

Biological Recording in 2021

Discovering our Natural History



Outer Hebrides Biological Recording

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Discovering our Natural Heritage Biological Recording in 2021

Robin D Sutton

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Introduction

Introduction

Each year we add to our knowledge of the biodiversity of the islands – the range and number of species, where and when they are found and whether they appear to be common or rare. There are some species which are usually a central feature of the records we receive, either because we encounter them on a regular basis, are part of a specific study, widespread or common, easy to identify or eye-catching. A new survey, a project on a previously neglected group of species or records from a visiting expert can suddenly add a new dimension to the biodiversity map. Although they might not have the same significance as the results of an in-depth study, the discovery of a species that has not previous been recorded in the Outer Hebrides or even in Britain, is always exciting.

The number and diversity of the records we collect are not purely a reflection of the landscapes, ecology, geography and climate of the islands, they are influenced by the interests and expertise of the biological recorders and where they operate. Information about where a local recorder sites his moth traps, whether the local entomologists are interested in bees or beetles or whether a team of expert lichenologists visited Lewis in August, is part of interpreting the annual pattern of recording and information about the distribution of our wildlife. People are an integral part of biological recording and the ways they engage with and influence our natural environment are important in developing our understanding of the islands' biodiversity.

One of the major changes in the last ten years has been the growth in the number of local people taking an active interest in our natural environment. It may begin with a question about the identity of a wild flower or a butterfly on social media or responding to a request for information about whether they have earwigs in their garden. Participating in biological recording does not require great expertise. The submission of a handful of records of common species such as the number of rabbits on the croft or which type of caterpillar are eating the cabbages, can make an important contribution to our knowledge. Collecting a few sea shells can lead to looking in rockpools for sea anemones and before too long a young naturalist is photographing nudibranchs. It may take a few years, but beachcombers can evolve into natural philosophers.

The majority of the records are submitted by a handful of very experienced local naturalists, but their contribution is supported and enriched by the participation, enthusiasm and enjoyment of a large number of local people engaging with nature. Whether it is a single record or many more, we would like to thank everyone for helping to expand our knowledge of our local wildlife and to map the biodiversity of the islands. We would like to acknowledge the work of the small group of volunteers who organise OHBR and to thank Robin Sutton for compiling the 2021 annual records summary.



The South Uist Hills (from near Howmore) at sunset, the way the machair is being farmed is changing and there will be changes in the distribution and abundance of many plants and animals as a consequence - all photographs are by Robin Sutton unless otherwise credited.

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 Scotland¹ and on the OHBR wildlife website hub². 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 website³. 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 download⁴ and a list of on-line resources to help with species identification⁶. You can share your observations and also ask for help with identification on our social media group page⁵.

Our friends at Outer Hebrides Birds⁷ 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 website⁸.

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>



Hills of North Uist – records, of even very common species, from areas with more difficult access are always very welcome

Recording overview

Summary

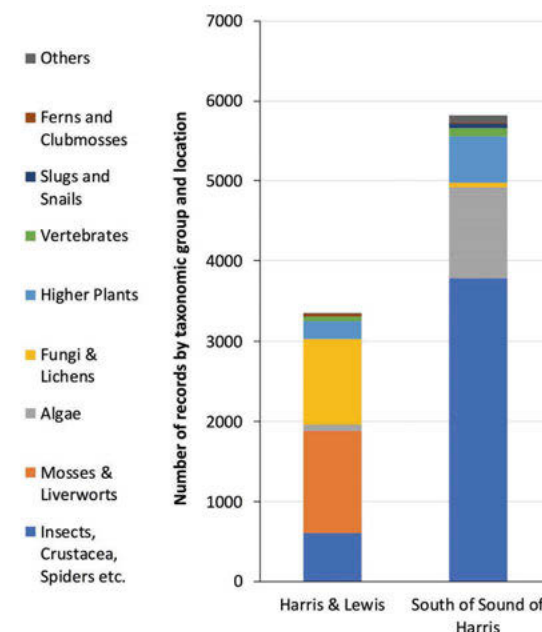
Species	Common Name	Records
<i>Forficula auricularia</i>	Common Earwig	68
<i>Apamea monoglypha</i>	Dark Arches	59
<i>Lycophotia porphyrea</i>	True Lover's Knot	52
<i>Xanthorhoe designata</i>	Flame Carpet	47
<i>Abraxas grossulariata</i>	Magpie Moth	45
<i>Lacanobia oleracea</i>	Bright-line Brown-eye	45
<i>Euthrix patoria</i>	Drinker	43
<i>Mythimna impura</i>	Smoky Wainscot	43
<i>Cerapteryx graminis</i>	Antler Moth	42
<i>Xanthorhoe montanata</i>	Silver-ground Carpet	42
<i>Pieris napi</i>	Green-veined White	41
<i>Noctua pronuba</i>	Large Yellow Underwing	41
<i>Ochropleura plecta</i>	Flame Shoulder	40
<i>Arctia caja</i>	Garden Tiger	39
<i>Apamea crenata</i>	Clouded-bordered Brindle	38
<i>Vanessa atalanta</i>	Red Admiral	38
<i>Xestia baja</i>	Dotted Clay	34
<i>Blastobasis lacticolella</i>	Wakely's Dowd	33
<i>Spilosoma lutea</i>	Buff Ermine	33
<i>Acronicta rumicis</i>	Knot Grass	32
<i>Limnephilus marmoratus</i>	a caddisfly	32
<i>Plusia festucae</i>	Gold Spot	32
<i>Diachrysia chrysitis</i>	Burnished Brass	31
<i>Hydraecia micacea</i>	Rosy Rustic	31
<i>Laotloe populi</i>	Poplar Hawk-moth	31

Records were received from 160 people who submitted 9,168 records of over 2,000 taxa (mostly full species but a few sub-species, varieties and so on). About twenty of the species found were new ones for the Outer Hebrides. Most species weren't recorded very often; 1,348 were recorded five or fewer times of which 657 were seen just once.

Twenty-five species were recorded more than 30 times and twenty-one of these most frequently recorded species were moths. Only four non-moth species (shown in red) make it to the top 25, Common Earwig (68 times), Green-veined White (41), Red Admiral (38) and a caddisfly, *Limnephilus marmoratus* (32). Moth recorders always submit huge number of records each year. Two of the most prolific recorders in 2020 were arthropod specialists and most of their records were of moths. The third highest volume recorder was mainly looking at algae. All three live on South Uist and their interests tend to bias records there towards those groups. Records from Harris and Lewis, in contrast, were mostly of lichens (recorded by a small group of visiting lichenologists) or of mosses and liverworts (sent in by a local bryologist).

Only two people sent in records of mosses and liverworts. In contrast 114 contributed sightings of various arthropod species. The groups requiring most taxonomic expertise can be illustrated by looking at the average number of records per recorder. The 155 vertebrate records came from forty-three recorders, an average of 3.6 per person. At the other extreme 1,270 records of mosses and liverworts were supplied by just two people, an average of 635 per person. It's a crude measure as in reality one person supplied 1,256 (98.9%) of the records, the second making just 14 records.

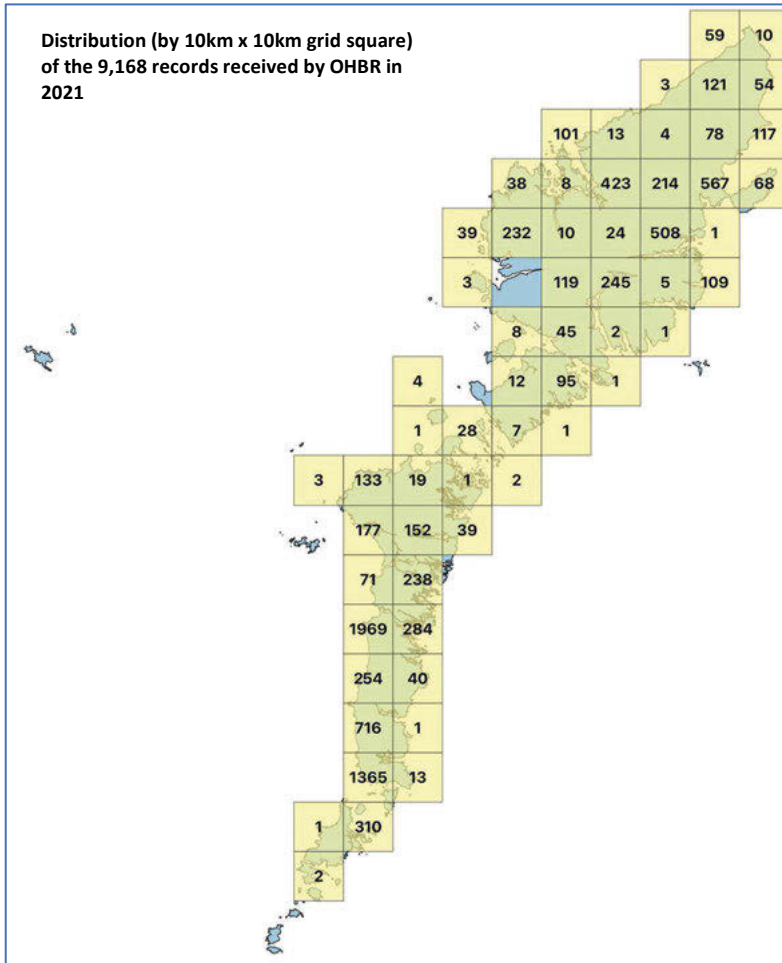
Group	Records	Recorders	Records / recorder
Mosses & liverworts	1270	2	635.0
Algae	1223	4	305.8
Lichens & other fungi	1121	24	46.7
Arthropods (insects etc.)	4392	114	38.5
Higher plants	798	27	29.6
Slugs & snails	67	12	5.6
Ferns & clubmosses	39	9	4.3
Vertebrates	155	43	3.6
Other groups	103	20	5.2



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 every one 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.

Recording overview



Callanish stone circle, Lewis

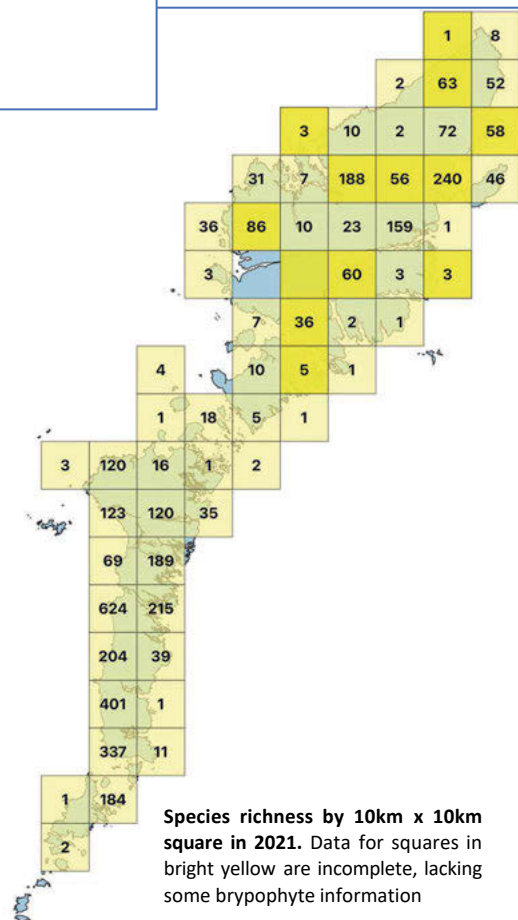
Records came from 60 of the 83 10km grid squares that cover the Outer Hebrides. On most maps we exclude squares covering North Rona, Sula Sgeir and the Flannan Isles which are very remote and rarely visited by naturalists.

We include the St Kilda archipelago on most maps as these are regularly visited nowadays and have short term resident and/or seasonal inhabitants that occasionally submit records to OHBR. There were no records from St. Kilda, the Monach Isles, Shiantis or the islands south of Barra in 2021.

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.



Mingulay



Recording overview

Vertebrates	Class	Common Names	¹ VC110	2021
			No. of Species	No. of Species (records)
	Aves*	Birds*	409	*
	Actinopterygii	Bony Fish	64	3 (7)
	Mammalia	Mammals	36	20 (109)
	Ascidiacea & Thaliacea	Sea Squirts, Salps etc	34	-
	Elasmobranchii	Sharks, Rays & Skates	6	3 (5)
	Reptilia	Reptiles	5	3 (6)
	Amphibia	Frogs, Toads & Newts	3	2 (26)
	Cephalaspidomorphi	Jawless Fish (Lampreys)	1	-
Total			578	31 (153)

* Records of bird sightings – not collated by OHBR but through the Outer Hebrides Birds website and the BTO local recorder.

Invertebrates	Class	Common Names	No. of Species	No. of Species (records)
	Arthropoda	Insects (except Lepidoptera)	1593	270 (960)
		Lepidoptera	533	342 (3369)
		Other Arthropods e.g. Crustaceans, Spiders, Millipedes etc.	221	28 (63)
	Mollusca	Snails, Slugs, Bivalves, Octopuses etc.	412	34 (67)
	Annelida	True Worms	160	2 (2)
	Cnidaria	Corals, Jellyfish, Hydra etc.	89	4 (15)
	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	3 (9)
	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,	11	10 (18)
		Echiura, Phoronida, Gastrotricha, Myzozoa		
Total			3172	695 (4485)

Plants	Division	Common Names	No. of Species	No. of Species (records)
	Magnoliopsida	Flowering Plants	950	230 (781)
	Bryophyta*	Mosses	348	-
	Marchantiophyta*	Liverworts	169	-
	Rhodophyta	Red Algae	149	-
	Chlorophyta	Green Algae	72	17 (26)
	Charophyta	Stoneworts and Desmids	Awaiting revision	316 (1197)
	Pteridophyta	Ferns & Horsetails	45	15 (39)
	Pinopsida	Conifers	23	1 (1)
	Lycopodiopsida	Clubmosses & Quillworts	9	1 (1)
	Anthocerotophyta*	Hornworts	2	-
Total			1767	580 (2045)

* 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	282	9 (12)
		Lichen forming Ascomycota	616	355 (1075)
	Basidiomycota	Larger mushroom type species, and Rusts	539	44 (51)
		Lichen forming Basidiomycota e.g. <i>Lichenomphalia</i> spp.	6	5 (7)
	Chytridiomycota	Chytrids (fungi with flagellate spores)	2	-
	Zygomycota	Moulds	7	-
	Oomycota*	Filamentous protists (Downy Mildews)	10	-
	Myxomycota*	Slime moulds	Unknown	1 (1)
Total			1462	414 (1146)

*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	11	7 (13)
	Chromista	Brown Seaweeds, Diatoms etc.	79	19 (35)
	Protozoa		6	6 (8)
Total			96	32 (56)

¹ Unless stated otherwise, No. of species for VC110 are from current OHBR checklists or NBN Atlas Scotland checklists as of 1/2/20. 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, 614 (c. 29%) of them were recorded in 2021. There appears to be a slightly rising trend in the number and percentage of VC 110 species recorded each year.

Order	Common Name	Britain Species ¹	VC 110		Number of species recorded						
			Species ²	% ³	2017	2018	2019	2020	2121	% ⁴	Trend
Diptera	Flies	7,000	850	12.1	74	69	55	71	92	10.8	↑
Hymenoptera	Bees, Wasps etc.	7,000	104	1.5	26	22	28	29	34	32.7	↑
Coleoptera	Beetles	4,000	455	11.4	18	19	32	68	76	16.7	↑
Lepidoptera	Butterflies & Moths	2,570	554	21.6	312	333	343	319	342	61.9	≈
Hemiptera	Bugs	1,830	74	3.4	11	6	10	16	21	28.3	↑
Phthiraptera	Biting lice & Sucking lice	540									
Collembola ⁵	Springtails	250	7	2.8					2	28.6	↑
Trichoptera	Caddisflies	198	76	36.9		14	22	25	24	31.6	≈
Thysanoptera	Thrips	179									
Psocoptera	Barkflies	100	1	1.0			1		3	300.0	↑
Neuroptera	Lacewings & Antlions	69	4	5.8			1	1	2	50.0	↑
Siphonaptera	Fleas	62	16	25.8				1	2	12.5	↑
Ephemeroptera	Mayflies	51	10	19.6		1	2	2	1	10.0	≈
Odonata	Dragonflies	49	12	24.5	9	9	8	8	8	66.7	≈
Plecoptera	Stoneflies	34	9	26.5			1	1	2	22.2	≈
Orthoptera	Grasshoppers & Crickets	33	3	9.1	1	2	1	1	2	66.7	≈
Protura ⁵	Simpletails	15									
Diplura ⁵	Two-pronged Bristle-tails	11									
Dictyoptera	Cockroaches, Termites etc.	11									
Strepsiptera	Stylops	10									
Archaeognatha	Bristle-tails	7	2	28.6	1	1	1		1	50.0	≈
Dermaptera	Earwigs	7	1	14.3	1	1	1	1	1	100.0	≈
Mecoptera	Scorpionflies	4									
Rhaphidioptera	Snakeflies	4									
Megaloptera	Alderflies	3	1	33.3				1	1	100.0	≈
Zygentoma (Thysanura)	Silverfish & Firebrats	2									
Total		24,039	2,145	8.9	453	477	506	544	614	28.7	↑

¹ The Royal Entomological Society Book of British Insects, Peter C Barnard, 2011, Willey-Blackwell
² From current OHBR or NBN Atlas Scotland checklists as of 1st February 2020
³ As percentage of total British species, ⁴ As percentage of VC110 (Outer Hebrides) species, ⁵ No longer considered as Insects

Most insect records are from resident naturalists. Increases in the number of species of Diptera, Hymenoptera, Coleoptera and Hemiptera recorded in 2021 shows a welcome broadening in their taxonomic interests. Rather more systematic sampling for some of these groups is also now taking place, albeit at just a few locations at the moment. Some of the smaller orders, Collembola, Psocoptera, Neuroptera and Siphonoptera also showed slight increases in the number of species recorded in 2021. These were mostly opportunistic records of specimens that cropped up in other contexts rather than being the result of any systematic sampling. Records of Lepidoptera, Trichoptera and Odonata have plateaued. For these orders more work on extending the distribution of recording sites would be useful. Two others orders might benefit from more work, the Ephemeroptera and Plecoptera. Systematic surveys in both still and running freshwater habitats would easily lead to an increase in their representation in the annual recording summary.

Insects - Lepidoptera

Insects – Lepidoptera

Group	2017			2018			2019			2020			2021		
	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
Moths	3546		299	3287		320	3274		330	3116		306	3215		329
Butterflies	222		13	186		13	187		13	105		13	154		13
Other insects	864	18%	141	533	13%	144	703	17%	163	806	19%	225	960	21%	270
All Insects	4632		453	4006		477	4164		506	4027		544	4329		612
Other inverts.	287	6%	89	77	2%	53	75	2%	53	131	3%	70	177	4%	83
All Inverts.	4919		542	4083		530	4239		559	4158		614	4506		695

2021 in figures

- Lepidoptera (moths and butterflies) continue to dominate the invertebrate records
- 4,485 records of 695 species of invertebrate were recorded in 2021
- This is the highest number of records of invertebrates received since 2017
- The Lepidoptera records (3,369) make up 75% of the total invertebrate records
- The 695 species of invertebrate recorded in 2021 is the highest number since publication of our annual summaries started in 2017
- Just under half (49%) of all invertebrate species recorded are Lepidoptera, 342 species in 2021 out of a total of 696 invertebrates
- Of the 342 species recorded in 2021, 329 were moths and 13 were butterflies
- Forty recorders in total contributed Lepidoptera records in 2021, butterfly records came from seventeen people and moth records from thirty-four.

Butterflies

Family	Species	Common Name	Records
Lycaenidae	<i>Polyommatus icarus</i>	Common Blue	14
Nymphalidae	<i>Vanessa atalanta</i>	Red Admiral	38
	<i>Maniola jurtina</i>	Meadow Brown	20
	<i>Aglais urticae</i>	Small Tortoiseshell	16
	<i>Speyeria aglaja</i>	Dark Green Fritillary	6
	<i>Aglais io</i>	Peacock	5
	<i>Vanessa cardui</i>	Painted Lady	4
	<i>Coenonympha pamphilus</i>	Small Heath	2
	<i>Coenonympha tullia</i>	Large Heath	2
	<i>Hipparchia semele</i>	Grayling	2
Pieridae	<i>Pararge aegeria</i>	Speckled Wood	2
	<i>Pieris napi</i>	Green-veined White	41
	<i>Pieris brassicae</i>	Large White	2
Total			154



Vanessa atalanta – Red Admiral, the 2nd most frequently recorded butterfly in 2021 with 38 records



Vanessa cardui - Painted Lady, a poor year with only 4 records

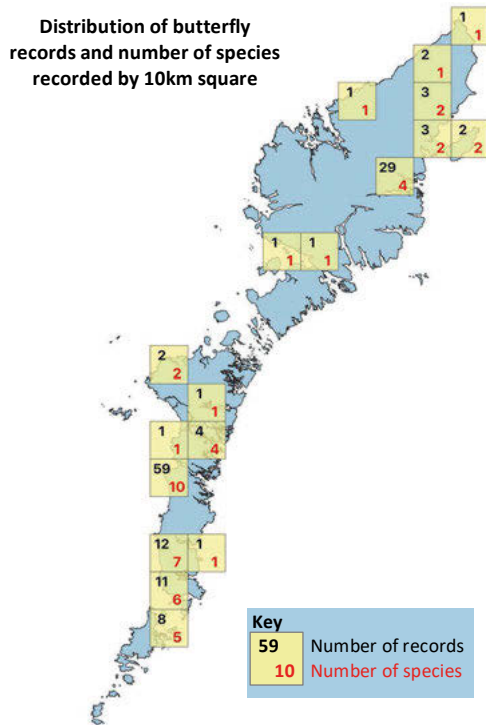


Pieris napi – Green-veined White, 41 records, the most frequent

Insects - Lepidoptera

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

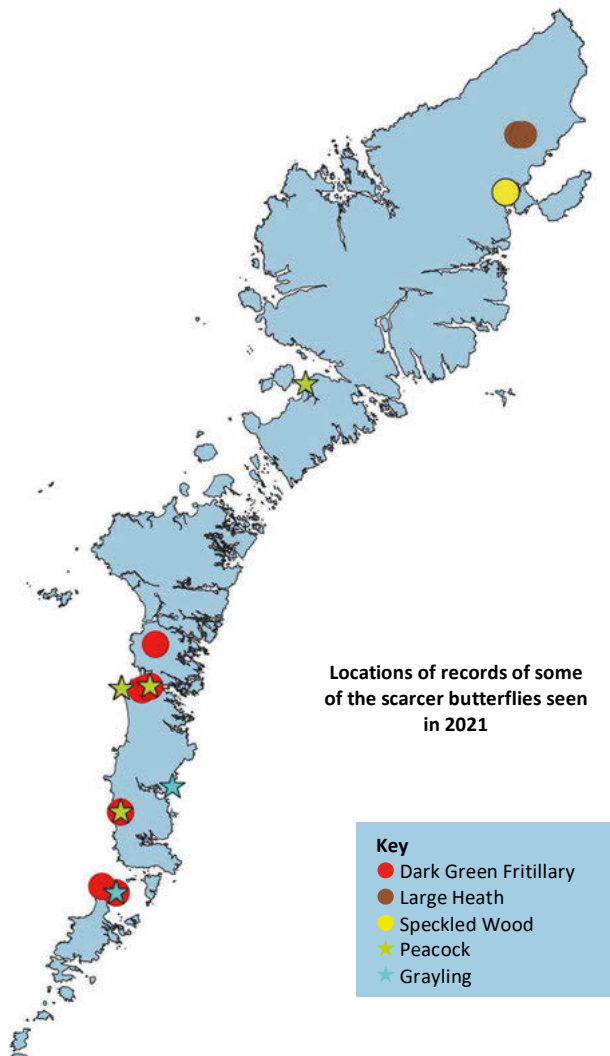
¹as of 18/1/2022



Each year since 2017, we have recorded thirteen species of butterfly. We don't always get the same species each year. Common butterflies like Green-veined White, Meadow Brown and Common Blue always seem to be found, but then some of the less common may be missed. In 2021 Large Heath was seen, Small White was missed.

Then there's a few scarce species we get most years. Speckled Wood seems to be hanging on around Stornoway Castle. Adults were seen in mid-May and late-July. Colonies of Ringlet (not seen since 2012) and Orange Tip (no sightings since 2019) may not have survived. Clouded Yellow is a far less frequent migrant visitor than Painted Lady and hasn't been seen here since 1992. The Peacock seen at Luskentyre on Harris was the first one seen north of the Sound of Harris since 2006.

The total number of records for the year was considerably higher than in 2020 but still well below the level of recording we were seeing in the period 2017 – 2019. The lack of recording on Harris and Lewis persists. Both the total number of records and the number of species seen is still low. We are not sure whether the diversity of butterflies does really decrease as we move north through the islands or is a function of less intense recording?



Insects - Lepidoptera

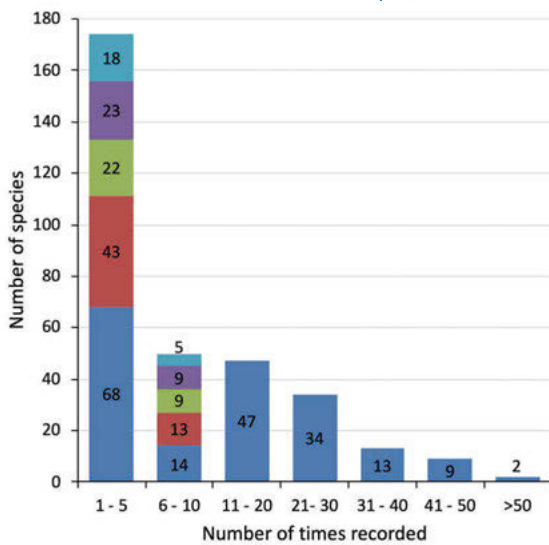
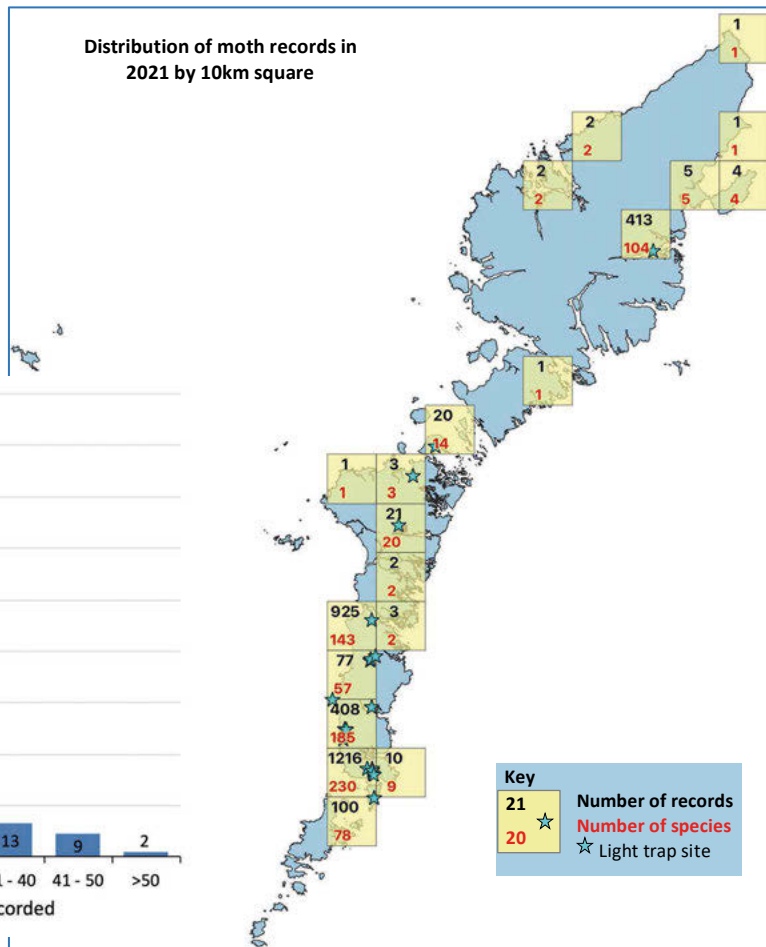
Moths

Moth recorders in 2021 found about the usual number of species. The range runs from 299 in 2017 through to 300 in 2019. The total number of records reported is slightly lower than in either 2017 or 2018. On the ground it didn't feel like it was going to be a good season. Spring was late with cold weather well into May and the autumn wind and rain seemed to start earlier than usual.

Method	Records
Robinson MV Trap (125W)	1998
Actinic trap	441
Trapped at light	357
Netted	82
Field observation	326
Caught in house	8
Found dead	1
No method recorded	2
Total	3215

As in previous years most moths were caught in some form of light trap. The main traps were operated in the same locations as last year with a couple of extra at locations operated, short term, by visitors to the islands.

Most moth species weren't recorded very often. Only two, *Apamea monoglypha* (Dark Arches) and *Lycophotia porphyrea* (True Lover's Knot), were found more than fifty times. 174 were recorded less than five times including sixty-eight that were found just once and forty-three that were found just twice.



Moths recorded as larvae



Acronicta rumicis - Knot Grass



Euthrix potatoria – Drinker, an early instar larva

Insects - Lepidoptera

There are a number of moths which are recorded as caterpillars as well as adults. These include very obvious species such of *Acrionicta rumicis* (Knot Grass) and *Euthrix potatoria* (Drinker). They stand out due to their striking colour patterns which probably act as warnings to potential predators that these contain unpleasant chemicals or have irritant hairs, often both. Ironically, characteristics that help deter predation are the things that enable us to spot them.



Arctia caja - Garden Tiger

Caterpillars that feed on our plants also attract attention. *Arctia caja* (Garden Tiger) larvae seem to feed on most vegetable crops given the chance. These are a favourite food of Cuckoos and it was said that other birds wouldn't eat them. I've seen Blackbird, Song Thrush and Stonechat feeding on them. They thrash the caterpillar repeatedly against a hard surface until the hairs are knocked off. They use the same strategy for slugs to get rid of the slime.



Lacanobia oleracea - Bright-line Brown-eye, green form



Lacanobia oleracea - Bright-line Brown-eye, brown form

Another moth whose caterpillars are regularly found feeding on garden plants is *Lacanobia oleracea* (Bright-line Brown-eye). They can be quite a pest if the adults get into greenhouse where they seem to have a special taste for tomato plants.



Eupithecia centaureata - Lime-speck Pug, another spotted in a garden during plant maintenance

Family / Species	Common Name	Records
Lasiocampidae		
<i>Euthrix potatoria</i>	Drinker	8
<i>Lasiocampa quercus</i>	Oak Eggar	3
<i>Lasiocampa quercus callunae</i>	Northern Eggar	1
<i>Macrothylacia rubi</i>	Fox Moth	5
Noctuidae		
<i>Acrionicta psi</i>	Grey Dagger	1
<i>Acrionicta rumicis</i>	Knot Grass	3
<i>Colocasia coryli</i>	Nut-tree Tussock	2
<i>Lacanobia oleracea</i>	Bright-line Brown-eye	3
<i>Phlogophora meticulosa</i>	Angle Shades	1
<i>Xestia</i>	Xestia	1
<i>Xylena vetusta</i>	Red Sword-grass	1
Erebidae		
<i>Arctia caja</i>	Garden Tiger	4
<i>Phragmatobia fuliginosa</i>	Ruby Tiger	3
<i>Spilosoma lubricipeda</i>	White Ermine	2
<i>Tyria jacobaeae</i>	Cinnabar	1
Geometridae		
<i>Abraxas grossulariata</i>	Magpie Moth	1
<i>Eupithecia centaureata</i>	Lime-speck Pug	2
<i>Eupithecia satyrata</i>	Satyr Pug	1
<i>Opisthograptis luteolata</i>	Brimstone Moth	1
Yponomeutidae		
<i>Swammerdamia caesiella</i>	Birch Ermel	3
Nepticulidae		
<i>Stigmella aurella</i>	Golden Pigmy	1
<i>Stigmella microtheriella</i>	Nut-tree Pigmy	2
Zygaenidae		
<i>Zygaena filipendulae</i>	Six-spot Burnet	2
Saturniidae		
<i>Saturnia pavonia</i>	Emperor Moth	1
Momphidae		
<i>Mompha raschkiella</i>	Little Cosmet	1
Notodontidae		
<i>Notodonta ziczac</i>	Pebble Prominent	1
Total		55

Another easy way to spot the larvae of certain moth species is by looking for leaf mines. *Stigmella aurella* (Golden Pigmy) forms mines on Bramble and *Stigmella microtheriella* (Nut-tree Pigmy) on Hazel.

