

Orkney Field Club

Founded in 1959

Aim: To encourage the study and conservation of the natural and cultural heritage of the County



The Orkney Field Club is a registered Scottish charity, No. SC 012459

SUBSCRIPTIONS (2012) are Adults £10, Family £15, Concessionary £6, Student £3. Non-members attending outdoor meetings shall pay for temporary membership at the rate of £2 for individuals (adults only) and £3 for families.

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CLUB NIGHTS are usually held in Kirkwall on the third Friday of each month except in summer, with talks, demonstrations and discussions. Non-members welcome. Meetings are advertised in *The Orcadian* under the 'Out & About' section, on **Radio Orkney** and on the Club's **Orkney Communities** web site (<http://www.orkneycommunities.co.uk/fieldclub>).

FIELD MEETINGS are held frequently, chiefly during the summer, at a wide range of locations, including the outer isles.

ORKNEY FIELD CLUB was a founding partner of the Orkney Biodiversity Record Centre (OBRC), located in the Orkney Library & Archive, which holds records of Orkney species, sites, habitats etc in a database. This valuable data is available to all interested parties. Records are submitted to OBRC by a network of County Recorders who encourage amateurs to participate in the collection of data. The Club promotes and is actively involved in conservation by means of tree planting, reserves, study and fieldwork.

NEWSLETTERS are normally sent out to members three times per year and are available on the Club's website. They give members news, information and a programme of events.

RESOURCES Members have access to the Club's slide collection and a comprehensive range of reference books and other equipment, including microscopes. Contact the OBRC for details (<http://www.orkneylibrary.org.uk/obrc>).

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Introduction

Roger Davies

This year's bumper edition of the Field Club Bulletin seems more than ever a celebration of the great diversity of Orkney's wildlife. Perhaps like many others, I came to the Club from an interest in birdwatching, and it has been one of the joys of membership to have the opportunity to learn more about a great range of life-forms. That 'variety of life' has been at the heart of our recent programme of activities, and it is good that these pages should have a similar theme. Substantial articles of record across taxonomic groups are interspersed with accounts of particular species, and I hope that all readers will find much of interest!

Almost half of the Bulletin is given over to Recorders' reports on events in their specialist areas during 2011, and readers may be aware that the Club has been trying to promote the 'recording habit', running with the support of the Editor of *Living Orkney* a series of monthly articles illuminating particular species and encouraging the wider public to send in sightings.

The Club was founded to promote the study and conservation of the natural heritage of the County, and alongside our wide-ranging programme of indoor and outdoor events we have been active on conservation issues, for example responding (although not always successfully!) to policy consultation and to planning applications which affect sensitive habitats. One of the difficulties for the Club in years to come may be striking the right balance in terms of how active to be in such fields – almost unlimited time could be spent... There is also more practical work to be done, for example at the part of the RSPB's Durkadale plantation which the Club manages, or on our own 'Thomas Wilson Plot' in Orphir.

We do not act alone, and indeed an issue for the Club is to work out how far to drive activity ourselves and how far to concentrate on providing support to the initiatives of others, given the wide range of folk active in the study of Orkney's wildlife. In particular this year I should like to salute the work done by the Scapa Flow Landscape Partnership Scheme, which has enabled much that would not otherwise have happened; and also to celebrate the remarkable and sustained influence of Elaine Bullard, remembered below by Prof Robert Crawford.

In Memoriam: the late Dr Elaine R. Bullard M.B.E

(1915-2011)

Elaine Bullard, Founder Member and President of Orkney Field Club died on the 10th of August at the age of 96. Elaine devoted the greater part of her life to recording Orkney's botanical heritage and raised a new awareness of the importance of its conservation; Orkney has been fortunate to have had many distinguished botanists who have painstakingly explored its many islands and meticulously investigated and recorded its varied plant life. Few if any however, can match the thoroughness and detail with which Elaine explored and recorded the Orkney flora for over half a century, personally visiting every possible habitat that might yield more information, not just for Orkney but also for neighbouring Caithness. From the

tops and gullies of Hoy, to all the geos, inlets, marshes, bogs, and lochs, Elaine searched out their plants, recording not just the species, but also all the possible hybrids and any other novelties that might have escaped the notice of less gifted, or less observant naturalists. Weather was seldom an obstacle, as she travelled around Orkney and beyond in an old Reliant three-wheeler, onto which she had constructed a makeshift tent. The Botanical Society of the British Isles could not have had a more active and efficient Official Recorder, a post she held with great credit and distinction for 46 years!

Elaine came to Orkney shortly after the war and worked as a milk recorder. However at the age of 45 she retired from this type of recording to devote herself to an interest she said she had since she was a 10-year-old, namely recognising plants and naming them accurately. As she herself said. "If you can't name a thing accurately how you can go back to it again and tell somebody else anything about it?" An outstanding feature of Elaine's botanizing was her energetic and unrelenting capacity for exploration. Taking cognisance of the fact that plant life of Orkney might suffer from insular isolation she made a particular point of comparing Orkney habitats with those in Caithness.

Her painstaking field studies went beyond merely recording and locating species but involved also revisiting and assessing change. This aspect of her work has assumed ever-greater importance in recent times, as changes in land-use and climate variation repeatedly present problems for conservation and biodiversity. Consequently, this extra dimension that was added to many of her records has given them a very special ecological value. One particular study of *Primula scotica* carried out at Yesnaby with Hugo Shearer involved revisiting marked locations several times a season for over 16 years. Such a record was invaluable in providing an understanding of the vicissitudes of modern life for Scotland's only endemic species and provided information that was invaluable for evaluating a conservation policy for this threatened plant.

As a founder of Orkney Field Club in 1959 and its President since 1993, and present when it celebrated its 50th birthday, Elaine played an active role in inspiring community activities in Field Studies. Members of the Club were actively helped and encouraged to engage, not just in recording but in taking part in conservation projects such as planting native trees in Durkadale and helping to control invasive species from taking over and reducing the biodiversity of vulnerable natural habitats. Her regularly updated species checklists remain an invaluable legacy. The fact that she had no formal training in Botanical Science is in her case irrelevant. Over the years she has been an inspiration to visiting academics from numerous universities and institutions as well as students and their teachers and enriched their knowledge and understanding of Botany in a northern climate. Her chapter on vegetation in 'The Natural History of Orkney' edited by R. J. Berry remains a milestone in the natural history of Orkney; and her checklist of the flowering plants and ferns of Orkney, first published in 1972 (and frequently updated), is still an essential reference for anyone interested in the Orcadian flora.

Elaine's contribution to Orkney botany has been widely recognised - both locally and further afield. She was made an MBE in 1981 for services to nature conservation in Orkney. In 2007 Heriot-Watt University awarded her an honorary doctorate in recognition of her contribution to botany. Her passing has deprived us all of an unparalleled and probably irreplaceable font of botanical knowledge and Orkney of a unique and pioneering enthusiast for its natural heritage.

R.M.M. Crawford
17th August 2011

Orkney's shores are rich in seaweed, but the presence of 'true' vascular (or flowering) plants in the seas around Orkney is much less well-known. Around Orkney, the **Eelgrass** *Zostera marina* is present on sand and muddy sand in sheltered water from around low water to depths of four or five metres. The narrow-leaved 'variety *angustifolia*', in the past sometimes regarded as a full species, is confined to shallower water and has only been recorded in one or two places.

Eelgrass has long slender leaves and flowers that emerge from a tall shoot. Collectively the plants form dense, meadow-like beds that can have important ecosystem functions, such as sediment capture, nutrient sequestration and oxygenation. They also provide habitat for many marine invertebrates, are a nursery for juvenile fish and in some places are important feeding grounds for migrating ducks and geese. If all of that wasn't enough to confirm their ecological importance, both species of seahorse found in UK waters – the **Short-snouted Seahorse** *Hippocampus hippocampus* and the **Spiny Seahorse** *Hippocampus guttulatus* live in *Zostera* beds. Seahorse records are largely restricted to the South of England – although the Seahorse Trust does show distribution of the spiny seahorse to be as far north as the Shetland Islands.

In the 1920s and 1930s a wasting disease resulted in large-scale reduction of beds worldwide, from which they have never fully recovered. Some studies suggest that the fungus or slime mould that causes the disease persists in populations at low levels but plants are not affected unless stressed by other environmental factors. Other environmental risks to beds today include pollution, excessive nutrient enrichment, sedimentation and physical damage.

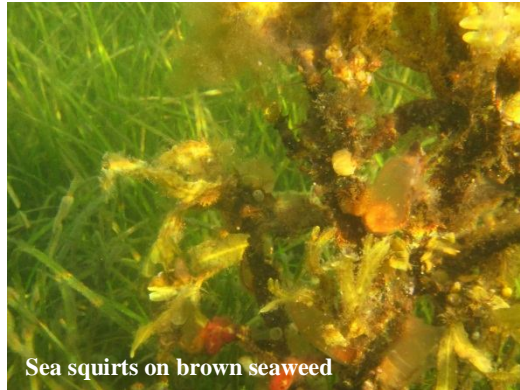
In 2010, SULA Diving were commissioned by Scottish Natural Heritage to undertake transect surveys of known *Zostera* beds to refine a computer model predicting the distribution of Eelgrass, created by Dr Emma Jackson (Marine Biological Association UK). This survey concentrated on sites at Tingwall (Rousay), Wyre, Woodwick (Evie), Wasswick (Rendall), Widewall Bay (South Ronaldsay), Deer Sound and East Weddell Sound (Burray). The model was then used to identify other sites around Orkney where conditions were suitable for Eelgrass to grow. SULA Diving undertook a further survey to confirm presence or absence in these locations. Their report shows that although many of the predicted sites brought back negative results, new sites were identified at the Finstown Ouse and on the north shore of Wyre, where Eelgrass was growing in association with maerl. Further positive results were returned at the Bay of Isbister (Rendall), Longhope, Burray, Graemsay, Rousay Sound, Gairsay Sound, Mill Bay (Stronsay) and Veantrow Bay (Shapinsay).

The Scapa Flow Landscape Partnership Scheme funded some of this research, and has also provided funds for a small ecosystem survey of the habitat. This has been undertaken by Jenni Kakkonen and Katy Beaton at the OIC Marine Services Department. Their work focuses on two of Orkney's Eelgrass beds; one at Finstown, an easily accessible bed with diverse marine life, and another at Widewall Bay which is one of the most extensive in Orkney. The study involves the identification and recording of microscopic fauna and flora within sediment cores and on plant leaves taken from each bed. Cores and leaves have been collected from diving trips and work is now underway on identifying and recording the vast number of animals and algae present in each sample. The project is due for completion later in the year.

To complement the laboratory study, we are recording the larger animals and algae present at different sites in Orkney. This is to be done in a more qualitative way, by recording what is seen on snorkeling trips to various sites. At present we have visited four very different locations; Finstown, St Peter's Pool (Deerness), Widewall Bay and Tingwall. Even at first glance we have seen that although there are obvious similarities between the beds, there are certainly visible differences too. However, it should be noted that our dives and snorkels are by no means definitive and, as yet we have not accounted for seasonal changes that may occur.

Finstown

Of the four beds we have visited, Finstown appears to be one of the most diverse. The bed begins only metres from the slipway in the centre of Finstown. At first small plants with slender leaves appear in patches but as you head out into deeper water the bed is dense and the plants are larger with wider leaves. Seasquirts are common in this bed, on the Eelgrass itself as well as on brown seaweeds growing within the bed, with *Ciona intestinalis* and **Gas Mantle Ascidian** *Corella parallelogramma* being among those identified.



Sea squirts on brown seaweed



Snakeslock anemone on eelgrass (Finstown)

This is the only bed (of the four) where we have found **Snakeslock Anemones** *Anemonia viridis*. Small individuals are abundant, living attached to the leaves of the Eelgrass.

Fifteen-spined Sticklebacks *Spinachia spinachia*, **Two-spotted Gobies** *Gobiusculus flavescens*, juvenile **Pollack** *Pollachius pollachius* and juvenile wrasse species were among the fish spotted. **Common Starfish** *Asterias rubens* and **Bloody Henry Starfish** *Henricia oculata* were both seen frequently – with many tiny individuals on the eelgrass leaves and on brown seaweed. **Great Scallop** *Pecten maximus*, **Queen Scallop** *Aequipecten opercularis* and **Common Whelk** *Buccinum undatum* were among the molluscs recorded, whilst a **Stalked Jellyfish** *Lucernariopsis campanulata* was spotted on seaweed nearby the bed during one dive.

St Peter's Pool

This bed was notable for one creature in particular, the mollusc *Akera bullata*. When snorkeling to this bed, we saw the animal in ever increasing densities on the sediment and the bed itself is dominated by them. At first glance it is perhaps not the most charismatic creature. However, disturbance causes it to swim away using fleshy protrusions called parapodia. They give the appearance of a cape, and the animal moves in pulsating bursts through the water – quite a spectacle! **Shore Crab** *Carcinus maenas*, **Common Whelk**, **Two-spotted Goby** and

Long-spined Sea Scorpion

Taurulus bubalis were among the animals also recorded on this snorkel, but the character of the bed was really defined by the abundance of this one species.

Widewall Bay

This bed is the largest but at first glance seemed less abundant in terms of sea life. However, as you can see from the species list in Jenni's article on the Seasearch course, the combined records from six divers and snorkelers show it is full of life.



Akera bullata swimming

Tingwall Bay

This bed is set apart from the others by its association with the coralline algae, maerl. In spring, before algal growth began to dominate the maerl bed, the pink maerl and green Eelgrass made for a truly beautiful underwater 'vista'. Spider crab (species not identified), **Peacock Worm** *Sabella pavonina*, **Two-spotted Goby** and **Snake Pipefish** *Entelurus aequoreus* were among the animals seen within these habitats.

Over the coming months, we plan to revisit these sites and explore some of the other beds around Orkney too. Anyone who would like to join us for a snorkel is welcome to come along.

Nectar-robbing Bumblebees

John Crossley

Anyone who has closely examined flowers with deep corollas or spurs may have noticed small puncture holes near the base where the nectar is located, and may also have seen insects, almost always bumblebees, visiting these holes. They would thus appear to be taking their reward for visiting flowers without benefitting the plants by pollinating them. This nectar-robbing is a well-known and studied phenomenon, of particular interest because it appears to represent a breakdown of an evolved mutually beneficial relationship between plants and insect pollinators, which may in turn have negative consequences for the reproduction of many plants. The literature on this is abundant and I do not propose to refer to it at length, just to relate some of my own local observations in the hope that others will find it interesting too and notice things that I have not already.



White-tailed Bumblebee
Bombus lucorum agg.
robbing **Meadow Vetchling**
Lathyrus pratensis

Very many species of plants are robbed, especially the clover, dead-nettle and figwort families, but many others too. I have seen just one species (or aggregate of three critical species) engaging in primary robbery in Orkney, the **White-tailed Bumblebee** *Bombus lucorum* agg. Primary robbers are the ones that make the first hole; secondary robbers come along afterwards and use the ready-made hole. I have seen just two species (in addition to *B. lucorum* agg.) engaging in secondary robbery in Orkney, the **Heath Bumblebee** *B. jonellus* and the **Honeybee** *Apis mellifera*, but I have read that other species including wasps and beetles do it too. Only bees of the short-tongued bee species, which are unable to reach the nectar in many flowers by legitimate means, nectar-rob: those with long tongues that can reach the nectar from the 'entrance' to the flower do not, even when a hole has already been punched in the corolla – or that's what I have seen and I have not come across contrary evidence in the literature.

The obvious question of what effect this behaviour has on plant pollination has been studied a good deal, and all studies appear to show that the effect is, surprisingly, neutral or only slightly negative. Many suggestions have been put forward as to why this should be. Experimental work carried out by Morris (1996) suggested two: firstly that much successful pollination was carried out by bees alternating between gathering pollen and robbing nectar, secondly that plants with many punctured flowers received more insect visits than those without and that this greater number of visits at least partially compensated for the poor rate of pollination per individual visit.

Another question recently studied is whether bumblebees learn this behaviour from other bumblebees (Leadbeater & Chitka, 2008). The answer seems to be no, or only indirectly. Some individual bees learn to primary-rob by themselves, others never do, while others learn to do it from visiting existing puncture holes. No one seems to have yet studied whether the behaviour of bumblebees of the same species varies from place to place, and yet this something I have noticed: the *Fuchsia* flowers in my garden in South Ronaldsay are never punctured but the ones in Stromness are.

References

Leadbeater, L. & Chitka, L. 2008. Social transmission of nectar-robbing behaviour in bumble-bees. *Proceedings of the Royal Society – Biological Sciences* - vol. 275 No. 1643 1669-1674

Morris, W.F. 1996. Mutualism denied? Nectar-robbing bumblebees do not reduce female or male success of bluebells. *Ecology* 77:1451-1462.

Fan Mussel *Atrina pectinata*

Penny Martin

An extremely rare fan mussel was discovered in Scapa Flow in early September. The 30cm specimen was spotted by Seasearch volunteer divers, in a horse mussel bed by one of the wrecks. The **Fan Shell** or fan mussel (*Atrina pectinata* – formerly *A. fragilis*) is Britain's biggest shell, reaching 48cm in length, and lives on the seabed down to a depth of at least 400m. Underwater it resembles a huge mussel, and lives with its narrow end embedded up to three quarters of its length in mud or gravelly sand. It is a filter feeder, extracting food particles from the water column through specialized adaptation of the gills.

Prior to this, only fourteen other giant fan mussels had been reported by divers to the Marine Conservation Society, who co-ordinate the Seasearch dive programme, over the past two decades from around the United Kingdom, including three from Scotland.

Historical records from Roman times reveal that fanshells used to be harvested in the Adriatic for their 'byssus threads', which were woven by the ancient Romans in order to make the most valuable and finest silks.

The Fan Shell is protected under UK law (the Wildlife and Countryside Act) from being intentionally taken from its natural habitat in coastal waters, but accidental capture in fishing gear is permitted.

Chris Wood, UK and Ireland Seasearch Co-ordinator, who was part of the team that found and photographed the living specimen in Scapa Flow, said

"The fan shell is another example of something, once abundant in UK coastal waters, which has declined rapidly since the advent of industrial trawl fishing. It is now so rare that it is one of very few marine species protected throughout the UK from being intentionally or recklessly killed, injured or taken. It is also one of the priority features in the different processes to identify new marine protected areas currently underway in Scotland, England and Wales" ..



Orkney records

There is an interesting reference in Robert Rendall's "*Mollusca Orcadensia*" that Fan Mussels were very rare even in 1960.

A specimen was found on 22/03/1951 in Brings Deep, Scapa Flow and subsequently taken to Stromness Museum.

2 specimens (6 and 6.5 inches long) were found on 23/02/1937 off Copinsay and another 8 inches long 26/10/37, also off Copinsay, all received by Aberdeen trawlers

1 specimen measuring 12.5 inches was obtained from a seine fishing net about 15 to 20 miles off Noup Head, Westray on 03/09/1956.

Bedstraw Hawkmoth

Chris Booth

From egg to pupa

The **Bedstraw Hawkmoth** *Hyles galii* is a scarce but regular migrant to the British Isles from Southern and Eastern Europe. In some years caterpillars are found, but this moth has never become established in Britain. It is thought that this is due to climatic conditions; the caterpillars thrive in the warm sunny continental summers and the pupae can survive the cold dry winters rather than the damp British climate.



In good migration years small numbers of Bedstraw Hawkmoths reach Orkney, so I was particularly pleased on 15th August to find one in our moth trap in the garden. I placed it in a container to photograph it and left it there during the day, releasing the moth at dusk. On examining the container later I was surprised to find that the moth had laid a number of eggs.

These were pale green in colour, almost oval in shape and just over 1mm in length. The question then was would the eggs be fertile and would it be possible to rear any caterpillars if the eggs hatched?

On 22nd August, the first caterpillars appeared with hatching continuing on 23rd. The caterpillars were just over 2mms in length, light green in colour with a darker tail horn. The main food plants include the Bedstraws *Galium sp.* **Rosebay Willowherb** *Chamerion angustifolium*, Fuchsia *Fuchsia magellanica* and as we had a Fuchsia bush in the garden I decided this was the most convenient food plant on which to feed the caterpillars.





On 30th August the largest ones had their first skin change and were still light green in colour but with longitudinal yellow lines on their backs and a dark tail horn. By the time they had completed their fourth and final skin change they were splendid looking caterpillars,

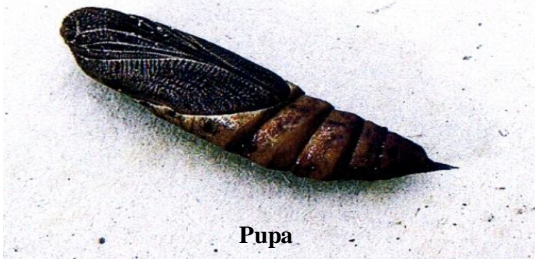
black with large yellow spots along the sides of the body, a red head and tail horn. Some caterpillars were more advanced than others and the first buried itself ready for pupation on 24th September when it was 8cms in length with others following, on different days, up to the 30th September. Altogether 11 caterpillars reached maturity and pupated successfully.

I then left them undisturbed to pupate and unearthed them after 4 weeks to transfer them to a box for the winter. Hopefully the moths will emerge in July 2012.



Although, over the years, I have reared a number of different Hawk moth species from eggs to adult moths this was my

first chance to try to rear Bedstraw Hawkmoths. In fact the only time I had seen a caterpillar of this species was in September 2003 when a nearly full grown specimen was brought to me by Ross Flett, who had found it feeding on Willowherb in his garden on South Ronaldsay. This caterpillar subsequently pupated and emerged as a moth on 25th July the following year.



Last year I was lucky enough to be asked to record the bryophytes (mosses and liverworts) of the small area known as Happy Valley in Stenness, on behalf of the Scapa Flow Landscape Partnership. I am not an expert bryologist, but I know most of the common ones and was reasonably confident that I could identify almost all the rest with sufficient homework (peering down a microscope): as it happened I did in the end get some very expert help.

Happy Valley is celebrated for its mature trees, but also supports other habitats including many stone walls, shaded earth banks, some semi-improved grassland and recently cultivated ground, a small area of heathland and the burn of Russadale-Housequoy. Mosses and liverworts occur in all of them: some of these can grow in a variety of habitats and are common and widespread, while others are more specialised and more or less confined to particular habitats, such as trees. Many of the trees have a thick covering of epiphytic mosses and liverworts, which helps greatly to make the woodland an attractive place. However, because Happy Valley is plantation and the trees are relatively young compared to those of most natural woodlands, they do not support the variety of species that may be found in those much older habitats. Almost all the species found in the various habitats are common in Orkney, with the notable exception of some of those found on patches of bare soil in the field that was cultivated two years ago: many of these are exceedingly small, ephemeral species that are probably overlooked rather than really unusual, but they do include one that has not been seen in Orkney before.

I first visited the site in early summer, then twice more later in the year, adding a few species to the list on each of the subsequent visits. Finally on 3 October I visited with a group led by the national expert and author on mosses and liverworts, Nick Hodgetts, who found yet more cryptic species growing on bare soil.

Trees

Many of the trees, more especially those on the north-eastern side of the wood, sheltered from westerly winds and shaded from sunlight falling on the southern side, have patches of mosses, and less frequently, liverworts. Elder, Sycamore, Goat Willow, Wych Elm and Wild Cherry have more than Beech, Ash and conifers, which are often more or less bare. Most of the mosses on branches and upper trunks of trees are of the ‘cushion’ types, able to withstand periodic drying out; the commonest species by far is **Frizzled Pincushion** *Ulota phyllantha*. Feather mosses are mainly on tree bases. Elder trees are exceptional in supporting creeping or ‘feather’ mosses as well as the cushion types in abundance: trunks and lower branches are often quite covered. Two small liverwort species, **Forked Veilwort** *Metzgeria furcata* and **Bluish Veilwort** *M. violacea*, occur quite frequently, in a thin layer on the bark of several tree species. *M. violacea* (it goes bluish only when preserved dry) is frequent in Britain but this is only the third record for Orkney.



