

The Orkney Naturalist



**BULLETIN OF THE ORKNEY FIELD CLUB
2005**

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ORKNEY FIELD CLUB OFFICE HOLDERS & MEMBERSHIP DETAILS

Founded in 1959

Aim: To encourage the study and causation of the natural and culture heritage of the County



OFC OFFICE HOLDERS - 2005

President:	Elaine R Bullard	
Vice-presidents:	Mildred Cuthbert	Ted Kellock
Officers (2003)	Peter Ford	Chairman
	Kate Barrett	Vice-chairman
	David Peppitt	Secretary
	Dennis Paice	Treasurer/Membership Secretary
	David Peppitt	Bulletin
	Dick Matson	Walks & Talks
Committee:	Sally Hallam	John Crossley
	Ray Hallam	Jeff Barrett
	Chris Booth	Sydney Gauld

SUBSCRIPTIONS (2005): Adults £10, Family £15, Concessionary £6, Student £3. Non-members of the public attending outdoor meetings shall pay for temporary membership at the rate of £2 for individuals (adults only) and £3 for families.

MEMBERSHIP SECRETARY: Dennis Paice, Ardleigh, Dounby, tel. 771535, who can also provide copies of the Club Constitution.

CLUB NIGHTS are usually held in Kirkwall on the third Friday of the month, with talks, slides, demonstrations and discussions. All are welcome. Meetings are advertised in the Orcadian under Club/Society notices and on Radio Orkney.

FIELD MEETINGS are held approximately monthly to a wide range of locations, including the outer isles.

ORKNEY FIELD CLUB was a partner of the Orkney Biodiversity Records Centre (OBRC), which enters records of Orkney species, sites, habitats, etc., into its database. This valuable data is available to all interested parties. The Biological Recording Sub-committee, made up of the Orkney County Recorders, welcomes and encourages amateurs to participate in the collection of data. The Club promotes, and is actively involved in, conservation by means of a native trees plantation, reserves, study and fieldwork.

NEWSLETTERS: normally sent out three per year, free to members. These give Club news, information, and programmes for activities and Junior's notes.

RESOURCES: these include the Library Folder in the County Library Reference Room. This contains copies of wildlife publications and OFC committee meeting minutes. The Archives include slides, equipment and textbooks. Members also have access to a comprehensive range of reference books, and equipment, including microscopes, in the Orkney Biodiversity Records Centre, also situated in the Library.

PRESIDENTS LETTER

I do not know if this is more common in Scotland than in England but there is a curious tendency to throw off interest in voluntary action once an "official" organisation takes over. In 1959, when OFC was started, the old Nature Conservancy was in its very young days with a minute staff for the whole of Scotland and Orkney Field Club did a number of small "jobs" for it, like listing all the abandoned quarries with fossil fish-bed exposure and, later, carrying out the annual count of grey seal pups born on certain South Ronaldsay beaches (no Health and Safety regulations in those days). But once the NCC (now SNH) set up its own Kirkwall Office, many OFC members suggested there was now no need for the Club to take any further active part in wild-life conservation, even in fact-finding (recording). Perhaps the differences in the Wildlife Trust Movement between England and Scotland may have encouraged this "not our business" attitude because although Trusts were based on single counties in England and considerable local pride could be generated. Scotland had, and still has, the one Trust to cover the whole country. The RSPB was certainly not inhibited by the existence of a national government wildlife conservation body.

But OFC members still have a strong interest in what is now known as "biological recording" especially for the huge distribution Atlases organised by the various national specialist organisation. This type of recording doesn't help a Local Authority when it is faced with a Planning Application for a wind farm. 440 different species of wild flowers, some of them very rare, may be known to grow in Orphir, but how many of them grow on Gruf Hill?

Ah, but we now have an official Biological Records Centre housed in our beautiful new Library. Surely, it is its job to say what wild flowers and other wildlife occur on Gruf Hill? And if it lacks this information, and lacks the money to get it, why doesn't it tell us, and arrange some sort of project for us to undertake - just as the BSBI did in 2003 with the popular Local Change project? But here the notorious Health and Safety, and masses of other protective legislation come into play. No government run organisation can "tell" volunteers what to do. The initiative must come from the volunteers themselves. What about it?