Insects - Lepidoptera

Moths not found in light traps

Moth traps are very 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, *Ematurga atomaria* (Common Heath) for example, is attracted to light. Some such as *Lycia zonaria* (Belted Beauty), *Zygaena filipendulae* (Six-spot Burnet) and *Macrothylacia rubi* (Fox Moth) are sometimes found in moth traps but are, perhaps, more easily found through direct observation. The record for Grey Dagger is interesting as this species is impossible to separate from the Dark Dagger as an adult without dissecting its genitalia. As caterpillars they are distinctively different.

A number of others, principally small cryptic micro-moths, were only found by sweeping areas of suitable looking vegetation. One species, *Depressaria daucella* (Dingy Flat-body), with a common name suggesting a plot line for a TV crime drama, was only found inside a house.

Species (species in red were only found as larvae)	Common Name	Field Obs.	Netted	In house	Total
<i>Lycia zonaria</i>	Belted Beauty	13			13
<i>Zygaena filipendulae</i>	Six-spot Burnet	9			9
<i>Ematurga atomaria</i>	Common Heath	6	1		7
<i>Emmelina monodactyla</i>	Common Plume	5			5
<i>Macrothylacia rubi</i>	Fox Moth	5			5
<i>Glyphipterix simplicella</i>	Cocksfoot Moth	4			4
<i>Swammerdamia caesiella</i>	Birch Ermel	2	3		5
<i>Udea ferrugalis</i>	Rusty Dot	2	1	1	4
<i>Rheumaptera hastata</i>	Argent & Sable	2	1		3
<i>Anarta myrtilli</i>	B'ful Yellow Underwing	2			2
<i>Colocasia coryli</i>	Nut-tree Tussock	2			2
<i>Stigmella microtheriella</i>	Nut-tree Pigmy	2			2
<i>Carpatolechia notatella</i>	Sallow-leaf Groundling	1	1		2
<i>Acronicta psi</i>	Grey Dagger	1			1
<i>Alucita hexadactyla</i>	Twenty-plume Moth	1			1
<i>Ancylis</i>	Ancylis	1			1
<i>Argyresthia goedartella</i>	Golden Argent	1			1
<i>Camptogramma bilineata subsp. atlantica</i>		1			1
<i>Epinotia cruciana</i>	Willow Tortrix	1			1
<i>Hyles gallii</i>	Bedstraw Hawk-moth	1			1
<i>Lomaspilis marginata</i>	Clouded Border	1			1
<i>Mompha raschkiella</i>	Little Cosmet	1			1
<i>Nymphula nitidulata</i>	Beautiful China-mark	1			1
<i>Operophtera brumata</i>	Winter Moth	1			1
<i>Parornix scoticella</i>	Rowan Slender	1			1
<i>Phyllonorycter maestingella</i>	Beech Midget	1			1
<i>Stigmella aurella</i>	Golden Pigmy	1			1
<i>Tyria jacobaeae</i>	Cinnabar	1			1
<i>Xestia</i>	Xestia	1			1
<i>Xylena vetusta</i>	Red Sword-grass	1			1
<i>Argyresthia brockeella</i>	Gold-ribbon Argent		2		2
<i>Argyresthia conjugella</i>	Apple Fruit Moth		2		2
<i>Argyresthia retinella</i>	Netted Argent		2		2
<i>Glyphipterix schoenicolella</i>	Bog-rush Fanner		2		2
<i>Glyphipterix thrasonella</i>	Speckled Fanner		2		2
<i>Phyllonorycter hilarella</i>	Sallow Midget		2		2
<i>Pleurota bicostella</i>	Light Streak		2		2
<i>Schreckensteinia festaliella</i>	Bramble False-feather		2		2
<i>Clepsia senecionana</i>	Obscure Twist	1			1
<i>Dichrorampha montanana</i>	Spike-marked Drill	1			1
<i>Grapholita compositella</i>	Triple-stripe Piercer	1			1
<i>Leucoptera spartifoliella</i>	Broom Bent-wing	1			1
<i>Depressaria daucella</i>	Dingy Flat-body			1	1



Lycia zonaria – Belted Beauty, female



Zygaena filipendulae - Six-spot Burnet, mating

Insects - Lepidoptera

Macro-moths

Family	Recorders	Records	Species	Most frequently recorded in family	Common name	Records
Noctuidae	18	1289	93	<i>Apamea monoglypha</i>	Dark Arches	59
Geometridae	18	784	76	<i>Xanthorhoe designata</i>	Flame Carpet	47
Erebidae	10	166	8	<i>Arctia caja</i>	Garden Tiger	39
Notodontidae	5	52	5	<i>Notodonta ziczac</i>	Pebble Prominent	23
Lasiocampidae	10	54	4	<i>Euthrix potatoria</i>	Drinker	43
Sphingidae	7	38	3	<i>Laothoe populi</i>	Poplar Hawk-moth	31
Drepanidae	1	2	2	<i>Ochropacha duplaris</i>	Common Lutestring	1
Saturniidae	8	8	1	<i>Saturnia pavonia</i>	Emperor Moth	8
Zygaenidae	5	9	1	<i>Zygaena filipendulae</i>	Six-spot Burnet	9
Hepialidae	3	7	1	<i>Korscheltellus fusconebulosa</i>	Map-winged Swift	7
Total Macro-moths		2409	194			

Species	Common Name	Records
<i>Apamea monoglypha</i>	Dark Arches	59
<i>Lycophotia porphyrea</i>	True Lover's Knot	52
<i>Xanthorhoe designata</i>	Flame Carpet	47
<i>Abraxas grossulariata</i>	Magpie Moth	45
<i>Lacanobia oleracea</i>	Bright-line Brown-eye	45
<i>Euthrix potatoria</i>	Drinker	43
<i>Mythimna impura</i>	Smoky Wainscot	43
<i>Cerapteryx graminis</i>	Antler Moth	42
<i>Xanthorhoe montanata</i>	Silver-ground Carpet	42
<i>Noctua pronuba</i>	Large Yellow Underwing	41
<i>Ochropleura plecta</i>	Flame Shoulder	40
<i>Arctia caja</i>	Garden Tiger	39
<i>Apamea crenata</i>	Clouded-bordered Brindle	38
<i>Xestia baja</i>	Dotted Clay	34
<i>Spilosoma lutea</i>	Buff Ermine	33
<i>Plusia festucae</i>	Gold Spot	32
<i>Acronicta rumicis</i>	Knot Grass	32
<i>Laothoe populi</i>	Poplar Hawk-moth	31
<i>Diachrysia chrysitis</i>	Burnished Brass	31
<i>Hydraecia micacea</i>	Rosy Rustic	31
<i>Alcis repandata</i>	Mottled Beauty	30
<i>Xanthorhoe ferrugata</i>	Dark-barred Twin-spot Carpet	30
<i>Cerastis rubricosa</i>	Red Chestnut	30
<i>Cosmorhoe ocellata</i>	Purple Bar	30
<i>Eupithecia nanata</i>	Narrow-winged Pug	29
<i>Diarsia mendica</i>	Ingrailed Clay	28
<i>Spilosoma lubricipeda</i>	White Ermine	28
<i>Opisthograptis luteolata</i>	Brimstone Moth	28
<i>Amphipoea oculea</i> agg.	Ear Moth agg.	28
<i>Denticucullus pygmina</i>	Small Wainscot	27
<i>Hypena proboscidalis</i>	Snout	26
<i>Abrostola tripartita</i>	Spectacle	26
<i>Ceramica pisi</i>	Broom Moth	26
<i>Apamea remissa</i>	Dusky Brocade	25
<i>Orthosia incerta</i>	Clouded Drab	24
<i>Colostygia pectinataria</i>	Green Carpet	24
<i>Perizoma blandiata</i>	Pretty Pinion	23
<i>Notodonta ziczac</i>	Pebble Prominent	23
<i>Orthosia gothica</i>	Hebrew Character	23
<i>Rivula sericealis</i>	Straw Dot	23
<i>Diarsia rubi</i>	Small Square-spot	22
<i>Mesapamea secalis</i> agg.	Common Rustic agg.	22
<i>Eugnorisma glareosa</i>	Autumnal Rustic	22
<i>Diarsia brunnea</i>	Purple Clay	22
<i>Xestia xanthographa</i>	Square-spot Rustic	22
<i>Eupithecia centaureata</i>	Lime-speck Pug	21
<i>Sideridis rivularis</i>	Campion	21
<i>Hydriomena furcata</i>	July Highflyer	21
<i>Noctua janthe</i>	L. Broad-bordered Yellow Underwing	20
<i>Petrophora chlorosata</i>	Brown Silver-line	20

2,409 records of 194 species of macro-moth were recorded in 2021. Fifty of these were recorded more than twenty times. There were representatives of ten moth families with the two big macro families dominating the data; 1,289 records of 93 species of Noctuidae and 784 records of 76 species of Geometridae.



Diachrysia chrysitis - Burnished Brass



Xanthorhoe ferrugata f. *ferrugata* - Dark-barred Twin-spot Carpet (red form), confirmed by dissection



Abraxas grossulariata - Magpie Moth

Insects - Lepidoptera

Micro-moths

Family	Recorders	Records	Species	Most frequently recorded in family	Common name	Records
Tortricidae	5	301	47	<i>Eucosma cana</i>	Hoary Belle	28
Crambidae	6	254	23	<i>Udea lutealis</i>	Pale Straw Pearl	29
Gracillariidae	3	23	7	<i>Aspilapteryx tringipennella</i>	Ribwort Slender	8
Gelechiidae	2	25	7	<i>Neofaculta ericetella</i>	Heather Groundling	9
Depressariidae	3	19	6	<i>Agonopterix cnicella</i>	Sea-holly Flat-body	7
Coleophoridae	1	12	5	<i>Coleophora glaucicolella</i>	Grey Rush Case-bearer	4
Pyrilidae	2	16	5	<i>Delplanqueia dilutella</i>	Powdered Knot-horn	6
Elachistidae	2	9	5	<i>Elachista canapennella</i>	Little Dwarf	3
Argyresthiidae	3	10	5	<i>Argyresthia pygmaeella</i>	Sallow Argent	3
Glyphipterigidae	2	8	3	<i>Glyphipterix simplicella</i>	Cocksfoot Moth	4
Tineidae	1	4	3	<i>Monopis weaverella</i>	Carrion Moth	2
Momphidae	2	3	3	<i>Mompha propinquella</i>	Marbled Cosmet	1
Pterophoridae	2	17	3	<i>Platyptilia isodactylus</i>	Hoary Plume	8
Oecophoridae	4	35	3	<i>Endrosis sarcitrella</i>	White-shouldered House-moth	20
Nepticulidae	1	3	2	<i>Stigmella microtheriella</i>	Nut-tree Pigmy	2
Blastobasidae	3	38	2	<i>Blastobasis lacticolella</i>	Wakely's Dowd	33
Schreckensteiniidae	1	2	1	<i>Schreckensteinia festaliella</i>	Bramble False-feather	2
Yponomeutidae	1	5	1	<i>Swammerdamia caesiella</i>	Birch Ermel	5
Lyonetiidae	1	1	1	<i>Leucoptera spartifoliella</i>	Broom Bent-wing	1
Choreutidae	2	16	1	<i>Anthophila fabriciana</i>	Common Nettle-tap	16
Alucitidae	1	1	1	<i>Alucita hexadactyla</i>	Twenty-plume Moth	1
Plutellidae	2	4	1	<i>Plutella xylostella</i>	Diamond-back Moth	4
Total Micro-moths		806	135			

Species	Common name	Records
<i>Blastobasis lacticolella</i>	Wakely's Dowd	33
<i>Udea lutealis</i>	Pale Straw Pearl	29
<i>Eucosma cana</i>	Hoary Belle	28
<i>Catoptria margaritella</i>	Silver-stripe Grass-veneer	28
<i>Crambus pascuella</i>	Inlaid Grass-veneer	28
<i>Eucosma campolliana</i>	Marbled Bell	25
<i>Celypha lacunana</i>	Common Marble	24
<i>Endrosis sarcitrella</i>	White-shouldered House-moth	20
<i>Bactra lancealana</i>	Rush Marble	19
<i>Agriphila straminella</i>	Straw Grass-veneer	19
<i>Agriphila tristella</i>	Common Grass-veneer	18
<i>Anthophila fabriciana</i>	Common Nettle-tap	16
<i>Chrysoteuchia culmella</i>	Garden Grass-veneer	16
<i>Notocelia cynosbatella</i>	Yellow-faced Bell	15
<i>Eudonia pallida</i>	Marsh Grey	15
<i>Acleris aspersana</i>	Ginger Button	14
<i>Notocelia uddmanniana</i>	Bramble Shoot Moth	14
<i>Eana penziana</i>	Large Mottled Shade	14
<i>Hofmannophila pseudospretella</i>	Brown House-moth	13
<i>Eana osseana</i>	Dotted Shade	13
<i>Anania fuscalis</i>	Cinerous Pearl	12
<i>Eudonia angustea</i>	Narrow-winged Grey	11
<i>Eudonia murana</i>	Moorland Grey	10
<i>Evergestis pallidata</i>	Chequered Pearl	10

Identifying micro-moths is more demanding than it is for macro-moths. More of the species 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 but, with experience, the common species likely to be found in your area become familiar. In total there were 806 records of 135 species of micro-moth from 22 families. Twenty-four were recorded ten or more times.



Blastobasis lacticolella - Wakely's Dowd



Catoptria margaritella - Silver-stripe Grass-veneer



Mompha propinquella - Marbled Cosmet

Insects other than Lepidoptera

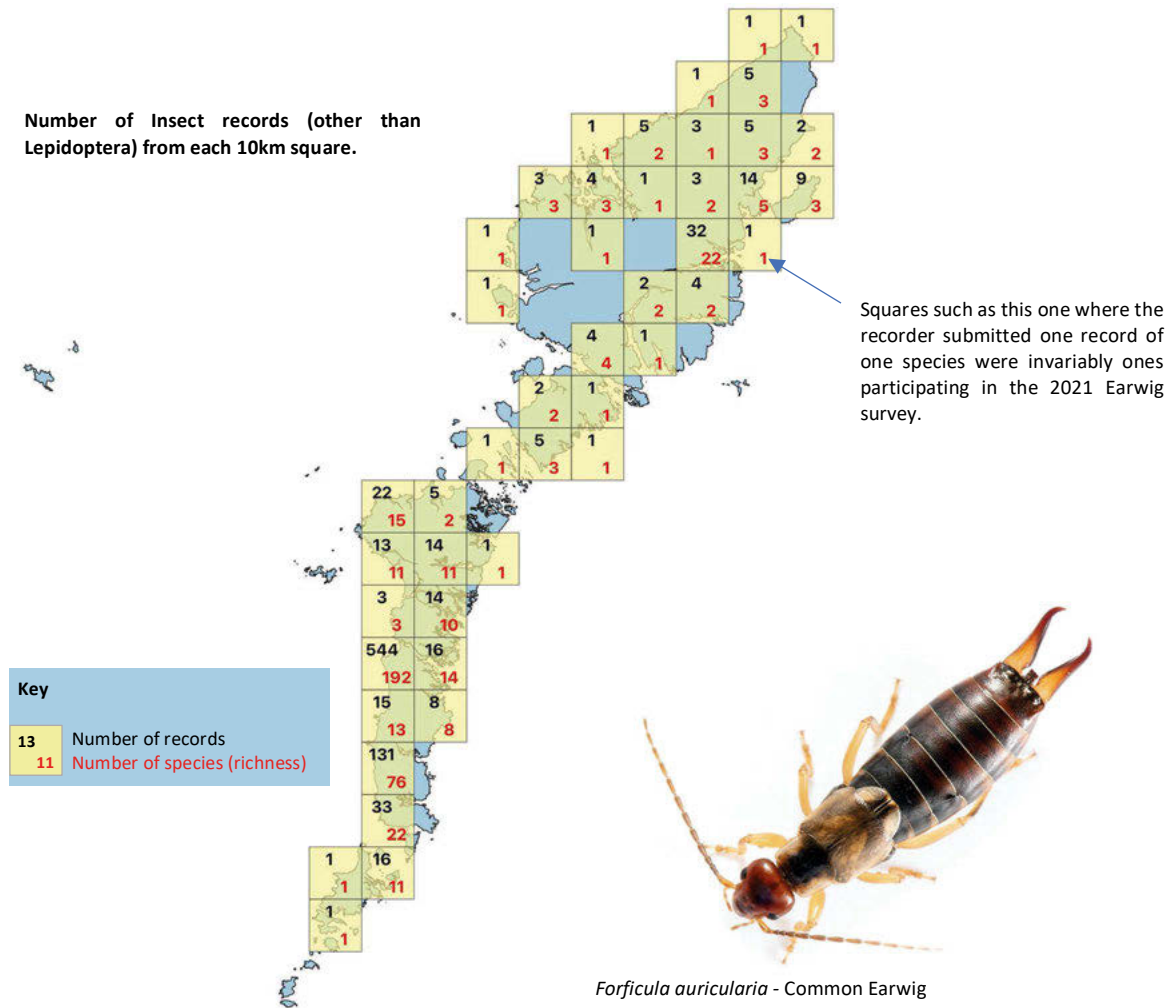
Insects other than Lepidoptera

Recording summary

Insects (other than Lepidoptera) records by island										
Island	2017	%	2018	%	2019	%	2020	%	2021	%
Lewis, Harris etc.	179	20.1	99	17.6	80	11.4	37	4.1	114	12.0
Lewis	141		24		54		34		97	
Great Bernera					2					
Harris	38		75		20		3		17	
Scalpay					4					
North Uist etc.	66	7.4	103	18.3	85	12.1	23	2.9	57	6.0
Berneray	1		8		4		4		1	
North Uist	65		78		77		19		56	
Grimsay	0		17		4					
Benbecula	77	8.6	56	9.9	3	0.4	7	0.9	24	2.5
South Uist etc.	506	56.7	284	50.4	483	68.7	734	91.5	734	77.1
South Uist	485		277		481		732		729	
Eriskay	21		7		2		2		5	
Barra etc.	64	7.2	22	3.9	52	7.4	5	0.6	23	2.4
Barra	63		18		42		5		23	
Vatersay	1		2		10					
Mingulay			2							
Total	892		564		703		806		952	

Eighty-five people submitted 952 records of insects other than Lepidoptera in 2021 compared to just twenty-four in 2000. Fifty-one recorders participated in an Earwig survey organized through the Currag and OHBR Facebook pages. Records of earwigs were the only ones received from these people. The total number of records received was the highest since 2017 when publication of annual reports started. Records were also received from most 10km squares in the Outer Hebrides though a high proportion were from people participating in the earwig survey.

Number of Insect records (other than Lepidoptera) from each 10km square.



Insects other than Lepidoptera

Species	Type	Records
<i>Forficula auricularia</i>	Common Earwig	68
<i>Limnephilus marmoratus</i>	Caddisfly	32
<i>Plectrocnemia conspersa</i>	Caddisfly	26
<i>Bombus lucorum</i> agg.	Bumblebee	23
<i>Bombus muscorum</i>	Moss Carder	21
<i>Tipula paludosa</i>	Cranefly	17
<i>Philaenus spumarius</i>	Cuckoospit Bug	16
<i>Bombus jonellus</i>	Heath Bumblebee	15
<i>Pyrrhosoma nymphula</i>	Large Red Damselfly	14
<i>Limnephilus affinis</i>	Caddisfly	13
<i>Limnephilus lunatus</i>	Caddisfly	13
<i>Limnephilus sparsus</i>	Caddisfly	12
<i>Pterostichus niger</i>	Ground Beetle	12
<i>Bombus pascuorum</i>	Common Carder	11
<i>Ischnura elegans</i>	Blue-tailed Damselfly	11
<i>Limnephilus elegans</i>	Caddisfly	11
<i>Nebria brevicollis</i>	Ground Beetle	11
<i>Rhingia campestris</i>	Heineken Fly	10
<i>Thanatophilus rugosus</i>	Carrion Beetle	10

Most species of insect weren't recorded very often. Nearly half were recorded just once and only nineteen more than ten times.

The Common Earwig (*Forficula auricularia*) was the most frequently recorded species with sixty-eight records. Most of the remaining species were either charismatic species, such as bumblebees (4 species) or damselflies (2 species), or things like caddisflies and ground beetles which were caught during regular entomological surveys. Two species were just interesting things that people noticed, the Cuckoospit Insect (*Philaenus spumarius*) and the hoverfly commonly called the Heineken Fly (*Rhingia campestris*).

No. of times recorded	Number of species
1	128
2	52
3	22
4	16
5	6
6	5
7	8
8	7
9	8
≥10	19
Total	271



Philaenus spumarius – Cuckoo-spit Insect.



Rhingia campestris - Heineken Fly, it reaches the parts other hoverflies can't reach.



Ischnura elegans - Blue-tailed Damselfly



Pterostichus niger – a ground beetle



Bombus muscorum – Moss Carder



Limnephilus elegans – a caddisfly

Insects other than Lepidoptera

Recorders	Made	Records
64	1	Record
8	2 - 5	Records
8	6 - 20	Records
2	21 - 100	Records
2	101 - 200	Records
1	>300	Records
85	Total	

As we've seen most insects aren't recorded very often and most recorders don't submit many records. Three-quarters of all recorders submitted just a single record, mostly of a Common Earwig. In contrast the three most prolific provided over 70% of the total records.

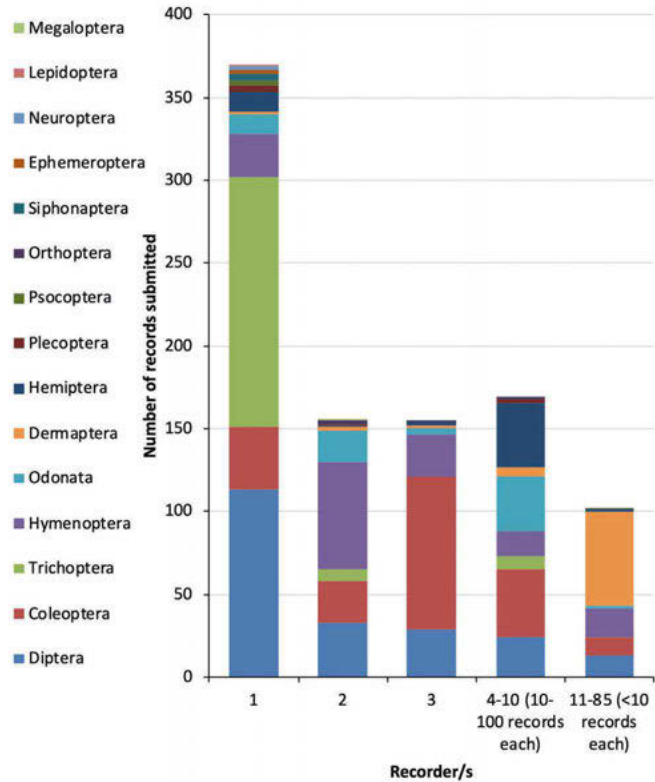
The most active recorders have slightly differing interests. Most caddisfly records (Trichoptera) and true fly (Diptera) records came from the most prolific recorder. Recorder two was strong on bees and wasps etc. (Hymenoptera) whilst recorder three submitted most beetle (Coleoptera) records. Mid-range recorders, those submitting 10 - 100 records, recorded the charismatic groups; the larger flies, some beetles, bees, dragonflies, damselflies and some of the aquatic bugs (Hemiptera). Records from those who only sent one or two, were mostly of the Common Earwig (*Forficula auricularia*, Order Demaptera) as part of a large survey of that species carried out in 2021.

The most active recorders may send in most sightings of most insects but they are all resident on South Uist and most of their activity is in the southern islands of the Outer Hebrides. They give great depth to the OHBR records but the breadth is often given by those who send in fewer records. Whether these are from planned surveys as in 2021 or are just a few more general sightings they are all important.

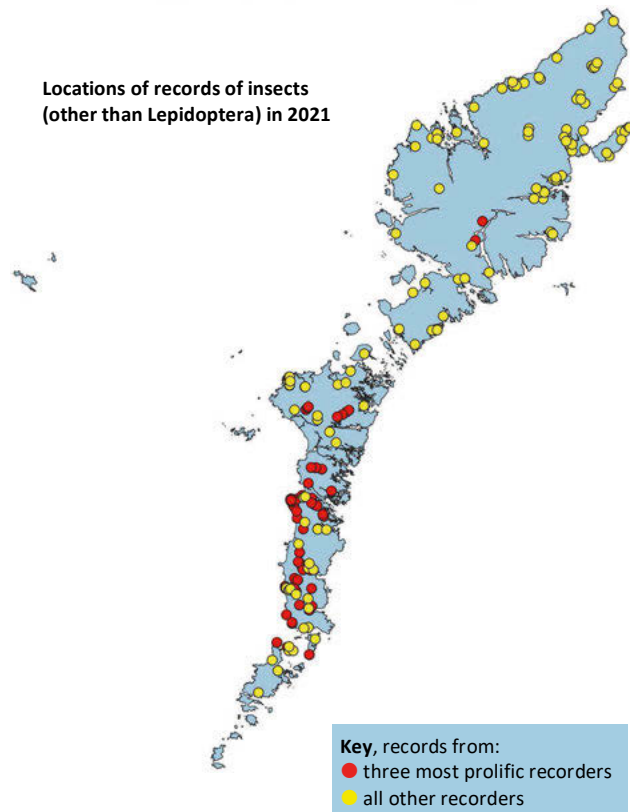


Bombus jonellus – Heath Bumblebee

Recorder activity by insect Order



Locations of records of insects (other than Lepidoptera) in 2021



Insects other than Lepidoptera

Order Hymenoptera – Bees, wasps, ants etc.

Recording synopsis

7000 British species, 104 VC110 species, 1.5% of British list. **2021**, 155 records of 34 species, 32.7% of VC List

The number of species recorded in 2021 (33 species) is slightly more than has been recorded in previous years.

The presence of Buff-tailed Bumblebee (*Bombus terrestris*) on South Uist was confirmed with a second record at the same location. Its workers are not readily separated from those of the *Bombus lucorum* group. They are best recorded as:

Bombus lucorum/terrestris/magnus/cryptarum
White/Buf-tailed Bumblebee workers

There were five new hymenopteran species for the Outer Hebrides in 2021, two sawflies, a braconid and two ichneumon wasps.



Dicaelotus pusillator – there is only one other UK record for this species, a preserved specimen in Nottingham Museum. The group has not been extensively studied here and a number of species in the same genus known to European workers are now starting to be found in the UK. They've probably always been here but not identified or well recorded previously.

Family	Species	Common name or type	Records
Andrenidae	<i>Andrena ruficrus</i>	Northern Mining Bee	1
	<i>Andrena tarsata</i>	Tormentil Mining Bee	2
Apidae	<i>Apis</i>	Honeybee	1
	<i>Bombus distinguendus</i>	Great Yellow Bumblebee	8
	<i>Bombus hortorum</i>	Garden Bumblebee	9
	<i>Bombus jonellus</i>	Heath Bumblebee	15
	<i>Bombus lucorum</i>	White-tailed Bumblebee	4
	<i>Bombus lucorum/terrestris/magnus/cryptarum</i>	White/Buf-tailed Bumblebee workers	29
	<i>Bombus muscorum</i>	Moss Carder-bee	21
	<i>Bombus pascuorum</i>	Common Carder Bee	11
	<i>Bombus terrestris</i>	Buff-tailed Bumblebee	1
Chrysididae	<i>Chrysis</i>	a ruby-tailed wasp	4
Colletidae	<i>Colletes floralis</i>	The Northern Colletes	4
Formicidae	<i>Myrmica ruginodis</i>	a red ant	2
Vespidae	<i>Ancistrocerus oviventris</i>	a potter wasp	4
	<i>Ancistrocerus scoticus</i>	a potter wasp	3
	<i>Dolichovespula sylvestris</i>	Tree Wasp	7
	<i>Vespula rufa</i>	Red Wasp	2
Cynipidae	<i>Andricus kollari f. agamic</i>	Marble Gall causer	1
Braconidae	* <i>Alysia</i>	a braconid	1
	<i>Zele deceptor</i>	a braconid	1
Ichneumonidae	<i>Cidaphus atricillus</i>	an ichneumon wasp	1
	* <i>Dicaelotus pusillator</i>	an ichneumon wasp	1
	<i>Netelia vinulae</i>	an ichneumon wasp	2
	<i>Ophion obscuratus agg.</i>	an ichneumon wasp	7
	* <i>Pimpla turionellae</i>	an ichneumon wasp	1
Cimbicidae	* <i>Cimbex femoratus</i>	Birch Sawfly	1
Siricidae	<i>Urocerus gigas</i>	Greater Horntail	1
Tenthredinidae	<i>Dolerus aericeps</i>	a sawfly	1
	<i>Dolerus aeneus</i>	a sawfly	1
	<i>Euura bridgmanii</i>	a sawfly	1
	<i>Euura collactanea</i>	a sawfly	1
	<i>Euura pedunculi</i>	a sawfly	4
	* <i>Platycampus lurdiventris</i>	a sawfly	2
	*New species for VC110	Total	155

Insects other than Lepidoptera

Aside from these rather exciting species the bulk of the Hymenoptera records, 92 (62%) of the 149 in total, in 2021 were of bumblebees. In addition, there were four true wasps (Family Vespidae), an ant, a gall wasp, two solitary bees and further six sawflies.

The remainder of the records were of various parasitoid wasps, five ichneumons and two braconids. These groups are often considered difficult and to add to that difficulty there is a lot of taxonomic reassessment taking place.

Braconidae



Alysia (poss.) manducator - new to the Outer Hebrides



Alysia (poss.) manducator – detailed examination of the mandibles is needed to confirm species. These are parasitic on the larvae of Blowflies and pupate within the blowfly pupa and the strange looking mandibles are used to cut their way out of the tough pupal case. They may also help in pushing through the dead material to find larvae to parasitise in the first place.



Zele deceptor - one previous record for Outer Hebrides

Ichneumonidae



Pimpla turionellae - new to the Outer Hebrides



Pimpla turionellae

There is still much more work to be done on the various ichneumons and similar species found in the Outer Hebrides. The latest NBN checklist gives just four species of braconids out of a UK list of c.1,000 and about 30 ichneumons out of c.2,000. One problem is that many are superficially very similar. There are no real differences in colour or patterning to help and even structurally they can also be difficult to separate.

In contrast the bees, social ones such as *Bombus* (the bumblebees) and solitary ones like *Andrena* spp., and wasps are probably pretty well known as a group.