Epiphytes on Elder



Figure 1 Frizzled Pincusion *Uloa phyllantha* on sycamore

Trees –continued

Cushion mosses	
<i>Orthotrichum affine</i>	Wood Bristle-moss
<i>Uloa phyllantha</i>	Frizzled Pincusion
<i>Uloa crista</i>	Crisped Pincusion
Feather mosses	
<i>Amblystegium serpens</i> var. <i>serpens</i>	Creeping Feather-moss
<i>Rhynchostegium confertum</i>	Clustered Feather-moss
<i>Kindbergia praelonga</i>	Common Feather-moss
<i>Homalothecium sericeum</i>	Silky Wall Feather-moss
<i>Isothecium myosurioides</i> var. <i>myosurioides</i>	Mouse-tail Moss
Liverworts	
<i>Metzgeria violacea</i>	Bluish Veilwort
<i>Metzgeria furcata</i>	Forked Veilwort

Walls

Shaded, damp walls are also moss-covered. Drier places, such as the roof of the house, are less so. Species comprise both feather and cushion mosses. The bright, golden-green shoots of **Silky Wall Feather-moss** *Homalothecium sericeum* are common in many places, also the duller, shaggy fronds of **Mouse-tail Moss** *Isoetecium myosurioides*.



Cushion mosses	
<i>Barbula convoluta</i>	Lesser Bird's-claw Beard-moss
<i>Didymodon rigidulus</i>	Rigid Beard-moss
<i>Didymodon fallax</i>	False Beard-moss
<i>Tortula muralis</i>	Wall Screw-moss
<i>Bryum capillare</i>	Capillary Thread-moss
Feather mosses	
<i>Rhynchostegium confertum</i>	Clustered Feather-moss
<i>Kindbergia praelonga</i>	Common Feather-moss
<i>Homalothecium sericeum</i>	Silky Wall Feather-moss
<i>Brachythecium rutabulum</i>	Rough-stalked Feather-moss
<i>Hypnum cupressiforme</i>	Cyprus-leaved Plait-moss
<i>Isoetecium myosurioides</i> var. <i>myosurioides</i>	Mouse-tail Moss

Shaded earth banks



The earth banks referred to are under the trees, especially along the burn. These shaded areas are largely bare of vegetation other than mosses and liverworts. The only thallose liverworts, i.e. those crust-like rather than leafy in form, found at the site are on the banks of the burn. **Common Pocket-moss** *Fissidens taxifolius* and **Elegant Silk-moss** *Pseudotaxiphyllum elegans* are characteristic of such places too. Others are common, generalist species found in variety of habitats.

Shaded earth banks - continued

Cushion mosses	
<i>Fissidens taxifolius</i> var. <i>taxifolius</i>	Common Pocket-moss
<i>Barbula convoluta</i>	Lesser Bird's-claw Beard-moss
<i>Mnium hornum</i>	Swan's-neck Thyme-moss
Feather mosses	
<i>Plagiomnium undulatum</i>	Hart's-tongue Thyme-moss
<i>Kindbergia praelonga</i>	Common Feather-moss
<i>Pseudotaxiphyllum elegans</i>	Elegant Silk-moss
<i>Plagiothecium undulatum</i>	Waved Silk-moss
Liverworts	
<i>Pellia epiphylla</i>	Overleaf Pellia
<i>Conocephalum conicum</i>	Great Scented Liverwort
<i>Lophocolea bidentata</i>	Bifid Crestwort

Burn

Attached to rocks in the burn.

<i>Platyhypnidium riparioides</i>	Long-beaked Water Feather-moss
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Semi-improved (neutral) grassland

Mosses and liverworts are at a disadvantage in fertile grassland, but where fertility is lower and the ground is wet some common shade-tolerant species can thrive, as they do here.

Springy Turf-moss *Rhytidiadelphus squarrosus* is one species that can thrive in sunny situations where the grass is short, and this is locally abundant here too.

Feather mosses	
<i>Pseudoscleropodium purum</i>	Neat Feather-moss
<i>Kindbergia praelonga</i>	Common Feather-moss
<i>Brachythecium rutabulum</i>	Rough-stalked Feather-moss
<i>Calliergonella cuspidata</i>	Pointed Spear-moss
<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss
Liverworts	
<i>Lophocolea bidentata</i>	Bifid Crestwort

Heather and acid grassland

Heather and associated rough grass on thin peat comprise a very small part of the site but support many of the more common species found in such habitats. Some of these are confined to moorland or certain types of woodland, including **Acute-leaved Bog-moss** *Sphagnum capillifolium*, **Common Haircap** *Polytrichum commune*, **Heath Plait-moss** *Hypnum jutlandicum* and **Red-stemmed Feather-moss** *Pleurozium schreberi*.

Bog mosses (Sphagna)	
<i>Sphagnum capillifolium</i>	Acute-leaved Bog-moss
Cushion mosses	
<i>Polytrichum commune</i> var. <i>commune</i>	Common Haircap
<i>Dicranum scoparium</i>	Broom Fork-moss
Feather mosses	
<i>Thuidium tamariscinum</i>	Common Tamarisk-moss
<i>Pseudoscleropodium purum</i>	Neat Feather-moss
<i>Hypnum jutlandicum</i>	Heath Plait-moss
<i>Pleurozium schreberi</i>	Red-stemmed Feather-moss
<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss
<i>Hylocomium splendens</i>	Glittering Wood-moss

Bracken and woodrush

This thick vegetation and deep shade under the bracken exclude almost all other plants, except the very shade-tolerant **Common Feather-moss** *Kindbergia praelonga*.

<i>Kindbergia praelonga</i>	Common Feather-moss
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Path to house

<i>Ceratodon purpureus</i>	Redshank
<i>Barbula convoluta</i>	Lesser Bird's-claw Beard-moss
<i>Bryum capillare</i>	Capillary Thread-moss
<i>Bryum violaceum</i> *	A Thread-moss

Arable field

A strip of land cultivated in the last two years, on the right of the entrance track, has small patches of bare soil that are being colonised by mosses, including annuals and the immature stages of longer-lived cushion and feather mosses. Among them is the most unusual and exciting find of the survey, the **Hornwort** *Anthoceros punctatus*. Hornworts comprise a distinct class of organisms separate from both mosses and liverworts. In appearance they are like some liverworts, but their reproductive parts are thin green spikes ('horns'). Only four species are known from Britain and none have been recorded in Orkney before now.

All the mosses growing here are very small, the annuals especially so and appearing, before closer inspection, as little more than a greenish crust on the soil. **Common Pottia** *Tortula truncata* and **Cylindric Ditrichum** *Trichodon cylindricus* are the most common of them.

These annuals will naturally disappear as the soil becomes covered over with larger mosses, grasses and other plants.

Cushion mosses	
<i>Dicranella varia</i> *	Variable Forklet-moss
<i>Dicranella staphylina</i>	Field Forklet-moss
<i>Pseudephemerum nitidum</i>	Delicate Earth-moss
<i>Pleuridium sp.</i>	An Earth-moss
<i>Trichodon cylindricus</i>	Cylindric Ditrichum
<i>Barbula convoluta</i>	Lesser Bird's-claw Beard-moss
<i>Didymodon fallax</i>	False Beard-moss
<i>Didymodon insulanus</i> *	Cylindric Beard-moss
<i>Tortula truncata</i>	Common Pottia
<i>Ulota phyllantha</i>	Frizzled Pin-cushion
<i>Funaria hygrometica</i> *	Bonfire-moss
<i>Pohlia melanodon</i> *	Pink-fruited Thread-moss
<i>Pohlia wahlenbergii</i>	Pale glaucous Thread-moss
<i>Bryum dichotomum</i>	Bicoloured Bryum
Feather mosses	
<i>Kindbergia praelonga</i>	Common Feather-moss
<i>Brachythecium rutabulum</i>	Rough-stalked Feather-moss
<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss
Hornworts	
<i>Anthoceros punctatus</i>	Dotted Hornwort

*Additional species recorded by Nick Hodgetts

Sea Squirts

Penny Martin

A trip to the Caribbean earlier this year where I did lots of snorkelling got me wondering what was under the Orkney waters and why, with all the interest and expertise in Orkney birds, bats, mosses, beetles, flowers, grasses, mosses, dragonflies, cetaceans, fungi and lichens was there so little recent information and interest to be seen about marine life.

So, on the advice of a snorkelling friend, I donned wet suit and snorkel and dipped a toe in to find out!

It has been a revelation; in my opinion, there is more to be seen here than around the reefs in the Caribbean. Although from the surface it looks uninviting, once one puts one's head underwater it is vibrant and full of life.

So far, I have done one or more snorkelling expeditions in: Marwick Choin, around both sides of the causeway in Birsay, Skipi Geo, Evie Bay, Firth Bay (from the slipway, by the brig to the Ouse, by Grimbister causeway and on the beach at the end of road from Old Finstown road), Inganess Bay, The Lash, Orphir, Bay of Ireland, Stenness Loch by the watchstone and both sides at the Brig o' Waithe, both sides of the 1st, 2nd and 3rd Barriers, Echna Loch and Bay, Burray side of 4th Barrier, Houton Bay both east and west side of the ferry jetty, Scapa Bay, St Peter's Pool, Newark Bay and Widewall Bay.

We have a wealth of different habitats here, from Kelp forests and parks, the artificial reefs made by the Churchill Barriers, Eelgrass beds, rocky ledges, reefs and crevices, sandy and muddy sea beds, Maerl beds and areas of mixed sea algae. These different habitats provide a wonderful diversity of marine animal life.

One of the groups that I realised I knew nothing about was the Sea squirts of which there are many in Orkney waters. They are often vivid orange, white and red in colour and seen in large numbers in mixed colonies. 5 species can be seen in the photo below.



Sea squirts

Sea squirts are members of the Phylum *Chordata* subphylum *Tunicata*, a group of underwater saclike filter feeders with incurrent and excurrent siphons. Despite their simple appearance, they are closely related to vertebrates, which include fish and all land animals with bones.

Tunicates are unsegmented and exclusively marine chordates.

Sea squirts, class *Ascidia* (Ascidian = earthenware, bag, bladder)

These are sessile, benthic animals ie immobile and living on or just above the sea bed. They have a thick, gelatinous or leather-like tunic with an oral siphon for ingoing water situated on the top for most species and the atrial siphon for outgoing water, situated on the side. The body contains an intestine for processing filtered material and a simple heart with a unique blood circulation where blood is pumped one way round the body for several seconds then the flow is reversed for an equivalent amount of time. Water, together with detritus and plankton, is inhaled into the branchial sac and trapped and concentrated by cilia. The food particles are filtered out and transported to the gut through ciliated furrows. The water is then excreted through the atrial siphon. Waste is discharged from the anus and follows the water.

Reproduction is sexual with most squirts being hermaphrodites, male and female gonads maturing at different times to avoid self-fertilisation. The larvae, which resemble tadpoles, are planktonic with a well-developed tail and chorda (notochord). They have a primitive eye (light receptor) and initially swim up towards the light, then down to the seabed where the tail and notochord are reabsorbed and they settle into their adult form and become sessile.

Sea squirts have few predators as the cellulose in their tunics is hard to digest and some have a highly acidic body wall which makes them unpalatable. Squirts live on average from 12 to 24 months.

Sea squirts that I have observed in Orkney:

Yellow ringed sea squirt *Ciona intestinalis*

Most Commonly observed so far.

Individuals not fused together in any way, so known as solitary rather than colonial species although can be found in extremely dense aggregations of up to 5,000 squirts per square metre. May be creamy white, yellowish green or orange. Both siphons have distinct yellow rim with tiny red sense organs (ocellus) of uncertain significance. Each oral siphon has 8 red 'dots'; the atrial siphons have 6. They can pump up to 3 litres of water per hour and extract particles as small as a thousandth of a mm.

Found in various locations most notably in Firth Bay, amongst the Eelgrass beds in Widewall Bay, St Peter's Pool, on all the Barriers and in Kirkwall marina.



Light bulb sea squirt *Clavelina lepadiformis*

Common on the Barriers

Colonial species joined at the bases. Occur in small clumps of up to about 15 individuals. Rarely found below 20 m. Tunic fully transparent with white stripes. Sexual reproduction occurs in July/August when larvae are released. Individual squirts then regress to leave tiny “winter buds” slightly bigger than pin heads but filled with nutrition that survive the winter and develop into new squirts in spring.

Red sea squirt *Ascidia mentula*

Common seen mainly on the Barriers.

Larger bright red sea squirt usually found lying on its side with the atrial siphon pointing upwards. This is marked by 8 white spots. The siphons are spaced far apart.



Gas mantle sea squirt *Corella Parallelogramma*

Common in Firth Bay and amongst the Eelgrass beds.

Small, very striking solitary species with transparent tunic often marked with flecks of red or yellow and intricate mesh like structure often clearly visible.



Fluted Sea squirt *Asciidiella aspersa*

Seen mainly in Firth Bay

Large grey or white solitary sea squirt with rough surface which tends to trap silt and detritus. Siphons widely spaced and looks crimped. Often found on more muddy sea bottoms.



Gooseberry or “Baked Bean” sea squirt *Dendrodoa grossularia* Common in all areas especially on kelp and mooring ropes and chains.

Smaller solitary sea squirt most often found in large groups, often 50-60,000 squirts per sq. m, found on all types of surfaces from mussels, stones to kelp and wrack. It is more spherical and red to orange in colour resembling ‘baked beans’, viviparous with larvae developing inside the tunic. A mature individual can contain 20 to 100 eggs at various stages of development. The released larvae are approx 2 mm long.



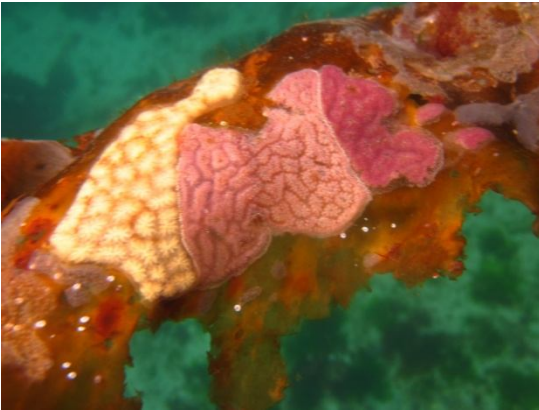
Star sea Squirt *Botryllus schlosseri*

Seen in various locations usually on kelp

A beautiful star shaped colonial sea squirt in a common gelatinous tunic seen in flat layers encrusting rocks and kelp about 2-4mm thick. Groups of 3 to 12 individuals are arranged in star shaped cluster. Each has an individual intake siphon but they have a common atrial siphon. The basic tunic is usually a dark colour with colonies of different colours usually yellow or white but occasionally pink or other colours.

Botryllus leachii

This is a similar species of flat colonies with the zooids arranged in pairs in elongated, sometimes meandering clusters rather than star shaped. Colour is highly variable. This is the preferred food of cowries.



Conclusion and future plans.

These are my initial observations and photos of sea squirts around Orkney. I feel I have just started to discover facts about a fascinating species and this has raised many questions.

In 2012 I intend to study them more deeply and record observations about their presence in different habitats and any seasonal changes.

Although, since June 2011, I have explored in 29 different locations, many on more than one occasion, I would like to look in many other places on mainland Orkney and in the other islands. I have been surprised by the many different species and how easy it is to access the different areas. I want to study more about the behaviour of different species and how they inter-relate and change with seasons, tides and weather conditions.

I would welcome any information or observations from anywhere in Orkney.

A Lichen Building Block?

Roger Davies



John Crossley spotted this puzzling, filamentous substance growing in a stony, calcareous flush, otherwise more or less bare of vegetation, near his home in South Ronaldsay. Plainly it was not a moss or other bryophyte, and I did not recognise it as a lichen – its short, unbranched filaments and its lack of typical

lichen fruiting bodies suggested otherwise. However, with the help of John Douglass, our point of reference on lichens, we were able to identify it as a green alga, of the genus *Trentepohlia*.

This was an intriguing discovery as green algae are partners in most of the symbioses with fungi which create lichens. They are the ‘photobionts’, photosynthesising as a source of food while the fungal ‘mycobiont’ provides shelter and much of the structure. *Trentepohlia* is the photobiont in some thirty British lichen genera, but can also survive independently, as with this species.

Going beyond the generic level, as yet scientists know very little as to which algal species are involved in which lichens. We do know though that *Trentepohlia* as a genus provides the algal partner in the ‘lirellate’ lichens, which so resemble tiny worms or primitive writing. It is fascinating to think that perhaps our alga above enjoys a second existence within Orkney’s lichens such as the one on the right!



When I was small I asked my father about the dozens of long-legged ‘spiders’ that appeared on the base of a large chestnut tree in our garden of an evening. He called them “long-legged spiders”. As I got to mix with other children I found that many called these creatures “daddy-long-legs”, a name which my family gave to what I now know as crane-flies (Tipulidae). I have since learned that these “long-legged spiders” were in fact harvestmen.

Harvestmen belong to the class Arachnida, as do spiders, which are of the order Araneae. Harvestmen are of the order Opiliones and quite different to spiders. There are about 6,400 species so far described world-wide, of an estimated total of 10,000. Four species new to the UK have been identified in the last three years, which brings the total to 30.

Until 2003 Opiliones were believed to have originated in the Eocene period (about 34 million years ago) but recent computer imaging of fossils in Scottish chert has produced images of Opiliones very like current animals but around 410 million years old¹. At that time their relatives the spiders and scorpions did exist but in primitive forms. This means that the Opiliones were among the very earliest animals to walk on land and have changed very little. I have seen videos of some other fossil studies. They are remarkable. These creatures would not look out of the ordinary in my garden².

Characteristics

The bodies of adult harvestmen vary greatly in size according to species, from 1mm to about 22mm. UK species are usually between 4mm and 7mm. All UK species are quite dull in colour: most have patterns with brown and grey predominating. Males are said to be brighter in colour than females. All have eight legs. In most species these are extremely long in comparison to the body; however at least two British species are exceptional in having shorter legs. The larger British species may span over 70mm. Whilst some will be out in the open during daylight hours most species are nocturnal and will be found under stones etc. during daylight hours.

Adults of most species die in late autumn after laying eggs. They then overwinter as either eggs or juveniles depending on species. Adults are most numerous in late summer and autumn. Smaller specimens will be seen throughout spring and early summer. Nymphs resemble adults. There are usually five skin changes to adulthood but adults continue to change skins through their life.

Technically the body is formed by a cephalothorax and an abdomen. The two parts appear to be fused together giving them a rotund appearance.

The simple eyes are placed on the top of their heads often on a raised ‘turret’ called the ocularium. The structure of this is often a diagnostic feature.



Possibly *Oligolophus tridens*. Notice clearly segmented abdomen. This one may have been preying on the shiny black mites that look like little black marbles in the photo

Feeding

It is recorded that most species of harvestmen are omnivorous and feed on small live insects or larger dead organisms. They also eat plant matter and fungi, and most literature quotes them as feeding on bird dung.

Although harvestmen have no spinnerets or poison fangs as spiders do, some species actively hunt, some of these by ambushing their prey. Surprisingly there is not much reliable information on Opiliones as hunters. There is an account of harvestmen of the species *Phalangium opilio* and *Leiobunum rotundum* being important predators of aphids on potatoes in Scotland³. The former has been recorded in Orkney.

Habits

Harvestmen occur in most habitats. They reproduce sexually; all lay eggs. In autumn I seem to find at least one harvestman under every other stone. Some are gregarious and several of one species may be under the same stone. With practice one can soon learn which places will be most productive in the search although some species do turn up quite unexpectedly. For instance I found a tiny black and white woodland species *Nemastoma bimaculatum* covered in detritus under a stone when I was looking for woodlice. By its side was a specimen of the **Rosy Woodlouse** *Androniscus dentiger*. Bizarrely the same species turned up with the same species of woodlouse in my garden the very next week. I concluded that they have similar habitat requirements.

If you watch a harvestman walking you will notice that although it has very long legs, it carries its body quite close to the ground.

Defence mechanisms

If you disturb some species they will vibrate, bobbing up and down. It is believed that this is a defence mechanism. There is a long-legged spider that uses the same defence technique. Opiliones are able to lose a leg without too much inconvenience. They are said to shed legs to get away from enemies. If a leg is shed or pulled off by a predator, the detached limb will continue to twitch for some time afterwards. I have observed this frequently. If you pick up a harvestman you may notice that it gives off an unpleasant smell. This is because they exude a strong-smelling liquid from pores designed for the purpose. It is believed that this is a defence against predators.

Harvestmen in Orkney

As with most invertebrates the number of harvestmen, both individuals and species, decreases as one travels northwards. There appear to be three common species in Orkney with a fourth occurring less frequently. Altogether there seem to be six or seven species recorded from Orkney but I have yet to find more than four. These are *Mitopus morio*, *Nemastoma bimaculatum*, *Paroligolophus agrestis* and *Phalangium opilio*. Harvestmen seem to occupy most habitats even under stones above the high tide mark on the shore. There are species of Opiliones that have been recorded from Shetland and even Fair Isle but not from Orkney. There are even more that are



frequently found in Caithness but not Orkney. It is likely that this group is greatly under-recorded.

I have found that many Orcadian harvestmen carry mites attached to their legs or thorax. Some species of mite are only parasitic in their nymphal stages and use harvestmen as hosts during this time. **Velvet Mites** *Eutrombidium* spp. are among these. Mites of the genus *Parasitus* whilst not being parasitic attach themselves to other arthropods as means of transport. In Orkney these are most often seen on bumblebees but also on harvestmen.

1. Transactions of the Royal Society of Edinburgh: Earth Sciences (2003), 94: pp 341-354. Royal Society of Edinburgh, DOI: 10.1017/SO263593300000730. Published online: 26 July 2007

2. Imperial College London News Release (<http://www.bbc.co.uk/news/science-environment>) Tuesday 23 August 2011

3. P. L. Dixon and R. G. McKinlay. 1989. Aphid Predation by Harvestmen in Potato Fields in Scotland. *Journal of Arachnology* Vol. 17, No. 2 (Summer, 1989), pp. 253-255

Orkney Bat Group 2011

Effy Everiss

The bat group had another good year, meeting nearly every week from April through to October. The OFC funded two extra bat detectors and most members of the group have their own tackle so when we go out *en masse* we can now cover a site well. This is very useful as it is very easy to miss bat activity in Orkney, our few bats can emerge and go elsewhere at the blink of an eye! Due to the enthusiasm and diligence of the bat group we have made quite a few interesting observations on Orkney bat-life, and there is so much more to find out!

Early in April one bat was detected roosting in the old farm steading at Papdale and our regular occupant at Woodwick gave us a brief shout before going off elsewhere and was never recorded there again this year. Having several members of the group living in the Evie area is very useful - they have detected a bat hotspot in the village and we are pretty sure of the roost locality but have yet to confirm it. In May the bats were very active, we had a very exciting night in Holm with 8+ very acrobatic bats, and we even had calls there in the Natusius' range. Two bats were discovered roosting at Redland, emerging rapidly and going elsewhere to party! The early season bats were emerging at quite low temperatures, less than 5 deg C. Like us they go out when the wind drops! There was activity on several occasions at the various Firth sites throughout the summer and a new roost of two Common Pips confirmed in the area in a lovely old building between the two active wooded sites.

Anne Youngman, the Bat Conservation Trust Scottish Officer visited Orkney again in June. She gave a delightfully entertaining talk in the Rendall Hall on Saturday night on the life and times of the British bat and how the Orkney bats manage in our challenging climate. We listened to recordings of the various species' calls and were shown the assorted types of bat detector available and the merits and disadvantages of each. Anne had plenty of detectors with her so most of the folk had the use of one for the walk which she led nearby at 10.30pm. The temperature was by this time very low and not very auspicious for a good showing of bats, they tend to assume a state of torpidity in poor conditions in order to conserve energy. The Orkney Bats are a tough bunch and right on cue they emerged to give a splendid aerial

display. Their echolocation calls and feeding buzz activity was picked up by the detectors; due to the good light conditions the bats were clearly seen by everyone. The bats were calling at 42-8 kHz indicating that we were seeing Common Pipistrelles. An excellent night out!

