

Outer Hebrides Biological Recording

Biological Recording in 2024

Discovering our Natural Heritage



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Christine Johnson

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Cover photograph: Round-leaved Sundew (*Drosera rotundifolia*) © Robin D. Sutton

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I would like to thank the recording community for their continued supports and colleagues in other recording groups and individual specialists who help us confirm the identification of difficult species.

The contribution of everyone who has helped with the production of this report and the generosity of those who have contributed photographs is appreciated.

Robin Sutton was responsible for initiating the production of the OHBR annual summary of records and devoted an enormous amount of time and effort to produce the reports for 2017 to 2023. These reports have promoted the work of OHBR and helped us establish our role in biological recording in Scotland.

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Foreword

Each year presents new challenges to our community of biological recorders in their effort to describe and document the islands' wildlife, discovering new species and adding more dots to the distribution maps. There are logistic problems to overcome, travelling by ferry from north to south down the archipelago and visiting the small uninhabited offshore islands and trekking across peatbogs and moorland. Then there is the unpredictable nature of weather, which in 2024 was particularly, cold, wet and windy and kept even the most resolute naturalists indoors.

The biodiversity data we provide and make available the NBN Atlas is a key element in providing the evidence-based approach for conservation, nature regeneration and rewilding and for monitoring the effects of habitat loss and climate change. The Scottish Biodiversity Strategy recognises importance of high-quality data provided by amateur naturalists.

It is easy to focus on the statistics of biological recording, but the importance of encouraging everyone to take the time to indulge their natural curiosity, to stop to watch the bees in their garden, muse over the identity of an eye-catching insect or do a little beachcombing when walking the dog, should not be overlooked. It is good for both our individual and community well-being and for the future of our natural environment.

The success of OHBR is the result of the hard work and commitment of our recorders, whether they are resident or regular visitors, and provide 100s or a handful of records. Similarly, contributions to our Facebook groups, either by posting photographs or observations, helping with identification queries or participating in discussions is appreciated. The annual reports are a tribute to everyone who contributes to OHBR, but this year it is dedicated to everyone who braved the weather, got wet or fell in a peat bog in the pursuit of discovering more about our wonderful islands and their wildlife.

Christine Johnson, March 2024.



OHBR recorders in action. Photographs © Christine Johnson

Resources

Information about biological recording, how to submit records and participate in surveys is available on the OHBR website. There are copies of our Wildlife of the Outer Hebrides leaflets, species checklists and previous issues of *Working Together - Discovering Our Natural Heritage*, *Biological Recording in the Outer Hebrides* to download and a list of on-line resources to help with species identification.

You can share your observations and also ask for help with identification on the OHBR and Curracag Facebook group pages.

All the OHBR records are available on-line on the NBN Atlas Scotland and are available to browse or download. Botanical records are part of the OHBR database and are shared with the Botanical Society of Britain and Ireland on the NBN Atlas and on the BSBI on-line Floral Atlas.

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 Resources - <https://www.ohbr.org.uk/identification.php>
6. Outer Hebrides Algae - <https://www.outerhebridesalgae.uk/index.php>
7. Outer Hebrides Fungi - <https://www.outerhebridesfungi.co.uk/>
8. Outer Hebrides Lepidoptera - <https://www.outerhebrideslepidoptera.co.uk/index.php>
9. OHBR Facebook page - <https://www.facebook.com/groups/286293481746505/>
10. Curracag Facebook page - <https://www.facebook.com/groups/curracag>
11. BSBI Floral Atlas - <https://plantatlas2020.org/index.php/>



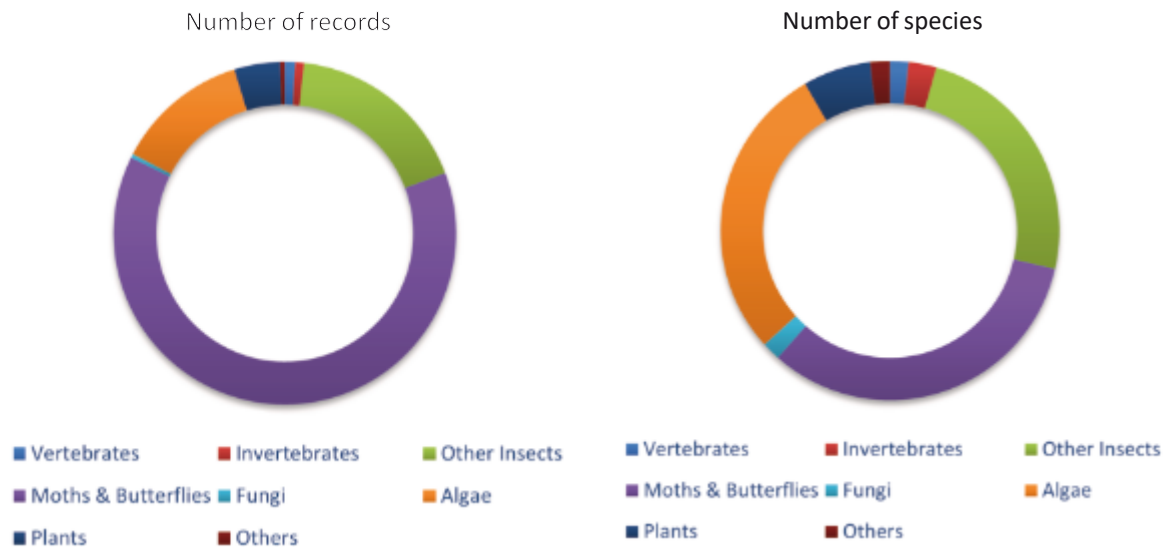
Botanical recording in progress Photograph © Christine Johnson

Summary

Summary of Records Collected in 2024: Overview

Since 2012 biological records of animals, plants, fungi, bacteria, protozoa and chromists, collected in the islands and coastal waters of the Outer Hebrides have been submitted to OHBR. In 2024 we received 5,954 records from 95 recorders from the north of Lewis to the southern islands around Barra and the distant archipelago of St. Kilda.

Each year we also receive some records collected in previous years, these are often of species which are difficult to identify, often needing sophisticated microscopic examination e.g. diatoms or micro-fungi. These are not included in the analysis of the annual records, but are noted in the relevant sections of the report and are included in the datasets submitted to the NBN Atlas.



There is considerable variation in the number of records received and the proportions of the taxonomic groups and range of species represented in the data. However, considerable care must be taken in interpreting the overall statistics as a number of factors can interact to affect the totals.

The weather in the Outer Hebrides can be extremely variable and affect both the behaviour of the recorders and species they wish to record. Similarly the methods used to collect the records e.g. using a moth trap, plankton or insect net or direct observation can have a significant effect on both the number and range of species recorded. The number of resident active recorders, their interests and expertise will vary from year to year, but the presence of a visiting specialist can have a major effect on the number and diversity of records collected for a single taxonomic group.

In the Outer Hebrides in 2024 the summer was cold, wet and cloudy and the mean monthly maximum temperatures from June to September were the lowest in recent years. This affected both the behaviour of the local wildlife, particularly insects such as bees, butterflies and moths, and limited the opportunities for fieldwork. It is also possible that the poor weather discouraged some of the specialist naturalists who regularly visit the islands.

The poor weather conditions probably contributed to a 7% decrease in the total number of records in 2024 compared with 2023. However, if an adjustment is made to account for changes in recording activity e.g. an increase in the number of local naturalists using moth traps in Lewis, this will fall to over 14%

There is not a direct relationship between the number of records and species recorded e.g. an increase in the number of records of dragonflies in a year will not significantly alter the number of species recorded, because there are only 8 species commonly found in the islands. However, an increase in the amount of surveying of an under-recorded group e.g. slime moulds or diatoms, would increase the number of species recorded. Therefore, the total number of species recorded each year will be limited by the diversity of the islands' wildlife and the recording effort and methods.

Each year we continue to add new species to the taxonomic lists for the Outer Hebrides. This includes some of the more well studied groups such as moths, flies and bees, as well as the less well documented taxa e.g. freshwater algae. As the number of recorders increase, opportunities arise to survey new areas and different habitats, and to experiment with new recording methods. This will help us extend the range of species we record and improve our knowledge of the islands' wildlife.

Summary

Taxonomic Group		Common Name	VC110 ¹ Species	2024 ² Species (Records)
Vertebrates	Aves ³	Birds	413	3 (6)
	Actinopterygi	Bony fish	67	1 (1)
	Mammalia	Mammals	36	11 (34)
	Elasmobranchii	Sharks, skates & rays	10	1 (2)
	Reptilia	Reptiles	5	-
	Amphibia	Frogs, toads & newts	3	2 (16)
	Other Classes	Sea squirts, salps, jawless fish	52	-
		Total	586	18 (59)
Invertebrates	Arthropoda	Insects (except Lepidoptera)	1418	244 (1041)
		Lepidoptera (butterflies & moths)	553	334 (3747)
		Other groups: crustaceans, arachnids, millipedes, isopods, spring tails	264	20 (41)
	Mollusca	Snails, slugs, bivalves,	371	6 (10)
	Annelidia	Segmented worms	193	1 (1)
	Cnidaria	Corals, jellyfish, etc.	139	2 (2)
	Other Classes	Rotifers, nematodes, tardigrades	6	2 (2)
	Other Classes	Marine, freshwater, terrestrial invertebrates	172	-
		Total	3116	606 (4843)
Plants	Angiosperms	Flowering plants	950	64 (256)
	Gymnosperms	Conifers	31	-
	Pteridophyta	Ferns & horsetails	41	3 (3)
	Bryophyta, Marchantiophyta, Anthocerotophyta	Mosses, liverworts & hornworts	525	-
	Charophyta	Stoneworts & desmids	784	256 (710)
	Chlorophyta	Green algae	125	30 (39)
	Rhodophyta	Red algae	164	-
		Total	2620	352 (1008)
Fungi	Ascomycota	Cup fungi, earth tongues, truffles	426	2 (2)
		Lichens	514	4 (4)
	Basidiomycota	Mushrooms, puffballs, brackets, jelly fungi, rusts, smuts	549	10 (13)
		Lichens	5	-
	Chytridomycota	Chytrids	4	1 (1)
	Zygomycota	Bread & pin moulds	8	-
	Oomycota ⁴	Water moulds & downy mildews	13	-
	Myxomycota ⁴	Slime moulds	7	1 (1)
		Total	1526	16 (21)
Chromista		Brown seaweeds, diatoms	105	6 (11)
Protozoa			16	2 (2)
Bacteria		Cyanobacteria	34	10 (10)

¹ Unless stated otherwise, the number of species for VC110 (Outer Hebrides) are from current OHBR checklists or NBN Atlas Scotland lists as of 10/3/2025. For less commonly recorded taxa the data are incomplete.

² This table only includes records made during 2024. However, records are often submitted in subsequent years, particularly for taxonomic groups which are difficult to identify. These records are submitted to the NBN Atlas in the OHBR datasets, and where significant numbers are involved they are noted in the text of this report.

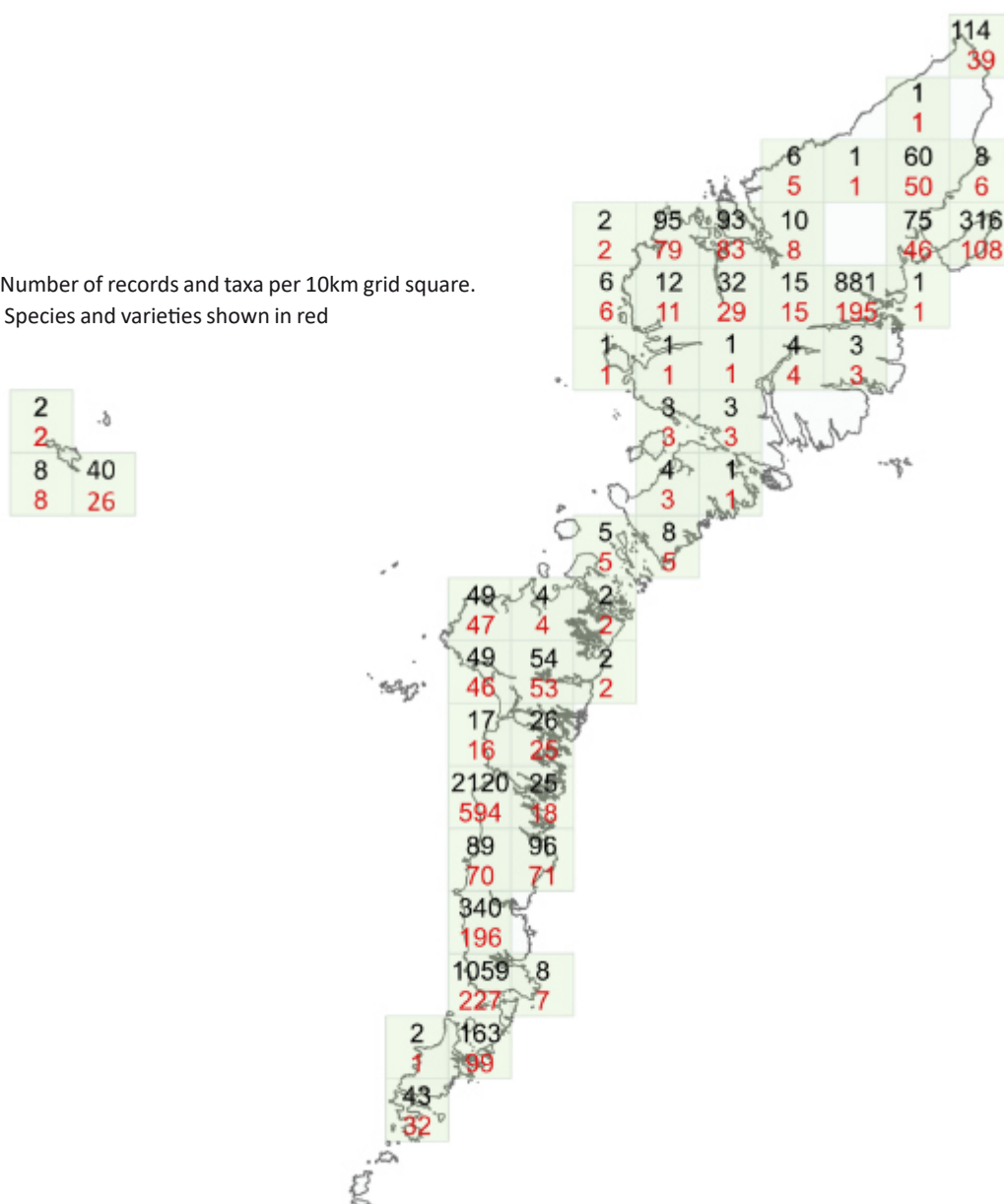
³ Records of birds are collated through the Outer Hebrides Birds website and the BTO local recorder. The records included here are collated through the OHBR Spring Survey.

⁴ Oomycota and Myxomycota are now classified as Chromista and Protozoa respectively, but are usually included with the fungi.