EDITORIAL.

Once more an eclectic collection of articles. Explore "Plants in a drowned winter landscape" to discover the trout fishers favorite flower. Read Kate's article on slugs where she lists the salient identification points of this gardeners' enemy(?).

This year we have included more illustrations which we hope will enhance your pleasure in our publication.

Finally, without our contributors and yourselves as readers, our efforts would be in vain. Thank you.

ORKNEY'S NEW COUNTY FLOWER

ELAINE R BULLARD

A small personal note re our supposed new County Flower. *Armeria maritima* (see below for old Orcadian names for it) has nothing specifically Orcadian about it. It occurs on all the coasts of the BI, down the coast of Brittany and, I think, into Portugal. It is certainly more plentiful on Brittany coasts than in Orkney. It finishes flowering before our main tourist season and for the rest of the year has very undistinguished grass-like foliage. The type of vegetation in which it often occurs is called "Plantago/Armeria sward." And, as far as I can find out, "Sea Pink" was not the old Orkney name for it. Wallace's "Arby" seems the oldest recorded name for it in Orkney.

During the several years the national ballot was carried out it appears hardly anyone in Orkney bothered to vote. We could have had *Primula scotica*, although Caithness does have a better moral claim as Orcadian naturalists continued to call it a form of the Bird's-eye Primrose well after it was recognised as a separate species in Caithness.

Better still, we could have had the beautiful Sea Lungwort or Oysterplant, *Mertensia maritima*. Orkney can claim to have more of that than anywhere in GB. It occurs, even if only intermittently, on the coast of every island in Orkney and can be seen without getting out a car at No. 4 Barrier. Some other County with far less right to it, got it. And I think some other County, perhaps English, already has *Armeria maritima* - I have not checked.

This List of names is from Low's and Wallace's Orkney lists. Thought it might amuse you to see them and maybe try and puzzle out those I have been unable to interpret - Low's dog latin is very difficult! Both used pre-Linnean nomenclature. It is such a pity these old names have been lost in Orkney.

Mare's-tail and Horse-tail appear to have been used correctly by all the old botanists (The BBC Beech Grove Gardening programme invariably gets them mixed up!)

Whiterot <i>Pinguicula vulgaris</i>	Low
Waybread <i>Plantago major</i>	Low
Star of the Earth <i>Plantago coronopus</i>	Low
Cheese Rennet <i>Galium verum</i>	Low
Marsh goose-grass <i>Galium uliginosum</i>	Low
Break-stone Chickweed <i>Sagina procumbens</i>	Low
Sea Gillyflower <i>Armeria maritima</i>	Low; Arby Wallace.
Blaeberries <i>Vaccinium myrtillus</i>	Low
Arsemart (probably a <i>Persicaria</i> ?)	Low
Mountain strawberry-tree ??	Low
Autumnal Senegreen? either a <i>Saxifrage</i> or a <i>Sedum</i>	Low
Meadow pinks, Wild Williams, Cuckow flowers (All Ragged Robin)	Low and others. or Cuckoe -flower
Wartwort <i>Euphorbia helioscopia</i>	Low
Quicken tree <i>Sorbus aucuparia</i>	Low

Goutweed, Ashweed Ground Elder <i>Aegopodium podagraria</i>	Wallace
Queen of the Meadow <i>Filipendula ulmaria</i>	Wallace. (Still used in Orkney today)
Nailwort	Wallace
Whitelow grass	Wallace
Birdsnest <i>Daucus carota</i>	Wallace
Scorpion-grass all <i>Myosotis</i>	Wallace
Scot's Sea Master-wort <i>Ligusticum. Scoticum</i>	Wallace
St Jame's-wort? (not groundsel)	Wallace
Duck's-meat <i>Lemna minor</i>	Wallace
Spatling Poppy?	Wallace
Male Fool's Stones? (probably an orchid)	Wallace
Cocks-comb (Yellow rattle)	Wallace
Bird's tears Tufted Vetch	Wallace
Crowfoot generally applied to all buttercups	Wallace and Low
Balagan <i>Lapsana?</i>	Wallace
Clover - generally all trefoils	
Common Tansey - "plentiful in Hoy Churchyard"	Low
Grey Bulwand - <i>Artemesia?</i>	Low
Goose-tongue - <i>Achillea ptarmica</i>	(Low?)
Blue-bottle.? "Habitat in arvis, planta rariseme fantasse importata" (Cornflower?)	Low
Crake Berries <i>Empetrum nigrum</i>	(Low?)
Septfoil <i>Potentilla erecta</i>	(Low?)
Pilewort <i>Ranunculus ficaria</i> .	Wallace and Low