Our first dusk to dawn survey, in late June in Holm, had discovered no bats but at the beginning of July we repeated the exercise in the South Isles. What an amazing and spectacular event it was too! Calm, dry and clear. 9.1 deg C. Sunset 22.26hrs. Sunrise 04.08hrs. Main emergence was at 23.00hrs although there was one bat heard slightly earlier from an adjacent site. Bats were clearly seen emerging from various places. One place in particular was very active most of the night (easy to spot, no lichen and slightly darker) with bats being seen entering and leaving. Bats were hunting in trees, along tracks and road returning frequently to the roost site all night. They flew very close to us especially when the landowner was out with us. At midnight there was a particularly intense period of activity in the roosting area with the bats making frequent short circular flights up from the roost and down again which lasted about 15 minutes, our first record of active swarming? This was repeated to a lesser degree at 02.00hrs when the bats finally roosted, and all activity stopped quite suddenly as if a whistle had been blown at the end of the match! Monitoring continued for another 30 minutes, but there was no further activity, very strongly indicating a maternity roost at this site. It never really got dark so visibility was excellent; the ideal weather conditions followed by a wonderful sunrise made this watch particularly memorable. Our short summer nights only gave the bats three hours to feed, and a brooding female would have a high energy demand at this time...which may account for the continuous feeding activity in daylight conditions. It may also explain, to a certain extent, why our bat roosts are so small. It must be hard to maintain a population when the feeding time is so restricted due to short nights and a challenging climate.

We did a few well supported watches in the Orphir area in sites where bats are seen regularly, good habitat and in excellent conditions but they failed to perform for us. We don't have any members of the bat group living in the Orphir area...it would be useful as there are many suitable places to investigate. Volunteers, anyone?

We also carried out several watches in Kirkwall and other than the lone Papdale bat also failed to find any activity. However since that time several folk have contacted me to say they have regular bat activity and it centres on one particular area...we hope to verify this in 2012. There are odd bat sightings from many places in Kirkwall and I do not doubt that there is a colony somewhere, again very mobile and making regular forays out into the gardens and woods of the area. Shapinsay bats may also be popping over to 'the toon' for the night.....

Anne returned to Orkney over the weekend of 9-11th September to lead a 'Bat discovery weekend' in conjunction with the Orkney Bat group, the Scapa Flow Landscape Partnership and the RSPB's Wildlife Explorers.

On the Friday night Anne gave a very lively and interesting presentation in the Cromarty Hall, organised by the Scapa Flow Landscape Partnership. She described the bat-friendly habitats in the county followed by an overview of their lifecycle and biology including the main features of the various bat species that are found here. There were specimens to see and recordings of the various calls, including those from Orkney. Anne explained the importance of recording bats and the best way to do it in Orkney. Bat detectors' use was then demonstrated, the evening ending with a lively discussion of local bat-life. The meeting was well attended with folk keen to find out more.

The following evening 30 enthusiastic young Wildlife Explorers became “bat detectives” in Finstown. Once again Anne entertained the youngsters, introducing the life of a bat with excellent pictures, sound recordings and assorted props. Some of the children experimented with cardboard “ears” to learn about how bats “see” using sound and others made colourful bat masks, fridge magnets and finger puppets. Everyone then wrapped up warmly and ventured out clutching bat detectors and very soon the sounds of bats flitting around filled the air and they were also seen as they hunted and fed through the woods and around the houses. The evening finished with warming cups of hot chocolate and bat biscuits. A lovely night with the bats behaving themselves and showing off at just the right time... a relief to us all!

October 12th, again in Finstown Sue Whitworth in her role as Education Officer for the RSPB led a batwatch with Stromness P2 children and their assorted siblings, parents etc. Sue was doing project work with the children in respect to wildlife at night. Eric Meek’s Moth trap was also set up; however the night was cool and nothing was caught. Two bats emerged shortly after dusk and flew amongst the trees long enough for the children to hear and see them before they disappeared rapidly away from the site.....possibly off to.....the nearby lekking site as this is the time of year when your average bat is feeling very amorous....

Two days later the bat group had the last organised watch of the year in the nearby woods; there were 10 folk with 9 detectors. The conditions were perfect, warm (14 deg C), dry, clear and not too windy, loads of insects on the wing but not of the nibbly variety. The Moon was almost full but intermittent. A good turnout of experienced batters meant that we managed to cover a wide area of bat activity in and around the woods and made interesting observations and recordings. Brian and Tim discovered that there were bats emerging from the vicinity of the farm, coursing up and down the burn before entering the woods. This has been suspected for a while, so confirmation was good. Bats did not enter the woods from the direction of the Mill or the town at the dusk emergence, but may have done so later. The main emergence was in the woods itself, further adding to the evidence that there is a well established roost there. We hope to confirm this with a dusk to dawn survey (or two) in 2012.

Analysis of the bat sound recordings taken that evening indicates that all the bats were 45Pips, with many clear and resounding social/mating calls being picked up as well as feeding activity. This firmly establishes these woods as a lekking site for the Firth bats and maybe explains the paucity of bats elsewhere in the area on previous nights.

Overall this year I think there have been far fewer bats out and about compared with last year. However we have discovered several new bat roosting areas even though we have not pinpointed the actual roosts. I have had many verbal reports of bat sightings at rural farms and houses right around the Rendall Hills and through the Lyde which may further reflect the mobility of our bats but difficult to prove without radio-tracking.

Once again I wish to thank the Bat Group stalwarts for turning out so reliably and cheerfully even when the bats were unobliging! Roger and Sue Whitworth, Brian and Jean Wright, Brian Ribbands, Barry Jones, Wendy Adams, Marcia Humes, Bunty Pottinger, Chris Booth, Leona Graves, Stewart Hutchinson, Kate Thomson and Tim Dean; Pauline Barber and Anne Youngman for their support and encouragement; the WEx Group and Julian Branscombe and his Scapa Flow Partnership team; the landowners and householders who have given us such free access to their property; all the folk who have contacted us with their various bat sightings which are very helpful in building up the Orkney bat picture. My apologies to anyone who I may have missed out. It has been encouraging to get so much support from the community on the whereabouts and activity of our very small and important bat population.

In my first year as Hemiptera Recorder, and with only a single week of field experience on Orkney, I am mostly aware of my ignorance. I am at an early stage in the preparation of a checklist of species so far known for the islands, and suspect that there may be some way to go to generate a reasonably definitive list. It was a mixed pleasure to discover, from Alan Stewart, the national recorder for the leafhopper and planthopper recording scheme, that the national scheme database contained just fifteen records of Auchenorrhyncha from Orkney, of six species. Hopefully there are more records to be discovered elsewhere. Six days of recording in July 2011, in sometimes far from ideal weather and not even concentrating unduly on the group, produced 141 records of 46 species, so the shortage of records is clearly not for want of animals to record. The positive aspect of this discovery is there is clearly much useful work to be done: on the negative side, there is clearly much work to be done. The 102 records of 30 species of Heteroptera also made in 2011 are likely to provide less in the way of novelty: this group has always been more popular.

Because of my ignorance of the background of previous recording, as a first contribution to the knowledge of the Hemiptera of Orkney, I offer a lightly annotated summary of my own records made in 2011. I have confined my attention to the Auchenorrhyncha (leafhoppers and planthoppers) and Heteroptera (true bugs): of the other member groups of the Hemiptera, I do not (and cannot) identify aphids, and only sporadically and selectively identify Psylloidea (jumping plant lice). I have made no attempt to determine which species are newly recorded for Orkney, though it seems reasonable to expect that some are.

I recorded Hemiptera from nineteen localities on Orkney between the 16th and the 22nd of July 2011. Some were visited as part of survey work commissioned by Julian Branscombe for the Scapa Flow Landscape Partnership Scheme, and others, often briefly, in spare time. Records were mostly made by sweep-netting, beating, suction sampling and searching. At Happy Valley (a proposed Local Nature Reserve) such methods were supplemented by pitfall traps and window traps, and the collecting period has been considerably extended by Julian Branscombe, who serviced them and posted catches for identification until the window traps mostly blew away: such trapping methods are, however, not especially efficient in the capture of Hemiptera, and the traps have, slightly surprisingly, added only two species which were not captured by active survey in July, and only one (*Psallus haematodes*) after the July visits.

The localities visited, and their approximate centre point or conveniently inclusive grid references and dates of visits are as follows:

- A. Berriedale, Hoy, HY202013, 20th July
- B. Brodgar, West Mainland, HY294134, 16th July
- C. Burn of Ireland (downstream), West Mainland, HY294096, 19th July
- D. Burn of Ireland (upstream), West Mainland, HY306089, 19th July
- E. Burn of Lerquoy, West Mainland, HY355058, 19th July
- F. Churchill Barrier No 4, Burray, HY479953, 22nd July
- G. Clouston, Stenness, West Mainland, HY299109, 21st July
- H. Happy Valley pLNR, West Mainland, HY326106, 17th & 21st July; traps to 26th Aug
- I. Harray Road End SWT Reserve, West Mainland, HY336137
- J. Hobbister RSPB reserve, West Mainland HY3906, 18th July
- K. Housequoy Burn, West Mainland, HY318111, 19th July
- L. Loch of Harray: Grimeston picnic area, West Mainland, HY311139, 20th July

- N. Newark Bay, Deerness, HY574042, 22nd July
 O. Orphir Burn, West Mainland, HY335045, 19th July
 R. Rackwick Road to Berriedale, Hoy, 20th July
 S. Russa Dale, West Mainland, HY333097, 17th July, 21st July
 W. Waulkmill Bay, West Mainland, HY382064, 18th July
 X. Whaness Burn, Hoy, HY245015, 20th July
 Y. Yesnaby, West Mainland, HY220159, 17th July.

The following table summarises the captures. For the purposes of this summary, captures are listed merely by place name. The list has been arranged largely alphabetically: Auchenorrhyncha are listed first, then Heteroptera: within each, families are in alphabetical order, and species in alphabetical order within families. The statuses given are national ones, and may poorly reflect the status of the species in Orkney. Names used follow Aukema & Rieger (1995-2006) for Heteroptera and Biedermann & Niedringhaus (2009) for Auchenorrhyncha.

Taxon	Status	Localities (listed above)
Auchenorrhyncha		
Aphrophoridae		
<i>Neophilaenus lineatus</i>	common	G; H; I; J; R; S; W; X
<i>Philaenus spumarius</i>	common	E; G; H; I; J; R; S; W
Cicadellidae		
<i>Anoscopus albifrons</i>	common	A; E; H; S; W; Y
<i>Anoscopus limicola</i>	Nationally Scarce	W
<i>Aphrodes ?diminuta</i>	?	G; H; I; S; W
<i>Aphrodes aestuarina</i>	Nationally Scarce	W
<i>Cicadula intermedia</i>	local	I; W
<i>Cicadula quadrinotata</i>	common	I; W
<i>Cosmotettix panzeri</i>	Nationally Scarce	J; R
<i>Deltocephalus pulicaris</i>	common	B; J; S; W
<i>Dikraneura variata</i>	common	A; R
<i>Eupteryx atropunctata</i>	local	H
<i>Eupteryx florida</i>	common	F
<i>Eupteryx signatipennis</i>	common	H; S
<i>Eupteryx stachydearum</i>	common	F
<i>Evacanthus interruptus</i>	common	A; E; H; I; L; S; W; X
<i>Forcipata forcipata</i>	local	S; W; X
<i>Jassargus distinguendus</i>	common	I; R; S; W
<i>Kybos strigilifer</i>	common	H
<i>Limotettix striola</i>	local	R; X
<i>Macrosteles laevis</i>	common	W
<i>Macrosteles sexnotatus</i>	common	A
<i>Macrosteles viridigriseus</i>	common	W
<i>Macustus grisescens</i>	common	I; R; S; W; X
<i>Megophthalmus scanicus</i>	common	E; H; I; S; W
<i>Metidiocerus elegans</i>	local	A; H; R; S; W
<i>Notus flavipennis</i>	common	A; B; H; I; L; R; S; W; X
<i>Oncopsis flavicollis</i>	common	A

Taxon	Status	Localities (listed above)
<i>Oncopsis subangulata</i>	local	A; H
<i>Oncopsis tristis</i>	common	A; H
<i>Planaphrodes bifasciatus</i>	local	J; S; W
<i>Psammotettix nodosus</i>	common	Y
<i>Streptanus sordidus</i>	common	H; W
<i>Thamnotettix confinis</i>	common	A
<i>Ulopa reticulata</i>	common	G; H; J; R; S; W
Cixiidae		
<i>Cixius nervosus</i>	common	A; G; H; I; R; S; W
Delphacidae		
<i>Conomelus anceps</i>	common	H; R; S; W
<i>Criomorpha albomarginatus</i>	common	J; W
<i>Florodelphax leptosoma</i>	common	W
<i>Javesella discolor</i>	common	A; R; W; X
<i>Javesella dubia</i>	common	H; I; S; W
<i>Kelisia vittipennis</i>	local	R
<i>Megamelus notula</i>	local	I; L; R; W
<i>Muellerianella brevipennis</i>	common	H
<i>Muellerianella extrusa</i>	local	S
<i>Tyrphodelphax distinctus</i>	local	R
Heteroptera		
Corixidae		
<i>Sigara scotti</i>	common	S
<i>Sigara venusta</i>	common	E
Lygaeidae		
<i>Scolopostethus decoratus</i>	common	A; G; H; J; R; S; W
<i>Scolopostethus thomsoni</i>	common	H
<i>Stygnocoris sabulosus</i>	common	H; I; R; S; W
Miridae		
<i>Bothynotus pilosus</i>	local	I
<i>Capsus ater</i>	common	E; H; W; X
<i>Closterotomus norwegicus</i>	common	A; B; E; G; H; I; R; S; W
<i>Leptopterna ferrugata</i>	common	A; B; G; H; I; R; S; W; X
<i>Lygocoris contaminatus</i>	common	A
<i>Lygocoris pabulinus</i>	common	A; W
<i>Mecomma ambulans</i>	common	A; H; S; W
<i>Monalocoris filicis</i>	common	A; H; S
<i>Orthops campestris</i>	common	H; S
<i>Orthotylus ericetorum</i>	common	G; J; R; S; W; X
<i>Pithanus maerkeli</i>	common	I; N; R; W
<i>Plesiocoris rugicollis</i>	common	A; H; R; S; W
<i>Psallus haematodes</i>	common	H; R; S; W; X
<i>Stenodema holsata</i>	common	R; S; W
<i>Teratocoris saundersi</i>	local	H; R; S; W
<i>Trigonotylus ruficornis</i>	common	W

Taxon	Status	Localities (listed above)
<i>Nabidae</i>		
<i>Nabis flavomarginatus</i>	common	H; W
<i>Nabis limbatus</i>	common	R
<i>Saldidae</i>		
<i>Chartoscirta cincta</i>	common	E; L; R
<i>Salda littoralis</i>	local	L
<i>Saldula orthochila</i>	local	Y
<i>Saldula saltatoria</i>	common	E; H; L; S; W
<i>Tingidae</i>		
<i>Acalypta carinata</i>	local	S
<i>Acalypta parvula</i>	common	J
<i>Veliidae</i>		
<i>Velia caprai</i>	common	C; D; E; H; K; O; S; X

It is apparent even from this small number of records, and very apparent in the field, that some species are very common on Orkney: *Neophilaenus lineatus*, *Philaenus spumarius*, *Evacanthus interruptus* and *Closterotomus norwegicus* appear to be almost universal. Most of the species recorded are more or less common or only a little local in Britain as a whole, and have a wide distribution. Their presence on Orkney is unsurprising, and they are not greatly in need of further comment. A few species, however, warrant further notes.

Aphrodes diminuta, recorded but with a question-mark, has not yet been formally added to the British list, but should be shortly: it has previously been confused with *A. bicincta*. The Orkney specimens agree with definitions of *A. diminuta* in current literature, and it seems likely that *diminuta* will be found predominantly in damp habitats in the north and west of Britain, and *bicincta* in dry places in the south. However, until the species is formally recorded, and any further taxonomic characters revealed, an element of uncertainty in identification remains.

Aphrodes aestuarina and *A. limicola*, both Nationally Scarce, are specialist saltmarsh species. Records from elsewhere in Britain suggest that they are surprisingly good at getting to even quite isolated areas of saltmarsh, but it is nonetheless pleasing to note the presence of both, and in large numbers in the case of *A. limicola*, at Waulkmill Bay. Unfortunately, the addition of yet another stretch of coast to the known distribution of these species adds one more nail to the coffin of their formal statuses: it seems doubtful that they will continue to be considered Nationally Scarce for long.

Orkney recording has also helped cast doubt on the appropriateness of the formal status of *Cosmotettix panzeri*, recorded in 2011 from both West Mainland and Hoy. Feeding on *Eriophorum*, it seems likely that this species' apparent rarity stems at least in part from it living selectively in parts of Britain where, historically, hemipterists didn't. It is, however, likely to be confined to areas of high quality habitat, and with *Kelisia vittipennis* and *Tyrphodelphax distinctus* forms a small core of specialist peatland species, which has scope for expansion. *Megamelus notula*, *Cicadula intermedia* and *Limotettix striola* can be considered rather less demanding members of the same assemblage.

Bothynotus pilosus is a curiously charismatic species for one which is fairly small, brown and of undistinguished appearance. It is the only European member of the small tribe

Clivinematini, and is highly sexually dimorphic, the male delicate and fully-winged, the female short-winged and rather beetle-like. It is usually associated with deep tussocks of *Polytrichum*, though no-one seems to know exactly what it does there. The female tends to lurk deep in the tussocks, and is rather rarely seen; males emerge, perhaps briefly, at dusk, and can then be swept. It is perhaps something about sweep-netting by the light of the setting sun that accounts for the species' appeal. Though there are scattered English records, it is overwhelmingly a Scottish species. It is always pleasing and surprising to record it. The single individual captured, at the Harray Road End Reserve, was, true to form, caught by the last bout of sweep-netting in the evening, just before light levels fell too low to see the catch.

These tabulated records comprise almost a complete summary of Orkney Hemiptera records from 2011. To them can be added an additional record of *Oncopsis tristis*, found on birch at Queenamidda, Rendall, West Mainland, by Brian Ribbands on the 19th of July. This species seems likely to occur wherever there is birch.

These records constitute a rather small proportion of the roughly 570 species of Heteroptera and 390 species of Auchenorrhyncha known from Britain. However, the Orkney fauna is likely to contain only a small proportion of the national total: species richness of Heteroptera in particular falls off rather sharply with increasing latitude, and the limited woody vegetation of Orkney will further restrict the fauna. Dolling (1983) listed Heteroptera from the "far north", defined as vice-counties 100-112, and listed only 150 species (though more have been recorded since); Orkney is mentioned for only ten. Auchenorrhyncha include a rather smaller proportion of determinedly southern species, as is reflected in the relative proportions of the national lists of the two groups recorded in Orkney in 2011, but are nonetheless decidedly less diverse in the north. For both groups, the 2011 records may include a quite respectable proportion of the Orkney fauna.

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Vagrant Emperor Dragonfly

Chris Booth

On 10th April Kerry Scott photographed a large dragonfly which was clinging to her washing at her house in Burray. It had a wingspan of about 15cm. I did not recognise it as one of our resident species; also it was far too early in the year for any of them to be on the wing.

On consulting reference books the dragonfly that appeared to match Kerry's photograph was the **Vagrant Emperor** *Hemianax ephippiger*. This species is usually found in southern Europe, Africa and southern Asia but is also known to be a long distance migrant.

I sent the photograph to Keith Fairclough, the Orkney Dragonfly Recorder, to obtain his opinion. Although he thought it to be a Vagrant Emperor he contacted other dragonfly recorders with experience of this species to obtain their views. They were able to confirm the identification. Keith was also told that there had been an influx of these dragonflies into Britain earlier in the year, with sightings especially in Kent and south west England. One had been reported from the Western Isles and others had even reached the Faeroe Islands.

This is the first record for Orkney of the Vagrant Emperor dragonfly.



Vagrant Emperor Dragonfly
Photo Kerry Scott

Seasearch Scapa Flow

Jenni Kakkonen

In September 2011, a Seasearch Observer Training course, funded and organised by Scapa Flow Landscape Partnership Scheme, was held in Kirkwall for both diving and snorkelling marine life enthusiasts. The aim of the weekend was to give local divers and snorkelers the basic knowledge to identify marine habitats and associated marine life and to record this information correctly on the Seasearch Observation Forms.

On the Saturday, North Scotland Coordinator, Chris Rickard and Seasearch National Coordinator, Chris Wood led a classroom based day. The purpose of this was to give us an introduction to common families of flora and fauna found in the sea. As Marine Services, OIC are currently undertaking a study on local eelgrass beds, Jenni Kakkonen gave a short presentation on eelgrass beds and their importance in the marine systems.

After a day in the classroom on Saturday, Jenni Kakkonen, Chris Wood and Chris Rickard and local divers Duncan Johnston and Lindsay Reid headed for a dive at SMS Karlsruhe. During our dive Chris Wood was able to re-locate and confirm a sighting of a giant **Fan mussel** (*Atrina pectinata*). An article about this discovery can be found elsewhere in the Bulletin. The wonders of the day didn't finish there as after the dive we had an amazing visit from a **Minke whale**, which came right up to the RIB and stayed in the vicinity for a good few minutes.

One of the aims of the weekend was to widen our understanding of the biodiversity amongst - eelgrass beds on Orkney. Our first dive of the Sunday was at Orkney's largest eelgrass bed at Widewall Bay. Everyone enjoyed the dive/snorkel but maybe not so much the trek across the sandy bay to reach the waters edge! A lot of information was gathered on many of the species in the eelgrass, see Table 1.

This information will feed into a small study on eelgrass beds on Orkney currently underway by Marine Services, OIC which is funded by Scapa Flow Landscape Partnership Scheme. All Seasearch Forms filled were sent to the Marine Conservation Society for collation and will therefore contribute towards the national marine life data base (www.searchnbn.net) into which all Seasearch records are incorporated.

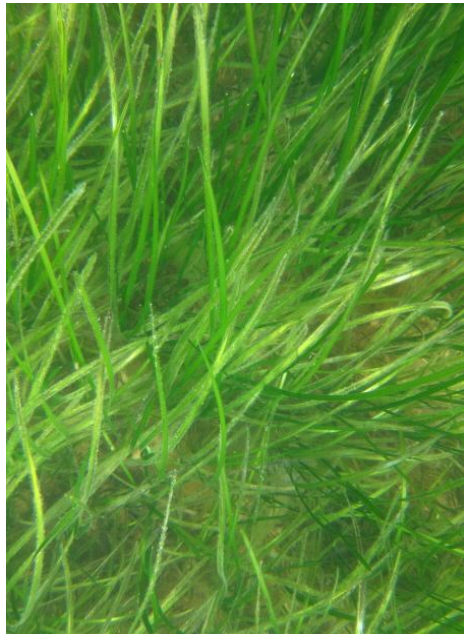
Table 1. Species Recorded at Widewall Bay Sea-grass Bed, September 2011.

Species	Common name	Species	Common name
Angiosperms		Echinodermata	
<i>Zostera marina</i>	Eelgrass	<i>Asterias rubens</i>	Common starfish
Algae		Tunicata	
<i>Ascophyllum nodosum</i>	Knotted wrack	<i>Ascidia mentula</i>	Red sea squirt
<i>Chorda filum</i>	Mermaids tresses	<i>Asciidiella aspersa</i>	Fluted sea squirt
<i>Codium fragile</i>	Green sea fingers		
<i>Fucus serratus</i>	Serrated wrack	Mollusca	
<i>Fucus vesiculosus</i>	Bladder wrack	<i>Buccinum undatum</i>	Common whelk
<i>Halidrys siliquosa</i>	Sea oak	<i>Gibbula cineraria</i>	Grey top shell
<i>Lithothamnium</i>	Encrusting pink algae		

		Pisces	
Annelida		<i>Gobiusculus flavescens</i>	Two-spotted goby
<i>Arenicola marina</i>	Lugworm	<i>Pholis gunnellus</i>	Butterfish
<i>Lanice conchilega</i>	Sand mason	<i>Pleuronectes platessa</i>	Plaice
<i>Sabella pavanina</i>	Peacock worm	<i>Pomatoschistus minutus</i>	Sand goby
		<i>Spinachia spinachia</i>	Fifteen spined stickleback
Crustacea		<i>Syngnathus acus</i>	Great pipefish
<i>Carcinus maenas</i>	Green shore crab	<i>Taurulus bubalis</i>	Long-spined sea scorpion
<i>Common hermit crab</i>	Common hermit crab	<i>Trisopterus minutus</i>	Poor-cod
<i>Liocarcinus depurator</i>	Harbour crab		
<i>Macropodia sp.</i>	Spider crab	Hydrozoa	
<i>Mysidae</i>	Opossum shrimp	<i>Hydractinia echinata</i>	Hermit crab fur
<i>Necora puber</i>	Velvet swimming crab		



Arenicola marina casts and *Sabella pavanina* amongst *Zostera marina*.