Summary

Distribution of records and taxa for 2024 received by OHBR

Number of records and taxa per 10km grid square.
Species and varieties shown in red



Islands	Records	Recorders
Lewis	1655	50
Great Bernera	74	6
Harris	24	3
St Kilda	50	1
Berneray	6	2
North Uist	66	11
Benbecula	53	5
South Uist	3822	24
Eriskay	149	3
Barra, Vatersay, Healsay	55	5
Total	5954	

Summary

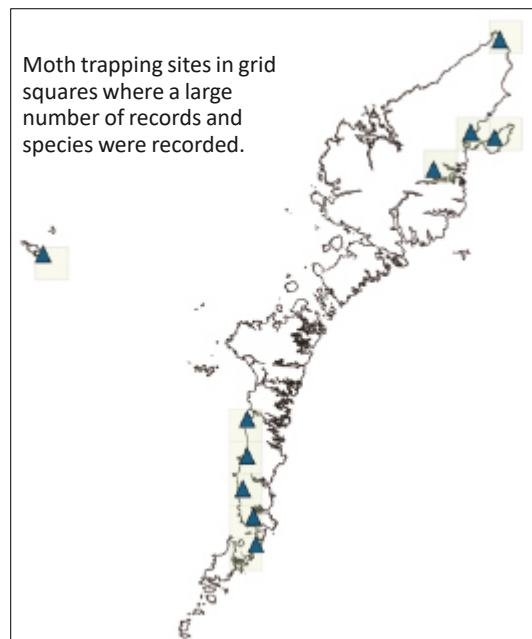
Biological records in species distribution atlases are usually summarized in 10×10 km grid squares (hectads). In 2024 we received records from 49 of the 88 hectads which cover the Outer Hebrides archipelago. This excludes the more remote islands of North Rona, Sula Sgeir and the Flannans. In some years there are records from the Shiantis or Monach islands and some of the smaller islands in the Sound of Harris, Sound of Barra, and to the south of Barra. Some areas consistently produce very few records, these are not biodiversity deserts, but either remote and inaccessible hectads or by a quirk of geography just contain very small areas of coastal land.



Pabbay, in the Sound of Harris, last visited by OHBR recorders in 2022. The island is still farmed as a croft, but only inhabited during the summer months. Part of the island is a SSSI (shown in pink on the map). Map © NatureScot. Photograph © Miranda Forrest.

There is considerable diversity in the number of records and species recorded in each grid square, varying from a single record to over 2100. This is usually an indication of recorder activity rather than a biodiversity hot spot. This commonly a site where moth trapping takes place on a regular basis, or a specialist recorder is active or a group of recorders have been surveying a particular area or habitat. Conversely, a small number of records may indicate that an area is rarely visited by OHBR recorders or a survey focusing on selected species has taken place e.g. the Hairy Caterpillar Survey.

Information from the distribution maps is used to identify areas which are under-recorded and where there are gaps in our knowledge about the distribution of particular species or taxonomic groups. The hectad maps provide a useful overview of recording activity, however the more detailed information required for the distribution of species in relation to habitat or for land management, conservation monitoring or environmental impact assessments is provided by more detailed maps usually at the 1×1 km scale (monad). This is why there is a preference for the use of 4 or 6 figure map references in biological records.



Dark Arches *Apamea monoglypha*.

This is Scotland's most abundant and widespread Noctuids species and they can appear in light-traps in their hundreds. The main flight period is from June to August over a large range of habitats.

In 2024 the islands' moth trappers produced 81 records of this species comprising 1017 individuals.

Photograph © Chris Johnson

Surveys

OHBR Surveys 2024

Documenting the biodiversity of our islands, recording our wildlife to help monitor climate change, mapping the distribution of our wildlife and encouraging everyone to engage with nature and enjoy our wonderful natural heritage are all part of the work of OHBR. Our community of amateur naturalists has a wide range of skills and interests, and the small group of experienced naturalists and the much larger band who have a more general interest in wildlife all have an important role to play in helping us document our wildlife.

Each year we organise a small number of surveys which are designed to provide information on the distribution of a small number of specific species. They focus on species which are easy to identify to encourage as many people as possible to participate. Information for participants is provided on the OHBR website and help with identification is provided via the OHBR and Curragag social media sites.

Signs of Spring



Lesser Celandine and White-tailed Bumblebee Photographs © Christine Johnson. Wheatear Photograph © Bill Neill

The arrival of spring weather in the Outer Hebrides is always unpredictable.

The start of spring varies according to astronomical or meteorological definitions, so it is either 1 or 20 March each year. These are very rigid definitions and most people will have their own natural indicators e.g. bees buzzing and daffodils flowering in the garden. Our interest in using natural events to record the spring dates back to early 18th century. Since then recording the variation in the timing of seasonal events, such as bird migration, emergence of insects and bud break on trees, called phenology, has continued. It is now recognised that using an index of natural events can highlight a biological response to climate change.

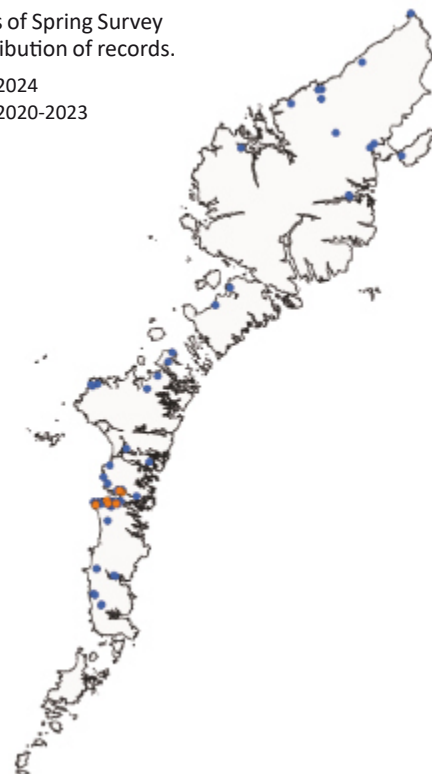
Unfortunately, many of the species used in the UK national surveys are not found in the Outer Hebrides. We have therefore devised our own project using species which are appropriate to the islands. We have chosen 3 species of flowers, insects and birds, all of which are easy to identify. Recording when you first see or hear any of these will help us track the arrival of spring through the islands and measure the variation from year to year.

This survey began in 2020 and is still in operation. Unfortunately, the results of the 2024 survey were disappointing with a decrease in the distribution and number of records; just 19 records Benbecula and the northern end of South Uist.

This is a survey which is still in its infancy, but the initial results indicate that our choice of spring events appears to correlate with meteorological data. In the long term, this dataset may provide an insight the effects of climate change.

Signs of Spring Survey
Distribution of records.

● 2024
● 2020-2023

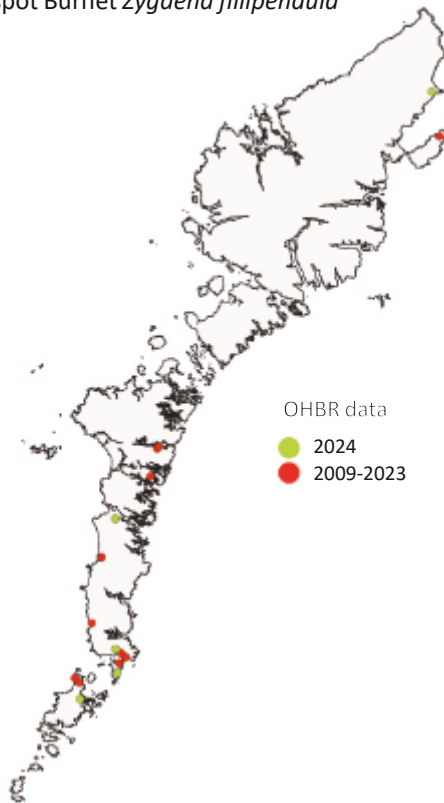


The OHBR Annual Summary of Biological Records for 2023 contains a summary of the results of the survey from 2020-2023. This report is available to download from the OHBR website.

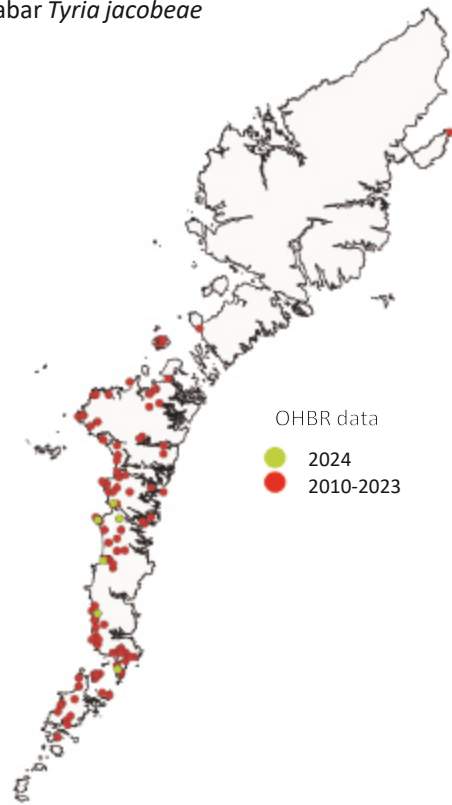
Surveys

OHBR Cinnabar and Six-spot Burnet Survey 2024

Six-spot Burnet *Zygaena fillipendula*



Cinnabar *Tyria jacobaeae*



The six-spot burnet and cinnabar are two very distinctive day-flying moths which are found in the Outer Hebrides and which, according to recent studies (Leverson & Cubbit (2024) *The Larger Moths of Scotland*), may be extending their distribution in Scotland.

The records of the six-spot burnet appear in the OHBR database from 2009, but its distribution, with the exception of two records in Harris and Lewis extends no further north than Berneray. The cinnabar appear to be a more recent arrival in the islands, but its distribution does not seem to have expanded beyond the southern islands. However, as only 3-4 records are submitted each year, it is not clear whether the population is expanding northwards.

The caterpillars of both moths feed on plants that are widespread in the islands; cinnabar on ragwort and six-spot burnet on bird's-foot trefoil and other members of the pea family. Therefore, a search of the areas where these two plants are present would help to confirm whether these moths were present in Harris and Lewis and had previously been overlooked.

Unfortunately the flight periods of both moths coincided with a period of very poor weather. The survey produced only 9 records of the cinnabar and 6 of the six-spot burnet. Therefore, we have been unable to establish whether the six-spot burnet is confined to the southern isles or whether the cinnabar is moving northwards. Perhaps we will have more success in 2025.



Six-spot burnet. Photograph © Chris Johnson



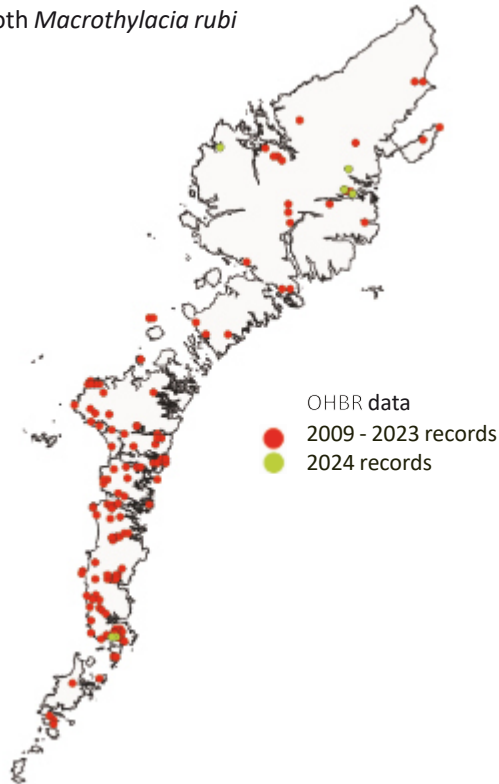
Cinnabar. Photograph © John Kemp

Surveys

On the Trail of the Hairy Caterpillars - OHBR Survey 2024

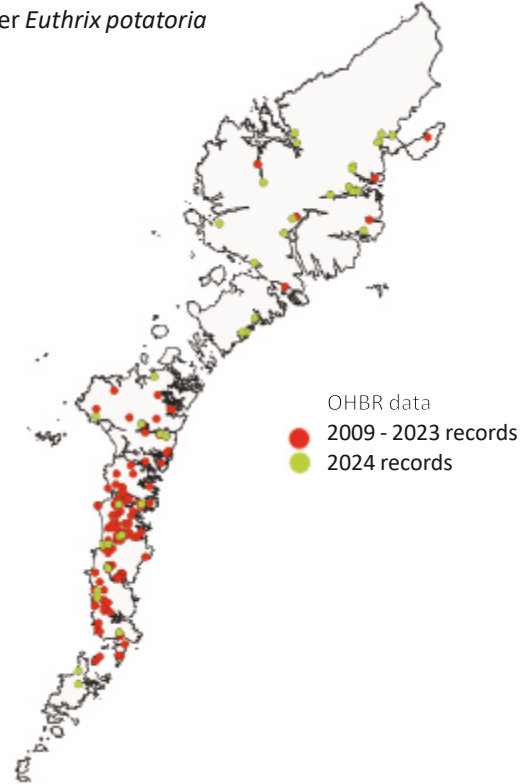
Searching for caterpillars is a very accessible way of recording the distribution of some moth species. In 2023 we were encouraged by the number of observations of moth and butterfly larvae posted on the Curragag and OHBR Facebook group pages, so a small recording project was launched to fill in some of the gaps in the distribution maps. Four species with very distinctive hairy caterpillars were chosen – drinker, fox moth, northern eggar and garden tiger, to attempt to expand our knowledge of the distribution of these species in Harris, Lewis and Barra.

Fox Moth *Macrothylacia rubi*



Fox moths have been recorded in the islands since 2009 and established populations have been recorded from Barra to Harris and Lewis for some time. However, there are still areas of Lewis and Harris where this species has not been recorded, which may be due to a lack of recorders. The 2024 survey added some new locations to the distribution map, but there is still further work to do.

Drinker *Euthrix potatoria*



First recorded on the Outer Hebrides in 2009, over the following 15 years the population has exploded. It was first recorded in Harris in 2018 and Lewis in 2021 and the island of Fuday in the Sound of Barra in 2021. The results of the survey in 2024 show a continued expansion in Harris, Lewis and into Barra.



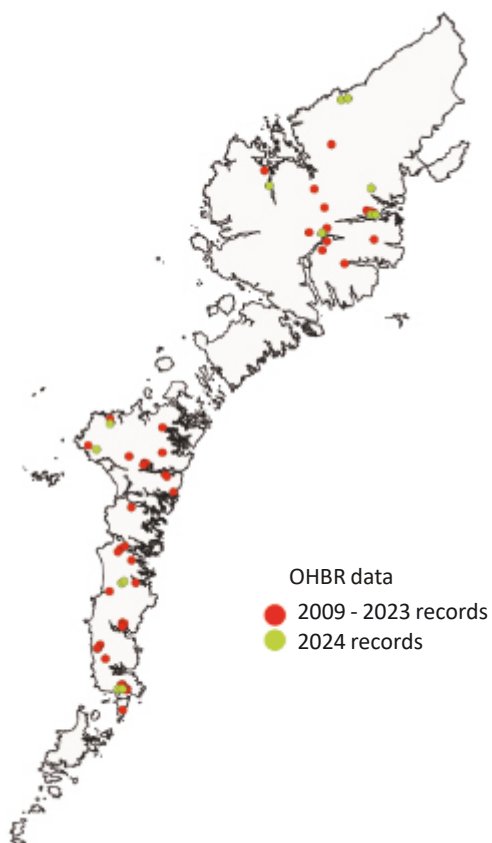
Fox Moth *Macrothylacia rubi*



Drinker *Euthrix potatoria*

Photographs © Chris Johnson

Northern Eggar *Lasiocampa quercus*



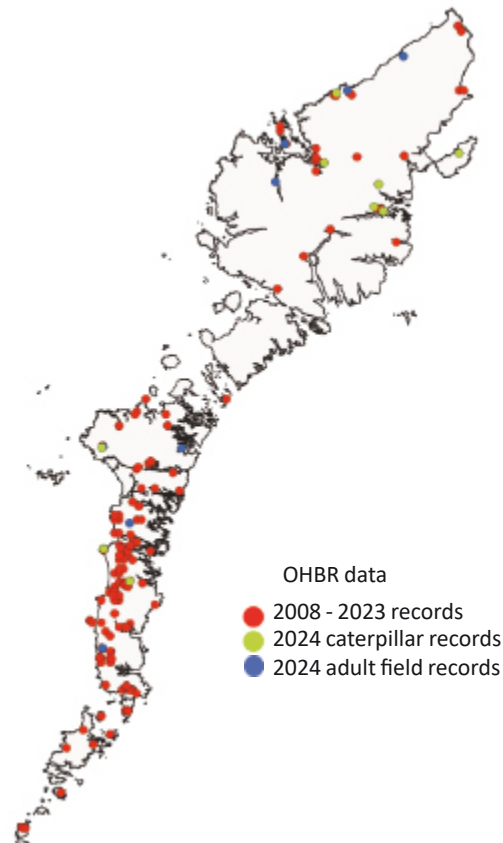
The northern eggar is a variety of the oak eggar found in northern England and Scotland. It has a two year life-cycle, overwintering as a caterpillar and as a pupa in the second winter. Therefore the adults and caterpillars will be relatively more abundant in alternate years. This pattern can be observed in the OHBR data, but care has to be taken to account for differences in recording effort. The ability to record the larvae and pupae can help to produce a more even picture of the distribution.



