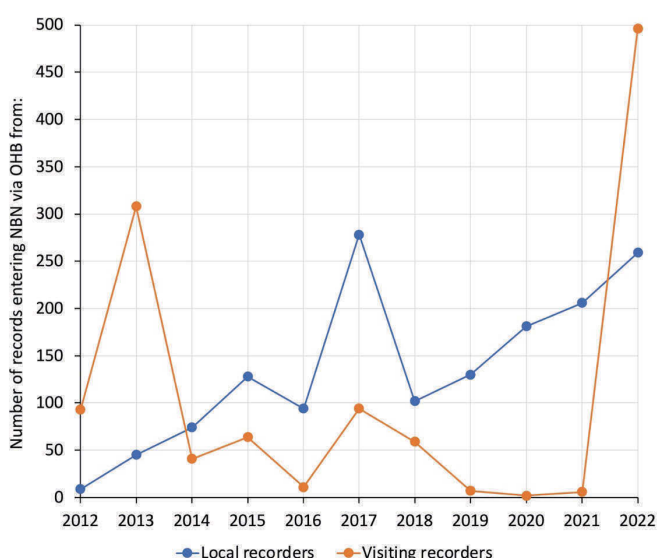


*Tipula luteipennis* - female on left, male on right, another late season species less likely to be recorded by visiting entomologists.

## Insects other than Lepidoptera

In the ten years between its inception in 2012 and 2022, 90% of the records on NBN have been submitted via OHBR. Those records are either from local residents or visitors from off-island.

Data rights holder	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	%
Outer Hebrides Biological Recording	102	353	115	192	105	372	161	137	183	212	755	<b>2687</b>	88.9%
Highland Biological Recording Group		99	21									<b>120</b>	4.0%
Biological Records Centre (including schemes below)	6	3	1	0	3	2	8	10	51	22	7	<b>113</b>	3.7%
UK Crane-fly Recording Scheme						2	4	5	47	4		<b>62</b>	-
Soldierflies and Allies Recording Scheme	6	3	1		2		2	1		4	3	<b>22</b>	-
Kelp Fly Recording Scheme										4	1	<b>5</b>	-
Heleomyzid Recording Scheme									1	2		<b>3</b>	-
Calliphoridae Recording Scheme					1					1		<b>2</b>	-
Hippoboscidae and Nycteribiidae Recording Scheme								1		1		<b>2</b>	-
NatureScot				3	50							<b>53</b>	1.8%
Cumbria Biodiversity Data Centre		46										<b>46</b>	1.5%
Unassigned		2										<b>2</b>	0.1%
<b>Total</b>	<b>108</b>	<b>503</b>	<b>137</b>	<b>195</b>	<b>158</b>	<b>374</b>	<b>169</b>	<b>147</b>	<b>234</b>	<b>234</b>	<b>762</b>	<b>3021</b>	



Since 2012, local recorders have provided a good source of diptera records for NBN. But in some years, 2013, 2017 and particularly 2022, visiting entomologists have made a very strong contribution too. In earlier years virtually all records for the Outer Hebrides would have come from visiting naturalists.

In 2022 we were lucky to have a number of experienced entomologists visiting the islands. One recorded mainly Coleoptera (Beetles) but another was a plant-gall specialist who was responsible for all twelve of the Cecidomyiidae (Gall-midge) records.

Another visiting entomologist was particularly important in recording families such as Muscidae (House flies), Anthomyiidae, Calliphoridae (Blow flies) and Dolichopodidae (Long-legged flies) and the others shown in blue opposite. These can be quite difficult groups for a relative beginner to identify but I'm sure, in time, the number of locally generated records will continue to increase.

Local recorders did rather better for the species families shown in red opposite; Tipulidae (Craneflies), Anisopodidae (Window-gnats), Trichoceridae (Winter-gnats), Raghionidae (Snipeflies) and Bibionidae (St. Mark's flies). These families have a number of early (in the year) and late flying species which may have been missed as our visiting experts came for a couple of weeks in July and August. Both local and visiting recorders did well with the Syrphidae (Hoverflies), Scathophagidae (Dungflies) and Coelopidae (Kelp flies).

Recorder type:	Visitor	Local	
Family	Records (species)	(species)	Total
Muscidae	<b>114</b> (30)	<b>11</b> (7)	125
Syrphidae	<b>87</b> (37)	<b>60</b> (25)	147
Anthomyiidae	<b>60</b> (22)	<b>2</b> (2)	62
Calliphoridae	<b>33</b> (10)	<b>11</b> (3)	44
Dolichopodidae	<b>25</b> (13)	<b>1</b> (1)	26
Hybotidae	<b>13</b> (5)		13
Cecidomyiidae	<b>12</b> (8)		12
Tachinidae	<b>11</b> (4)	<b>1</b> (1)	12
Tipulidae	2 (2)	<b>29</b> (10)	31
Anisopodidae		<b>18</b> (3)	18
Trichoceridae		<b>7</b> (2)	7
Raghionidae	<b>2</b> (1)	<b>11</b> (2)	13
Bibionidae	<b>4</b> (1)	<b>8</b> (3)	12
Scathophagidae	<b>28</b> (5)	<b>28</b> (6)	56
Coelopidae	<b>12</b> (2)	<b>17</b> (2)	29
Other families	<b>93</b> (53)	<b>55</b> (29)	148
<b>Total records</b>	<b>496</b> (193)	<b>259</b> (96)	<b>755</b>

## Insects other than Lepidoptera

A number species of diptera were recorded in 2022 which don't feature on the OHBR Diptera Checklist<sup>2</sup>. In addition there was a "big-head fly" (Family Pipunculidae) which wasn't identified any further than Genus. The Larvae of these unusual looking flies are internal parasitoids of various leafhoppers and planthoppers (Order Hemiptera). Knowing the name of an organism gives access to layers and layers of information which would be hard to access otherwise.



Pipunculidae possibly *Cephalops* sp. – no species of Pipunculidae have been recorded from the Outer Hebrides. A number of these tiny flies were seen in a garden at Eochar in bright sunshine in July 2022. Identification beyond genus wasn't achieved.

Family	Species
<b>New species</b>	
Tephritidae	<i>Campiglossa plantaginis</i>
Muscidae	<i>Villeneuveia aestuum</i>
	<i>Spilogona setigera</i>
	<i>Helina quadrinotata</i>
	<i>Chersodromia alata</i>
Hybotidae	<i>Tephrochlaena oraria</i>
Heleomyzidae	<i>Hilara pseudocornicula</i>
Dolichopodidae	<i>Dolichopus clavipes</i>
Canacidae	<i>Tethina grisea</i>
Cecidomyiidae	<i>Contarinia loti</i>
Anthomyiidae	<i>Delia planipalpis</i>
Pipunculidae	<i>Cephalops</i> sp.
<b>Status confirmed</b>	
Tachinidae	<i>Winthemia quadripustulata</i>
Anthomyiidae	<i>Delia lavata</i>

There were also two species which appear on the checklist but there was some doubt about their true status:

"*Winthemia quadripustulata* - (Waterston 1981), recorded as *Winthemia (Exorista) apicalis* (Dale 1892) Vallay, North Uist."

"*Delia lavata* - it is not possible to distinguish between a small resident breeding population or wind-blown strays from continental Europe."

Both have now been confirmed, *Winthemia quadripustulata* was positively identified at Balranald, and *Delia lavata* was found in dunes at Balranald, Berneray and Grenitote confirming the presence of a breeding population in the Outer Hebrides.

### Gallery – some nice finds of 2022



*Hyadina guttata* – Ephydriidae, 10<sup>th</sup> August 2022



*Trypeta zoe* – Tephritidae, 31<sup>st</sup> July 2022

<sup>2</sup> <https://www.ohbr.org.uk/documents/checklists/diptera%20checklist.pdf>



## Insects other than Lepidoptera



*Chrysotoxum bicinctum* – Syrphidae, 21<sup>st</sup> July 2021, only two previous records both from 2014



*Bibio pomonae* – Bibionidae, 31<sup>st</sup> August 2022



*Syrphus torvus* – Syrphidae, 31<sup>st</sup> July 2022, only two previous records on NBN but older records known from literature



*Norellisoma spinimanum* – Scathophagidae, 6<sup>th</sup> May 2022, only previous NBN record from 1995 taken from literature



*Eristalis nemorum* – Syrphidae, 27<sup>th</sup> June 2022



*Scathophaga suilla* – Scathophagidae, 12<sup>th</sup> August 2022, published records from 1994, 2008 and on NBN from 2013



*Calliphora vicina* – Calliphoridae, 5<sup>th</sup> October 2022



*Heteromyza commixta* – Heleomyzidae, 22<sup>nd</sup> June 20

## Insects other than Lepidoptera



*Panzeria anthophila* – Tachinidae, 26<sup>th</sup> August 2022



*Chrysopilus cristatus* – Stratiomyidae, 4<sup>th</sup> July 2022



*Sylvicola zetterstedti* – Anisopodidae, 23<sup>rd</sup> October 2022, no previous NBN records but in literature and on OHBR checklist



*Empis livida* – Empidae, 21<sup>st</sup> June 2022



*Dolichopus urbanus* – Dolichopodidae – 21<sup>st</sup> June 2022

## Insects other than Lepidoptera

### Order Coleoptera – Beetles

#### Recording synopsis

4000 British species, 474 VC110 species, 11.9% of British list. **2022**, 369 records of 176 species, 37.1% of VC List

Family	Type	Species	Records	Recorders
Staphylinidae	Rove beetles	63	103	7
Carabidae	Ground beetles	33	67	13
Scarabaeidae	Chafers & dung-beetles	9	37	2
Silphidae	Carion beetles	6	36	10
Hydrophilidae	Water scavenger beetles	8	16	1
Curculionidae	Weevils	7	15	3
Dytiscidae	Diving beetles	11	14	6
Cantharidae	Soldier beetles	2	11	4
Scirtidae	Marsh beetles	4	11	4
Chrysomelidae	Leaf beetles	7	10	3
Gyrinidae	Whirligig beetles	2	6	3
Coccinellidae	Ladybirds	1	5	5
Meloidae	Oil beetles	1	5	2
Nitidulidae	Pollen beetles	2	5	2
Apionidae	Apionid weevils	3	4	2
Cryptophagidae	Silken fungus beetles	3	4	1
Elateridae	Click beetles	2	4	2
Geotrupidae	Dor beetles	3	4	3
Hydraenidae	Moss beetles	2	3	2
Halipidae	Crawling water beetles	1	2	1
Ptinidae	Spiderweb beetles	2	2	2
Dascillidae	Orchid beetles	1	1	1
Dryopidae	Long-toed water beetles	1	1	1
Helophoridae	Grooved water scavengers	1	1	1
Leiodidae	Fungus beetles	1	1	1
<b>Total</b>		<b>176</b>	<b>368</b>	

Over half of the Coleoptera records in 2022 came from a single visiting entomologist who spent a few days in late July on Harris and Scalpay. In total they generated 190 records of 123 species. Most of the **Staphylinidae** (rove beetle) records came from this person.

Staphylinid (Rove beetle) records		
	Records	Species
Visiting recorder	88	57
Local recorders	15	8

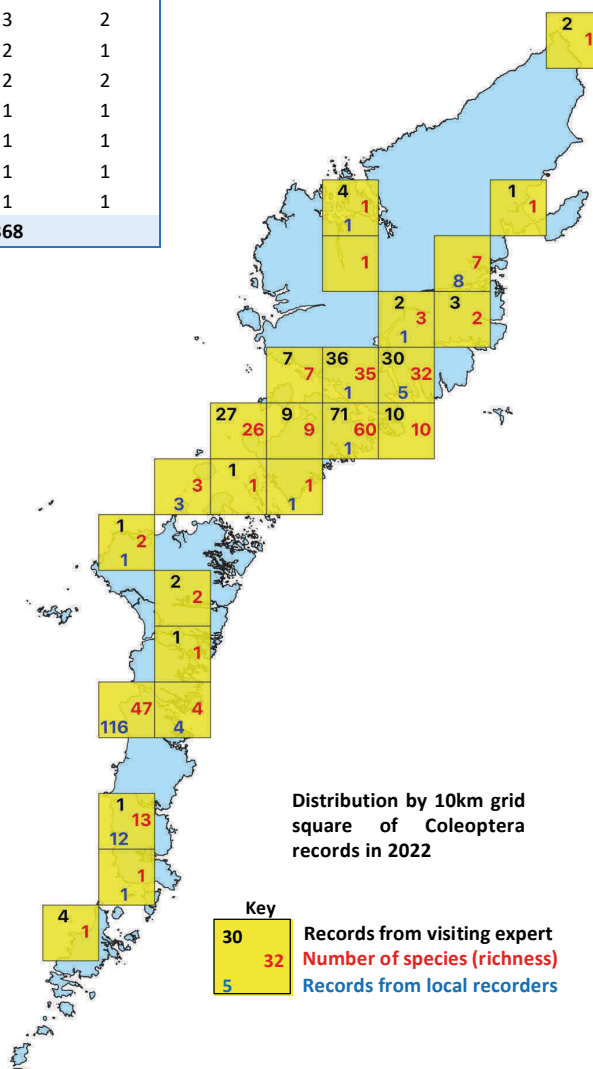
The rove beetle records sent in by local recorders were mostly of the larger species such as *Creophilus maxillosus* and *Staphylinus erythropterus*.



*Creophilus maxillosus* – Carrion Beetle



*Staphylinus erythropterus*





## Insects other than Lepidoptera

**Carabidae** – The carabids are often large and relatively easy to identify and local recorders cope better with these than they do with more difficult groups such as the Staphylinidae. As a family this was the most frequently recorded in 2022, thirteen recorders sent in 67 records of 33 carabid species. local recorders provided 36 records of 14 species, compared to 31 of 21 species from the visiting coleopterist.



*Pterostichus niger* – the most frequently recorded carabid in 2002 (8 records).



*Carabus granulatus* – 4 records in 2022



*Carabus glabratus* - 6 records in 2022

**Scarabaeidae** – two small dung beetles *Acrossus rufipes* (19 records) and *Bodilopsis rufa* (10 records) frequently turn up in mothtraps in summer. The only other member of the family to be recorded more than once in 2022 was *Serica brunnea* (Brown Chafer).



*Serica brunnea* - Brown Chafer

**Silphidae** – ten recorders provided 36 records of six species. The three *Nicrophorus* species regularly turn up in moth traps and can be readily identified by elytra patterning and colour of the terminal antennal club. The real prize for coleopterists visiting the Outer Hebrides is *Silpha tyrolensis*. Of the 207 records of this species on NBN, 177 come from the Outer Hebrides.

Species	Records
<i>Nicrophorus investigator</i>	14
<i>Nicrophorus humator</i>	8
<i>Phosphuga atrata</i>	7
<i>Silpha tyrolensis</i>	3
<i>Thanatophilus rugosus</i>	3
<i>Nicrophorus vespilloides</i>	1
<b>Total</b>	<b>36</b>



*Nicrophorus vespilloides* – separated from the more frequent *N. investigator* by all black segments in the antennal club



*Silpha tyrolensis* – largely restricted to machair on the west coast of the Uists

## Insects other than Lepidoptera

### A miscellany of beetles of damp/wet places

Family/Species	Records
<b>Dryopidae</b> - Long-toed water beetles	
<i>Dryops luridus</i>	1
<b>Dytiscidae</b> – Diving beetles	
<i>Agabus</i>	1
<i>Agabus bipustulatus</i>	3
<i>Dytiscidae</i>	1
<i>Dytiscus marginalis</i>	1
<i>Dytiscus semisulcatus</i>	1
<i>Hydroporus</i>	2
<i>Hydroporus gyllenhalii</i>	1
<i>Hydroporus memnonius</i>	1
<i>Hydroporus obscurus</i>	1
<i>Hydroporus palustris</i>	1
<i>Hydroporus pubescens</i>	1
<b>Gyrinidae</b> – Whirligig beetles	
<i>Gyrinus minutus</i>	4
<i>Gyrinus substriatus</i>	2
<b>Haliplidae</b> - Crawling water beetles	
<i>Haliplus fulvus</i>	2
<b>Helophoridae</b> - Grooved water scavengers	
<i>Helophorus</i>	1
<b>Hydraenidae</b> - Moss beetles	
<i>Limnebius truncatellus</i>	2
<i>Ochthebius punctatus</i>	1
<b>Scirtidae</b> - Marsh beetles	
<i>Contacyphon</i>	1
<i>Contacyphon hilaris</i>	5
<i>Contacyphon kongsbergensis</i>	1
<i>Contacyphon padi</i>	4
<b>Total</b>	<b>53</b>



*Gyrinus minutus* – a Whirligig Beetle



*Haliplus fulvus* – a Crawling Water Beetle



*Helophorus* sp. – a Grooved Water Scavenger Beetle



*Limnebius truncatellus* – a Moss Beetle



*Contacyphon padi* – a Marsh Beetle



*Dryops luridus* – a Long-toed Water Beetle



*Hydroporus pubescens* – a Diving Beetle

## Insects other than Lepidoptera

### Order Odonata – Dragonflies & Damselflies

#### Recording synopsis

49 British species, 11 VC110 species, 24.5% of British list. **2022**, 56 records of 8 species, 72.7% of VC List

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

All eight of the regularly seen species were recorded again in 2022. The number of records was lower than in 2022. Two dragonfly larvae found as bycatch in an algae sample could only be identified to genus (*Sympetrum* sp.)

Family	Species	Common Name/type	Individuals	
			Adults	Larvae
Aeshnidae	<i>Aeshna juncea</i>	Common Hawker	1	
Coenagrionidae	<i>Enallagma cyathigerum</i>	Common Blue Damselfly	8	
	<i>Ischnura elegans</i>	Blue-tailed Damselfly		5
	<i>Pyrrosoma nymphula</i>	Large Red Damselfly	14	
Lestidae	<i>Lestes sponsa</i>	Emerald Damselfly		
Libellulidae	<i>Libellula quadrimaculata</i>	Four-spotted Chaser		
	<i>Sympetrum</i> sp.	Darter Dragonfly		1
	<i>Sympetrum danae</i>	Black Darter	11	
	<i>Sympetrum striolatum</i>	Common Darter	1	2
<b>Total</b>			<b>35</b>	<b>8</b>

Most dragonfly and damselfly records each year are of adults. Recordors often fail to note the life-cycle stage, but there are always a number of larvae reported, mainly as bycatch during regular algae sampling at various locations. There are often cast skins as well as living larvae in these samples. The extendable “mask” that makes these larvae formidable predators can easily be seen on these empty larval exoskeletons.



*Pyrrosoma nymphula* – Large Red Damselfly, larval mask



*Sympetrum danae* – Black Darter, recently emerged



## Insects other than Lepidoptera



*Enallagma cyathigerum* - Common Blue Damselfly, note pattern on caudal lamellae ("tails")



*Enallagma cyathigerum* - Common Blue Damselfly (F), note spine, on the underside of S8, the only blue damselfly to have this



*Enallagma cyathigerum* - Common Blue Damselfly, note "mask"



*Ischnura elegans* - Blue-tailed Damselfly



*Sympetrum danae* - Black Darter, legs all black



*Sympetrum striolatum* - Common Darter, note yellow leg stripe



*Sympetrum danae* - Black Darter (F) note the prominent spine like vulvar scale on the underside of the eighth abdominal segment (S8)



*Sympetrum striolatum* - Common Darter, dark forms of this species used to be known as the Highland Darter but are now considered as a variation of the Common Darter

## Insects other than Lepidoptera

### Order Hemiptera – True Bugs

#### Recording synopsis

1830 British species, 75 VC110 species, 4.0% of British list. **2022**, 72 records of 35 species, 46.7% of VC List

#### Summary of Hemiptera records on NBN

The Hemiptera, with the exception of those families of aquatic bugs (Corixidae, Notonectidae, Gerridae and Veliidae) have been one of those orders of insects that, to some extent, have been under-reported on NBN. Prior to 2012, when OHBR began recording and submitting data to NBN, there were 362 records of 36 species recorded on NBN for VC110. The majority of those records (362) were of aquatic bugs with just nine records of terrestrial bugs.

The number of species recorded from here showed a similar bias towards aquatic species, 31 aquatic ones compared to 5 terrestrial ones. Recording of aquatic bugs had slowed to a trickle by 2012 and although OHBR has started to record them again in small numbers the number of aquatic bug species has hardly risen at all; it now stands at 33.

Hemiptera (NBN records)	pre 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Number of records entered onto NBN database by year</b>												
Records (aquatic families)	362		1	3	4	2	3	2	5	12	28	16
Records (terrestrial families)	9	1	44	10	11	13	30	20	30	14	26	56
<b>Cumulative number of species on NBN database</b>												
Species (aquatic families)	31	31	31	32	33	33	33	33	33	33	33	33
Species (terrestrial families)	5	6	24	25	26	26	32	35	38	42	46	54*

For terrestrial species it is very different. There have been 255 records of terrestrial Hemiptera added to the data base since 2012 compared to just 76 for aquatic species. Whilst the number of aquatic hemiptera recorded here has remained static at just over 30, the number of known terrestrial species has gone from five to 54.

Data on the species in many of the insect orders found in the Outer Hebrides is incomplete, but there is a considerable amount of information that can be found elsewhere e.g. museum collections, scientific papers and reports. The OHBR team are working to up-date the species lists and making this information available on NBN and in published checklists. The national Caddisfly Recording Scheme organiser has done a similar gleaning exercise for Trichoptera across the UK and the NBN database is now a much more useful source of information.

There is a need for someone to do a similar job on the Hemiptera. The classic work on invertebrates of the Outer Hebrides (Waterson 1981)<sup>3</sup> lists three of the (by NBN data) “new” species found here in 2022 amongst the 154 species known for the Outer Hebrides.