Zostera marina

The Orkney Wildflower Project

Eileen Summers and John Crossley

Flower-rich grasslands are scarcer in Orkney than they were before farming became more intensive, and this change has had knock-on effects for insect pollinators, including of course bees. The Orkney Wildflower Project has been developing a programme to begin to address this, and in ways which also enhance the lives of the county's human residents.

The impetus for the project came from a national action plan for the **Great Yellow Bumblebee** *Bombus distinguendus*, which began in 2007 (see the Orkney Field Club Bulletin 2009 and 2010). The Great Yellow Bumblebee is a scarce and declining species with remaining British populations in Orkney, the Western Isles and coastal areas of Caithness and Sutherland. The plan was part of Scottish Natural Heritage's Species Action Framework, which set out a strategic approach to species management in Scotland. It had several elements, including raising awareness, gathering data and providing advice on appropriate land management, but stopped short of creating new habitat. In Orkney the Great Yellow Bumblebee is scarce but still widely distributed. Flower-rich meadows and coastal grasslands on the fringes of agricultural land still provide favourable habitat in many places, but in general the lowland landscape of intensively managed farmland has little to offer. However, small areas of suitable habitat do exist amongst the agricultural land and these represent significant food sources, nesting sites and 'stepping stones' which the bees readily utilise. Such areas must be conserved and enhanced if this species is to have a safe future in Orkney. Flower-rich grasslands will of course benefit other, less high-profile species, including another declining bumblebee, the **Moss Carder Bee** *B. muscorum*, and butterflies.

In July 2008 a local group was formed, with representatives from RSPB, SGRPID, SNH, SEPA, OIC and the Bumblebee Conservation Trust, also John Crossley who is the Orkney recorder for bees and wasps and for vascular plants. The Council has taken the initiative in leading on the Wildflower Project as it represents a practical contribution towards fulfilling its 'Biodiversity Duty' as a Public Body.

First we wished to establish a sustainable supply of wildflower seed from a number of plant species sourced within Orkney. These could then be used in habitat enhancement projects. From the outset, we saw that local provenance was vital. Wildflower seed is widely available from seed producers on the UK mainland, but to sow seed from these sources would represent a threat to the genetic identity of local strains of native wildflower species. Local, genetically-based variation is an important element of biodiversity, particularly so in islands where out-crossing with larger gene-pools is limited. Whilst the prevalence of such variation cannot be known without detailed research, there are practical as well as theoretical indications that it exists in Orkney, for example in the atypical local character of some common plants such as **Wild Angelica** *Angelica sylvestris* and possibly **Red Champion** *Silene dioica*. The loss of such visual diversity would be regrettable in itself, but it also has theoretical and practical implications including, for example, the 'fitness' of species to their particular local environment and hence their value for other species that depend upon them, and the potential uses to which they may be put, for instance for medical research.

Initially, we have concentrated upon species which represent important sources of nectar for the Great Yellow Bumblebee but over time we intend to expand upon this by including a wide range of flowering species which are native to Orkney. We envisage that the availability of a source of locally-produced seed could encourage more widespread introduction of these species into both the agricultural environment and gardens, and that this would ultimately increase the amount of favourable habitat throughout Orkney.

Initially we started with very small quantities of seed – teaspoons really – and over a period of two years four species were grown on and bulked up at the Agronomy Institute at the Orkney College. This was very successful and we were able to harvest considerable amounts of seed from these plots. We also benefitted from advice on how to improve the germination rate of certain species. Each autumn we have sent a quantity of seed to Scotia Seeds for cleaning and storage, the cost of which has been covered by RSPB. You would expect wildflowers to be easy to grow – and indeed some are; however others require more specialised conditions. For example the seeds of **Primrose** *Primula vulgaris*, **Cowslip** *Primula veris* and **Devil's-bit Scabious** *Succisa pratensis* germinate better following prolonged exposure to cold conditions; and **Vetch** *Vicia* species seeds have a hard outer coating which must be degraded before germination can take place. This process may be speeded up by soaking the seed overnight or scarifying its surface, e.g. with sandpaper.

Late in 2008 a field at the Council-owned property Happy Valley was made available to the Group where in recent years plots have been established containing the following species:

Red Clover	<i>Trifolium campestre</i>
Bird's-foot Trefoil	<i>Lotus corniculatus</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Water Avens	<i>Geum rivale</i>
Common Knapweed	<i>Centaurea nigra</i>
Tufted Vetch	<i>Vicia cracca</i>
Bush Vetch	<i>Vicia sepium</i>
Red Campion	<i>Silene dioica</i>
Selfheal	<i>Prunella vulgaris</i>
Ragged-Robin	<i>Lychnis flos-cuculi</i>
Cat's-ear	<i>Hypochaeris radicata</i>
Yellow-rattle	<i>Rhinanthus minor</i>
Devil's-bit Scabious	<i>Succisa pratensis</i>



Seed pods of Bird's-foot Trefoil

Recent projects

In 2011 an opportunity arose to use locally-sourced wildflower seed in a number of habitat enhancement projects which are planned for the new Schools Investment Programme projects at the Pickaquoy Centre, Stromness Primary School, Kirkwall Grammar School and the Papdale Halls of Residence. The approach to biodiversity enhancement at all four sites will see the creation of new, species-rich habitats through re-seeding areas with a variety of native grass and wildflowers, new woodland and shrub plantings, ponds and associated wetland habitats, and amenity plantings using plant species of recognised value for wildlife.

Seed for the first of these projects was collected during summer and autumn 2011, both at Happy Valley and from the wider countryside, and we were particularly grateful to receive donations of seed from a number of Field Club members. The seed mixes are broadly based on the wildflower mixes provided by commercial seed producers with adjustments being

made to ensure that only those species that are native to Orkney are included. Members of the Orkney Wildflower Group have also advised on the most appropriate grass species to include.

In autumn 2011 a quantity of seed was sown on the embankment surrounding the all-weather pitch at Pickaquooy. This included **Vetches**, **Yellow-rattle**, **Eyebright** *Euphrasia* species and **Devil's-bit Scabious**. Further seed will be sown in spring 2012 and this will be supplemented by plug plants later in the year.

At Stromness Primary School, which is due for completion in summer 2012, there are plans to use plug plants to enhance an existing grassed area at the head of Hamnavoe. Given the location and level of exposure to the sea it was considered that appropriate species should include **Thrift** *Armeria maritima*, **Yarrow** *Achillea millefolium*, **Bird's-foot Trefoil** *Lotus corniculatus*, **Sea Champion** *Silene uniflora* and **Kidney Vetch** *Anthyllis vulneraria* – all species commonly found in maritime grassland.

The grounds around Kirkwall Grammar School and Papdale Halls of Residence are not scheduled for completion until 2013, giving us time to generate further supplies of seed. At these sites the largest areas are likely to be sown with a northern hay meadow mix, and a smaller area will be occupied by a pond and surrounding wetland area.

Funding provided by the Scapa Flow Landscape Partnership Scheme during 2011 allowed us to purchase a mechanical seed harvester which has enabled us to collect seed from larger areas such as the RSPB reserve at Brodgar. The project has also benefited from funding from the Bumblebee Conservation Trust as well as a donation from Morrison Construction, the main contractor in the Schools Investment Programme.

The Orkney Wildflower Project started in a very small way but considerable progress has been made in the intervening years and it is encouraging now, that the opportunity has arisen to use the locally sourced seed for these biodiversity enhancement projects.

Earthworms.

Keith Fairclough

I have recently taken on the role of Earthworm Recorder for Orkney. I did so for two reasons: firstly because I cannot find a single record or reference to earthworms anywhere in the literature, and second, because I think they are fascinating animals, apparently totally ignored by naturalists in Orkney, despite the fact that they are so important, in so many ways.

The great naturalist Charles Darwin, after making a careful study of them, wrote this:

"...it may be doubted if there are any other animals which have played such an important part in the history of the world as these lowly organized creatures."

Wow! Who am I to argue with the great man?

Initially, his earthworm work drew as much, or more, attention as his evolution work. His book, *The Formation of Vegetable Mould Through the Action of Worms, With Observations on Their Habits*, (catchy title!), published in 1881, sold even better than *On the Origin of Species*, during Darwin's lifetime.

Darwin was convinced they were valuable for turning over the soil, in part by chewing it up and passing it out, thereby making it more fertile.

To find out how fast the worms were turning the soil, Darwin did experiments. He spread small coal stones across a field behind his house and left them for 20 or 30 years. Then, he dug a trench across the land and looked in the walls of the trench to see how far down the stones had sunk through the action of the worms.

One important thing that earthworms do is to *plough the soil* by tunnelling through it. Their tunnels provide the soil with passageways through which air and water can circulate, essential for micro-bacteria and plant roots to function efficiently.

One study showed that each year on an acre (0.4 hectare) of average cultivated land, 16,000 pounds (7200 kg) of soil pass through earthworm guts and are deposited on top of the soil, 30,000 pounds (13,500 kg) in really wormy soil! Charles Darwin himself calculated that if all the worm excreta resulting from ten years of worm work on one acre of soil were spread over that acre, it would be two inches (5 cm) thick.

This is important, because earthworm droppings, called *castings* when deposited atop the ground, are rich in nitrogen, calcium, magnesium, and phosphorus, and these are all important nutrients for healthy, prospering ecosystems. Grass around earthworm burrows grows taller and greener than grass just inches away.

Earthworms exhibit many fascinating aspects of behaviour. For example, when the soil gets very cold, very hot, very wet or very dry, earthworms struggle, but they have a range of survival strategies which vary from species to species. One typical behaviour is to tunnel deeper into the soil, to where conditions aren't so extreme. Some species, especially during hot, dry periods, do what's shown on the right. At a fair depth they roll themselves into balls and excrete mucous around themselves, creating a kind of cocoon. In such a state, their body functions slow down drastically. They go into a kind of suspended animation, known as aestivation, just waiting for soil conditions to improve.



In Orkney, everybody who works the soil or turns dung and compost will be well aware of the fact that earthworms form part of our native fauna. There are around 25 species which might be described as native to Britain, 12 of which are regarded as 'common'. However, many other exotic species have been accidentally introduced; but thankfully, they are largely confined to botanical gardens and commercial greenhouses. In the south of England, perhaps due to climate change, our native **Octagonal-tailed Worm**, *Dendrobaena octaedra* is being ousted by the European *D.attemsi*.

I have recently written to the British Earthworm Society in an attempt to find out which species have been recorded in Orkney but, up to the time of writing, I have failed to elicit a response. I have however (tentatively) identified several species myself.

The Lob Worm *Lumbricus terrestris*, is Britain's largest earthworm and can be up to 35cm (14") long when moving. They live in deep vertical burrows in the soil and can anchor themselves by broadening their tail to grip the sides of the burrow. They emerge at night to feed on fallen leaves and other decaying plant material.



The Brandling Worm *Eisenia fetida*, and the **Compost Worm** *Eisenia veneta*, are usually found in garden compost but they also occur in wet, decaying leaf litter, organic-rich soils and manure heaps. They eat rotting vegetation and grow to around 6 or 7 cm long respectively. In both species, the whole body is stripy on the upper surface, with dark red bands, separated by narrower pale pink or yellowish bands in between. In the compost worm, the saddle is usually a similar colour to the rest of the body, whereas it is paler in the brandling worm,



Compost Worm

which can exude an unpleasant-smelling yellowish fluid when handled.

The Blue-Grey Worm *Octolasion cyaneum*, is found in pasture and arable land, gardens and woodlands. It lives in the topsoil. The typical size of an adult is 10cm (4"). The body, from the first segment to the saddle, is partly or entirely pale in colour. It can vary from faint blue-grey to a pale rosy pink with a distinct yellow tail (the last 4 or 5 segments). It may have a lilac blue line on the upper surface.



Blue-Grey Worm

The Green Worm *Allolobophora chlorotica*, has a wide distribution and is often the most numerous earthworm in all but the most acid habitats. It occurs in 2 different colour morphs, a muddy greenish yellow colour, and a pale grey colour. It grows to around 8cm long when moving, and can produce copious amounts of yellow fluid from pores along its body when disturbed.



Green Worm

There are several other species which may possibly occur in Orkney, including

The Grey Worm, *Aporrectodea caliginosa*;

The Black-headed Worm, *A. longa*

The Redhead Worm, *Lumbricus rubellus*; and perhaps others.

If anyone is interested, it is worth trawling the net, where reference is made to ID keys and where many species are illustrated.

Oh by the way, if you chop a worm in half, it doesn't grow two bodies. In fact, in most cases, even the head end dies! So, be careful how you dig.

Feral Cats in Orkney *Are they part of our wild heritage?* **Dave Musson**

For the last 4 years my wife (Pauline) and I have been involved in the “Trap Neuter Release” (TNR) programme run by Orkney Cats Protection League. Just this year we have had close to ninety cats pass through our hands. A large proportion of these will have been Feral. Experience gained trapping Feral Cats made us increasingly aware of our lack of knowledge of the ways of these animals in their habitat. In order to further our understanding we drove many miles and spent many hours observing Feral Cats in rural Orkney. I have also trawled through international literature to learn from other more detailed research.

The following is a brief outline of some of the information gained as applied in the setting of The Orkney Islands.

What are Feral Cats?

Feral cats are Domestic Cats *Felis catus* or the descendents of domestic cats that are now living and reproducing in the wild without significant human support.

How and when did cats first arrive in Orkney?

Genetic sequencing now suggests that except for accidental cross breeding *Felis catus* is not related to the wildcats of Europe. In fact the ancestors of Domestic Cats broke off from their wild counterparts to begin living with humans 130,000 years ago and a similar cat to *Felis catus* originated in the Middle East around 100,000 years ago¹. There is archaeological evidence of these cats living with people in Cyprus around 9,500 BC¹.

Cats could theoretically have been brought to Orkney with any group of settlers to have arrived since the last ice receded. It is known that the Iron Age Settlers of Britain kept Domestic Cats² and that the Romans pictured Domestic Cats on their mosaics of Roman life³. More relevant to Orkney are the Vikings who had a special place for cats in their lives. The goddess Freya is often pictured in a chariot pulled by two cats.

One very large breed of *Felis catus* - The “Scogkatt” or “Forest Cat” - is a large Norwegian breed and generally recognised as the original Viking cat. Male Scogkatts reach over 10 kg in weight and females over 6 kg. That Orcadian Ferals can trace at least some of their ancestry to the Vikings may be supported by the size that some Orcadian Feral Cats grow to. We have trapped sleek, healthy feral males weighing in excess of 10 kg (these would not fit into a normal cat carrier). Females can weigh in excess of 6 kg.

It is likely that all influxes of people to the Orkneys as well as visiting ships brought cats to the islands. Some of these cats may have been left behind when the people left. Therefore it is probable that Feral Cats have been a part of the Orkney fauna since at least Viking times and have been boosted by new blood through the centuries till the present day.

1. BBC News, Science and Nature: DNA Traces Origin of Domestic Cat. 26/06/2011.

2. The British Museum. Iron Age Tours: Daily Life in Iron Age Britain. (Page 1) Undated.

3. Societas Via Romana: Pets in Ancient Rome. (undated)

How many Feral Cats are there in Orkney?

No one knows. It is estimated that there are around 130,000 feral cats in Scotland as whole⁴. After trapping, neutering and releasing around 70 cats – including rehoming kittens- in South Ronaldsay and Burray we began to catch only neutered animals and reports of new Feral colonies all but ceased.

This is not evidence. There could be many feral cats that we are not aware of.

How do they survive in Orkney?

Surprisingly well is the answer. The impression of thin, weakly cats surviving on the edge of existence is not at all true of most Orcadian Ferals. True Feral Cats are very secretive and rarely seen. It is only when kittens force Mum and family into the open or when old or sick that these animals show themselves. On numerous occasions we have been called to trap a female with kittens. The first cat to be trapped will often be a large (often huge) Tom whose presence had previously been unsuspected.

It was not until the late 1970s that feral domestic cats were studied and found to have a highly complex social structure⁵. It is now known that they live in close-knit colonies of varying sizes. It has been found that colonies that need to hunt to survive are generally smaller in number than those that are supported in some way by humans. Related females support each other, often lying together. They act as midwives to each other, co-operatively raising young, nursing, nesting, guarding and communally grooming. They even co-operate in teaching kittens how to hunt and how to interact with other cats, as well as teaching them to be wary of humans. Females will also act together to repel invading cats and other animals. Toms will bring food to kittens from their own colony and even play with kittens. We once attended a trap to find it contained an enormous Tom whilst kittens around the trap played with him through the mesh.

It is known that in most areas only 80% of kittens survive the first year. In Orkney the mortality rate is likely to be higher. By keeping tabs on cat families we found it rare for a female with small kits to be seen with the same young who were over three months old.

We have found that after true feral kittens reach the age of around 7 weeks they will be very difficult to get tame enough to become domestic pets. However if the colony is regularly fed by a human beings, much older kittens can be tamed quite easily. This supports the theory that kittens are taught to distrust humans by the other cats in the colony.

Are Feral Cats harmful to the environment?

Cats are very efficient predators, but are opportunistic feeders taking advantage of any food opportunity that comes along. They catch and eat birds and mammals. They also eat dead animals and human leftovers. They will not slaughter a whole shed-full of birds in one go as do foxes and mustelids. Once a cat finds a good food supply, that cat is likely to keep on coming back whilst the food is there. Thus a whole brood of chicks or voles may be eaten over a time. Cats eat birds, rats, mice, voles and rabbits. Rats do eat chicks and also eggs, mice and voles which they store in “larders”. Cats do not eat eggs or have larders.

In the middle ages the Church viewed cats as being evil. Domestic cats of the time were persecuted almost to extinction. It is generally accepted that the loss of cats and the ensuing proliferation of rats was the main factor in the spread of Rat Flea borne Bubonic Plague.

There is evidence from isolated islands that introduced cats have decimated or exterminated entire species.

In Conclusion: Cats have been living wild in Orkney for hundreds – possibly thousands of years and have taken on the role as Top Predator (Mesopredator) in a very complex ecological web.

Changes in human activity, including farming, building, fishing etc. alter the balance of this web, and the result is often a decline in both prey and predator species.

It is internationally accepted that the Trap, Neuter and Return program is the most effective means of regulating Feral Cat populations. In Orkney trapped Feral Cats over four months old are neutered and their left ears are trimmed for later identification; they are then returned to the point of capture. These cats will then hold this territory against all newcomers. Kittens are usually socialised (tamed) and rehomed as domestic cats. Some will always go un-trapped and thus un-neutered.

The intention of this system is that the Orcadian Feral Cat population should be maintained at a healthy level that is in balance with the food web as whole.



Feral Kitten on arrival after trapping



Prior to being trapped this kitten had lost an eye due to infection. It became quite tame and now has a good home

4. Game and Wildlife Conservation Trust: National Gamebag Census 2011 (Feral Cats)

5. CVC Medicine Centre: Sharon L. Crowel- Davies : Dispelling the Myth of the Asocial Cat, (College of Veterinary Medicine, University of Georgia, 2006).

Spiders of Sanday

Edward Milner

Until 2003 there were apparently no spider records for Sanday. This low-lying island has a variety of habitats including, most notably, extensive areas of dune grassland, known as machair, and coastal sand dunes covered with **Marram Grass** *Ammophila arenaria*. There are also areas of damp herb-rich meadow, mires and swamps with reed-beds *Phragmites communis*. Elsewhere much of the land comprises 'improved' pastureland and arable crops, with just small areas of heathland remaining of the pre-'improvement' land cover. The author spent a week on the island in July 2003, collecting spiders from sites across the island (see list below), and setting trios of pitfall traps at a number of places. These were then emptied for 12 consecutive months by a local schoolboy, Thomas Newton, and the samples sent to the author for sorting in London.

From these efforts a provisional list of spiders has been produced, and the annotated list below includes both the number of sites on Sanday and the number of other Orkney records (courtesy the Orkney Museum) for each species. Nomenclature is according to Harvey *et al.* (2002).

Sanday sites

A list of the collecting sites follows. Those marked * were pitfall-trapped for 12 months; in the text these, plus Start Point and Tofts Ness are referred to as the 'main sites' where more of the ground collecting, vegetation sorting etc. was done.

Locality	HY map ref	Habitat
Backaskail Bay	653939	sand dune
*Bay of Lopness	727435	sand dune
*Cata Sand	710408	sand dune/machair
*Cata Sand (west)	703413	sand dune/salt marsh
Cleat	699422	wetland veg; low pH
East Mill Brae	679450	heath/moor; heather
*Isegarth	668377	wetland veg; low pH
Little Sea	682393	sand dune
Myrtlelane	683414	walls/buildings
Quoy Ayre	677390	sand dune
Roo	661450	walls/buildings
Roos Wick	657481	sand dune/machair
*School	665406	heath/moor; heather
Start Point	769439	sand dune/machair
Stove (south end)	610356	heath/moor; heather
The Wart	630377	sand dune/machair
Thorness Farm	669431	sand dune
North Loch	748461	wetland veg; low pH
Tofts Ness	755470	machair
*Whitemill Bay	687466	sand dune/edge of wetland

Results

During this survey 66 spp. of spider were recorded, of which two (*Tapinocyba praecox* and *Trochosa ruricola*) were new records for Orkney. Orkney has been under-recorded; although 146 spp. have been recorded up to now (February 2012), 35 species (25% of the total) are known only from a single record, and many others only from the Mainland and Hoy. Of the species found during this survey 48 spp. (72%) are money spiders (*Linyphiidae*), as is to be expected at this latitude, while ten other families are represented.

The larva of an ichneumonid parasite *Acrodactyla degener* was found attached to the abdomen of a single immature *Lepthyphantes* sp. probably *tenuis*; there is one previous record of this parasite from Linyphiid a spider at Berriedale, Hoy..

Annotated list of spiders recorded from Sanday

The numbers in brackets refer to the number of sites on Sanday, followed by the number of other Orkney records for the species.

MIMETIDAE (pirate spiders)	
<i>Ero furcata</i> [1, 2]	Mimetids are spiny, spider-hunting species which occur as isolated individuals in many habitats. A single female of <i>E. furcata</i> was collected from sorting tussocky grass at Cata Sand.
THERIDIIDAE (tangle-web spiders)	
<i>Robertus lividus</i> [3, 5]	This is a small brown spider found commonly under stones and in grass throughout Scotland and the Northern Isles. During this survey both sexes were found at Cata Sand, Isegarth and at School (heathland). A second, scarcer species <i>R. arundineti</i> found at several sites elsewhere in Orkney is not yet recorded from Sanday.
LINYPHIIDAE (money spiders)	
<i>Ceratinella brevipes</i> [3, 8]	This is a tiny black money spider found fairly frequently throughout the British Isles including Shetland and several localities in Orkney. During this survey individuals were trapped at three sites; Isegarth, School and at Whitemill Bay.
<i>Walckenaeria acuminata</i> [6, 4]	This very widespread winter-active species, in which the male has an extraordinary projection of the carapace like a periscope, is recorded from several sites around Orkney and was trapped at all six pitfall sites during this survey.
<i>Walckenaeria antica</i> [3, 3]	Almost as common and widespread as <i>W. acuminata</i> , <i>W. antica</i> was found at three sites during this survey (Cata Sand west, School, and Whitemill Bay).
<i>Walckenaeria vigilax</i> [3, 1]	This is less common than the previous two species but was found at three sites on Sanday; the only previous Orkney record was from Hill of White Hamars.
<i>Dicymbium brevisetosum</i> [5, 3]	Although this species, common in damp grassy places, can only be distinguished from <i>D. nigrum</i> in the male sex, all females have been assigned to <i>D. brevisetosum</i> since so far no male <i>D. nigrum</i> has been found on Sanday. <i>Dicymbium</i> was found at four sites and a female assumed to be the same species was found at Whitemill Bay.
<i>Dicymbium tibiale</i> [3, 9]	Closely related to the previous species, and showing similar habitat preferences, <i>D. tibiale</i> is a northern species frequent throughout Orkney. In this survey it was found at three of the main sites.