Northern Eggar *Lasiocampa quercus*

Photographs © Chris Johnson

Garden Tiger *Arctia caja*



A very distinctive and easily recognisable moth that is common and widespread throughout the islands. Populations have declined in many parts of the UK, but they appear to be stable in Scotland.

The distribution of this species is based on records from moth trapping combined with observations of adult moths and caterpillars. The ability to record some species by different methods can provide a more complete map of their distribution.



Garden Tiger *Arctia caja*

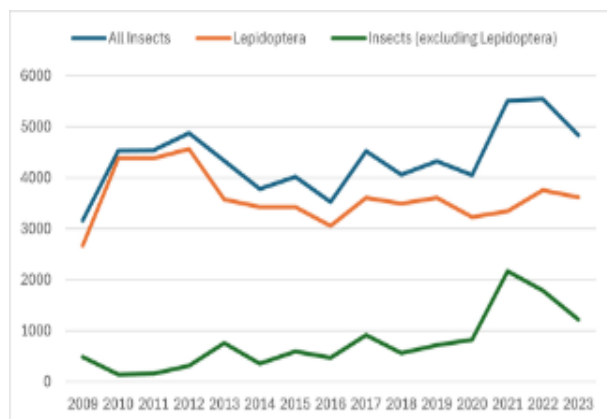
Taxonomic Summary: Invertebrates

Taxonomic Summary: Invertebrates

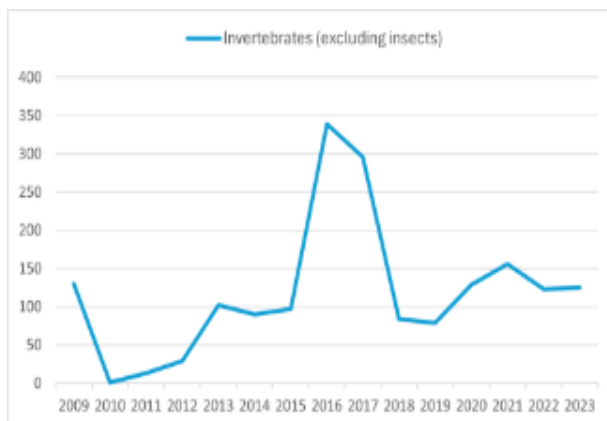
The invertebrates account for over 80% of the 5924 records and 60% of the 1010 species recorded in 2024. Within this group, the insects, notably the Lepidoptera (butterflies and moths) predominate. Within the other insect taxa four groups: Diptera (flies), Hymenoptera (bees and wasps), Tricoptera (caddisflies) and Coleoptera (beetles), produce the majority of the records.

Taxon	2024 No. records	2024 No. species
Lepidoptera	3747 (78%)	334 (58%)
Other Insects	1040 (22%)	246 (42%)
Total Insects	4787	580
All Insects	4787 (99%)	580 (96%)
Other Invertebrates	55 (1%)	26 (4%)
Total Invertebrates	4842	606

Variation in the annual totals of records of insects illustrating the contribution of Lepidoptera and other insect taxa to the total



Variation in the annual totals of records of invertebrate taxa excluding insects



The number of invertebrate records can vary by as much as 35% and similarly the number of species recorded by 54%, from year to year. In 2024 the poor summer weather probably had a depressing effect on the numbers of insects recorded, but this was balanced by an increase in recording effort.

Most of the variation between years arises from the contribution of "other" insects which can probably be attributed to the records submitted by specialist entomologists visiting the islands and local recorders taking a specific interest in recording particular groups e.g. beetles or caddisflies. In contrast the contribution of records of moths and butterflies to the annual totals remains consistent largely due to sustained efforts of a small number of resident moth trappers.

Annual totals of invertebrate records

Year	All Insects	Lepidoptera	Other Insects	Invertebrates (non-insects)
2009	3161	2670	491	130
2010	4528	4383	145	1
2011	4540	4380	160	13
2012	4876	4564	312	29
2013	4328	3571	757	102
2014	3782	3423	359	90
2015	4018	3427	591	97
2016	3526	3053	473	339
2017	4524	3607	917	296
2018	4058	3495	563	84
2019	4324	3605	719	79
2020	4051	3228	823	129
2021	5511	3345	2166	156
2022	5539	3753	1786	123
2023	4838	3619	1219	125

If these data are to be used to assess the effects of climate or environmental changes, it is important to understand the effects of variation in recorder effort and survey methods on the annual totals of records and species numbers. Therefore the data collected from a small number of moth traps situated at various locations in the islands and operated regularly throughout the year will probably be the most reliable indicator of change.

Taxonomic Summary: Insects

Taxonomic Summary: Insects

With the exception of the Lepidoptera, only 5 groups of insects are recorded regularly on an annual basis by resident recorders and within the larger groups this is restricted to particular families e.g. hoverflies, craneflies and blowflies in the Diptera. Some of the more experienced local naturalists specialise in recording individual groups of species such as caddisflies whilst others take a more general or wider interest in groups such as ground beetles, hoverflies or dragonflies.

The combination of poor weather and the absence of visiting entomologists depressed the level of recording of some of the insects taxa compared with the previous three years, however, the growing interest in recording some of the other insect groups such as bees, beetles and hoverflies is encouraging. Most of the minor groups of insects such as lacewings and stoneflies, together with some of the more challenging families of beetles and flies remain under-recorded and await the attention of visiting specialists.

Insect Orders		VC110 Number of Species	2024 Species	2024 Records
Diptera	Flies	896	108	495
Hymenoptera	Bees, Wasps & Ants	131	42	181
Coleoptera	Beetles	518	47	114
Lepidoptera	Butterflies & Moth	618	334	3747
Hemiptera	Bugs	104	10	14
Trichoptera	Caddisflies	75	25	165
Psocodea	Barkflies	4	1	3
Neuroptera	Lacewings	6	1	1
Ephemeroptera	Mayflies	12	1	4
Odonata	Dragonflies	11	7	45
Plecoptera	Stoneflies	10	1	2
Dermaptera	Earwings	1	1	16
Total			469	4276

Stimulating an interest in some of these under-recorded species is challenging as identification can be difficult and may require microscopy or specific sampling or surveying methods. However, encouraging the moth-trappers to look at other insects which are attracted to light and can be collected in the traps or examining the aquatic beetles and bugs and insect larvae which are inadvertently collected when sampling algae, can produce some interesting records. Similarly, some records can be gleaned from photographs posted on social media of some of the larger and more colourful insects which are not routinely recorded such as parasitic wasps or migrant moths.



Banchus volutatorius a parasitic wasp (ichneumon) which attacks the larvae of low-feeding noctuid moths.
Photograph © Christine Johnson



Black Sexton Beetle *Nicrophorus humator*. Attracted to light and found in moth traps.
Photograph © Christine Johnson

Insects: Lepidoptera

Butterflies

The number of records submitted in 2024 was 40% lower than in 2023. With the exception of green-veined white, the commonly abundant resident and migratory species such as red admiral, small tortoiseshell and meadow brown were not observed as frequently as in 2023. The population levels of butterflies are variable, but it is unusual to see a decrease in numbers affecting the majority of species.

Species		2024 Records
Orange-tip	<i>Anthocharis cardamines</i>	1
Large White	<i>Pieris brassicae</i>	3
Green-veined White	<i>Pieris napi</i>	55
Speckled Wood	<i>Pararge aegeria</i>	3
Small Heath	<i>Coenonympha pamphilus</i>	3
Meadow Brown	<i>Maniola jurtina</i>	30
Dark Green Fritillary	<i>Speyeria aglaja</i>	2
Red Admiral	<i>Vanessa atalanta</i>	33
Painted lady	<i>Vanessa cardui</i>	1
Peacock	<i>Aglais io</i>	3
Small Tortoiseshell	<i>Aglais urticae</i>	23
Common Blue	<i>Polyommatus icarus</i>	8



Large Heath *Coenonympha tullia*.

Recorded in small numbers in 2024 and one of the species where the population appears to be in decline.

Photograph © Chris Johnson

The butterfly fauna of the islands currently comprises 13 species, plus small white and orange-tip which are recorded intermittently. Large heath and grayling were not recorded in 2024, and the small population of ringlets in South Uist has not been recorded since 2017. Speckled wood is largely restricted to a small population in Stornoway, although there were 2 records from new locations in Lewis in 2024.

Painted lady is a migratory species arriving in the spring from southern Europe and North Africa, and the numbers vary from year to year. The population of red admiral also has a migratory component with adults arriving from the south to breed and produce a second generation of adults in July-August. This year the numbers of red admirals recorded in the spring was small and very few adults were recorded later in the summer.

Small tortoiseshells overwinter as adults and produce a new generation in July-August at about the same time as a second generation of green-veined whites appear.

Overall the number of butterfly records submitted in 2024 was very small, but it appears that the poor summer weather affected the butterfly breeding season producing a small number of adults in July and August.



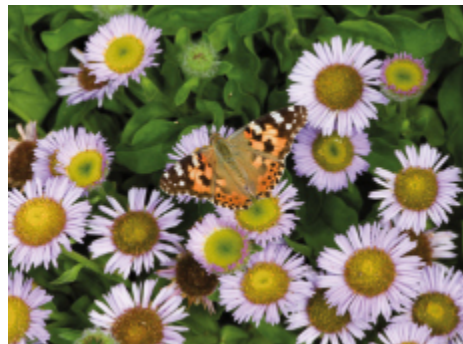
Common Blue *Polyommatus icarus*.

Notably scarce in 2024, compared with previous years.

Photograph © Chris Johnson

This situation was not confined to the Outer Hebrides, as Butterfly Conservation declared a “butterfly emergency” following a marked decline in the numbers of butterflies recorded in their annual national survey.

We are also concerned about the islands’ butterflies and wish to encourage more observers to record butterflies throughout the archipelago. A new survey will be launched in 2025 to record red admiral, painted lady, peacock and small tortoiseshell which are all large, brightly coloured and easy to identify.

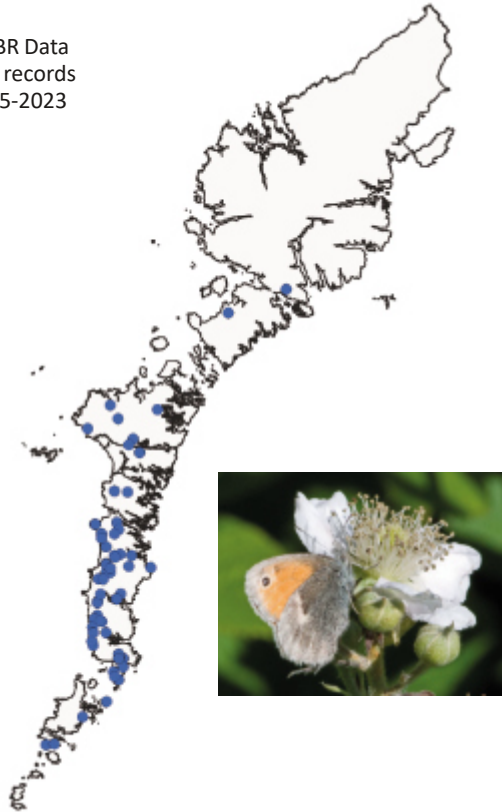


Painted Lady *Vanessa cardui*.

Photograph © Chris Johnson

Small Heath

OHBR Data
129 records
1995-2023



Dark Green Fritillary

OHBR Data
143 records
1996-2023



Grayling

OHBR Data
49 records
1996-2023



Butterflies on the watch list

Information on the distribution and numbers of some of the islands' butterflies is limited. It is possible because of ecological or climatic factors, scarcity or under-recording.

Small populations on remote islands are always vulnerable to extinction as they may be too distant from mainland populations to be sustained by immigration. This problem can also occur on the mainland when populations become isolated, which is why the maintenance and establishment of nature networks to maintain connections between populations is important.

Under-recording of even charismatic species such as butterflies can be an issue. The number of naturalists is small and it can be difficult to access parts of the island. Some species can be difficult to find because they have a camouflaged appearance e.g. grayling, or their habitat is limited.



Speckled woods breed only in woodland and have a very restricted distribution in the islands,

Photographs © Chris Johnson

Insects: Lepidoptera

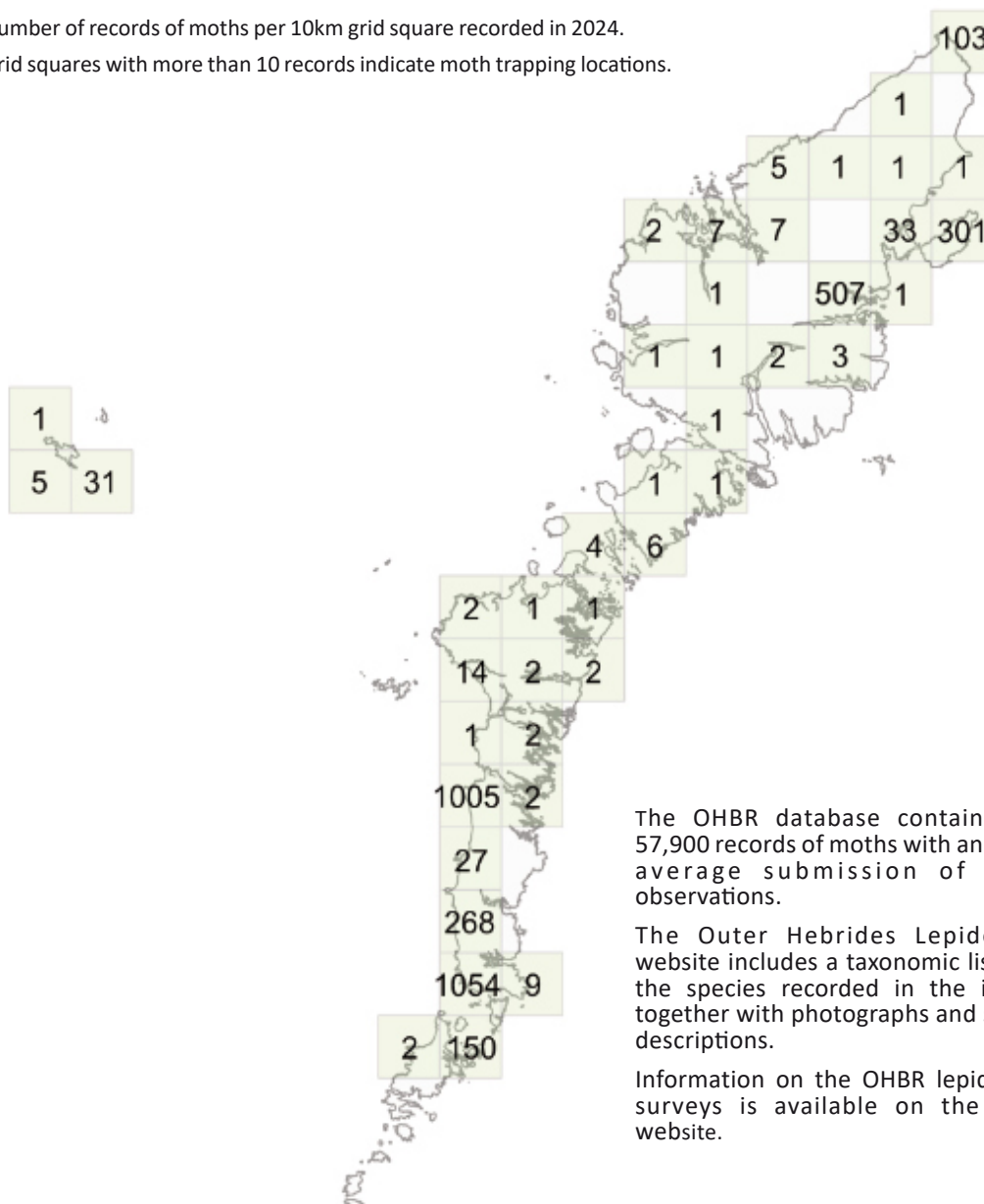
Moths

Sixty two recorders submitted 3578 records of 324 species which compares favourably with 3328 records of 325 species from 44 recorders in 2023. The number of recorders increased in 2024 through participation in two new moth surveys and an increase in the use of moth traps. In 2024 part of the OHBR NatureScot field work grant was used to enable local recorders based in areas where Lepidoptera are under-recorded and no moth traps were operating.