*Stenodema (Brachystira) calcarata*, the two nymphs on the left have yet to develop the three conspicuous spines on the trailing edge of the hind leg that allow this species to be easily recognised (R).

## Insects other than Lepidoptera

### OHBR records of Hemiptera in 2022

Family	Species	Common Name	Sample Recorders		
			OHBR	Visitors	Total
<b>Homoptera</b>					
Aphididae	<i>Brachycolus cerastii</i>	an aphid		2	2
Psyllidae	<i>Livia juncorum</i>	a psyllid		3	3
Aphrophoridae	<i>Neophilaenus lineatus</i>	a frog hopper		5	5
	<i>Philaenus spumarius</i>	Cuckoo-Spit Insect	2	9	11
Cicadellidae	<i>Deltocephalus pulicaris</i>	a leafhopper		1	1
	<i>Evacanthus interruptus</i>	a leafhopper	1		1
	<i>Forcipata citrinella</i> <sup>1</sup>	a leafhopper		1	1
Cixiidae	<i>Cixius simplex</i>	a lacehopper		2	2
Delphacidae	<i>Javesella forcipata</i> <sup>1</sup>	a planthopper		1	1
<b>Heteroptera - terrestrial</b>					
Lygaeidae	<i>Drymus (Sylvadrymus) sylvaticus</i>	a groundbug	2		2
	<i>Scolopostethus decoratus</i>	a groundbug		1	1
	<i>Scolopostethus thomsoni</i>	a groundbug	3		3
Miridae	<i>Closterotomus norwegicus</i>	Potato Capsid	2	2	4
	<i>Leptopterna dolabrata</i>	Meadow Plant Bug	1		1
	<i>Leptopterna ferrugata</i>	a plantbug		4	4
	<i>Mecomma (Mecomma) ambulans</i>	a plantbug		1	1
	<i>Orthops (Orthops) campestris</i>	a plantbug	1		1
	<i>Pachytomella parallela</i>	a plantbug		3	3
	<i>Pithanus maerkelii</i>	a plantbug		2	2
	<i>Plagiognathus (Plagiognathus) chrysanthemi</i>	a plantbug		1	1
	<i>Stenodema (Brachystira) calcarata</i>	a plantbug	2		2
	<i>Stenodema (Stenodema) holsata</i> <sup>1</sup>	a plantbug		1	1
	<i>Trigonotylus ruficornis</i>	a plantbug		1	1
	<b>Heteroptera - shoreline</b>				
Saldidae	<i>Salda littoralis</i>	a shorebug		1	1
	<i>Saldula palustris</i>	a shorebug		1	1
<b>Heteroptera - aquatic</b>					
Corixidae	<i>Corixidae</i>	a lesser water-boatman	1		1
	<i>Hesperocorixa castanea</i>	a lesser water-boatman	5		5
	<i>Hesperocorixa sahlbergi</i>	a lesser water-boatman	1		1
	<i>Sigara (Sigara) dorsalis</i>	a lesser water-boatman	1		1
	<i>Sigara (Subsigara) scotti</i>	a lesser water-boatman	3		3
Gerridae	<i>Gerris (Gerris) odontogaster</i>	Toothed Pondskater	1		1
	<i>Gerris (Gerris) thoracicus</i>	a pondskater	1		1
Notonectidae	<i>Notonecta</i>	a greater water-boatman	1		1
	<i>Notonecta (Notonecta) obliqua</i>	a greater water-boatman	1		1
Veliidae	<i>Velia (Plesiovelia) caprai</i>	Water Cricket	1		1
<b>Total</b>			<b>30</b>	<b>42</b>	<b>72</b>



*Evacanthus interruptus* – a leafhopper, infected by an *Entomophthora* fungus

Five local recorders and two visiting entomologists sent in 72 records of 33 species of Hemiptera in 2022. Sixteen of the records were of aquatic bugs; waterboatmen, pond skaters and water crickets. All of these came from local people but most of the the terrestrial bug records came from the two visiting entomologists. Seven of these species (shown in red above) are not on the NBN database but three are recorded in Waterston (1981)<sup>3</sup>.

<sup>3</sup> Waterston, A.R. (1981) Present knowledge of the non-marine invertebrate fauna of the Outer Hebrides. *Proceedings of the Royal Society of Edinburgh*, 79B: 215-321.



## Insects other than Lepidoptera

### Minor Orders

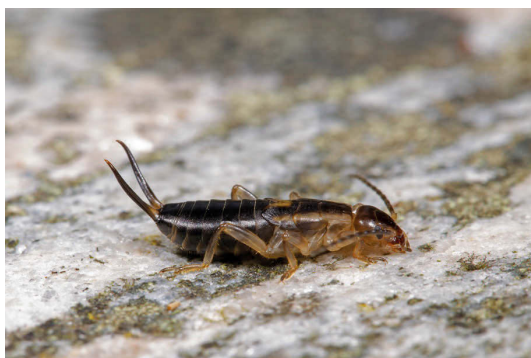
Class	Order	Family	Species	Common name/type	Total
Insecta	Archaeognatha	Machilidae	<i>Petrobius maritimus</i>	Sea Bristletail	2
	Dermaptera	Forficulidae	<i>Forficula auricularia</i>	Common Earwig	13
	Ephemeroptera	Baetidae	<i>Cloeon simile</i>	a mayfly	2
		Caenidae	<i>Caenis luctuosa</i>	Angler's Curse	3
		Leptophlebiidae	<i>Leptophlebia vespertina</i>	a mayfly	4
				Alderflies	-
	Megaloptera			Lacewings	-
	Neuroptera			Grasshoppers etc.	-
	Orthoptera				-
	Plecoptera	Nemouridae	<i>Nemoura cinerea</i>	a stonefly	7
	Psocoptera	Ectopsocidae	<i>Ectopsocus petersi</i>	a barkfly	1
		Paracaeciliidae	<i>Chilenocaecilius ornatipennis</i>	a barkfly	1
		Trogiidae	<i>Cerobasis guestfalica</i>	a barkfly	2
	Siphonaptera			Fleas	-
Collembola	Collembola	Neanuridae	<i>Anurida maritima</i>	a springtail	1
	Entomobryomorpha	Tomoceridae	<i>Pogonognathellus longicornis</i>	a springtail	1
	Symphyleona	Sminthuridae	<i>Sminthurus viridis</i>	a springtail	1
<b>Total</b>					<b>38</b>

Thirty-eight species of insects (including Collembola even though they are now considered a separate Class of Arthropod) were recorded in 2022 by eight recorders. No records of Orthoptera, Neuroptera, Megaloptera or Siphonaptera were received.

### Order Dermaptera – Earwigs & Cockroaches

#### Recording synopsis

7 British species, 1 VC110 species, 14.3% of British list. **2022**, 14 records of 1 species, 100% of VC List



*Forficula auricularia* – Common Earwig

As always, the Common Earwig was the most frequently recorded of all insects belonging to the minor orders. But, after it's heady fame of 2021, where it topped the "most frequently recorded organism" league table, in 2022 it came in a distant joint 137<sup>th</sup>. Finishing alongside the delightfully named Flat-topped Bog-moss and Bog-moss Flapwort but also alongside the better known Emperor Moth and Yellow Iris on 13 records.

### Order Ephemeroptera – Mayflies

#### Recording synopsis

51 British species, 11 VC110 species, 19.6% of British list. **2022**, 9 records of 3 species, 27.3% of VC List



*Caenis luctuosa* – Angler's Curse, 100s in moth trap 8<sup>th</sup> June

The only mayfly recorded at an adult stage was the Angler's Curse (*Caenis luctuosa*) which appeared at one of the moth trap locations in a number of mass emergence episodes in June. The total numbers must be in the many 1000s as outside walls under lighted windows or outside lights are often covered in mayflies. The other two species recorded, *Cloeon simile* and *Leptophlebia vespertina*, were both found as larvae amongst other bycatch during algae sampling at a number of locations.

## Insects other than Lepidoptera



*Cloeon simile* – a mayfly larva



*Leptophlebia vespertina* – a forked-gill mayfly larva

### Order Plecoptera – Stoneflies

#### Recording synopsis

34 British species, 11 VC110 species, 26.5% of British list. **2022**, 7 records of 1 species, 9.1% of VC List

Just one species, *Nemoura cinerea*, recorded in 2022. It can be found in moth traps and on outside walls where it perhaps was attracted to lighted windows or exterior lights. The very granular appearance of the pronotum (often thought of as the thorax) is a good field clue as to its identification.



*Nemoura cinerea* – a stonefly, adult (L) and larva (R), the larva is commonly found in slow flowing water, ditches and at margins of small ponds and other bodies of water

### 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

Prior to 2019 there were no records of any Psocoptera from the Outer Hebrides, we are now up to four species with the addition of *Ectopsocus petersi* to the list.



*Ectopsocus petersi* – a barkfly, new to VC110



*Cerobasis guestfalica* – a barkfly

## Insects other than Lepidoptera

### Order Archaeognatha – Bristletails

#### Recording synopsis

7 British species, 2 VC110 species, 28.6% of British list. **2022**, 2 records in 2022 of 1 species, 50% of VC List

Two records in 2022 of *Petrobius maritimus* (Sea Bristletail), one from Benbecula the other was found on Mingulay. It can be found away from the sea despite both its scientific and common names suggesting otherwise. There is a single record of *Petrobius brevistylis* from St. Kilda (2010) so specimens should be checked carefully to see if there are indeed *Petrobius maritimus*.



*Petrobius maritimus* – Sea Bristletail, a key confirmatory character is the, hard to see, dark line between the eye and the op of the mandibles, arrowed on right.

### Class Collembola – Springtails

#### Recording synopsis

250 British species, 10 VC110 species, 28.6% of British list. **2022**, 3 records of 3 species in 2022, 1 new to NBN, 30.0% of VC List



*Pogonognathellus longicornis* – a springtail

Single records of three species in 2022; *Anurida maritima*, *Pogonognathellus longicornis* and *Sminthurus viridis*. The last of these species has no previous records on NBN. The other two have previous records with *Anurida maritima* being our most frequently recorded species and is often found in huge rafts of 1000s on the seashore.

Collembola are another of the under-recorded groups that require some work. There are just 54 previous records of nine species for the Outer Hebrides on NBN; Waterston (1981) lists 45 species.

Of the nine species previously on NBN, seven (shown in red) haven't been recorded since 1933.



*Pogonognathellus longicornis* – a springtail

VC110 Species (NBN data)	Records
<i>Anurida maritima</i>	33
<i>Pogonognathellus longicornis</i>	4
<i>Tomocerus minor</i>	4
<i>Hypogastrura viatica</i>	3
<i>Folsomia fimetaria</i>	2
<i>Folsomia quadrioculata</i>	2
<i>Lepidocyrtus cyaneus</i>	2
<i>Pseudachorutella asigillata</i>	2
<i>Pseudosinella alba</i>	2
<i>Sminthurus viridis</i>	1 - New
<b>Total</b>	<b>55</b>



## Other invertebrates

### Invertebrates other than Insects

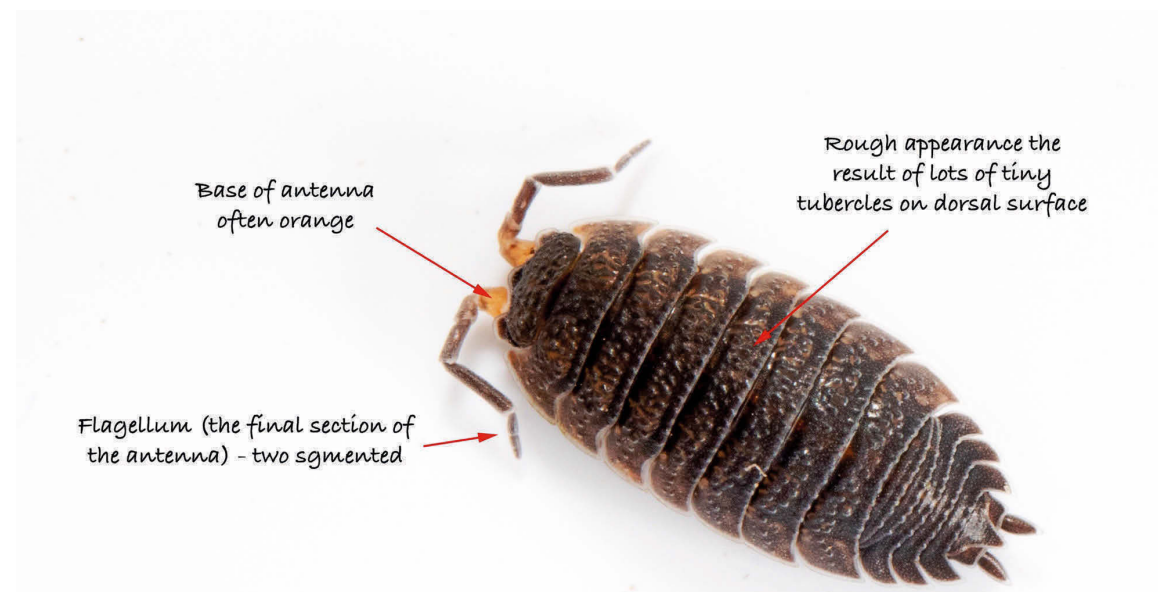
Twenty recorders submitted 127 records of 83 different species in 2022, fewer recorders produced the same number of species as in 2021. The total number of records well below the 287 found in 2017 though the number of species found is almost up to 2017 levels. Twelve people submitted records of species of terrestrial invertebrates (other than insects), thirteen sent in records of marine species (down from 21 in 2021) and just four sent in records of freshwater species.

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

### Other invertebrates - terrestrial species

Sixty-eight records of 40 species were sent in by recorders. This is a considerable increase compared to 2021 when there were 59 records but of only of 27 species. Three recorders, one resident and two visitors, sent in 75% of the records. One of the visiting naturalists sent in all the gall midge records, the other visitor submitted many of the spider records, once again indicating the value of visiting naturalists who have complementary skills to those of the resident recorders.

Twenty-four of the 40 species were recorded just once and only two woodlice, *Oniscus asellus* (Common Shiny Woodlouse) and *Porcellio scaber* (Common Rough Woodlouse), and a snail, *Cornu aspersum* (Common Garden Snail), were recorded four or more times.



*Porcellio scaber*- Common Rough Woodlouse



## Other invertebrates

### Records of terrestrial invertebrates in 2022

Phylum	Class	Order	Species	Common Name / type	Records		
Arthropoda	Arachnida	Araneae	<i>Tegenaria domestica</i>	Common House Spider	2		
			<i>Textrix denticulata</i>	a spider	2		
			<i>Amaurobius similis</i>	a spider	2		
			<i>Araneus diadematus</i>	Garden Spider	2		
			<i>Larinioides cornutus</i>	a spider	1		
			<i>Clubiona phragmitis</i>	a spider	1		
			<i>Clubiona trivialis</i>	a spider	1		
			<i>Erigone longipalpis</i>	a spider	1		
			<i>Erigone promiscua</i>	a spider	1		
			<i>Halorates reprobus</i>	a spider	2		
			<i>Oedothorax retusus</i>	a spider	1		
			<i>Arctosa perita</i>	a spider	1		
			<i>Pardosa pullata</i>	a spider	1		
			<i>Pirata piraticus</i>	a spider	1		
			<i>Pholcus phalangioides</i>	Cobweb Spider	1		
			<i>Segestria senoculata</i>	a spider	2		
			<i>Metellina merianae</i>	a spider	3		
			<i>Metellina segmentata</i>	a spider	2		
			<i>Tetragnatha extensa</i>	a spider	1		
			Ixodida	<i>Ixodes (Ixodes) ricinus</i>	Castor Bean Tick	1	
		Opiliones	<i>Nemastoma bimaculatum</i>	a harvestman	1		
			<i>Mitopus morio</i>	a harvestman	2		
			<i>Rilaena triangularis</i>	a harvestman	1		
		Trombidiformes	<i>Aceria euaspis</i>	a gall mite	1		
			<i>Aceria thomasi</i>	a gall mite	3		
			<i>Cecidophyes rouhollahi</i>	a gall mite	1		
			<i>Eriophyes pyri</i>	a gall mite	1		
			<i>Phyllocoptes populi</i>	a gall mite	2		
			Trombidiidae (Family)	a red spider mite	1		
			Chilopoda	Lithobiomorpha	<i>Lithobius (Lithobius) melanops</i>	a centipede	1
		Diplopoda	Polydesmida	<i>Polydesmus angustus</i>	Common Flat-backed Millipede	1	
		Isopoda		<i>Oniscus asellus</i>	Common Shiny Woodlouse	4	
				<i>Philoscia muscorum</i>	Common Striped Woodlouse	1	
		Mollusca	Gastropoda	Pulmonata	<i>Porcellio scaber</i>	Common Rough Woodlouse	6
					<i>Cornu aspersum</i>	Common Garden Snail	5
<i>Helicella itala</i>	Heath Snail				3		
<i>Ambigolimax valentianus</i>	Iberian Threeband Slug				2		
<i>Limacus maculatus</i>	Green Cellar Slug				1		
<i>Milax gagates</i>	Smooth Jet Slug				1		
<i>Oxychilus (Oxychilus) cellarius</i>	Cellar Snail				1		
Total				68			



*Oniscus asellus* – Common Shiny Woodlouse, note the three segmented flagellum

## Other invertebrates



*Clubiona phragmitis* – just 2 pre 1980 records (St Kilda & Barra) before being found at Loch Carnan, South Uist in May 2022



*Polydesmus angustus* - Common Flat-backed Millipede, 16 records going back to 1971, all recent records are from S.Uist



*Amaurobius similis* – a few scattered records throughout VC110, the inset show the palp, key to the identification of many spiders



*Oxychilus (Oxychilus) cellarius* - Cellar Snail, 54 records from across VC110 including St. Kilda and Mingulay



*Rilaena triangularis* – 6 records on NBN but very under-recorded



*Milax gagates* - Smooth Jet Slug, 69 records across VC110, only three since 2012



*Mitopus morio* – 66 NBN records scattered throughout VC110



*Ambigolimax valentianus* - Iberian Threeband Slug, no previous VC110 records and only 4 in Scotland north of the Great Glen

## Other invertebrates

### Other invertebrates – freshwater species

Eight recorders sent in sightings of freshwater invertebrates (other than insects). In total there were sixteen records of eleven taxa. The records were largely of bycatch from routine sampling of algae.

Phylum	Class	Order	Species	Common Name / type	Records
Arthropoda	Branchiopoda	Diplostraca	<i>Eurycercus (Eurycercus) lamellatus</i>	a water flea	1
			<i>Alonopsis elongata</i>	a waterflea	2
	Malacostraca	Amphipoda	<i>Gammarus duebeni</i>	a freshwater shrimp	1
	Maxillopoda	Harpacticoida	<i>Harpacticoida</i> incertae sedis	a copepod	1
Mollusca	Gastropoda	Hydrophila	<i>Ampullaceana balthica</i>	Wandering Snail	5
		Littorinimorpha	<i>Potamopyrgus antipodarum</i>	Jenkins' Spire Snail	1
Amoebozoa	Tubulinea	Arcellinida	<i>Diffugia oblonga</i>	a testate amoeba	1
Cercozoa	Imbricatea	Euglyphida	<i>Euglypha strigosa</i>	a testate amoeba	1
Rotifera	Eurotatoria	Ploima	<i>Lecane hamata</i>	a rotifer	1
			<i>Kellicottia longispina</i>	a rotifer	1
			<i>Microcodon</i>	a rotifer	1
			Total		



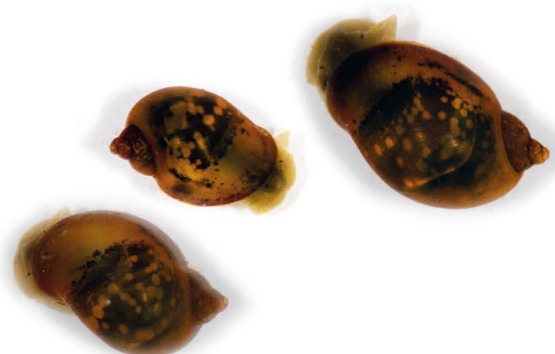
*Eurycerus (Eurycerus) lamellatus* – a freshwater crustacean.