Ancistrocerus scoticus – one of the Potter Wasps, so called because they build clay cells, in cracks in mortar, dead stems, and in soft soil, to lay their eggs in.

Insects other than Lepidoptera

Order Trichoptera – Caddisflies or sedges

Recording synopsis

198 British species, 76 VC110 species, 37.4% of British list. **2021**, 166 records of 24 species, 31.6% of VC List

There was ongoing recording of caddisflies as moth trap bycatch in 2021. The number of species recorded and the total number of records were both lower than in 2020. A single specimen of *Polycentropus irroratus* was the first recorded since 2001 and only the fourth occasion on which it had been found in the Outer Hebrides.

Species	Previous records	OHBR records				Comments
		2018	2019	2020	2021	
<i>Limnephilus marmoratus</i>	181	5	30	37	32	
<i>Plectrocnemia conspersa</i>	132	2	24	25	26	
<i>Limnephilus sparsus</i>	120	1	14	17	12	
<i>Limnephilus affinis</i>	96	5	18	18	13	
<i>Limnephilus lunatus</i>	71	3	13	15	13	
<i>Stenophylax permistus</i>	63	1	6	11	9	
<i>Limnephilus elegans</i>	58		12*	15	11	*First since 1901
<i>Polycentropus flavomaculatus</i>	55		3	7	1	
<i>Tinodes waeneri</i>	52	3	7	5	7	
<i>Phryganea grandis</i>	44	1	7	8	8	
<i>Oecetis ochracea</i>	43	2	7	3	6	
<i>Lepidostoma hirtum</i>	37	1	2	3	1	
<i>Limnephilus hirsutus</i>	35	2	5	4	3	
<i>Agrypnia varia</i>	31		2	4	8	
<i>Halesus radiatus</i>	30	1	3	2	1	
<i>Limnephilus griseus</i>	29		1			
<i>Athripsodes cinereus</i>	28		3	3	1	
<i>Mystacides azurea</i>	23	1	2	1	1	
<i>Oecetis furva</i>	19		1*	5	2	*First since 1971
<i>Ceraclaea fulva</i>	17	1	2	3	2	
<i>Limnephilus luridus</i>	16		3*	3	2	*First since 1962
* <i>Triaenodes bicolor</i>	15			2	1	*Only recorded as larva
<i>Limnephilus vittatus</i>	10		1	2	1	
<i>Athripsodes aterrimus</i>	5			1*		*Only 4 th record
<i>Oecetis lacustris</i>	3			1*	2	*last recorded Stornoway 1960
<i>Polycentropus irroratus</i>	3				1	
<i>Limnephilus pati</i>	2			1*		*1st in Scotland
Number of species		14	22	25	24	
Number of records		29	166	196	166*	*Includes 2 records of <i>Limnephilus</i> sp.

There were no further specimens of *Limnephilus pati* in 2021. Weather conditions around the time when it might have been expected were not particularly conducive to moth trapping. Consequently, the trap was operated on rather fewer occasions than at the equivalent period in 2020. The Outer Hebrides is no longer the only known location for the species in Great Britain. A specimen was collected in Suffolk at the Market Weston Fen nature reserve on 7th June 2021. This is close to one of the original locations for the species. Specimens were last collected in that area in 1915. Efforts will be redoubled here in 2022 to try and locate further sites for the species.

Insects other than Lepidoptera

Date	No. of <i>L. elegans</i> caught
15/04/2021	1
14/05/2021	2
16/05/2021	3
26/05/2021	4
27/05/2021	82
29/05/2021	48
01/06/2021	13
02/06/2021	38
05/06/2021	2
06/06/2021	7
14/06/2021	1
Total	201



Perhaps the highlight of 2021 caddisfly recording was the period between 15th April and 14th June when over 200 *Limnephilus elegans* were caught in a moth trap at Eochar on South Uist. The specimens caught in 2019 had been the first recorded in the Outer Hebrides since 1901. It is now clear that this species is quite common here. It is hoped that further locations for the species will be located in 2022.

There are forty-nine species of caddisfly recorded from the Outer Hebrides that haven't been recorded during the current survey period (2018-2021). Some of these are species associated with running water and are less likely to be found at the current sampling location. Others may be species that have a very localised distribution here or are genuinely rare species and some may have been misidentified. *Limnephilus elegans* would have appeared on this list as its last previous record was 1901. We now know it to be common, at least at one location. There is still a lot to find out about the caddisfly fauna of the Outer Hebrides.

Species	Last seen	Records
<i>Athripsodes bilineatus</i>	1900	1
<i>Halesus digitatus</i>	1900	2
<i>Hydroptila sparsa</i>	1900	1
<i>Lype phaeopa</i>	1900	2
<i>Molanna albicans</i>	1900	3
<i>Limnephilus auricula</i>	1906	6
<i>Beraea pullata</i>	1935	2
<i>Limnephilus extricatus</i>	1940	4
<i>Ceraclea nigranervosa</i>	1960	3
<i>Hydroptila simulans</i>	1960	1
<i>Wormaldia occipitalis</i>	1960	2
<i>Hydroptila tineoides</i>	1962	4
<i>Limnephilus coenosus</i>	1966	6
<i>Limnephilus ignavus</i>	1966	3
<i>Limnephilus stigma</i>	1966	2
<i>Stenophylax vibex</i>	1966	2
<i>Oxyethira frici</i>	1967	2
<i>Limnephilus politus</i>	1970	1
<i>Oxyethira sagittifera</i>	1976	3
<i>Potamophylax cingulatus</i>	1976	5
<i>Cyrnus flavidus</i>	1977	2
<i>Oxyethira flavicornis</i>	1977	3
<i>Holocentropus picicornis</i>	1978	5
<i>Ceraclea annulicornis</i>	1982	1
<i>Hydropsyche angustipennis</i>	1998	1

Species	Last seen	Records
<i>Phryganea bipunctata</i>	1998	1
<i>Polycentropus irroratus</i>	2001	3
<i>Neureclipsis bimaculata</i>	2002	1
<i>Sericostoma personatum</i>	2004	21
<i>Apatania muliebris</i>	2006	7
<i>Micropterna sequax</i>	2006	9
<i>Oxyethira falcata</i>	2006	3
<i>Plectrocnemia geniculata</i>	2006	23
<i>Agapetus fuscipes</i>	2007	5
<i>Hydropsyche pellucidula</i>	2007	25
<i>Plectrocnemia brevis</i>	2007	1
<i>Polycentropus kingi</i>	2007	7
<i>Rhyacophila dorsalis</i>	2007	39
<i>Hydropsyche siltalai</i>	2008	42
<i>Cyrnus trimaculatus</i>	2010	14
<i>Limnephilus incisus</i>	2010	3
<i>Beraea maurus</i>	2013	7
<i>Limnephilus borealis</i>	2013	1
<i>Philopotamus montanus</i>	2013	30
<i>Tinodes maclachlani</i>	2013	21
<i>Anabolia nervosa</i>	2015	2
<i>Agrypnia obsoleta</i>	2017	3
<i>Limnephilus flavicornis</i>	2017	1
<i>Limnephilus rhombicus</i>	2017	2

Insects other than Lepidoptera

Order Diptera – True Flies

Recording synopsis

7000 British species, 850 VC110 species, 12.1% of British list. **2021**, 212 records of 92 species, 10.8% of VC List

Family	Type of fly	Species	Records
Agromyzidae	Leaf mining flies	8	13
Anthomyiidae	Root-maggot flies	5	7
Asilidae	Robber flies	1	1
Calliphoridae	Blowflies & bluebottles	4	7
Coelopidae	Kelp flies	2	9
Dolichopodidae	Long-legged flies	1	1
Drosophilidae	Fruit flies	1	1
Empididae	Dagger flies	1	2
Heleomyzidae	Spiny winged flies	2	4
Heterocheilidae	Seaweed flies	1	2
Hippoboscidae	Keds	1	1
Muscidae	House flies	2	3
Polleniidae	Cluster flies	1	1
Psilidae	Root flies	1	1
Rhagionidae	Snipe flies	1	5
Scathophagidae	Dung flies	1	1
Sciomyzidae	Snail-killing flies	1	1
Sepsidae	Black scavenger flies	1	3
Sphaeroceridae	Lesser dung flies	2	5
Stratiomyidae	Soldier flies	1	2
Syrphidae	Hoverflies	17	48
Tabanidae	Clegs, horse flies etc	3	8
Tachinidae	Parasitic flies	2	3
Tephritidae	Fruit flies	1	1
Anisopodidae	Window gnats	2	6
Bibionidae	St. Mark's flies	3	7
Cecidomyiidae	Gall midges	1	1
Chironomidae	Non-biting midges	1	2
Dixidae	Meniscus midges	1	1
Sciaridae	Dark-winged fungus gnats	1	1
Limoniidae	Craneflies	7	11
Pediciidae	Craneflies	2	5
Tipulidae	Craneflies	11	44
Trichoceridae	Winter gnats	2	4
Total		92	212



Helophilus pendulus – the “Footballer”, so called because the black and yellow striped thorax resembles one of the more traditionally styled football shirts, in Scotland Berwick Rangers springs to mind. I’m not sure you’d see the activity these two hoverflies are engaging in on any football training pitch though.

With 850 species, the Diptera are the most diverse of the insect orders recorded from the Outer Hebrides although this is only about 12% of the estimated 7,000 UK species. The 92 species recorded in 2021 represents about 11% of the known Diptera from the area. The estimated number of UK Diptera species is the same as for the Hymenoptera (c.7,000). Of the 7,000 UK Diptera c.850 are known from VC110. For the Hymenoptera only 104 are known from VC110. Each year OHBR records about a third of the known Hymenoptera species but 2021 is the first time we have recorded over 10% of the known Diptera species for the islands.

There have rarely been any resident local naturalists who have specialised in the Diptera and recording within this group has been undertaken mostly by visiting naturalists.

Two families of Diptera contain many of the 2021 records. The hoverflies (Syrphidae) always feature strongly in the annual OHBR records. They are attractive animals and, with care, are fairly easy to photograph. There are also good identification resources for the group.



Tipula rufina – mating pair, relatively easy to identify by the broad black stripe running along the side of the thorax. They can often be found resting on outside walls in a characteristic wing closed, legs spread pose.

The second group which seems to be attracting attention is the craneflies (Tipuloidea). Better identification works are becoming available through the Crane-fly Recording Scheme but I doubt if many people would consider “daddy long-legs” particularly attractive. They have been under-recorded in VC110 in the past and a number of new species for the Outer Hebrides have been recorded by OHBR recently.

Insects other than Lepidoptera

Nematocera

These are generally thought of as more primitive Diptera. Most of the 2021 records are of craneflies and their allies. They are regularly found when attracted to light, including moth traps, and most records here are from the bycatch of a moth trap run in Eochar, South Uist. There were three new nematocerans recorded by OHBR recorders in 2021, *Bibio lanigerus*, *Trichocera hiemalis* and *Schwenckfeldina carbonaria*.

Verifying whether a species is new to the islands involves checking two checklists, the OHBR one which has 850 species whereas the NBN only has 545 species. The two don't always agree about individual species but it usually easy enough to figure out a correct status.

Nematocera records received by OHBR in 2021				
Family	Species	2021	NBN	OHBR
Anisopodidae	<i>Sylvicola cinctus</i>	3		
	<i>Sylvicola punctatus</i>	3		
Bibionidae	* <i>Bibio lanigerus</i>	1	X	X
	<i>Dilophus febrilis</i>	5		
	<i>Dilophus femoratus</i>	1		
Cecidomyiidae	<i>Iteomyia major</i>	1		
Chironomidae	Chironomidae	2	na	na
Dixidae	<i>Dixella</i>	1	na	na
Limoniidae	<i>Dicranomyia didyma</i>	1		
	<i>Dicranomyia modesta</i>	1		
	<i>Dicranophragma nemorale</i>	5		
	<i>Erioptera fuscipennis</i>	1		
	¹ <i>Erioptera squalida</i>	1		X
	<i>Euphyllidorea meigenii</i>	1		
	<i>Limonia nubeculosa</i>	1		
Pediidae	<i>Pedicia rivosa</i>	3		
	<i>Tricyphona immaculata</i>	2		
Sciariidae	* <i>Schwenckfeldina carbonaria</i>	1	X	X
Tipulidae	<i>Nephrotoma cornicina</i>	1		
	<i>Nephrotoma submaculosa</i>	1		
	<i>Tipula confusa</i>	4		
	² <i>Tipula lunata</i>	1	X	
	³ <i>Tipula luteipennis</i>	1		X
	<i>Tipula oleracea</i>	9		
	<i>Tipula pagana</i>	3		
	<i>Tipula paludosa</i>	17		
	<i>Tipula rufina</i>	3		
	<i>Tipula varipennis</i>	3		
Trichoceridae	⁴ * <i>Trichocera hiemalis</i>	1		X
	<i>Trichocera regelationis</i>	3		
Notes	Total	82		
Species marked "X" in either the NBN or OHBR columns are ones that didn't feature on those lists as of January 2021. Some OHBR records in 2021 were at the genus or family level only, these are marked in the NBN and OHBR columns as "na".				
* New species for Outer Hebrides				
¹ First recorded 2020, not updated on OHBR Checklist				
² OHBR has published record from 2008 not on NBN				
³ First recorded 2020, not yet updated on OHBR Checklist				
⁴ * New in 2021, but already picked up by NBN via iRecord				



Trichocera hiemalis – one of the winter gnats, a new species for VC110. Identification of this specimen from 2021 was obtained via iRecord and was subsequently picked up by NBN before the end of 2021. It was not present on the OHBR checklist as submission of records from OHBR only takes place at the end of the year.

Apparent contradictions between the two checklists can also arise from the inclusion of records gleaned from published accounts and distribution atlases. Species can be recorded as present but the location given is often very broad and confirmation about the current distribution of species is a fruitful area for further recording work. The OHBR checklist probably contains rather more species, at least partly, because of the inclusion of more species from published records.

On top of everything else there is a seemingly continuous re-evaluation of the taxonomy of many groups of plants and animals as our knowledge and understanding of the natural world increases. In the Outer Hebrides a comparatively under recorded group, such as the Diptera, will doubtlessly still have many new things to discover. It would be nice to see a few more resident naturalists take an interest in them.

Insects other than Lepidoptera

Identification of the Diptera does require a detailed examination, usually under a stereo microscope, but there is nowadays much easier access to identification works, from across the world, for amateur entomologists.



Bibio lanigerus - found in pot of water in garden. Detailed examination of features was needed to confirm identify at the species level



Dilophus febrilis – one of the St. Mark's flies

Schwenckfeldina carbonaria – a dark winged fungus gnat

Insects other than Lepidoptera

Brachycera

Family	Species	2021	NBN	OHBR	Family contd.	Species cont.	2021	NBN	OHBR
Agromyzidae	* <i>Agromyza filipendulae</i>	1	X	X	Rhagionidae	<i>Rhagio scolopaceus</i>	5		
	<i>Agromyza nana</i>	2			Scathophagidae	<i>Scathophaga calida</i>	1		
	<i>Aulagromyza</i>	1	na	na	Sciomyzidae	<i>Ilione lineata</i>	1		
	<i>Cerodontha iraeos</i>	2			Sepsidae	<i>Orygma luctuosum</i>	3		
	<i>Chromatomyia aprilina</i>	1			Sphaeroceridae	<i>Thoracochaeta brachystoma</i>	2		
	<i>Chromatomyia horticola</i>	1				<i>Thoracochaeta zosteræ</i>	3		
	* <i>Phytomyza aquilegiae</i>	3	X	X	Stratiomyidae	<i>Beris vallata</i>	2		
	<i>Phytomyza ranunculi</i>	2			Syrphidae	<i>Episyrphus balteatus</i>	5		
Anthomyiidae	<i>Botanophila fugax</i>	1				<i>Eristalinus sepulchralis</i>	1		
	<i>Delia platura</i>	2				<i>Eristalis arbustorum</i>	1		
	<i>Pegomya betæ</i>	1				<i>Eristalis intricaria</i>	7		
	<i>Pegoplatæ aestiva</i>	2				<i>Eristalis pertinax</i>	1		
	<i>Pegoplatæ infirma</i>	1				<i>Eupeodes corollæ</i>	1		
Asilidae	¹ <i>Dioctria baumhaueri</i>	1		X		<i>Helophilus pendulus</i>	3		
Calliphoridae	<i>Calliphora uralensis</i>	1				<i>Leucozona lucorum</i>	3		
	<i>Calliphora vicina</i>	2				<i>Melanostoma scalare</i>	3		
	<i>Cynomya mortuorum</i>	3				* <i>Neoascia meticulosa</i>	4	X	X
	<i>Protophormia terraenovæ</i>	1				<i>Platycheirus albimanus</i>	2		
Coelopidae	<i>Coelopa frigida</i>	8				<i>Rhingia campestris</i>	10		
	<i>Coelopa pilipes</i>	1				* <i>Rhingia rostrata</i>	1	X	X
Dolichopodidae	<i>Dolichopus urbanus</i>	1				<i>Scaeva pyrastræ</i>	2		
Drosophilidae	<i>Scaptomyza flava</i>	1				<i>Sericomyia silentis</i>	2		
Empididae	² <i>Empis tessellata</i>	2	X			<i>Syrphus vitripennis</i>	1		
Heleomyzidae	<i>Heteromyza commixta</i>	2			Tabanidae	<i>Volucella bombylans</i>	1		
	<i>Tephroclamyx rufiventris</i>	2					<i>Chrysops relictus</i>	4	
Heterocheilidae	<i>Heterocheila buccata</i>	2					<i>Haematopota pluvialis</i>	3	
Hippoboscidae	<i>Ornithomya chloropus</i>	1				<i>Hybomitra montana</i>	1		
Muscidae	<i>Neomyia cornicina</i>	2			Tachinidae	<i>Gymnocheta viridis</i>	2		
	³ <i>Phaonia errans</i>	1	X				<i>Tachina grossa</i>	1	
Polleniidae	^{4*} <i>Pollenia amentaria</i>	1		X	Tephritidae	* <i>Acidia cognata</i>	1	X	X
Psilidae	<i>Chamaepsila rosæ</i>	1				Total	130		

* New species for Outer Hebrides, ¹ An old record from 2019, probably an accidental import on potted plant, ² OHBR has published record from 2008 not on NBN, ³ OHBR has published record from 2008 not on NBN, ^{4*} New in 2021, already picked up by NBN via iRecord

The Brachycera includes many of the larger more interesting flies including the hoverflies (17 species in 2021) with two new ones for VC110. One of them (*Neoascia meticulosa*) is very small and probably easily overlooked.

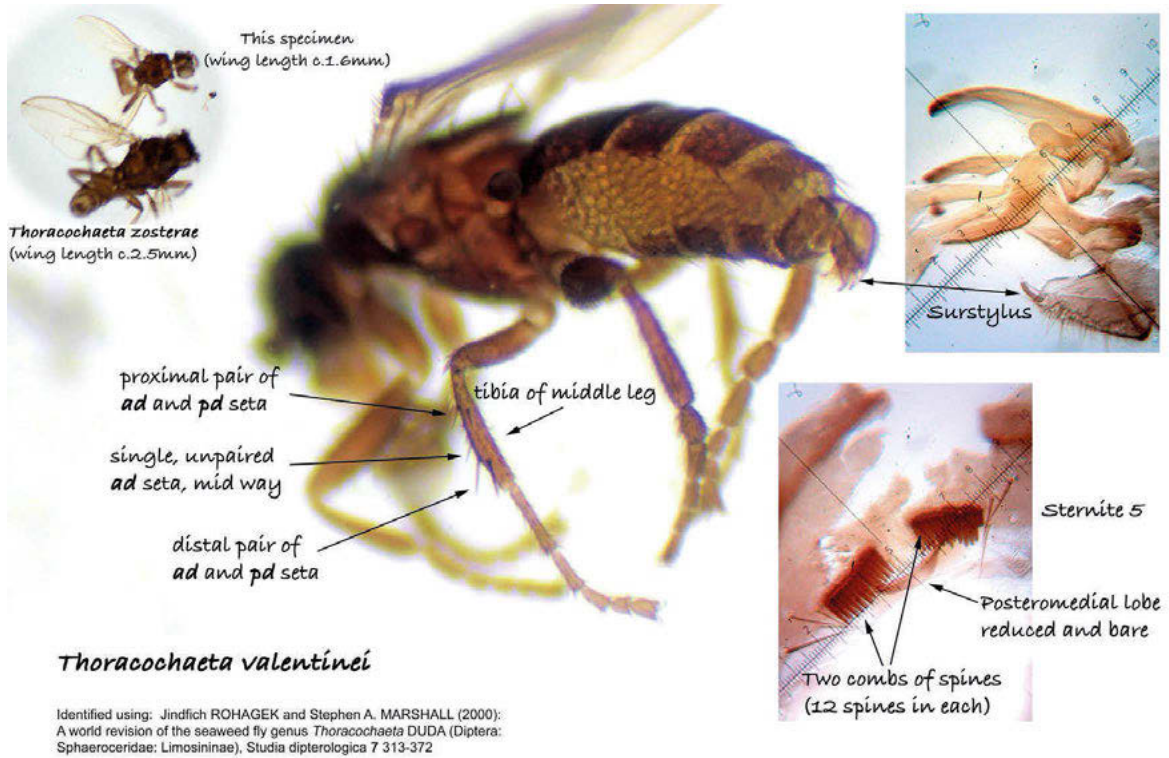


Neoascia meticulosa – a new Hoverfly for the Outer Hebrides

The other new hoverfly (*Rhingia rostrata*) is a bit of a surprising sighting as its usually only found south of a line drawn from the Humber to the Mersey. It is very similar to the very common *Rhingia campestris* so it could be a result of a misidentification. On the other hand it is tempting to say “as *R. rostrata* is only found in the south this must be *R. campestris*” effectively prejudging an identification without double checking.

One of the other species recorded here gives another possibility. We’ve included an old record from 2019 of the Robber Fly *Dioctria baumhaueri*, that reached us this year. This is also a southern species but arrived here, it is thought, as a passenger on a plant brought in from the mainland. Checking the known distribution of a species before accepting an identification is good practice but retaining the specimen and seeking a second opinion is probably better.

Insects other than Lepidoptera



Thoracochoaeta valentinei – a new species for VC110. Identifying Diptera is not always easy even for some of the larger, brighter species such as hoverflies. For smaller specimens it will involve having a good look at, for example, the arrangement of bristles on certain legs. You may need to extract the genital capsule and examine that under a high-power microscope. All of that and more was required for this specimen.

An easier group to work on are the leaf mining flies (Agromyzidae). The adults are very small but fortunately they tend to be very host specific. If you know the host species you can very often work out what species of fly, or other, miner caused it. I find this Dutch website the most useful to help with identifications, <https://bladmineerders.nl> (English can be selected as the working language).



Chromatomyia aprilina - on Honeysuckle



Phytomyza aquilegiae – a new species for VC110



Cerodontha iraeos – on Yellow Flag, the inset shows a mature pupa ready for the adult to emerge. The overlying plant epidermis was removed to show the pupa.

Insects other than Lepidoptera

Seaweed Flies and Kelp Flies

The huge piles of seaweed left on winter beaches after big storms are full of life. They are well worth investigating, particularly if you have an interest in hairy flies. These are the things that swarm in huge numbers just when you want to enjoy a nice day out on the beach. They may irritate us but they are a vital part of the ecology of the beach. Their larvae help break down the seaweed, and are a food source for lots of other insects and birds like Sanderling, Turnstone, Dunlin and Starling. Tens of thousands of adult flies emerge en masse and are snapped up by yet more birds, Wagtails, Pipits and even Black-headed and Common Gulls.



Coelopa frigida - Bristly-legged Seaweed Fly, female top right, male below
Family Coelopidae



Coelopa pilipes - Furry-legged Seaweed Fly, Family Coelopidae



Thoracochaeta zosterae - Family Sphaeroceridae



Orygma luctuosum - Family Sepsidae



Heterocheila buccata - Family Heterocheilidae

Insects other than Lepidoptera

Order Coleoptera – Beetles

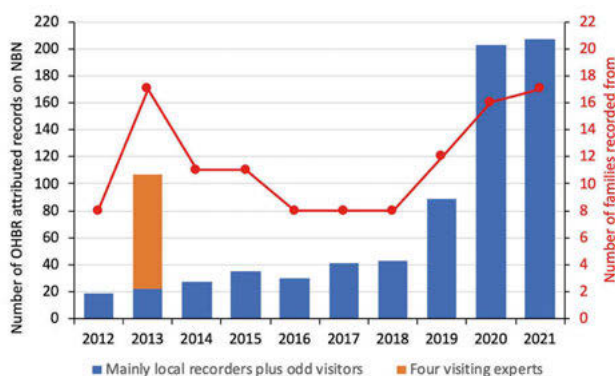
Recording synopsis

4000 British species, 455 VC110 species, 11.0% of British list. **2021**, 207 records of 76 species, 16.7% of VC List

Year	Species	Records	Sample method	Records
2017	18	41	Caught in house	4
2018	19	41	Field Observation	112
2019	32	88	Flight Trap	1
2020	68	196	Pitfall Trap	70
2021	76	207	Robinson MV 125w	20
Data from this and previous annual reports			Total (2021)	207

Since the first of these reports in 2017, recording of Coleoptera has gone from strength to strength, from 41 records of 18 species in 2017 to 207 records of 76 species in 2021. The number of recorders involved in collect these data has remained roughly the same. The big change is that a few people are now being much more systematic in their

approach and have developed their identification skills across a number of beetle families. There is an increasing use of various trapping methods that are used on a systematic basis during the year. Casual field observations still provide plenty of records but the skill development shown by the four leading Coleoptera recorders is leading to an increasing number of records amongst more and more families of beetles.



Looking at records on NBN attributed to OHBR there is a steady increase in the number of records since 2012 apart from an odd peak in 2013. This peak was caused by the presence here of four very good entomologists. Three of them spent just three days on Mingulay but their presence gave a clear boost to the number of records that year. It also increased the number of beetle families that were covered in the records. In 2021 our recorders were able to find and identify beetles across seventeen families. In 2013 the four experience visitors, here for just a few days, gave the same breadth to the records as that achieved by our “experts” over a whole year – we’ve clearly got more expertise still to develop.



Serica brunnea - Brown Chafer, the most frequently recorded species amongst all of those recorded by OHBR since 2012. Fam. Scarabaeidae

Of all the beetles recorded by OHBR since 2012 *Serica brunnea* is the most frequently found species. It wasn't one of the species found by our general recorders in 2021. The species they found are mostly the large, spectacular end of the spectrum of beetle diversity.

They include some of the larger ground beetles as well as the spectacular dor beetles. Soldier (or “bonking”) beetles always seem to get noticed and there's a few more similar species as well. Most of the smaller stuff comes from a few people with a bit more experience.

Typical beetles found by casual observers

Species	Family
<i>Rhagonycha fulva</i>	Cantharidae
<i>Pterostichus niger</i>	Carabidae
<i>Carabus problematicus</i>	Carabidae
<i>Carabus clatratus</i>	Carabidae
<i>Carabus glabratus</i>	Carabidae
<i>Carabus granulatus</i>	Carabidae
<i>Otiorhynchus sulcatus</i>	Curculionidae
<i>Ctenicera cuprea</i>	Elateridae
<i>Geotrupes stercorarius</i>	Geotrupidae
<i>Aphodius</i>	Scarabaeidae
<i>Silpha tyrolensis</i>	Silphidae
<i>Phosphuga atrata ssp. atrata</i>	Silphidae
<i>Nicrophorus investigator</i>	Silphidae
<i>Creophilus maxillosus</i>	Staphylinidae
<i>Ocyopus olens</i>	Staphylinidae

The species shown in red are illustrated on some of the following pages

Insects other than Lepidoptera

Beetle records 2021 by Family			
Family	Type	Species	Records
Carabidae	Ground beetles	16	60
Silphidae	Carrion/Burying beetles	8	37
Staphylinidae	Rove beetles	13	30
Scarabaeidae	Dung beetles	5	16
Cantharidae	Soldier beetles	3	11
Gyrinidae	Whirligig beetles	3	11
Dytiscidae	Diving beetles	8	9
Curculionidae	Weevils	3	7
Apionidae	Seed weevils	3	5
Geotrupidae	Dor beetles	2	5
Hydrophilidae	Water scavenger beetles	4	4
Elateridae	Click beetles	2	3
Leiodidae	Round fungus beetles	2	3
Chrysomelidae	Leaf beetles	1	2
Coccinellidae	Ladybirds	1	2
Histeridae	Clown beetles	1	1
Meloidae	Oil beetles	1	1
Total		76	207

Family Carabidae (Ground Beetles) – 60 records of 16 species. Many are large typical black ground beetles. The family also includes smaller species.

Species	Records
<i>Amara aenea</i>	1
<i>Amara ovata</i>	1
<i>Calathus fuscipes</i>	1
<i>Calathus mollis</i>	1
<i>Carabus clatratus</i>	2
<i>Carabus glabratus</i>	1
<i>Carabus granulatus</i>	7
<i>Carabus problematicus</i>	1
<i>Dyschirius globosus</i>	1
<i>Harpalus rufipes</i>	1
<i>Nebria brevicollis</i>	11
<i>Notiophilus biguttatus</i>	4
<i>Pterostichus madidus</i>	1
<i>Pterostichus niger</i>	12
<i>Pterostichus nigrita/rhaeticus</i>	9
<i>Pterostichus strenuus</i>	6
Total	62



Pterostichus niger – large (15-21mm) predatory beetle



Carabus glabratus – at 22-30mm one of our largest ground beetles



Carabus glabratus – looking tough, a ferocious surface active predator, hunts chiefly at night



Notiophilus biguttatus – small (c.6mm), diurnal predator feeding on springtails, mites and small insect larvae. Close up it is very elegant looking like sculpted bronze.



Carabus granulatus – 16-23mm, a snail predator and a gardener's friend

Insects other than Lepidoptera

Family Silphidae (Carrion Beetles) 37 records 8 species. They bury carrion, often called Burying or Sexton Beetles.

Species	Records
<i>Nicrophorus humator</i>	1
<i>Nicrophorus investigator</i>	9
<i>Nicrophorus vespilloides</i>	2
<i>Phosphuga atrata</i>	3
<i>Phosphuga atrata ssp. atrata</i>	1
<i>Silpha tyrolensis</i>	7
<i>Thanatophilus dispar</i>	4
<i>Thanatophilus rugosus</i>	10
Total	37



Phosphuga atrata – another snail predator



Nicrophorus investigator – very common black and orange carrion beetle, orange segments on the clubbed antenna



Nicrophorus vespilloides – very similar to *N. investigator* but less common and has an entirely black antenna



Nicrophorus humator – very similar body shape to the two other *Nicrophorus* spp. but body is entirely black, and the clubbed antenna has orange segments



Thanatophilus rugosus – the female lays c.30 eggs under the body of a dead animal, these hatch after 4 days or so and the larvae feed rapidly for up to 12 days before they pupate, adults emerge after a further 5 days, so egg to adult is very rapid

Family Staphilinidae (Rove Beetles) 30 records of 13 species. The most commonly recorded species is the very distinctive Hairy Rove Beetle. Rove beetles can generally be identified by the short wing cases which leave many of the abdominal segments uncovered giving them a very characteristic appearance.