Overall moth trapping produced 3148 records of 294 species from 12 locations, producing over 87% of the records. This method of recording is very effective and can provide a basis for long term monitoring. However, not all species are attracted to light and as trapping is restricted to a limited number of locations it does not significantly contribute to mapping species distribution, even though there is variation in the frequency and range of species recorded between sites. Differences between the nature of the records obtained between sites is becoming more apparent as the amount of moth trapping increases in Lewis. Therefore a combination of light trapping and fieldwork involving direct observation and other sampling methods such as hand netting, will provide a more comprehensive picture of the moth fauna of the islands. This broad approach to recording moths also encourages participation by a wider group of local naturalists.

Number of records of moths per 10km grid square recorded in 2024.

Grid squares with more than 10 records indicate moth trapping locations.



The OHBR database contains over 57,900 records of moths with an annual average submission of 3,622 observations.

The Outer Hebrides Lepidoptera website includes a taxonomic list of all the species recorded in the islands, together with photographs and species descriptions.

Information on the OHBR lepidoptera surveys is available on the OHBR website.



Photograph © Christine Johnson

The more experienced OHBR lepidopterists use a variety of methods to survey moths in the field. Hand netting can be effective and has the advantage of sampling moths micro-moths which are small and flighty or hide in the vegetation.

Direct observation and searching in particular habitats or around known food plants is an effective way of locating caterpillars and pupae. This is particularly effective for finding species where the larvae produce leaf-mines, spin webs, roll leaves, form protective cases or where the adult female moths are flightless.

The value of casual observation should not be over looked as serendipity has produced some interesting records such as the rare oleander hawk-moth (*Daphnis nerii*) found on Lewis in September 2024.

Moths recorded in 2024 by direct observation or netting which are not attracted to light

Species		Records
Macro-moths		
<i>Anarta myrtili</i>	Beautiful Yellow Underwing	5
<i>Camptogramma bilineata</i>	Yellow Shell	3
<i>Daphnis nerii</i>	Oleander Hawk-moth	1
<i>Ematurga atomaria</i>	Common Heath	6
<i>Lycia zonaria</i>	Belted Beauty	9
<i>Zygaena filipendulae</i>	Six-spot Burnet	6
Micro-moths		
<i>Argyresthia brockeella</i>	Gold W	2
<i>Argyresthia conjugella</i>	Apple Fruit Moth	1
<i>Argyresthia goedartella</i>	Golden Argent	1
<i>Argyresthia retinella</i>	Speckled Tip Moth	1
<i>Bucculatrix demaryella</i>	Birch Tuft	1
<i>Clepsis senecionana</i>	Tawny Tortrix	1
<i>Coleophora alticolella</i>	Common Rush Case-bearer	1
<i>Glyphipterix schoenicolella</i>	Bog-rush Moth	2
<i>Glyphipterix thrasonella</i>	Eyed Rush Moth	1
<i>Grapholita compositella</i>	Meadow Tortrix	1
<i>Leucoptera spartifoliella</i>	Broom Stem-miner	1
<i>Monochroa tenebrella</i>	Burnished Sorrel Moth	1
<i>Pammene rhediella</i>	Fruit Mining Tortrix	1
<i>Phylloporia bistrigella</i>	Striped Cutter	1
<i>Stigmella aurella</i>	Golden Dot	1
<i>Stigmella microtheriella</i>	Nut-tree Dot	2
<i>Swammerdamia caesiella</i>	Birch Drab	2

Six-spot Burnet (*Zygaena filipendulae*). The adults are not attracted to light, but can be reliably identified by direct observation. The larvae and the pupae are also distinctive. Photograph © Chris Johnson



Leaf mine found in bramble formed by the larva of Golden Dot (*Stigmella aurea*). Photograph © Bill Neill



Birch Drab (*Swammerdamia caesiella*) larvae found in webs on the upper-side of birch leaves. Photograph © John Kemp



New species recorded in the Outer Hebrides in 2024

Each year a small number of new species are added to the Outer Hebrides list. These may be migratory e.g. olive-tree pearl or species which are extending their range or moths which are rare or difficult to record. 2024 was a good year for new moths with records of 8 species.

Two species, birch tuft and striped cutter were caught as adults using a hand net near birch which is the larval food plant. The larvae of both species feed by forming mines in the leaves of birch. The remaining species were recorded in moth traps, apart from the marsh pug which was found by direct observation.

Family	Species	
Macro-moths		
Geometridae	<i>Eupithecia dodoneata</i>	Oak-tree Pug
	<i>Eupithecia indigata</i>	Ochreous Pug
	<i>Eupithecia pygmaeta</i>	Marsh Pug
Micro-moths		
Bucculatricidae	<i>Bucculatrix demaryella</i>	Birch Tuft
Crambidae	<i>Palpita vitrealis</i>	Olive-tree Pearl
Icurvariidae	<i>Phylloporia bistrigella</i>	Striped Cutter
Pyalidae	<i>Phycitodes maritima</i>	Coast Knot-horn
Tortricidae	<i>Acleris sparsana</i>	Lead-coloured Tortrix

The marsh pug was one of three species of pug added to the Outer Hebrides list in 2024. This species is thought to be in decline in Scotland, possibly from habitat loss. It's absence from the west of the country could be attributed to under-recording as it rarely comes to light (Leverson & Cubitt 2024. *Larger Scottish Moths*).

The ochreous pug has a more widespread distribution in Scotland and its scarcity in the Hebrides maybe linked to the scarcity of Scots pine which is the larval food plant.

The third pug, the oak-tree pug is an example of a species which appears to be expanding its range. A recent colonist in Scotland it had moved as far north as Colonsay by 2019. Unfortunately more recent information is not available on the NBN Atlas.



Marsh Pug (*Eupithecia pygmaeta*).
Photograph © Debbie Storrow

Micro-moths

Micro-moths can be difficult to identify, and some species require microscopic examination of the genitalia. This may account for a degree of under-recording e.g. in 2024 micro-moths accounted for only 16% of the total number of moth records.

Not all species are attracted to light, but direct observation and hand netting in habitats where their larval food plants are found can be an effective recording method e.g. machair grassland.



Diamond-back Moth (*Plutella xylostella*) is a migrant species which can occur in very large numbers. It has been recorded every year since 2009, and prior to 2023 it had not been recorded in Harris or Lewis. Probably a case of under-recording as the larvae feed on brassicas. Photograph © Chris Johnson

The larvae of many of the micro-moths have highly specialised feeding behaviour and ecology which can be used to help establish species distribution. Looking for evidence of leaf mines or galls on the food plants or leaves that have been rolled or stuck together by silk are often evidence of the presence of micro-moth caterpillars. However, the larvae of other insects are also leaf miners and cause the formation of galls, so identification is not always straightforward. Even so, it is an interesting pursuit and provides an insight to the ecology of moths and their interactions with plants.



Leaf mine containing larva of fireweed mompha (*Mompha raschkiella*) on rosebay willowherb (*Chamaenerion angustifolium*).
Photograph © John Kemp

Insects: Diptera

Taxon Family		Species VC110	Species	Records	Recorders
Syrphidae	Hoverflies	81	24	108	8
Tipulidae	Long-palped Craneflies	27	11	88	5
Limoniidae	Short-palped Craneflies	43	6	71	2
Bibionidae	St Mark's Flies	8	4	70	26
Rhagionidae	Snipeflies	3	2	18	4
Anisopodidae	Winter Craneflies	4	2	17	1
Scathophagidae	Dungflies	12	4	17	2
Stratiomyidae	Soldierflies	4	2	14	4
Empididae	Dance Flies	31	3	11	2
Coelopidae	Kelp Flies	3	2	10	1
Tachinidae	Parasite-flies	19	3	8	2
Trichoceridae	Window-gnats	3	3	8	1
Heleomyzidae		11	5	6	2
Tephritidae	Gallflies	12	4	6	2
Muscidae		82	5	5	1
Tabanidae	Horseflies	5	3	5	3
Fanniidae	Lesser Houseflies	10	2	4	2
Pallopteridae	Trembling-wing Flies	1	1	4	1
Sepsidae	Ensign Flies	13	2	4	2
Dolichopodidae	Long-legged Flies	70	3	3	1
Calliphoridae	Blowflies	17	2	2	1
Pipunculidae	Big-Headed flies	1	1	2	1
Sphaeroceridae	Lesser Dungflies	32	2	2	2
Agromyzidae	Leaf-miner Flies	33	1	1	1
Anthomyiidae	Root-maggot Flies	44	1	1	1
Cecidomyiidae	Gall-midges	43	1	1	1
Chironomidae	Chironomidae	65	1	1	1
Chloropidae	Phantom-midges	20	1	1	1
Drosophilidae	Fruit Flies	6	1	1	1
Dryomyzidae		1	1	1	1
Hybotidae	Dance Flies	52	1	1	1
Lauxaniidae		7	1	1	1
Opomyzidae		4	1	1	1
Pediciidae	Hairy-eyed Craneflies	4	1	1	1
Sciaridae	Black fungus-gnats	9	1	1	1

The current *Checklist of Diptera of the British Isles* (Chandler 2024) lists 7270 species and the list for the Outer Hebrides includes 896, although some families may be under-recorded. In 2024, 495 records included 108 species, which is an increase in the number of records of 8% and a decrease of 22% in the number of species compared with 2023. This can be attributed to a reduction in both the number of records and species of hoverflies recorded and a large increase in the number of records of red-thighed St Mark's fly (*Biblio pomonae*)

New species of Diptera recorded in 2024

Family	Species
Chironomidae	<i>Demeijerea rufipes</i>
Drosophilidae	<i>Drosophila immigrans</i>
Empididae	<i>Rhamphomyia crassirostris</i>
Fanniidae	<i>Fannia tuberculata</i>
Muscidae	<i>Hydrotaea albipuncta</i>
Pipunculidae	<i>Cephalops varipes</i>
Tephritidae	<i>Tephritis vespertina</i>

In 2024, 5 new species were added to the species list and two species were confirmed.

Demeijerea rufipes is included in Waterston (1981)¹ as a verified record collected in South Uist before 1960, but there are no recent records prior to 2024.

Cephalops varipes. A record of *Cephalops* sp was recorded in South Uist in 2022.

¹ Present Knowledge of the non-marine invertebrate fauna of the Outer Hebrides. Proceedings Royal Society Proceeding Royal Society Edinburgh. Section B Biological Sciences 79: 215-321

A significant number of the Diptera records have been contributed by visiting entomologists. The current list for the Outer Hebrides includes records from the scientific literature, but over time these are being updated by records submitted to OHBR.

Although the current community of resident OHBR recorders does not include a specialist dipterist, some of the more experienced records are making a significant contribution to increasing our knowledge of the islands flies. This includes recording many of the more common and widely distributed species, and finding species not previously recorded in the islands. However, to extend our knowledge of the distribution of species the number of recorders has to increase.

The success of the red-thighed St Mark's fly survey indicates the potential for social media based surveys to increase information on the distribution of selected species. The targeted species have to be easy to identify by direct observation and from submitted photographs.

***Bibio pomonae* Survey 2024**



Red-thighed St Marks Fly (*Bibio pomonae*)
Photograph © Chris Johnson

In July 2024 photographs of red-thighed St Marks flies began to appear on social media sites and a survey was organised to capture these records and to encourage other local naturalists to participate. In total 49 records were received from 25 recorders. This was the largest number of record received in a year and extended the distribution map.

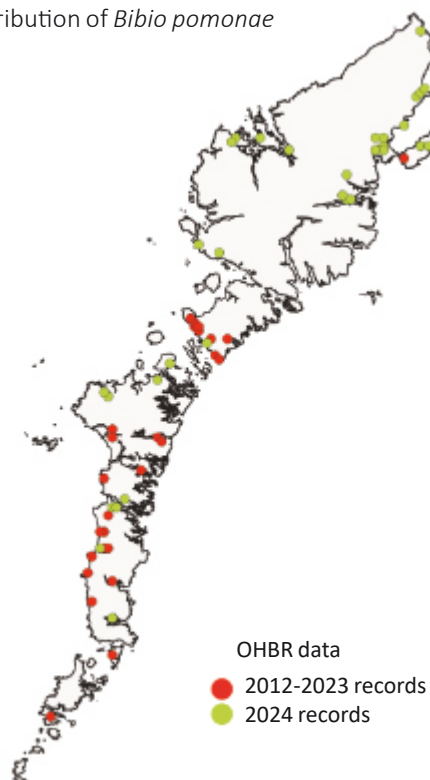
In northern Europe there is some evidence to suggest that this species is semivoltine, taking two seasons or more to complete its life cycle. Therefore, in some years the adults are absent or present in very small numbers, producing biennial variation in the number of adults recorded.

The annual number of records since 2012 is too small to suggest a cyclical pattern and some of this variation may be due to under-recording. It would be interesting to continue to run this survey to try to resolve this conundrum.



Rhamphomyia crassirostris, a new species of non-biting midge recorded in 2024.
Photograph © Debbie Storrow

Distribution of *Bibio pomonae*



Variation in the number of annual records



Syrphidae: Hoverflies

It is not surprising that hoverflies are amongst the most popular and commonly recorded Diptera in the islands. As pollinating insects they are common in gardens and easily recognised, although the species with black and yellow markings on the abdomen can be confused with small bees or wasps.

The number of records and species varies considerably from year to year from a peak of 202 records to a low of 49. In 2024, the 108 records were all submitted by local recorders. If compare the most frequently recorded species in 2024, 8 appear in the top ten list of the most recorded species from 2012 to 2013.

Most frequently recorded species

2024 Records		2012-2023 Records	
<i>Eristalis pertinax</i>	17	<i>Eristalis intricaria</i>	178
<i>Helophilus pendulus</i>	13	<i>Rhingia campestris</i>	126
<i>Eristalis intricaria</i>	12	<i>Helophilus pendulus</i>	105
<i>Cheilosia illustrata</i>	10	<i>Sericomyia silentis</i>	86
<i>Episyrphus balteatus</i>	7	<i>Melanostoma scalare</i>	78
<i>Platycheirus manicatus</i>	7	<i>Episyrphus balteatus</i>	74
<i>Platycheirus albimanus</i>	5	<i>Eristalis pertinax</i>	73
<i>Rhingia campestris</i>	5	<i>Platycheirus albimanus</i>	69
<i>Eupeodes corollae</i>	4	<i>Platycheirus manicatus</i>	64
<i>Melanostoma scalare</i>	3	<i>Melanostoma mellinum</i>	63
<i>Sericomyia silentis</i>	3	<i>Volucella bombylans</i>	59

There are over 280 species of hoverflies in Britain of which 81 have been recorded in the Outer Hebrides. Not all species are easy to identify by direct observation, however some have very distinctive characteristics which enables some to be identified from photographs. The key to success is to take a series of images which include a dorsal and side views, the head and face and the wings if possible. The colour and shape of the legs are diagnostic in some species.