*Alonopsis elongatus* – a waterflea, photo by Chris Johnson



*Potamopyrgus antipodarum* - Jenkins' Spire Snail



*Ampullaceana balthica* - Wandering Snail



*Lecane hamata* - a rotifer



Two testate amoeba: *Euglyphis strigosa* & *Nebela collaris*, photos by Chris Johnson



## Other invertebrates

### Other invertebrates - marine species

Phylum	Class	Order	Species	Common Name / type	Records		
Arthropoda	Malacostraca	Decapoda	<i>Corystes cassivelaunus</i>	Masked crab	1		
			<i>Pagurus bernhardus</i>	Hermit Crab	1		
			<i>Pagurus prideaux</i>	Pagurus prideaux	1		
			<i>Carcinus maenas</i>	Green Shore Crab	2		
		Maxillopoda	Lepadiformes	<i>Lepas (Anatifa) anatifera</i>	Common Goose Barnacle	2	
		Sessilia	<i>Semibalanus balanoides</i>	Acorn Barnacle	1		
Cnidaria	Anthozoa	Actiniaria	<i>Actinia equina</i>	Beadlet anemone	3		
			<i>Adamsia palliata</i>	Cloak anemone	1		
	Hydrozoa	Anthoathecata	<i>Velella velella</i>	By-the-wind-sailor	2		
	Scyphozoa	Semaestomeae	<i>Cyanea capillata</i>	Lion's Mane Jellyfish	1		
			<i>Chrysaora hysoscella</i>	Compass jellyfish	1		
Ctenophora	Tentaculata	Cydidippida	<i>Pleurobrachia pileus</i>	Sea Gooseberry	1		
Echinodermata	Asteroidea	Paxillosida	<i>Astropecten irregularis</i>	Sand Star	2		
		Spinulosida	<i>Henricia oculata</i>	Bloody Henry Starfish	1		
Mollusca	Bivalvia	Euheterodonta	<i>Ensis magnus</i>	a razor fish	1		
		Pectinoida	<i>Talochlamys pusio</i>	Humpback Scallop	1		
		Veneroida	<i>Cerastoderma edule</i>	Common Cockle	1		
			<i>Mactra stultorum</i>	Rayed Trough Shell	1		
			<i>Macoma balthica</i>	Baltic Tellin	1		
			<i>Macomangulus tenuis</i>	Thin Tellin	1		
			<i>Chamelea striatula</i>	Striped Venus	1		
			<i>Venerupis corrugata</i>	Pullet Carpet Shell	1		
			Gastropoda	Littorinimorpha	<i>Littorina littorea</i>	Common Periwinkle	2
					<i>Littorina obtusata</i>	Flat Periwinkle	3
				<i>Littorina saxatilis/arcana</i>	Rough Periwinkle	1	
		Neogastropoda	<i>Nucella lapillus</i>	Dog Whelk	1		
				<i>Tritia reticulata</i>	Netted Dog Whelk	1	
			Nudibranchia	<i>Doris pseudoargus</i>	Sea Lemon	2	
				<i>Goniodoris nodosa</i>	Goniodoris nodosa	1	
		Patellogastropoda		<i>Patella vulgata</i>	Common Limpet	2	
		Vetigastropoda		<i>Steromphala cineraria</i>	Grey Top Shell	1	
			<i>Steromphala umbilicalis</i>	Flat Top Shell	1		
Total				43			

Thirteen observers sent in 43 records of 32 species of marine invertebrates. There are fewer of those perennial sea-shore favourites, Goose Barnacles, By-the-wind Sailors and jellyfish of various sorts reported for 2022 but more shells of various types, 16 in total plus a couple of Nudibranchs (Sea Slugs). A single beach on Lewis on one day in October produced twelve of the sixteen shells, perhaps adopt a local beach and see how many different species you can find on it over 2023?



*Pleurobrachia pileus* - Sea Gooseberry, North Uist, August 2022



*Chrysaora hysoscella* - Compass jellyfish, North Uist, August 2022



## Other invertebrates



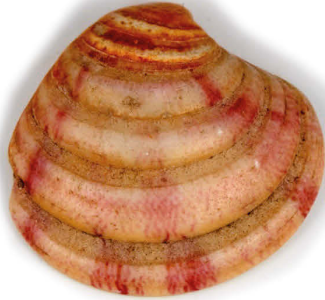
*Henricia oculata* - Bloody Henry Starfish, South Uist, August 2022

**Shell Challenge 2023** - We've all walked along a nice sandy beach picking up shells and naming those we can. But if you find one of those shelly treasure troves between the rocks at the end of the beach, where all the periwinkles get washed up and where you look for Cowries, there are some really nice finds to be made. Probably shells we are less familiar with; some are quite small and will need searching for. All the shells on the next two pages were found here during years of looking for shells – see what you can find and record for us.





## Other invertebrates



Width 20mm



Width 42mm



Length 26mm

Width 38mm



Length 22mm



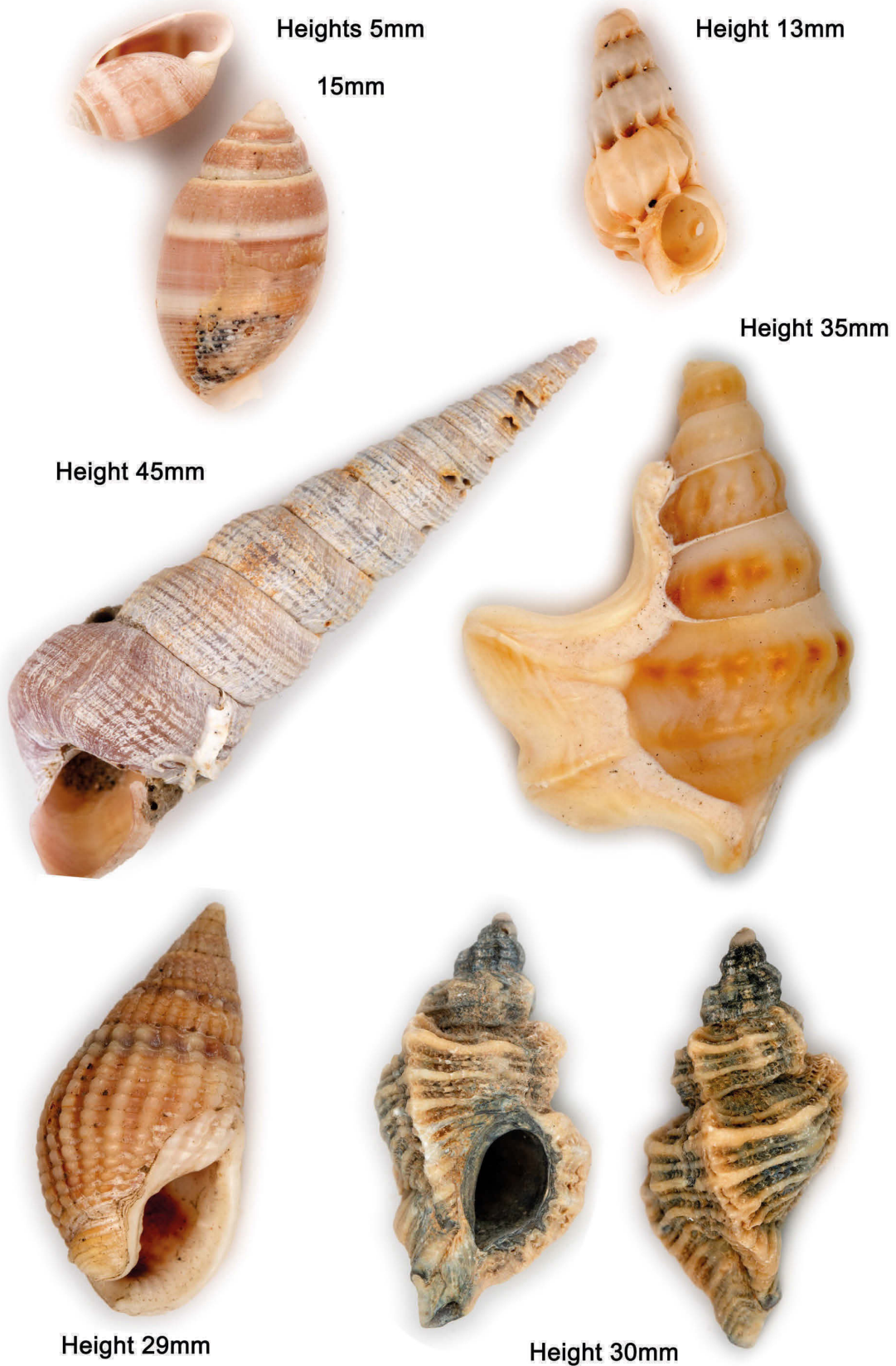
Lengths 31mm & 40mm



Clockwise from top left: Banded Venus (*Clausinella fasciata*), Jingle Shell (*Anomia simplex*), Keyhole Limpet (*Diodora graeca*), Woody Canoe-bubble (*Scaphander lignarius*), Hungarian Bonnet Shell (*Capulus ungaricus*), Faroe Sunset Shell (*Gari fervensis*)



## Other invertebrates



Clockwise from top left: Beerbarrel Shell (*Acteon tornatilis*), Wentletrap (*Epinotium clathrus*), Pelican's Foot (*Aphorrhais pespelecani*), Sting Winkle (*Ocenebra erinaceus*), Netted Dog Whelk (*Tritia reticulata*), Tower Shell (*Turritellinella tricarinata*)

## Vertebrates

### Vertebrates

The overall level of recording was broadly similar to that seen in 2020 and 2021. Once again, more individuals (39) contribute to recording vertebrates than to most other taxonomic groups. The total number of vertebrate records (141) was disappointingly low though. Of the 28 species of vertebrate recorded in 2022 thirteen were of marine animals, whales, dolphins, seals and fish – many of them sadly as casualties found on beaches. Two of the most frequently recorded species overall though were Common Frog (28 records) and Otter (26 records), “crossover species” associated with both terrestrial and aquatic habitats. Of the purely terrestrial species Hedgehog (20 records) was the most frequently seen.

	Vertebrate records received					
	2017	2018	2019	2020	2021	2022
<b>Records</b>	160	158	171	137	153	141
<b>Species</b>	36	29	31	30	31	28
<b>Recorders</b>	46	34	49	38	39	39

Type of animal	Species	Common name	Road casualties, strandings or otherwise found dead	Droppings, footprints, runs or other signs	Trapped	General observation	Total
<b>Fish</b>							
Bony fish	<i>Gasterosteus aculeatus</i>	Three-spined Stickleback				2	2
Sharks, rays etc.	<i>Scyliorhinus canicula</i>	Lesser Spotted Dogfish		2		1	3
	<i>Dipturus batis</i>	Skate		1			1
	<i>Dipturus intermedia</i>	Flapper Skate	2				2
	<i>Squalus acanthias</i>	Spurdog	1				1
<b>Amphibian</b>							
Toad	<i>Bufo bufo</i>	Common Toad				3	3
Frog	<i>Rana temporaria</i>	Common Frog				28	28
<b>Reptile</b>							
Lizard	<i>Anguis fragilis</i>	Slow-worm				2	2
<b>Mammal</b>							
Deer	<i>Cervus elaphus</i>	Red Deer	2			4	6
Carnivore	<i>Lutra lutra</i>	Eurasian Otter	1	7		13	21
	<i>Mustela putorius subsp. furo</i>	Feral Ferret		1		1	2
	<i>Halichoerus grypus</i>	Grey Seal	2			1	3
Whales & dolphins	<i>Phoca vitulina</i>	Harbour Seal				1	1
	<i>Delphinus delphis</i>	Common Dolphin	1			6	7
	<i>Grampus griseus</i>	Risso's Dolphin				1	1
	<i>Lagenorhynchus acutus</i>	Atlantic White-sided Dolphin				2	2
	<i>Lagenorhynchus albirostris</i>	White-beaked Dolphin	1				1
	<i>Stenella coeruleoalba</i>	Striped Dolphin				2	2
	<i>Tursiops truncatus</i>	Bottle-Nosed Dolphin	1				1
	<i>Phocoena phocoena</i>	Common Porpoise				4	4
	<i>Balaenoptera acutorostrata</i>	Minke Whale				1	1
	<i>Erinaceus europaeus</i>	West European Hedgehog	20		1	5	26
Insectivores	<i>Sorex minutus</i>	Eurasian Pygmy Shrew	3			1	4
Rabbits & hares	<i>Lepus</i>	Hare				1	1
	<i>Oryctolagus cuniculus</i>	European Rabbit	1			9	10
Rodents	<i>Microtus agrestis</i>	Field Vole	2			4	6
	<i>Apodemus sylvaticus</i>	Wood Mouse			1		1
	<i>Mus musculus</i>	House Mouse				2	2
	<i>Rattus norvegicus</i>	Brown Rat	1		3	1	4
<b>Total</b>			<b>38</b>	<b>11</b>	<b>5</b>	<b>95</b>	<b>149</b>

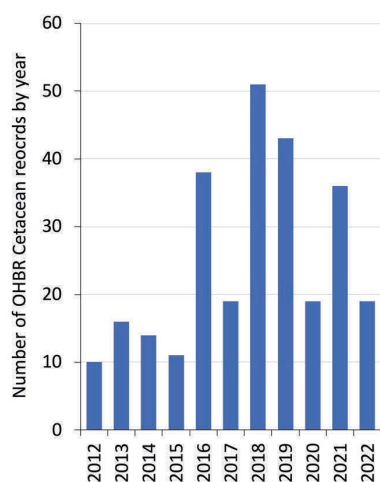
## Vertebrates

### Mammals – Cetaceans

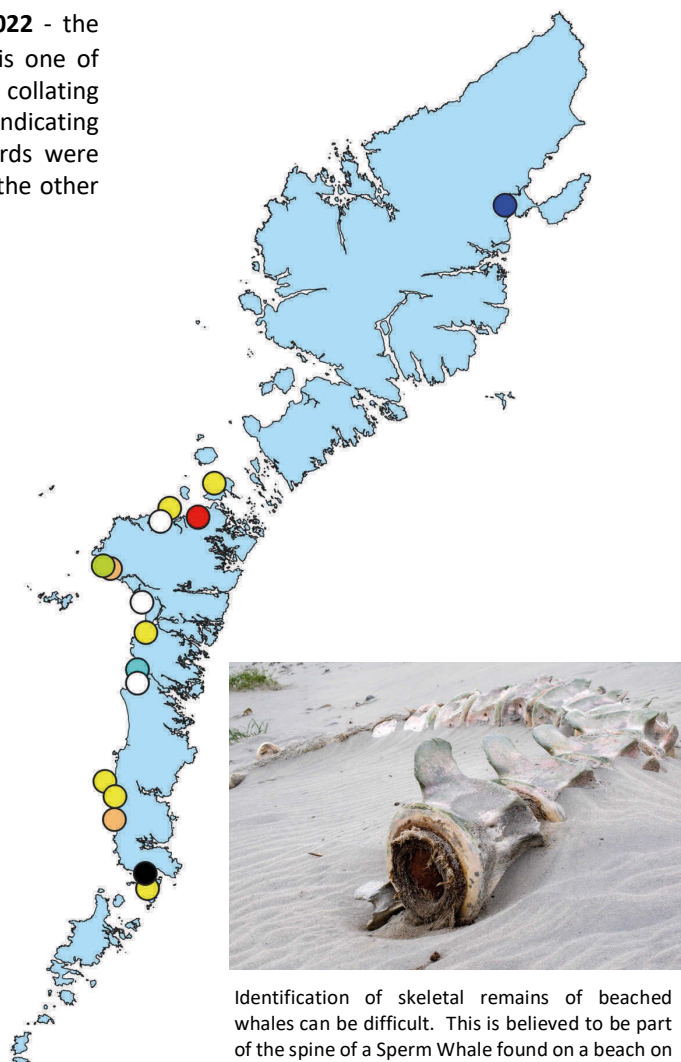
Particularly striking is the low number of records of the larger cetaceans (whales in common parlance) recorded in 2022; just a single sighting of a Minke Whale. In some respects, the low number of records might be considered good news as many, especially of the larger species, are usually recorded as beached carcasses.

Key	Common Name	Location	Date	Comments
	Atlantic White-sided Dolphin	Clachan Sands, North Uist	07/02/2022	Almost certainly two independent reports of the same animal
		Clachan Sands, North uist	08/02/2022	
	Bottle-Nosed Dolphin	Borve, Benbecula	01/05/2022	Dead on the shore
	Common Dolphin	Rubha Ardvule, South Uist	09/02/2022	
		Kildonan, South Uist	01/03/2022	
		Eriskay	22/09/2022	
		Princes Strand, Eriskay	24/09/2022	
		Balivanich, Benbecula	02/02/2022	
		Grenitote, North Uist	28/07/2022	
		Traigh Iar, Berneray, Harris	14/02/2022	
	Common Porpoise	Balgarva, South Uist	29/10/2022	3 Feeding offshore at Balgarva
		Balgarva, South Uist	02/12/2022	3 Feeding offshore at Balgarva
		Baleshare, North Uist	06/07/2022	
		Malaclet, North Uist	05/01/2022	
	Minke Whale	Port Scolpaig, North Uist	12/06/2022	
	Risso's Dolphin	Eriskay causeway	15/08/2022	
	Striped Dolphin	Askernish, South Uist	07/01/2022	
		Paiblesgarry, North Uist	15/07/2022	
	White-beaked Dolphin	Stornoway, Lewis	12/09/2022	Adult female stranded and died

**Location of OHBR Cetacean records for 2022** - the total of nineteen records of eight species is one of the lowest returns since OHBR began collating records. Two of the records had comments indicating they were of stranded animals, two records were noted as being alive offshore. It's possible the other records could have been in either category.



The number of cetacean records recorded by OHBR seems to be in decline after a peak in 2018-2019.



Identification of skeletal remains of beached whales can be difficult. This is believed to be part of the spine of a Sperm Whale found on a beach on the west side of South Uist in 2021.

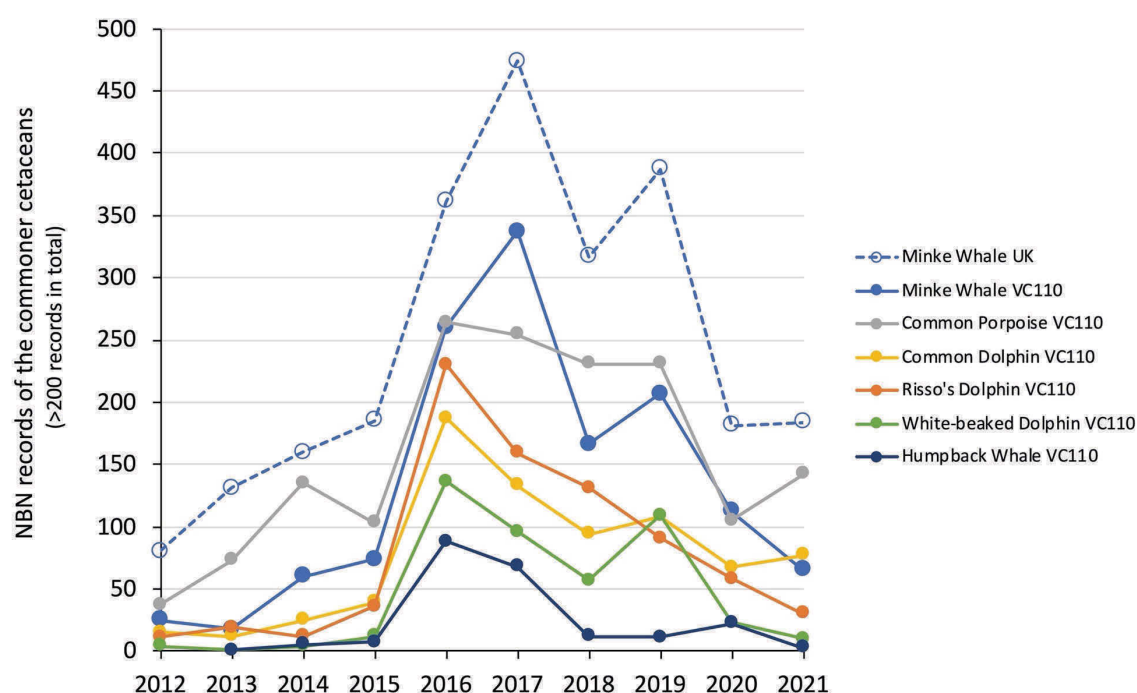


## Vertebrates

As ever it is difficult to know whether a decline in the number of records is the result of real population change, a change in the pattern of how cetaceans are using the areas around our coasts or just reduced recorder activity. Checking the cetacean records for the Outer Hebrides on NBN shows a similar pattern of changing numbers of records by year as is seen for the OHBR records on the graph above. Peak recording of the commoner species appears to have been between 2016 and 2019. The number of records per year is now returning to levels seen pre-2016. There are few data on NBN for 2022 as yet so the graph below only includes records to the end of 2021.

Species	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Common Dolphin		1	2	2	3	5	11	9	3	14	7	56
Common Porpoise	2	3	5	2	7	2	5	9	1	9	4	53
Minke Whale	1	2			5	2	10	11	1	5	1	46
Risso's Dolphin	2	1		2	5	2	4	1	1	3	1	24
Bottle-nosed Dolphin	4	6			1	2	1	2	2	1	1	20
Long-finned Pilot Whale		1	2	2	3	1	2	3	2	1		17
Cuvier's Beaked Whale			4			1	10		1			16
White-beaked Dolphin					4	1	5		2	1	1	14
Sperm Whale		1		1	1	1	1	2	3	1		12
Striped Dolphin		1	1	1	1		1	3	1		2	9
Orca (Killer Whale)	1			1				2		1		7
Humpback Whale					6							6
Atlantic White-sided Dolphin					2			1	1		2	4
Sowerby's Beaked Whale						2						2
Fin Whale									1			1
Northern Bottlenose Whale							1					1
<b>Records</b>	<b>10</b>	<b>16</b>	<b>14</b>	<b>11</b>	<b>38</b>	<b>19</b>	<b>51</b>	<b>43</b>	<b>19</b>	<b>36</b>	<b>19</b>	<b>288</b>
<b>Species</b>	<b>5</b>	<b>8</b>	<b>5</b>	<b>7</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>10</b>	<b>12</b>	<b>9</b>	<b>8</b>	<b>16</b>

One of the eagerly anticipated delights on a ferry crossing to or from the Outer Hebrides is the chance of seeing porpoises, dolphins or if really lucky one of the larger whales such as a Minke Whale. If the evidence of the records is correct it seems we are less likely to see them now. Ferry crossings can be a good source of cetacean records and I would encourage all of us to watch carefully and send in records of those you see.