<i>Dismodicus bifrons</i> [4, 10]	Similar in habitat preferences to the two previous species, it is also widespread in Orkney and recorded during this survey at four sites on Sanday.
<i>Hypomma bituberculatum</i> [6, 18]	Another species usually found among damp grass or other low vegetation; it is widespread in Orkney and was found at six sites on Sanday.
<i>Baryphyma trifrons</i> [2, 2]	This small money spider occurs in damp places but also frequently on sand dunes. It is commoner in the north with few records south of the Humber. Two specimens were found during this survey, both in grass near the coast: there are two previous Orkney records both from the Mainland.
<i>Gonatium rubens</i> [3, 4]	Common in most open habitats including heathland throughout the British Isles, <i>G. rubens</i> breeds in late summer or autumn. It was found at three sites, 17 specimens being trapped at Isegarth in September.
<i>Peponocranium ludicrum</i> [1, 2]	Another tiny species of unimproved grassland especially in sandy places, <i>P. ludicrum</i> occurred in considerable numbers in heathland at School where 28 specimens were trapped in a single month (May).
<i>Pocadicnemis pumila</i> [9, 7]	A common species of grassland throughout the British Isles, <i>P. pumila</i> was recorded at nine sites on Sanday; it has also been widely recorded elsewhere in Orkney.
<i>Oedothorax gibbosus</i> [9, 11]	A common spider of disturbed damp sites and sandhills, this species was found at 9 sites on Sanday, and is widespread elsewhere in Orkney.
<i>Oedothorax fuscus</i> [4, 2]	A common spider of disturbed sites, this was not as common as the other two <i>Oedothorax</i> spp. on Sanday; it was recorded from four sites, mainly in pitfalls but not in heathland at School.
<i>Oedothorax retusus</i> [8, 5]	A common and widespread spider of disturbed damp grassland, it was found at all the main sites on Sanday, and is recorded from five other sites elsewhere in Orkney.
<i>Trichopterna thorelli</i> [2, 2]	This strangely-shaped spider is regarded as very local throughout the British Isles. It is recorded from scattered localities normally in damp places and among <i>Sphagnum</i> as far north as Fair Isle (Shetland). Several specimens were trapped at Isegarth in a boggy area, and a single male was collected behind the sand dunes at Start Point.
<i>Silometopus elegans</i> [8, 8]	This tiny spider is fairly common in damp places and amongst grass throughout the northern half of the British Isles including mountain areas. During this survey it was found at all the main sites (except School) on Sanday.
<i>Silometopus ambiguus</i> [2, 7]	This species is found exclusively in coastal habitats such as salt-marshes and sand dunes. Specimens were trapped at Cata Sand and at Whitemill Bay.
<i>Tiso vagans</i> [8, 4]	This common and widespread spider of grassland was found at all the main sites except School.
<i>Tapinocyba praecox</i> [3, -]	This tiny spider of unimproved grassland is scarce in northern Britain; three males were trapped at Cata Sand in March. This is the first record for Orkney and the northernmost record in Britain.
<i>Monocephalus fuscipes</i> [2, 10]	This common species is most often found in woodland but appears to find open habitats satisfactory in the northern parts of Britain. On Sanday it was trapped at Isegarth and at Whitemill Bay, and is widespread elsewhere in Orkney.

<i>Lophomma punctatum</i> [3, 8]	This is almost exclusively found in damp places and wetland; on Sanday it was found at three sites, and it has been recorded from seven other damp sites elsewhere in Orkney.
<i>Savignia frontata</i> [3,5]	This tiny spider is a common pioneer species typically found in disturbed habitats. It was found at three of the main sites on Sanday.
<i>Diplocephalus permixtus</i> [4, 6]	This tiny spider is almost exclusively found in wet marshy habitats and is common throughout the British Isles. It was found at four of the main sites on Sanday.
<i>Araeoncus crassiceps</i> [3, 6]	This tiny spider, frequently found in damp grassy areas, has a scattered occurrence throughout the British Isles and is rarely common, but sometimes occurs in very large numbers. At Whitemill Bay in May a trio of pitfall traps caught over three hundred individuals in a single month. Mass ballooning of this species has also been reported on Hoy and it has been recorded from at least six other sites elsewhere in Orkney.
<i>Typhochrestus digitatus</i> [2, 1]	This scarce winter-active spider occurs on mountains and in unimproved grassland as far north as Shetland. During this survey it was found at two sites on Sanday; it was previously reported from just one other Orkney site.
<i>Erigone dentipalpis</i> [5, 7]	This is a very common and widespread pioneer spider found in many habitats but especially disturbed places, 'improved' grassland etc. A few individuals were trapped at five sites on Sanday, and it has been recorded from seven other sites elsewhere in Orkney.
<i>Erigone atra</i> [10, 6]	This spider occurs with the previous species but usually in smaller numbers. On Sanday it appears to be more common than <i>E. dentipalpis</i> and was found at ten sites.
<i>Erigone arctica</i> [3, 6]	This species is a common inhabitant of coastal habitats such as sand-dunes and dead seaweed along the shoreline. During this survey it was found at three sites, and has been recorded from six other coastal sites elsewhere in Orkney.
<i>Erigone longipalpis</i> [5, 2]	Another species almost exclusively found in coastal habitats throughout the British Isles, this is generally less common than the previous species. On Sanday it was more common, and was found at five sites; it has been recorded only twice before from elsewhere in Orkney.
<i>Leptorhoptrum robustum</i> [13, 3]	This spider of wetlands and damp grassland is not generally very common but occurs widely in northern areas including Orkney and Shetland. On Sanday it was found at thirteen sites, but mainly as isolated individuals.
<i>Halorates reprobus</i> [1, 2]	This exclusively coastal species occurs in shoreline litter and on sand-dunes throughout the British Isles. At Cleat several specimens were found among the tidal debris, and it has been recorded from the same habitat at two other places in Orkney.
<i>Porrhomma pygmaeum</i> [3, 3]	This spider of damp, marshy places is much less frequently found in northern parts of Britain and there are few records north of Helmsdale in Sutherland. On Sanday it was found at three sites (Start Point, North Loch and Whitemill Bay) suggesting it is fairly common, but these were the northernmost records for the British Isles; it has not been recorded from Shetland, but has been recorded from three other Orkney sites.
<i>Agyneta conigera</i> [2, 1]	A fairly uncommon species of undisturbed grassland with a northern distribution, this small spider was found at two sites on Sanday: Backaskail Bay and Whitemill Bay, but only one other Orkney site.

<i>Agyneta decora</i> [4, 5]	A widespread but never common spider usually found in undisturbed grassland and heathland, it was found at four of the main sites on Sanday.
<i>Centromerus prudens</i> [2, 3]	This is a fairly uncommon winter-active spider of dry grasslands, commoner in the north than the south of the British Isles. Specimens were found during this survey at School and Cata Sand in December and January.
<i>Centromerita bicolor</i> [5, 4]	This winter-active grassland spider can be the most abundant spider species during January and February. It is widespread throughout the British Isles. During this survey it was taken in pitfalls at five sites during October and November. Many winter-active spiders are under-recorded, but <i>C. bicolor</i> has been recorded from four other Orkney sites.
<i>Centromerita concinna</i> [5, 3]	Another winter-active species, less common than the previous species and generally restricted to undisturbed grassland. During this survey it was recorded from the same five pitfall sites from October through to February. It is recorded from three other sites elsewhere in Orkney.
<i>Bathyphantes approximatus</i> [1, 5]	This spider is associated with damp, marshy places and has a scattered distribution with relatively few records from the north of Scotland. During this survey a single male was trapped at Whitemill Bay in November; it is recorded from five other sites elsewhere in Orkney.
<i>Bathyphantes gracilis</i> [12, 11]	This common and ubiquitous species is found throughout the British Isles, often in large numbers. During this survey it was found at twelve sites on Sanday, and is widespread throughout Orkney.
<i>Bathyphantes parvulus</i> [6, 6]	This spider is somewhat less common than <i>B. gracilis</i> , but occurs in most grasslands of all types. During this survey specimens were collected at six sites on Sanday.
<i>Diplostyla concolor</i> [1, 3]	This spider of damp and shaded disturbed habitats is ubiquitous in the south but is very scarce north of Inverness. A single specimen was trapped at Cata Sand west during this survey; elsewhere in Orkney it has been recorded from only three other sites.
<i>Poecilonea variegata</i> [1, 5]	This spider usually found under stones, on walls etc, has a scattered distribution and is not generally common although it occurs as far north as Shetland. During this survey a one male and two females were found under stones at Whitemill Bay, but not elsewhere on Sanday.
<i>Bolyphantes luteolus</i> [5, 4]	A widespread autumn/winter active spider, commoner in the north, <i>B. luoteolus</i> is usually found in unimproved grassland. It was found at five of the main sites on Sanday; elsewhere in Orkney it has been recorded from four other sites.
<i>Lepthyphantes tenuis</i> [11, 17]	This is one of the commonest and most widespread spiders in Britain; it is found at all times of year in most habitats. During this survey it was found at 11 different sites, and it has been recorded from many other sites elsewhere in Orkney.
<i>Lepthyphantes zimmermanni</i> [1, 13]	Much less common than the previous species, <i>L. zimmermanni</i> is more often found in heathland or woodland than grassland. Only a single specimen was found on this survey, but it has been recorded from most of the other sites elsewhere in Orkney.
<i>Lepthyphantes mengei</i> [5, 7]	This smaller relative of the two previous species is widespread in unimproved grassland and heathland. During this survey it was found at five different sites on Sanday; it is known from six other Orkney sites.

<i>Leptyphantes ericaeus</i> [7, 10]	This tiny species is common in unimproved grassland and heathland throughout the British Isles. It was found at all the main sites on Sanday, and is widely recorded elsewhere in Orkney.
<i>Allomengea scopigera</i> [7, 4]	This is a fairly common northern species, active in late summer and autumn only, with a scattered distribution in northern Scotland as far as Shetland. It is widespread in Sanday and recorded from four other sites elsewhere in Orkney.
TETRAGNATHIDAE (long-legged orb-web spiders)	
<i>Pachygnatha clercki</i> [7, 5]	This fairly common medium-sized spider is associated with marshland and damp grassland and occurs as far north as Unst, Shetland. Specimens were taken at several sites both by searching and in pitfalls including one at Cata Sand in February.
<i>Pachygnatha degeeri</i> [3, 4]	A common grassland and heathland spider which occurs as far north as Unst, Shetland. It appears to be less common than <i>P. clercki</i> : it was found at 3 locations only and for Orkney as a whole there are records for about half the number of sites (6 out of 11).
ARANEIDAE (orb-web spiders)	
<i>Zygiella x-notata</i> [1, 1]	This common small orb-web spinner makes a characteristic web with one segment missing. It was found on numerous windows (a typical habitat) around Roo buildings. It is only recorded from one other locality in Orkney, and must be under-recorded. Other common orb-web spiders such as <i>Metellina</i> spp. and the Common Garden Spider (<i>Araneus diadematus</i>) are both widely found in small numbers through mainland Orkney but have not so far been found on Sanday.
LYCOSIDAE (wolf spiders)	
<i>Pardosa palustris</i> [2, 2]	This wolf spider is found commonly throughout the British Isles, but much less frequently in the north. It was found at Cata Sand (in pitfalls) and at Start Point, but not elsewhere on Sanday. It may be under-recorded in Orkney generally. The other two known localities are the two most intensively investigated: Berriedale and Hill of White Hamars, both on Hoy.
<i>Pardosa pullata</i> [9, 11]	This common and widespread wolf spider is found throughout Sanday and was recorded at 9 different sites; it is also widely recorded from other sites in Orkney.
<i>Trochosa ruricola</i> [1, -]	This larger wolf spider is generally found in damp places, but only scarcely in the northern parts of Britain. A single specimen was trapped at Cata Sand in August. This was the first record for Orkney; there is only a single record from Shetland.
<i>Trochosa terricola</i> [1, 5]	A much commoner spider (in the north) than <i>T. ruricola</i> , this species has been recorded from five localities elsewhere in Orkney. During this survey a single specimen was trapped at Cata Sand in April.
<i>Pirata piraticus</i> [9, 4]	This common and widespread marshland spider was found at all sites where a suitable habitat occurred. It is only recorded from three other sites in the rest of Orkney, but this reflects the general under-recording of spiders. It is widespread in Shetland
AGELENIDAE (house-spiders)	
<i>Textrix denticulata</i> [3, 9]	This common northern species is usually found in stony places such as stone walls etc and in a range of other habitats. It was found on walls at three sites, and is known to occur widely elsewhere in Orkney.

<i>Tegenaria domestica</i> [1, 3]	The Common House Spider has become established inside buildings throughout the British Isles; it was found in one house during this survey but has been recorded from three other sites in Orkney and is probably much under-recorded, and may occur inside most buildings.
AMAUROBIIDAE (large blue-web spiders)	
<i>Amaurobius fenestralis</i> [2, 4]	This medium-sized blue-web spider is found under stones, in walls and around buildings throughout the British Isles. It was found at two sites on Sanday and has been recorded on the Mainland and on North Ronaldsay.
CLUBIONIDAE (mouse-spiders)	
<i>Clubiona phragmitis</i> [3, 4]	This hunting spider is common throughout England but much less common in Scotland, although it is recorded as far north as Shetland. It is most commonly found on <i>Phragmites</i> stems, but also less often on sand dunes. At Start Point and Whitemill Bay it was found to occur in considerable numbers under stones in the sand and in Orkney (three other sites as well as Sanday) seems to reach a greater size than elsewhere in the British Isles.
<i>Clubiona trivialis</i> [1, 7]	This small hunting spider is predominantly a northern, heathland species which was found only at School among the heather. It occurs usually singly and has been recorded from several other sites elsewhere in Orkney.
GNAPHOSIDAE (hunter spiders)	
<i>Haplodrassus signifer</i> [1, 1]	A fairly common and widespread species of unimproved grassland and heathland, a single specimen was trapped at Cata Sand in August. There is only one previous record elsewhere in Orkney.
THOMISIDAE (crab spiders)	
<i>Xysticus cristatus</i> [7, 3]	This crab-spider is common throughout the British Isles especially in unimproved grassland and heathland. During this survey it was found at seven sites on Sanday, and it has been recorded from several other sites elsewhere in Orkney.
<i>Ozyptila trux</i> [2, 9]	This tiny crab spider is widespread but rarely common. A single male was trapped at School, and it has been recorded from seven other sites throughout Orkney.

Discussion

This preliminary species list is likely to be added to once further collecting has been done. Some systematic sampling of the machair would prove interesting as there is no baseline data of the spider fauna for this habitat, either on Sanday or in the Hebrides. From several other studies conducted by the author, it appears that many small spiders occur in very small numbers sparsely distributed through habitats such as short grassland, so that it may take time for a truer picture of the spider fauna of Sanday to emerge.

Acknowledgements

I would like to thank Dr Peter Merrett for the identification of some specimens, and Dr Mark Shaw for identification of the spider parasite, and Thomas Newton for his kind assistance with emptying spider traps in all weathers!

References

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Edward Milner, *Recorder of Spiders for Orkney, 80 Weston Park, London N8 9TB*

This year's account is more anecdotal and less comprehensive than those of previous years. This is because I have been expending much time and effort recently in producing a unified database of Orkney plant records and a new checklist of species. By the time this edition of 'Orkney Naturalist' appears, the checklist will be accessible on the websites of the Orkney Field Club and Botanical Society of the British Isles (BSBI).

Local field meetings

Local BSBI members had three meetings in 2011, in the Orphir hills at Mid Hill and Naversdale; the Bigswell/Germiston marsh in Stenness; and the saltmarsh at Bay of Suckquoy in St Andrews.

The Orphir and Stenness meetings had a particular purpose, ultimately unsuccessful, of finding species recorded long ago and not seen since, these being **Three-flowered Rush** *Juncus triglumis* on the hill and **Spiked Sedge** *Carex spicata* on the marshland fringe. The well-recorded area including Mid Hill yielded a familiar array of upland species and was notable for the abundance of **Cowberry** *Vaccinium vitis-idaea* and the presence of **Stiff Sedge** *Carex bigelowii* (Locally Rare)¹, the latter at one of only two known locations outside Hoy. The Bigswell area yielded a respectable 144 species, mainly of fen, flush, neutral grassland and moorland fringe. The total included a new County record (actually discovered two days earlier by ERM) of the alien species **Bronze Pirr-pirri-bur** *Acaena anserinifolia*, escaped from a nearby garden and apparently spreading along the roadside verge (Mid-Bigswell, HY334104, 09/06/2011), and a **Dock** *Rumex* hybrid *R. x pratensis* (= *R. crispus x obtusifolius*) (Locally Scarce)¹.

The very accessible saltmarsh at Bay of Suckquoy is a fine example of this habitat, almost unmodified by human intervention. **Long-bracted Sedge** *Carex extensa* (Locally Scarce), recorded here more than 50 years ago, was not re-found on this occasion, but there was plenty more of interest. **Annual Sea-blite** *Suaeda maritima* and **Saltwort** *Salicornia europaea* agg. were unusually abundant. We were not able to identify the *Salicornia* to species, but had more success with the equally difficult **Eyebrights** *Euphrasia* spp., finding plenty of **Foula Eyebright** *E. foulaensis* (Nationally Scarce)² and, almost certainly, a few plants of **Heslop-Harrison's Eyebright** *E. heslop-harrisonii* (Locally Rare and Nationally Rare)³. Both **Sea-spurreys**, **Lesser** *Spergularia marina* and **Greater** *S. media* were present and flowering side-by-side, the differences for once being clear to see. On the edge of the site, **Dockens** *Rumex* spp. drew attention, notably **Northern Dock** *R. longifolius* (Locally Rare and new for East Mainland), both subspecies of **Curled Dock**, *R. crispus* ssp. *crispus* and *R. crispus* ssp. *littoreus*, also an apparent *Rumex* hybrid whose precise identity escaped us. Record details for all these species are HY5204, 31/07/2011. Also on the edge of the site was a patch of **Large Bindweed** *Calistegia silvatica*, no doubt a garden escape and thus an alien, but a new County record nevertheless (HY52480410).

¹ Criteria for 'Locally Rare' and 'Locally Scarce' follow guidelines issued by the Botanical Society of the British Isles (BSBI) for compiling 'County Rare Plant Registers', and a draft local list in preparation.

² Found in not more than 100 10 km grid squares in the British Isles

³ Found in not more than 15 10 km grid squares in the British Isles

The BSBI Threatened Plants Project

This national project continues and the focus in 2011 was on **Small White Orchid** *Pseudorchis albida* (Locally Scarce). Plants were re-found at the two pre-selected survey locations: close to the road to Sandy Loch, Hoy, HY22730354, 01/07/2011 (RM and JT), and between Craig Gate and Runcigill, Rackwick, Hoy, ND21099838 and nearby, 04/07/2011 (JEC). The few remaining plants at the first site do seem to be threatened, as the area has been heavily grazed and poached by cattle in recent winters. Two plants were found at an apparently new site west of Round Hill, Hoy, HY21830371, 01/07/2011 (JEC) (there is a report of some seen near here before but there is apparently no actual record).

Other new County records

Purple Toadflax *Linaria purpurea*, Burwick, South Ronaldsay, ND43788410, 16/07/2011 (DM conf. JEC), a well-established clump on a stony embankment;

Dandelion *Taraxacum exacutum*, North Flaws, South Ronaldsay, ND457856, 10/05/2011 (JEC det. A J Richards);

Dandelion *T. pallidipes*, Burwick, South Ronaldsay, ND440842, 10/05/2011 (JEC det. A J Richards);

Dandelion *T. xanthostigma*, North Flaws, South Ronaldsay, ND457856, 10/05/2011 (JEC det. A J Richards);

Deergrass *Trichophorum cespitosum* (formerly *T. cespitosum* ssp. *cespitosum*), in fen below pumping station, Hoy, HY223035, 10/07/2011 (ERM conf. A Amphlett & M Braithwaite);

False Fox-Sedge *Carex otrubae*, near Breck, Orphir, HY3042504095, 16/10/2011 (ERM conf. A Chater), plants just above strandline;

Water Sedge *Carex aquatilis*, Blows Moss, South Ronaldsay, ND45738604, 01/05/2011 (JEC conf. M Porter), an extensive stand in swamp near east end of the Moss.

Other records of note

Among a total of nearly 2000 records received in 2011 there were many unusual or otherwise interesting ones. I have confined my selection mainly to locally or nationally notable⁴ species recorded at new sites or at previously known sites where not seen for many years. This does not mean that more recent updates and the like are not important or welcome: they most certainly are!

Stag's-horn Clubmoss *Lycopodium clavatum* (Locally Scarce), Rackwick, Hoy, ND20189985, 04/07/2011 & 02/10/11, a large colony at junction with road to The Glen (JEC, then ERM); and at South Rusky Hill, Stennes, HY335102, 31/08/2011 (ERM): both new sites within 10km sqs.

Moonwort *Botrychium lunaria*, near Leafea, Stromness, HY238097, 07/06/11 (KS): first for this area since 1922.

Hybrid Horsetail *Equisetum x litorale* (= *E. arvense* x *fluviatile*) (Locally Scarce), White Glen, Hoy, HY24290232, a large colony along roadside (JEC conf. Chris Page): new site within 10 km sq.

Black Spleenwort *Asplenium adiantum-nigrum* (Locally Scarce), on crag between Swart Field and Gliffter, Rousay, HY395287, 18/04/11 (ERM): update for site.

⁴ 'Notable' is used here in a general sense, meaning anything of note for a variety of reasons in a local or national context.

Maidenhair Spleenwort *Asplenium trichomanes* ssp. *quadrivalens*, near Cleat, South Ronaldsay, on shaded wall of rock-cut well, ND45508484, 22/02/2011 (JEC): first record in linked South Isles.

Long-headed Poppy *Papaver dubium* ssp. *dubium* (Locally Scarce), South Links, Burray, ND486970, 21/07/2011 (JEC with Wildflower Society group); update for 10 km sq.

White Ramping Fumitory *Fumaria capreolata* (Locally Scarce), Bain, Sandwick, HY253203, 16/08/2011 (ERM): not new or update, but an unusual abundance of this scarce Fumitory

Swedish Whitebeam *Sorbus intermedia*, North Dales, Stenness, HY32380831, 04/06/2011 (ERM): a small sapling, clearly self-seeded.

Salmonberry *Rubus spectabilis*, Langa Skeo, Stenness, HY3257308317, 04/06/2011, two plants of this invasive alien found and destroyed (ERM): first record in this valley.

Small-flowered Cranesbill *Geranium pusillum*, Queenamidda, Rendall, HY372206, 8/08/2011 (JBR): a rarely recorded bird-seed alien.

Northern Yellow-cress *Rorippa islandica* (Nationally Scarce), Backaskaill links, Sanday, HY64783945 and HY64863973, 02/09/2011 (JEC): new sites in recent 10 km sq.

Horse Radish *Armoracia rusticana* (Locally Rare), Sandside, Deerness, HY591070, 08/05/2011 (ERM): new for 10 km sq.

Northern Dock *Rumex longifolius* (Locally Scarce), track to Knowe of Yarso, Rousay, HY40772767, 14/08/2011 (ERM): first for 10 km sq and island.

Grass-leaved Orache *Atriplex litoralis* (Locally Rare), 4th Barrier, Burray, ND48029534, 31/08/2011 (JEC): update for 10 km sq.

Trailing Azalea *Kalmia* (formerly *Loiseleuria procumbens*) (Locally Rare), west of Back Saddles, Hoy, HY19910308, 20/06/2011 (OFC): update for 10 km sq.

Serrated Wintergreen *Orthilia secunda*, Locally Rare, north-west slope of Blotchnie Field, Rousay, HY41382914, 14/08/2011, a single fruiting spike among non-flowering plants: at a well-known and recorded site but unusual to find flowers or fruits.

Field Gentian *Gentianella campestris*, RDB listed as 'Vulnerable', Black Craig, Stromness, HY218111, 02/08/2011, at least 1000 plants on each side of cliff-top path (PH): new site, and unusually large number, within recent 10 km sq.

Foula Eyebright *Euphrasia foulaensis* (Nationally Scarce), Neblonga, Stromness, HY220114, 03/08/2011, 1000s or even 10,000s of plants (ERM): new site, and an unusual abundance, within recent 10 km sq.

Corn Marigold *Glebionis* (formerly *Chrysanthemum*) *segetum* (RDB 'Vulnerable' and Locally Scarce):

1. Bain Sandwick, HY253203, over 1200 plants in arable field (ERM): not new or update, but an unusual abundance.

2. Herston, South Ronaldsay, ND421917, 26/08/2011 (DM): update for 10 km sq.

Common Cornsalad *Valerianella locusta*, Queenamidda, Rendall, HY372206, 20/07/011, (JBR): a rarely recorded bird-seed alien.

Bog Orchid *Hammarbya paludosa* (Locally Rare), Glims Moss, Birsay, HY30972285, 11/08/2011, a total of 20 plants of which six in flower (JEC and ERM): not new or update, but first count and accurate grid reference.