Helophilus pendulus. The most common of the *Helophilus* species but care needs to be taken to exclude the other two species. Apart from examining the pattern of yellow marks on the abdomen the colour of the facial stripe and extent of the yellow on the hind tibia need to be confirmed.

Photographs © Chris Johnson



Eristalis intricaria. Female with a distinctive white tail which is reddish-brown in males. Often found around willow flowers in the early spring. A bumblebee mimic.



Syritta pipiens. One of the small dark species which are difficult to identify. However, close inspection will reveal a characteristic enlarged hind femur.



Sericomyia silentis. An easily identifiable wasp mimic.

Although there has been an increase in recording hoverflies, there are still some large gaps in the distribution for even some of the more commonly recorded species e.g. *Rhingia campestris*, *Episyrphus balteatus*, *Eristalis intricaria*, in Harris and Lewis.

Craneflies

There are three families which are commonly known as craneflies: Tipulidae, Limoniidae and Pediciidae, with 74 species included in the Diptera checklist. However, only a small proportion of these are recorded on a regular basis. Until 2019 the annual total of records was less than 30, but this has now increased so that in 2023 there were 99 records and 160 in 2014. This can be attributed to a small number of experienced local recorders increasing their efforts to record and identify this challenging group.

Tipula rufina is one of the most frequently recorded species together with *T. Oleracea*. Both species adopt a similar position when resting on walls with the wings folded. A black stripe running down the side of the thorax in *T. rufina* will separate the two species.



Rhagionidae: Snipeflies

The downlooker snipefly *Rhagio scolopaceus* is recorded more frequently than the black snipefly *Chrysopilus cristatus*. The numbers recorded each year vary, in 2024 there were 15 records of *R. scolopaceus* and 3 of *C. cristatus* contributed by 4 of the most experienced OHBR recorders.

The downlooker snipefly, aptly named as it rests on vertical surfaces looking down, is not difficult to identify. Therefore the relatively small number of annual records may be due to under-recording.



Downlooker snipefly *Rhagio scolopaceus*

Other Families

There are currently records from 56 families in the database, and from 2007 to 2023 there are 27 with less than 10 records. The majority of records are contributed by visiting specialists and experienced local recorders. For the less frequently recorded families, it is usually a combination of chance and curiosity which produces a record and the ability to obtain a suitable photograph or specimen to enable an identification to be made and verified. From time to time this will add a new species to the OHBR Diptera list or confirm a historical record.

Many of the Diptera are difficult to identify by direct observation or from photographs, and it is difficult to find species which are suitable for surveys to encourage general participation.

Generally, dipterists concentrate on identifying adult flies, however, there are some species where the larvae produce leaf mines or galls. This produces an alternative method of increasing our knowledge of species diversity and an effective means of mapping distribution. This method of recording has many advantages, but for some species it is necessary to look at the larva enclosed in the mine or the gall or even attempt to rear it to the adult stage. However, some flies only use a specific plant host or produce very characteristic mines or galls. There are currently 145 records of 22 species of gall midges, and 56 records of 20 species of leaf miners. In 2024 single records of each type were recorded. In the future this could be increased by encouraging participation in this method of recording.



Galls formed by the larvae the gall midge *Dasineura urticae* on common nettle. Last recorded in 2022.



Leaf mine on honeysuckle formed by the larva of *Chromatomyia aprilina*. Last recorded in 2021

Photographs © Christine Johnson

Insects: Hymenoptera

A total of 181 records from 12 families of 42 taxa (some records were only identified to genus) were submitted by 22 recorders. This was a marked decrease in the number of records compared to 2023, which could be attributed to the poor summer weather. There were a number of new taxa added to the Outer Hebrides list, some of which are not currently included in the NBN Scotland Atlas.

Apoidea: Bees

There are 20 species (including two species aggregates) recorded in the OHBR database. The list is dominated by the bumblebees (genus *Bombus*), but also includes 4 species of mining bees (Andrenidae), 2 species of colletes (Colletidae) and 2 Crabronidae taxa (1 species and 1 genus).



Western Honeybee *Apis mellifera*. There are relatively few beekeepers in the islands so encounters with honeybees are unusual.

Photograph © Christine Johnson



Moss Carder *Bombus muscorum*. Particular care has to be taken when recording carder bees as when they become worn late in the summer and the bright orange colour fades they are difficult to distinguish from the common carder (*Bombus pascuorum*).

Photograph © Chris Johnson

Hymenoptera records 2024

	Records	Species
Apoidea (bees)		
Andrenidae	4	1
Apidae	137	8
Colletidae	1	1
Crabronidae	1	1
Vespoidea (Wasps)		
Vespidae	7	2
Formicoidea (Ants)		
Formicidae	1	1
Chrysidoidea (Ruby Wasps)		
Chrysididae	1	1
Cynipoidea (Gall Wasps)		
Figitidae	1	1
Ichneumonoidea (Parasitic Hymenoptera)		
Ichneumonidae	20	17
Braconidae	4	3
Siricoidea (Horntails and Wood Wasps)		
Siricidae	1	1
Tenthredinoidea (sawflies)		
Tenthredinidae	5	4



Heath Bumblebee *Bombus jonellus*. In the Outer Hebrides this species has a buff or reddish tail which makes it easy to distinguish from the garden bumblebee (*Bombus hortorum*) which has a white tail.

Photograph © Chris Johnson

Records of Apoidea in the OHBR dataset

Apoidea Species		2006-2023	2024
<i>Bombus muscorum</i>	Moss Carder	1343	21
<i>Bombus lucorum/terrestris/magnus/cryptarum</i>	White-tailed Bumblebee	724	65
<i>Bombus distinguendus</i>	Great Yellow Bumblebee	469	10
<i>Bombus pascuorum</i>	Common Carder	301	18
<i>Bombus hortorum</i>	Garden Bumblebee	290	6
<i>Bombus jonellus</i>	Heath Bumblebee	251	6
<i>Bombus magnus</i>	Northern White-tailed Bumblebee	143	
<i>Bombus cryptarum</i>	Cryptic Bumblebee	9	
<i>Bombus bohemicus</i>	Gypsy Cuckoo Bee	7	1
<i>Bombus terrestris</i>	Buff-tailed Bumblebee	6	
<i>Bombus lucorum/terrestris</i>		1	
<i>Apis mellifera</i>	Western Honey Bee	3	5
<i>Lasioglossum albipes</i>	Bloomed Furrow Bee	3	
<i>Nomada marshamella</i>	Marshams's Nomad Bee		1
<i>Andrena ruficrus</i>	Northern Mining Bee	11	
<i>Andrena tarsata</i>	Tormentil Mining Bee	8	
<i>Andrena clarkella</i>	Clarke's Mining Bee	4	4
<i>Andrena coitana</i>	Small Flecked Mining Bee	2	
<i>Andrena scotica</i>	Chocolate Mining Bee		4
<i>Colletes floralis</i>	Northern Colletes	262	1
<i>Colletes succinctus</i>	Heather Colletes	23	
<i>Mellinus arvenis</i>	Field Digger Wasps	2	
<i>Ectemnius</i>			1

Three new records of Apoidea species added to the Outer Hebrides list in 2024.

The records of chocolate mining bee (*Andrena scotica*) and the Marshams's nomad bee (*Nomada marshamella*) were both observed in Stornoway in May 2024. This nomad bee is kleptoparasitic, laying its eggs in the burrows made by *A. scotica*.

After the identification of *A. scotica* was confirmed it was discovered that there was a record in the literature from Barra of *A. scotica* which had been overlooked as it was under the old name of *Andrena jacobii*.

The third new record was of an *Ectemnius* species. A solitary wasp which excavates its nest in wood.

Ichneumonidea: Parasitic Wasps

A total of 26 records from 22 taxa were submitted by six recorders in 2024 and included species not previously found in the islands. Parasitic wasps can be challenging to identify and although there are 225 records comprising 80 taxa (some only identified as genus) they are recorded in very small numbers.

The *Trybliographa* species is particularly interesting as it may be an undescribed species. These tiny wasps are parasites of Diptera and lacewing larvae.



Enicospilus ramidulus. A nocturnal species that is attracted to light and often found in moth traps.
Photograph © Chris Johnson

Taxa	Records 2024
Ichneumonidae	
<i>Agrothereutes abbreviatus</i> *	1
<i>Banchus volutatorius</i>	1
<i>Cidaphus atricillus</i>	2
<i>Enicospilus ramidulus</i>	2
<i>Eridolius hofferi</i> *	1
<i>Homotherus locutor</i> *	1
<i>Ichneumon melanotis</i> *	1
<i>Ichneumon oblongus</i>	1
<i>Ichneumon primatorius</i>	2
<i>Iseropus stercorator</i>	1
<i>Itoplectis aterrima</i> *	1
<i>Lissonota</i>	1
<i>Netelia testacea</i>	1
<i>Ophion inclinans</i>	1
<i>Pimpla flavicoxis</i>	1
<i>Stenichneumon culpator</i> *	1
<i>Xenolytus</i>	1
Brachonidae	
<i>Dacnusa areolaris</i> *	1
<i>Homolobus infumator</i>	1
<i>Zele albiditarsus</i>	2
Chrysididae	
<i>Chrysis</i>	1
Figitidae	
<i>Trybliographa</i> *	1

* Taxa not previously recorded in the Outer Hebrides

Other Families: Wasps, Ants

Taxa	Records 2024
Vespidae: Wasps	
<i>Ancistrocerus oviventris</i>	3
<i>Dolichovespula sylvestris</i>	4
Formicidae: Ants	
<i>Myrmica ruginodis</i>	1
Tenthredinidae: Sawflies	
<i>Dolerus aericeps</i>	1
<i>Hemichroa australis</i> *	1
<i>Nematus septentrionalis</i>	2
<i>Tenthredo atra</i>	1
Siricidae: Wood Wasps	
<i>Urocerus gigas</i>	1
* Species not previously recorded in the Outer Hebrides. Larvae feed on alder leaves.	

Generally the records from these families are based on casual observation, and the number of records and species recorded is modest.

OHBR database 2009-2023

Vespidea: 126 records of 8 species

Formicidea: 275 records of 5 species (*Myrmica ruginodis*). The large number of records can be attributed to a research survey from 2012-2017.

Tenthredinidea: 147 records of 27 species. This includes larvae and gall forming species.

Siricidea: 4 records of Greater Horntail Wasp (*Urocerus gigas*)



Ancistrocerus oviventris, one of the two species of mason wasps regularly recorded. Note that the abdominal stripes are white rather than yellow in the species found in the Outer Hebrides.

Photograph © Chris Johnson



Tree Wasp *Dolichovespula sylvestris*.

Photograph © Chris Johnson



Dark Sawfly *Tenthredo atra*.

Photograph © Chris Johnson



Willow Gall Sawfly *Eupontania pedunculi*. The larvae of this sawfly form galls on the leaves of eared willow *Salix aurita*. Photograph © Christine Johnson

Insects: Coleoptera

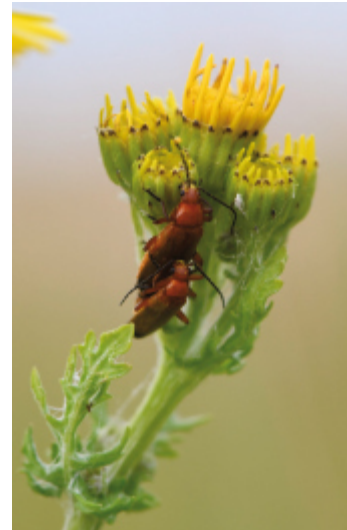
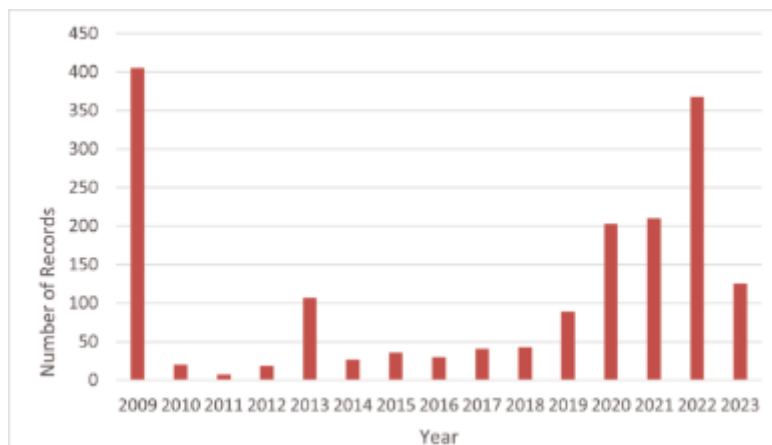
Family		Species 2024	Records 2024	Records 2000-2023
Staphylinidae	Rove beetles	12	14	275
Carabidae	Ground beetles	6	11	571
Silphidae	Burying beetles	4	24	219
Scarabaeidae	Dung beetles	4	23	132
Chrysomelidae	Leaf beetles	4	5	326
Curculionidae	Weevils	3	7	93
Cantharidae	Soldier beetles	2	10	81
Dytiscidae	Diving beetles	2	2	58
Scirtidae	Marsh beetles	1	1	13
Ptiliidae	Feather-wing beetles	1	1	2
Nitidulidae	Sap beetles	1	1	8
Geotrupidae	Dor beetles	1	2	30
Coccinellidae	Ladybirds	1	7	66
Leiodidae	Round fungus beetles	1	1	13
Dascillidae	Orchid beetles	1	1	5
Meloidae	Oil beetles	1	1	7
Apionidae	Seed weevils	1	1	11
Elateridae	Click beetles	1	2	35

The beetles fauna of the Outer Hebrides includes both terrestrial and freshwater species and includes over 480 species. The OHBR database currently holds 1738 records of 288 species submitted between 2000 and 2024. In 2024, 114 records of 47 species were submitted by 20 local naturalists.

The number of records varies annually and in peak years such as 2009, 2013 and 2022 indicates the presence of visiting entomologists. However from 2019 to 2022 two of the resident naturalists conducted a survey at two sites in South Uist using pitfall traps. This work has been temporally discontinued but will be resumed.

The beetles of the islands have been well studied and in addition to the OHBR data there are records from two major studies on the NBN Scotland Atlas. The Water Beetle Survey of Britain and Ireland contains 1,285 records from 1914 to 1994 and the Machair Life dataset contains 9,515 records collected from 2010 to 2013. An analysis of this data and information contained in the scientific literature will help consolidate the species list for the islands. However, the value of recording at the local level throughout the year, even on a more casual basis should not be discounted.

Annual number of records submitted to OHBR 2009-2023



Red Soldier Beetle *Rhagonycha fulva*. Usually recorded as mating pairs and one of the most frequently recorded species.



Nicrophorus humator, the Black Sexton Beetle is one of the large beetles which is attracted to light and can be found in moth traps.

Photographs © Christine Johnson

In 2024 two new species were added by one of the experienced OHBR recorders to the islands' species list. *Catops fuliginus* is a small beetle no more than 4.5mm long which feeds on subterranean fungi or carrion. There are no recent records, but it is listed by Waterson (1981) as recorded on St Kilda and Lewis. The second species, *Olophrum piceum* is a small rove beetle which has not previously been recorded here, but is present on Skye.