## Vertebrates

### Other Mammals

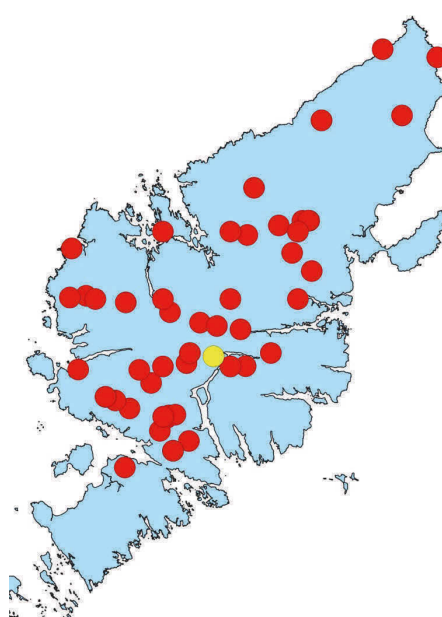
Eighty-eight records of thirteen species of mammals (other than cetaceans) were received in 2022. This seems roughly in line with the level of recording in recent years but well below the peak of 168 records in 2014. It's hard to identify trends in populations from these data. It is likely that there is an element of observer fatigue which may account for a reluctance to note some of the more common species such as Rabbit and Brown Rat.

Common name	Scientific name	pre 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Otter	<i>Lutra lutra</i>	117	27	23	37	5	53	40	31	28	38	16	21	415
Hedgehog	<i>Erinaceus europaeus</i>	1	1	13	61	26	16	9	10	32	18	20	26	207
European Rabbit	<i>Oryctolagus cuniculus</i>	19	4	3	6	3	34	18	6	5	6	4	10	108
Red Deer	<i>Cervus elaphus</i>	2	1	7	28	5	8	12	16	2		1	6	82
Field Vole	<i>Microtus agrestis</i>		2	4	11	7	6	6	3	5	8	6	6	58
Grey Seal	<i>Halichoerus grypus</i>	6	3		3	2	6	10	2	8	2	9	3	51
Brown Rat	<i>Rattus norvegicus</i>	1	2	4	5	2	2	1	7	9	7	9	5	49
Pygmy Shrew	<i>Sorex minutus</i>	1	2	5	3	1		4		8	5	4	4	33
Feral Ferret	<i>Mustela putorius furo</i>	1	1	2	8	4	4	1	10				2	31
Mountain Hare	<i>Lepus timidus</i>	1	4	3	4	1	8	1	1	6				29
Harbour (Common) Seal	<i>Phoca vitulina</i>		1	1	1	6	1	2	2	5	1	1	1	21
Wood Mouse	<i>Apodemus sylvaticus</i>	2	1				1				2	1	1	7
Pipistrelle Bat species	<i>Pipistrellus</i>	1		2		1	1				1	1		7
House Mouse	<i>Mus musculus</i>	1			1								2	4
Noctule type bat	<i>Nyctalus</i>	1												1
Walrus	<i>Odobenus rosmarus</i>	1												1
Brown Hare	<i>Lepus europaeus</i>							1						1
Hare sp.	<i>Lepus sp.</i>												1	1
American Mink	<i>Neovison vison</i>							1						1
<b>Total</b>		<b>155</b>	<b>49</b>	<b>67</b>	<b>168</b>	<b>63</b>	<b>140</b>	<b>106</b>	<b>88</b>	<b>108</b>	<b>88</b>	<b>72</b>	<b>88</b>	<b>1107</b>



*Oryctolagus cuniculus* - Rabbit

Whilst anecdotally Rabbit populations are on the increase there is still little evidence of it in the records received in 2022 with just ten observations sent in. Its now three years running without a sighting of Mountain Hare. A record of *Lepus sp.* on Lewis on 7<sup>th</sup> May 2022 was certainly well within the known range of the species but couldn't be confirmed.

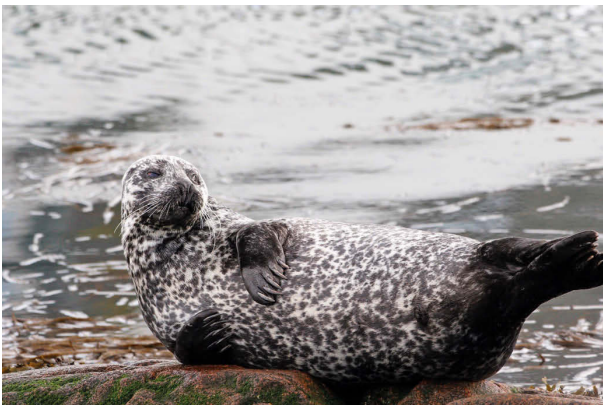


Known distribution of *Lepus timidus* - Mountain Hare, from NBN records. The yellow dot is the location of a record of *Lepus sp.* from 7th May 2022.

## Vertebrates



*Cervus elaphus* - Red Deer



*Phoca vitulina* – Harbour (or Common) Seal

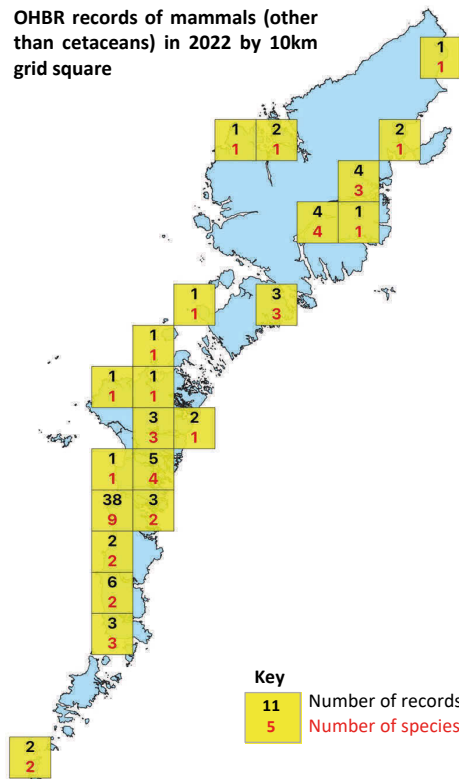


*Lutra lutra* – Otter



*Erinaceus europaeus* – Hedgehog

OHBR records of mammals (other than cetaceans) in 2022 by 10km grid square



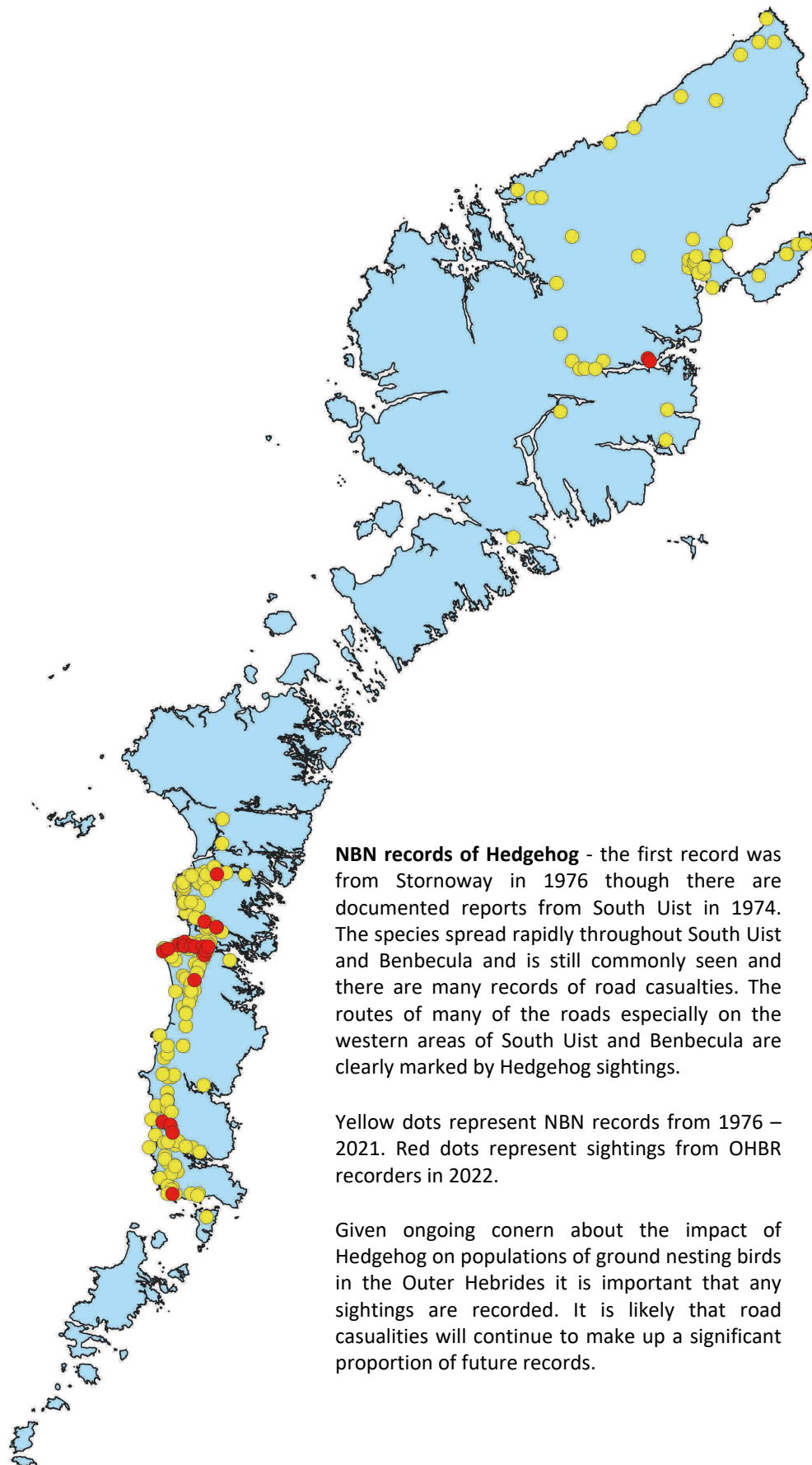
Many of the mammals known to be present here are consistently under-represented in the records submitted each year. There seems to be little enthusiasm for making notes of sightings of Grey Seal, Common Seal and Red Deer and the smaller species such as Pygmy Shrew, Field Vole and Wood Mouse are never covered well, most Pygmy Shrew sightings being of dead animals.

The two most frequently recorded mammals are Otter and Hedgehog. Otter sightings come from throughout the Outer Hebrides. Most are seen around the coast but there are always a number of inland sightings as well. There must be many more individuals that are seen by residents, holiday makers and other visitors that never end up as records submitted to OHBR. The footprints of otters are often seen on sandy beaches and the five toes and large size of the paw allow reliable identification.

Hedgehog records are mostly from South Uist and Benbecula and are of road casualties. Twenty of the twenty-six 2022 records of Hedgehog were as road casualties. A recent record from North Uist in 2021 is worrying given the effort that has been made to keep that area free of Hedgehogs to protect ground nesting waders. Equally concerning were press reports of a dead Hedgehog on Barra in June 2022.



## Vertebrates





## Vertebrates

### Amphibians – frogs, toad and newts

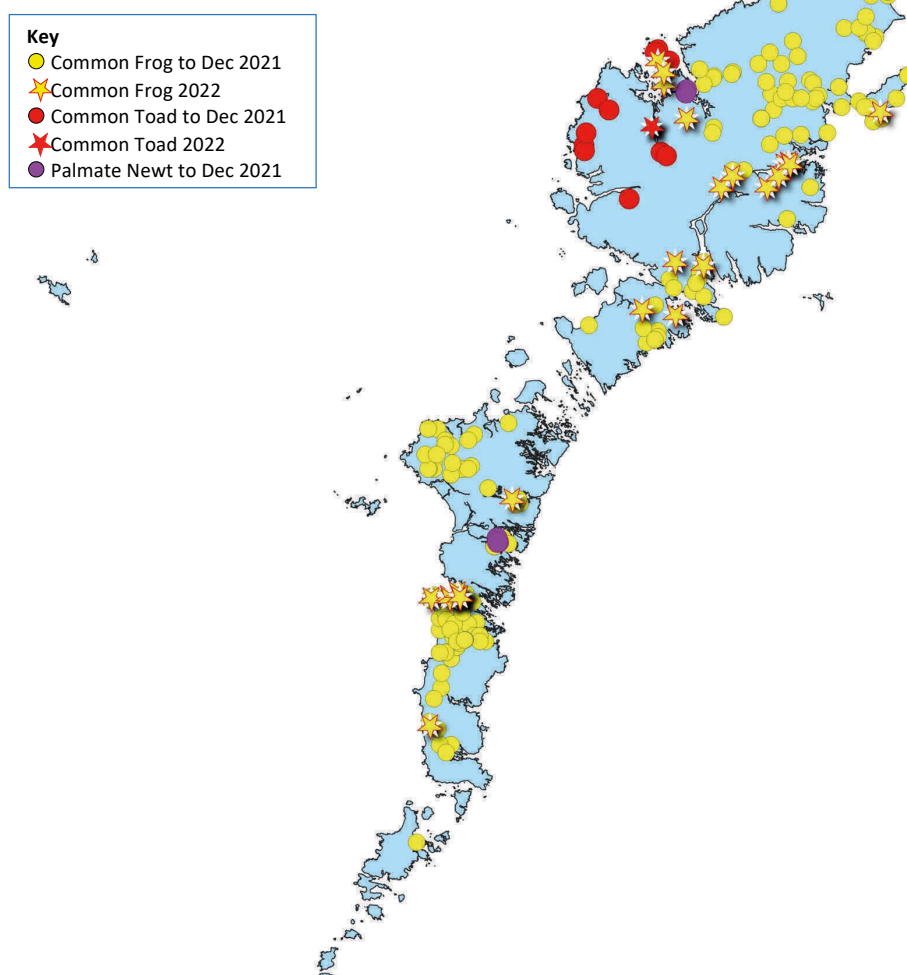
NBN has (as of 12<sup>th</sup> January 2023) 243 records of amphibians from the Outer Hebrides, 87% of these records are attributed to OHBR. The most recent record is from November 2021. They cover three species: Common Toad (*Bufo bufo*), Common Frog (*Rana temporaria*) and Palmate Newt (*Lissotriton helveticus*).

#### OHBR Records of Amphibians

Species	Scientific name	Pre 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	First record
Common Frog	<i>Rana temporaria</i>	34	6	17	24	11	16	27	12	17	7	25	28	<b>224</b>	1960
Common Toad	<i>Bufo bufo</i>	5	2			1	1						3	<b>12</b>	2008
Palmate Newt	<i>Lissotriton helveticus</i>							3	1			1		<b>5</b>	2017
Records from before 2012 are ones extracted from published books, other literature and the personal records of a number of recorders.															

All three species are thought to be the result of accidental or deliberate introductions. It's often said that some may have resulted from a curriculum change that required school pupils to look at metamorphosis. This led to teachers bringing frog spawn across from the mainland and the resultant froglets or tadpoles were then released into suitable places locally. The earliest date for Common Frog on NBN is pre-1960 and looks as if it was extracted from an atlas of amphibian distribution published in 1983 which shows both pre-1960 (Harris near Tarbert) and post-1960 (Lewis and Benbecula/North Uist) records.

#### Distribution of Amphibians in the Outer Hebrides



## Vertebrates



*Rana temporaria* – Common Frog

**Common Frog** is widely distributed throughout the Outer Hebrides. Twenty-eight records were received in 2022 scattered over most of the known range of the species, there were no records from Benbecula.

There is still just a single record from Barra, one seen at Arveenish in August 2020. Whilst records show no sign of any spread from this location it is a species that is worth looking out for on Barra.

Records of **Common Toad** are restricted to an area of south-west Lewis and north west Harris. Three records were received in 2022 from within the known range in south-west Lewis. Additional records of Common Toad from any locations would be welcomed.

**Palmate Newt** has been recorded at two locations, Grimsay and Great Bernera. There were no further records of this species in 2022. There remain, then, just three records from Grimsay in 2017 and single records from Great Bernera in 2018 and 2021. Records from either location in 2023 would be useful in confirming the continued presence of these populations



*Bufo bufo* – Common Toad

## Vertebrates

### Reptiles - lizards & turtles

Species	Scientific name	pre 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	First record
Leathery Turtle	<i>Dermochelys coriacea</i>	51			2	1		2			1	1		58	1936
Slow-worm	<i>Anguis fragilis</i>	17	1	3				4	4	2	13	4	1	52	1900
Loggerhead Turtle	<i>Caretta caretta</i>	10	1							1				12	1898
Kemp's Ridley	<i>Lepidochelys kempii</i>	1										2		3	2008
Common Lizard <sup>1</sup>	<i>Zootoca vivipara</i>	1												1	2000
Green Turtle	<i>Chelonia mydas</i>	0								1				1	2019
<b>Total</b>		<b>80</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>14</b>	<b>7</b>	<b>1</b>	<b>127</b>	

<sup>1</sup> The only record of Common Lizard is of a dead individual found at Range head, South Uist in 2000. It is thought to have come in on freight imported from the mainland.

The only records of reptiles received in 2022 were **Slow Worms**. One of these records was a late one from April 2021 seen at Glen Gravir, Lewis, and the other was from April 2022 at Achmore, Lewis.

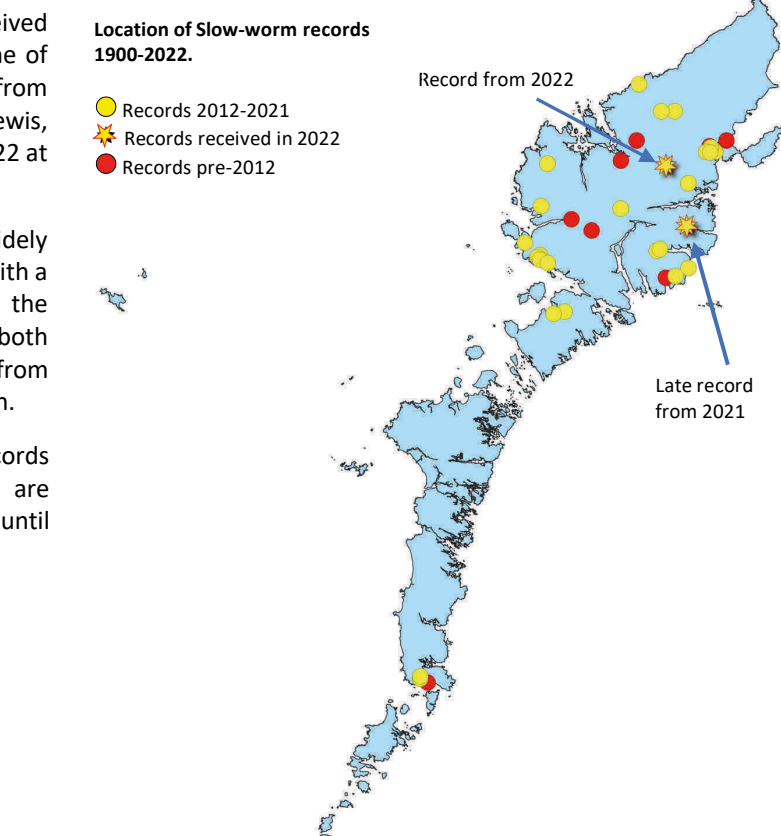
Slow worms appear to be widely distributed in Harris and Lewis with a small isolated population at the bottom of South Uist and both records submitted in 2022 were from the main Harris/Lewis population.

The peak time for Slow-worm records is July/August though there are sightings from April through until October.

Slow-worm records by month	
Month	Records
April	5
May	5
June	2
July	9
August	7
September	4
October	3

**Turtles**, no records of turtles were received in 2022.

Those from other years fall into two groups: Leathery Turtle (including "turtles") which are found in summer and into early autumn.



Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Leathery Turtle						5	6	18	15	7			58
Turtles <sup>1</sup>					1	2	2	2	1	1			13
Loggerhead Turtle	1	4	1	1		2					2	1	12
Kemp's Ridley		1									2		3
Green Turtle												1	1
<b>Total</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>8</b>	<b>20</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>87</b>

<sup>1</sup> Approximately 15% of turtle records are not identified to species, but by month they were recorded, are most likely to have been Leathery Turtles

In contrast, Loggerhead, Kemp's Ridley and Green Turtles occur mostly in autumn and winter. The lack of any turtle sightings in 2022 echoes the lack of large cetacean records. Both groups are often recorded as stranded casualties. Maybe sea conditions; tides, currents and winds in 2022 were less conducive to strandings than in other years.

## Vertebrates

### Fish

2022 was a disappointing year for fish, just nine records of five species. There were two records of Three-spined Stickleback (*Gasterosteus aculeatus*), the only “bony fish” recorded. The other seven records were of cartilaginous fish (sharks, rays, skates etc.).