Species	Records
<i>Aleochara curtula</i>	1
<i>Anotylus rugosus</i>	1
<i>Anthobium unicolor</i>	2
<i>Creophilus maxillosus</i>	8
<i>Ocyopus olens</i>	1
<i>Omalium laeviusculum</i>	2
* <i>Omalium rivulare</i>	1
<i>Philonthus laminatus</i>	8
<i>Platystethus nodifrons</i>	1
<i>Staphylinus erythropterus</i>	2
<i>Tachinus rufipes</i>	1
<i>Tachyporus hypnorum</i>	1
<i>Tinotus morion</i>	1
*New species for VC110	
Total	30

Insects other than Lepidoptera



Creophilus maxillosus – the very large (15-22mm) Hairy Rove Beetle is the most recorded species though in many respects it is not a typical looking rove beetle, most are much less hairy and many are much smaller



Rhagonycha fulva – more usually seen on the flower heads of umbellifers, more often than not they seem to be mating, hence the common name “Bonking Beetles”

Other Beetle families



Philonthus laminatus – a medium sized (9-12mm), much less hairy species with a very attractive metallic green bronze colour, adults are active predators often associated with dung or compost where they feed on insect larvae and other small invertebrates

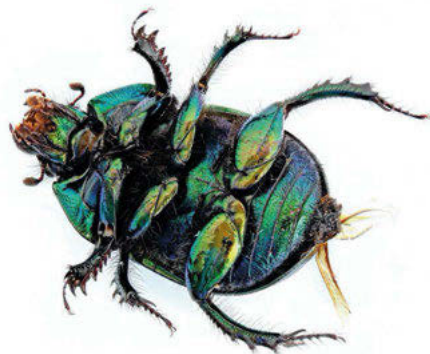


Omalium laeviusculum – at the smaller end of the rove beetle scale at 3-4mm, a coastal species often found under piles of rotting seaweeds

Family Cantharidae (Soldier Beetles) usually bright red/orange and black beetle can be found in large numbers on hogweed, wild carrot etc.

Species	Records
<i>Rhagonycha fulva</i>	9
<i>Rhagonycha nigriventris</i>	1
Total	37

Species	Records
Apionidae	
<i>Protapion apricans</i>	2
<i>Protapion fulvipes</i>	2
<i>Protapion trifolii</i>	1
Chrysomelidae	
<i>Donacia versicolorea</i>	2
Coccinellidae	
<i>Coccinella undecimpunctata</i>	2
Curculionidae	
<i>Barynotus moerens</i>	1
<i>Otiorhynchus singularis</i>	1
<i>Otiorhynchus sulcatus</i>	5
Dytiscidae	
<i>Agabus bipustulatus</i>	2
<i>Agabus sturmii</i>	1
<i>Colymbetes fuscus</i>	1
<i>Dytiscidae</i>	1
<i>Hydroporus</i>	1
<i>Hydroporus obscurus</i>	1
<i>Hydroporus pubescens</i>	1
<i>Ilybius fuliginosus</i>	1
Elateridae	
<i>Athous haemorrhoidalis</i>	1
<i>Ctenicera cuprea</i>	2
Geotrupidae	
<i>Geotrupes spiniger</i>	1
<i>Geotrupes stercorarius</i>	4
Total	33



Geotrupes stercorarius – Dor Beetle, beautiful iridescent colours on the underside

Insects other than Lepidoptera

Other Beetle families continued

Species	Records
Gyrinidae	
<i>Gyrinus aeratus</i>	4
<i>Gyrinus minutus</i>	4
<i>Gyrinus substriatus</i>	3
Histeridae	
<i>Saprinus semistriatus</i>	1
Hydrophilidae	
<i>Anacaena globulus</i>	1
<i>Cercyon depressus</i>	1
<i>Enochrus affinis</i>	1
<i>Hydrobius fuscipes</i>	1
Leiodidae	
<i>Catops chrysomeloides</i>	1
<i>Catops morio</i>	2
Meloidae	
<i>Meloe brevicollis</i>	1
Scarabaeidae	
<i>Acrossus rufipes</i>	7
<i>Aphodius</i>	1
<i>Bodilopsis rufa</i>	4
<i>Melinopterus sphaclatus</i>	2
<i>Serica brunnea</i>	2
Total	32

Family Hydrophilidae (water scavenger beetles)



Anacaena globulus – a tiny beetle c.3mm long – one of the water scavenger beetles

Family Meloidae (oil beetles)



Meloe brevicollis – Short-necked Oil Beetle, probably the beetle find of the year. Until recently this species was known, in Scotland, only from the Isle of Coll, in the rest of the UK a few colonies along the south coast of England and one on a coastal site in North Wales. A local naturalist wandering the dunes on Barra found an entirely new colony in June 2021, a full account can be found in the *Hebridean Naturalist* for 2021.

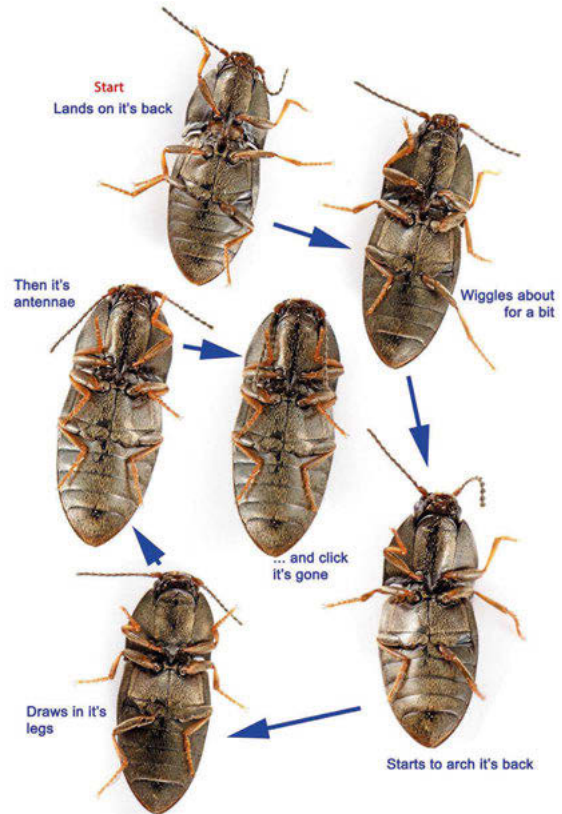
Family Scarabaeidae (dung beetles)



Bodilopsis rufa (formerly *Aphodius rufus*) – commonly attracted to moth traps in late summer into early autumn



Acrossus rufipes – another of the small dung beetles often found in moth traps



Ctenicera cuprea - a click beetle in the family Elateridae

Insects and other invertebrates

Order Odonata – Dragonflies & Damselflies

Recording synopsis

49 British species, 10 VC110 species, 24.5% of British list. **2021**, 72 records of 8 species, 80% of VC List

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

All eight of the regularly seen species were recorded again in 2021. The number of records was slightly higher than in 2020.

There were no sightings of two extra species on the NBN list, Vagrant Emperor and Golden-ringed Dragonfly.

Species	Common Name	Status
<i>Anax ephippiger</i>	Vagrant Emperor	Rare vagrant, single record 2011
<i>Cordulegaster boltonii</i>	Golden-ringed Dragonfly	Four post 1960 records

Species	Common Name	Number of	
		Adults	Larvae
<i>Aeshna juncea</i>	Common Hawker	11	2
<i>Enallagma cyathigerum</i>	Common Blue Damselfly	5	1
<i>Ischnura elegans</i>	Blue-tailed Damselfly	13	2
<i>Lestes sponsa</i>	Emerald Damselfly	3	
<i>Libellula quadrimaculata</i>	Four-spotted Chaser	8	9
<i>Pyrrosoma nymphula</i>	Large Red Damselfly	26	18
<i>Sympetrum sp.</i>			4
<i>Sympetrum danae</i>	Black Darter	4	
<i>Sympetrum striolatum</i>	Common Darter	8	9
Total		78	45



Pyrrosoma nymphula – Large Red Damselfly larva

Not all recorders state whether their observations were of adult or larval insects. Those who did recorded seventy-eight adults and forty-five larvae. The larvae of two species, *Lestes sponsa* (Emerald Damselfly) and *Sympetrum danae* (Black Darter) were not seen and four larvae could only be assigned as *Sympetrum sp.*



Sympetrum striolatum - Common Darter



Enallagma cyathigerum - Common Blue Damselfly



Pyrrosoma nymphula - Large Red Damselfly

Insects and other invertebrates

Order Hemiptera – True Bugs

Recording synopsis

1830 British species, 74 VC110 species, 4.0% of British list. **2021**, 54 records of 21 species, 28.4% of VC List

Family	Species	Common Name/type	Total
Terrestrial			
Anthocoridae	<i>Anthocoris nemorum</i>	flower bug	3
Aphididae	* <i>Eriosoma lanigerum</i>	aphid	1
Aphrophoridae	<i>Philaenus spumarius</i>	Cuckoo-spit Insect	16
Lygaeidae	¹ <i>Scolopostethus thomsoni</i>	ground bug	1
Miridae	* <i>Capsus ater</i>	capsid bug	1
	<i>Closterotomus norwegicus</i>	Potato Capsid	2
Nabidae	<i>Nabis flavomarginatus</i>	Broad Damselbug	1
Pentatomidae	* <i>Palomena prasina</i>	Green Shield Bug	1
Aquatic			
Corixidae	<i>Callicorixa wollastoni</i>	lesser waterboatman	1
	<i>Corixidae</i> sp	lesser waterboatman	5
	<i>Cymatia bondsdorffii</i>	lesser waterboatman	1
	<i>Glaenocoris propinqua</i>	lesser waterboatman	1
	<i>Hesperocorixa castanea</i>	lesser waterboatman	4
	<i>Hesperocorixa sahlbergi</i>	lesser waterboatman	2
	<i>Sigara nigrolineata</i>	lesser waterboatman	1
	<i>Sigara dorsalis</i>	lesser waterboatman	2
	<i>Sigara distincta</i>	lesser waterboatman	1
	<i>Sigara scotti</i>	lesser waterboatman	4
Gerridae	<i>Gerris odontogaster</i>	pond skater	2
Notonectidae	<i>Notonecta obliqua</i>	greater waterboatman	2
Veliidae	<i>Velia caprai</i>	water cricket	2
Grand Total			54

* New for Outer Hebrides
¹ First recorded in Outer Hebrides in 2020

The group as a whole is poorly represented in the VC110 fauna and is still not often looked at. Only 4% of the UK species are known to occur here but I suspect this is partly due to long-term under recording.

In recent years there have been a few casual records but no systematic recording of any of the aquatic families. The terrestrial families have probably only ever been recorded as casual sightings with little systematic work at all.

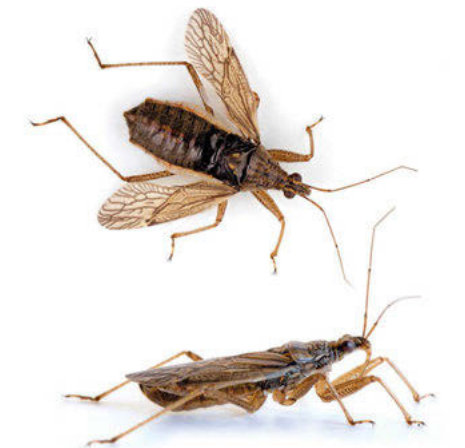


Capsus ater – a capsid bug new to the Outer Hebrides in 2021

Prior to 2012 the vast majority of Hemiptera records came through the Biological Records Centre (BRC) and they were exclusively of aquatic families. It seems incredible but prior to 2012 there seems to be just nine records of terrestrial Hemiptera from the Outer Hebrides. Since 2012 OHBR has been the major data provider of Hemiptera records to NBN.

Data from	pre 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
AHRS	11											11
BRC	342								1			343
CBDC			8									8
HBRG	2	2										4
NS						1						1
OHBR	8	1	35	13	15	15	33	21	22	28	54	245
SEPA	8											8
THRS								1	2			3
Families by habitat												
Aquatic Total	362	0	6	3	4	3	3	2	5	14	28	430
Terrestrial Total	9	1	39	10	11	13	30	20	20	14	26	193
Total	371	1	45	13	15	16	33	22	25	28	54	623

AHRC - Aquatic Heteroptera Recording Scheme, BRC - Biological Records Centre, CBDC - Cumbria Biodiversity Data Centre, HBRG - Highland Biological Recording Group, NS - NatureScot, OHBR - Outer Hebrides Biological Recording, SEPA - Scottish Environment Protection Agency, THRS - Terrestrial Heteroptera Recording Scheme



Nabis flavomarginatus – Broad Damselbug, just one previous record for the Outer Hebrides, from Lewis in 2010

The Desmid project generated a few records of aquatic Hemiptera in 2021. But there is plenty of scope for more up to date work on these families and on terrestrial Hemiptera more generally.

Focus on Aquatic Bugs

Habitat	Type of bug	Scientific name	Records
Live on water surface, don't go underwater	Pond Skaters (Family Gerridae)	<i>Gerris odontogaster</i>	25 (2)
		<i>Gerris costae</i>	18
		<i>Gerris lacustris</i> ¹	9
		<i>Gerris thoracicus</i>	6
	2021 records are in brackets, with the species shown in red	<i>Gerris lateralis</i>	2
	Water Crickets (Family Veliidae)	<i>Velia caprai</i>	30 (2)
		<i>Velia saulii</i>	2
Often seen on surface but dive under water to feed, carry an air bubble and can remain submerged for long periods. Lesser Waterboatmen swim face down, Greater Waterboatmen swim up side down	Lesser Waterboatmen (Family Corixidae)	<i>Sigara scotti</i>	58 (4)
		<i>Sigara dorsalis</i>	28 (2)
		<i>Sigara nigrolineata</i>	23 (1)
		<i>Sigara distincta</i>	20 (1)
		<i>Callicorixa wollastoni</i>	18 (1)
		<i>Hesperocorixa castanea</i>	17 (4)
		<i>Corixa iberica</i>	15
		<i>Hesperocorixa sahlbergi</i>	13 (2)
		<i>Arctocorisa germari</i>	12
		<i>Cymatia bondsdorffii</i>	10 (1)
		<i>Sigara semistriata</i>	10
		<i>Corixa panzeri</i>	9
		<i>Sigara venusta</i>	8
		<i>Arctocorisa carinata</i> ²	6
		<i>Callicorixa praeusta</i>	5
		<i>Glaenocorixa propinqua</i>	3 (1)
		<i>Hesperocorixa linnaei</i>	2
		<i>Micronecta poweri</i>	2
		<i>Paracorixa concinna</i>	2
		<i>Corixa dentipes</i> ²	1
	<i>Corixa punctata</i> ³	1	
	<i>Sigara fossarum</i> ²	1	
<i>Sigara lateralis</i> ²	1		
Greater Waterboatmen (Family Notonectidae)	<i>Notonecta obliqua</i>	11 (2)	
	<i>Notonecta glauca</i>	10	
In bottom mud and detritus	Water Scorpion (Family Nepidae)	<i>Nepa cinerea</i>	8
Only found on seashore	Shore Bugs (Family Saldidae)	<i>Salda littoralis</i>	2
		<i>Saldula saltatoria</i>	2
		<i>Saldula palustris</i>	1

¹ 8 out of total of 9 records from single observer, all later than 2014

² Only records are from 1942, not recorded by any subsequent recorder

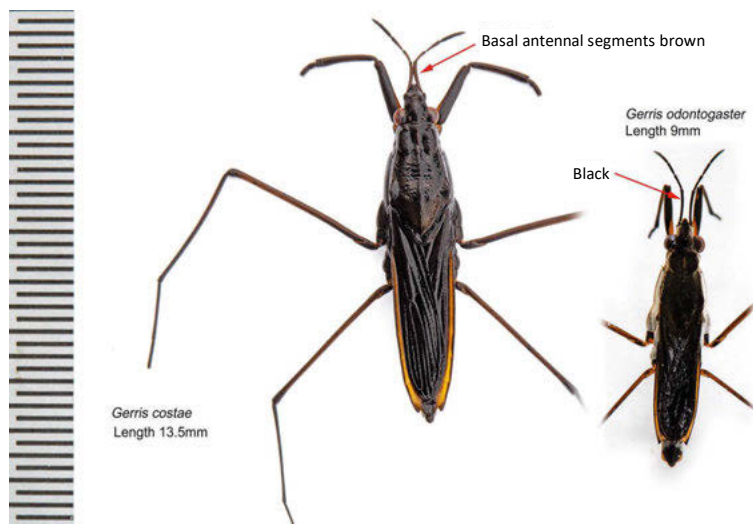
³ Difficult to separate from *Corixa iberica*, may be a misidentification

Family Gerridae – Pond skaters

The two most frequently recorded species of Pond Skater, *Gerris costae* and *Gerris odontogaster*, are readily separated from each other on the basis of size and colour of the basal antennal segments. Unfortunately, there are records of three other species to confuse the issue.

G. lateralis and *G. thoracicus* share the brown basal antennal segments shown by *G. costae* but differ in length (*G. lateralis* 9-11mm long, *G. thoracicus* 10-12mm and *G. costae* 12-14mm). Size is not a wholly reliable character for identification and ideally specimens should be retained for more detailed examination.

G. lacustris is of similar size (7-10mm) to *G. odontogaster* and can be confused with that species. All the records of *G. lacustris* are post 2014 and are from nine different sites across South Uist, North Uist and Harris. Eight of the records are from a single recorder. The species is widespread across the UK and is found on other islands such as Islay, Jura, Mull, Coll, Skye and adjoining mainland areas. It is unlikely that this species, familiar to observers across the UK, would have been missed by earlier recorders and could be a recent colonist of the Outer Hebrides. The possibility that the species has been misidentified should also be considered.

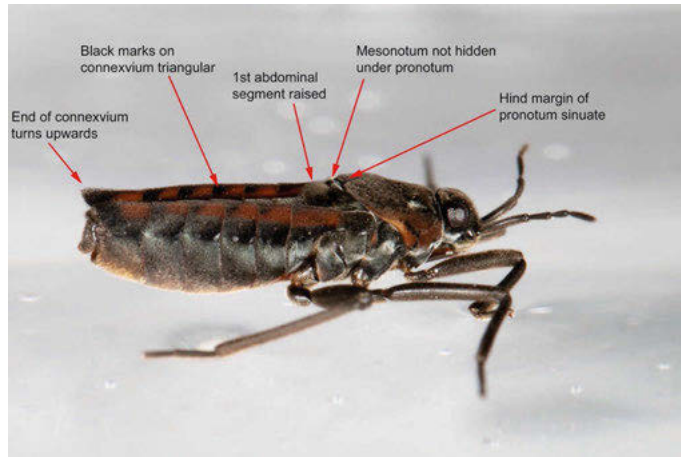


Gerris costae and *Gerris odontogaster*, the two most frequently recorded Pond Skaters in the Outer Hebrides

Focus on Aquatic Bugs

Family Veliidae – Water Crickets

Both *Velia caprai* and *Velia saulii* are recorded from VC110. Most adult Water Crickets are wingless and identification of the females is relatively straightforward. *V. caprai* is by far the most frequently recorded and females should have the characteristics shown here.



Velia caprai, female showing key features

Family Corixidae – Lesser Waterboatmen

Twenty-three species have been recorded from VC110. Of these five are doubtful records having, either, no records since 1942 or likely to have been confused with other species. Specimens thought to be any of these species should be retained for confirmation.

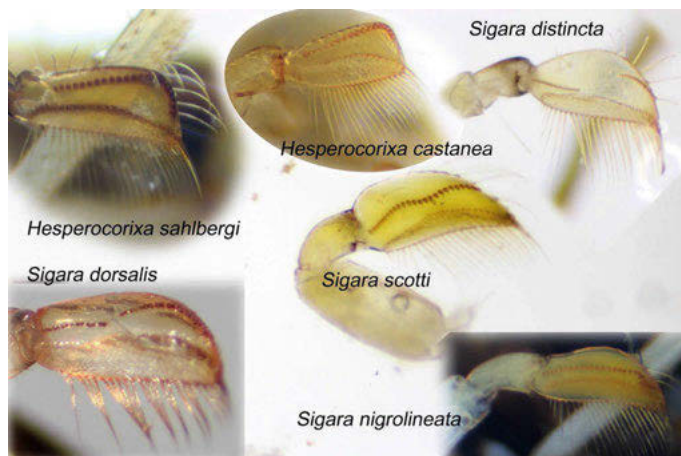
Identification of some species is difficult. Generally, males are easier to identify than females as some keys will require examination of some exclusively male features such as the pala, strigil and parameres and may require dissection to show the later.



Hesperocorixa sahlbergi (male), showing some of the key identification features

On live specimens a good enough view of the palae can sometimes lead to an identification. It is generally much easier to do this on retained specimens though. The four most frequently recorded *Sigara* species (shown below) have reasonably distinct arrangements of palar pegs but for the two *Hesperocorixa* species it's not so clear.

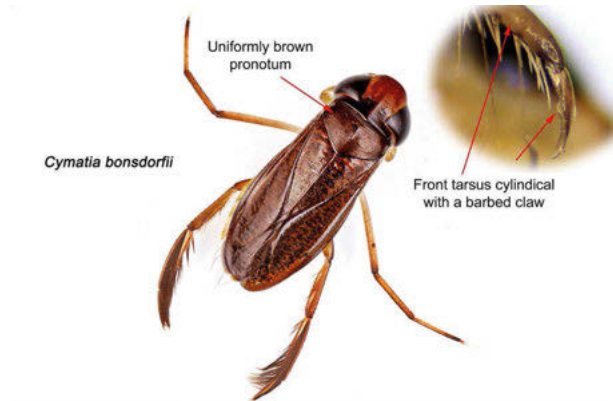
Hesperocorixa species all have a long pointed metasternal xiphus, a triangular plate on the ventral surface between the bases of the 2nd and 3rd pairs of legs. They may show very similar arrangements of the palar pegs but they can be separated by size. Of the two species recorded in the Outer Hebrides *H. sahlbergi* is much bigger at 7-8mm than *H. castanea* at about 5mm long.



Arrangement of palar pegs in various Corixidae species

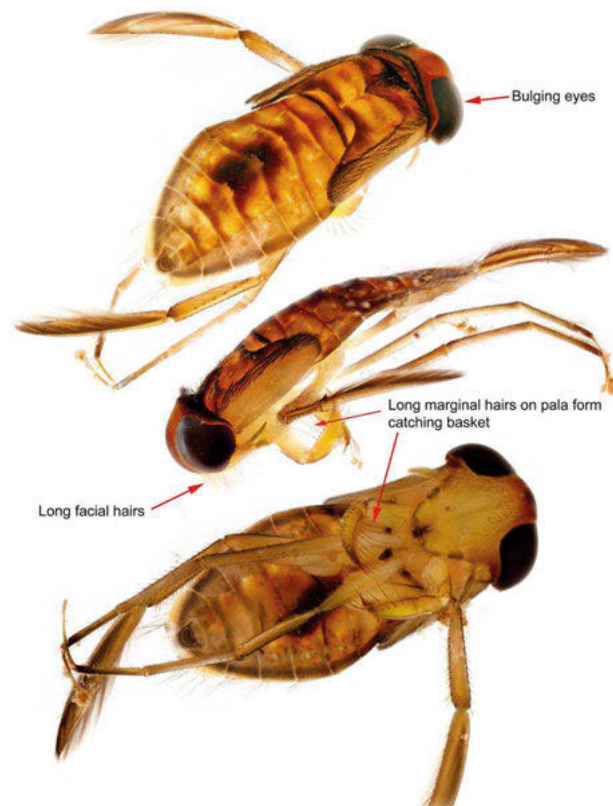
Focus on Aquatic Bugs

Some species found here have unique features that make identification simpler. The plain brown pronotum and front tarsus adapted to catch small aquatic invertebrates are distinctive of *Cymatia bonsdorfii*. This is an ambush predator and will rest on the leaves of aquatic plants for prey to come within range.



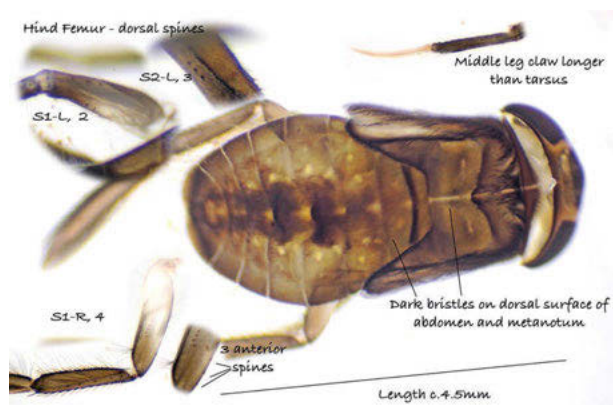
Cymatia bonsdorfii, an ambush predator with front tarsi adapted to catch small aquatic invertebrates.

Another predatory species *Glaenocoris propinqua* also has a number of distinctive features (shown right) that allow easy identification of both adults and late instar larvae. This species is an active predator that swims around and will take prey from the water surface as well as from within the water column.



Glaenocoris propinqua, showing some key identification features

Identification keys are available for larval corixids. They depend on examination of the characters such as the hairiness of the pronotum, patterning on the abdomen and number of spines on the rear femur.



Callicorixa wollastoni, showing some of the main identification features of larval corixids

Focus on Aquatic Bugs



Notonecta obliqua, hanging from water surface



Notonecta obliqua, dorsal view showing pale wing marks



Nepa cinerea – the Water Scorpion, with breathing tube just breaking the water surface

Family Notonectidae – Greater Waterboatmen

Greater Waterboatmen are also known as Back-swimmers from their characteristic habit of swimming upside down. They can be seen hanging in this pose from the surface of ponds replenishing their air bubbles and scanning the water below for potential prey.

Two species have been recorded from the Outer Hebrides, *Notonecta glauca* and *N. obliqua*. Both species have been recorded equally frequently and can be easily separated. *Notonecta obliqua* has very conspicuous pale marks running across its wings which contrast with the otherwise generally dark colouration. *Notonecta glauca* is generally a warm brown colour but may have some mottling or darker patches.

Two further species, *N. viridis* and *N. maculata* are more southern species that don't extend into Scotland beyond a few records from the Borders region.

Family Nepidae – Water Scorpion

There are two UK species *Nepa cinerea* (Water Scorpion) and *Ranatra linearis* (Water Stick Insect). Only *N. cinerea* occurs in Scotland and its flattened shape and long breathing tube make it unmistakable. It is an ambush predator that lives in the silt and sediment in shallow pools, ponds and ditches. A long tube at the tail end is a breathing tube that enables the insect to obtain air without surfacing.

Family Saldidae – Shore Bugs

One or two records of three species, all made by the same observer in July/ August 2013 during a visit to Barra and Mingulay, are the only VC110 records. These species are associated with muddy margins of small pools and slow streams. They are a group that is probably under-recorded nationally and are only likely to be found after careful searching by specialist entomologists.

Insects and other invertebrates

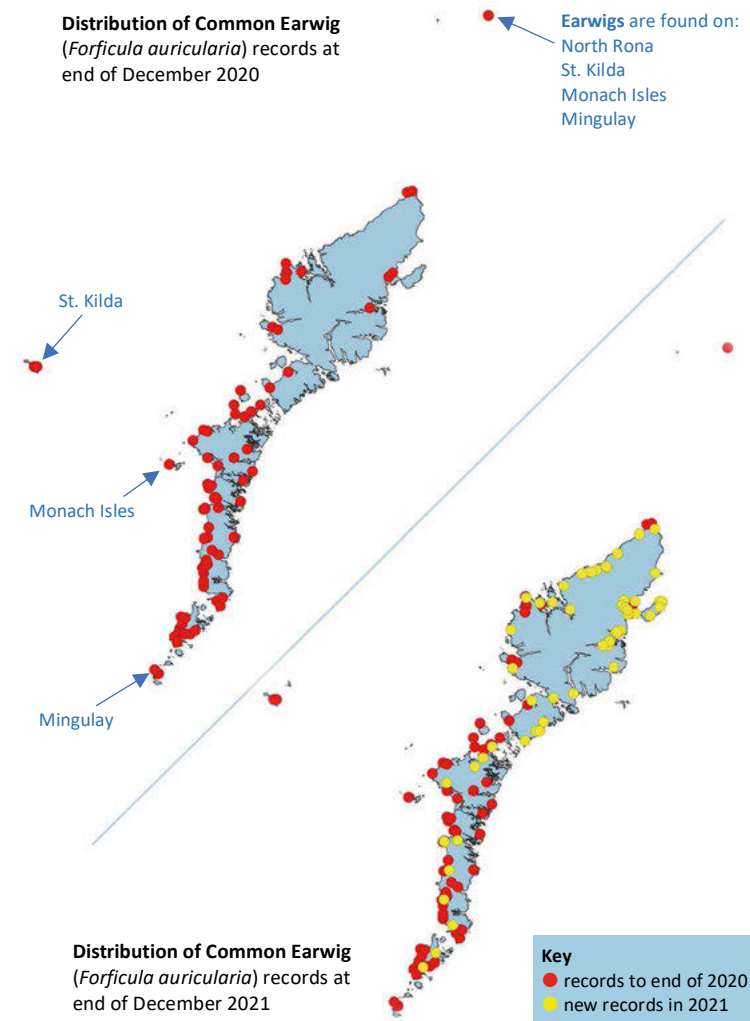
Minor Orders

Order	Family	Species	Type	Records
Archaeognatha	Machilidae	<i>Petrobius maritimus</i>		1
Dermaptera	Forficulidae	<i>Forficula auricularia</i>	Common Earwig	68
Ephemeroptera	Caenidae	<i>Caenis luctuosa</i>	Angler's Curse Mayfly	3
Megaloptera	Sialidae	<i>Sialis lutaria</i>	Alder fly	1
Neuroptera	Hemerobiidae	<i>Micromus paganus</i>	Lacewings	1
		<i>Micromus variegatus</i>		1
Orthoptera	Acrididae	<i>Myrmeleotettix maculatus</i>	Grasshoppers	1
		<i>Omocestus viridulus</i>		3
Plecoptera	Leuctridae	<i>Leuctra hippopus</i>	Stoneflies	1
	Nemouridae	<i>Nemoura cinerea</i>		7
Psocoptera	Paracaeciliidae	<i>Chilenocaecilius ornatipennis</i>	Bark flies	2
	Trogiidae	<i>Cerobasis guestfalica</i>		1
		<i>Lepinotus patruelis</i>		1
Siphonaptera	Ceratophyllidae	<i>Nosopsyllus (Nosopsyllus) fasciatus</i>	Fleas	2
	Ctenophthalmidae	<i>Ctenophthalmus nobilis subsp. vulgaris</i>		2
Total				95

Order Dermaptera – Earwigs & Cockroaches

Recording synopsis

7 British species, 1 VC110 species, 14.3% of British list. **2021**, 68 records of 1 species, 100% of VC List



Sometimes when you look at a distribution map for a species you know it's not quite right. Looking at the distribution of earwigs last winter was a case in point. Why were earwigs found throughout Barra and the Uists (and remote offshore islands such as St. Kilda, North Rona, the Monachs Isles and Mingulay) but missing from much of Lewis.

The answer, we thought, was that few people had sent in records from Lewis in the past. Or was it? Just to be sure, in August 2021, we asked people via the Curracag and OHBR Facebook pages for their sightings. Fifty-nine people sent in earwig sightings from sixty-eight places with lots from Lewis. As you can see from the maps they managed to fill in the Lewis gap quite nicely, at least round the edges – are there any in the middle?

Other species show odd gaps. Large Red Damselflies are very scarce on Barra and Harris, Peacock butterflies aren't found on Harris or Lewis anymore? Are there still Common Toads around Uig on Lewis? We may need help!