EDITOR'S NOTE ON *ARMERIA MARITIMA*

The following information is copyright of



Basic Information researched by: Joelene Hughes

Phylum	Anthophyta	Flowering plants
Class	Magnoliopsida	
Authority	Willd.	

Recent synonyms:	<i>Statice maritima</i>
Recorded Distribution in Britain and Ireland	<i>Armeria maritima</i> occurs all around the British Isles and Ireland. The subspecies <i>Armeria maritima</i> ssp. <i>elongata</i> is found in Lincolnshire but is very rare.
Habitat information	<i>Armeria maritima</i> is found on coasts, cliffs and salt marshes as well as inland on mountain ledges in Britain and Ireland.
Description	A perennial flower with a corolla consisting of five petals that are joined at the base with five stamens and five separate styles. The leaves form rosettes at the base of the stalk and the fruit capsule contains only a single seed. The leaves of <i>Armeria maritima</i> are narrow and numerous, and usually have hairs along their margins. The leaves surround a stalk that rises, unbranched terminating in a dense inflorescence of usually pink flowers. Often seen, and easy to identify in the absence of flowers. The rootstock is woody and easily seen under the leaves.



KEY IDENTIFICATION FEATURES:

- ◆ *Armeria maritima* usually has pink flowers although they are infrequently white.
- ◆ The flower consists of five petals, about 8mm wide with stamens opposite the petals and five styles that are hairy towards their base.
- ◆ The hairy calyx (the whorl of 'sepals' which occur outside the petals), has five ribs and teeth up to 1mm deep.
- ◆ A brown, tubular sheath falls 2-3cm below the flower head.
- ◆ The flower stalk is unbranched and between 5-30cm high, emerging from a rosette of 2-10cm long leaves.
- ◆ The leaves have a single vein, may have hair along the margins and originate from a cushion-forming, woody rootstock.

The Biology and Sensitivity Key Information Sub-programme is funded by:



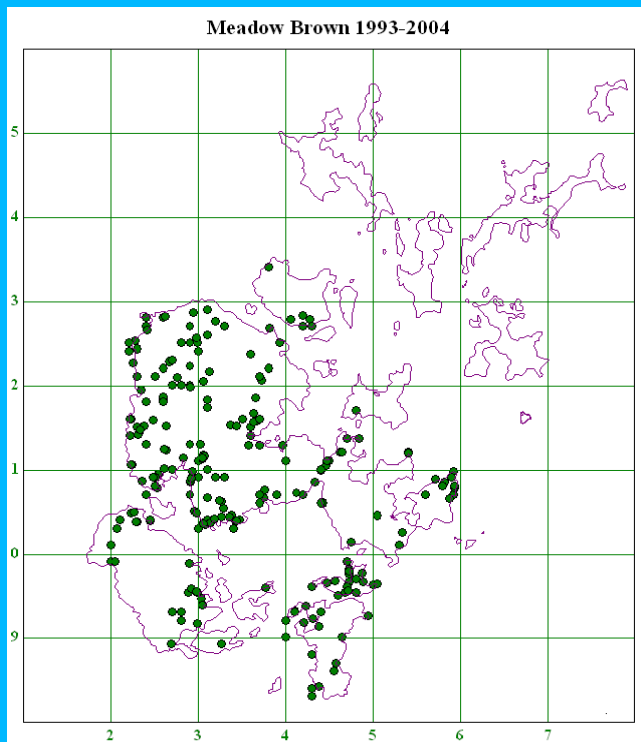
MEADOW BROWN FACT SHEET

EFFY EVERISS
AND SYDNEY GAULD

We are in the process of producing a series of ID guides for Orkney species with financial support from OIC, SNH and OFC. Because of this work, we have made up fact sheets for each species. These try to bring together national and local information in one document. Eventually the fact sheets will be published to the web so they can be kept updated and be more widely available. The following is the current fact sheet for the meadow brown.