Common name	Scientific name	pre	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
<b>Class Actinopterygii (Bony Fish)</b>														
Three-spined Stickleback	<i>Gasterosteus aculeatus</i>		1			2	2	1		1	4	3	2	16
Grey Trigger-fish	<i>Balistes caprisus</i>	2						1			1	3		7
European Eel	<i>Anguilla anguilla</i>			1				1	3					5
Lumpsucker	<i>Cyclopterus lumpus</i>		1							1	3			5
Sun-fish	<i>Mola mola</i>	3										1		4
Butterfish	<i>Pholis gunnellus</i>	1							1					2
Fifteen-spined Stickleback	<i>Spinachia spinachia</i>		1							1				2
Garfish	<i>Belone belone</i>										1			1
Common Dragonet	<i>Callionymus lyra</i>							1						1
Herring	<i>Clupea harengus</i>			1										1
Dab	<i>Limanda limanda</i>				1									1
Atlantic Salmon	<i>Salmo salar</i>									1				1
Brown/Sea Trout	<i>Salmo trutta</i>							1						1
Mackerel	<i>Scomber scombrus</i>			1										1
Blue-fin Tuna	<i>Thunnus thynnus</i>										1			1
<b>Total</b>		<b>6</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>9</b>	<b>7</b>	<b>2</b>	<b>49</b>
<b>Class Elasmobranchii (Cartilaginous Fish)</b>														
Basking Shark	<i>Cetorhinus maximus</i>	16		2			1		8	9	2			38
Lesser Spotted Dogfish	<i>Scyliorhinus canicula</i>			3		1	2	2	1	3	7	2	3	24
Spurdog	<i>Squalus acanthias</i>	2											1	3
Skate	<i>Dipturus batis</i>			1								1	1	3
Flapper Skate	<i>Dipturus intermedia</i>												2	2
Blonde Ray	<i>Raja brachyura</i>							1						1
Cuckoo Ray	<i>Leucoraja naevus</i>							1						1
Nursehound	<i>Scyliorhinus stellaris</i>							1						1
Spotted Ray	<i>Raja montagui</i>							1						1
Tope	<i>Galeorhinus galeus</i>											1		1
<b>Total</b>		<b>16</b>	<b>6</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>9</b>	<b>9</b>	<b>4</b>	<b>7</b>	<b>75</b>



The familiar Mermaid's Purse, an egg case of *Scyliorhinus canicular* – Lesser Spotted Dogfish

Notable amongst the Elasmobranchii were the two records of Flapper Skate (*Dipturus intermedia*). This species has only recently (in the last ten years or so) been split from the other skate species *Dipturus batis*. The egg cases are dark and very much larger than the familiar Mermaid's Purse egg case of the Lesser Spotted Dogfish (*Scyliorhinus canicula*).



## Fungi, lichens and slime moulds

### Fungi, Lichens and Slime Moulds

The 81 records submitted in 2022, mostly by local recorders, was much reduced in comparison to 2020 (1,170 records) and 2021 (1,146 records). In both of those years the overall number of records was boosted by the presence, for a few weeks each year, of specialist lichen recorders. The 81 records received in 2022 are widely but thinly scattered over much of the Outer Hebrides.

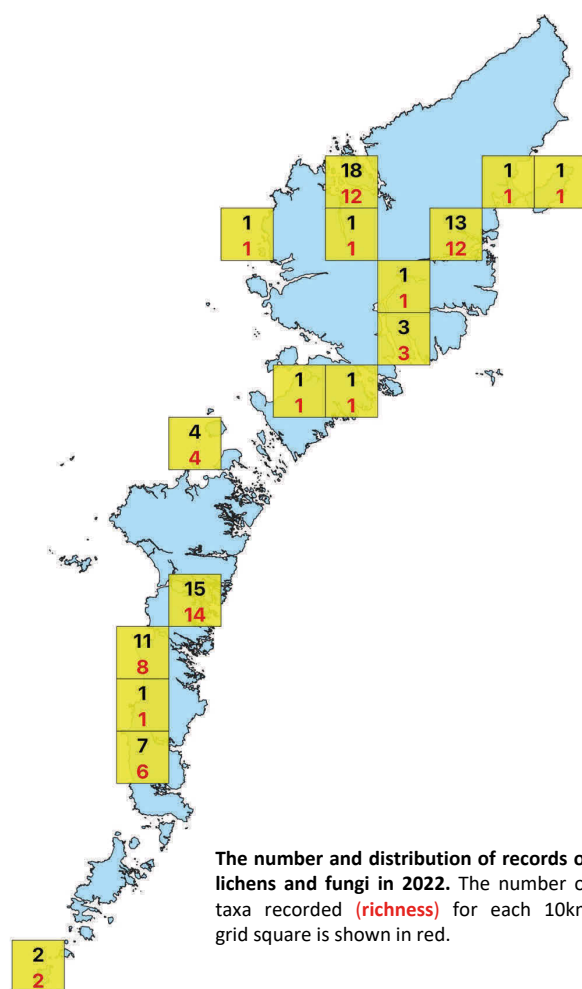
**What is a fungus?** - It's actually difficult to define what most of us think of as being a fungus. We're using the term here to include records of species within four phyla; Basidiomycota, Ascomycota, Oomycota and, as a nod to tradition, the Slimemoulds which are now regarded as Protozoa but which have long been studied by mycologists.

Phylum	Habit	Species	Records
Basidiomycota	Fungus	32	41
	Rust Fungus	4	6
Ascomycota	Lichen	9	14
	Fungus	4	9
	Mildew fungus	1	1
	Gall former fungus	1	4
	Fungi imperfecta	1	1
Oomycota	White Rust	1	2
Protozoa	Slime mould	3	3
<b>Total</b>		<b>56</b>	<b>81</b>

For some people fungus and toadstool are more or less synonymous and its within the Phylum Basidiomycota that you can find species that most would recognise as being toadstools.



*Panaeolus papilionaceus* - Petticoat Mottlegill, a typical toadstool, a stem, a cap on the top and gills underneath



Within the Basidiomycota there are other growth forms, clubs, spindles, balls, crusts and more .....



*Clavaria zollingeri* – Violet Coral, the genus *Clavaria* contains spindle, club and finger shaped fungi, most are yellow or whitish

## Fungi, lichens and slime moulds



*Lycoperdon perlatum* – Common Puffball (left), *Puccinia urticata* – Nettle Rust (middle) & *Hygrocybe punicea* – Crimson Waxcap (right) all members of the same phylum (Basidiomycota) but with very different growth forms

Phylum	Class	Order	Species	Common Name / type	Phylum	
Basidiomycota	Agaricomycetes	Agaricales	<i>Agaricus campestris</i>	Field Mushroom	1	
			<i>Agrocybe praecox</i>	Spring Fieldcap	2	
			<i>Arrhenia sphagnicola</i>	Sphagnum Navel	1	
			<i>Bolbitius titubans</i>	Yellow Fieldcap	3	
			<i>Bolbitius titubans</i> var. <i>olivaceus</i>	Yellow Fieldcap	1	
			<i>Clavaria zollingeri</i>	Violet Coral	1	
			<i>Coprinopsis nivea</i>	Snowy Inkcap	2	
			<i>Coprinus comatus</i>	Shaggy Inkcap	1	
			<i>Galerina</i>	<i>Galerina</i>	1	
			<i>Gliophorus psittacinus</i>	Parrot Waxcap	1	
			<i>Hygrocybe acutoconica</i>	Persistent Waxcap	1	
			<i>Hygrocybe ceracea</i>	Butter Waxcap	1	
			<i>Hygrocybe chlorophana</i>	Golden Waxcap	1	
			<i>Hygrocybe coccinea</i>	Scarlet Waxcap	2	
			<i>Hygrocybe conica</i>	Blackening Waxcap	2	
			<i>Hygrocybe glutinipes</i>	Glutinous Waxcap	1	
			<i>Hygrocybe pratensis</i> var. <i>pallida</i>	Pale Waxcap	1	
			<i>Hygrocybe punicea</i>	Crimson Waxcap	2	
			<i>Hygrocybe splendidissima</i>	Splendid Waxcap	1	
			<i>Hygrocybe virginea</i>	Snowy Waxcap	1	
			<i>Lepista nuda</i>	Wood Blewit	1	
			<i>Lycoperdon nigrescens</i>	Dusky Puffball	1	
			<i>Lycoperdon perlatum</i>	Common Puffball	1	
			<i>Panaeolus papilionaceus</i>	Petticoat Mottlegill	2	
			<i>Panaeolus semiovatus</i> var. <i>semiovatus</i>	Egghead Mottlegill	1	
			<i>Psilocybe semilanceata</i>	Magic Mushroom	1	
			<i>Stropharia semiglobata</i>	Dung Roundhead	1	
			Auriculariales	<i>Auricularia auricula-judae</i>	Jelly Ear	1
			Boletales	<i>Leccinum versipelle</i>	Orange Birch Bolete	1
		<i>Scleroderma citrinum</i>		Common Earthball	1	
			Polyporales	<i>Daedaleopsis confragosa</i>	Blushing Bracket	2
		<i>Ganoderma applanatum</i>		Artist's Bracket	1	
	Pucciniomycetes	Pucciniales	<i>Phragmidium violaceum</i>	Violet Bramble Rust	1	
			<i>Puccinia</i>	Rust	1	
			<i>Puccinia urticata</i>	Nettle Rust	3	
			<i>Puccinia urticata</i> s. lat.	Nettle Rust	1	
	Total				47	



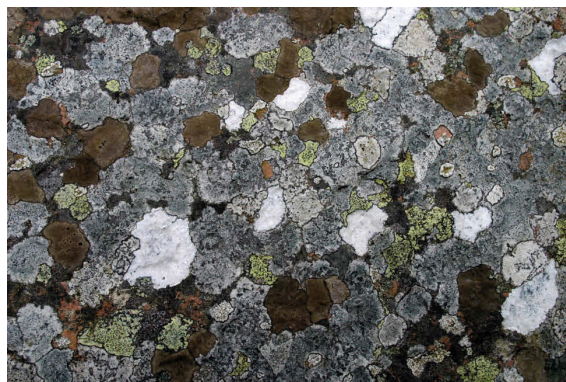
## Fungi, lichens and slime moulds

### Phylum Ascomycota

Eight of the twenty-nine species of Ascomycota recorded in 2022 are in the Class Lecanoromycetes which contains most of the lichenized fungi including two species recorded from Mingulay (*Peltigera* sp. and *Rhizocarpon geographicum*).



*Peltigera* sp. – a dog lichen



*Rhizocarpon geographicum* – the green patches, a map lichen

Phylum	Class	Order	Species	Common Name / type	Records
Ascomycota	Dothideomycetes	Pleosporales	<i>Tetraploa aristata</i>	Fungi imperfecta	1
	Lecanoromycetes	Peltigerales	<i>Lobaria pulmonaria</i>	Lungwort Lichen	3
			<i>Peltigera</i>	Dog Lichens	1
			<i>Peltigera canina</i>	a dog lichen	1
			<i>Peltigera membranacea</i>	a dog lichen	1
		Pertusariales	<i>Ochrolechia parella</i>	Crab's Eye Lichen	1
		Rhizocarpales	<i>Rhizocarpon geographicum</i>	Map Lichen	3
		Teloschistales	<i>Xanthoria parietina</i>	Common Orange Lichen	1
	Leotiomyces	Erysiphales	<i>Neoerysiphe galeopsidis</i>	Mint Mildew	1
			<i>Podosphaera epilobii</i>	a gall former on Willowherb	4
		Rhytismatales	<i>Rhytisma acerinum</i>	Sycamore Tarspot	2
			<i>Rhytisma salicinum</i>	Willow Tarspot	1
	Pezizomycetes	Pezizales	<i>Peziza ammophila</i>	Dune Cup	1
	Sordariomycetes	Hypocreales	<i>Claviceps purpurea</i>	an ergot fungus on various grasses	5
	Taphrinomycetes	Taphrinales	<i>Taphrina alni</i>	Alder Tongue (a gall former)	2
			<i>Taphrina potentillae</i>	a gall former on Tormentil	1
Total				29	



*Claviceps purpurea* - Ergot



*Rhytisma acerinum* - Sycamore Tarspot

The other Ascomycota recorded included a range of tar spot fungi, a mildew and some that are gall formers on a variety of host plants and a more conventional cup fungus (*Peziza ammophila*).



## Fungi, lichens and slime moulds

**Other “fungi” phyla** – the **Oomycota** were previously thought of as fungi but unlike them the cell wall is not composed of chitin but of celluloses and other polysaccharides. They are now classified as a separate phylum but they do have a fungus like filamentous growth form and, like most fungi, feed on decaying organic matter. Probably the best-known member of the group is *Phytophthora infestans* which causes Potato Blight. There are other genera of pest species in the group causing root rot of peas (*Aphanomyces*), a number of downy mildews (*Plasmopara*) and white rusts (*Albugo*).

Phylum	Class	Order	Species	Common Name / type	Records
Oomycota	Peronosporae	Albuginales	<i>Albugo lepigoni</i>	White Rust	2
Protozoa	Myxogastrea	Liceida	<i>Lycogala terrestre</i>	Wolf's Milk slime mould	1
		Physarida	<i>Badhamia lilacina</i>	a slime mould	1
			<i>Fuligo septica</i>	Dog Vomit slime mould	1
				<b>Total</b>	<b>5</b>

Slimemoulds have a complex lifecycle alternating between asexual and sexual stages. The part we see is usually the asexual stage and within this there are different steps and changes in appearance. There is a plasmodial stage when the slimemould exists as a multi nucleate of undifferentiated cells. This stage is able to move in an ameboid mass looking for food and the organism increase in size and the area of substrate it covers. At some point the cells start to aggregate into an aethalium where the mass starts to break up into individual spores. The outer layer often darkens and hardens as the interior breaks down into dust like spores which disperse, germinate into individual gametes, and then mate. The resulting zygote forms the next plasmodial stage which wanders around looking for food and the whole cycle starts again.



*Lycogala terrestre* - Wolf's Milk slime mould, early aethalial stage



*Lycogala terrestre* - Wolf's Milk slime mould, late aethalial stage



*Fuligo septica* - Dog Vomit slime mould, early aethalial stage

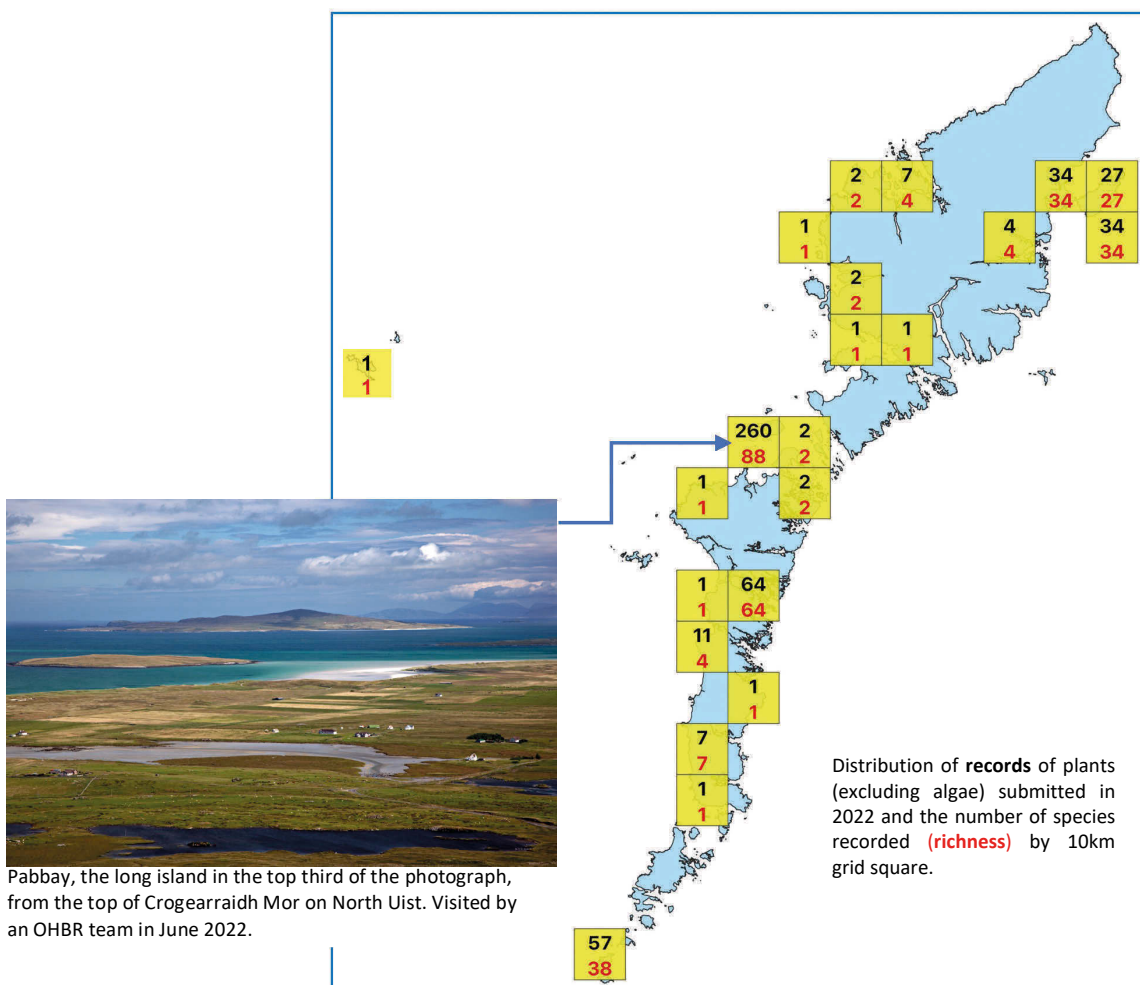


*Fuligo septica* - Dog Vomit slime mould, late aethalial stage

## Plantae – Pteridiophyta and Tracheophyta

### Plantae - Pteridiophyta and Tracheophyta

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



### 2022 in numbers

- Twenty-one recorders submitted sightings of higher plants in 2022
- After a better year in 2021 numbers of both records and recorded plant species dropped back closer to the levels seen in 2020
- Level of recording was well below those of 2017 – 2019, years which were boosted by the visits of outside botanists doing extensive survey work
- The 147 species recorded in 2022 was about 43% of the average number recorded in 2017 – 2019 (341)
- In contrast, the total number of records submitted in 2022 (521) was just 21% of the average 2017 - 2019 (2454) number of records



## Plantae – Pteridiophyta and Tracheophyta

### PHYLUM Pteridophyta - Ferns, horsetails etc.

Scientific name	Common name	2022
<i>Equisetum arvense</i>	Field Horsetail	4
<i>Equisetum fluviatile</i>	Water Horsetail	
<i>E. x litorale</i>	Shore Horsetail	
<i>Equisetum palustre</i>	Marsh Horsetail	5
<i>Equisetum pratense</i>	Shady Horsetail	
<i>Equisetum sylvaticum</i>	Wood Horsetail	
<i>Equisetum telmateia</i>	Great Horsetail	
<i>Equisetum variegatum</i>	Variegated Horsetail	
<i>Hymenophyllum wilsonii</i>	Wilson's Filmy-fern	
<i>Botrychium lunaria</i>	Moonwort	1
<i>Ophioglossum azoricum</i>	Small Adder's-tongue	
<i>Ophioglossum vulgatum</i>	Adder's-tongue	1
<i>Osmunda regalis</i>	Royal Fern	1
<i>Asplenium adiantum-nigrum</i>	Black Spleenwort	
<i>Asplenium marinum</i>	Sea Spleenwort	
<i>Asplenium ruta-muraria</i>	Wall-rue	
<i>Asplenium trichomanes</i>	Maidenhair Spleenwort	1
<i>Asplenium viride</i>	Green Spleenwort	
<i>Athyrium filix-femina</i>	Lady-fern	2
<i>Blechnum spicant</i>	Hard-fern	2
<i>Ceterach officinarum</i>	Rustyback	
<i>Cryptogramma crispa</i>	Parsley Fern	
<i>Cystopteris fragilis</i>	Brittle Bladder-fern	
<i>Dryopteris aemula</i>	Hay-scented Buckler-fern	1
<i>Dryopteris affinis</i>	Scaly Male-fern	
<i>Dryopteris affinis affinis</i>	Buckler-Fern	
<i>Dryopteris borrieri</i>	Borrer's Scaly Male Fern	
<i>Dryopteris cambrensis</i>	Narrow Scaly Male Fern	
<i>Dryopteris carthusiana</i>	Narrow Buckler-fern	
<i>Dryopteris dilatata</i>	Broad Buckler-fern	
<i>Dryopteris expansa</i>	Northern Buckler-fern	
<i>Dryopteris filix-mas</i>	Male-fern	
<i>Dryopteris oreades</i>	Mountain Male-fern	
<i>Gymnocarpium dryopteris</i>	Oak Fern	
<i>Oreopteris limbosperma</i>	Lemon-scented Fern	
<i>Phegopteris connectilis</i>	Beech Fern	
<i>Phyllitis scolopendrium</i>	Hart's-tongue	
<i>Polypodium vulgare</i>	Polypody	1
<i>Polystichum aculeatum</i>	Hard Shield-fern	
<i>Polystichum setiferum</i>	Soft Shield-fern	
<i>Pteridium aquilinum</i>	Bracken	4
<i>Pilularia globulifera</i>	Pillwort	
<b>Total</b>		<b>23</b>

Excluding hybrids there are 42 species of ferns, horsetails etc. listed on NBN for VC110. In 2022 just 23 records of 11 species were submitted. Identification for less specialist naturalists can be tricky but it is a group that needs further work.



*Osmunda regalis* - Royal Fern, one record from Roisinis, Benbecula 19<sup>th</sup> September 2022



*Botrychium lunaria* – Moonwort, recorded from Beinn Tairbeirt, South Uist 17<sup>th</sup> August 2022



*Ophioglossum vulgatum* - Adder's Tongue, one record from Pabbay 6<sup>th</sup> June 2022



## Plantae – Pteridiophyta and Tracheophyta

### PHYLUM Tracheophyta

Class Magnoliopsida (Flowering Plants), Summary

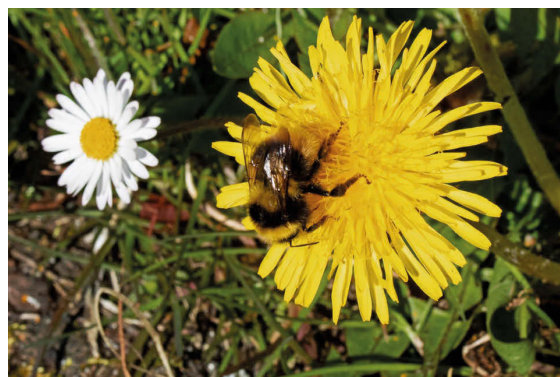
In 2022 there were 491 records of 134 taxa of flowering plants submitted to OHBR. This was the work of 21 individual recorders. Most of the recording in 2022 was concentrated in four locations; Pabbay (242 records), the Roisinis area of Benbecula (57 records), Mingulay (54 records) and the Point area near Stornoway on Lewis (92 records).