Insects and other invertebrates

Order Ephemeroptera – Mayflies

Recording synopsis

51 British species, 10 VC110 species, 19.6% of British list. **2021**, 3 records of 1 species, 20.0% of VC List



Just one species was recorded in 2020, *Caenis luctuosa*, the Angler's Curse Mayfly, were attracted to the Eochar moth trap on three occasions 2nd and 6th April when around 20-50 were seen and again on 14th April when 263 were counted but many more were scattered on the walls and buildings adjacent to the trap.

Order Plecoptera – Stoneflies

Recording synopsis

34 British species, 9 VC110 species, 26.5% of British list. **2021**, 8 records of 2 species, 11.1% of VC List

Adults of *Nemoura cinerea* were at a couple of location on South Uist in April and as larvae in water samples collected in March and November.



Nemoura cinerea – adult



Nemoura cinerea – larva

Larvae of a second species *Leuctra hippobus* were in a water sample collected in November 2021.

Order Neuroptera – Lacewings

Recording synopsis

69 British species, 5 VC110 species, 7.2% of British list. **2021**, 2 records of 2 species, 40.0% of VC List

Single individuals of two brown lacewings (*Micromus paganus* and *Micromus variegatus*) were recorded as moth trap bycatch this year.



Micromus paganus – 3rd VC110 record



Micromus variegatus – 3rd VC110 record, first in 2019 at same site

Insects and other invertebrates

Order Psocoptera - Barkflies

Recording synopsis

100 British species, 3 VC110 species, 3% of British list. **2021**, 4 records of 3 species

A bumper year for this poorly recorded order. The first ever record of a Barkfly for the Outer Hebrides was of *Chilenoacaecilius ornatipennis*, a recent introduction from Chile, on South Uist in 2019. Second and third specimens were recorded in 2021, one from the original location on South Uist in June, the second from Stornoway in November. The species was first recorded in the UK in 2017 and has spread rapidly. Scotland seems to be a hot spot for the species with 87% of the 2020 sightings recorded here.

Year	Records	
	UK	Scotland
2017	7	
2018	9	6
2019	44	30
2020	93	81
2021	5	5
Data for 2021 is incomplete as most records will not have reached NBN yet		



Chilenoacaecilius ornatipennis

Two other species were also added to the list for the Outer Hebrides this year *Cerobasis guestfalica* and *Lepinotus patruelis*. The total species list VC110 now stands at three species.



Cerobasis guestfalica – new to Outer Hebrides in 2021

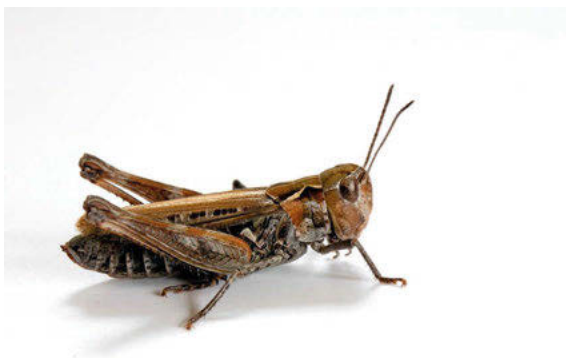


Lepinotus patruelis - new to Outer Hebrides in 2021

Order Orthoptera – Grasshoppers & Crickets

Recording synopsis

33 British species, 3 VC110 species, 9.1% of British list. **2021**, 4 records of 2 species, 33.3% of VC List



Myrmeleotettix maculatus – Mottled Grasshopper



Omocestus viridulus - Common Green Grasshopper

Insects and other invertebrates

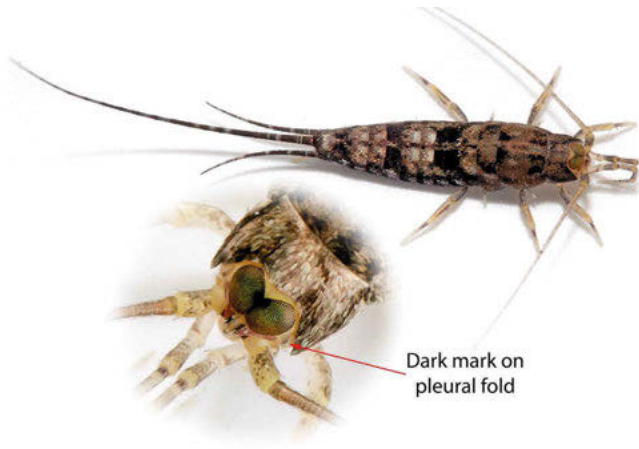
Just four grasshopper records of two species in 2021. Three sightings of *Omocestus viridulus* (Common Green Grasshopper) at Askernish (2) and Askervein (1) on South Uist. The second species was *Myrmeleotettix maculatus* (Mottled Grasshopper) seen at North Loch Eynort on South Uist. All records were between 1st July and 10th September.

Order Archaeognatha – Bristletails

Recording synopsis

7 British species, 2 VC110 species, 28.6% of British list. **2021**, 1 record in 2021.

A single record of *Petrobius maritimus* from Baile Mhic' Phail, North Uist in August



Petrobius maritimus – despite its scientific name can be found a considerable way inland. To confirm the species look for the dark spot on the pleural fold of head

Order Megaloptera – Alderflies

Recording synopsis

3 British species, 1 VC110 species, 33.3% of British list. **2021**, 1 record of the only VC110 species, 100% of VC list

A specimen of Alderfly, *Sialis lutaria*, the only species known in the Outer Hebrides was found on South Uist in June.



Sialis lutaria – Alderfly

Order Siphonaptera – Fleas

Recording synopsis

62 British species, 16 VC110 species, 25.8% of British list. **2021**, 4 records of 2 species, 6% of VC list

Two records of two species in 2021, *Ctenophthalmus nobilis* subsp. *vulgaris* and *Nosopsyllus (Nosopsyllus) fasciatus* both found on the same dead rat on South Uist.



Ctenophthalmus nobilis subsp. *vulgaris*



Nosopsyllus (Nosopsyllus) fasciatus

Insects and other invertebrates

Invertebrates other than Insects

Twenty-six recorders submitted 177 records of eighty-three different species in 2021, a 33% increase in the number of records compared to 2020. The total number of records is still well below the 287 found in 2017 though the number of species found is almost up to 2017 levels. Ten people submitted records of species of terrestrial invertebrates (other than insects), but twenty-one sent in records of marine species and just four sent in records of freshwater species.

Phylum	Common Name	Number of records					Number of species				
		2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Mollusca	Slugs, Snails, Limpets, Mussels etc.	139	31	27	34	67	43	28	20	22	34
Arthropoda	Spiders, Mites, Woodlice, Millipedes, Crabs etc.	74	24	19	68	63	22	16	15	32	28
Cnidaria	Corals, Jellyfish, Hydra etc.	48	18	15	14	15	10	5	7	6	4
Echinodermata	Sea Urchins, Starfish, Brittlestars, Sea etc.	14	1	3	3	3	5	1	3	2	2
Amoebozoa	Amoeba	3			1	10	1			1	5
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	
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			2		5
Platyhelminthes	Flatworms				4	9				2	3
Total		287	77	75	131	177	89	53	53	70	83

Other invertebrates - terrestrial species

Fifty-nine records of twenty-seven species were sent in by eleven recorders. Over half of the records (31) came from a single recorder. The other twenty-five records were spread fairly evenly amongst the others. Half the species were recorded just once and only three species were recorded five times or more.



Amaurobius similis – recorded 6 times in 2021



Tetrax denticulata – recorded 5 times in 2021

All three of these species are commonly found inside buildings and that may have something to do with the frequency of them of being seen.



Porcellio scaber – Common Rough Woodlouse recorded 6 times

Many of the invertebrate (excluding insects) records involve casual observation of specimens rather than any systematic surveying of likely habitats. Of the twenty-seven species of terrestrial invertebrates seen in 2021 fifteen were arthropods in the class Arachnida (10 spiders, 3 harvestmen, a gall mite and a bumblebee mite). There were another four arthropods, single species of, millipede, centipede, springtail and woodlouse, and three records of *Arthurdendyus triangulates*, the New Zealand Flatworm, an introduced predator of earthworms.

Insects and other invertebrates

Phylum	Class	Order	Species	Type	Records	
Arthropoda	Arachnida	Araneae	<i>Amaurobius similis</i>	a spider	6	
			<i>Araneus diadematus</i>	a spider	3	
			<i>Enoplognatha ovata</i>	a spider	3	
			<i>Metellina merianae</i>	a spider	1	
			<i>Metellina segmentata</i>	a spider	1	
			<i>Pholcus phalangioides</i>	a spider	1	
			<i>Segestria senoculata</i>	a spider	3	
			<i>Tetragnatha extensa</i>	a spider	1	
			<i>Textrix denticulata</i>	a spider	5	
			<i>Xysticus cristatus</i>	a spider	1	
			Mesostigmata	<i>Parasitellus fucorum</i>	a bumblebee mite	1
				Opiliones	<i>Megabunus diadema</i>	a harvestman
			<i>Mitopus morio</i>		a harvestman	3
		<i>Rilaena triangularis</i>	a harvestman		1	
		Trombidiformes	<i>Aceria nalepai</i>	a gall mite on Alder	2	
			Chilopoda	Lithobiomorpha	<i>Lithobius (Lithobius) forficatus</i>	a centipede
		Collembola			Entomobryomorpha	<i>Pogonognathellus longicornis</i>
			Diplopoda	Julida		<i>Cylindroiulus punctatus</i>
		Malacostraca	Isopoda	<i>Porcellio scaber</i>	Common Rough Woodlouse	6
Mollusca	Gastropoda			Pulmonata	<i>Arion (Arion) flagellus</i>	Green-soled Slug
		<i>Cepaea (Cepaea) hortensis</i>	White-lipped Snail		2	
		<i>Cochlicella (Cochlicella) acuta</i>	Pointed Snail	2		
		<i>Cornu aspersum</i>	Garden Snail	1		
		<i>Helicella itala</i>	Heath Snail	4		
		<i>Limacus maculatus</i>	Green Cellar Slug	2		
		Stylommatophora	<i>Xeroplexa intersecta</i>	Wrinkled Snail	1	
			Platyhelminthes	Rhabditophora	Tricladida	<i>Arthurdendylus triangulatus</i>
Total					59	



Tetragnatha extensa – sometimes called stretch spiders as they have the habit of stretching themselves out along a plant stem to achieve better camouflage



Xysticus cristatus – Common Crab Spider, just five previous records on NBN but spider species on the Outer Hebrides are not generally well recorded on NBN



Amaurobius similis – easily identified as the photograph shows the palps well

Insects and other invertebrates



Mitopus morio – well recorded (63 records) across much of the Outer Hebrides including St. Kilda, Mingulay and the Shiant, one of the shorter legged harvestmen



Megabunus diadema – one of the longer legged harvestmen



Lithobius (Lithobius) forficatus – our two *Lithobius* species can only reliably be separated by looking at the teeth on the forcipular coxosternite (inset *L. forficatus* (L) and *L. melanops* (R))



Pogonognathellus longicornis – the forked “spring” is visible on the underside (L hand specimen), Collembola are reasonably well known here, 53 records of 9 species for VC110



Xeroplexa intersecta – Wrinkled Snail



Helicella itala – Heath Snail



Cochlicella (Cochlicella) acuta – Pointed Snail

Insects and other invertebrates

Other invertebrates – freshwater species

Phylum	Class	Species	Type	Total
Annelida	Clitellata	<i>Chaetogaster diaphanus</i>	a tubifex worm	1
		<i>Haemopsis sanguisuga</i>	Horse Leech	1
Arthropoda	Arachnida	<i>Hydrachna</i>	a freshwater mite	2
	Malacostraca	<i>Gammarus duebeni</i>	a freshwater shrimp	3
	Maxillopoda	<i>Diaptomus castor</i>	a copepod	1
Mollusca	Bivalvia	<i>Pisidium</i>	a pea cockle	5
		<i>Euglesa casertana</i>	a pea cockle	1
	Gastropoda	<i>Ampullaceana balthica</i>	Wandering Pond Snail	10
		<i>Aplexa hypnorum</i>	Moss Bladder Snail	1
		<i>Galba (Galba) truncatula</i>	Dwarf Pond Snail	2
		<i>Oxyloma (Oxyloma) elegans</i>	Pfeiffer's Amber Snail	2
		<i>Potamopyrgus antipodarum</i>	Jenkins' Spire Shell	5
Platyhelminthes	Rhabditophora	<i>Dalyellia viridis</i>	a rhabdocoel flatworm	3
		<i>Polycelis nigra</i>	a flatworm	3
Grand Total				40

Just four recorders sent in sightings of freshwater invertebrates (other than insects). In total there were thirty-nine records of fourteen taxa. This is a slight increase on 2020 (seventeen records of ten species). Identification of freshwater invertebrates is quite a specialist activity and most of the records came from the team involved in the ongoing desmid project (details later in report). It is expected that the invertebrate bycatch data from this sampling will continue to increase over the next few years.



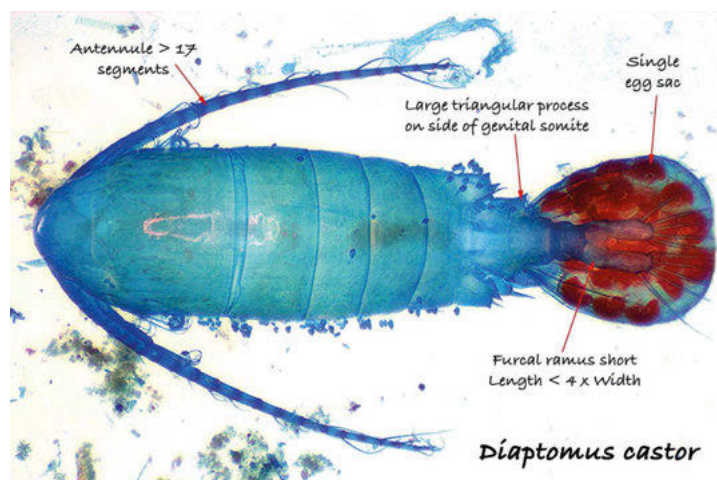
Chaetogaster diaphanus – a tubifex worm (photo Chris Johnson)



Gammarus duebeni – unlike the commonest freshwater shrimps in southern UK this has kidney shaped eyes



Hydrachna – in a sorting tray these seem like tiny spheres of perpetual motion



Diaptomus castor - a copepod, the blue colour is a microscope stain to enable fine detail to be picked out to aid identification

Insects and other invertebrates



Polycelis nigra – these seem to glide over the surface of sorting trays, they are fairly simple animals, their gut system has just one opening, food goes in one way and waste takes the same way out



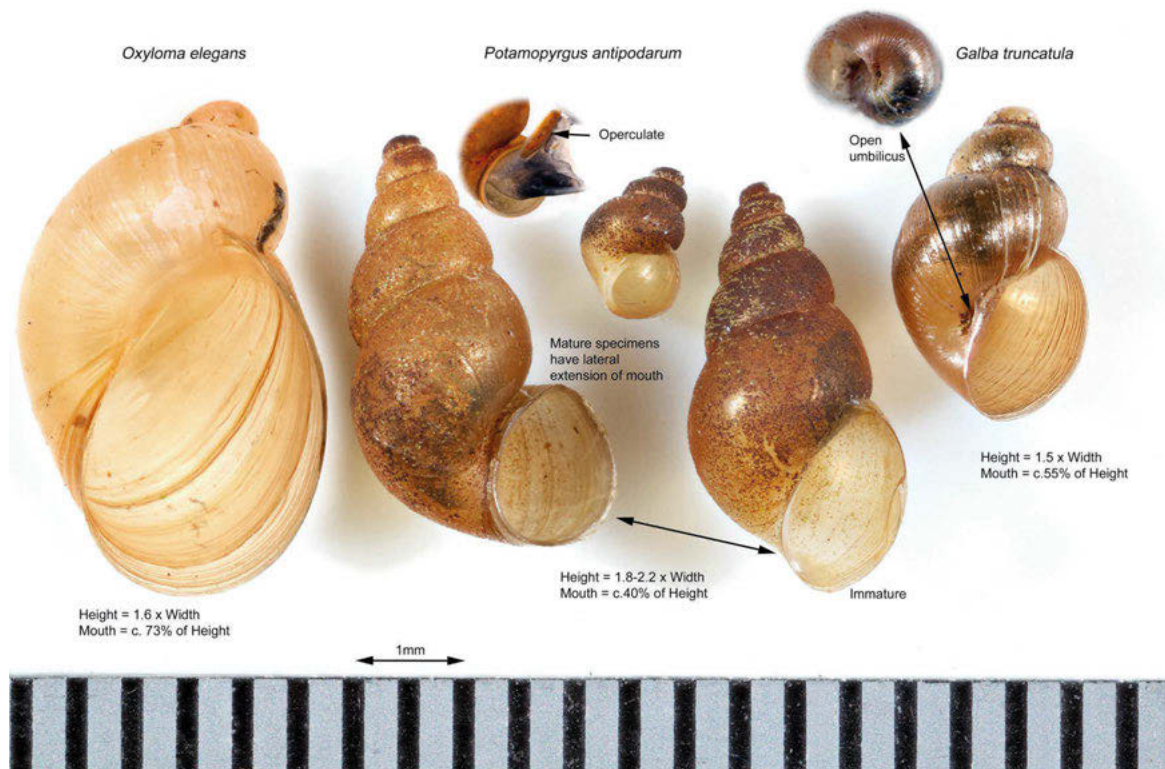
Aplexa hypnorum - Moss Bladder Snail, note that the shell opening is on the left (sinistral, anticlockwise coiling) unlike most snails which show dextral, clockwise coiling



Dalyellia viridis – the bright green colour is from symbiotic zoochlorella



Ampullaceana balthica – Wandering Pond Snail, this has gone through many name changes, formerly known as *Radix balthica*, *Lymnaea peregra*, *Lymnaea ovata*



Oxyloma elegans- Pfeiffer's Amber Snail, *Potamopyrgus antipodarum* - Jenkins' Spire Shell and *Galba truncatula* - Dwarf Pond Snail, the relative size of the mouth in relation to the overall height and the number of body whorls are important diagnostic characteristics

Insects and other invertebrates

Other invertebrates - marine species

Phylum	Class	Species	Type	Total
Arthropoda	Collembola	<i>Anurida maritima</i>	Sea Springtail	1
	Maxillopoda	<i>Lepas (Anatifa) anatifera</i>	Common Goose Barnacle	8
Cnidaria	Hydrozoa	<i>Velella velella</i>	By-the-wind Sailor	5
	Scyphozoa	<i>Rhizostoma octopus</i>	Barrel (or Dustbin-lid) Jellyfish	7
		<i>Chrysaora hysoscella</i>	Compass Jellyfish	2
Echinodermata	Asteroidea	<i>Cyanea lamarckii</i>	Blue Jellyfish	1
		<i>Asterias rubens</i>	Common Starfish	1
		<i>Astropecten irregularis</i>	Sand Star	2
Mollusca	Bivalvia	<i>Pecten maximus</i>	King (or Great) Scallop	1
		<i>Acanthocardia echinata</i>	Prickly Cockle	1
	Gastropoda	<i>Acanthodoris pilosa</i>	a sea slug (Nudibranch)	1
		<i>Aeolidia papillosa/filomenae</i>	Grey Sea Slug (Nudibranch)	2
		<i>Amphorina farrani / andra</i>	a sea slug (Nudibranch)	1
		<i>Aplysia punctata</i>	Sea Hare (Nudibranch)	1
		<i>Buccinum undatum</i>	Common Whelk	1
		<i>Doris pseudoargus</i>	Sea Lemon (Nudibranch)	2
		<i>Elysia viridis</i>	a sea slug (Nudibranch)	2
		<i>Euspira catena</i>	Large Necklace Shell	2
		<i>Facelina bostoniensis</i>	a sea slug (Nudibranch)	2
		<i>Favorinus branchialis</i>	a sea slug (Nudibranch)	2
		<i>Jorunna tomentosa</i>	a sea slug (Nudibranch)	1
		<i>Lamellaria perspicua</i>	a slug like sea snail	1
		<i>Nucella lapillus</i>	Dog Whelk	2
		<i>Patella pellucida</i>	Blue-rayed Limpet	2
		<i>Patella vulgata</i>	Common Limpet	1
		<i>Polycera quadrilineata/norvegica</i>	a sea slug (Nudibranch)	1
		<i>Steromphala cineraria</i>	Grey Top Shell	1
		Polyplocophora	<i>Lepidochitona (Lepidochitona) cinerea</i>	Common Chiton
Total				55

Twenty-one observers sent in fifty-five records of twenty-eight species of marine invertebrates. It's good to hear of many of the perennial seashore favourites, goose barnacles, various jellyfish, by-the-wind sailors and the usual scattering of sea shells, stranded starfish. There were some that needed greater exploration of rock pools and sandy shores. There is a fine set of records of ten species of sea slug, and one slug like sea snail (*Lamellaria perspicua*), that were found on Benbecula in the South Ford area. The photos of them should provide an incentive for more of us to explore our amazing coastlines with a bit more regularity and curiosity.



Patella pellucida – Blue-rayed Limpet



Amphorina farrani / andra – a nudibranch sea slug (KMCC)



Lepidochitona (Lepidochitona) cinerea - Common Chiton

Insects and other invertebrates



Lamellaria perspicua a slug like sea snail (KMCC)



Favorinus branchialis – a nudibranch sea slug (KMCC)



Aeolidia papillosa – a nudibranch sea slug (KMCC)



Facelina bostoniensis – a nudibranch sea slug (KMCC)



Polycera quadrilineata – a nudibranch sea slug (KMCC)



Elysia viridis – a pair of nudibranch sea slugs (KMCC)



Jorunna tomentosa – a nudibranch sea slug (KMCC)



Doris pseudoargus – a nudibranch sea slug (KMCC)

The nudibranch photographs are by Katie McCandlish (KMCC)

Vertebrates

Vertebrates

The overall level of recording was very similar to that seen in 2020. Once again, more individuals (39) contribute to recording vertebrates than to most other taxonomic groups. Of the thirty-one species of vertebrate recorded in 2021 eighteen were of marine animals, whales, dolphins, turtles, seals and fish – many of them sadly as casualties found on beaches. Two of most frequently recorded species overall though were Common Frog (25 records) and Otter (16 records), “crossover species” associated with both terrestrial and aquatic habitats. Of the purely terrestrial species Hedgehog (20 records) was the most frequently seen.

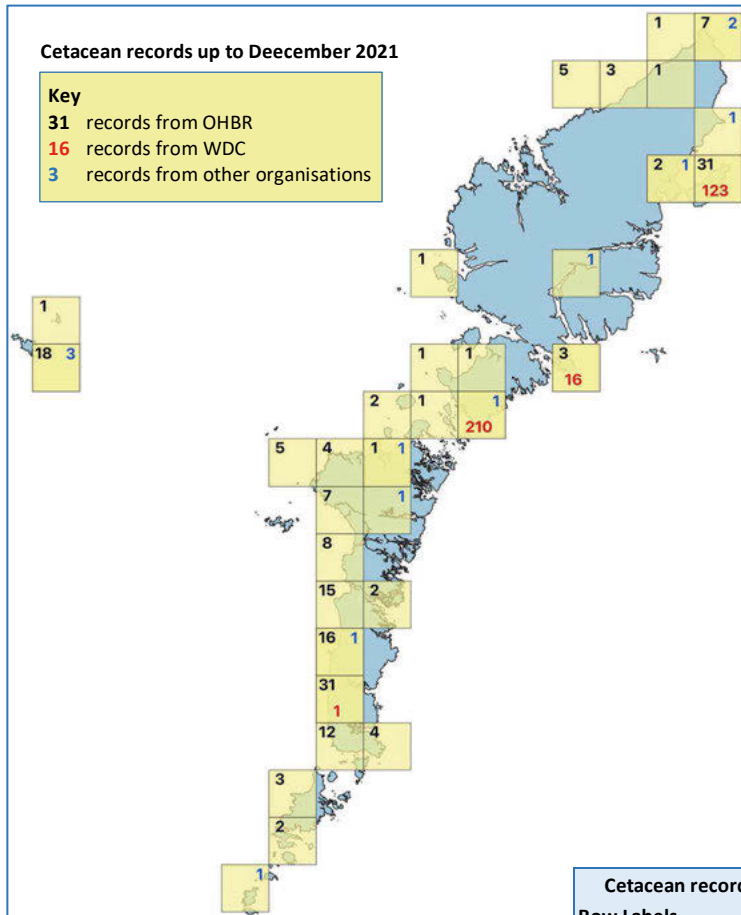
	Vertebrate records received				
	2017	2018	2019	2020	2021
Records	160	158	171	137	153
Species	36	29	31	30	31
Recorders	46	34	49	38	39

Type of animal	Species	Common name	Road casualties, strandings or otherwise found dead	Droppings, footprints, runs or other signs	Trapped	General observation	Total
Fish							
Bony fish	<i>Gasterosteus aculeatus</i>	Three-spined Stickleback				3	3
	<i>Balistes caprisus</i>	Grey Trigger-fish	2			1	3
	<i>Mola mola</i>	Sun-fish				1	1
Sharks, rays etc.	<i>Scyliorhinus canicula</i>	Lesser Spotted Dogfish	1			1	2
	<i>Galeorhinus galeus</i>	Tope				1	1
	<i>Dipturus batis</i>	Skate				2	2
Amphibia							
Frog	<i>Rana temporaria</i>	Common Frog	1			24	25
Newts	<i>Lissotriton helveticus</i>	Palmate Newt				1	1
Reptilia							
Lizard	<i>Anguis fragilis</i>	Slow-worm				2	2
Turtle	<i>Dermochelys coriacea</i>	Leathery Turtle				2	2
	<i>Lepidochelys kempii</i>	Kemp's Ridley	2				2
Mammal							
Deer	<i>Cervus elaphus</i>	Red Deer		1		1	2
Carnivora	<i>Halichoerus grypus</i>	Grey Seal	7			2	9
	<i>Phoca vitulina</i>	Harbour (Common) Seal				1	1
Cetacean	<i>Lutra lutra</i>	Otter	4	2		10	16
	<i>Balaenoptera acutorostrata</i>	Minke Whale				5	5
	<i>Physeter macrocephalus</i>	Sperm Whale	1				1
	<i>Globicephala melas</i>	Long-finned Pilot Whale	1				1
	<i>Orcinus orca</i>	Killer Whale				1	1
	<i>Delphinus delphis</i>	Common Dolphin	1			13	14
	<i>Grampus griseus</i>	Risso's Dolphin				3	3
	<i>Lagenorhynchus albirostris</i>	White-beaked Dolphin				1	1
	<i>Phocoena phocoena</i>	Common Porpoise				9	9
	<i>Tursiops truncatus</i>	Bottle-nosed Dolphin				1	1
Bat	<i>Pipistrellus</i>	Pipistrelle Bat species				1	1
Insectivore	<i>Sorex minutus</i>	Pygmy Shrew	3			1	4
	<i>Erinaceus europaeus</i>	Hedgehog	10			10	20
Rabbits & hares	<i>Oryctolagus cuniculus</i>	Rabbit				4	4
Rodents	<i>Apodemus sylvaticus</i>	Wood Mouse			1		1
	<i>Microtus agrestis</i>	Field Vole	2			4	6
	<i>Rattus norvegicus</i>	Brown Rat	1	2	2	4	9
Total			26	5	3	98	153

Mammals - Cetaceans

OHBR is an important source of cetacean records for NBN, about 34% of all their records are attributable to us as an organisation. Most of the other records come from Whale and Dolphin Conservation (61%) with the remainder coming from organisations such as British Trust for Ornithology, National Trust Scotland, Highland Biological Recording Group, and National Museum Scotland.

Vertebrates



The two major suppliers of records act in different ways to record data. Most of the OHBR records tend to come from the western side of the Outer Hebrides. They cover many of the west coast beaches and have recorded fifteen species including records of strandings of Cuvier's Beaked Whale, Long-finned Pilot Whale, various dolphins and also live sightings of various other species. Most of the live sightings though come from WDC Shorewatchers who tend to watch from fixed vantage points such as Tiumpnan Head (Lewis), the lighthouse on Scalpay or Rodel (Harris). All are excellent spots for catching movements of cetaceans through the Minch or through the Sound of Harris. Five species make up the majority of sighting from these watchers (Common Dolphin, Common Porpoise, Minke Whale and Risso's Dolphin. These species are much less frequently recorded by the west coast beach wanderers.

It would be hard to overestimate the excitement of catching a glimpse of one of the spectacular cetaceans that crop up occasionally. Four Killer Whales passing Tiumpnan head on 11th April 2021 must have been exciting. In total, in 2021 there were thirty-six records of nine species of cetacean. This is a fairly typical number of records and a welcome recovery from the nine records of just seven species in 2020.



Oryctolagus cuniculus - Rabbit

Cetacean records for the Outer Hebrides to December 2021				
Row Labels	OHBR	WDC	Others	Total
Atlantic White-sided Dolphin	3		3	6
Bottle-nosed Dolphin	10	3		13
Common Dolphin	35	28	5	68
Common Porpoise	31	198	2	231
Cuvier's Beaked Whale	15			15
Fin Whale		1		1
Humpback Whale	5	4		9
Killer Whale	6	1		7
Long-finned Pilot Whale	14			14
Minke Whale	24	52	14	90
Northern Bottlenose Whale	1			1
Risso's Dolphin	15	25	3	43
Sowerby's Beaked Whale	2			2
Sperm Whale	11			11
Striped Dolphin	8		1	9
White-beaked Dolphin	11			11
Total	192	350	28	573

Other Mammals

Several reports came in from local people saying that Rabbit populations seemed to be increasing in 2021. This wasn't reflected in an increase in the number of records with just four sightings, still well down on the peaks of 2016/2017. For the second year running there were no sightings of Mountain Hare. In the past a few have been seen on the higher hills of Harris it would be good to hear of sightings of this species in 2022.

Vertebrates

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.



Cervus elaphus - Red Deer, just one record in 2021



Halichoerus grypus – Grey Seal, nine records in 2021



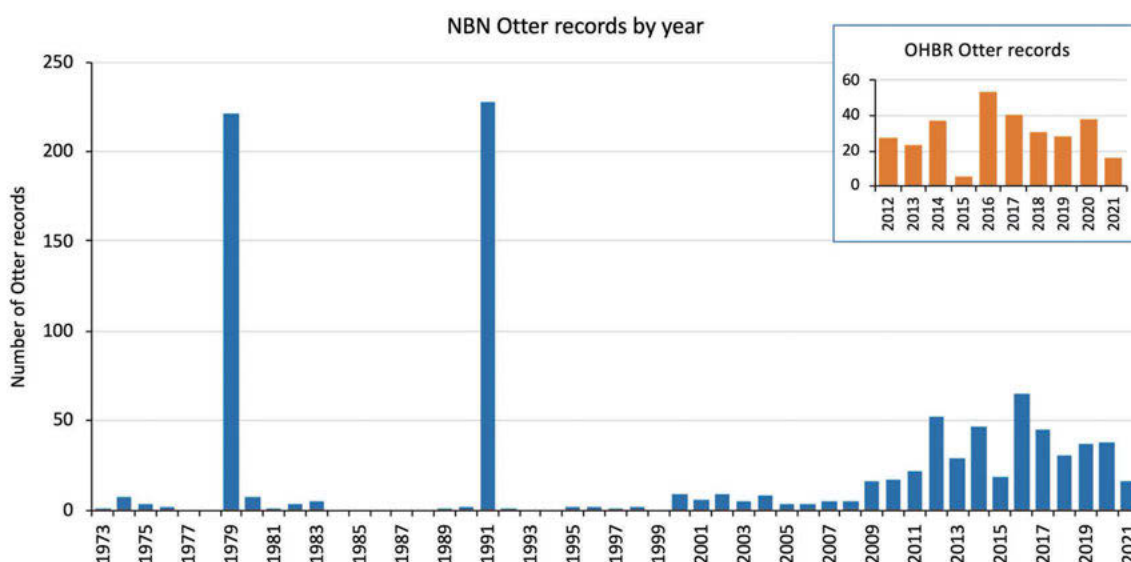
Phoca vitulina - Harbour (Common) Seal, one record in 2021

In overall terms 2021 was a fairly poor year for mammal records received by OHBR. Since its inception in 2012 the organisation contributes, annually, about 40% of the mammal records making their way onto NBN database. As most recorders submitting mammal records are local residents, we are well placed for detecting changes in populations. Many of the other records making their way onto NBN are “one off” records from casual visitors, spasmodic surveys and so on. These data whilst very valuable do make NBN data very peaky.