There are many beetles which are distinctive and can be recorded by direct observation and can be identified from photographs. Some species are also attracted to light and can be found in moth traps.

Casual records are biased towards the larger, distinctive beetles or species which arouse curiosity. Nevertheless these records are valuable additions to the database and add to our distribution maps.



11-spot Ladybird *Coccinella undecimpunctata*. This is the only ladybird species commonly recorded in the islands.



Carabus granulatus. A large and distinctive ground beetle



Hairy Rove Beetle *Creophilus maxillosus*. A large and distinctive carnivorous rove beetle



Geotrupes stercorarius. One of the two large, black, iridescent dor beetles recorded in the islands.



Black Marram Weevil *Otiorhynchus atroapterus*. Found in dunes where the larvae feed on the roots of marram grass.

Photographs © Christine Johnson

Insects: Trichoptera

Caddisflies

Family	Species	Records 2012-2023	Records 2024
Beraeidae	<i>Beraea maurus</i> *	1	
Hydropsychidae	<i>Hydropsyche siltalai</i>	1	1
Lepidostomatidae	<i>Lepidostoma hirtum</i>	9	2
Leptoceridae	<i>Athripsodes aterrimus</i> *	1	
	<i>Athripsodes cinereus</i>	10	1
	<i>Ceraclea fulva</i>	22	1
	<i>Mystacides azurea</i>	8	3
	<i>Oecetis furva</i>	18	
	<i>Oecetis lacustris</i> *	4	
	<i>Oecetis ochracea</i>	37	5
	<i>Triaenodes bicolor</i>	3	
Limnephilidae	<i>Anabolia nervosa</i> *	2	
	<i>Halesus radiatus</i>	12	3
	<i>Limnephilus affinis</i>	85	12
	<i>Limnephilus auricula</i> *	2	
	<i>Limnephilus elegans</i> *	62	11
	<i>Limnephilus griseus</i>	1	2
	<i>Limnephilus hirsutus</i>	23	1
	<i>Limnephilus lunatus</i>	62	17
	<i>Limnephilus luridus</i> *	8	6
	<i>Limnephilus marmoratus</i>	172	35
	<i>Limnephilus pati</i> *	6	1
	<i>Limnephilus sparsus</i>	87	14
	<i>Limnephilus vittatus</i> *	7	1
	<i>Stenophylax permistus</i>	42	10
Philopotamidae	<i>Philopotamus montanus</i>	3	
Phryganeidae	<i>Agrypnia varia</i>	27	7
	<i>Phryganea grandis</i>	41	7
Polycentropodidae	<i>Cyrnus flavidus</i>		1
	<i>Plectrocnemia conspersa</i>	12	19
	<i>Polycentropus flavomaculatus</i>	14	1
	<i>Polycentropus irroratus</i>	5	1
Psychomyiidae	<i>Tinodes maclachlani</i>	2	
	<i>Tinodes waeneri</i>	37	3
Sericostomatidae	<i>Sericostoma personatum</i>	3	
	Total	946	165

* *Beraea maurus*, *Athripsodes aterrimus*, *Oecetis lacustris*, *Limnephilus luridus* and *Limnephilus vittatus*

Recorded in the 1960s and then not until this new study began in 2012.

* *Anabolia nervosa*

First recorded in the Outer Hebrides in 2015

* *Limnephilus auricula*.

Records from St Kilda from 1883 to 1906. Subsequently recorded in Lewis and South Uist in 2022.

* *Limnephilus elegans*.

Three records from Lewis in 1900 and 1901, and not recorded until 2019 in South Uist.

* *Limnephilus pati*

Found as bycatch at a South Uist moth trapping site in 2020. It was thought to be extinct and had never been found in Scotland before.

It has subsequently been found close to its last known locations in East Anglia.

Caddis or sedgeflies are moth-like terrestrial insects with two pairs of membranous hairy wings. They have aquatic larvae which live underwater in cases or tubes of silk reinforced by gravel, sand or plant debris. The adults are attracted to light and can be sampled using light traps.

The OHBR database currently holds 1111 records of 35 species. The majority of these records (94%), and 29 species been recorded at a single location since 2019 as bycatch in a moth trap. Each year between 150 and 200 records of 22-25 species are fully documented and submitted to OHBR.

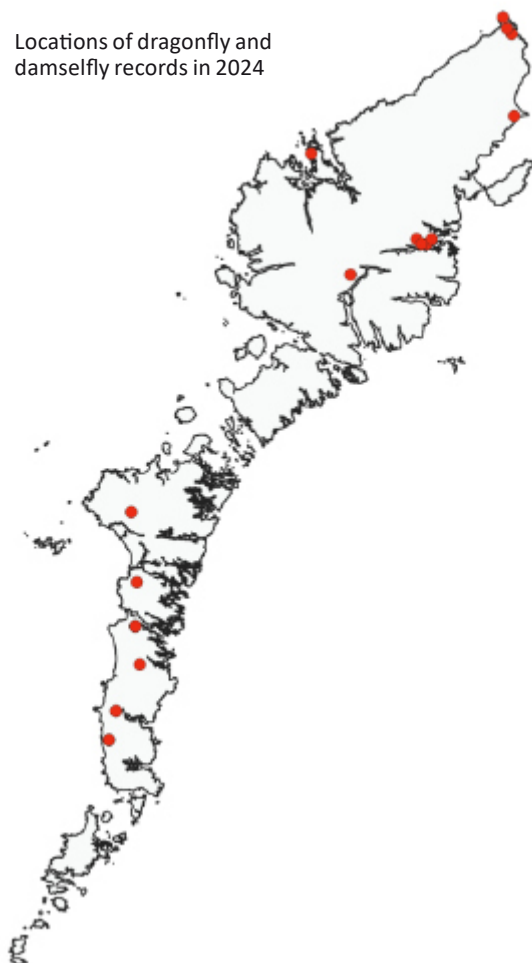
This is an outstanding example of a biological recording project, meticulously operated producing high quality data. Moreover the data is being carefully analysed and when published will make an important contribution towards our knowledge of Trichoptera in the Outer Hebrides.

We hope that this study will encourage other moth trappers to take an interest in the caddisflies and other insects which they find in their traps and add value to their recording efforts.

Insects: Odonata

Drangonflies & Damselflies

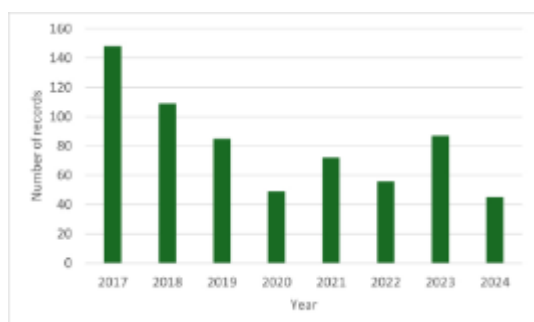
Locations of dragonfly and damselfly records in 2024



Common Blue Damselfly *Enallagma cyathigerum*.
Photograph © Chris Johnson

Species	Common Name	Records 2023	Records 2024
<i>Aeshna juncea</i>	Common Hawker	7	1
<i>Enallagma cyathigerum</i>	Common Blue Damselfly	15	4
<i>Ischnura elegans</i>	Blue-tailed Damselfly	17	6
<i>Pyrhosoma nymphula</i>	Large Red Damselfly	20	12
<i>Lestes sponsa</i>	Emerald Damselfly	1	
<i>Libellula quadrimaculata</i>	Four-spotted Chaser	5	1
<i>Sympetrum danae</i>	Black Darter	17	10
<i>Sympetrum striolatum</i>	Common Darter	5	11
Total		87	45

Annual number of records. OHBR data



The cool wet summer weather appears to have a detrimental affect on the number of Odonata records submitted. This was probably due to a combination of reduced activity in both dragonflies and the recorders. There were no records of emerald dragonflies and only single records of common hawker and four-spotted chaser.

Only two species, black and common darters, which are active in the late summer were observed in numbers similar to the annual average.

Insects: Hemiptera

The Hemiptera are a large and varied order of insects and generally under-recorded. It includes some familiar groups such as aphids, pond skaters, cuckoo-spit insects, shieldbugs and a variety of leaf hoppers and capsid bugs.

They are not systematically recorded, and the number of records received each year is small and eclectic. In 2014 13 records of 10 species were submitted

On the NBN Atlas there are 342 records of aquatic Hemiptera collected in the islands from 1900 to 1999 by the Aquatic Heteroptera Recording Scheme. This is an important source of information which supplements the OHBR data.



Pond skater *Gerris* sp. Photograph © Christine Johnson

Hemiptera records 2014

Family	Species		Records	Species
Cixiidae	<i>Cixius</i>	Lacehopper	1	1
Miridae	<i>Closterotomus norwegicus</i>	Potato Capsid	1	1
Cicadellidae	<i>Eupteryx cyclops</i>	Leafhopper	1	1
Nabidae	<i>Nabis</i>	Damsel Bug	1	1
Aphrophoridae	<i>Philaenus spumarius</i>	Cuckoo-spit	2	1
Lygaeidae	<i>Scolopostethus decoratus</i>	Ground bug	1	1
Lygaeidae	<i>Scolopostethus thomsoni</i>	Ground bug	2	1
Miridae	<i>Stenodema (Brachystira) calcarata</i>	Two-spine Grass Bug	1	1
Aphididae	<i>Tuberolachnus (Tuberolachnus) salignus</i>	Large Willow Aphid	1	1
Veliidae	<i>Velia (Plesiovelia) caprai</i>	Water Cricket	2	1
Total			13	10

Hemiptera records in OHBR database 2010-2023

Family		Records	Species
Aphrophoridae	Spittlebugs, Froghoppers	60	2
Corixidae	Water Boatmen	52	12
Miridae	Capsid and Mirid Bugs	48	16
Psyllidae	Plant Lice	37	3
Aphididae	Aphids	28	10
Gerridae	Pond Skaters	17	4
Lygaeidae	Seed Bugs	9	4
Triozidae	Plant Lice	9	1
Notonectidae	Backswimmers	8	3
Veliidae	Water Crickets	8	2
Cicadellidae	Leafhoppers	7	4
Anthocoridae	Flower Bugs	4	1
Nepidae	Water Scorpions	3	1
Cixiidae		2	2
Nabidae	Damsel Bugs	2	2
Pentatomidae	Shieldbugs	2	2
Saldidae	Shore Bugs	2	3
Tingidae	Lacebugs	2	2
Delphacidae		1	1
Total		301	75



Cuckoo-spit produced by *Philaenus spumarius*. Photograph ©Debbie Storrow.

Insects: Other Orders

The number of records submitted of species from the minor orders varies from year and can be boosted by an OHBR survey e.g. common earwigs in 2021. The majority of records are from direct observation or insects attracted to light during moth trapping.

In 2024 26 records from 6 species were submitted by 8 recorders. There were no records of bristletails, alderflies, grasshoppers or fleas.

Only a small number of species are recorded on a regular basis. These are species which are relatively easy to find and identify such as common earwig, mottled grasshopper, and sea bristletail. Apart from encouraging natural curiosity, an increase in the numbers of species recorded in this group may depend on the moth trappers taking a greater interest in the insect bycatch.

Order	Species		Records 2024	Species 2024	Records 2012-2023	Species 2012-2023
Dermaptera	<i>Forficula auricularia</i>	Common Earwig	16	1	137	1
Ephemeroptera	<i>Caenis luctuosa</i>	Angler's Curse	4	1	38	4
Neuroptera	<i>Micromus variegatus</i>	Brown Lacewing	1	1	7	3
Plecoptera	<i>Nemoura cinerea</i>	Stonefly	2	1	28	2
Psocodea	<i>Chilenocaecilius ornatipennis</i>	Barkfly	2	1	13	4
	<i>Lepinotus patruelis</i>	Barkfly	1	1		
Archaeognatha		Bristletails			33	1
Megaloptera		Alderflies			3	3
Orthoptera		Grasshopper			39	2
Siphonapteraa		Fleas			5	3
Total			26	6	303	23



Mottled grasshopper *Myrmeleotettix maculatus*. One of the 3 species of Orthoptera recorded in the islands. Currently there are no records from north Harris or Lewis. Photograph © Chris Johnson



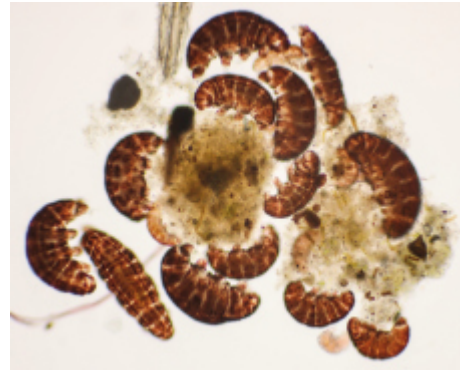
Yellow Sally *Isoperla grammatica*, one of the 3 species of stoneflies recorded in the islands. Photograph © Chris Johnson

Invertebrates

Invertebrates: Other Phyla

It was a disappointing year for recording invertebrates, with the lowest number of records submitted since 2012. It is probable that the weather depressed recording activity, particularly as there were only two records of marine invertebrates submitted (both jellyfish: mauve stinger and moon jellyfish). It was clearly not a year for beachcombing.

A total of 52 records from 30 species were submitted by 9 recorders. They were predominantly spiders and harvestmen with a smaller number of snails and slugs. Even amongst the small number of records, there were two interesting additions to the Outer Hebrides species list: *Philodina roseola* (a tardigrade or water bear) and two millipedes *Ophiulus pilosus* and *Platybunus pinetorum*.

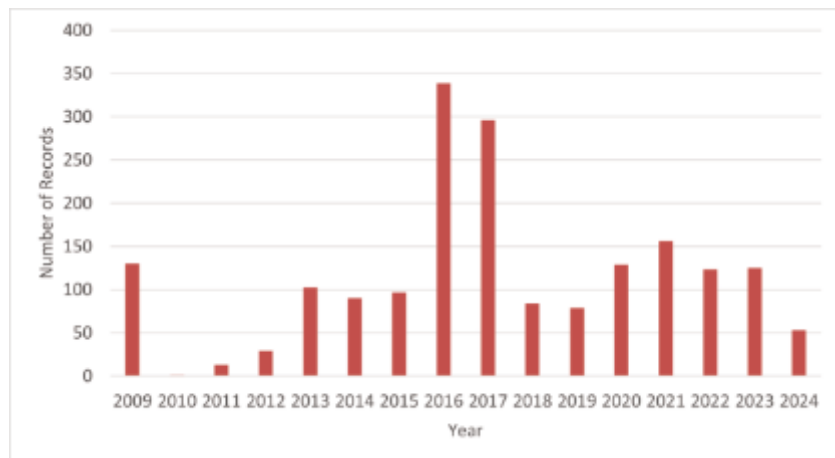


Philodina roseola, a tardigrade. Found in a water sample from a bird bath.
Photograph © Chris Johnson

Invertebrate records submitted in 2024

Phylum		Records	Species
Mollusca	Slugs, Snails, Bivalves etc.	10	6
Arthropoda	Spiders, Woodlice, Millipedes, Mites, Crabs	39	19
Cnidaria	Jellyfish, Corals	2	2
Annelida	Segmented Worms	1	1
Rotifera	Rotifers	1	1
Tardigrada	Water Bears	1	1
Total		52	30

The peak numbers of invertebrate records was in 2016 and 2017, when two local recorders became interested in marine invertebrates. Subsequently the number of records of marine taxa has declined and now comprises casual records from local recorders walking on the beach.