Early Marsh Orchid *Dactylorhiza incarnata*, Yesnaby road, Sandwick, HY23651530, 07/06/2011, 140 spikes in a damp patch in field on north side of road, of which 20% white (ERM): not new or update, but so many white ones unusual.

Least bur-reed, *Sparganium natans* (Locally Rare), near Haybrake, Lyness, North Walls, ND30669464, 04/06/2011 (JEC conf. Effy Everiss): new for 10 km sq and island.

Hybrid Deergrass *Trichophorum x foersteri* (= *T. cespitosum x germanicum*) (Locally Rare), in flush below Braebuster road corner, HY222035, 24/07/2011, (ERM): not new, but second Orkney record not far from first in 2010.

Saltmarsh Flat-sedge *Blysmus rufus* (Locally Scarce), Swanbister Bay, Orphir, HY354051, 04/05/2011 (JEC): new site and update for 10 km square.

Curved Sedge *Carex maritima* (RDB 'Endangered', Nationally Scarce and Locally Scarce):

1. Gricey Water, Stronsay, HY64622607, 30/05/2011, 260 flowering/fruited plants (JEC): update for 10 km square and island, and new site.

2. Backaskaill Links, Sanday, HY64623946 and nearby, 02/09/2011, c. 50 fruited plants (JEC): update (from 1898) for 10 km sq, and new site? (1898 record was nearby at Bea Loch and site description seems different).

(This leaves just one historic site, in North Ronaldsay, not thoroughly searched in recent years).

Quaking-grass *Briza media*, Locally Rare, near Ore Farm, North Walls, ND30179317, 13/10/2011 (AU): new for 10 km sq and island.

Wild Oat *Avena fatua* (Locally Rare), Breck Farm, Rendall, HY40A, 27/07/2011 (JEC): new for 10 km sq. With several records in recent years this species is perhaps no longer Locally Rare.

Creeping Soft-grass *Holcus mollis*, an uncommon alien, Binscarth Wood, Firth, HY351141, 29/07/2011 (ERM): new site within recent 10km sq.

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Chris Booth; Julian Branscombe; Paul Higson (PH); Eric Meek (ERM); Dave Musson (DM); Brian Ribbands (JBR); Ken Smith (KS); Andrew Upton (AU).

Orkney Lepidoptera Report 2011

S V Gauld

In the list that follows the following abbreviations are used: - R - Resident: I - Immigrant:

U - Status Uncertain: V - Vagrant: RI – Resident + Immigrant: RC - Recent Colonist

New to Orkney

Feathered Thorn *Colotois pennaria* (V); one taken by trap 15 October Queenamidda, Rendall (J B Ribbands). Common in woodland in England and Wales local in Scotland. Larva feeds on broadleaved trees. On the wing from September to early December.

Other Sightings of Interest

Honeysuckle Moth *Ypsolopha dentella* (R); two taken by trap 5 September 34 High St, Kirkwall (CJ&J Booth).

Udea olivalis (V?); 83 taken by traps, 77 taken between 19 June and the 3 August Bayview, Herston, South Ronaldsay (J & R McCutcheon), five taken between 30 June and the 15 July 34 High St, Kirkwall (CJ&J Booth) and one 5 July Queenamidda, Rendall (J B Ribbands).

Rusty-dot Pearl *Udea ferrugalis* (I); two taken by trap, one each 12 and 19 July Smyril, Stenness (ER & A Meek). The last record for *U ferrugalis* was 1 November 2004 at Quoyberstane, St Ola (SV Gauld).

Bee Moth *Aphomia sociella* (R); two taken by trap, one each on 6 and 15 August 34 High Street, Kirkwall (CJ&J Booth).

Clouded Yellow *Colias croceus* (V); one seen 12 October near Old Man of Hoy (CJ&J Booth). This will be the seventh year that Clouded Yellow has been recorded in Orkney since 1947.

The Peacock *Inachis io* (V); four seen in the field between 15 August and 12 October at various locations across Orkney.

Fox Moth *Macrothylacia rubi* (R); three larvae seen 25 February between the Burn of the White Horse and Burn of Bailliefea, Hoy (ER Meek). A dead larva was found on 12 April Wee Fea, Lyness (J B Ribbands and two larvae seen 10 August on north side of Lyrawa Burn, Hoy (ER Meek).

Small Fan-footed Wave *Idaea biselata* (V); one taken by trap 17 July Bayview, Herston, South Ronaldsay (J & R McCutcheon).

Flame Carpet *Orthonama designata* (R); six taken by trap, five between 27 June and 15 August Bayview, Herston, South Ronaldsay (J & R McCutcheon), and one 1 June Cairston Rod, Stromness (B Simpson).

Pine Carpet *Thera firmata* (V); six taken by trap, one each on 29 June and 5 August Bayview, Herston, South Ronaldsay (J & R McCutcheon), and four between 2 August and 2 September Queenamidda, Rendall (J B Ribbands).

Streak *Chesias legatella* (V); one taken by trap 30 September Cairston Road, Stromness (B Simpson).

Common Wave *Cabera exanthemata* (V); three taken by trap between 19 and 30 June 34 High Street, Kirkwall (CJ&J Booth). One seen in the field 3 June Blubbersdale, Rendall (J B Ribbands).

Barred Red *Hylaea fasciaria* (R); three taken by trap, one each on 2 and 6 August Queenamidda, Rendall (J B Ribbands), and one 24 August Bayview, Herston, South Ronaldsay (J & R McCutcheon).

Poplar Hawk-moth *Laothoe populi* (R); 49 taken by trap, four between 27 May and 27 June Bayview, Herston, South Ronaldsay (J & R McCutcheon). 38 between 2 June and 4 July Cairston Road, Stromness (B Simpson), five 3 June and 12 July Smyril, Stenness (ER & A Meek and two, one each on 15 & 16 June Viewforth, Swannay, Birsay (K Fairclough).

Hummingbird Hawk-moth *Macroglossum stellatarum* (I); three seen in the field, one each on 7 July North Ronaldsay (RJ Else). 27 July Brough of Birsay and Yesnaby, Sandwick (JH Clarke).

Bedstraw Hawk-moth *Hyles gallii* (V); three taken by trap, one each on 29 July and 7 August Viewforth, Swannay, Birsay (K Fairclough), and one 15 August 34 High St, Kirkwall (CJ&J Booth).

Dark Sword-grass *Agrotis ipsilon* (I); four taken by trap, one each on 27 May Bayview, Herston, South Ronaldsay (J & R McCutcheon), 24 September Queenamidda, Rendall (J B Ribbands). 2 October North Ronaldsay (R Else) and 19 November Cairston Road, Stromness (B Simpson).

Northern Rustic *Standfussiana lucernea* (R); one taken by trap 4 August Gillbreck, Widewall, South Ronaldsay (L Campbell & N Fairbairn).

Double Square-spot *Xestia triangulum* (U); two taken by trap, one each on 17 July and 11 August Bayview, Herston, South Ronaldsay (J & R McCutcheon).

Six-striped Rustic *Xestia sexstrigata* (U); ten taken by trap between 21 June and 5 August Bayview, Herston, South Ronaldsay (J & R McCutcheon).

The Gothic *Naenia typica* (U); three taken by trap, one each on 19 July and 4 August Smyril, Stenness (ER & A Meek), and one 16 August Cairston Road, Stromness (B Simpson).

Green Arches *Anaplectoides prasina* (V); one taken by trap 10 July Bayview, Herston, South Ronaldsay (J & R McCutcheon). This is the third record for Green Arches, the first record being the 18 July 2003 Quoyberstane, St Ola (SV Gauld), the second 14 August 2004 34 High Street, Kirkwall (CJ&J Booth).

Clouded Drab *Orthosia incerta* (RC); 245 taken by traps, 66 between 10 and 27 April Queenamidda, Rendall (J B Ribbands). Three between 11 and 21 April Smyril, Stenness (ER & A Meek) and 176 between 14 April and 16 May Bayview, Herston, South Ronaldsay (J & R McCutcheon).

Red Sword-grass *Xylena vetusta* (R?); two taken by trap one each on 2 and 21 October Bayview, Herston, South Ronaldsay (J & R McCutcheon).

The Satellite *Eupsilia transversa* (RI); four taken by trap between 31 October and 14 November Queenamidda, Rendall (J B Ribbands).

Yellow-line Quaker *Agrochola macilenta* (V); one taken by trap 15 October Bayview, Herston, South Ronaldsay (J & R McCutcheon). This is the third record for Yellow-line Quaker, the first record being 29 September 2000 West End, Burray (N & R McCance), the second 8 October 2008 Northolme, St Ola (RG Adam).

Large Wainscot *Rhizodra lutosa* (RI); three taken by trap, one each on 19 September Gillbreck, Widewall, South Ronaldsay (L Campbell & N Fairbairn). 20 September Smyril, Stenness (ER & A Meek), and 30 September Cairston Road, Stromness (B Simpson).

The Herald *Scoliopteryx libatrix* (U); one taken by trap 2 June Bayview, Herston, South Ronaldsay (J & R McCutcheon).

Straw Dot *Rivula sericealis* (V); one taken by trap 21 June Cairston Road, Stromness (B Simpson). This is the nineteenth record for Straw Dot but only the third year recorded. The first two records were in 1969 Quoyberstane, St Ola (SV Gauld). Then 16 records came in 2004 between 7 and 17 August 2004.

Pinion-streaked Snout *Schrankia costaestrigalis* (R?); 14 taken by trap, six between 21 and 29 July Bayview, Herston, South Ronaldsay (J & R McCutcheon), and seven between 21 July and 6 August Queenamidda, Rendall (J B Ribbands). One 30 July Viewforth, Swannay, Birsay (K Fairclough).

My thanks to everyone who supplied records during 2011.

Sawflies 2011

Jenni Stockan

Another new species of sawfly was recorded in Orkney this year. *Hemichroa crocea* is commonly known as the **Striped Alder Sawfly**, the stripes referring to the pattern on the larvae, or the orange wasp, referring to the bright orange colouration of the adults. More than 50 larvae were found on alder in a garden in Sandwick on 26 August and through into September. The larvae feed gregariously, skeletonizing leaves, which is often the first sign of their presence. The same date and location yielded a further interesting discovery of a small group of *Nematus ferrugineus* larvae feeding on willow. This species has only previously been recorded from Hoy. The **Berberis Sawfly** *Croesus septentrionalis* was found for the second year at the same garden in Sandwick. A large population of at least 250 larvae were recorded on alder on 27 June. Again this is the only known mainland population of this species and it would be interesting to know whether it is local or more widespread in its distribution.

There were several records of adult *Tenthredo arcuata* in June. This is probably one of the most commonly encountered sawflies in Orkney. A female was found at the Lochside viewpoint, Harray, on 24 June. Three females and a male were seen at Waulkmill Bay, Orphir, on 27 June and a single female was found by Yesnaby, Sandwick, on 28 June. All were feeding on umbellifers. Another common species in Orkney, *Tenthredo atra*, was spotted resting on willows in a garden in Sandwick on 28 June. Finally, one of the black sawflies, *Dolerus aeneus*, was recorded from Waulkmill Bay, Orphir, on 27 June. This is an important species in the diet of birds. The last record of the species was nearly thirty years ago.

Bees and Wasps 2011

John Crossley

An unusually warm April brought out many **White-tailed Bumblebee** *Bombus lucorum sens. lat.* queens and other species in smaller numbers, but poorer weather throughout most of the summer seems to have suppressed bumblebee activity. I have nevertheless received more than 200 records for 21 species (or maybe more – read on) of bees and wasps from 16 different observers. These include locals, holidaymakers and a visiting professional entomologist. There have been several highlights, including the finding of five species new to Orkney and the discovery of breeding aggregations of two species of mining bees, both of them previously recorded only as single individuals.

Bumblebees

There were 27 records of the **Great Yellow Bumblebee** *Bombus distinguendus* (UKBAP 'Priority' species), the earliest a queen at North Flaws, South Ronaldsay on 21 April (JEC) and the latest at Clicknafea, Hoy on 2 October (ERM). The highest count was of eight on the Outertown road, Stromness on 27 August (DT). Other records were from Birsay, Deerness, Holm, Kirkwall and St Ola, Papa Westray, Sandwick, Stromness and Westray (CJB, B & JMcC, LAH, PK, SP, JS, LS, SaS, DT). Perhaps the most surprising was that of two queens foraging on waste ground on Hatston Industrial Estate, Kirkwall on 3 July (JEC) – this a species that was believed not many years ago to be virtually confined to flowery machair in the Western Isles.

Garden Bumblebees *B. hortorum* were reported from Mainland and South Ronaldsay, between 14 April (B & JMcC) and 12 October (JEC) (almost exactly the same dates as last year) – a total of 24 records. The highest count was 63 workers in a Herston, South Ronaldsay garden on 27 July (B & JMc). Other reports from LAH, PK, JBR and JS.

Heath Bumblebees *B. jonellus* were reported from Mainland, Sanday and South Ronaldsay between 26 April and 25 August – a total of 11 records (JEC, PK, B & JMcC and JS). The highest count was of approximately 200 foraging on **Heather** *Calluna vulgaris* at Sanday Secondary School on 18 Aug (JEC) – a not unusual number at this time of year on heather. This was the first record for 10 km sq. HY64.

There were reports of the **White-tailed Bumblebee** *B. lucorum sens. lat.* (aggregate of three critical species) from Mainland, Papa Westray, Sanday and South Ronaldsay – a total of 37 records (JEC, PK, B & JMcC, JBR, LAH, SP and JS). Unusually early and late dates were 28 February and 20 November, both in Herston, South Ronaldsay (B & JMcC). Bees of this species, or aggregate, appeared to be much more numerous than last year. The highest count, of 85, was again in Herston.

Moss Carder Bee *B. muscorum* (UKBAP ‘Priority’ species) were recorded on 26 occasions on Mainland, South Ronaldsay, Swona, Hoy and Papa Westray between 26 April and 12 October (both South Ronaldsay) (CJB, JEC, LAH, PK, SP and JS). The highest count was of 70 at Bay of Sandquoy, Sanday on 18 August (JEC); they were foraging on **Sea Rocket** *Cakile maritima* on this sandy beach, sheltered from a fresh wind by the dune ridge behind.

Common Carder Bees *B. pascuorum* sightings (22 from CJB, JEC, LAH, PK, JBR and JS) were all on Mainland and South Ronaldsay between 14 April in Rendall (JBR) and 12 October in South Ronaldsay (JEC). There were no high counts.

Broken-belted Bumblebee *B. soroensis* was recorded for the first time in Orkney, a single individual (taken for identification) in Holland House garden, Papa Westray on 14 July by Stuart Priestley (conf. M Edwards), a visiting ecologist. This is an extraordinary discovery. *B. soroensis* is a moorland species, common in the north Highlands including Caithness, but scarce in the rest of the UK. It does not occur in Shetland or the Western Isles. One might expect it to turn up in Hoy but not Papay. It is a social, colony-forming bee, not a Cuckoo Bee. Whether this was a wind-blown vagrant or one of a resident population remains to be discovered. The captured individual was apparently a queen, in good condition: this and the early July date tend to suggest that it had been reared on the island.

The **Gypsy Cuckoo Bee** *B. bohemicus* was recorded on 18 occasions (JEC, B & JMcC, LAH, PK, JBR and JS) between 26 April (JEC) and 4 September (B & JMcC) from Mainland, Sanday and South Ronaldsay. Three records in Sanday (JEC) were the first for 10 km sq. HY64.

Barbut’s Cuckoo Bee *B. barbutellus*. There was a single record of this locally rare Cuckoo Bee, a female at Happy Valley, Stenness on 31 May (JEC).

There is a convincing report from Jenni Stockan of a single, male, **Field Cuckoo Bee** *B. campestris* at Brinkie’s Brae, Stromness on 25 August. This would be another new County record, but in the absence of a captured specimen it must remain unconfirmed. There are no other records of *B. campestris* north of Inverness, but in view of the recent re-finding of *B. barbutellus*, if anything rarer in Scotland than *B. campestris*, this is one to look out for in 2012. Unlike the other Cuckoo Bees present in Orkney it has no white on the tail, and some

individuals are very dark. This species takes over the nests of *B. pascuorum* and probably attacks *B. muscorum* as well.

Social wasps

Four reports of **Common Wasps** *Vespula vulgaris* were all from Kirkwall (CJB), between 6 May and 7 September. 10 were feeding on apples put out for birds on 7 September.

Red Wasps *V. rufa* were reported on nine occasions, from 2 May at Queenamidda, Rendall (JBR) to 20 September at Herston, South Ronaldsay (B & JMcC), also at North Flaws, South Ronaldsay (JEC).

There was just one report of **Norwegian Wasps** *Dolichovespula norvegica*, of two queens emerged after hibernation in the house at Queenamidda, Rendall on 28 April (JBR).

There were 13 reports of **Tree Wasps** *D. sylvestris* from 26 April at North Flaws, South Ronaldsay (JEC) to 31 August at Queenamidda, Rendall (JBR). Others were seen in Kirkwall (CJB) and Stenness. The highest count was of 12 queens on blackcurrant bushes at North Flaws on 26 April, and this was the first record for 10 km square ND48. This species appears to be well established throughout Mainland and the inner isles, and probably still spreading, after a first record in Hoy in 1996. This, *Vespula rufa* and at least some of the other species of social wasp may be looked for on flowering fruit bushes, especially blackcurrant, in the spring. They may be important pollinators.

Solitary bees and wasps

Among several finds in 2011 perhaps the most exciting and important was that of several breeding aggregations of **Tormentil Mining Bees** *Andrena tarsata* (RDB 'Rare' and UKBAP Priority species). The first were spotted by Brian Ribbands on 1 July near Rackwick, Hoy on steep clay banks by the path to Moaness and by the public road not far from the turning to The Glen. Many, possibly hundreds, of the small bees could be seen entering and departing from their nest holes, each about 4 mm in diameter. I visited the area on 4 July and found several more aggregations including one probably more than a thousand strong. There are two previous records of this species in Orkney, in 1978 in Rackwick and in 2003 near Nowt Bield, but these are the first of nesting aggregations. It is likely that there are more in the Nowt Bield area. Peter Kirby then found two males at Waulkmill Bay, Orphir on 20 July, the first record for Mainland.



Not satisfied with *A. tarsata*, Brian Ribbands then found a breeding aggregation of another mining bee species (no English name) *Andrena coitana*, on 10 July near Queenamidda, Rendall. There were about 100 nest holes and 10 bees seen. This is only the second record of *A. coitana* in Orkney, the first being of a single individual near Dounby in 1996. This species is much more common than *A. tarsata* in the British Isles.

A very striking new species of solitary wasp for Orkney in 2011 was the **Ruby-tailed Wasp** *Chrysis rutiliventris*. One was captured and identified by Peter Kirby on Glimps Holm, Burray on 22 July. *C. rutiliventris* is one of a critical group of species, possibly as many as nine, which are very difficult to identify and referred to as *C. ignita* agg: that is as far as one can get in the field. Two more *C. ignita* agg. were seen and one photographed, the first by Jenni Stockan on the shore at Sands of Wright, South Ronaldsay on 28 June and the second by Brian Ribbands at one of the *A. tarsata* sites near Rackwick on 1 July. *C. rutiliventris* is the most likely of the aggregate to occur here⁵, so probably these also were of that species. These little wasps are very brightly coloured. The head and thorax are greenish-blue and the abdomen red. As they usually appear in bright sunlight the vivid metallic colours of their bodies appear jewel-like. They are probably kleptoparasites rather than parasitoids⁶, laying their eggs in the burrows or nests of other solitary bees and wasps. The most likely hosts in Orkney are the **Mason Wasps** *Ancistrocerus* species.

No less than three other species of solitary wasp new to Orkney were discovered in 2011. I saw several Pompilid (**Spider-hunting Wasps**) *Priocnemis parvula* (determined from a specimen sent to M A Macdonald) on 4 July at two of the *A. tarsata* sites in Hoy. One of them was carrying a captured spider. Peter Kirby captured a Dryinid wasp, *Gonatopus clavipes*, at Burn of Lerquoy, near Swanbister, Orphir on 20 July. This is a very small species that parasitizes Cicadellidae (Leafhoppers), laying its eggs directly onto nymphs. The female is wingless. Peter also found a Crabronid (**Digger-wasp**), *Rhopalum clavipes*, at Happy Valley, Stenness on 22 July. This is another small species, not wingless, that preys upon Psocoptera (Bark-lice). It commonly nests in hollow plant stems. It is interesting to note the results of some recent research (Budrys *et al*, 2010) that indicates that many of the predatory wasps, including *Rhopalum clavipes*, are more common in or even confined to semi-natural landscapes, where the requirement of their complicated breeding requirements are met, than in agricultural ones (with the exception of those that are still very traditionally managed), where they are not. This is in contrast to many of the pollen-feeders (especially bees), which may do very well in largely agricultural landscapes that are not too intensively managed.

There were seven widespread reports of **Mason Wasps** *Ancistrocerus oviventris* from May to August on Mainland, South Ronaldsay and South Walls (LAH, MH, PK, DM and StS). There were 'lots' near the Broch of Deerness on 28 June (StS) and several nests at Burwick, South Ronaldsay on 6 August (DM). Individuals were found at Waulkmill Bay, Orphir on 20 July and on Glimps Holm, Burray on 22 July (both PK). All these were new for parish/island and for 10 km squares. A single **Mason Wasp** *A. scoticus* was recorded at Yesnaby, Sandwick on 17 July (PK).

Many thanks to all contributors: Chris Booth (CJB), Mary Harris (MH), Linda Hislop (LAH), Peter Kirby (PK), Bobby and John McCutcheon (B & J McC), Stuart Priestley (SP), Brian Ribbands (JBR), Sarah Sankey (SaS), Steve Sankey (StS) Eric Meek (ERM), Dave Musson (DM), Lee Shields (LS), Jenni Stockan (JS) and Derek Todd (DT).

References

E Budrys *et al*. 2010. Cavity-Nesting Hymenoptera across Europe: a Study in ALARM Project Field Site Network Sites Using Small Trap-Nests on Trees and Buildings. In: Settele *et al* (eds.), Atlas of biodiversity risk: 172-173. Pensoft, Sofia and Moscow.

⁵ M. A. Macdonald, pers. comm.

⁶ In this situation, a kleptoparasite larva consumes the food stored by the host species to feed its own larva. A parasitoid larva feeds on and eventually kills the host larva.

823 records of 223 species have been received for Orkney in 2011. In July Peter Kirby was in Orkney sampling invertebrates, see his *Hemiptera* article for details of sites and methods. He generated 645 records of 190 beetle species, plus a few not yet identified, including 47 new for Orkney, not really surprising as methods were different from, and probably more intensive than any previously used in Orkney. Many of the new species are weevils and rove beetles difficult to find by other methods, and difficult to identify once found. Most of them are probably overlooked rather than recent arrivals. Four were species that are on the Orkney list but I know of no definite previous records so it is very pleasing to get these. In August the water beetle experts Garth Foster and Ronald Bellstedt made a brief visit to Orkney. Garth Foster very kindly sent me a list of his finds, along with the Orkney records held by the national recording scheme. Water beetles in Orkney have been neglected for many years so this is very welcome. They have added 3 or 4 new species to the Orkney list and found 12 species not recorded for nearly 30 years or more. Ross Andrew also made two exceptional finds, both probably new to Orkney. The remainder this year are the usual casual reports of relatively conspicuous species.

Leistus terminatus was the new species with the most records, all from 2 sites in a small area of Stenness. This species is very distinctively coloured and I am almost certain that I saw one in Rendall 2 years ago but I was unable to capture it and did not want to claim a first for Orkney without a specimen. It is very unlikely to have been overlooked for long so this one is probably a recent arrival here. It is common throughout most of the rest of Britain.

Great diving beetles. *Dytiscus lapponicus* and *D. semisulcatus* were recorded but no *D. marginalis*, so it seems increasingly likely that the latter has been recorded in error in the past.

10-spot ladybird *Adalia decempunctata* was the only ladybird reported, one found at a new site in Stromness. This species has been recorded in every year since it was first found in 2007. No larvae have been seen but it seems very likely that it is breeding in Orkney now. It is said to prefer woodland so the larvae may be on trees where they would be difficult to find.

Heather beetle *Lochmaea suturalis* was abundant in Rendall in late April and early May but no damage to the heather was noticed greater than that caused by moth larvae in recent years. The beetle was also recorded on Rousay for the first time, and at 3 other Mainland sites.