Common name	Scientific name	pre 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Otter	<i>Lutra lutra</i>	117	27	23	37	5	53	40	31	28	38	16	415
Hedgehog	<i>Erinaceus europaeus</i>	1	1	13	61	26	16	9	10	32	18	20	207
European Rabbit	<i>Oryctolagus cuniculus</i>	19	4	3	6	3	34	18	6	5	6	4	108
Red Deer	<i>Cervus elaphus</i>	2	1	7	28	5	8	12	16	2		1	82
Field Vole	<i>Microtus agrestis</i>		2	4	11	7	6	6	3	5	8	6	58
Grey Seal	<i>Halichoerus grypus</i>	6	3		3	2	6	10	2	8	2	9	51
Brown Rat	<i>Rattus norvegicus</i>	1	2	4	5	2	2	1	7	9	7	9	49
Pygmy Shrew	<i>Sorex minutus</i>	1	2	5	3	1		4		8	5	4	33
Feral Ferret	<i>Mustela putorius furo</i>	1	1	2	8	4	4	1	10				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	21
Wood Mouse	<i>Apodemus sylvaticus</i>	2	1				1				2	1	7
Pipistrelle Bat species	<i>Pipistrellus</i>	1		2		1	1				1	1	7
House Mouse	<i>Mus musculus</i>	1			1								2
Noctule type bat	<i>Nyctalus</i>	1											1
Walrus	<i>Odobenus rosmarus</i>	1											1
Brown Hare	<i>Lepus europaeus</i>							1					1
American Mink	<i>Neovison vison</i>							1					1
Total		155	49	67	168	63	140	106	88	108	88	72	1104

Vertebrates

Trying to discern population trends from NBN data is difficult. This is illustrated by looking at NBN Otter records. The pattern is distorted initially by the national otter surveys carried out in 1977-1979 and 1991-1994 that clearly account for the two peaks in 1979 and 1991. Ignoring these then there is an impression that otters were scarce until 2000 and they then started increasing as we moved into 2010s onwards. The reality is, I'm sure, that there was little recording of otters being undertaken in the Outer Hebrides and the inception of OHBR in 2012 provided a stimulus that led to rather better and more consistent recording of Otters here.



Maintaining recording intensity is difficult and perhaps the steady decline in Otter records since 2016 is a sign of “recorder fatigue”. We all know otters are common up here and I suspect we, to some degree, take them for granted. Common things becoming rare is a sure indicator of major environmental damage. In much of the UK farmland birds and insects have more or less disappeared from some regions because of over intensification and pesticide use. It happened without most people realising. Wildlife here is still a part of everyday life but without consistent recording of even the common things it's hard to know when things are going wrong. In 2022, the tenth anniversary of OHBR, perhaps we can all be a bit better at recording the common things we see.

Amphibians – frogs, toad and newts

NBN has (as of 12th January 2022) 215 records of amphibians from the Outer Hebrides, 86% of these records are attributed to OHBR. They cover three species: Common Toad (*Bufo bufo*), Common Frog (*Rana temporaria*) and Palmate Newt (*Lissotriton helveticus*).

OHBR Records of Amphibians

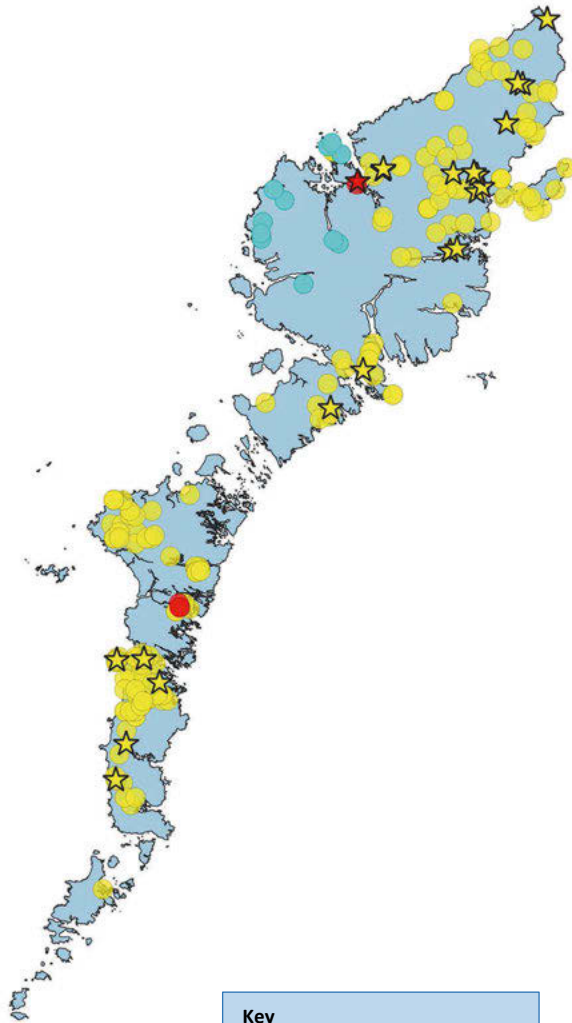
Species	Scientific name	Pre 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	First recorded
Common Frog	<i>Rana temporaria</i>	34	6	17	24	11	16	27	12	17	7	25	171	1960
Common Toad	<i>Bufo bufo</i>	5	2			1	1						9	2008
Palmate Newt	<i>Lissotriton helveticus</i>							3	1			1	4	2017

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.

Vertebrates

Distribution of Amphibians in the Outer Hebrides



- Key**
- Common Frog to Dec 2020
 - ★ Common Frog 2021
 - Common Toad to Dec 2020
 - Palmate Newt to Dec 2020
 - ★ Palmate Newt 2021

Common Frog is widely distributed throughout the Outer Hebrides. Twenty-five records were received in 2021 scattered over most of the known range of the species, none came from North Uist or Benbecula.



Rana temporaria – Common Frog



Rana temporaria – Common Frog, with spawn

Records of Common Toad are restricted to an area of south-west Lewis and north west Harris. No records were received in 2021 and the species has not been seen since 2016.

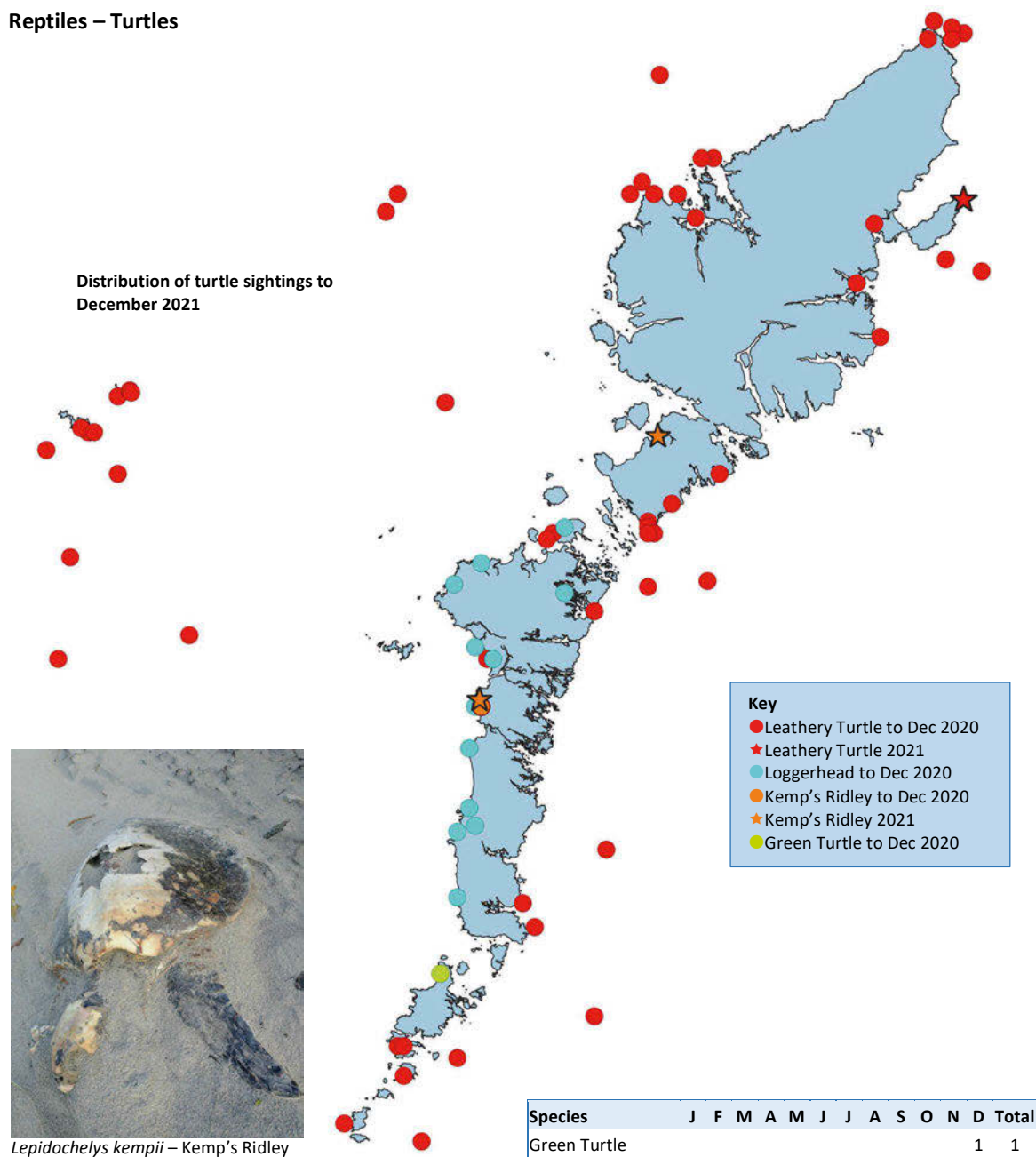


Bufo bufo – Common Toad

Palmate Newt has been recorded at two locations, Grimsay and Great Bernera, the single record in 2021 was from the latter area.

Vertebrates

Reptiles – Turtles



Over the years there have been 61 sightings of Leathery Turtles, 12 Loggerheads, 3 Kemp's Ridley (2008, and 2 in 2021) and just a single Green Turtle (2019). There were four turtle records in 2021, between one and five records per year is about the norm.

Two were live sightings of Leathery Turtles from Tiump Head, Lewis, one in August and the other in September. This species is a regular trans-Atlantic migrant said to follow shoals of jellyfish from their tropical breeding grounds. They are cold adapted which allows them to feed at depth where water is much colder than in the surface ocean layers. Sightings in the UK peak in August and September unlike those of the other species. Most Leathery Turtles are thought to return back across the Atlantic in the late autumn.

Records of the other three species recorded from the Outer Hebrides are mostly in the period December to April and are thought to be juveniles caught in the drift currents crossing the Atlantic. They are not cold adapted species and on reaching UK waters in late autumn/winter they suffer from cold shock and most sadly end up dead on the shore. There were two November records of dead Kemp's Ridley turtles, one on Benbecula the other on Harris, in 2021.

Vertebrates

Fish

Twelve records of six species of fish were received in 2021. Three of the species were members of the Class Elasmobranchii which includes sharks and rays. A large Tope (*Galeorhinus galeus*) was perhaps the most spectacular. The animal was first spotted swimming in the channel where the outflow from Loch Bee flowed under the Clachan to Ardivachar road on South Uist. It quickly gathered a small crowd of onlookers as at c.150cm in length it was quite an impressive fish. It had probably followed the tide in but then became trapped in a deep pool as the tide ebbed. It was not able to escape and sadly died before the next high tide.



Galeorhinus galeus – Tope, photo by Martyn Jamieson

There were also two records of a much smaller shark the Lesser Spotted Dogfish (*Scyliorhinus canicular*) recorded from Askernish (South Uist) and at the head of Loch Trolamaraig (North Harris). The final elasmobranch was a record of Skate (*Dipturus batis*) at Daliburgh (South Uist). No sightings of Basking Shark were made in 2021 and it seems to have been a poor year for them up here.



Galeorhinus galeus – Tope, the animal sadly died overnight before the next incoming tide would have refilled its escape channel to the sea. It was taken ashore for measurements and detailed photographs to enable identification.

The other main class of fish is the Actinopterygii. These are known as Bony Fish to separate them from the sharks and rays that have cartilaginous skeletons. There were records of three species.

One, the Three-spined Stickleback (*Gasterosteus aculeatus*) is a freshwater species though it can occur in brackish water. The three records in 2021 were all bycatch found during sampling of various lochs and other bodies of water for Desmids.



Gasterosteus aculeatus - Three-spined Stickleback

The other two species were marine species. Three Grey Trigger-fish (*Balistes caprisus*) were recorded from, one from a beach on South Uist (Frobost) and two from beaches on Harris (Luskentyre and Scarista). Trigger-fish are considered to be warm water species but the Grey Trigger-fish is now recorded from various places around the west coast of Scotland annually. The first NBN record for Scotland is from 2000 and there are now records most years. There are eight previous records for the Outer Hebrides.

Fungi, lichens and slime moulds

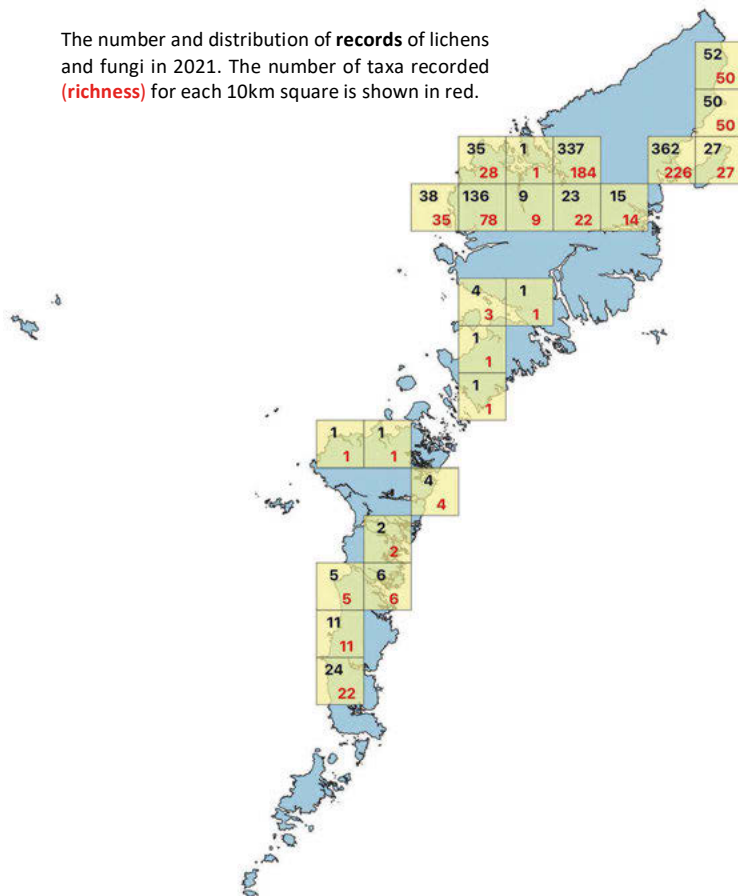
Fungi, Lichens and Slime Moulds

Phylum	Type	2020		2021	
		Species	Records	Species	Records
Ascomycota	Lichen	215	974	335	1075
	Fungus	51	90	9	12
Basidiomycota	Lichen	2	4	5	7
	Fungus	68	100	44	51
Protozoa	Slime Mould	2	2	1	1
Total		338	1170	414	1146

The number of records submitted in 2021 was broadly similar to 2020. There were slightly fewer records but of slightly more species. The vast majority of records came from a group of four very experienced lichenologists who spent a week or so on Lewis in September. They accounted for >90% of all records in 2021, and lichen recording in 2021 was heavily biased to locations on Lewis.

Island	2020	2021
Lewis	148	1085
Harris	249	7
Scalpay	31	
Berneray	3	
Lingaigh	4	
North Uist	115	6
Benbecula	48	2
Grimsay	14	
South Uist	207	46
Eriskay	181	
Barra	86	
Vatersay	7	
Mingulay	77	
Total	1168	1146

The number and distribution of **records** of lichens and fungi in 2021. The number of taxa recorded (**richness**) for each 10km square is shown in red.



Cordyceps militaris - Scarlet Caterpillarclub



Scutellinia - an eyelash fungus, identification to species needs microscopic examination of spores and setae, the "eyelashes"

Of the 978 Lichen records in 2020, 803 came from a single recorder who spent three weeks or so in the Outer Hebrides but managed to get records from islands all the way from Lewis to Mingulay. A more extensive approach than adopted by our visitors in 2021.

Visiting naturalists, especially those with expertise in some of the more difficult taxonomic groups, have always played an important role in developing our understanding of the natural history of the islands. There are though a number of local naturalists who record lichens and fungi, they contributed eighty-seven of the total records for 2021. About half (45) of the records were of lichens sent in by two locals. The rest were of the larger or more interesting basidiomycetes and a few non-lichen forming ascomycetes.

Fungi, lichens and slime moulds

Fungi

Sixty-three records of fifty-three fungi were received in 2021, most came from local recorders. They were of species that were distinctively coloured, interestingly shaped or otherwise attractive and most were recorded just once.

Phylum	Order	Species	Common Name	Records		
Ascomycota	Botryosphaeriales	<i>Microdiplodia narthecii</i>	a leaf spot fungus	4		
	Geoglossales	<i>Glutinoglossum glutinosum</i>	Glutinous Earthtongue	1		
	Hypocreales	<i>Cordyceps militaris</i>	Scarlet Caterpillarclub	1		
	Pezizales	<i>Aleuria aurantia</i>	Orange Peel Fungus	1		
		<i>Peziza ammophila</i>	Dune Cup	1		
		<i>Peziza vesiculosa</i>	Blistered Cup	1		
		<i>Scutellinia</i>	an eyelash fungus	1		
		Xylariales	<i>Xylaria hypoxylon</i>	Candlesnuff Fungus	1	
		Leotiales	<i>Bulgaria inquinans</i>	Black Bulgar	1	
	Basidiomycota	Agaricales	<i>Agaricus augustus</i>	The Prince	1	
<i>Armillaria ostoye</i>			Dark Honey Fungus	1		
<i>Calocybe gambosa</i>			St. George's Mushroom	1		
<i>Cantharellus cibarius</i>			Chanterelle	1		
<i>Clavaria zollingeri</i>			Violet Coral	2		
<i>Clavulinopsis corniculata</i>			Meadow Coral	2		
<i>Clavulinopsis fusiformis</i>			Golden Spindles	1		
<i>Clitocybe geotropa</i>			Trooping Funnel	1		
<i>Coprinellus micaceus</i>			Glistening/Mica Inkcap	1		
<i>Coprinus comatus</i>			Shaggy Inkcap	1		
<i>Entoloma chalybeum</i>			a pinkgill fungus	1		
<i>Flammulina elastica</i>			a velvet shank	1		
<i>Flammulina velutipes</i>			Velvet Shank	1		
<i>Hygrocybe conica</i>			Blackening Waxcap	1		
<i>Hypholoma fasciculare</i>			Sulphur Tuft	1		
<i>Laccaria amethystina</i>			Amethyst Deceiver	2		
<i>Laccaria laccata</i>			Deceiver	3		
<i>Lepista nuda</i>			Wood Blewit	2		
<i>Limacella guttata</i>			Weeping Slimecap	1		
<i>Lycoperdon nigrescens</i>			Dusky Puffball	1		
<i>Lycoperdon perlatum</i>			Common puffball	1		
<i>Macrotyphula fistulosa</i>			Pipe Club	1		
<i>Mycena pura</i>			Lilac Bonnet	2		
<i>Panaeolus semiovatus</i>			Egghead Mottlegill	1		
<i>Pleurocybella porrigens</i>			Angel's Wings	1		
<i>Pluteus cervinus</i>			Deer Shield	1		
<i>Schizophyllum commune</i>			Splitgill	1		
<i>Xerula radicata</i>			Rooting shank	1		
Auriculariales			<i>Auricularia auricula-judae</i>	Jelly Ear	1	
			<i>Pseudohydnum gelatinosum</i>	Jelly Tooth	1	
Boletales			<i>Hygrophoropsis aurantiaca</i>	False Chanterelle	1	
			<i>Neoboletus luridiformis</i>	Lurid Bolete	1	
			<i>Paxillus involutus</i>	Brown Rollrim	1	
			<i>Suillus luteus</i>	Slippery Jack	1	
Dacrymycetales			<i>Calocera cornea</i>	Small Stagshorn	1	
Gloeophyllales			<i>Gloeophyllum sepiarium</i>	Conifer Mazegill	1	
Polyporales			<i>Trametes versicolor</i>	Turkeytail	1	
Pucciniales			<i>Melampsora epitea s. lat.</i>	Willow Rust	1	
			<i>Puccinia urticata</i>	Nettle Rust	1	
Tremellales			<i>Tremella mesenterica</i>	Yellow Brain	1	
Russulales			<i>Hebeloma spp.</i>	Poisonpie	1	
			<i>Russula cyanoxantha</i>	Charcoal Burner	1	
			<i>Russula nigricans</i>	Blackening Brittlegill	1	
			<i>Russula nobilis</i>	Beechwood Sickener	1	
Total						63

Fungi, lichens and slime moulds



Clavaria zollingeri - Violet Coral



Trametes versicolor – Turkeytail



Coprinellus micaceus - Glistening Inkcap



Lycoperdon nigrescens - Dusky Puffball



Aleuria aurantia - Orange Peel Fungus

Fungi, lichens and slime moulds



Puccinia urticata - Nettle Rust



Tremella mesenterica - Yellow Brain

Lichens

Phylum	Order	Species	Records
Ascomycota	Abrothallales	1	1
	Acarosporales	4	9
	Arthoniales	14	33
	Baeomycetales	15	31
	Candelariales	3	9
	Dothideomycetes	5	6
	Helotiales	1	1
	Hymeneliales	2	5
	Hypocreales	2	2
	Lecanorales	142	488
	Lecanoromycetes	2	2
	Lecanoromycetidae	6	42
	Lecideales	20	56
	Lichinales	2	10
	Monoblastiales	2	2
	Mycocaliciales	1	1
	Ostropales	7	15
	Ostropomycetidae	3	6
	Peltigerales	25	64
	Pertusariales	22	79
	Pezizomycotina	7	10
	Phyllachorales	1	1
	Pleosporales	3	3
Pyrenulales	3	3	
Rhizocarpales	10	55	
Sordariales	1	1	
Teloschistales	33	105	
Umbilicariales	3	9	
Verrucariales	15	26	
Basidiomycota	Agaricales	3	4
	Corticiales	1	2
	Tremellales	1	1
	Total	360	1082



Lichenomphalia umbellifera – Heath Navel (Order Agaricales)

One such species is *Lichenomphalia umbellifera* (Heath Navel) which has a definite fungus look, being shaped like conventional a toadstool.

The fungal partner in the mutualistic relationship that we recognise as an individual lichen species forms the basis of their classification. Most are in the phylum Ascomycota but there are some where the fungal partner is a basidiomycete.

Most lichens though have a variety of other growth forms. Crustose, foliose and fruticose are the most commonly used terms, in plain English crusty, leafy and bushy are equivalents. Within an order most species will have similar growth forms.

Fungi, lichens and slime moulds

Crustose lichens

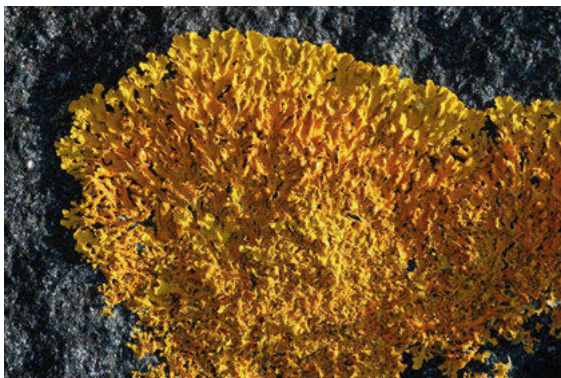


Rhizocarpon geographicum – Map Lichen (green patches) and other crustose lichens



Ochrolechia parella – Crab's Eye Lichen

Foliose lichens



Xanthoria aureola



Peltigera sp.

Fruticose lichens



Ramalina sp. and a variety of other lichens on a coastal wall on Lewis



Ramalina sp. and many other lichens covering much of gable wall of chapel at Howmore, South Uist



Cladonia sp.

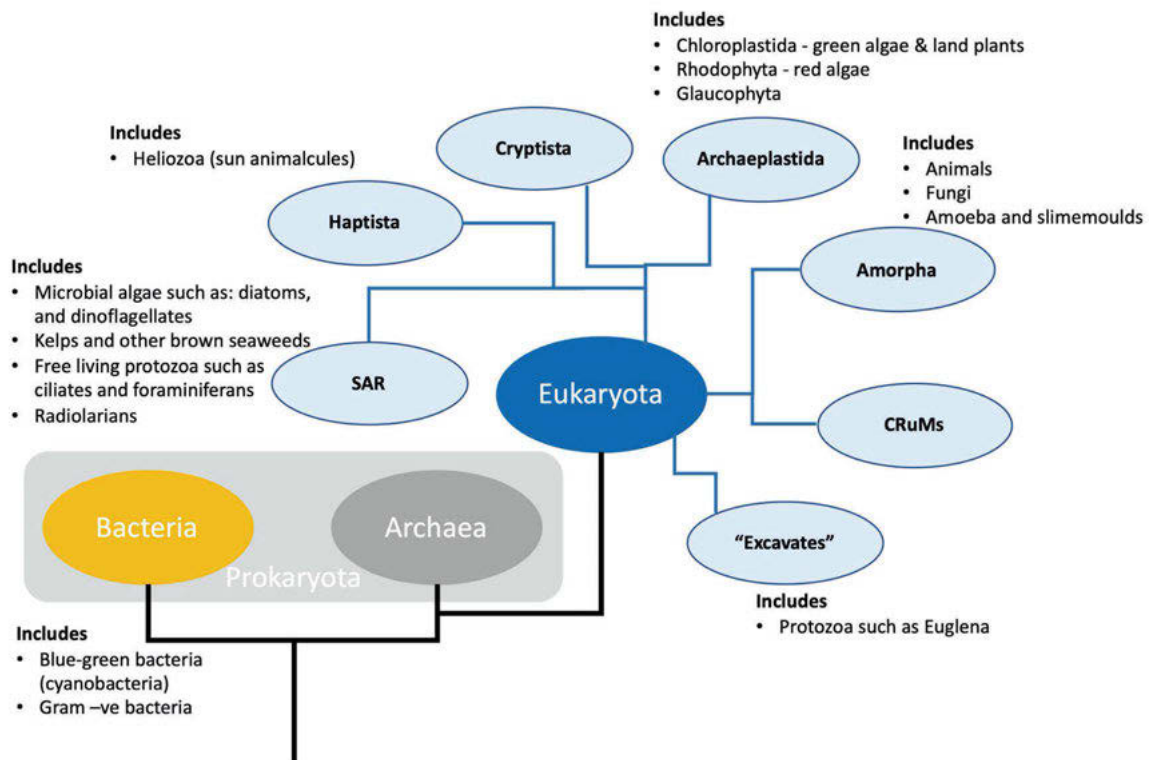
Algae and other freshwater micro-organisms

Freshwater Algae - classification

Not so long ago, if it was able to photosynthesise it was a green plant except if it was small when it became an alga. But then things started to get complicated. Blue-green algae became blue-green bacteria when it was realised that the details of their cellular structure were much more like a bacterium than an alga. Some algae could move like animals and they also headed off into different categories. The larger algae (green, red and brown seaweeds) weren't particularly similar either and brown seaweeds were put into a different group to the green and red seaweeds.

Once scientists started looking at things at a molecular level, a wholesale shuffling took place and a new family tree based on molecular similarities took its place. Things once lumped together as algae are now placed in a number of different taxonomic groups.

The basic division of life is into three domains. The Eukaryota which all have genetic information contained within each cell inside a membrane-enclosed nucleus and other common characteristics of cell structure and organisation. The other two domains are within the Prokaryota. Bacteria don't have a nucleus or cell organelles such as mitochondria or vacuoles so they are classified as Prokaryota. Some other microorganisms, also lacking the cell organisation of the eukaryotes but having fundamental differences in the molecules that make up their cell walls form another group within the prokaryotes – the Archaea.

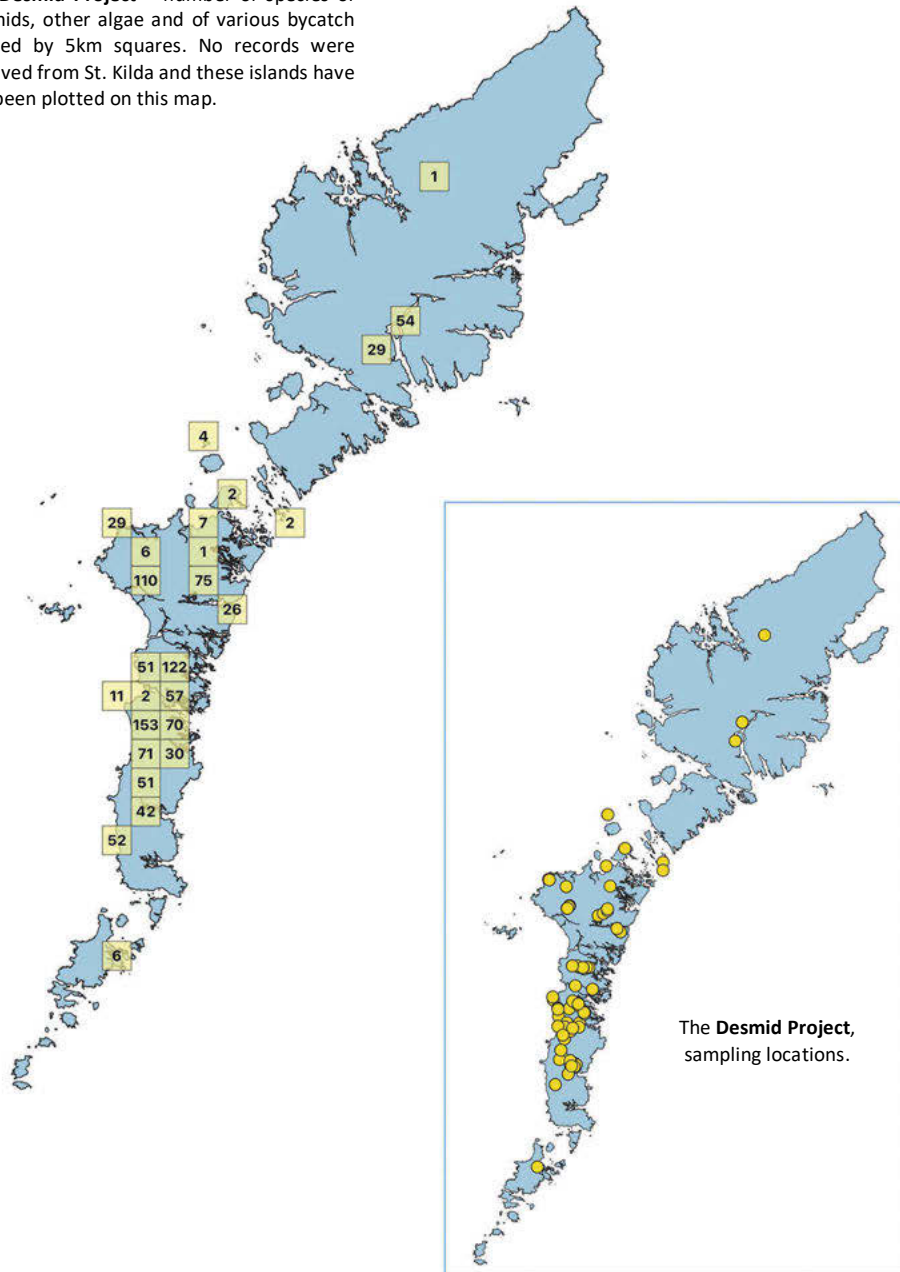


At the end of each year I get a set of spreadsheets containing all the records submitted to OHBR that year. One of those spreadsheets is labelled "Algae" and it contains all sorts of things. For the last couple of years it has contained mostly records of desmid species which are, by scientific consensus, algae in the group Archaeplastida. But there are also data for a whole range of other organisms some of which are protozoa, some are bacteria and others are split between other sections of the most recent evolutionary tree of life.