Island	2020	2021	2022
Lewis	16	208	103
Great Bernera			4
Harris	9	4	2
Taransay			1
Pabbay			242
North Uist	51	86	3
Bernera	2	5	2
St Kilda			1
Benbecula	164	104	63
South Uist	66	137	15
Eileanan Iasgaich		38	
Eriskay	46	1	1
Stack Islands		24	
Sound of Barra			
Fiaraidh		48	
Fuday		141	
Barra	3		
Vatersay	2		
Mingulay			54
<b>Total</b>	<b>359</b>	<b>796</b>	<b>491</b>

Eleven species were recorded ten times or more – species that represent the general character of much of the Outer Hebrides away from the machair strip on the west of the islands

Species	Common Name	Records
<i>Iris pseudacorus</i>	Yellow Iris	14
<i>Cardamine pratensis</i>	Cuckooflower	13
<i>Bellis perennis</i>	Daisy	11
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	11
<i>Pinguicula vulgaris</i>	Common Butterwort	11
<i>Plantago lanceolata</i>	Ribwort Plantain	11
<i>Urtica dioica</i>	Common Nettle	11
<i>Drosera rotundifolia</i>	Round-leaved Sundew	10
<i>Eriophorum angustifolium</i>	Common Cottongrass	10
<i>Potentilla erecta</i>	Tormentil	10
<i>Trifolium repens</i>	White Clover	10

The plants recorded in 2022 belonged to forty-two families. The most frequently recorded families were the Asteraceae (daisies, thistles, dandelions), Plantaginaceae (plantains, speedwells etc.), Ranunculaceae (buttercups), Fabaceae (vetches, clovers etc.). The daisy family contains some very familiar species such as Daisy (*Bellis perennis*) and Dandelion (*Taraxacum* sp.). Whilst common their value shouldn't be underestimated. As early flowering plants they provide a vital source of nectar and pollen for newly emerging queen bumblebees.



*Bombus jonellus* (Heath Bumblebee) nectaring on Dandelion (*Taraxacum* sp.)

Family	Type of plant	Species	Records
Asteraceae	Daisies, Thistles etc.	17	59
Plantaginaceae	Plantains, Speedwells	9	35
Ranunculaceae	Buttercups	7	27
Fabaceae	Vetches, Clovers etc.	6	26
Orobanchaceae	Rattles, Eye-brights	6	22
Cyperaceae	Sedges	6	15
Rosaceae	Rose, Cinquefoils etc.	5	24
Polygonaceae	Docks & Sorrels	5	23
Poaceae	Grasses	5	10
Ericaceae	Heathers	4	20
Brassicaceae	Scurveygrass, Charlock	4	19
Lentibulariaceae	Butterworts etc.	4	16
Orchidaceae	Orchids	4	15
Lamiaceae	Selfheal, Thymes, Mints	3	12
Juncaceae	Rushes, Wood-rushes	3	10
Caryophyllaceae	Campions, Chickweeds	3	9
Geraniaceae	Herb Robert	3	8
Rubiaceae	Bedstraws	3	8
Violaceae	Violets, Pansies etc.	3	8
Caprifoliaceae	Devil's-bit Scabious	3	4
Droseraceae	Sundews	2	13
Polygalaceae	Milkworts	2	12
Crassulaceae	Stonecrops, Roseroot	2	10
Salicaceae	Willows	2	8
Potamogetonaceae	Pondweeds	2	7
Primulaceae	Primroses etc.	2	7
Hypericaceae	St Johns Worts	2	4
Campanulaceae	Harebell, Water Lobelia	2	3
Gunneraceae	Gunnera	2	2
Iridaceae	Irises	1	14
Urticaceae	Nettles	1	11
Plumbaginaceae	Thrift	1	7
Araliaceae	Ivy	1	5
Nartheciaceae	Bog Asphodel	1	5
Menyanthaceae	Bogbean	1	4
Apiaceae	Umbellifers	1	3
Asparagaceae	Spring Squil	1	1
Boraginaceae	Bugloss, Forget-me-nots	1	1
Haloragaceae	Water Milfoil	1	1
Juncaginaceae	Arrowgrasses	1	1
Myricaceae	Bog Myrtle	1	1
Onagraceae	Willowherbs	1	1
<b>Total</b>		<b>134</b>	<b>491</b>

## Plantae – Pteridiophyta and Tracheophyta

### Class Magnoliopsida

#### Family Asteraceae

Species	Common name	Records
<i>Bellis perennis</i>	Daisy	11
<i>Cirsium arvense</i>	Creeping Thistle	9
<i>Antennaria dioica</i>	Mountain Everlasting	5
<i>Scorzoneroide autumnalis</i>	Autumn Hawkbit	5
<i>Achillea millefolium</i>	Yarrow	4
<i>Cirsium vulgare</i>	Spear Thistle	4
<i>Taraxacum officinale agg.</i>	Dandelion	4
<i>Jacobaea vulgaris</i>	Common Ragwort	3
<i>Sonchus asper</i>	Prickly Sow-thistle	3
<i>Centaurea nigra sens. lat.</i>	Common Knapweed	2
<i>Hypochaeris radicata</i>	Cat's-ear	2
<i>Tussilago farfara</i>	Coltsfoot	2
<i>Arctium minus</i>	Lesser Burdock	1
<i>Crepis capillaris</i>	Smooth Hawk's-beard	1
<i>Pilosella aurantiaca</i>	Fox-and-cubs	1
<i>Senecio vulgaris</i>	Groundsel	1
<i>Taraxacum</i>	Dandelion	1
<b>Total</b>		<b>59</b>



*Lotus corniculatus* - Common Bird's-foot-trefoil



*Vicia cracca* - Tufted Vetch

#### Family Plantaginaceae

Species	Common name	Records
<i>Callitriche</i>	Water-Starwort	1
<i>Callitriche stagnalis</i>	Callitriche stagnalis	1
<i>Digitalis purpurea</i>	Foxglove	1
<i>Hippuris vulgaris</i>	Mare's-tail	5
<i>Littorella uniflora</i>	Shoreweed	1
<i>Plantago coronopus</i>	Buck's-horn Plantain	6
<i>Plantago lanceolata</i>	Ribwort Plantain	11
<i>Plantago major</i>	Greater Plantain	3
<i>Plantago maritima</i>	Sea Plantain	6
<b>Total</b>		<b>35</b>



*Anthyllis vulneraria* – Kidney Vetch

#### Family Ranunculaceae

Species	Common name	Rec's
<i>Caltha palustris</i>	Marsh-marigold	4
<i>Ficaria verna</i>	Lesser Celandine	7
<i>Ranunculus acris</i>	Meadow Buttercup	4
<i>Ranunculus baudotii</i>	Brackish Water-crowfoot	1
<i>Ranunculus flammula</i>	Lesser Spearwort	4
<i>Ranunculus repens</i>	Creeping Buttercup	6
<i>Ranunculus trichophyllus</i>	Thread-leaved Water-crowfoot	1
<b>Total</b>		<b>27</b>

#### Family Fabaceae

Species	Common Name	Records
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	11
<i>Trifolium repens</i>	White Clover	10
<i>Trifolium pratense</i>	Red Clover	2
<i>Anthyllis vulneraria</i>	Kidney Vetch	1
<i>Lathyrus pratensis</i>	Meadow Vetchling	1
<i>Vicia cracca</i>	Tufted Vetch	1
<b>Total</b>		<b>26</b>

**Machair** - the clovers, vetches and trefoils in the family Fabaceae are vital sources of nectar for machair insects such as the Great Yellow Bumblebee.



*Trifolium pratense* – Red Clover



## Plantae – Pteridiophyta and Tracheophyta

Plants in the family Fabaceae can fix atmospheric nitrogen through the action of nitrogen fixing bacteria in their root nodules. This means they are well adapted to living in soils lacking in organic matter and hence short of available nitrates. Other common machair plants have a different strategy.

### Family Orobanchaceae

The family Orobanchaceae are hemiparasites; they are able to tap into the roots of grasses, take some of their nutrients, and help reduce the dominance of grasses allowing other plants to flourish.

Species	Common Name	Records
<i>Pedicularis sylvatica</i>	Lousewort	7
<i>Euphrasia officinalis</i> agg.	Euphrasia officinalis agg.	6
<i>Pedicularis palustris</i>	Marsh Lousewort	5
<i>Euphrasia</i>	Eyebright	2
<i>Euphrasia nemorosa</i>	Common Eyebright	1
<i>Rhinanthus minor</i>	Yellow-rattle	1
<b>Total</b>		<b>22</b>

### Families Droseraceae & Lentibulariaceae

Family / Species	Common name	Records
<b>Droseraceae</b>		
<i>Drosera anglica</i>	Great Sundew	3
<i>Drosera rotundifolia</i>	Round-leaved Sundew	10
<b>Lentibulariaceae</b>		
<i>Pinguicula lusitanica</i>	Pale Butterwort	3
<i>Pinguicula vulgaris</i>	Common Butterwort	11
<i>Utricularia intermedia</i>	Intermediate Bladderwort	1
<i>Utricularia minor</i>	Lesser Bladderwort	1
<b>Total</b>		<b>29</b>

Species in these families are carnivorous and many are familiar species. Identification of Bladderworts is not easy and usually relies on the presence of flowers which are only sporadically produced. *Utricularia intermedia* is especially difficult as it is now thought to be a complex of three closely related species.



*Utricularia* sp. – Bladderwort, the plant is able to remove water from the bladders creating a vacuum trap, a water flea touches one of the trigger hairs, the mouth of the bladder opens and the vacuum sucks in the flea to be digested.



*Rhinanthus minor* - Yellow-rattle, a very common machair species, by reducing the vigour of grasses it helps maintain the wonderful floristic diversity of machair grasslands.



*Pedicularis palustris* - Marsh Lousewort, found in wetter soils than many of the others members of the Orobanchaceae.



*Drosera intermedia* - Oblong-leaved Sundew, often overlooked



Plantae – Pteridiophyta and Tracheophyta



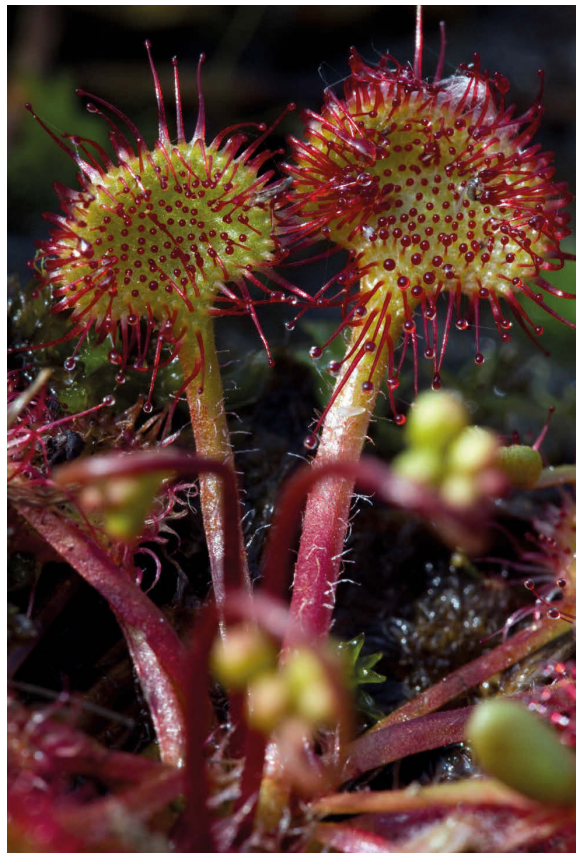
*Pinguicula lusitanica* – Pale Butterwort



*Drosera anglica* – Great Sundew



*Pinguicula vulgaris* – Common Butterwort



*Drosera rotundifolia* – Round-leaved Sundew



## Plantae – Pteridiophyta and Tracheophyta

### Family Ericaceae

Species	Common name	Records
<i>Calluna vulgaris</i>	Heather	8
<i>Empetrum nigrum</i>	Crowberry agg.	4
<i>Erica cinerea</i>	Bell Heather	5
<i>Erica tetralix</i>	Cross-leaved Heath	3
<b>Total</b>		<b>20</b>



View to Hecla, Beinn Corradale and Beinn Mhòr with *Calluna vulgaris* and *Erica cinerea* in foreground.

### Family Orchidaceae

Species	Common name	Records
<i>Dactylorhiza incarnata</i>	Early Marsh-orchid	4
<i>Dactylorhiza maculata</i>	Heath Spotted-orchid	7
<i>Hammarbya paludosa</i>	Bog Orchid	1
<i>Neottia ovata</i>	Common Twayblade	3
<b>Grand Total</b>		<b>15</b>

A poor year for orchid records, just fifteen records of four of the nineteen species known from the Outer Hebrides. Particularly noticeable is the lack of records of Northern Marsh Orchid (*Dactylorhiza purpurella*), Common Spotted Orchid (*Dactylorhiza fuchsia*) and Frog Orchid (*Coeloglossum viride*).

### Families Cyperaceae, Juncaceae & Poaceae

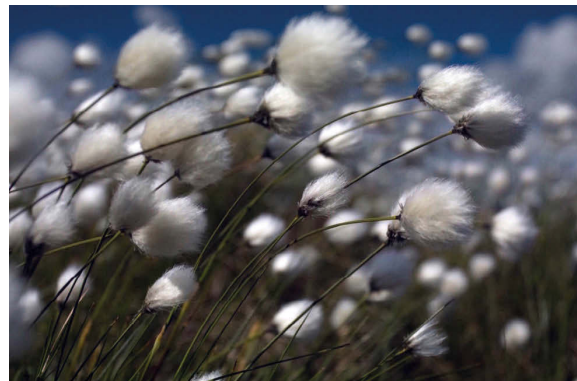
Family / Species	Common name	Records
<b>Cyperaceae</b>		
<i>Carex arenaria</i>	Sand Sedge	1
<i>Carex echinata</i>	Star Sedge	1
<i>Carex panicea</i>	Carnation Sedge	1
<i>Eleocharis palustris</i>	Common Spike-rush	1
<i>Eriophorum angustifolium</i>	Common Cottongrass	10
<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	1
<b>Juncaceae</b>		
<i>Juncus articulatus</i>	Jointed Rush	1
<i>Juncus bulbosus</i>	Bulbous Rush	4
<i>Juncus effusus</i>	Soft-rush	5
<b>Poaceae</b>		
<i>Ammophila arenaria</i>	Marram	4
<i>Cynosurus cristatus</i>	Crested Dog's-tail	1
<i>Festuca vivipara</i>	Viviparous Sheep's-fescue	2
<i>Molinia caerulea</i>	Purple Moor-grass	1
<i>Phragmites australis</i>	Common Reed	2
<b>Total</b>		<b>35</b>



*Dactylorhiza incarnata* – Early Marsh-orchid, in dune slack on Berneray



*Dactylorhiza maculata* – Heath Spotted-orchid, with Ceapabhal in background



*Eriophorum vaginatum* – Hare's-tail Cottongrass, occurs on wet moors and blanket bog. Masses of it, as in the photograph here, is often a sign of overgrazing by sheep or deer



*Eriophorum angustifolium* - Common Cottongrass, prefers less acidic conditions than *Eriophorum vaginatum*

## Plantae – Pteridiophyta and Tracheophyta

### Other families

Family / Species	Common name	Records
<b>Apiaceae</b>		
<i>Angelica sylvestris</i>	Wild Angelica	3
<b>Araliaceae</b>		
<i>Hydrocotyle vulgaris</i>	Marsh Pennywort	5
<b>Asparagaceae</b>		
<i>Scilla verna</i>	Spring Squill	1
<b>Boraginaceae</b>		
<i>Mertensia maritima</i>	Oysterplant	1
<b>Brassicaceae</b>		
<i>Cakile maritima</i>	Sea Rocket	1
<i>Cardamine pratensis</i>	Cuckooflower	13
<i>Rorippa nasturtium-aquaticum</i>	Water-cress	5
<b>Campanulaceae</b>		
<i>Campanula rotundifolia</i>	Harebell	1
<i>Lobelia dortmanna</i>	Water Lobelia	2
<b>Caprifoliaceae</b>		
<i>Lonicera periclymenum</i>	Honeysuckle	1
<i>Succisa pratensis</i>	Devil's-bit Scabious	2
<i>Valeriana locusta</i>	Common Cornsalad	1
<b>Caryophyllaceae</b>		
<i>Cerastium fontanum</i>	Common Mouse-ear	6
<i>Silene uniflora</i>	Sea Campion	2
<i>Stellaria graminea</i>	Lesser Stitchwort	1
<b>Crassulaceae</b>		
<i>Sedum anglicum</i>	English Stonecrop	9
<i>Sedum rosea</i>	Roseroot	1
<b>Geraniaceae</b>		
<i>Erodium cicutarium</i>	Common Stork's-bill	1
<i>Geranium molle</i>	Dove's-foot Crane's-bill	6
<i>Geranium robertianum</i>	Herb-Robert	1
<b>Gunneraceae</b>		
<i>Gunnera</i>	Gunnera	1
<i>Gunnera manicata</i>	Brazilian Giant-rhubarb	1
<b>Haloragaceae</b>		
<i>Myriophyllum alterniflorum</i>	Alternate Water-milfoil	1
<b>Hypericaceae</b>		
<i>Hypericum elodes</i>	Marsh St John's-wort	1
<i>Hypericum pulchrum</i>	Slender St John's-wort	3
<b>Iridaceae</b>		
<i>Iris pseudacorus</i>	Yellow Iris	14
<b>Juncaginaceae</b>		
<i>Triglochin maritimum</i>	Sea Arrowgrass	1
<b>Lamiaceae</b>		
<i>Prunella vulgaris</i>	Selfheal	5
<i>Scutellaria minor</i>	Lesser Skullcap	1
<i>Thymus polytrichus</i>	Wild Thyme	6
<b>Menyanthaceae</b>		
<i>Menyanthes trifoliata</i>	Bogbean	4
<b>Myricaceae</b>		
<i>Myrica gale</i>	Bog-myrtle	1
<b>Nartheciaceae</b>		
<i>Narthecium ossifragum</i>	Bog Asphodel	5
<b>Onagraceae</b>		
<i>Epilobium palustre</i>	Marsh Willowherb	1
<b>Plumbaginaceae</b>		
<i>Armeria maritima</i>	Thrift	7

<b>Polygalaceae</b>		
<i>Polygala serpyllifolia</i>	Heath Milkwort	5
<i>Polygala vulgaris</i>	Common Milkwort	7
<b>Polygonaceae</b>		
<i>Persicaria maculosa</i>	Redshank	1
<i>Rumex acetosa</i>	Common Sorrel	6
<i>Rumex acetosella</i>	Sheep's Sorrel	4
<i>Rumex crispus</i>	Curled Dock	7
<i>Rumex obtusifolius</i>	Broad-leaved Dock	5
<b>Potamogetonaceae</b>		
<i>Potamogeton natans</i>	Broad-leaved Pondweed	3
<i>Potamogeton polygonifolius</i>	Bog Pondweed	4
<b>Primulaceae</b>		
<i>Anagallis tenella</i>	Bog Pimpernel	3
<i>Primula vulgaris</i>	Primrose	4
<b>Rosaceae</b>		
<i>Alchemilla alpina</i>	Alpine Lady's-mantle	1
<i>Potentilla anserina</i>	Silverweed	7
<i>Potentilla erecta</i>	Tormentil	10
<i>Potentilla palustris</i>	Marsh Cinquefoil	4
<i>Rubus fruticosus agg.</i>	Bramble	2
<b>Rubiaceae</b>		
<i>Galium aparine</i>	Cleavers	1
<i>Galium saxatile</i>	Heath Bedstraw	5
<i>Galium verum</i>	Lady's Bedstraw	2
<b>Salicaceae</b>		
<i>Salix aurita</i>	Eared Willow	1
<i>Salix repens</i>	Creeping Willow	7
<b>Urticaceae</b>		
<i>Urtica dioica</i>	Common Nettle	11
<b>Violaceae</b>		
<i>Viola canina</i>	Heath Dog-violet	1
<i>Viola riviniana</i>	Common Dog-violet	6
<i>Viola tricolor</i>	Wild Pansy	1

### PHYLUM Tracheophyta – Lycopodiopsida, Pinopsida

Just one species of clubmoss and one conifer were recorded in 2022.