Many thanks to all contributors of records:

P Kirby, G N Foster, R Bellstedt, C J Booth, R Andrew, K Fairclough, J Branscombe, R Sinclair, D Musson, R & J McCutcheon, R Thorne, E Meek. Apologies to anyone missed out.

<u>New for Orkney in 2011</u>	<u>records</u>		<u>records</u>
<i>Agathidium laevigatum</i>	1	<i>Micropeplus porcatus</i>	2
<i>Agathidium nigripenne</i>	3	<i>Mycetoporus clavicornis</i>	1
<i>Antherophagus pallens</i>	1	<i>Mycetoporus nigricollis</i>	1
<i>Anthobium unicolor</i>	1	<i>Necrobia violacea</i>	1
<i>Apion cruentatum</i>	1	<i>Ochthebius lejolisii</i>	1
<i>Apion haematodes</i>	1	<i>Odeles marginata</i>	2
<i>Archarius salicivorus</i>	1	<i>Orthochaetes setiger</i>	3
<i>Barypeithes pellucidus</i>	9	<i>Otiorhynchus porcatus</i>	1
<i>Bledius subterraneus</i>	1	<i>Oulimnius troglodytes</i>	1
<i>Brachypterus glaber</i>	1	<i>Philonthus tenuicornis</i>	1
<i>Carpelimus incongruus</i>	1	<i>Proteinus brachypterus</i>	1

<i>Cartodere nodifer</i>	4	<i>Psylliodes napi</i>	1
<i>Cercyon tristis</i>	1	<i>Quedius boops</i>	1
<i>Cymindis vaporariorum</i>	1	<i>Quedius fulvicollis</i>	1
<i>Cyphon laevipennis</i>	1	<i>Quedius schatzmeyerii</i>	1
<i>Cyphon variabilis</i>	1	<i>Rhagonycha lignosa</i>	1
<i>Holotrichapion aethiops</i>	3	<i>Salpingus ruficollis</i>	1
<i>Hydraena gracilis</i>	6	<i>Sitona lineellus</i>	1
<i>Hydroporus planus</i>	2	<i>Stenus boops</i>	1
<i>Hypera postica</i>	1	<i>Stenus brevipennis</i>	2
<i>Ischnopterapion loti</i>	2	<i>Stenus canaliculatus</i>	2
<i>Leiodes calcarata</i>	4	<i>Stenus carbonarius</i>	2
<i>Leiodes obesa</i>	1	<i>Stenus tarsalis</i>	1
<i>Leiosoma deflexum</i>	2	<i>Tachinus pallipes</i>	1
<i>Leistus terminatus</i>	17	<i>Tachinus proximus</i>	2
<i>Lesteva pubescens</i>	1	<i>Trichocellus cognatus</i>	1
<i>Lordithon lunulatus</i>	2		

On Orkney list but no definite previous records found

<i>Bembidion tibiale</i>	2	<i>Malthodes pumilus</i>	1
<i>Cantharis paludosa</i>	2	<i>Tachyporus nitidulus</i>	1

Species not recorded since 1995 with year last recorded

<i>Anotylus maritimus</i>	1905	<i>Ilybius montanus</i>	1982
<i>Anotylus sculpturatus</i>	1905	<i>Laccobius bipunctatus</i>	1982
<i>Chaetarthria seminulum</i>	1947	<i>Nebrioporus elegans</i>	1982
<i>Ilybius aenescens</i>	1952	<i>Oulimnius tuberculatus</i>	1982
<i>Acilius sulcatus</i>	1976	<i>Rhantus suturellus</i>	1982
<i>Trechus quadristriatus</i>	1976	<i>Strophosoma melanogrammum</i>	1982
<i>Omalius excavatum</i>	1977	<i>Cercyon atomarius</i>	1983
<i>Synuchus vivalis</i>	1978	<i>Ceutorhynchus contractus</i>	1983
<i>Philonthus decorus</i>	1979	<i>Dalopius marginatus</i>	1983
<i>Elodes minuta</i>	1980	<i>Micrelus ericae</i>	1983
<i>Otiiorhynchus arcticus</i>	1980	<i>Notaris acridulus</i>	1983
<i>Perapion violaceum</i>	1980	<i>Phyllotreta flexuosa</i>	1983
<i>Serica brunnea</i>	1980	<i>Rhinoncus pericarpus</i>	1983
<i>Stenus impressus</i>	1980	<i>Sitona lepidus</i>	1983
<i>Aphodius ater</i>	1981	<i>Stenus juno</i>	1983
<i>Cafius xantholoma</i>	1981	<i>Stenus picipes</i>	1983
<i>Catops coracinus</i>	1981	<i>Tachyporus chrysomelinus</i>	1983
<i>Clivina fossor</i>	1981	<i>Tachyporus hypnorum</i>	1983
<i>Malthodes flavoguttatus</i>	1981	<i>Agabus nebulosus</i>	1990
<i>Malthodes mysticus</i>	1981	<i>Haliplus lineatocollis</i>	1990
<i>Othius angustus</i>	1981	<i>Hydroporus discretus</i>	1990

<i>Otiorhynchus atroapterus</i>	1981	<i>Hydroporus obscurus</i>	1990
<i>Quedius cinctus</i>	1981	<i>Hydroporus palustris</i>	1990
<i>Agabus arcticus</i>	1982	<i>Hydroporus pubescens</i>	1990
<i>Agabus congener</i>	1982	<i>Ilybius fuliginosus</i>	1990
<i>Agabus guttatus</i>	1982	<i>Ochthebius dilatatus</i>	1991
<i>Agabus sturmii</i>	1982	<i>Lathrobium brunnipes</i>	1992
<i>Amara bifrons</i>	1982	<i>Lesteva sicula</i>	1992
<i>Bradycellus ruficollis</i>	1982	<i>Othius subuliformis</i>	1992
<i>Cyphon coarctatus</i>	1982	<i>Hydraena britteni</i>	1993
<i>Cyphon hilaris</i>	1982	<i>Hydroporus gyllenhalii</i>	1993
<i>Elmis aenea</i>	1982	<i>Laccobius minutus</i>	1993
<i>Enochrus fuscipennis</i>	1982	<i>Agonum fuliginosum</i>	1995
<i>Helophorus flavipes</i>	1982	<i>Olophrum piceum</i>	1995
<i>Hydroporus memnonius</i>	1982	<i>Quedius molochinus</i>	1995
<i>Hydroporus tristis</i>	1982		

This list is provisional, some records need further checking, also some names need checking for changes

Fish Report 2011

Chris Booth

Details of some of the more interesting fish reported in 2011 are given below:

Basking shark *Cetorhinus maximus*

There were far fewer records than in 2010. The first report was of one in Warness Sound, Eday on 20th June followed by another sighting there on 11th July and singles in Evie Bay on 12th and off Black Craig on 15th July. August sightings, all of single sharks, were at Barth Head, South Ronaldsay 11th, Warness Sound 18th and 22nd, off Fowl Craig, Papa Westray on 19th and near the old pier Papa Westray on 24th, North Ronaldsay 27th to 31st, Echnaloch Bay and Black Craig 30th. In September there were sightings of singles off Black Craig on 1st and in Warness Sound on 6 days between 6th and 15th and in October on 6th, 11th and 23rd.

Flapper skate *Raja intermedius*

A male was caught off Outshore Point, Sandwick in early July, it was tagged and released. The weight was 132 pounds.

Cuckoo ray *Raja naevus*

On 9th May one was found stranded on Scapa Beach.

Garfish *Belona belona*

One was found at Lopness, Sanday on 25th February.

Lumpsucker *Cyclopterus lumpus*

Two were found stranded on the east side of South Ronaldsay on 17th February and one was found on Skailil Beach, Sandwick on 28th February. In September 1 was found in Birsay Bay on 25th.

Bass *Dicentrarchus labrax*

One, weighing 454gms was caught in Inganess Bay on 28th July

Ray's bream *Brama brama*

This species has now been recorded in autumn for the last 5 years.

On 9th November one was found trapped near Scapa pier, it was released alive. One was found alive at Creels of Banks, Holm on 13th November, it weighed 2.16kgms and was 61cms long. Another was found alive on Scapa Beach on 21st November.

Wolf fish *Anarhichas lupus*

One was caught in a creel off Papa Westray on 11th January

My thanks to the following for their records:

C Bullen, M Cockram, D Cowan, M Cowie, J Crossley, T Dodman EMEC, I Hardwicke, A K Johnson, A Knight, F Mciver, E R Meek, North Ronaldsay Bird Observatory, R Philby, A Pietrie, S Sankey, J Struthers, R Thorne, R Vasey, D Wise, A Woodbridge.

Amphibia Report 2011

Chris Booth

Palmate Newt *Triturus helveticus*

On 24th February, one was found on the pavement of Holm Road, St Ola, close to the turning to the Lynnfield Hotel. It is thought that it had probably escaped from a garden pond, somewhere in the vicinity.

There is an introduced population of this species on South Ronaldsay.

Common Toad *Bufo bufo*

The only report of tadpoles was from the large pond near the bridge at Rackwick, Hoy. A number were seen on 12th May and hundreds on 1st June.

At Hundasaeter, Birsay an adult toad was found on 1st May and another on 14th June, this weighed 31gms and had a length of 63.6mms. On 19th June there was one which weighed only 3gms and was 25mms in length. A further 3 toads were found there between 5th and 7th August.

Common Frog *Rana temporaria*

The earliest report was of a freshly predated frog on 1st February at Dale, Birsay, a second one was found there on 6th February.

The first spawn of the year was recorded at Scapa View, Orphir on 23rd February; this is the earliest date for spawn yet to be recorded in Orkney. The next batch of spawn to be reported

was from Hundasaeter, Birsay on 3rd March and then at Braesdene, Holm on 5th March. Two batches on the 7th at Blackhammar, Rousay was the earliest date to be recorded at this site. Tadpoles were seen at Hundasaeter on 4th April and froglets on 7th July. Away from known breeding sites, single frogs were reported near the Covenanters' Memorial, Deerness on 23rd June, the upper reaches of the Burn of Jockasey on 18th July and North Dales, Stenness on 9th August. Some tadpoles were released on North Ronaldsay in August. There were few sightings after the end of October with the last being at Rosebank Cottage, Harry on 18th and Hundasaeter on 20th November.

My grateful thanks to the following for their records:

J Booth, E Everiss, AK&JH Johnson, A Knight, RE Matson, D Mayes, E R Meek, M Rinder , J&S Scott, C Webb, A Woodbridge.

Reptile Report 2011

Chris Booth

Green Turtle *Chelonia mydas*

On 13th December Bobby and John McCutcheon discovered a freshly dead Green turtle on the beach at Newark, South Ronaldsay.

A post mortem found that it was an immature male, in good body condition and no external injuries. The stomach was empty apart from some mucus. The curved carapace length was 29.5cms and the curved carapace width 27cms; it weighed 3.05kgms. The cause



Green Turtle

Photo Bobby and John McCutcheon.

of death was thought to be hypothermia. These turtles cannot survive in sea temperatures below 20 C and if the water temperature is lower they become comatose and eventually die.

The Green turtle is rare in British waters and this is only the second record for Orkney, the first was found on the shore of the loch of Stenness on 27th January 1980. This turtle is found in tropical waters throughout the world. It is possible that it may have drifted to Orkney from the Caribbean on the Gulf Stream.

Bat Report 2011

Chris Booth

Bat enthusiasts were busy during the summer on both Hoy and Mainland; a summary of their findings is included below

Common pipistrelle *Pipistrellus pipistrellus*

There were sightings and bat detector contacts from the following locations:

Evie village; Finstown – Binscarth Wood and Heddle Road; Kirkwall - Papdale wood.

Pipistrelle sp.

Sightings and bat detector contacts:

Hoy: Bu, Burra House, Melsetter and Longhope

Mainland: Evie - Woodwick House; Finstown - several sites including Redland Farm;

Holm – Graemeshall

The majority of the observations involved 1-5 bats but 11-12 were recorded at Melsetter House on 2nd July, 9 Heddle Road on 29th July, 8 Graemeshall, Holm on 25th May, 5-8 Burra House on 1st July and 5-6 Binscarth Wood on 14th October.

Thanks are due to Effy Everiss and the Orkney Bat Group including W Adams, P Barber, E Batchelor, T Dean, M Humes, B Jones, E MacDonald, G MacDonald, D Macisaac, D Macisaac jnr, C Rendall, J B Ribbards, M Russell, K Thomson, M Trickett, G&J Van Jennians, R&S Whitworth, B&J Wright.

Additional observations were provided by K Drever and W Latimer.

Elsewhere:

Two bats were reported to have been seen near Moan, Graemsey on 13th May (per E Everiss). A bat was found grounded outside a house on the Lyde Road, Firth on 28th May, it had disappeared an hour later (C Daley). A bat, thought to be of a pipistrelle species, was seen at Twingness, North Ronaldsay on 17th, 18th and 20th June (A Woodbridge and North Ronaldsay Bird Observatory). The last sighting for the year and also unusual was that of a bat, again thought to be of a pipistrelle species, seen at dusk by Raymond Besant on 30th October. It was flying along the Durkadale Road about 200 metres from the Evie/Dounby junction.

Whale, Dolphin and Porpoise Report 2011

Chris Booth

It was a good year for both Killer whale and Risso's dolphin sightings.

Minke whale *Balaenoptera acutorostrata*

Common

The first reports were of singles off Black Craig on 5th and 19th January and in Warness Sound, Eday on 12th March. In April there were singles off Sanday on 19th, Black Craig on 20th, the west side of No 2 Barrier on 28th and between Swona and Burwick on 30th. The only May report was of 1 off Black Craig on 3rd. In June there was 1 in Warness Sound on 3rd, 2 off Black Craig on 6th, singles off Swona on 12th, in Warness Sound on 14th and off Black Craig on 23rd. July sightings were of singles off Black Craig on 3rd and 6th. In August there were singles off Black Craig on 2nd, 3rd and 24th when also 1 close in to Moclett, Papa

Westray, 5 were off Black Craig on 31st. In September one was off Whitaloo Point, Birsay on 4th, 3 off St Johns Head, Hoy on 5th, 1 Bay of Sandoyne Holm on 9th, 2 off Black Craig on 12th and 15th and 2 off Scapa on 23rd.

Strandings:

18th January 1, long dead, Bay of Cubbigoe, Westray. Length c 5 metres.
2nd April 1, Holm, stranded dead. Length 4.8 metres

Sperm whale *Physeter macrocephalus* Uncommon

On 12th October an immature male, about 15 metres in length, came in close to Kirkwall pier. It was first seen about 7 am and in the next few hours was watched by many people. Later in the morning it moved out towards the Hatston pier. Eventually it headed northwards and once reaching deeper water swam away very quickly.

Harbour porpoise *Phocoena phocoena* Common recorded every month

Monthly distribution of sightings 2011

J	F	M	A	M	J	J	A	S	O	N	D
12	5	7	6	6	11	16	17	16	10	6	5

Most sightings involved 1-6 individuals but at least 7 were off Hoxa Head, South Ronaldsay on 30th July and a minimum of 15 there on 25th August. Seven were in Scapa Flow on 23rd September. Elsewhere up to 10 were present in Deer Sound on 2nd October

Strandings:

10th June An adult male stranded alive, but had to be put down, Bay of Ayre, Holm
12th June 1, dead some time, South of Hall of Ireland, Stenness. Length 1.3 metres.
30th August 1, dead a few days, Bay of Skail, Sandwick
15th December 1, freshly dead, Scapa Beach. Length 1.27 metres

Short-beaked Common dolphin *Delphinus delphis* Uncommon

There were 18 off Black Craig on 26th and 4 on 31st August. Seven were seen in the Pentland Firth on 5th September and 1 off Black Craig on 18th September.

Stranding:

11th December 1 stranded alive but died, Ferry Point, Rennibister. A juvenile male, length 1.71 metres and weight 53 kgms. Probably a victim of recent gales.

Bottle-nosed dolphin *Tursiops truncatus* Rare

Two spent some time feeding in Newark Bay, Deerness on 12th June

Atlantic White-sided dolphin *Lagenorhynchus acutus* Uncommon

Four were seen off Black Craig on 17th May. Then in June 8 were off Noup Head, Westray on 3rd and 9 off Black Craig on 4th. All further sightings were off Black Craig with 7 on 20th and 3 on 21st July, 2 on 11th and 3 on 15th August, 5 on 1st and 3 on 12th September.

White-beaked dolphin *Lagenorhynchus albirostris* Formerly common, now uncommon

No sightings but the following strandings:

15th June 1, dead a few days, Scapa. A female, length 2.2 metres
30th August A juvenile, freshly dead, Bay of Skail, Sandwick. Length 1.27 metres
20th November A juvenile, Swanbister, Orphir.

Killer whale *Orcinus orca* Common April to July, uncommon at other times

The first report was of 3 off Black Craig on 8th February, followed in April by 2 Eynhallow Sound on 5th, 5, including an adult male, were seen between St. Margarets Hope and Swona

on 21st, with between 6 and 8 near Swona on 24th. May records were of 3, including an adult male, in the Bay of Sandoyne, Holm on 18th, 6 in the Pentland Firth on 19th, a pod of 5 in Scapa Flow on 25th and 2 off The Brough of Birsay on 30th.

In June 4 were seen in Sandside Bay, Deerness on 3rd and on the same day 4 were seen in Pierwall Bay, Westray, 6 were off North Ronaldsay on 5th, 8 were off Hoxa Head, South Ronaldsay on 6th and 6 off Brough of Birsay on 7th. On 10th 4 were seen off the Lother, South Ronaldsay, 5 were off North Ronaldsay on 12th and 7 there on 17th, while 5 were on the west side of No 4 Barrier on 16th. Two killed a seal west of Thieves Holm on 19th and several were in Hoxa Sound on 20th. On 26th 5, including 1 adult male, 1 immature male, 2 females and a juvenile were off the Point of Buckquoy, Birsay and then off Gurness Evie. Four were seen in Warness Sound on 28th.

July sightings were of 5, including an adult male and calf in Navershaw Bay, Stromness on 2nd, 1 was seen in the Stronsay Firth on 3rd and 1 was off Bothican, Papa Westray on 11th, 5 were close in to the jetty at Burwick, South Ronaldsay on 15th. Six, including an adult male, were circling the Muckle Skerry, Pentland Skerries on 14th, 4 were off Tresness Sanday on 19th, 8 off Twingness, North Ronaldsay on 21st and 3 were seen off Dennis Head, North Ronaldsay on 27th when also there were 2 west of Wyre. The last sighting was of 1 off Black Craig on 2nd August.

Long finned Pilot whale *Globicephala melas* Formerly common, now uncommon
Five were seen off Black Craig on 26th July, then further sightings from there of 8 on 31st August and 10 on 12th October.

Risso's dolphin *Grampus griseus*

Common

The first reports were from Black Craig with 2 on 8th January, 4 on 15th March, 2 on 19th April and 3 on 7th May. At least 6, possibly 8, were in the Bring Deeps, Scapa Flow on 11th May. Then no more sightings until July when 8 off Black Craig on 8th and 27th. In August 3 were off Black Craig on 3rd and 2 on 15th, 3 were in Warness Sound, Eday on 18th, 4 in Shapinsay Sound on 23rd and 4, including a cow and calf, were off Hoxa Head, South Ronaldsay on 25th then 1 off Black Craig on 31st. September sightings were 5 off Black Craig on 12th and 2 on 15th, 2 were seen off North Ronaldsay on 16th and 21st, 3 off Black Craig on 23rd and 14 there on 24th. Then from Black Craig 4 were seen on 12th October, 6th and 22nd November. In December 4 were in Warness Sound on 11th, 3 off Black Craig on 15th and 1 on 30th.

Strandings:

2 nd April	1, very decomposed, Newlot, Shapinsay. Length 3.35 metres
28 th July	1, Bay of Skaill, Sandwick, fairly fresh. Length 3.15 metres.
23 rd October	1, female, Rapness, Westray. Length 3.3 metres

Unidentified cetaceans

There were a number of sightings where identification could not be made with absolute certainty:

7 th January	A large whale, probably a Humpback, was seen off Greenigoe, Orphir and then off the single point mooring, Flotta on 8 th .	
7 th February	1 cetacean sp seen off North Ronaldsay	9 th
May	1 dophin sp off North Ronaldsay.	

The following were noted from Black Craig; in June 5 on 6th, 1 on 16th. August 5 on 10th, 1 on 11th and 15th, 2 on 17th. September singles on 1st, 18th and 26th. October 19 on 12th.

December singles on 4th and 31st.

Stranding:

31st December A Common/Striped dolphin, dead some time, Scarva Taing, Finstown Bay

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Special thanks to EMEC, D Cowan and C Bristowe for details of sightings from their manned sites.

Mammal Report 2011

Brian Ribbands

Following the discovery of stoats in 2010 another unexpected new mammal was found in Orkney in 2011 - a badger, but it seems to have been dead long before it came here and probably arrived by natural means. Stoats continue to be reported but no more have been trapped. The bearded seal stayed for more than a year; it was last reported in May. Otters and brown hares are well reported but small mammals are very under recorded. Most land mammals cannot readily swim between islands so it is of particular interest which islands they are on. There are species lists for each island but they are based on old records; they are out of date and may contain errors. If any cat owners, especially on the smaller islands, would be prepared to record what the cats bring in then some of these lists could be updated and corrected.

Orkney Vole *Microtus arvalis orcadensis*

Reported from Mainland, Rousay, Westray and South Ronaldsay, but under-recorded. The snow cover at the start of the year again lasted long enough for voles to make extensive run systems under it, revealing just how widespread they are, when the snow melts. One observer reported that there were much fewer such vole runs within 300m of a farm with cats. Another suggested that voles seemed to be much more numerous than usual in 2011, even in 'improved' grass fields which they normally avoid. Voles probably suffer less predation under snow; this could have maintained high numbers before the breeding season increase. There were two reports of black (melanic) voles. One was seen alive in Firth. A cat near Tingwall brought in two black and three partly black voles within a short period, presumably all related.

Wood Mouse *Apodemus sylvaticus*

The only records were from Birsay, Rendall and South Ronaldsay, so very under-recorded. Seen visiting my bird table in Rendall in daylight between April and November.

House Mouse *Mus domesticus*

Very under-recorded. The only reports were of one from Kirkwall, several trapped about a mile from here in Rendall (where I have never found them, only wood mice) and two dead mice found on Copinsay, which could be identified by their teeth. They used to be abundant in the buildings on that island and have survived for years after the human inhabitants have gone. This suggests that there are no wood mice on the island; the two mouse species can coexist when people are living there but usually the house mice are replaced by wood mice within a year or so when people leave. This happened on St Kilda, where the mice had been there long enough to form distinctive races; the St Kilda house mouse became extinct shortly after the islanders were evacuated. Wood mice are listed for Copinsay but I cannot find any definite records - is this a mistake?

Common Rat *Rattus norvegicus*

Widespread on Mainland but under-recorded with very few reports this year.

Rabbit *Oryctolagus cuniculus*

Recorded this year from Mainland, Westray, Hoy, South Ronaldsay, Flotta and Swona. I first noted small young rabbits on 1st April in Rendall. Black rabbits were reported on Swona and Westray, and on Flotta where most of the rabbits seen around the plantation were black. Partial albinos were seen in Rendall and South Ronaldsay.

Brown Hare *Lepus europaeus*

Again recorded throughout Mainland in almost every parish. The maximum count in any one place was nine. One observer reported that they seemed more numerous than rabbits in his area. On 27th April, 8 were watched in Rendall, in a close group. There was little movement for several minutes then a burst of frantic activity, jumping over each other, boxing and chasing for a few seconds, then suddenly stopping again. This was repeated for at least 45 minutes before the group started to break up and disperse. I expect it was rivals deciding who was dominant, but there seemed to be no obvious conclusion.

Mountain Hare *Lepus timidus*

Reported from Hoy, mostly around Ward Hill, also between Rackwick and the Old Man of Hoy. Highest count was 10 on 26th January. Two reports from south of the Rackwick road, between Lyrawa and Pegal burns.

Hedgehog *Erinaceus europaeus*

Rather few records this year, seems to be scarcer than usual. Recorded from Mainland, South Ronaldsay, Hoy and North Ronaldsay. There were no early season reports; the last report of the year was a road casualty on 22nd November.

Pygmy Shrew *Sorex minutus*

As usual most reports were of animals found dead, in West Mainland, Deerness, South Ronaldsay and Rousay. More unusual were the two live sightings reported from the same site in South Ronaldsay in July and August.