Most algal records come from an ongoing desmid survey of the Outer Hebrides that continues to produce many records. As well as a large number of desmid species there is also a substantial bycatch of other algae, blue-green bacteria, protozoa, amoeba and a few planktonic crustaceans. In 2021 samples were collected from 74 locations, mostly on South Uist and Benbecula, giving a total of 1,301 records of 379 species. The most prolific samples were from a "small pool with vegetation and loch margin" that generated 234 records of 105 species from two visits, one in January and the second in March 2021.

Algae and other freshwater micro-organisms

The **Desmid Project** – number of species of desmids, other algae and of various bycatch plotted by 5km squares. No records were received from St. Kilda and these islands have not been plotted on this map.



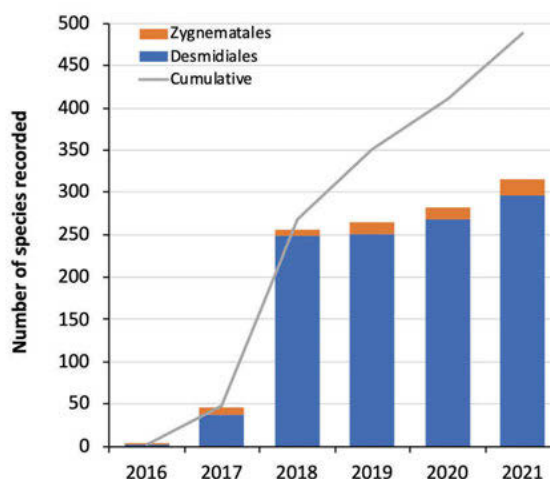
Algae –Desmids (Charophyta) and other green algae (Chlorophyta)

Domain	Supergroup	Clade	Phylum	Class	Order	Taxa ¹	Records		
Eukaryota	Archaeplastida	Viridiplantae	Charophyta	Zygnematophyceae	Desmidiiales	296	1109		
					Zygnematales	20	88		
					Chlorophyta	Chlorophyceae	Chlamydomonadales	1	5
					Sphaeropleales		6	8	
					Volvocales		1	1	
			Trebouxiophyceae	Chlorellales	7		10		
			Prasiolales	1	1				
			Trebouxiales	1	1				
			Total	333	1223				

Taxa¹ - rather than species we talk about taxa for this group. Many desmids exist in a variety of distinct forms which are given specific varietal names e.g. - *Closterium diana*, *C. diana* var. *arcuatum*, *C. diana* var. *minus*, *C. diana* var. *pseudodiana*

Algae and other freshwater micro-organisms

Prior to 2017, very little was known about the desmid flora of the Outer Hebrides. There are eleven NBN records for 2016 of “Zygnematales” with no differentiation into species. A few records were collected by a local naturalist in 2017. In 2018 a visit by a European expert led to a big jump in records and added considerable impetus to the now ongoing survey carried out by our own local expert. The total number of species recorded is well over 450 with new taxa being added each year. Records of an additional seventy-new taxa for the Outer Hebrides were collected in 2021. Many of these taxa have yet to make it onto the UK Species Inventory; it’s a group needing UK wide revision.

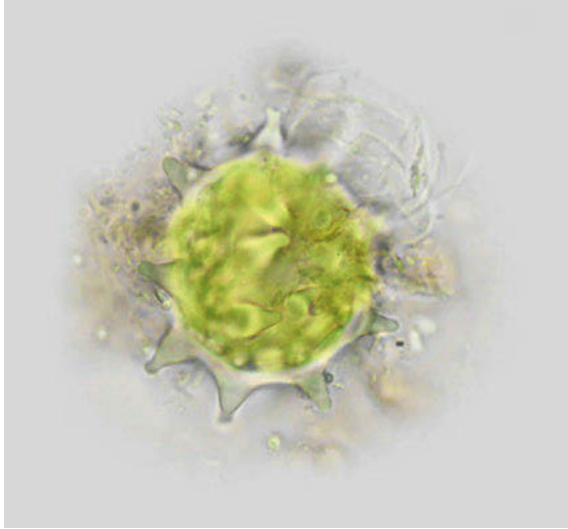


Class	Recommended Taxon Name	Notes
Zygnematophyceae	<i>Actinotaenium didymocarpum</i>	Not on UKSI
	<i>Actinotaenium diplosporum</i> f. <i>minus</i>	Not on UKSI
	<i>Closterium cynthia</i>	On UKSI as: <i>Closterium jeneri</i> var. <i>cynthia</i>
	<i>Cosmarium bipyrenoideum</i>	1st UK record
	<i>Cosmarium boitierense</i>	Not on UKSI
	<i>Cosmarium boitierense</i> var. <i>inambitosum</i>	Not on UKSI
	<i>Cosmarium calculus</i>	Not on UKSI
	<i>Cosmarium contractum</i> var. <i>retusum</i>	Not on UKSI
	<i>Cosmarium discrepans</i>	Not on UKSI
	<i>Cosmarium hostensiense</i>	On UKSI as: <i>Cosmarium variolatum</i> var. <i>skujajae</i>
	<i>Cosmarium luxuriosum</i> var. <i>papilliformis</i>	Not on UKSI: a new variety described by Williamson & Johnson
	<i>Cosmarium medietusum</i>	Not on UKSI
	<i>Cosmarium polygonatum</i>	Not on UKSI
	<i>Cosmarium subcostatum</i> var. <i>minus</i>	Not on UKSI
	<i>Cosmarium suborthogonum</i>	On UKSI as: <i>Cosmarium impressulum</i> var. <i>suborthogonum</i>
	<i>Cosmarium subtumidiforme</i>	1st UK record (awaiting publication)
	<i>Euastrum coeselii</i>	On UKSI as: <i>Euastrum groenbladii</i>
	<i>Hyalotheca dissiliens</i> var. <i>minor</i>	Not on UKSI
	<i>Penium amplificatum</i>	On UKSI as: <i>Penium spirostriolatum</i> var. <i>amplificatum</i>
	<i>Roya closteroides</i>	Not on UKSI
	<i>Staurastrum anatinum</i> var. <i>subantatinum</i>	Not on UKSI
	<i>Staurastrum avicula</i> var. <i>lunatum</i>	On UKSI as: <i>Staurastrum lunatum</i>
	<i>Staurastrum brevispina</i>	On UKSI as: <i>Staurodesmus brevispina</i>
	<i>Staurastrum bulbosum</i> var. <i>cyathiforme</i>	Not on UKSI
	<i>Staurastrum cristatum</i> var. <i>oligacanthum</i>	Not on UKSI
	<i>Staurastrum cyrtocerum</i> var. <i>inflexum</i>	Not on UKSI
	<i>Staurastrum cyrtocerum</i> var. <i>brachycerum</i>	Not on UKSI
	<i>Staurastrum ralfsii</i>	On UKSI as: <i>Staurastrum orbiculare</i> var. <i>ralfsii</i>
	<i>Staurastrum sibiricum</i>	On UKSI as: <i>Staurodesmus sibiricum</i>
	<i>Staurastrum simonyi</i> var. <i>sparsiaculeatum</i>	Not on UKSI
	<i>Staurastrum striatum</i>	On UKSI as: <i>Staurastrum punctulatum</i> var. <i>striatum</i>
	<i>Staurodesmus controversus</i> var. <i>crassus</i>	On UKSI as: <i>Staurodesmus crassus</i>
	<i>Staurodesmus cuspidicurvatus</i>	On UKSI as: <i>Staurastrum curvatum</i>
	<i>Staurodesmus dejectus</i> var. <i>brevispinus</i>	Not on UKSI
	<i>Staurodesmus extensus</i> var. <i>rectus</i>	Not on UKSI
	<i>Staurodesmus ralfsii</i>	On UKSI as: <i>Staurodesmus incus</i> var. <i>ralfsii</i>
<i>Staurodesmus triangularis</i> var. <i>brevispina</i>	Not on UKSI	
<i>Staurodesmus validus</i> var. <i>subincus</i>	Not on UKSI	
<i>Tortitaenia bahusiensis</i>	1st UK record	

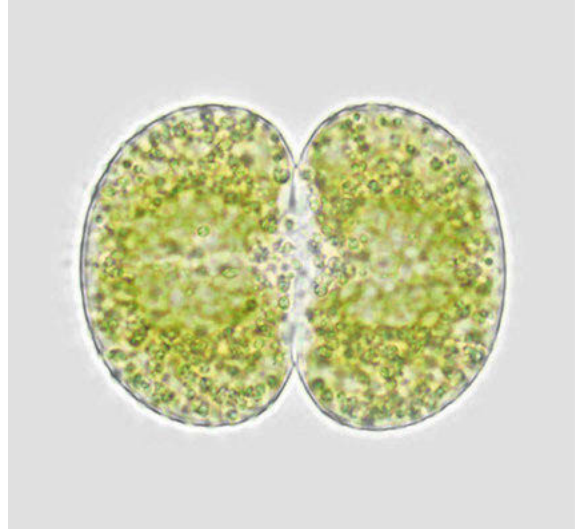
Taxonomic notes – list of species either; not currently on the UK Species Inventory (UKSI), recorded under an older name on UKSI, or species and varieties new to the UK.

Algae and other freshwater micro-organisms

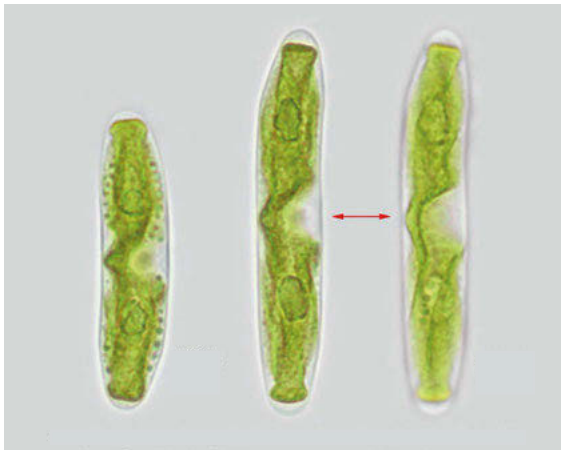
Two species new to the UK (*Cosmarium bipyrenoideum* and *Tortitaenia bahusiensis*), a putative new UK species (*Cosmarium subtumidiforme*), and a previously undescribed variety of a species (*Cosmarium luxuriosum* var. *papilliformis*) were found in samples in 2021. This survey is of national importance. As of 7th January 2021 the NBN had 3,298 records of desmids in the class Zygnematophyceae. Of these 2,649 (c.80%) came from records supplied by Outer Hebrides Biological Recording.



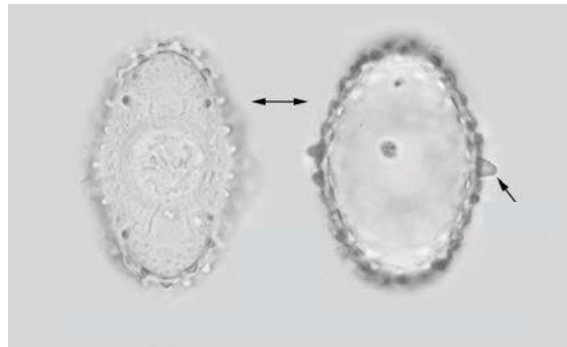
Cosmarium subtumidiforme (zygospore) – a putative new UK species, to be authenticated by a forthcoming publication (CJ)



Cosmarium bipyrenoideum – new to UK in 2021 (CJ)



Tortitaenia bahusiensis – new to UK in 2021 (CJ)



Cosmarium luxuriosum var. *papilliformis* - apical views of an empty cell showing the large central granule, a newly described variety for UK (CJ)

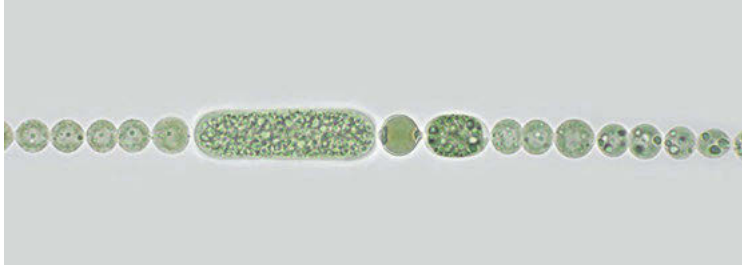
Blue-green and other Bacteria

Domain	Phylum	Class	Order	Species	Records	
Bacteria	Proteobacteria	Gamma proteobacteria	Thiotrichales	<i>Achromatium oxaliferum</i>	3	
	Cyanobacteria	Cyanophyceae	Chroococcales	<i>Aphanothece stagnina</i>	1	
				<i>Chroococcus dimidiatus</i>	4	
	Nostocales			<i>Calothrix braunii</i>	1	
				<i>Dolichospermum macrosporum</i> *	1	
				<i>Cyanothece major</i> *	2	
	Synechococcales			<i>Aphanocapsa incerta</i> *	1	
*see taxonomic notes at end of this section					Total	13

Thirteen records of seven species of bacteria were submitted in 2021. Six of the species (12 records) were of blue-green bacteria. The Cyanobacteria are the first known group of organisms to have been able to release oxygen. Stromatolites which are thought likely to have contained this group of bacteria appeared about 3.5 million years ago. Oxygen released by photosynthetic cyanobacteria led to the oxygenation of the atmosphere in the "Great Oxygenation Event" of c.2.5 million years ago. This paved the way for the

Algae and other freshwater micro-organisms

evolution of life as we know it today. The structure of blue-green bacteria closely resembles that of the chloroplasts in algae and other plants. This was noticed by biologists in the late 19th century and led to the eventual acceptance of the idea that it was the ingestion (phagocytosis) of a blue-green bacterium by an early Eukaryote organism that eventually led to them becoming endosymbiotic and leading to the evolution of algae and other plants. The three groups included in the Archaeplastidae (algae, green plants and red seaweeds) share this common evolutionary root.



Dolichospermum macrosporum - a blue-green bacterium (both photos CJ)



Cyanothece major - a blue-green bacterium

Other Algae – SAR and Haptista

Domain	Supergroup	Clade	Phylum	Class	Order	Species	Records			
Eukaryota	SAR	Stramenopila	Ochrophyta	Bacillariophyceae	Cymbellales	<i>Encyonema silesiacum</i>	1			
					Fragilariales	<i>Synedrella subconstricta</i>	1			
					Thalassiosirales	<i>Cyclotella meneghiniana</i>	1			
					Raphidophyceae	Raphidomonadales	<i>Gonyostomum semen</i>	3		
						Synurophyceae	Synurales	<i>Synura sphagnicola</i>	1	
						Xanthophyceae	Mischococcales	<i>Ophiocytium cochleare</i>	1	
							<i>Pseudostaurastrum enorme</i>	2		
					Alveolata	Myzozoa	Dinophyceae	Actinophryida	<i>Actinophrys sol</i>	3
								Gonyaulacales	<i>Ceratium carolinianum</i>	1
									<i>Ceratium cornutum</i>	1
						<i>Ceratium hirundinella</i>	1			
					Peridinales	<i>Peridinium cinctum</i>	3			
			Ciliophora	Heterotrichea	Heterotrichida	<i>Stentor</i>	2			
		Oligohymenophorea			Peritrichida	<i>Ophrydium versatile</i>	2			
		Spirotrichea				<i>Spirotrichea</i>	1			
			Rhizaria	Cercozoa	Prostomatea	Prorodontida	<i>Coleps hirtus*</i>	1		
					Imbricatea	Euglyphida	<i>Euglypha strigosa</i>	1		
					Foraminifera	Foraminifera incertae sedis	<i>Archerella flavum</i>	3		
		Eukaryota	Haptista		Heliozoa	Centrohelida	<i>Acanthocystis turfacea</i>	5		
		*see taxonomic notes at end of this section							Total	35



Ceratium hirundinella – a dinoflagellate (CJ)



Acanthocystis turfacea – a sun-animalcule (CJ)

Algae and other freshwater micro-organisms

This group contains a mix of organisms that are generally considered as algae but share a rather different evolutionary history when compared to other algae (those within the phyla Charophyta and Chlorophyta). The origin of chloroplasts through phagocytosis of blue-green bacteria is accepted as the basis of photosynthesis in what most of us think of as “real” plants and algae. Photosynthesis in members of the SAR supergroup is thought to have originated by the secondary ingestion of a simple red alga by other eukaryotic organisms. The chloroplasts in these species are surrounded by four membranes. A total of thirty-five records of nineteen species of Eukaryote algae belonging to the groups SAR and Haptista were recorded in 2021.

Protozoa

Euglena and other similar organisms within the class Euglenoidea have long caused taxonomic head-scratching. They are green, contain chlorophyll, and can photosynthesise - definite “plant-like” characteristics. They can also move using a long whip like flagellum and are able to ingest food by phagocytosis - more “animal-like” characteristics. They are now considered to be protozoans and are classified in the Eukaryote supergroup Excavata. Eight records of six species in this group were found during freshwater sampling in 2021.

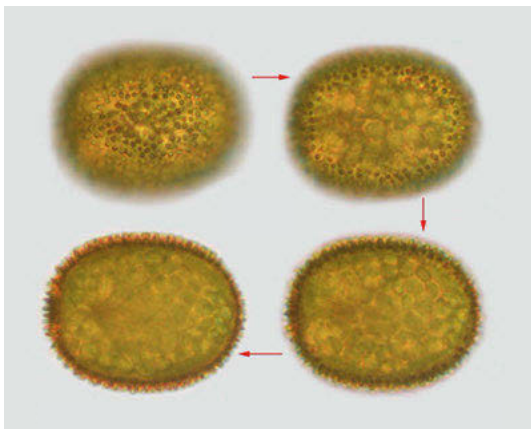
Domain	Supergroup	Clade	Phylum	Class	Order	Species	Records
Eukaryota	Excavata		Protozoa	Euglenoidea	Euglenida	<i>Euglena proxima</i>	2
						<i>Euglena tripteris</i>	1
						<i>Monomorphina pyrum</i>	1
						<i>Strombomonas acuminatus</i>	2
						<i>Trachelomonas hispida</i>	1
					Euglenoidea	<i>Lepocinclis salina</i>	1
Total							8



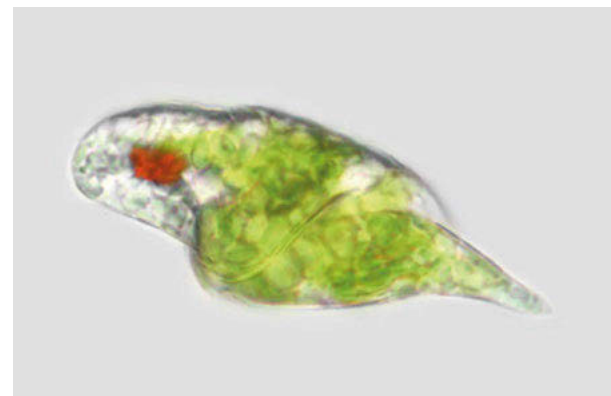
Strombomonas acuminatus (CJ)



Monomorphina pyrum (CJ)



Trachelomonas hispida (CJ)



Euglena proxima (CJ)

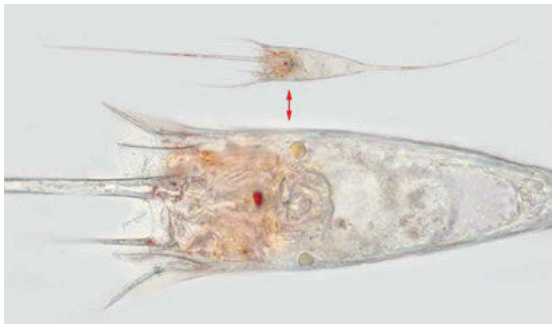
Algae and other freshwater micro-organisms

Desmid sampling bycatch

The final records in this section are included as they were found as bycatch during freshwater sampling for desmids and other algae. Taxonomically they all belong in the eukaryote group Amorphea, which includes all the animals as well as amoebae and slime moulds, and fungi. Ecologically their role within the freshwater ecosystems sampled will be as consumers; heterotrophs obtaining energy through the consumption of other organisms (herbivores and carnivores) or of dead organic material (detrivores). In contrast the autotrophic nutrition of algae classifies them as producers.

Domain	Supergroup	Clade	Phylum	Class	Order	Species	Records		
Eukaryota	Amorphea	Opisthokonta	Rotifera	Eurotatoria	Ploima	<i>Kellicottia longispina</i>	1		
						<i>Keratella cochlearis</i>	4		
						<i>Lecane</i>	1		
						<i>Notommatidae</i>	1		
					Amoebozoa	Tubulinea	Bdelloidea	<i>Philodina roseola</i>	1
								<i>Arcella gibbosa</i>	1
							Arcellinida	<i>Centropyxis aculeata</i>	3
								<i>Cryptodiffugia oviformis</i> *	1
								<i>Nebela guttata</i> *	1
								<i>Planocarina carinata</i>	4
					Arthropoda	Branchiopoda	Diplostraca	<i>Acroperus harpae</i>	1
								<i>Chydorus sphaericus</i>	2
								<i>Euryceridae</i>	1
								Maxillopoda	Cyclopoida
Total	23								

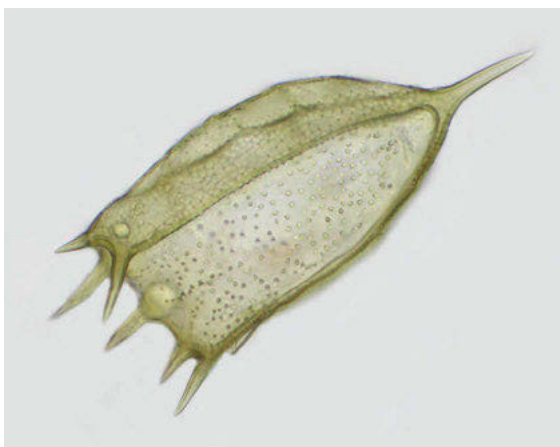
*see taxonomic notes at end of this section



Kellicottia longispina - a rotifer (CJ)



Arcella gibbosa – a testate amoeba (CJ)



Keratella cochlearis - a rotifer (CJ)



Cyclopoida - a crustacea (CJ)

Photographs – all the photographs in the Algae section are courtesy of Chris Johnson, credited in the captions: (CJ).

Algae and other freshwater micro-organisms

Taxonomic notes

Class	Recommended Taxon Name	Notes
Cyanophyceae	<i>Aphanocapsa incerta</i>	Not on UKSI
	<i>Cyanothece major</i>	Not on UKSI
	<i>Dolichospermum macrosporum</i>	On UKSI as: <i>Anabaena macrospora</i>
Prostomatea	<i>Coleps hirtus</i>	Not on UKSI
Tubulinea	<i>Cryptodiffugia oviformis</i>	Not on UKSI
	<i>Nebela guttata</i>	Not on UKSI

Desmid bycatch – larger invertebrates

The sampling methods used to collect desmids, and a multitude of algae and a few microscopic animals, also collected odd specimens of larger invertebrates and occasionally a few Three-spined Stickleback. These were also identified and a brief summary is given below. A total of fifty-six species of larger invertebrates and one species of fish were caught during regular desmid sampling. Some of these were species seldom recorded in recent times in the Outer Hebrides.

More detail of these animals in the wider context of their distribution and recording in the Outer Hebrides has already been given in the relevant invertebrate sections.

Group	Scientific name	Common name	Records
Bony Fish	<i>Gasterosteus aculeatus</i>	Three-spined Stickleback	3
Arachnida	<i>Hydacarina</i>	a freshwater mite	2
Crustacea	<i>Diaptomus castor</i>	a calanoid copepod	1
	<i>Gammarus duebeni</i>	a freshwater shrimp	2
Coleoptera	<i>Agabus bipustulatus</i>	a diving beetle	2
	<i>Agabus sturmii</i>	a diving beetle	1
	<i>Anacaena globulus</i>	a hydrophilid beetle	1
	<i>Colymbetes fuscus</i>	a diving beetle	1
	<i>Colymbetes/Rhantus</i>	a diving beetle	1
	<i>Donacia versicoloreae</i>	a reed beetle	1
	<i>Enochrus affinis</i>	a water beetle	1
	<i>Gyrinus aeratus</i>	a whirligig beetle	3
	<i>Gyrinus minutus</i>	a whirligig beetle	3
	<i>Gyrinus substriatus</i>	a whirligig beetle	3
	<i>Hydrobius fuscipes</i>	a hydrophilid beetle	1
	<i>Hydroporus obscuratus</i>	a diving beetle	1
	<i>Hydroporus pubsecens</i>	a diving beetle	1
	<i>Hydroporus sp.</i>	a diving beetle	1
	Diptera	Chironomidae	a chironomid
<i>Dixella sp.</i>		a meniscus midge	1
<i>Tipula pagana</i>		a crane fly	1
Tipulidae (unidentified pupa)		a crane fly	1
Hemiptera	<i>Callicorixia wollastoni</i>	a lesser waterboatman	1
	Corixidae (unidentified larva)	a lesser waterboatman	4
	<i>Cymatia bondsdorffii</i>	a lesser waterboatman	1
	<i>Gerris odontogaster</i>	a pond skater	2
	<i>Glaenocoris propinqua</i>	a lesser waterboatman	1
	<i>Hesperocorixa castanea</i>	a lesser waterboatman	4
	<i>Hesperocorixa sahlbergi</i>	a lesser waterboatman	2
	<i>Notonecta obliqua</i>	a greater waterboatman	2
	<i>Sigara distincta</i>	a lesser waterboatman	1
	<i>Sigara dorsalis</i>	a lesser waterboatman	2
	<i>Sigara nigrolineata</i>	a lesser waterboatman	1
	<i>Sigara scotti</i>	a lesser waterboatman	4
Mollusca	<i>Ampullaceana balthica</i>	Wandering Snail	9
	<i>Aplexa hypnorum</i>	Moss Bladder Snail	1
	<i>Galba truncatula</i>	Dwarf Pond Snail	2
	<i>Oxyloma elegans</i>	Pfeiffer's Amber Snail	1

Algae and other freshwater micro-organisms

Group	Scientific name	Common name	Records
Mollusca (continued)	<i>Pisidium</i> sp.	Pea Mussel	5
	<i>Potamopyrgus antipodarum</i>	Jenkin's Spire Shell	5
Odonata	<i>Aeshna juncea</i>	Common Hawker	2
	<i>Enallagma cyathigerum</i>	Common Blue Damselfly	1
	<i>Ischnura elegans</i>	Blue-tailed Damselfly	1
	<i>Libellula quadrimaculata</i>	Four-spotted Chaser	1
	<i>Pyrrhosoma nymphula</i>	Large Red Damselfly	4
	<i>Sympetrum striolatum</i>	Common Darter	2
	<i>Sympetrum striolatum/danae</i>	Darter	2
Platyhelminthes	<i>Dalyellia viridis</i>	a micro-turbellarian	2
	<i>Polycelis nigra</i>	a flatworm	2
Plecoptera	<i>Leuctra hippopus</i>	a stonefly	1
	<i>Nemoura cinerea</i>	a stonefly	2
Trichoptera	<i>Limnephilus affinis/incisus</i>	a cased caddisfly	1
	<i>Limnephilus lunatus</i>	a cased caddisfly	2
	<i>Limnephilus marmoratus</i>	a cased caddisfly	1
	<i>Limnephilus</i> (unidentified larva)	a cased caddisfly	1
	<i>Plectrocnemia conspersa</i>	a caddisfly larva	1
	<i>Trienodes bicolor</i>	a cased caddisfly	1
Total			109

The larvae of many caddisflies live inside cases made from a silk tube strengthened by a variety of material glued to the outside. The cases are thought to provide physical protection, and camouflage. They may also act as ballast in running water species. In some species the choice and arrangement of external materials is very specific and allows identification of the animal to genus and sometimes to species. *Trienodes bicolor* and *Limnephilus marmoratus* are two common cased caddisflies that use short plant fragments arranged in almost diagnostic patterns. Other *Limnephilus* species are less selective about the material they use and for critical determination their larvae may need to be removed from their cases for more detailed examination. Not all caddisfly larvae are case builders. One of the most frequently recorded caddisflies in the Outer Hebrides, *Plectrocnemia conspersa*, is one of the caseless caddisflies.



Limnephilus marmoratus - early instar larvae inside their cases

Limnephilus sp. - case made mostly from shell-sand fragments



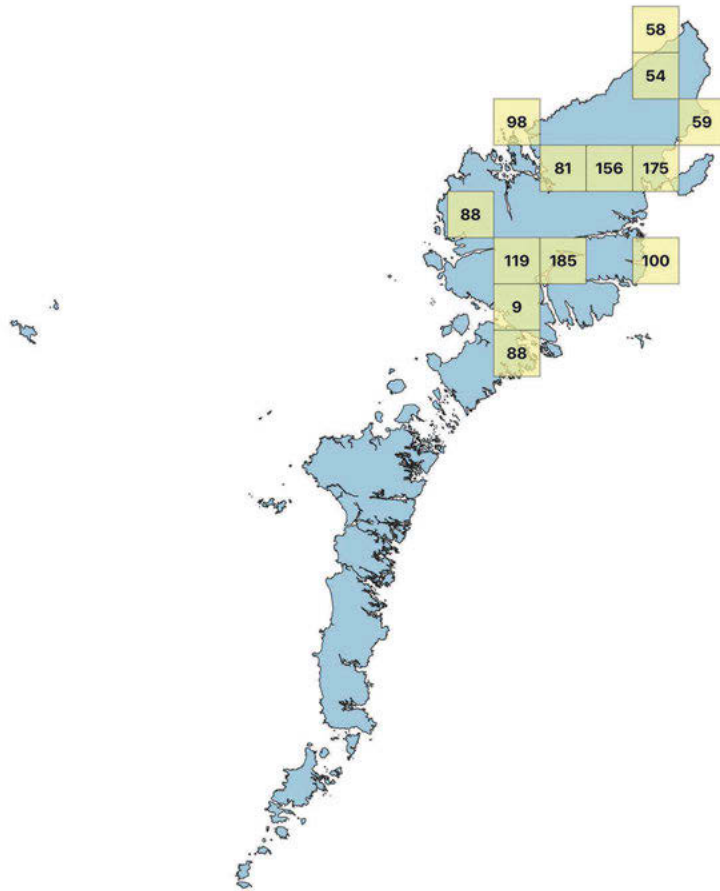
Trienodes bicolor - case is made from short plant fragments arranged in a characteristic spiral pattern



Plectrocnemia conspersa - not all caddisflies have larvae that construct cases, the larvae of this species are always free livi

Mosses and liverworts

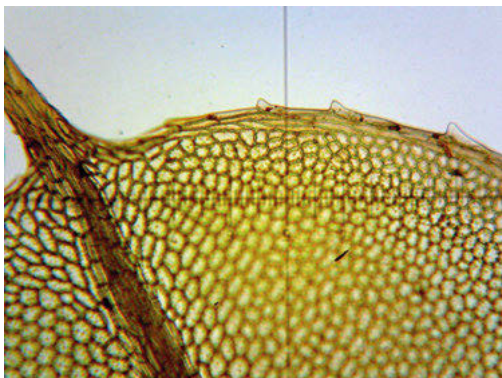
PHYLA Anthocerphyta (Hornworts), Marchantiophyta (Liverworts) and Bryophyta (Mosses)



A total of 1270 records were received in 2021 from just two recorders. All the records were from Lewis or Harris. At the time of writing (February 2022) a full list of species recorded in 2021 was not available but there was a first VC110 record for *Pleurozium acuminatum* and *Polytrichum longisetum* was seen for only the second time (the only previous sighting was by E.V. Watson on Barra in 1936).