Class	Family / species	Common name	Records
Lycopodiopsida	<b>Lycopodiaceae</b>		6
	<i>Huperzia selago</i>	Fir Clubmoss	
Pinopsida	<b>Cupressaceae</b>		
	<i>Juniperus communis</i>	Juniper	1
<b>Total</b>			<b>7</b>

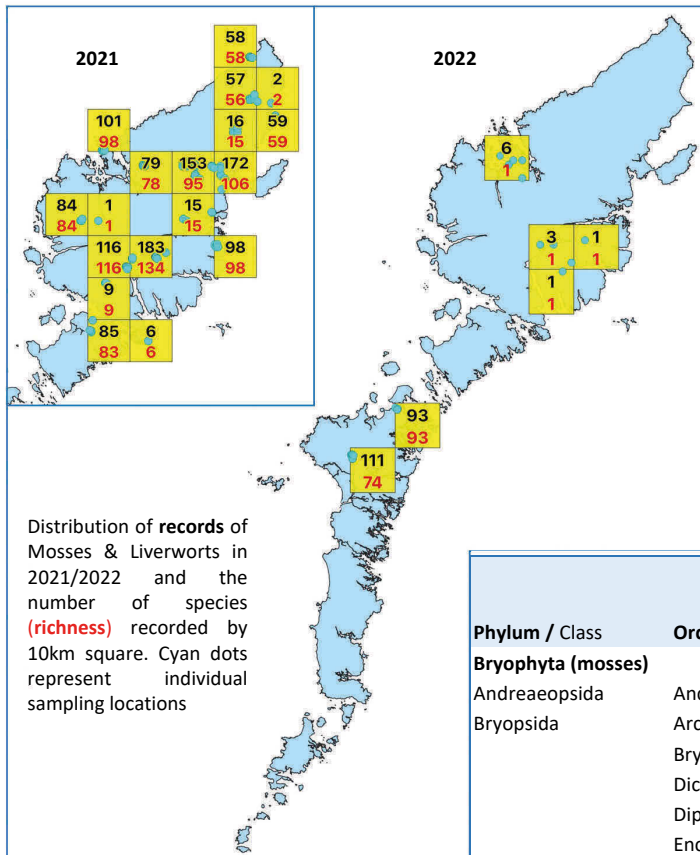


*Juniperus communis* - Juniper



## Mosses, liverworts and hornworts

**PHYLA Anthocerophyta** (Hornworts), **Marchantiophyta** (Liverworts) and **Bryophyta** (Mosses)



Recording mosses, liverworts and hornworts is very much a specialist activity. Since 2012 62.9% of all records came from a bryologist resident in the Outer Hebrides with almost all of those records coming from Lewis and Harris. They also did some intensive recording in two hectads on North Uist in 2022.

A further 35.9% of records came from some experienced British Bryological Society members who made recording trips here between 2002 and 2016. The locations visited by them complement those that our resident bryologist has recorded at very nicely and together they cover much of the Outer Hebrides. The areas which haven't been surveyed recently are mostly the parts of South Harris, North Uist, Benbecula and South Uist away from the west coastal fringe.

The missing 1.2% of records come from a few local recorders or visitors making odd sightings at scattered locations.

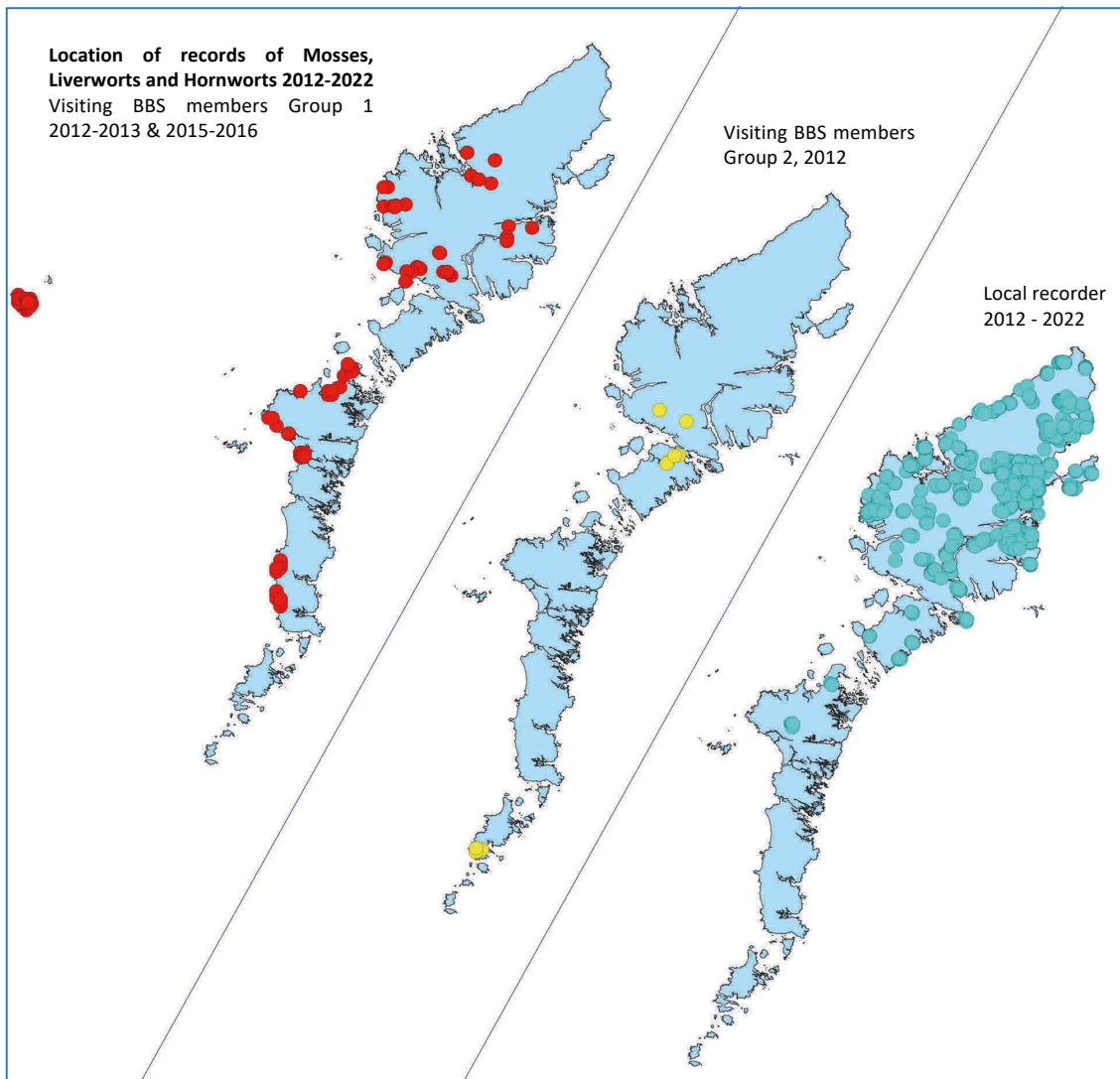
In total there are over 21,000 records of 598 taxa of Mosses, Liverworts and Hornworts, mostly at species level but some as subspecies or genus and higher levels. This total has been reached after a steady accumulation of new species for well over 120 years. The exact dating of the earliest records can be difficult to ascertain as they are often given as ranges such as pre 1936 or 1850-1936.

At the time of writing of the 2021 report a complete submission of species data hadn't been received from our resident bryologist. This report therefore summarises those records subsequently sent to OHBR. In 2021 the final figures were 1,294 records of 283 species of moss or liverwort. No records of Hornworts, Anthocerophyta, were recorded. A breakdown, by Order, is given below.

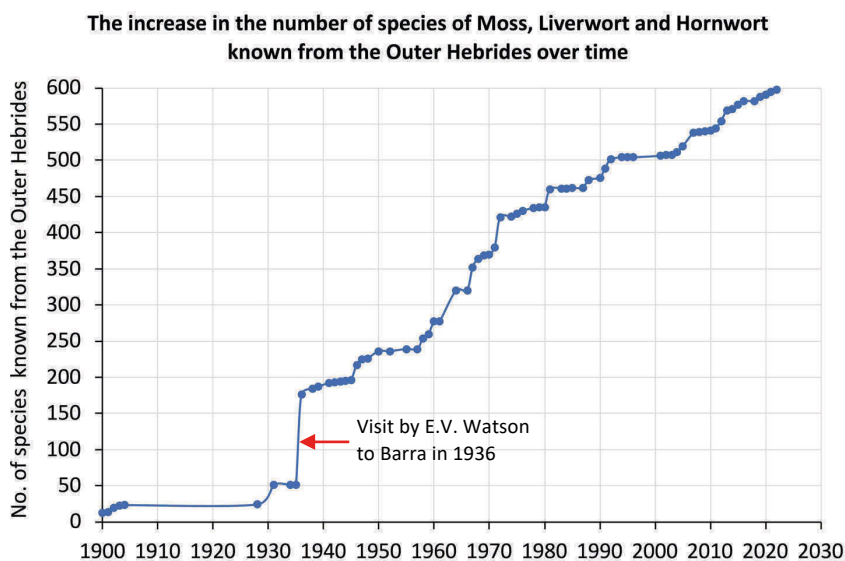
All of the 2021 records came from Lewis and Harris, a pattern seen in previous years. In 2022 sampling at a number of locations on North Uist

		2021 update (as of 9/1/23)		2022 records (as of 9/1/23)	
Phylum / Class	Order	Records	Species	Records	Species
Bryophyta (mosses)					
Andreaeopsida	Andreaeales	15	3	2	1
Bryopsida	Archidiales	1	1		
	Bryales	95	24	11	7
	Dicranales	139	28	34	13
	Diphysciales	1	1		
	Encalyptales	1	1		
	Funariales	12	3		
	Grimmiales	85	18	16	11
	Hedwigiales	6	1	1	1
	Hookeriales	4	1	1	1
	Hypnales	286	54	51	29
	Orthotrichales	17	7	5	5
	Pottiales	49	17	5	5
	Splachnales	3	1		
Polytrichopsida	Polytrichales	70	11	8	4
Sphagnopsida	Sphagnales	138	20	29	14
Tetraphidopsida	Tetraphidales	1	1		
Total		923	192	163	91
Marchantiophyta (liverworts)					
Jungermanniopsida (leafy liverworts)	Jungermanniales	255	62	38	23
	Metzgeriales	38	7	2	1
	Pelliales	13	3	3	1
	Pleuroziales	10	1	2	1
	Porellales	47	13	7	4
	Ptilidiales	1	1		
Marchantiopsida (thalloid liverworts)	Blasiales	3	1		
	Marchantiales	4	3		
Total		371	91	52	30

## Mosses, liverworts and hornworts



A visit by E. V. Watson to Barra in 1936 triggered the first big increase in number of recorded species; he added 125 new species to the VC110 list. He later went on to write *British Mosses and Liverworts*. First published in 1955, it looked at 200 or so commoner species plus a number of rarer ones and inspired



many to start looking at the group and was no doubt used by many of the naturalists who continued to add species to the Vice County list. It was superseded by A.J.E. Smith's *The Moss Flora of Britain & Ireland* in 1978.

## Mosses, liverworts and hornworts

The records received by OHBR for 2022 so far come almost entirely from North Uist. Twenty-seven species were recorded fifty or more times.

Species (>50 records in 2022)	Records
<i>Sphagnum capillifolium</i> subsp. <i>rubellum</i>	67
<i>Hylocomium splendens</i>	66
<i>Hypnum jutlandicum</i>	65
<i>Dicranum scoparium</i>	63
<i>Rhytidiadelphus squarrosus</i>	63
<i>Sphagnum denticulatum</i>	63
<i>Scapania gracilis</i>	62
<i>Diplophyllum albicans</i>	62
<i>Rhytidiadelphus loreus</i>	60
<i>Thuidium tamariscinum</i>	60
<i>Racomitrium lanuginosum</i>	59
<i>Racomitrium fasciculare</i>	59
<i>Sphagnum palustre</i>	58
<i>Sphagnum subnitens</i> var. <i>subnitens</i>	58
<i>Sphagnum papillosum</i>	57
<i>Plagiothecium undulatum</i>	55
<i>Frullania tamarisci</i>	55
<i>Pleurozium schreberi</i>	55
<i>Nardia scalaris</i>	53
<i>Odontoschisma sphagni</i>	52
<i>Cephalozia bicuspidata</i>	52
<i>Calliergonella cuspidata</i>	52
<i>Sphagnum cuspidatum</i>	51
<i>Lophozia ventricosa</i>	51
<i>Scapania undulata</i>	50
<i>Calypogeia muelleriana</i>	50
<i>Racomitrium aciculare</i>	50



The long flat green shoots are of *Plagiothecium undulatum*, a moss typical of acid moors and heaths but also found in sessile oak woodlands across western Britain. The bright red moss is a *Sphagnum* sp. (possibly *Sphagnum capillifolium* subsp. *rubellum*) and the fungus is a species of *Arrhenia*.

These species are all typical of acidic environments and are commonly encountered in areas of open moorland, heathy grasslands and similar habitats. The presence of a number of *Sphagnum* species indicates that some areas are waterlogged and likely to be peat covered.



A similar assemblage of acid loving mosses and liverworts might be expected to be found in areas of moorland such as this around Loch Druidibeg. NBN currently has just 6 moss records for the area.

Species associated with more calcareous conditions on Baleshare, Kirkbost and Berneray by British Bryological Society members in 2015	
<i>Amblystegium serpens</i> var. <i>salinum</i>	<i>Hypnum cupressiforme</i> var. <i>lacunosum</i>
<i>Aneura pinguis</i>	<i>Kindbergia praelonga</i>
<i>Barbula convoluta</i>	<i>Leiocolea bantriensis</i>
<i>Barbula unguiculata</i>	<i>Leiocolea gillmanii</i>
<i>Brachythecium glareosum</i>	<i>Lophocolea bidentata</i>
<i>Brachythecium rutabulum</i>	<i>Moerckia flotoviana</i>
<i>Bryoerythrophyllum recurvirostrum</i>	<i>Pellia endiviifolia</i>
<i>Bryum pseudotriquetrum</i>	<i>Petalophyllum ralfsii</i>
<i>Calliergonella cuspidata</i>	<i>Plagiochila porelloides</i>
<i>Ceratodon purpureus</i>	<i>Plagiomnium cuspidatum</i>
<i>Climacium dendroides</i>	<i>Pohlia wahlenbergii</i> var. <i>wahlenbergii</i>
<i>Cratoneuron filicinum</i>	<i>Preissia quadrata</i>
<i>Ctenidium molluscum</i>	<i>Pseudocrossidium hornschurchianum</i>
<i>Dicranum scoparium</i>	<i>Pseudocrossidium revolutum</i>
<i>Didymodon fallax</i>	<i>Rhytidiadelphus squarrosus</i>
<i>Didymodon ferrugineus</i>	<i>Rhytidiadelphus triquetrus</i>
<i>Didymodon insulanus</i>	<i>Riccardia chamedryfolia</i>
<i>Distichium inclinatum</i>	<i>Riccia cavernosa</i>
<i>Ditrichum gracile</i>	<i>Scapania aspera</i>
<i>Encalypta raptocarpa</i>	<i>Scapania cuspiduligera</i>
<i>Encalypta streptocarpa</i>	<i>Scorpidium cossonii</i>
<i>Entodon concinnus</i>	<i>Syntrichia ruralis</i> var. <i>ruraliformis</i>
<i>Fissidens dubius</i>	<i>Thuidium assimile</i>
<i>Frullania tamarisci</i>	<i>Thuidium delicatulum</i>
<i>Homalothecium lutescens</i>	<i>Tortella tortuosa</i>
<i>Hylocomium splendens</i>	<i>Trichostomum brachydontium</i>

Ecologists use changes in moss and liverwort assemblages as indicators of environmental change. They are already seeing the effects on increased nitrogen deposition as mosses and liverworts more typical of sites with nutrient enrichment move in. The increased likelihood of environmental change caused by the climate crisis means its more important than ever to make sure that we know what is here now.

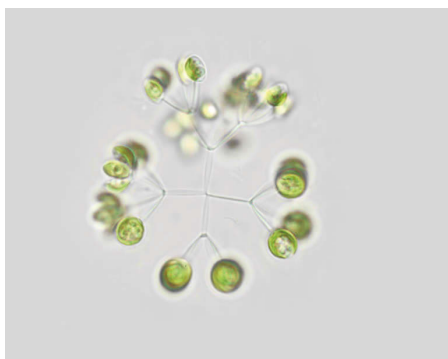


## Algae

### Algae

Phylum	Class	Order	Type of organism	Records	Taxa
Charophyta	Zygnematoiphyceae	Desmiales	Desmids	1099	316
		Zygnematales	Desmids	60	13
Chlorophyta	Chlorophyceae		Green algae	2	2
	Trebouxiophyceae			2	2
	Ulvophyceae	Ulotrichales		1	1
Ochrophyta	Bacillariophyceae	Naviculales	Diatoms	1	1
		Tabellariales	Diatoms	2	2
	Phaeophyceae	Laminariales	Kelps	1	1
	Xanthophyceae	Mischococcales	Yellow-green algae	4	1
Rhodophyta	Florideophyceae	Batrachospermales	Red algae	1	1
		Corallinales	Calcified red algae	1	1
Protozoa	Euglenoidea	Euglenida	Unicellular flagellate	1	1
<b>Total</b>				<b>1175</b>	<b>342</b>

The continuing survey of freshwater algae produced 1,175 records of 342 different taxa, 99% of the records, and 96% of the taxa, were of desmids. 91% of the records came from just one person. That person was also responsible for 99% of the determinations to species.

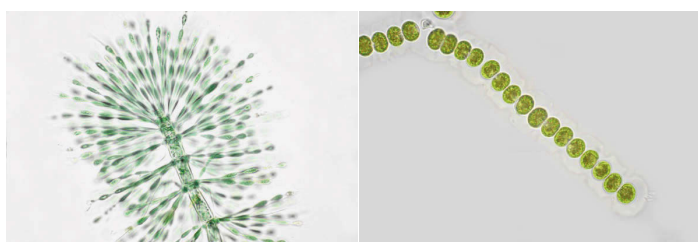
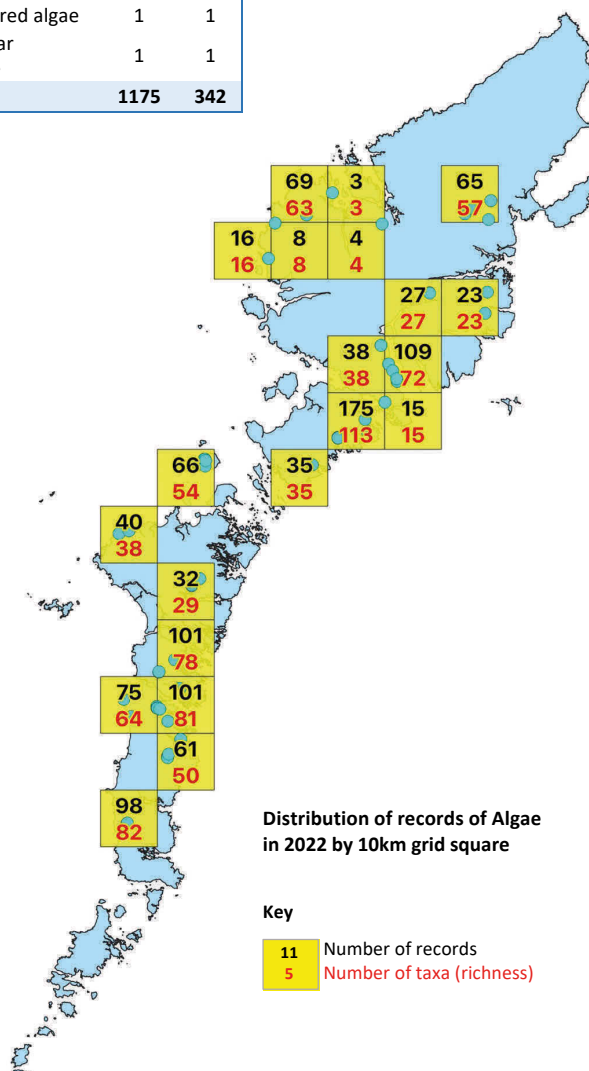


*Mucidosphaerium pulchellum* - Trebouxiophyceae

The taxonomy of UK desmids lags a long way behind the Outer Hebrides survey. In 2022, 147 of the 342 taxa recorded here were not currently on the UK Species Inventory (UKSI) and whilst many of them had been recorded previously here, there were 14 taxa for which there were no previous UK records. Over the whole of the UK over 85% of all desmid records come from the Outer Hebrides.