Walking the tide line can be an interesting way of recording marine invertebrates.
Photograph © Christine Johnson

Number of records in the OHBR database 2009 to 2023

Phylum	Terrestrial	Marine	Freshwater	Total
Mollusca	517	274	5	796
Arthropoda	398	168	1	567
Cnidaria		250		250
Echinodermata		46		46
Amoebozoa			10	10
Cercoza			2	2
Annelida	20	9		39
Ctenophora		12		12
Porifera		17		17
Bryozoa		11		11
Chordata		18		18
Rotifera			13	13
Platyhelminthes	1	11		12
Nematoda		12		12
	936	828	31	1805

Two phyla dominate the list of records in the non-insect invertebrate section of the OHBR database. Both groups contain roughly equal numbers of records from terrestrial and marine habitats and include species which are both relatively easy to identify by direct observation and from photographs.

There is also a diverse number of species to be found in the garden - spiders, woodlice, millipedes, earthworms, slugs and snails. Recording invertebrates in the vegetable patch may not have the charisma of beachcombing, but it can be as interesting.



Galls on sycamore leaves caused by the mite *Aceria pseudoplatani*.
Photograph © Christine Johnson



Garden Snail *Cornu aspersum*
Photograph © Christine Johnson



Pointed Snail *Cochlicella (Cochlicella) acuta*
Photograph © Chris Johnson

Vertebrates

Vertebrates

There were 48 records of 15 species submitted by 14 local recorders in 2024. This is a notable decline in the number of records from 2023 and 2022 (58% and 72% respectively) with an associated decrease in the number of species reported.

There were no records of palmate newts, slow-worms, red deer or seals. There are no organised surveys of vertebrates in progress, although we encourage the local community to record toads, frogs and newts and Invasive Non-Native Species (INNS).

Vertebrate recording in 2024, number of records and species

	Species		Records	Species
Actinopterygii	<i>Gasterosteus aculeatus</i>	Three-spined Stickleback	1	1
Elasmobranchii	<i>Dipturus intermedia</i>	Flapper Skate	2	1
Amphibia	<i>Rana temporaria</i>	Common Frog	8	1
	<i>Bufo bufo</i>	Common Toad	4	1
Mammalia	<i>Lutra lutra</i>	Eurasian Otter	3	1
	<i>Mustela putorius subsp. furo</i> *	Feral Ferret	3	1
	<i>Erinaceus europaeus</i> *	West European Hedgehog	3	1
	<i>Sorex minutus</i>	Pygmy Shrew	5	1
	<i>Lepus timidus</i>	Mountain Hare	3	1
	<i>Oryctolagus cuniculus</i>	European Rabbit	2	1
	<i>Apodemus sylvaticus</i>	Wood Mouse	1	1
	<i>Microtus agrestis</i>	Field Vole	4	1
	<i>Rattus norvegicus</i>	Brown Rat	5	1
	<i>Delphinus delphis</i>	Common Dolphin	2	1
	<i>Tursiops truncatus</i>	Bottle-nosed Dolphin	2	1
		Total	48	15

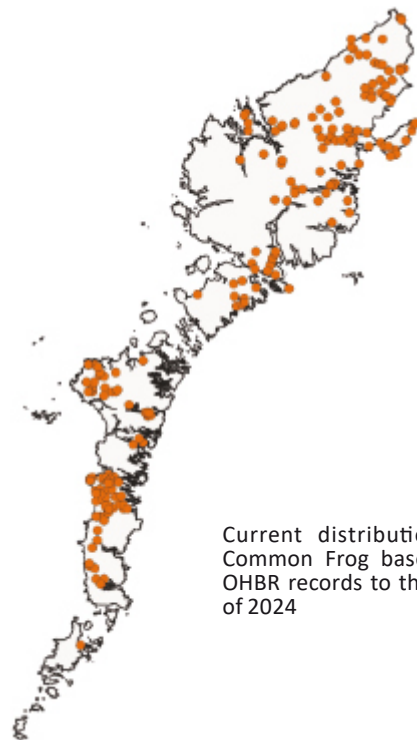
*Feral Ferret and Hedgehog are introduced and designated as Invasive Non-native Species (INNS). Common Frog and Toad are also recent introductions but not classified as invasive and harmful to the environment.



Common Frog *Rana temporaria*.
Photograph © Chris Johnson

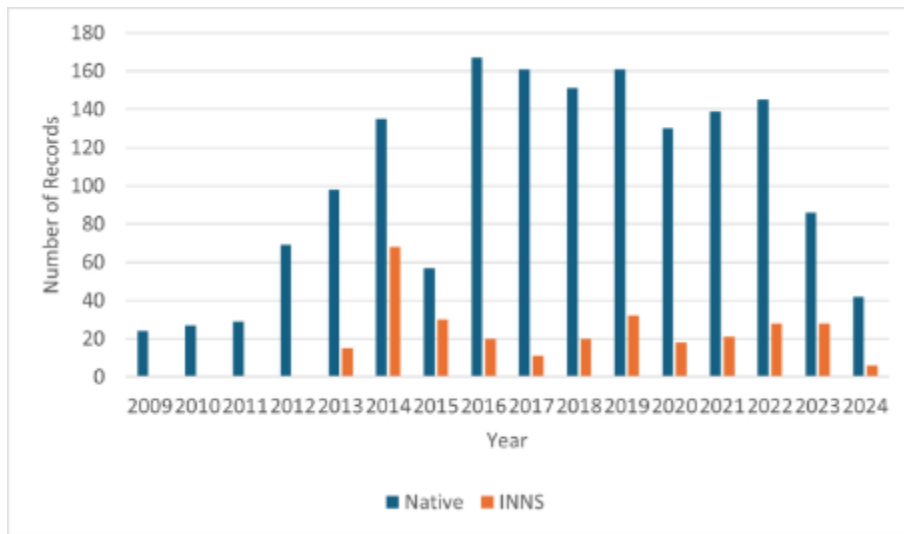
A survey of common frogs (adults and spawn) was one of the first popular surveys organised by OHBR. In 2011 there were only a small cluster records around Stornoway and by 2023 the distribution map extends from Barra in the south to the Butt of Lewis in the north. There are still some interesting gaps, so perhaps we need a concerted effort to discover whether these areas are devoid of frogs.

Unfortunately we have not had a similar success with either common toads or palmate newts.



Current distribution of
Common Frog based on
OHBR records to the end
of 2024

Records of vertebrate species in OHBR database 2009 to 2024



Native species: includes Common Frog, Common Toad, Palmate Newt and Turtles.
INNS: feral ferret and hedgehog

Records of vertebrates are mainly by direct observation and in most cases not based on organised surveys. There has been a decline in the number of records since 2022 and this is probably due to a lack of public engagement. In recent years the majority of records of marine mammals have been collected by the Hebridean Whale and Dolphin Trust through their Shorewatch project. Other records of marine mammals can still be submitted to OHBR.

Not all vertebrate species are easy to survey and the only way to maintain or expand the flow of annual records has to be through enhanced public engagement.



Humpback Whales *Megaptera novaeangliae*. Observed off Tiumpthead, Lewis by an OHBR recorder contributing to the Shorewatch project. Photograph © Steve Dodd.

Fungi, Lichens & Allies

Fungi, Lichens and Allies

The OHBR dataset contains records of fungi and several taxonomic groups which belong to Chromista and Protozoa and are traditionally included in the fungi. They represent less than 1% of the total number of records and are included for completeness.

The identification of fungi and lichens often requires lengthy microscopic and chemical analysis. Therefore not all records are received within the reporting year and cannot be included in the annual report.

In 2024 we received 1720 records which included 1699 records collected between 2015 and 2022 from a long term study of the micro-fungi associated with plants which began in 2005. These records are available on the NBN Atlas and a full species list will be placed on the Outer Hebrides Fungi website.

	Taxon		Records 2005-2024
Fungi			
	Chytridiomycota	Micro-fungi which produce flagellate zoospores	24
	Zygomycota	Pin moulds	16
	Ascomycota	Cup and flask fungi, lichens	3084
	Basidiomycota	Mushrooms, bracket, puffballs, corals, rusts and smuts	4524
Chromista			
	Oomycota	Includes downy mildews and blister rusts	44
	Cercozoa Phytophycea	Endoparasites of plants, animals and fungi	3
Protozoa			
	Amoebozoa Myxomycota	Slime moulds	21

The number of records of macro-fungi and lichens collected by local recorders has slowly declined since 2020 as the two recorders who specialised in fungi have been working on other taxa. Therefore in recent years the records have been restricted to species which can be identified from photographs and without microscopy.

Examples of fungi recorded in 2024



Yellow Brain *Tremella mesenterica*.
Photograph © Chris Johnson



Dryad's Saddle *Polyporus squamosus*
Photograph © Chris Johnson



Yellow Fieldcap *Bolbitius titubans*
Photograph © Chris Johnson



Dune Cup *Peziza ammophila*
Photograph © Ruth Hamilton

Fungi recorded in 2024 by local recorders

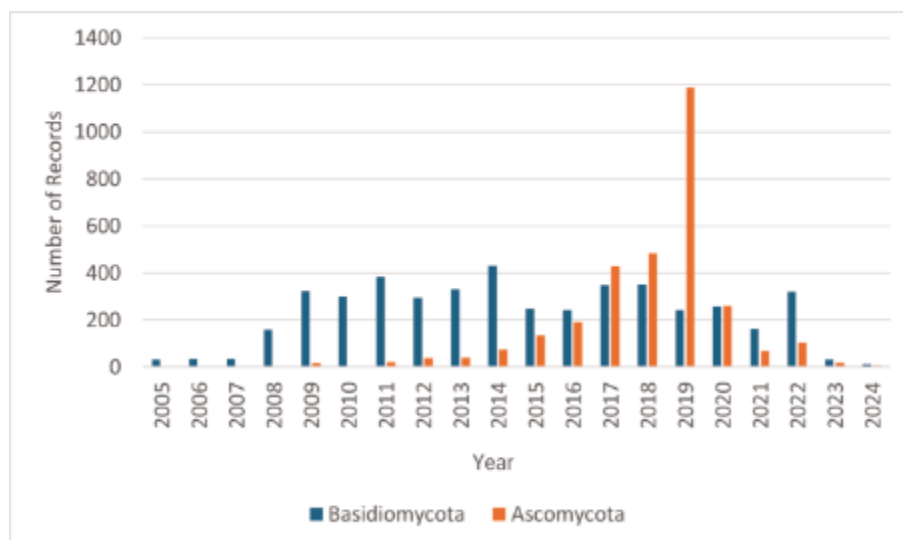
Phylum	Family	Species	
Ascomycota	Erysiphaceae	<i>Podosphaera clandestina</i> var. <i>cydoniae</i> *	
	Parmeliaceae	<i>Bryoria fuscescens</i>	Lichen
	Parmeliaceae	<i>Hypogymnia physodes</i>	Dark Crottle
	Parmeliaceae	<i>Parmelia sulcata</i>	Netted Shield Lichen
	Ramalinaceae	<i>Ramalina farinacea</i>	Lichen
	Pezizaceae	<i>Peziza ammophila</i>	Dune Cup
Basidiomycota	Agaricaceae	<i>Coprinus micaceus</i>	Glistening Inkcap
	Agaricaceae	<i>Lepiota boudieri</i> *	Girdled Dapperling
	Bolbitiaceae	<i>Bolbitius titubans</i>	Bolbitius titubans
	Clavariaceae	<i>Ramariopsis pulchella</i> *	Lilac Coral
	Hygrophoraceae	<i>Hygrocybe coccinea</i>	Scarlet Waxcap
	Polyporaceae	<i>Polyporus squamosus</i>	Dryad's Saddle
	Phragmidiaceae	<i>Phragmidium mucronatum</i> *	Rose Rust
	Pucciniaceae	<i>Puccinia urticata</i>	Nettle Clustercup Rust
	Tremellaceae	<i>Tremella mesenterica</i>	Yellow Brain
	Urocystidaceae	<i>Urocystis ranunculi</i>	
Chytridiomycota	Synchytriaceae	<i>Synchytrium taraxaci</i>	
Amoebozoa	Pysaraceae	<i>Craterium minutum</i>	Slime Mould
* Species not previously recorded in the Outer Hebrides All the species are illustrated on the Outer Hebrides Fungi website			

In common with other OHBR datasets, the fungi records show annual patterns of variation which are influenced by the work of a visiting specialist or the activity of local recorders. The fungi data are slightly different as the recording of plant micro-fungi is primarily based on an annual surveys by a visiting recorder. In contrast the large number of Ascomycota records from 2017 to 2020 is due of a combination of lichen surveys by a visiting lichenologist and a local recorder.



Nettle Cluster Cup Rust
Puccinia urticata. A rust found on common nettles that can be reliably identified by direct observation or from a photograph.
Photograph
© Chris Johnson

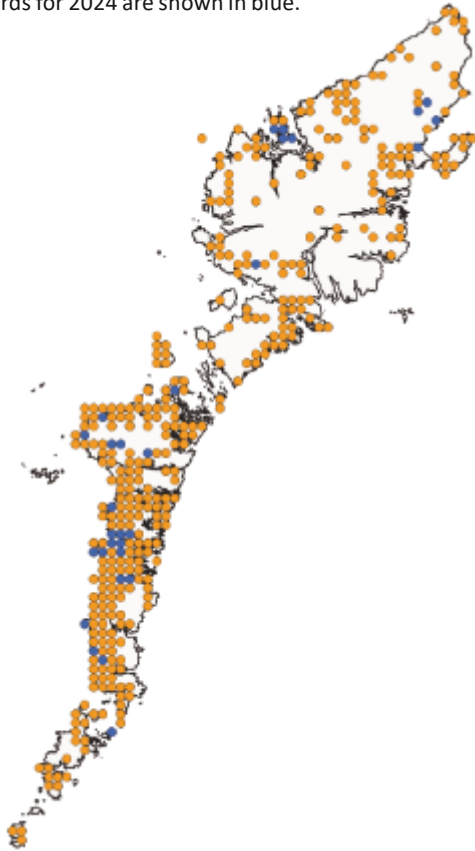
Annual number of fungi records (excluding the small number of chytrids and Oomycota)



Flowering Plants, Ferns and Allies

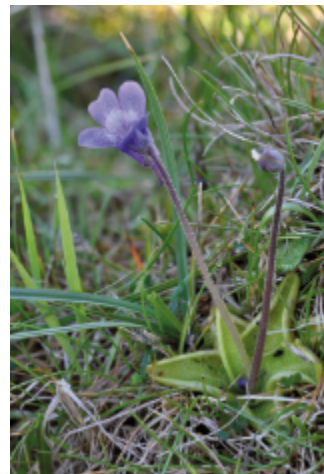
Plants: Flowering Plants, Ferns, Club Mosses, Horsetails and Quillworts

Distribution of flowering plants, ferns and allies based on OHBR records 2009-2024 per tetrad. Records for 2024 are shown in blue.



In 2024, 259 records of 66 species from 48 sites were submitted by 14 recorders. This included a systematic survey of one site in South Uist, which produced 210 records of 44 species.

In the islands botanical records collected either from organised surveys or from more casual observation of interesting plants. A photograph on social media can sometimes provide a useful record of an unusual or rarely recorded species.



Common Butterwort *Pinguicula vulgaris*. One of the 9 species of insectivorous plants found in the islands.