Plagiomnium undulatum - Hart's-tongue Thyme-moss



Identification to species level will often require microscopic examination of leaf structure



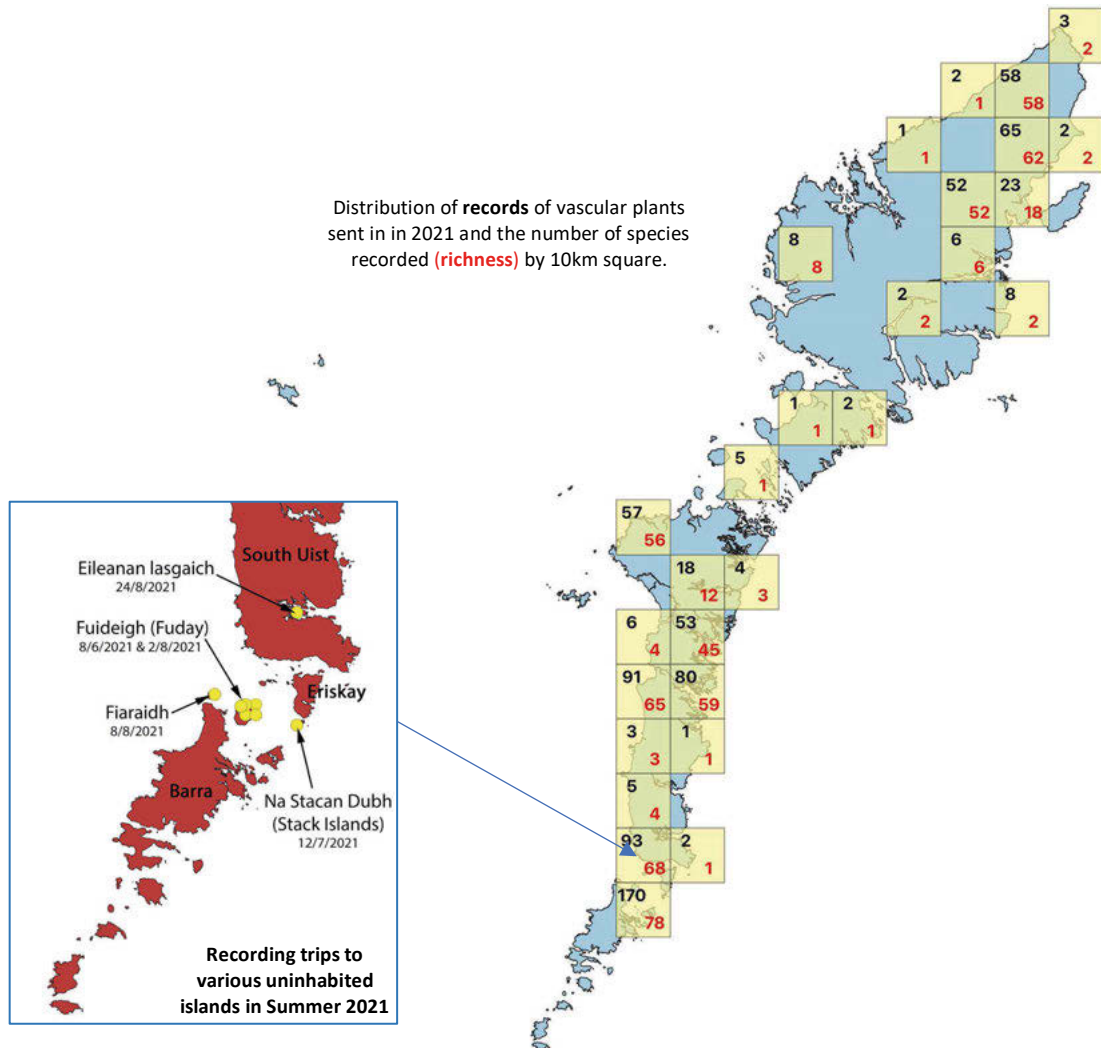
Plagiomnium rostratum - Long-beaked Thyme-moss



Rhytiadelphus squarrosus - Springy Turf-moss, even common species such as this are infrequently recorded south of Harris/Lewis

Tracheophyta - vascular plants

KINGDOM	Type of Plant	Species					Records				
		2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
PLANTAE											
Pteridiophyta	Horsetails	4	3	3	2	3	65	14	20	4	7
	Ferns	21	16	15	1	12	145	67	59	1	32
Tracheophyta	Clubmosses & Quillworts	2	2	2	1	1	2	7	3	1	1
	Flowering Plants	304	342	298	141	230	3213	1789	1949	359	781
	Conifers	6	3	3	1	1	17	7	7	2	1
	Total	337	366	321	146	246	3442	1884	2038	367	821



2021 in numbers

- Eighteen recorders submitted sightings of higher plants in 2021
- There was a welcome recovery in records of vascular plants in 2021 after the Covid lows of 2020, with 821 records of 246 species compared to 367 records of 146 species in 2020
- Level of recording was still well below levels of 2017 – 2019 which were boosted by the visits of outside botanists doing extensive survey work
- The 246 species recorded in 2021 was about 72% of the average number recorded in 2017 – 2019 (341)
- In contrast the total number of records submitted in 2021 (821) was just 33% of the average 2017 – 2019 (2454) number of records
- OHBR recorders visited four uninhabited islands in July – August 2021, recording on Stack Islands (24 plant species), Eileanan Iasgaich (39), Fiaraidh (45), Fuideigh (73).

Tracheophyta - vascular plants

PHYLUM Pteridophyta - Ferns, horsetails etc.

VC 110 species (in descending frequency)	Common Name (bold >200 records)	2021 records
<i>Blechnum spicant</i>	Hard Fern	5
<i>Equisetum fluviatile</i>	Water Horsetail	3
<i>Dryopteris dilatata</i>	Broad Buckler-fern	3
<i>Athyrium filix-femina</i>	Lady Fern	1
<i>Polypodium vulgare</i>	Polypody	3
<i>Pteridium aquilinum</i>	Bracken	5
<i>Equisetum arvense</i>	Common Horsetail	3
<i>Equisetum palustre</i>	Marsh Horsetail	1
<i>Asplenium marinum</i>	Sea Spleenwort	-
<i>Osmunda regalis</i>	Royal Fern	8
<i>Oreopteris limbosperma</i>	Lemon-scented Fern	1
<i>Dryopteris aemula</i>	Hay-scented Buckler-fern	1
<i>Asplenium adiantum-nigrum</i>	Black Spleenwort	-
<i>Ophioglossum vulgatum</i>	Adder's Tongue	-
<i>Dryopteris affinis</i>	Scaly Male Fern	1
<i>Hymenophyllum wilsonii</i>	Wilson's Filmy Fern	2
<i>Dryopteris filix-mas</i>	Common Male Fern	-
<i>Asplenium trichomanes</i>	Maidenhair Spleenwort	1
<i>Phegopteris connectilis</i>	Beech Fern	-
<i>Botrychium lunaria</i>	Moonwort	1
<i>Equisetum sylvaticum</i>	Wood Horsetail	-
<i>Phyllitis scolopendrium</i>	Hart's-tongue	-
<i>Dryopteris carthusiana</i>	Narrow Buckler-fern	-
<i>Cystopteris fragilis</i>	Brittle Bladder-fern	-
<i>Asplenium ruta-muraria</i>	Wall-rue	-
<i>Equisetum variegatum</i>	Variiegated Horsetail	-
<i>Ophioglossum azoricum</i>	Small Adder's-tongue	-
<i>Dryopteris expansa</i>	Northern Buckler-fern	-
<i>Pilularia globulifera</i>	Pillwort	-
<i>Cryptogramma crispa</i>	Parsley Fern	-
<i>Dryopteris borrieri</i>	Borrer's Scaly Male Fern	-
<i>Polystichum aculeatum</i>	Hard Shield-fern	-
<i>Equisetum pratense</i>	Shady Horsetail	-
<i>Dryopteris cambrensis</i>	Narrow Scaly Male Fern	-
<i>Dryopteris oreades</i>	Mountain Male Fern	-
<i>Gymnocarpium dryopteris</i>	Oak Fern	-
<i>Asplenium viride</i>	Green Spleenwort	-
<i>Ceterach officinarum</i>	Rusty-back Fern	-
<i>Equisetum telmateia</i>	Giant Horsetail	-
<i>Polystichum setiferum</i>	Soft Shield-fern	-
Total Records		39

NBN lists 42 species of ferns, horsetails, etc. from VC110. Two of these species, Alpine Lady Fern and Intermediate Polypody are considered dubious records and are ignored here. There are also a number of hybrids recorded that are not listed above. Most frequently recorded are Hard Fern and Water Horsetail with over 1000 records of each. Thirty-nine records of fifteen species of Pteridiophyta were received in 2021 from seven recorders. The records covered most of the commoner ferns and horsetails.

Royal Fern (*Osmunda regalis*), Hard Fern (*Blechnum spicant*) and Bracken (*Pteridium aquilinum*) were the most frequently recorded species. There were no records of Adder's Tongue (*Ophioglossum vulgatum*), this slightly odd fern is recorded from damp dune-slacks in most years.



Botrychium lunaria - Moonwort

PHYLUM Tracheophyta –

Lycopodiopsida (Clubmosses & Quillworts)

Species	Common Name	Records	
		VC110	2021
<i>Selaginella selaginoides</i>	Lesser Clubmoss	767	-
<i>Huperzia selago</i>	Fir Clubmoss	434	1
<i>Isoetes lacustris</i>	Quillwort	388	-
<i>Diphasiastrum alpinum</i>	Alpine Clubmoss	16	-
<i>Lycopodium clavatum</i>	Stag's-horn Clubmoss	10	-
<i>Lycopodiella inundata</i>	Marsh Clubmoss	4	-
Total		1	

Just one of six species of VC110 Clubmosses and Quillworts was recorded in 2021 - a sighting of Fir Clubmoss on Lewis

PHYLUM Tracheophyta – Pinopsida (Conifers)

Species	Common Name	2021 records
<i>Juniperus communis nana</i>	Dwarf Juniper	1
Total		1

A specimen of the prostrate form of Juniper (*Juniperus communis* subsp. *nana*) was found on Fuday in the Sound of Barra.

Tracheophyta - vascular plants

PHYLUM Tracheophyta – Magnoliopsida (Flowering Plants)

In 2021 there were 796 records of 230 taxa of flowering plants submitted to OHBR. This was the work of seventeen individual recorders. Most of the recording in 2020 was concentrated from Eriskay to North Uist with just 7% (25 records) coming from north of the Sound of Harris. In 2021 there was a much better coverage across the islands. There were 212 records (26.6%) north of the Sound of Harris and 214 records (26.8%) south of the Sound of Eriskay with the remaining 358 records (46.6%) in between on the islands from South Uist to Berneray. Two-hundred and fifty-one of the records were collected from four uninhabited and rarely visited islands. Three in the Sound of Barra between Eriskay and Barra and the other (Eileanan Iasgaich) just offshore from Lochboisdale.

Island	2020	2021
Lewis	16	208
Harris	9	4
Berneray	2	5
North Uist	51	86
Benbecula	164	104
South Uist	66	175
Eileanan Iasgaich		(38)
Eriskay	46	25
Stack Islands		(24)
Sound of Barra		189
Fiaraidh		(48)
Fuday		(141)
Barra	3	
Vatersay	2	
Total	359	796

The plants recorded in 2021 belonged to fifty-six families. As in previous years the most frequently recorded families were the Asteraceae (daisies, thistles, dandelions) Poaceae (grasses), Cyperaceae (sedges) and Orchidaceae (Orchids).



Calluna vulgaris (Ling Heather) and *Erica cinerea* (Bell Heather) give colour to the foreground of this iconic view of the hills of South Uist across Loch Druidibeg. Both plants are in the family Ericaceae which also includes *Erica tetralix* (Cross-leaved Heath), *Vaccinium myrtillus* (Bilberry) and *Empetrum nigrum* (Crowberry).

Family	Type of plant	Species	Records
Asteraceae	Daisies, Thistles etc.	27	107
Poaceae	Grasses	17	39
Cyperaceae	Sedges	16	44
Orchidaceae	Orchids	14	42
Orobanchaceae	Rattles, Eye-brights	9	24
Plantaginaceae	Plantains, Speedwells	9	38
Rosaceae	Rose, Cinquefoils etc.	9	41
Brassicaceae	Scurveygrass, Charlock	8	19
Fabaceae	Vetches, Clovers etc.	8	50
Juncaceae	Rushes, Wood-rushes	8	26
Lamiaceae	Selfheal, Thymes, Mints	7	20
Apiaceae	Umbellifers	6	17
Caryophyllaceae	Campions, Chickweeds	6	18
Ericaceae	Heathers	5	30
Onagraceae	Willowherbs	5	8
Polygonaceae	Docks & Sorrels	5	25
Ranunculaceae	Buttercups	5	36
Lentibulariaceae	Butterworts etc.	4	9
Rubiaceae	Bedstraws	4	18
Violaceae	Violets, Pansies etc.	4	11
Amaranthaceae	Oraches, Glasswort	3	4
Boraginaceae	Bugloss, Forget-me-nots	3	7
Salicaceae	Willows	3	7
Araliaceae	Ivy	2	5
Asparagaceae	Spring Squil	2	7
Betulaceae	Birch, Hazel etc.	2	2
Campanulaceae	Harebell, Water Lobelia	2	5
Crassulaceae	Stonecrops, Roseroot	2	6
Droseraceae	Sundews	2	13
Gentianaceae	Centuary, Field Gentian	2	5
Hypericaceae	St Johns Worts	2	2
Iridaceae	Irises	2	11
Potamogetonaceae	Pondweeds	2	12
Primulaceae	Primroses etc.	2	8
Alismataceae	Water Plantains	1	1
Araceae	Common Duckweed	1	1
Arecaceae	Coconut Palm	1	1
Balsaminaceae	Himalayan Balsam	1	1
Caprifoliaceae	Devil's-bit Scabious	1	12
Convolvulaceae	Bindweed	1	2
Euphorbiaceae	Euphorbias	1	1
Geraniaceae	Herb Robert	1	1
Haloragaceae	Water Milfoil	1	6
Linaceae	Fairy Flax	1	2
Malvaceae	Mallows	1	2
Menyanthaceae	Bogbean	1	8
Montiaceae	Blinks	1	2
Myricaceae	Bog Myrtle	1	3
Nartheciaceae	Bog Asphodel	1	6
Nymphaeaceae	White Water Lilly	1	1
Oleaceae	Ash	1	1
Papaveraceae	Poppies	1	2
Plumbaginaceae	Thrift	1	7
Polygalaceae	Milkworts	1	12
Saxifragaceae	Saxifrages	1	1
Typhaceae	Floating Bur-reed	1	2
Urticaceae	Nettles	1	5
Total		230	796

Tracheophyta - vascular plants

Fourteen species of vascular plants were recorded more than ten times in 2021. That's just over 6% of all that were recorded, 80% were recorded five or fewer times.

Vascular plants recorded more than 10 times in 2021		
Species	Common Name	Rec.
<i>Potentilla erecta</i>	Tormentil	16
<i>Trifolium repens</i>	White Clover	15
<i>Plantago lanceolata</i>	Ribwort Plantain	14
<i>Achillea ptarmica</i>	Sneezewort	12
<i>Succisa pratensis</i>	Devil's-bit Scabious	12
<i>Anacamptis pyramidalis</i>	Pyramidal Orchid	12
<i>Polygala serpyllifolia</i>	Heath Milkwort	12
<i>Rumex acetosa</i>	Common Sorrel	11
<i>Trifolium pratense</i>	Red Clover	11
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	11
<i>Calluna vulgaris</i>	Heather	11
<i>Potamogeton polygonifolius</i>	Bog Pondweed	10
<i>Ranunculus flammula</i>	Lesser Spearwort	10
<i>Jacobaea vulgaris</i>	Common Ragwort	10



Lotus corniculatus - Common Bird's-foot-trefoil, recorded eleven times in 2021. Also in the photograph but not sharp are *Bellis perennis* (Daisy, 9 records), and not in flower *Trifolium repens* (White Clover, 15 records), *Galium verum* (Lady's Bedstraw, 5 records), an eyebright, some young buttercup leaves and at least two grass species.

Visits to uninhabited, less frequently visited islands

One-hundred and twenty-six vascular plants were recorded on visits to three small islands in the Sound of Barra (Fuday, Fiaraidh and Stack Islands) and one to an island (Eileanan Iasgaich) just offshore from Lochboisdale.

Number of plant species recorded on small islands in 2021			
Island	Total	Seen previously	New
All islands	126	72	54
Eileanan Iasgaich	39	0	39
Fiaraidh	45	37	8
Fuday/Fuideigh	73	64	9
Stack Islands	24	20	4

The three Sound of Barra islands had all been visited by botanists in the past and had from 55 (Stack Islands) to 175 (Fuday) vascular plant species

recorded on NBN, Fiaraidh came in the middle with 112 vascular plant species recorded. No plants had been recorded previously for Eileanan Iasgaich. All precious records for this island had been of marine animals and a variety of green, red, and brown seaweeds. The thirty-nine species of vascular plants found on Eileanan Iasgaich in 2021 were all new species for the island.

The visits by OHBR recorders produced new species for the three Sound of Barra islands. Four on the Stack Islands, eight on Fiaraidh and fourteen of Fuday.



Anacamptis pyramidalis - Pyramidal Orchid, recorded 12 times in 2021 and newly recorded on Fiaraidh.

New species recorded by OHBR recorders on small islands 2021

Stack Islands	
<i>Euphrasia officinalis</i> agg.	Eyebright
<i>Plantago major</i>	Greater Plantain
<i>Rumex acetosella</i>	Sheep's Sorrel
<i>Trifolium pratense</i>	Red Clover
Fiaraidh	
<i>Anacamptis pyramidalis</i>	Pyramidal Orchid
<i>Arctium minus</i>	Lesser Burdock
<i>Centaurea nigra</i>	Common Knapweed
<i>Euphrasia officinalis</i> agg.	Eyebright
<i>Galium saxatile</i>	Heath Bedstraw
<i>Rumex acetosella</i>	Sheep's Sorrel
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Scorzoneroideis autumnalis</i>	Autumn Hawkbit

Tracheophyta - vascular plants



Gentianella campestris - Field Gentian, a new record for Fuday in 2021.



Menyanthes trifoliata – Bog Bean, a new record for Fuday in 2021.

Fuday has been well visited by botanists over the years. There are records from well-known botanists such as J.W. Heslop Harrison and E.V. Watson in the 1930s. Imogen Crawford, who published on the conservation and management of machair habitats in the 1980s/1990s, found close to 300 species on Fuday in 1988. Despite this there were a surprising number of very common and familiar species turned out to be new records for Fuday in 2021 - *Galium saxatile* (Heath Bedstraw), *Juncus effusus* (Soft-rush) and *Cirsium vulgare* (Spear Thistle) were all new for the island.

New species recorded by OHBR recorders on small islands 2021

Fuday

<i>Cirsium vulgare</i>	Spear Thistle
<i>Galium saxatile</i>	Heath Bedstraw
<i>Gentianella campestris</i>	Field Gentian
<i>Juncus effusus</i>	Soft Rush
<i>Juniperus communis subsp. nana</i>	Dwarf Juniper
<i>Menyanthes trifoliata</i>	Bogbean
<i>Osmunda regalis</i>	Royal Fern
<i>Polypodium vulgare</i>	Common Polypody
<i>Rumex acetosella</i>	Sheep's Sorrel

A number of insect species were also noted on the 2021 OHBR trips to the small islands in the Sound of Barra (and Eileanan lasgaich). Of the twenty species noted only two (marked in red) had been recorded on any of the islands before; *Eristalis intricaria* on Fuday in 2014 and *Bombus muscorum* on Stack Islands in 2020.

Insects noted on OHBR visits to Sound of Barra islands & Eileanan lasgaich in 2021

Order / Family	Species	Eileanan lasgaich	Fiaraidh	Fuday	Stack Islands
Coleoptera					
Cantharidae	<i>Cantharidae</i>			1	
	<i>Rhagonycha fulva</i>		1		
Carabidae	<i>Pterostichus niger</i>			1	
Silphidae	<i>Thanatophilus rugosus</i>		1		
Diptera					
Calliphoridae	<i>Cynomya mortuorum</i>		1		
Syrphidae	<i>Eristalinus sepulchralis</i>	1			
	<i>Eristalis intricaria</i>			1	
	<i>Leucozona lucorum</i>	1			
	<i>Sericomyia silentis</i>	1		1	
Hemiptera					
Aphrophoridae	<i>Philaenus spumarius</i>			3	
Hymenoptera					
Apidae	<i>Bombus distinguendus</i>		1		
	<i>Bombus jonellus</i>	1			1
	<i>Bombus lucorum/terrestris</i>			1	1
	<i>Bombus muscorum</i>	1	1	2	1
Chrysididae	<i>Chrysis</i>				1
Colletidae	<i>Colletes floralis</i>		1		
Tenthredinidae	<i>Euura pedunculi</i>	1			
	<i>Dolerus aeneus</i>			1	
Odonata					
Coenagrionidae	<i>Ischnura elegans</i>		2		
Libellulidae	<i>Sympetrum striolatum</i>		1		
Total		6	9	11	4

Tracheophyta - vascular plants

Family Orchidaceae – orchids

Visitors to the Outer Hebrides who have a general natural history interest will often have a personal tick list of things they'd like to see. Orchids on the machair will often be fairly high on the list (Great Yellow Bumblebee, Moss Carder Bee and Red-necked Phalarope are often high up there as well).

Species recorded in 2021	Common name	Rec.
<i>Anacamptis pyramidalis</i>	Pyramidal Orchid	12
<i>Coeloglossum viride</i>	Frog Orchid	1
<i>C. viride</i> x <i>D. fuchsii</i> = <i>X Dactyloglossum mixtum</i>		1
<i>C. viride</i> x <i>D. maculata</i> = <i>X Dactyloglossum conigerum</i>		
<i>C. viride</i> x <i>D. purpurella</i> = <i>X Dactyloglossum viridella</i>		
<i>X Dactyloglossum</i>		
<i>Dactylorhiza eбудensis</i>	Hebridean Marsh-orchid	
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid	7
<i>D. fuchsii</i> x <i>incarnata</i> = <i>D. x kernerorum</i>		
<i>D. fuchsii</i> x <i>maculata</i> = <i>D. x transiens</i>		
<i>D. fuchsii</i> x <i>purpurella</i> = <i>D. x venusta</i>		
<i>D. fuchsii</i> x <i>traunsteinerioides</i>		
<i>Dactylorhiza incarnata</i>	Early Marsh-orchid	
<i>D. incarnata</i> subsp. <i>coccinea</i>		1
<i>D. incarnata</i> subsp. <i>incarnata</i>		
<i>D. incarnata</i> subsp. <i>pulchella</i>		1
<i>D. incarnata</i> x <i>purpurella</i> = <i>D. x latirella</i>		
<i>D. incarnata</i> x <i>traunsteinerioides</i>		
<i>Dactylorhiza maculata</i>	Heath Spotted-orchid	5
<i>D. maculata</i> subsp. <i>ericetorum</i>		
<i>D. maculata</i> x <i>incarnata</i> = <i>D. x carnea</i>		
<i>D. maculata</i> x <i>occidentalis</i> = <i>D. x dinglensis</i>		
<i>D. maculata</i> x <i>purpurella</i> = <i>D. x formosa</i>		
<i>Dactylorhiza purpurella</i>	Northern Marsh-orchid	4
<i>D. purpurella</i> x <i>majalis</i>		
<i>Dactylorhiza traunsteinerioides</i>	Pugsley's Marsh-orchid	
<i>D. traunsteinerioides</i> subsp. <i>francis-drucei</i>		
<i>Dactylorhiza x jenensis</i>		
<i>Gymnadenia conopsea</i> agg.	Fragrant Orchid	
<i>G. conopsea</i> subsp. <i>conopsea</i>		
<i>Gymnadenia borealis</i>	Heath Fragrant Orchid	
<i>Gymnadenia conopsea</i>	Common Fragrant Orchid	1
<i>G. conopsea</i> x <i>D. fuchsii</i> = <i>X Dactylodenia st-quintinii</i>		
<i>Gymnadenia densiflora</i>	Marsh Fragrant-orchid	
<i>Hammarbya paludosa</i>	Bog Orchid	1
<i>Neottia cordata</i>	Lesser Twayblade	
<i>Neottia ovata</i>	Common Twayblade	2
<i>Orchis mascula</i>	Early-purple Orchid	
<i>Platanthera bifolia</i>	Lesser Butterfly-orchid	4
<i>Platanthera chlorantha</i>	Greater Butterfly-orchid	
<i>Spiranthes romanzoffiana</i>	Irish Lady's-tresses	1

Orchids tend to be well recorded most years. In 2021 there were forty-one records of thirteen species/taxa, including two subspecies of the Early Marsh-orchid and a hybrid between Frog Orchid and Common Spotted-orchid that was found on Askernish golf course on South Uist.



Dactylorhiza incarnata subsp. *coccinea* – the dune form of Early Marsh-orchid.

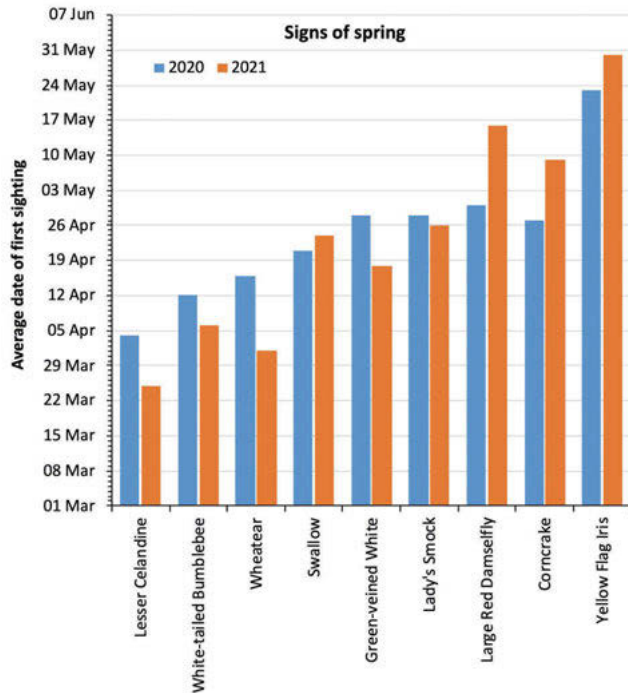


Platanthera bifolia – Lesser Butterfly-orchid



Dactylorhiza fuchsii – Common Spotted-orchid, with other machair flowers

Signs of Spring



For the last couple of years OHBR has been trying to collect phenological data on the timing of spring each year using sightings of nine common spring events; the first:

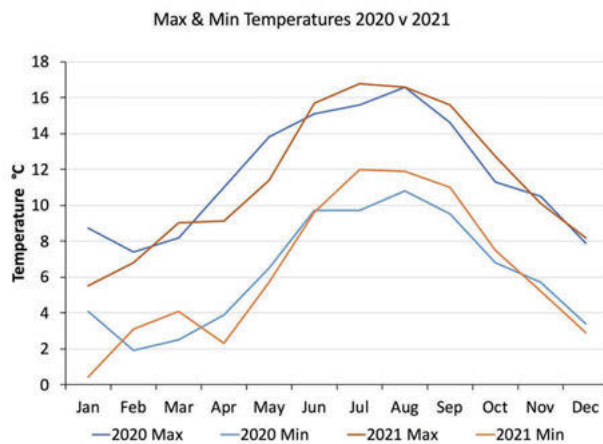
- fully open Lesser Celandine flower
- White-tailed Bumblebee, usually a queen prospecting for a nest site or topping up on nectar
- Wheatear
- Swallow
- Green-veined White butterfly
- fully open flower of Lady's Smock
- Large Red Damselfly
- time you hear a Corncrake, if you see one first that counts too
- fully open Yellow Flag Iris flower.

garden and along a roughly twelve-mile route that I cycle along on a regular basis. Within your area it's only the first time you see (or hear) each event that we want. By all means record in other areas too but don't mix up the sightings too much.

My feeling this year was that we had a long spring. It started well but then petered out as a run of cool, wet and windy weather became established. This is shown nicely in the graph bottom left. When we set up the list of species to record, we wanted to include early spring species (Lesser Celandine, White-tailed Bumblebee and Wheatear), some mid-spring ones (Swallow, Green-veined White and Lady's Smock) and some late spring species (Large Red Damselfly, Corncrake and Yellow Flag Iris).



Iris pseudacorus – Yellow Flag Iris



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

It seems to work best if you try and use the same locations as you did the previous year. Mine is the area around the

The early spring events were 5 to 15 days earlier in 2021 compared to 2020. For the middle three species things were roughly the same as in 2020 but the last three were about one to two weeks later than in 2021. Having a quick look at the average temperatures from the met data for Stornoway Airport we can see pretty much the same pattern. February-March temperatures were warmer in 2021 than 2020 but for April, May and June it was considerably cooler in 2021.

Signs of Spring

Over the two years of this trial period we have received dates from twenty-one people. Not everyone recorded all nine events and there were not many people who recorded the same events in both years. I think that, if enough of us get used to recording some of these spring events in our local patches each year, that this could develop into quite a nice way of looking at the long-term effects of global warming. Many people are saying that warming will lead to earlier springs but there are still subtleties to examine: will migratory birds show the same effect as we see in the resident plants and animals?



Pieris napi – Green-veined White

- is the effect going to be the same for early, middle and late spring species?
- is spring earlier on Barra than it is 130 miles away at the Butt of Lewis?
- will some species lose synchronicity?

Green-veined White Butterflies lay their eggs mainly on Lady's Smock. In 2020 Green-veined White and Lady's Smock "happened" at more or less the same time. In 2021 Green-veined White was about ten days earlier but Lady's Smock only two days earlier. That difference could mean that in 2021 Lady's Smock wasn't at the right stage for egg laying and that could have been disastrous for the butterfly.



Cardamine pratensis – Lady's Smock



Late evening on Berneray - looking northwards to Harris, walking the strandline will often generate interesting records



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