#### Species not previously recorded in UK

*Cosmarium bisphaericum*  
*Cosmarium bisphaericum* var. *densegranulatum*  
*Cosmarium cedercreutzii*  
*Cosmarium contractum* var. *notatum*  
*Cosmarium costatum* var. *gutwinskii*  
*Cosmarium granatum* var. *alatum*  
*Cosmarium hexalobium* f. *longum*  
*Cosmarium neonotabile*  
*Cosmarium ordinatum* var. *schulzii*  
*Cosmarium polygonum* var. *depressum*  
*Cosmarium sinostegos* var. *ausseanum*  
*Cosmarium trilobatum* f. *retusum*  
*Netrium lanceolatus*  
*Staurostrum reductum*  
*Xanthidium scrobiculatum*



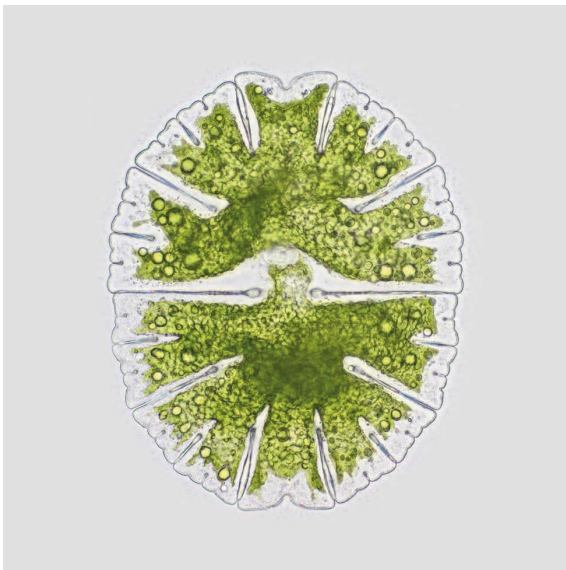
*Batrachospermum turfosum* - Rhodophyta, *Radiofilum flavescens* - Ulotrichales  
All photos on this page by Chris Johnson

## Algae

### Desmid Gallery – photos by Chris Johnson



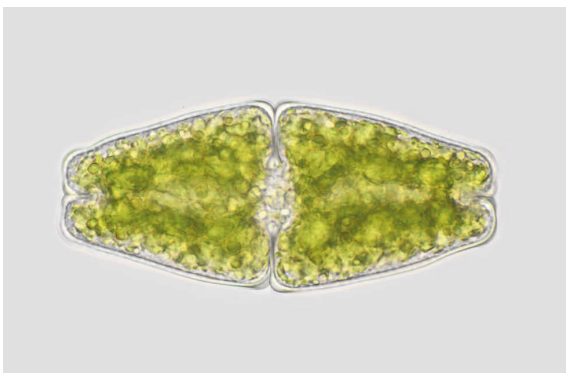
*Closterium incurvum*



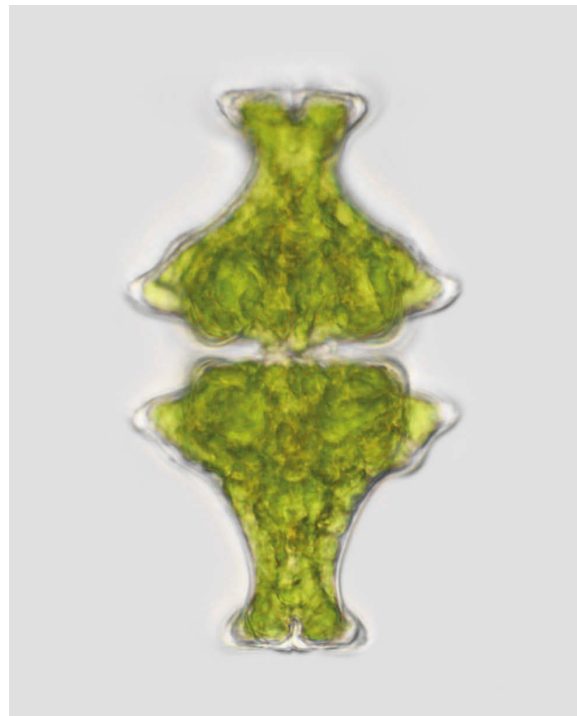
*Micrasterias denticulata*



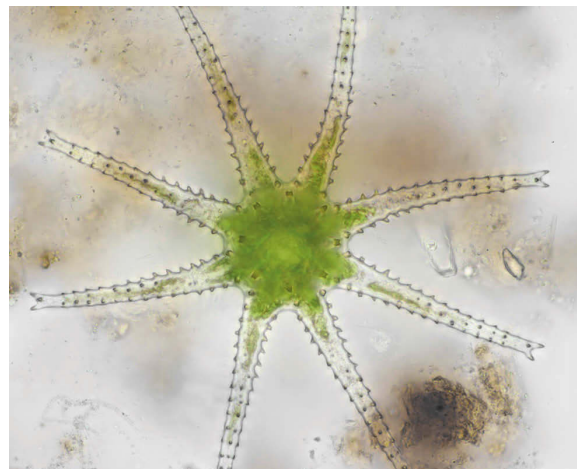
*Netrium lanceolatum* – not previously recorded in UK



*Euastrum cuneatum*



*Euastrum insigne*



*Staurastrum verticillatum*

## OHBR visits to Pabbay and Mingulay

### Island sampling – Pabbay & Mingulay NBN records (to end of 2021)

	Phylum	Pabbay		Mingulay	
		Species	Records	Species	Records
Fungi	Ascomycota	18	41	11	19
	Basidiomycota	1	1	6	8
Algae	Chlorophyta			1	1
	Ochrophyta			11	19
	Rhodophyta			33	63
				50	178
Mosses & liverworts	Bryophyta	147	389	22	38
	Marchantiophyta	59	143		
Vascular plants	Tracheophyta	218	1144	175	1571
	Pteridophyta	11	28	4	23
				6	14
Worms	Annelida			6	14
Arthropods	Arthropoda	6	6	203	434
Brozoans	Bryozoa			23	59
Jellyfish etc	Cnidaria			14	51
Starfish & urchins etc	Echinodermata			12	36
Snails, sea slugs etc	Mollusca			41	69
Spronges	Porifera			14	38
Birds, mammals etc	Chordata	36	67	103	818
	<b>Total</b>	<b>496</b>	<b>1819</b>	<b>729</b>	<b>3439</b>

Year	Ascomycota	Basidiomycota	Bryophyta	Chordata	Arthropoda	Marchantiophyta	Pteridophyta	Tracheophyta	Total
1935							1	27	28
1938								13	13
1939								6	6
1940							1	22	23
1941							2	39	41
1942					6			1	7
1945								1	1
1950								3	3
1956								1	1
1964				2					2
1976	41		94			18			153
1977				1					1
1983			3					9	12
1986				1					1
1992			98			41			139
1994				1					1
1995				10					10
1996							14	763	777
2004			41			4	10	259	314
2005			41			27			68
2006				5					5
2009			112			53			165
2010				1					1
2011				31					31
2014		1							1
2017				13					13
2018				1					1
2019				1					1
<b>Total</b>	<b>41</b>	<b>1</b>	<b>389</b>	<b>67</b>	<b>143</b>	<b>28</b>	<b>1144</b>	<b>1819</b>	

**Pabbay** - naturalists have always been drawn to islands, the earliest dated records for Pabbay go back to 1935. Twenty-seven fully dated trips that generated some records can be identified from the NBN dataset, but many records are just assigned to a year. The recording focus seems to have varied for each visitor or group of visitors. Early records were mostly of vascular plants (Tracheophyta) and some very intensive recording of the same group, and also ferns (Pteridophyta) took place on the 7<sup>th</sup> August 1996 and 27<sup>th</sup> July 2004. Records of mosses (Bryophyta) and liverworts (Marchantiophyta) came from visits in 1976, 1992, 2004, 2005 and 2009. Chordate records are mostly of birds with two mammals (Harbour Seal and a stranded Cuvier's Beaked Whale) and a Basking Shark sighting the only exceptions. What is really striking though is a more or less complete absence of any invertebrate records. A visit by a team of OHBR recorders on 6th June 2022 might have hoped to turn up a few new plant records but it was certain that any invertebrate species would be records of species not on the NBN database.



*Zygaena filipendulae* - Six-spot Burnet (L) and *Rhagio scolopaceus* - Downlooker Snipefly (R), the most frequently recorded invertebrates on the OHBR Pabbay trip.



## OHBR visits to Pabbay and Mingulay

### Pabbay new species (to NBN) recorded by OHBR 6<sup>th</sup> June 2022

Phylum	Class	Species	Common Name/ type	Rec's
Tracheophyta	Magnoliopsida	<i>Anthyllis vulneraria</i>	Kidney Vetch	1
		<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	1
		<i>Erodium cicutarium</i>	Common Stork's-bill	1
		<i>Neottia ovata</i>	Common Twayblade	2
		<i>Phragmites australis</i>	Common Reed	1
		<i>Ranunculus baudotii</i>	Brackish Water-crowfoot	1
		<i>Rumex acetosella</i>	Sheep's Sorrel	1
		<i>Thymus polytrichus</i>	Wild Thyme	4
Ochromphyta (Brown Seaweeds)	Phaeophyceae	<i>Saccharina latissima</i>	Sugar Kelp	1
Rhodophyta (Red Seaweeds)	Florideophyceae	<i>Corallina officinalis</i>	Coral Weed	1
Charophyta	Charophyceae	<i>Chara virgata</i>	Delicate Stonewort	1
	Zygnematophyceae	67 records of 55 new species of Desmids for Pabbay		67
Ascomycota	Lecanoromycetes	<i>Ochrolechia parella</i>	Crab's Eye Lichen	1
		<i>Rhizocarpon geographicum</i>	Map Lichen	1
		<i>Xanthoria parietina</i>	Common Orange Lichen	1
Arthropoda	Insecta	<i>Agabus</i>	a diving beetle	1
		<i>Agabus bipustulatus</i>	a diving beetle	1
		<i>Bombus lucorum</i> agg.	White-tailed Bumblebee	2
		<i>Bombus muscorum</i>	Moss Carder Bee	5
		<i>Cloeon simile</i>	a mayfly	1
		<i>Corixidae</i>	Lesser Water-Boatman	1
		<i>Eupeodes corollae</i>	a hoverfly	1
		<i>Gerris (Gerris) thoracicus</i>	a pond skater	1
		<i>Hydroporus</i>	a diving beetle	1
		<i>Ischnura elegans</i>	Blue-tailed Damselfly	2
		<i>Notonecta</i>	Back-Swimmer	1
		<i>Oecetis furva</i>	a caddis fly	1
		<i>Phragmatobia fuliginosa</i>	Ruby Tiger	1
		<i>Pieris napi</i>	Green-veined White	2
		<i>Rhagio scolopaceus</i>	Downlooker Snipefly	6
		<i>Scathophaga stercoraria</i>	a dung fly	1
		<i>Sigara (Subsigara) scotti</i>	Lesser water-boatmen	1
		<i>Sympetrum</i>	Darter Dragonfly	1
		<i>Zygona filipendulae</i>	Six-spot Burnet	9
	Malacostraca	<i>Carcinus maenas</i>	Green Shore Crab	1
Cnidaria	Anthozoa	<i>Actinia equina</i>	Beadlet anemone	1
Mollusca	Gastropoda	<i>Doris pseudoargus</i>	Sea Lemon	1
		<i>Littorina littorea</i>	Common Periwinkle	1
		<i>Steromphala umbilicalis</i>	Flat Top Shell	1
Chordata	Mammalia	<i>Lutra lutra</i>	Otter	1
<b>Total</b>				<b>130</b>

In the end the group added thirteen records of eight new flowering plants, not particularly rare species but when recording takes place on a limited number of dates even common species can easily be missed. There was, not surprisingly, a good range of new invertebrate records including

some larvae identifiable only as far as genus. Having a freshwater algae specialist in the group led to sixty-seven records of fifty-five Desmid species, all new to the island. There were a few new marine invertebrates and the first recorded sighting of an otter. There is obviously still more work to be done especially on the invertebrate fauna of Pabbay.



*Gerris thoracicus* – a pond skater, Pabbay 6<sup>th</sup> June 2022

## OHBR visits to Pabbay and Mingulay



*Oecetis furva* – a cased caddisfly larva



*Ischnura elegans* – Blue-tailed Damselfly, larva



*Agabus bipustulatus* – a diving beetle



*Sigara scotti* – a lesser waterboatman

All four species shown above were collected as bycatch during sampling for freshwater algae on Pabbay 6<sup>th</sup> June 2022.

**Mingulay** has perhaps been even more of an attractive destination for naturalists than Pabbay. There is much to appreciate, a poignant history with a deserted village abandoned by the islanders in 1912, and a stunningly beautiful beach on the east side of the island contrasting with 215m vertical cliffs on the west.

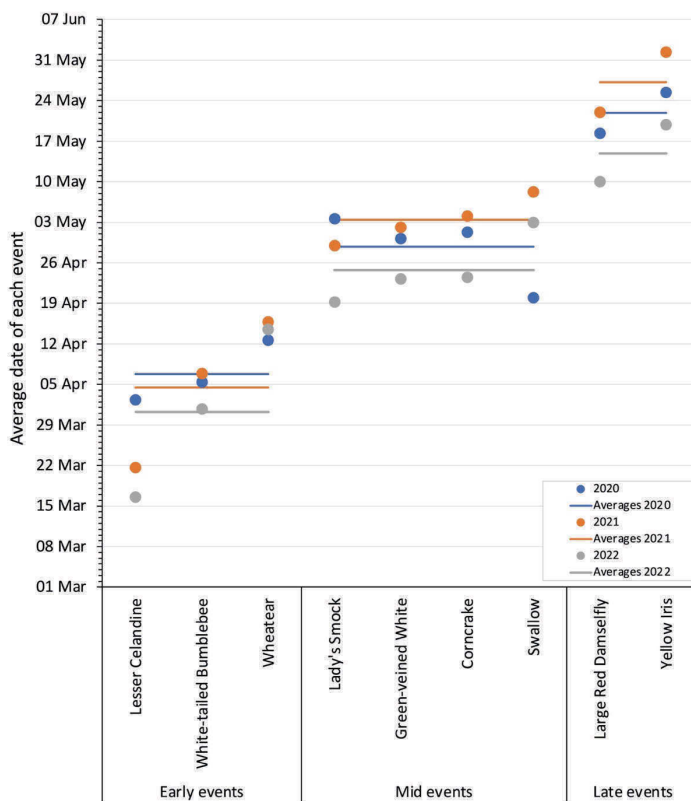
Some sightings from a OHBR recorder who visited Mingulay on the 2<sup>nd</sup> May 2021 were sent in in late 2022. A new record of *Gunnera* is slightly disconcerting given its invasive nature and the first Otter (*Lutra lutra*) record for the island were the most notable species.



Mingulay – beach on west side of the island, the building in the mid-distance is the old school house, the abandoned village lies out of sight just below.

## Phenology of spring events

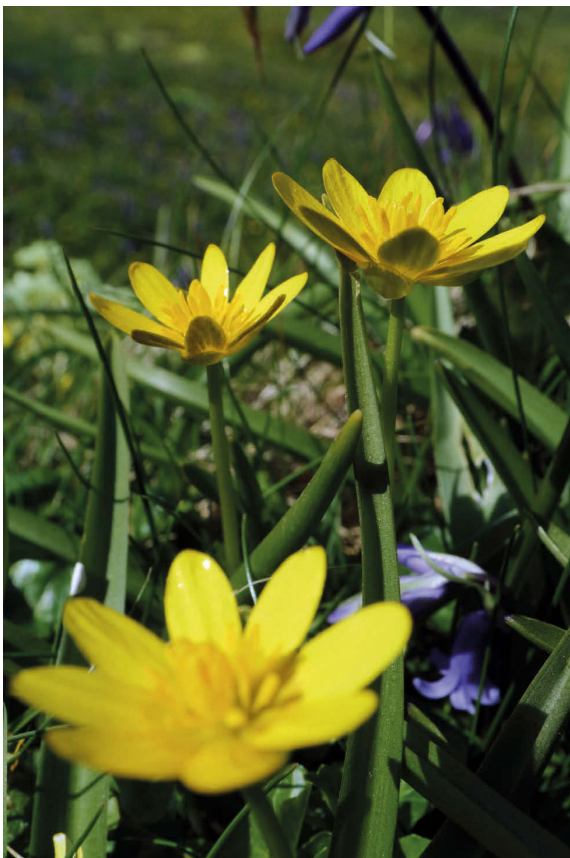
### Spring events 2020 – 2022 summary



*Bombus lucorum* agg. – White-tailed Bumblebee

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.



*Ficaria verna* – Lesser Celandine

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

- Lesser Celandine always flowers early. The first fully open Lesser Celandine in 2022 was on 16<sup>th</sup> March, 16 days earlier than in 2020.
- White-tailed Bumblebees were also active early, the first on 31<sup>st</sup> March was four and six days earlier than in 2020 and 2021 respectively.
- Wheatear appeared at more or less the same time between the 12<sup>th</sup> and 15<sup>th</sup> April in all three years.

The averages of all the dates were:

- 31<sup>st</sup> March in 2022, compared to
- 5<sup>th</sup> April in 2020 and
- 6<sup>th</sup> April in 2021.

So, the first part of spring seemed to be slightly earlier in 2022, than in the other two years, by about a week.



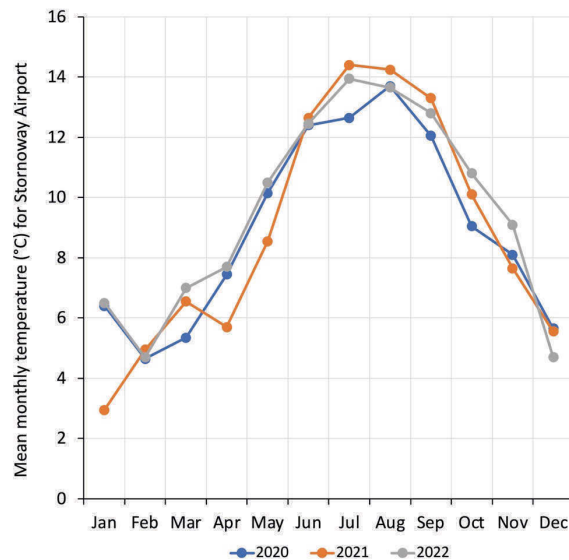
## Phenology of spring events



*Pieris napi* – Green-veined White



*Pyrrhosoma nymphula* – Large Red Damselfly



Contains public sector information licensed under the Open Government Licence v3.0  
<https://www.metoffice.gov.uk/research/climate/maps-and-data/historic-station-data>

For the **mid spring events** we used 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:

- 24<sup>th</sup> April in 2022,
- 28<sup>th</sup> April in 2020 and
- 3<sup>rd</sup> June in 2021.

As with the first part of spring, 2022 was markedly earlier than the other two years, coming in at about nine days earlier than in 2021.

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.

The first Large Red Damselfly appeared, in 2022, eight days earlier than in 2020 and 12 days earlier than in 2021. It was a similar pattern for Yellow Iris, again about 12 days earlier in 2022 than in 2021.

The average dates for the last two events were:

- 14<sup>th</sup> May in 2022,
- 21<sup>st</sup> May in 2020 and
- 27<sup>th</sup> May in 2021.

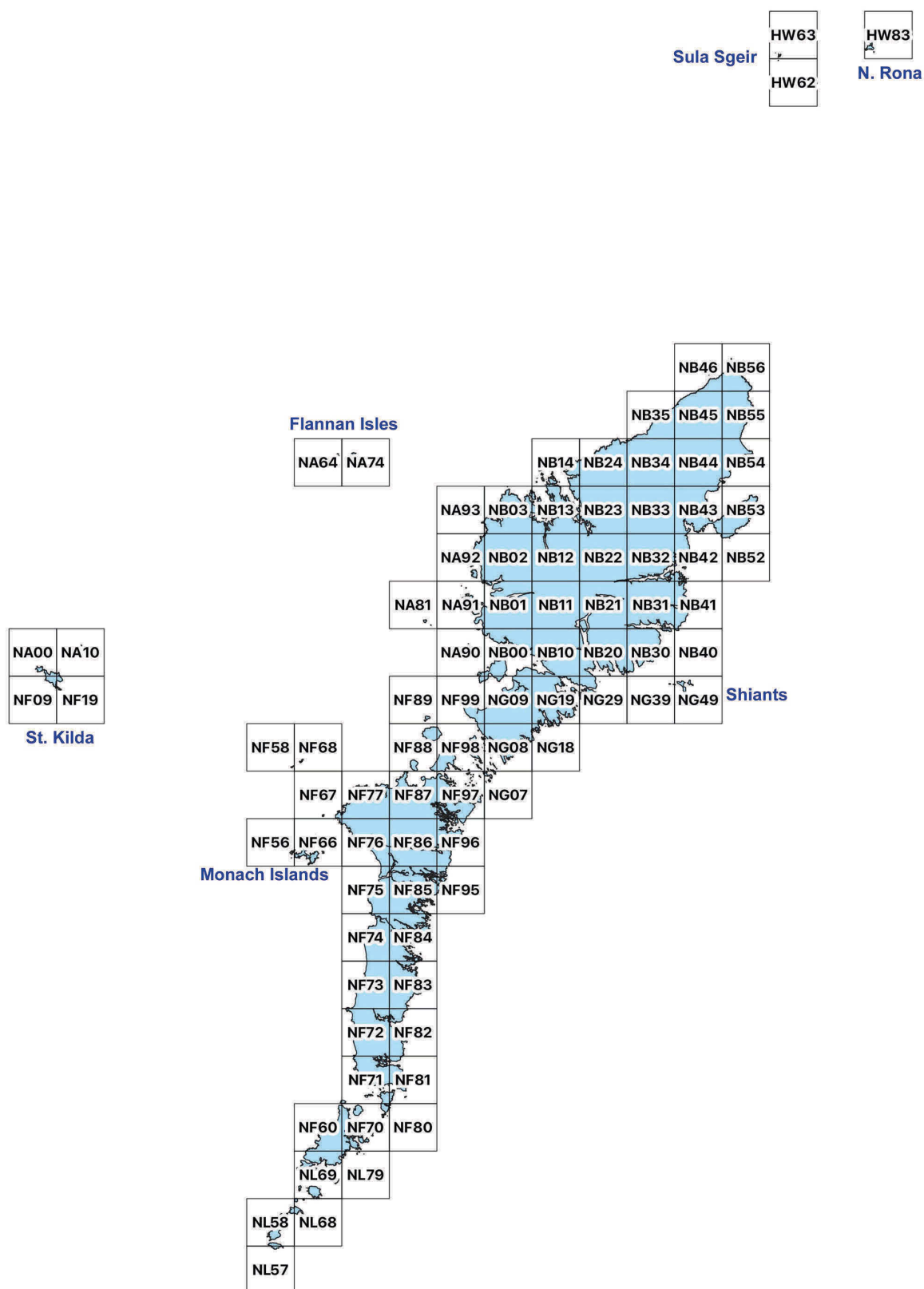
Mean monthly temperatures were calculated from the Met Office Historic Station dataset for Stornoway Airport, the only available open-licence data for the Outer Hebrides. It is noticeable that the winter to spring (Jan – May) data is more chaotic than the data for the rest of the year.

The mean temperatures for March, April and May were higher in 2022 than in 2020 or 2021 though, apart from March, 2022 and 2020 were very similar.

The mean temperature for March 2021 was similar to that of March 2022 and both were around about 1.5°C higher than in 2020. In April and May 2021 mean temperatures were about 2°C cooler than in 2022. So 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. 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.

### VC110 10km grid squares

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





Clachan Sands, North Uist - 31st August 2022,  
*Chrysaora hysoscella* - Compass Jellyfish (below left) & *Pleurobrachia pileus* - Sea Gooseberry (below right)



## 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