Badger *Meles meles*

The most surprising mammal record of the year was a dead badger found on the tideline at Warebeth, Stromness, on 9th October. It was adult, probably female, but was not fresh enough to give any clues to cause of death. It seems most likely that it died in a river somewhere in the Highlands, floated into the sea and drifted to Orkney.

Otter *Lutra lutra*

There were 24 reports of live sightings, of up to 4 animals, from Mainland, Hoy, South Walls, Wyre, Sanday, Papa Westray and North Ronaldsay. Spraints and tracks were found on the same islands and also Westray. Females with young were reported at Loch of Hundland, Loch of Harray, and Marwick Bay. Some of the other reports of 2 or 3 were also likely to be young. Otters seem to get everywhere; one was even seen crossing Dundas Crescent in Kirkwall. Three were reported dead as probable or definite road casualties, two in January and one in December. Another was found injured and died. At one hen harrier nest near a burn 2 young were predated by an otter which left incriminating spraints at the site. This must be an occasional hazard to any bird nesting near water.

Stoat *Mustela erminea*

19 reports of sightings. Most were concentrated in the east Mainland, around Wideford Hill and in South Ronaldsay. None of these were confirmed by photographs or trapped. Live trapping was resumed in the early part of the year but was stopped during the stoat breeding season because of concerns that a female with dependent young could be trapped. Later in the year trapping was resumed; this time a professional trapper was employed. Some of the sightings might have been escaped ferrets; possibly there are isolated individual stoats in each area. There is no real evidence of much impact on prey species yet.

Common/Harbour Seal *Phoca vitulina*

Highest reported counts of haul-outs were 40 Gairsay in November, 35 Birsay Bay in May and June, 30 Stromness Outer Holm in September and 20 Ha Wick, North Walls in June. Maximum count in the Loch of Stenness was 6 in March and October. Usually 6 or 7 were on the Finstown pier with the bearded seal.

Grey Seal *Halichoerus grypus*

Pup counts in November:

245 Gairsay

300 Sweyn Holm

8 Boray Holm

78 South Ronaldsay, between Burwick and Green Head.

A haul-out of about 150 was on the skerries in Burra Sound and 40 on Wyre Skerry, both in June.

Bearded Seal *Erignathus barbatus*

The animal that hauled out on the old pier in Finstown in 2010 remained into 2011; it was seen frequently up to March but much less often later. The last recorded sighting was on 24th May. It was first seen on 18th February 2010.

Cattle *Bos taurus*

In June the feral herd on Swona consisted of 17 animals: 12 black, 3 brown and 2 white. Another count was 11 cows, 3 calves and 2 bulls (1 outcast bull), presumably one was missed!

Many thanks to the following contributors of records:

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Bryophyte Report 2011

Rosemary McCance

There has been a very welcome increased interest in bryophytes during 2011.

Following on from the bryophyte day at Waulkmill in 2010, John Crossley organised two successful Sphagnum days, one at Russadale, Stenness on 14 May, another at Burn of Lushan, Evie on 24 Sept.

The Atlas of Bryophytes is being revised and all VC recorders are asked to visit under-recorded hectads. Five Mainland ones were visited and recording done, leaving five island ones to be done in 2012. Volunteers welcome!

In October, thanks to funding from the Scapa Flow Landscape Partnership, a very successful three-day course was run by Nick Hodgetts from Skye, co-author of “Mosses and Liverworts” from the New Naturalist series. Russadale in Stenness, Vinden in Rendall, the Aeolianite site at Aikerness in Evie, the Hill of Dwarmo in Evie and Burn of Lushan were visited and produced several interesting records. The new and updated VC111 records are listed below:

Conocephalum salebrosum - a liverwort; Hill of Dwarmo; new

Cephalozia pleniceps - a liverwort; Burn of Lushan; new

Cephalozia loitlesbergeri - a liverwort; Burn of Lushan; new

Didymodon luridus - a moss; Aikerness; new

Racomitrium affine - a moss; Russadale; new

Plagiomnium rostratum - a moss; Vinden; update

Pseudocrossidium hornschurchianum - a moss; Hatson; update

Other new and updated records from 2011 are:

Anthoceros punctatus - a hornwort found by John Crossley in a field at Happy Valley. This is the first hornwort record for Orkney.

Ditrichum gracile - a moss; Aeolianite site in Evie; R McC; new

Neckera complanata - a moss; Syradale, Firth; R McC; update

Pseudoephemerum nitidum - a moss; Happy valley, Stenness; JC; update

Antitrichia curtipendula – a moss; found in Hoy by John Crossley and Julian Branscombe. This is only the second record for Orkney. It was previously found, also in Hoy, in 1974.



I took over as Jellyfish reporter half way through the year and have had few records from others. Hopefully more people will report sightings to me in 2012.

I have seen very few “true” jellyfish while I have been snorkelling here in 2011 but have seen comb jellies, siphonophores and many jelly like medusae of hydroids, known as hydromedusae which are typically simpler, smaller, more transparent and delicate in appearance than “true jellyfish” but swim and capture their prey in the same way. As you will see from the photos, they look very similar and indeed I only discovered they were not true jellyfish when I tried to identify them. However, I would like to offer this as a

Cnidaria Report which includes jellyfish but also lesser known taxa such as hydroids, siphonophores and comb jellies which resemble jellyfish.



White Cross Jellyfish

The hydro medusa is the sexually reproductive stage of the hydroid. There are usually separate sexes whose eggs and sperm produce larvae which settle on the seabed to form new colonies of bottom living hydroid polyps. The polyps then give rise to medusa by asexual budding and the life cycle is complete. There seems to be very little known about the bottom living polyp stage of quite common medusae.

Sightings

Blue Lion’s Mane Jellyfish *Cyanea lamarckii* (a “true” jellyfish)

- 7th August Skipi Geo, 40 cm diameter Dead
- 18th Sept Scapa Bay, 30 cm diameter Dead
- 25th Sept Houton, 30 cm diameter Dead

Crystal Jellyfish *Equorea vitrina* (a Hydroid Medusa)

- 6th July Inganess Bay 50 cm diameter
- 13th July Birsay 4 medusae seen ranging from 20 to 50 cm,
- 6th July Inganess Bay 50 cm diameter
- 11th August. East side of 1st Barrier 8 medusae seen ranging from 30 to 60 cm diameter (Visibility not so good but all medusa “fishing” with tentacles extended, I wondered if there was lots of plankton in water).
- 17th August 3rd Barrier 40 cm diameter
- 14th September 2nd Barrier 40 cm diameter by Chris Werb
- 1st October Echna Bay 50 cm diameter
- 2nd Oct Evie Bay 40 cm diameter
- 6th Nov Burwick pier 30 cm diameter

Crystal Jellyfish



7th Dec Backaskail Beach, Sanday, 8 cms diameter by Nicky Thompson,
(She had also found a bigger one a few months earlier)

White Cross Jellyfish *Staurophora mertensii*

13th July Birsay, west side of causeway, 20 or so, 2-4 cm diameter

17th July The Lash, Orphir, 50 or so, 2 cm diameter

Sea Gooseberry *Pleurobrachia pileus* (a comb jelly)

28th June Firth Bay near the causeway to Grimbister, 1000 or so observed over 2 hours

String Jellyfish *Agalma elegans* (a siphonophore)

Sat 1st Oct Echna Bay, One string measuring 2 metres with many bright red polymorphic individuals

2nd Oct Evie Bay Another string measuring 1.5 m with similar bright red polypoids

1st Jan 2012 Houton Bay 4 short strings from 20 to 40 cm

Neoturris pileata (a hydroid medusa)

2nd August The Lash 3 medusae approx 3 cm diameter

I think that there are many jellyfish in Orkney waters, they are just being underobserved and under recorded.

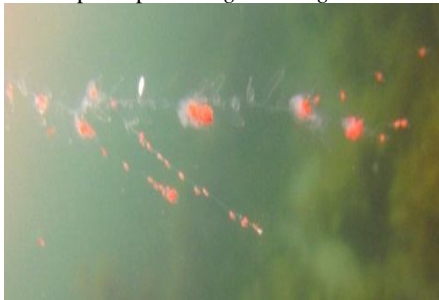
I note that we have had very few records of strandings or dead jellyfish on the beaches.

I would welcome any records.

Neoturris pileata



Siphonophore *Agalma elegans*



Sea gooseberry Comb jelly



Sea Anemones..... The “Flowers of the Sea”

Although Sea Anemones are not my brief, they are also members of the phylum, *Cnidarians* under the sub phylum *Anthozoa*, class *Hexacorallia*, Order *Actinaria*, so I thought I would write a brief report about which anemones I have seen in Orkney waters.

I have seen 6 species of anemones.

Beadlet Anemone *Actinia equina*

This very common anemone is seen in many locations in Orkney. Often found in rock pools and seen as ‘jelly blobs’ exposed on rocks. The colour is usually dark red but I have also seen shades through brown and orange to a delicate pink. It is also seen in a green variety but I have not seen this yet in Orkney.

I have seen them:

- Birsay
- Skipi Geo
- The Lash, Orphir,
- Swanbister Bay
- At all the barriers on both sides
- The old pier at Evie Bay

Beadlet



Plumose Anemone *Metridium senile*

This comes in 2 forms both of which I have seen in Orkney,

- *Dianthus* which can be fairly large with hundreds or thousands of tentacles giving a ‘fluffy’ appearance. They are very social animals and often form large groups normally all one colour usually white or orange. Some individuals have an orange column and white tentacles.
- *Pallidum*, which is much smaller and does not exceed 25mm across.

Observed at:

- Scapa side of 1st Barrier
- Pontoon alongside block ship at 3rd Barrier
- Mooring rope on buoy in Evie Bay
- Both sides of 2nd Barrier

Elegant Anemone *Sagartia elegans*

This anemone is very variable in colour which relatively long tentacles irregularly arranged which gives a rather ‘untidy’ appearance. A characteristic feature is that the column has pale suckers which appear as whitish spots.

I have seen two varieties, *Nivea* which has disc, column and tentacle translucent white; and *Venusta*, which has bright orange disc and column with white spots and white tentacles.

- East side of 3rd Barrier
- Scapa side of 1st Barrier

Dahlia Anemone *Urticina felina*

This and the closely related Horseman anemone are some of the largest and most dramatic common anemones. The colour is variable and often banded giving a stripey appearance. They only reproduce sexually so there is no clustering of individuals.

The Dahlia anemone usually has gravel on shell fragments attached to small grey adhesive warts on the column which can be seen when closed.

Horseman Anemone *Urticina eques*

This is very similar to the dahlia anemone with a 'clean' column. This column can be streaked with red patches of red and cream.

Both these anemones are slow growing and long lived. Aquarium specimens have been known to reach 50 years old. I have observed specimens of up to 30 cms across which are very impressive. I find them difficult to distinguish when the column is not visible.

- East side of 3rd Barrier, in large numbers
- Scapa side of 3rd Barrier
- Evie Bay
- Pontoon at 3rd Barrier
- Scapa beach
- St Peter's Pool

Snakeslock Anemone *Anemonia viridis*

This anemone occurs here in a very different visual form and description than in all the books which confused me (and caused much discussion on marine ID websites for a while)

I have found this only on Eelgrass here in Orkney, locally abundant in Firth Bay as a very tiny anemone often less than 50 mm and a pale brown colour. There are a few larger specimens.

- Firth Bay
- St Peter's Pool
- Widewall Bay

Conclusion

I think there are many more places where there are anemones in Orkney and would be really interested in any reports. Also possibly different species??

Plumose Anemone



Dahlia



Woodlice in Orkney 2011

Dave Musson

There have been no surprises this year.

The same 4 species come up in every location as expected

Common Rough Woodlouse *Porcellio scaber* seems to be everywhere especially in huge numbers at the high tide mark in summer months. This is the woodlouse most likely to come into your house.

Common Shiny Woodlouse *Oniscus asellus* is under nearly every stone that I turn but not on the shore.

Pygmy Woodlouse *Triconiscus pusillus* is a tiny brown soil dwelling species that is always present in damp soil if I search for it.

Sea Slater *Ligia oceanica* is on every shore that I have looked at so far.

Porcellio spinicornis is present in about half of the sites investigated. Much slower and in smaller numbers than the other *Porcellio*. I did find a colony that surpassed *P. scaber* in numbers at Eastside South Ronaldsay but this was unusual.

Rosy Woodlouse *Androniscus dentiger* was in this location as well. But that is my only record of that species in 2011.

Miktoniscus patiencei is a tiny, white soil dweller that I found last year. I have not found another. I am reliably informed that I will find *Haplophthalmus mengei* (another tiny white soil job) and *Triconiscus pygmaeus*. This latter looks so much like a small *T. pusillus* that I may well be missing it.

A new record for Orkney was the **Common Striped Woodlouse** *Philoscia muscorum* found by Dr Peter Kirby at Waulkmill. This species is very common further South and was sure to be in Orkney somewhere. The only surprise is that it took so long to be discovered.

When I first became Orkney Woodlouse recorder I expected to find eight species in the County. We now have eight definite species with another two almost certainly waiting to be discovered.

Young *Porcellio scaber*



Common Shiny Woodlouse *Oniscus asellus*



Land Molluscs in Orkney in 2011

Dave Musson

Orkney has a good variety of habitats suitable for Molluscs. This is reflected in the number of species that we have in Orkney.

Molluscs are sedentary animals, mostly relying on forces beyond their control to distribute species. The inevitable result of this is that populations become isolated from the main gene bank. In this situation most life forms have a tendency to diverge in form and habits as they interbreed within discrete populations. A local example of this is a species of *Clausiliidae* (door snails) which as far as I can tell lives in just one tiny nook of the Yesnaby Headland. It does not seem to fit into any of the species in this family.

I have added quite a few new species to my Orcadian snail list. *Discus rotundus* seems to be quite widespread but not as numerous as further south. *Clausilia bidentata* is local but plentiful where it is found.

Oxichilis is the name given to the family of little shiny flat whitish snails that seem to be increasing in number in many parts of Orkney. I seem to have three species of these in my garden. Interestingly they are listed as being mainly carnivorous.

I am still far short of adding to the list of Molluscs already recorded in the county. Dr Peter Kirby conducted a sample survey in Orkney in summer 2011, finding and identifying 130 molluscs in that time. I have yet to study these records in detail.

Anyone who keeps a garden in Orkney will know that we have a good variety of slug species; the list is too long for this short report. I have added a new slug to my Orkney list: *Limax flavus* is a large slug dull brown in colour mottled with lighter brown to yellow. This slug has quite smart looking ice blue head and tentacles.

Like many of our slugs this one eats fungi. I had a huge colony of them in the cellar of our last house but this is my first Orkney record.



Nearly 100 species of fungi were recorded in Orkney in 2011, 83 of them when visiting expert Liz Holden spent a couple of days on Mainland in September. The fungi of Orkney has received a lot of study in the past, as shown by *The Fungus Flora of Orkney* (Watling, Eggeling & Turnbull, 1999) which documents well over 1000 species here. However, a striking reminder of the limits to our knowledge was that Liz Holden's visit produced six species which were new to Orkney.

Two of these new species were fungi of grassland called pinkgills – *Entoloma asprellum* at Finstown Cemetery and *E. atrocoeruleum* at the cemetery by the Earl's Bu, Orphir. Other grassland species included a total of 14 species of waxcaps from the cemetery and coastal grassland sites visited. Highlights included a fine specimen of **Pink Waxcap** *Hygrocybe calyptriformis* (photo right) on the south side of St Magnus Cathedral.

Two new species were found on the visit to Happy Valley, Stenness. **Wood Pinkgill** *Entoloma rhodopolium* (photo below) was



found growing under the trees. A sharp-eyed member of the group also spotted a fine specimen of **Tan Ear** *Otidea alutacea*, a kind of cup fungus.

An interesting variety of species were found in association with the **Aspen** *Populus tremula* and willows at Waulkmill Bay. Two of these were new to Orkney – the **Stinking Brittlegill** *Russula foetens*, and a large bolete (thus with pores rather than gills) known only by its scientific name of *Leccinum aurantiacum*. (photo below) The other ectomycorrhizal fungi recorded in the visit to Waulkmill with Liz

Holden included **The Deceiver** *Laccaria laccata*, **Fleecy Fibrecap** *Inocybe flocculosa* and the **Red-cracking Bolete** *Xerocomus chrysenteron*.

This assemblage of fungi around the Aspen and willows has a mutually beneficial relationship with the trees. These fungi are known as 'ectomycorrhizal', with the fungal tissue forming a sheath around the tree root tips. Fine fungal threads spreading out from this sheath take up water and minerals from the soil, which are passed to the plant root, with the plants reciprocating by providing sugars to the fungi.



These fungal partners are essential for the healthy growth of the trees. Indeed, it seems likely that new plantings of trees such as **Downy Birch** *Betula pubescens*, willows and Aspen in Orkney will have to rely on a limited range of 'pioneer' fungi to assist with their growth. With so few trees on Orkney to act as a source of fungal inoculum it could take some time for the full diversity of fungi to become established. It is also possible that in some cases the trees will not grow as well as might be expected. Interestingly, where present, **Bearberry** *Arctostaphylos uva-ursi* hosts many fungal species that would transfer to birch, willow and aspen.

Liz's visit also allowed the opportunity for her to identify any recently collected specimens which were still in a good enough condition. One of these also proved to be new to Orkney – the **Scaly Sawgill** *Neolentinus lepideus*. This was found on a length of old telegraph pole used as a straining post along the edge of a field in Deerness – a typical habitat for this wood rotting species, which has been called The Trainwrecker on account of its dangerous habit of destroying railway sleepers.

The year also saw a spectacular addition to the Orkney list by Keith Fairclough. On 11th September, they saw **Fly Agaric** *Amanita muscaria* – the 'classic toadstool' with bright red cap covered with white fleecy scales – along the edge of Wee Fea plantation. This is another ectomycorrhizal species, often found in association with Birch, but here with pines.

The other fungal success of 2011 was an appeal through Radio Orkney and *Living Orkney* for sightings of **Giant Puffball** *Calvatia gigantea*. Records poured in from around a dozen widely spread locations, including several Mainland parishes and the isles of Faray, Glimps Holm, Hoy and Shapinsay, which significantly extends our understanding of the distribution of this easily-identified species. It would seem that it is widespread in Orkney, particularly on roadside verges and well-manured fields.

Note about Bird Records

Although from time to time articles in the *Orkney Naturalist* will deal with ornithological matters, we do not include the County's bird records as these are well dealt with in the annual *Orkney Bird Report*, edited by the County Bird Recorder, Jim Williams, telephone 01856 761317. Copies can be obtained from the Recorder or from the RSPB Stromness office, telephone 01856 850176.

Myriapods in Orkney in 2011

Dave Musson

Millipede Report: there seem to be four species of Millipede in Orkney.

- ❖ *Polydesmus* are flat sculptured millipedes. I am told that we have two species of *Polydesmus*. *P. angustus* is very common in stone dykes in South Ronaldsay.
- ❖ *P. inconstans* has been recorded. It is one of my target species for next year.
- ❖ **Blunt-tailed Snake Millipede** *Cylindroiulus punctatus* is quite common under old wood. I find it between the leaves of rotting plywood where it seems to like the degraded glue.
- ❖ I found one specimen of the **Black Millipede** *Tachypodiulus niger* on the shore at Toab. It gave off a very strong scent of Iodine when handled: a defence mechanism employed by some millipedes. I think that this was so strong due to living among rotting seaweed.



Centipede report: I have to admit to struggling to identify some centipedes. As with most groups of inverts the relevant national record keeper is always at the other end of an e-mail to assist.

- ❖ So far all of my fast, brown, shiny Lithobius have turned out to be *L. forficatus*, a common shiny centipede.
- ❖ *Geophilus truncorum* occasionally turns up under old wood. I note that Dr Kirby recorded one in his survey.
- ❖ A bit of a mystery is the colony of the **Marine Centipede** *Strigamia maritima* that thrives in large numbers on the beach at Herston. I have searched other likely areas without finding this species.
- ❖ A nice specimen of the **Luminous Centipede** *Geophilomorpha carpophagus* (I did not see it in the dark!) turned up when I was clearing some ground.

According to the National Centipede Recording Scheme maps there are several other species

to be found in Orkney. I would welcome any records, photographs or specimens of any centipedes that turn up. I also admit to being reluctant to kill specimens for identification! It may be necessary to overcome this reluctance in order to completely update the Orkney Centipede list



Orkney Recorders February 2012

(Please see second half of table for contact information)

County Recorders can arrange species identification, either through their own knowledge or by access to the expertise of others; they feed information into local and national recording schemes; and they maintain Definitive Lists. A number of the latter are now available on the Field Club's website, <http://www.orkneycommunities.co.uk/FIELDCLUB/index.asp>. As the Reports in the Bulletin demonstrate, appropriate records of sightings are always welcome.

ALGAE - MARINE (SEAWEEDS)	Prof. Martin Wilkinson
ALGAE - FRESHWATER	Eileen Summers
AMPHIBIANS & REPTILES (FROGS, TOADS ETC)	Chris Booth
ANTS	Keith Fairclough
BATS	Chris Booth
BETLES	Brian Ribbands
BIRDS	Jim Williams
BUMBLEBEES, SOLITARY BEES, SOCIAL WASPS & WASPS	John Crossley
BUTTERFLIES & MOTHS	Sydney Gauld
CADDIS FLIES, MAYFLIES & STONEFLIES (TRICHOPTERA, EPHEMEROPTERA & PLECOPTERA).	Ross Andrew
CENTIPEDES & MILLIPEDES	Dave Musson
CNIDARIA (SEA ANEMONES, JELLYFISH, HYDROIDS, COMB JELLIES AND SIPHONOMORES)	Penny Martin
CRUSTACEA (MARINE).	Helen Clarke
DRAGONFLIES & DAMSELFLIES	Keith Fairclough
EARTHWORMS, LEECHES ETC	Keith Fairclough
ECHINODERMATA (SEA URCHINS, STARFISH, ETC)	Duncan Clarke
FISH	Chris Booth
FUNGI (INCLUDING SLIME FUNGI)	Julian Branscombe
GRASSHOPPERS	Keith Fairclough
LICHENS	Roger Davies
MAMMALS (EXCEPTING BATS & CETACEANS)	Brian Ribbands
MOSESSES, LIVERWORTS, HORNWORTS	Rosemary McCance
SAWFLIES	Jenni Stockan
SEASHELLS	Andrea Taylor
SLUGS & SNAILS	Dave Musson
SPIDERS, PSEUDOSCORPIONS & HARVESTMEN	Edward Milner
STONEWORTS	Effy Everiss
TRUE BUGS (HEMIPTERA)	Peter Kirby
TRUE FLIES (DIPTERA); HOVER FLIES (SYRPHIDAE), PARASITIC FLIES (TACHINIDAE), FLESH FLIES (SARCOPHAGIDAE) AND BLOW FLIES (CALLIPHORIDAE).	Ross Andrew
VASCULAR PLANTS	John Crossley
WHALES, DOLPHINS & PORPOISES	Chris Booth
WOODLICE	Dave Musson

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General Advice on Recording

All records are worthwhile. The essential four pieces of information that must accompany **ALL** records are:

What	Where	When	Who By
SPECIES NAME (& HOW MANY)	PLACE NAME OR GRID REF (IF POSSIBLE)	DATE	YOUR NAME

Record Cards for some groups can be obtained from the Orkney Biodiversity Records Centre. Records, including completed cards, should be sent to the appropriate County Recorder. The use of Record Cards is desirable but not essential.

If no County Recorder is listed, please send your records to the Orkney Biodiversity Record Centre:

**Orkney Biodiversity Record Centre,
Orkney Library and Archive,
44 Junction Road,
Kirkwall,
Orkney,
KW15 1AG**

Email: [**biodiversity@orkneylibrary.org.uk**](mailto:biodiversity@orkneylibrary.org.uk)

If you want a reply it would be appreciated if you include a stamped addressed envelope. This is essential when specimens have to be sent away for identification. When collecting specimens please collect only the minimum number needed for purposes of identification. If you need help with identification or if you would like more information about records of a particular species of plants, birds, mammals, invertebrates, etc please ask the appropriate County Recorder.

Both individual County Recorders and the OBRC hold details of recording schemes for a large assortment of flora and fauna. Many of the organisers welcome and help beginners, so why not “take up” a species or a group to study and record?

To assist with species identification the OBRC holds a library of reference books and equipment including microscopes. See page 1.