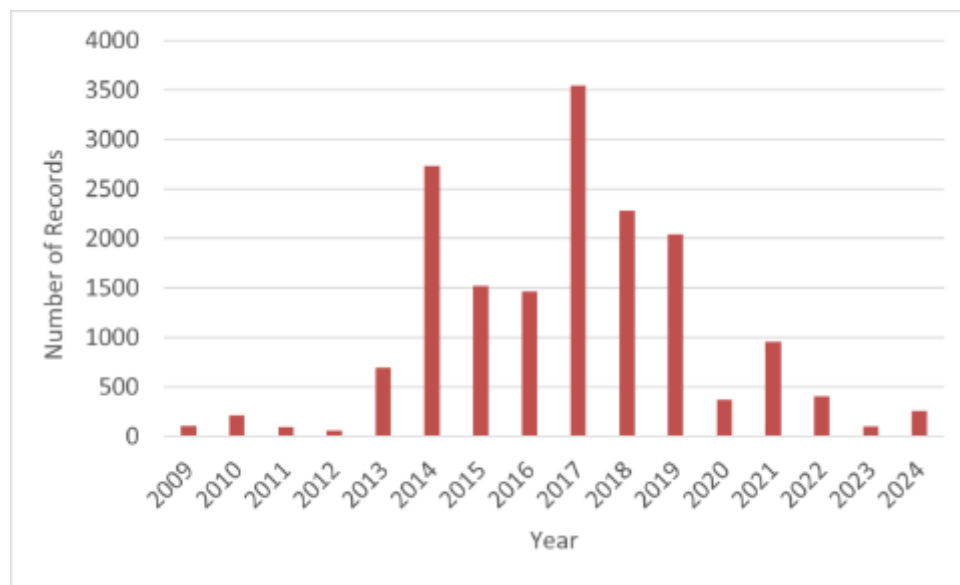
Pyramidal orchid *Anacamptis pyramidalis*. Part of a new colony discovered during a croft survey on South Uist in July 2024.

Photographs © Christine Johnson



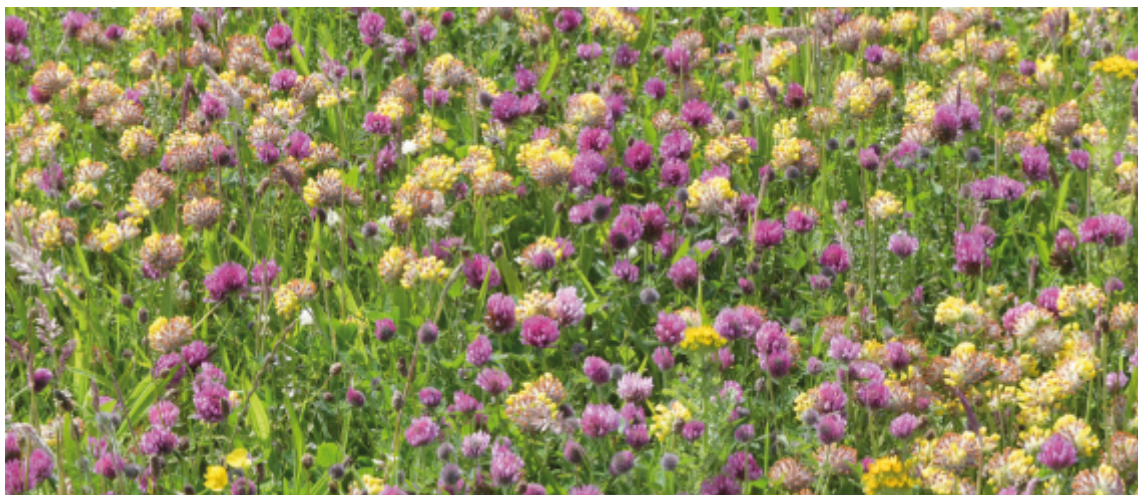
Water Lobelia *Lobelia dortmanna*. Aquatic plants are recorded as part of a freshwater algae survey.

Annual number of records of flowering plants, ferns and allies in the OHBR database



Botanical recording in the Outer Hebrides has a long history and mapping the distribution of the islands plants continues with biannual surveys by the BSBI county recorder. With the exception of 2019, all the records have been submitted by local recorders. There has been a decline in botanical recording in recent years as OHBR currently has no specialist botanical recorders.

OHBR has always had a close relationship with the BSBI county recorder and as part of a data sharing agreement, the OHBR botanical data is managed by the BSBI. Currently, species distribution maps for the Outer Hebrides flora are available on the Online Atlas of the British and Irish Flora (<https://plantatlas2020.org/>).

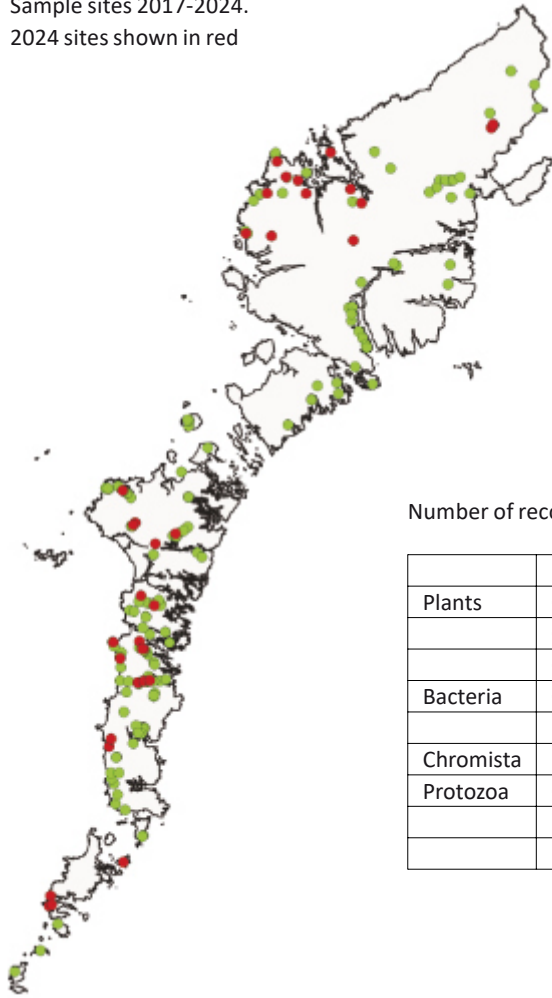


Red clover *Trifolium pratense* and kidney Vetch (*Anthyllis vulneraria*) in unimproved grassland on South Uist croft. The summer of 2024 was notable for the quality of the flora and the abundance of clovers and vetches. Photograph © Christine Johnson

Freshwater Algae and Allies

Freshwater Algae, Photosynthetic Bacteria, Chromista and Protozoa

Sample sites 2017-2024.
2024 sites shown in red



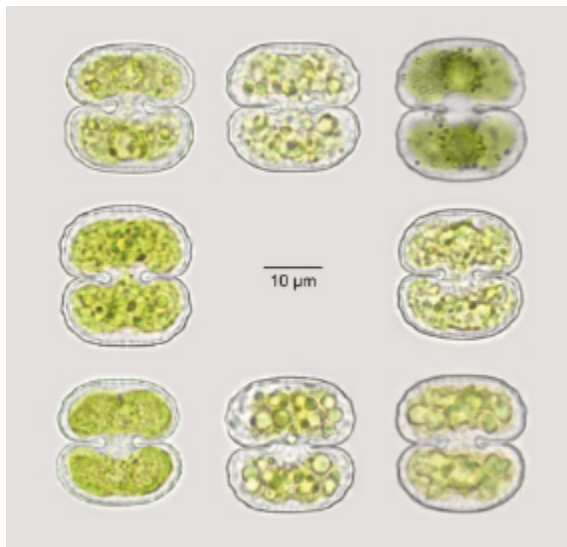
The freshwater algae survey has been in progress since 2017 and has examined water samples from machair and moorland lochs, peaty pools, ephemeral winter lakes, *Sphagnum* bogs and peat cuttings and from moss on wet rock faces, throughout the islands.

The focus of the survey is the microscopic green algae commonly referred to as desmids (Closteriaceae, Desmidiaceae, Mesotaeniaceae Peniaceae and Zygnemataceae families in the phylum Charophyta). The water samples usually contain other freshwater organisms: cyanobacteria, microscopic and filamentous green algae, chromists (including red and brown algae, flagellates) and photosynthetic protozoa. These are identified and recorded as time permits.

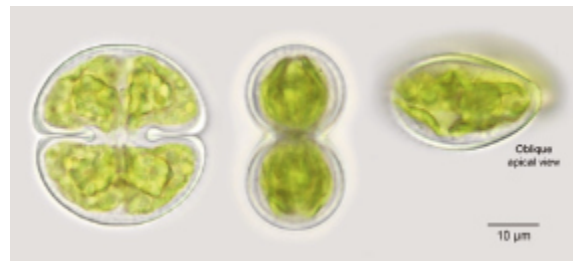
Number of records and species submitted to OHBR in 2024

	Phylum		Records	Taxa
Plants	Charophyta	Desmids	708	256
	Charophyta	Other families	1	1
	Chlorophyta	Green algae	39	30
Bacteria	Cyanobacteria	Blue-green bacteria	12	10
	Proteobacteria		1	1
Chromista	Myxozoa	Dinoflagellates	2	1
Protozoa	Ochrophyta	Brown algae	9	4
	Euglenozoa		2	2
		Total	774	305

In 2024, descriptions of 60 new desmid taxa (species and varieties) were added to the Outer Hebrides Algae website. These had not previously been recorded in the Outer Hebrides, or they had previously been recorded and their taxonomic status had changed either to a new species or variety. In addition there were a small number of species which could not be identified and await further analysis. There is a considerable amount of research and consultation with specialists required before the description of a new or particularly rare species can be published.



Cosmarium tasiussaigense was found in flooded machair in 2020. It is the first record since the species was originally found on Tasiusaq Island in the Upernavik Archipelago, Greenland in 1989. The description was published in 2024.



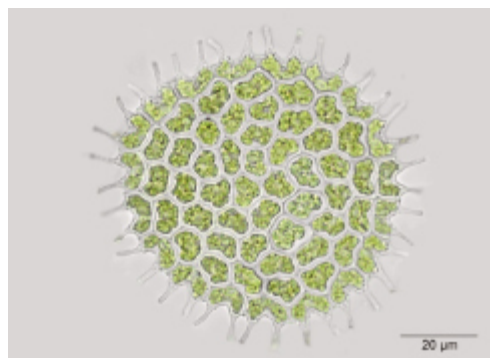
Cosmarium pankakoskiiforme was found in a sample from a loch in North Uist and was identified as an undescribed species. The description was published in 2024.

Photo-micrographs © Chris Johnson

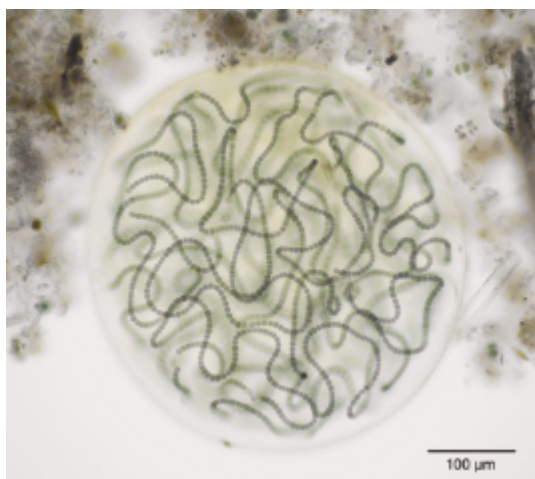
It is currently difficult to establish the status of freshwater algae, cyanobacteria and allied photosynthetic micro-organisms because of the paucity of information available either on the NBN Atlas or other sites. This is exemplified by the freshwater euglenoid protozoa where there are currently 106 records of 46 taxa (identified at species level) for the whole of the UK on the NBN Atlas. The situation is compounded by the fact that the UK species index for freshwater algae is over 20 years old. Many of the species recorded in the Outer Hebrides are not currently on the list either because they are new to the UK or their names have changes due to taxonomic revisions. Therefore the list of OHBR dataset on NBN does not include all the species recorded in the islands, although they are all illustrated and described on the Outer Hebrides Algae website.



Aegagropila brownii grow very slowly on the bed of the lochs and form balls of algal cells as they roll around with water movement.



Pseudopediastrum boryanum freshwater alga which forms a spherical colony.



Nostoc caeruleum var. *planctonicum* a cyanobacterium



Phacus elegans a euglenoid protozoa.

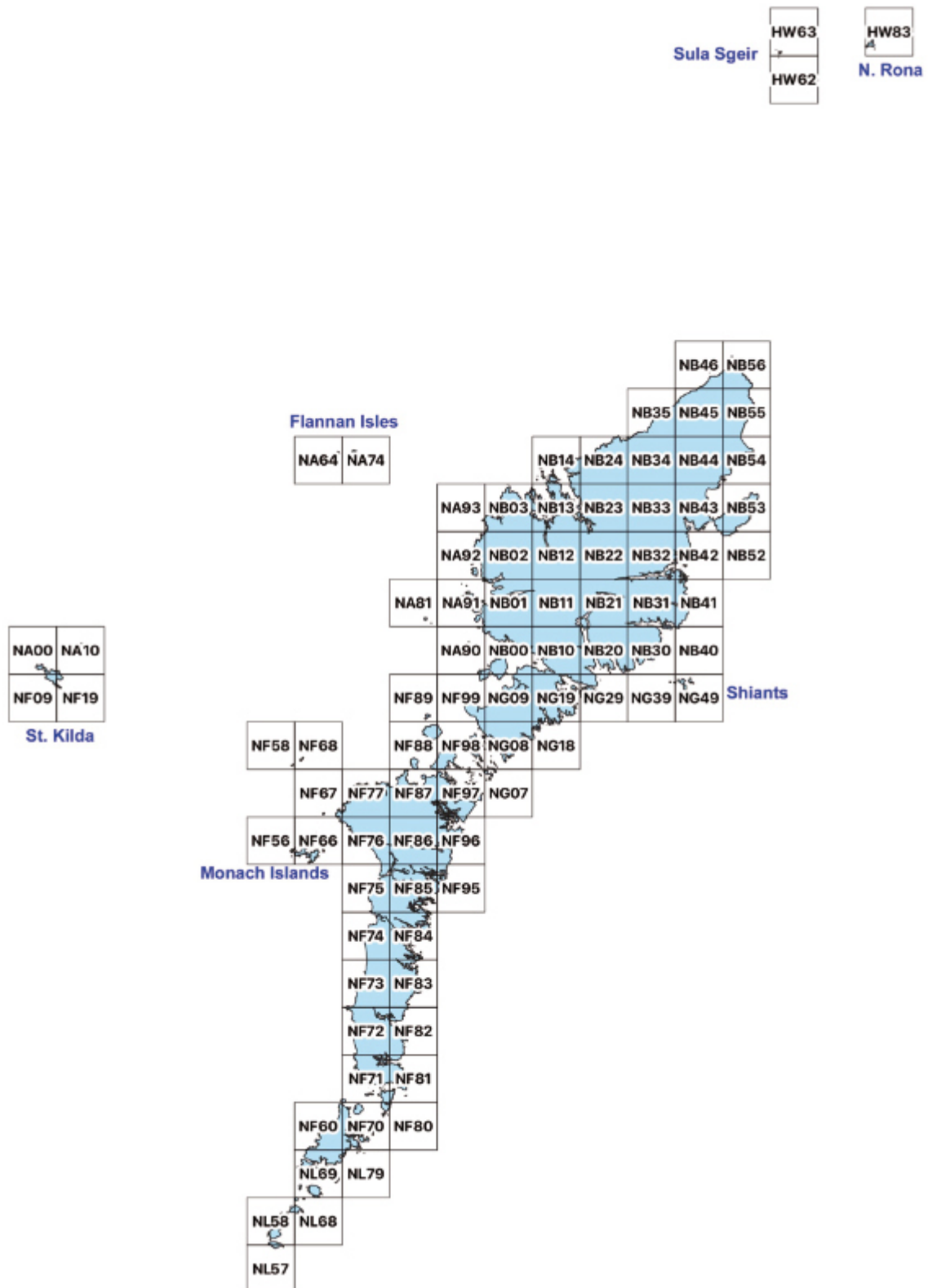


Shallow peaty pool in North Uist. A typical sample site for freshwater algae.

Photographs © Christine Johnson Photo-micrographs © Chris Johnson

VC110 10km grid squares

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





Ferns, mosses and flowering plants waiting to be discovered



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