Meadow Brown

Maniola jurtina splendida



UK STATUS AND RANGE

Resident Range stable.

CONSERVATION STATUS

- UKBAP: Not listed
- Butterfly conservation priority: Low
- European threat status: Not Threatened
- LBAP

EUROPEAN/WORLD RANGE

Its range extends across Europe south of 62°N, and eastwards to the Urals, Asia Minor and Iran. It is stable in most European countries.

GENERAL NOTES

The Meadow Brown is the most abundant butterfly species in many habitats. Hundreds may be seen together at some sites, flying low over the vegetation. Adults fly even in dull weather when most other butterflies are inactive.

Regional variations in the spotting pattern on the wings have led to it being studied extensively by geneticists over many years. Larger forms occur in Ireland and the north of Scotland.

It is one of our most widespread species, but many colonies have been lost due to agricultural intensification.

BIOLOGY

General	Wingspan female c.50mm, male.54mm Upper forewing has one optical ocellus, usually with one white pupil. Female has a substantially larger eyespot. This eyespot is likely to affect the behaviour of some insectivorous birds. Some variation between and within sub-species. Over 70 forms have been described. Considerable amount of research into the genetics of this species and 'islandisation' of populations. Rarely forms colonies above about 200 metres although it will successfully colonise the smallest of islands.
Habitat	Open grasslands, including downland, heathland, coastal dunes and under cliffs, hay meadows, roadside verges, hedgerows, woodland rides and clearings, and waste ground. It also occurs in urban habitats such as parks, larger gardens, and cemeteries. Grassy places of all kinds, gardens
Flight	June to September, which is quite long, there is great variability between populations, some having a synchronised emergence others a more prolonged one. Generally, the annual variations can be accounted for by differences in June temperatures. Sexes can be distinguished on the wing; males are more active and locate mates both by flying out from perches on low vegetation or by characteristic slow and low exploratory flight with frequent changes in direction to investigate small patches within the vegetation. Females mate once usually on the first day of activity and fly only to lay eggs or feed. They often bask and are active in dull weather or even light rain.
Food Plant	A wide range of grasses is used. Those with finer leaves such as fescues (<i>Festuca</i> spp.), bents (<i>Agrostis</i> spp.), and meadow-grasses (<i>Poa</i> spp.) are preferred, but some coarser species such as Cock's-foot (<i>Dactylis glomerata</i>), Downy Oat-grass (<i>Helictotrichon pubescens</i>), and False Brome (<i>Brachypodium sylvaticum</i>) are eaten by larger larvae. Other species of grass are also believed to be used. The highest densities are associated with unmanaged or poorly managed grassland of intermediate height especially

Food Plant (continued)	where there are patches of more open vegetation and knapweed also occurs.
Egg	July- September, solitary on grasses but often dropped when female perched. Sometimes loosely grouped on vegetation. Quite small, increasing in size northwards through Europe. Mottled brown-yellowish at first but turning greyish before hatching which takes about two weeks.
Larva	All year, nocturnal. Fully fed c.25mm long and thick bodied, head dark green, body green dorsal stripe darker green and lateral stripe narrow and white. Newly hatched larva are brown but turn green on feeding. They never eat the flower stems of grasses are rather sedentary and only move short distances. Do not have a true diapause and larvae will continue feeding in milder periods in the winter, when, being well camouflaged they feed by day until march when, usually in their third instar they switch to feeding after dusk. When not feeding they rest low down in the vegetation rising to the top of grass leaves to feed. They are highly sensitive to vibration dropping off and rolling up on disturbance. Larvae and pupae may be heavily parasitised and in high densities subject to viral and bacterial infections, may be predated by small mammals. Larval populations seem to have no synchronisation of development with several instars present in a population. Might be due to long period of egg laying and lack of a true diapause.
Pupa	Pupate Early June to July, very variable in pattern with a basic green colour. Hanging downwards from grass stems or blades, pupal astage lasts about a month but depends on the temperature.
Overwintering	As a larva, no true diapause, feeding on warmer days.

ORKNEY NOTES:

One annual brood Resident. On the wing July and August. The sub-specific characters of 'Larger and brighter coloured' The apical eyespot of the front wings with two white dots' seem to be shown more consistently and clearly than elsewhere (Thomson 1980) Widespread, except North isles but that is probably due to general lack of records from this area. Var. *splendida* was discovered in Orkney by McArthur in 1895.

REFERENCES:

Lorimer, R.I	The Lepidoptera of the Orkney Islands	Classey Ltd. UK. 1983
Gauld, S.V.	The status of <i>Polymmatius icarus</i> , Common Blue in Orkney 1997	OFC Bulletin 1999 p32-34

Emmet, Maitland A., Heath John. (Eds)	The Moths and Butterflies of Great Britain and Ireland. Volume 7, Part 1 Hesperiiidae- Nymphalidae The Butterflies	Harley Books 1989
Thomson, G	The Butterflies of Scotland - A Natural History	Croom Helm, London 1980
Photo / Mapping	Sydney Gauld The Local Orkney Biodiversity Action Plan 2002 Orkney Biodiversity Steering Group Butterfly Conservation Society Website, accessed July 2004	

SLUG IS A FOUR LETTER WORD

KATE BARRETT

I quite like slugs, or at least find them interesting – and I bet you don’t know many folk who say that. It began in my small town garden when it was brand new and we all know what builders leave behind them, don’t we? Foreign top soil, grass, and a load of builder’s rubble underneath, so it was with some concern that I viewed the lack of wildlife when I planned the garden. Over the six-odd years of living here, however, feeding the soil and the planting, wildlife has increased to such an extent that various species could demand a life-time’s study and that applies especially to molluscs. Monty Don says that in one experiment 27,500 slugs were collected from a small garden without making any noticeable difference to slug activity. Densities of 200 slugs per square metre are moderate in the average garden, according to Monty.

In the class Gastropoda (*Stomachfoot*) the head is well-developed and bears two pairs of retractable tentacles, one pair sensitive to smell and perhaps taste, the other ones, each with an eye at the tip, to light as well as smell. Although the shell is conspicuous in snails, in slugs it is less obvious, rudimentary and always internal. The mouth is a transverse slit close to the second pair of tentacles and contains a horny, rasping tongue with many rows of teeth used to saw plant tissue by the mouth. The slug’s body is dotted with sensory cells, most clustered around the mouth and tentacles, enabling it to taste, smell, react to light and dark from all angles. Originally, the slug was a sea creature, its gills becoming lungs so that it can survive on land, but still needing the moisture it loses through slime production.

When the slug moves a slime trail is left and two types of slime or mucus are secreted, one from the mucus glands of the foot and the other from the pedal gland

opening just below the mouth, this latter sticky and enabling the slug to move. The slime is also protective and helps to allow movement across irritants the slug may try to cross.

As you will know, slugs are hermaphrodite and cross fertilisation is the rule, usually reciprocal. Eggs, up to 36 at a time, depending on the species, several times a year, are laid mostly in summer and autumn underground in damp soil, hatching in 10-12 days. Slugs feed chiefly at night when humidity is raised and temperature lowered. They have no waterproof cover and are much affected by changes in humidity so during the day they seek shelter beneath stones or in crevices. Like other gastropods, they are cold-blooded and so activity slows down and finally ceases when temperatures fall in late autumn and winter and we all breathe a sigh of relief.

The smallest slug you are likely to find in the garden is *Deroceras reticulatum*, the Grey Field Slug. This slug is yellowish grey, although it can be other colours, and its slime milky white. The mantle is less obvious on this slug. It likes wet meadows and gardens and is distributed often among vegetables doing considerable damage when it likes yours, preferring plants with high nitrogen and protein content – and it can remember where they are!

The largest slugs, *Arion lusitanicus* (the Large Black Slug), *Arion ater* or *Arion distinctus*, can be as long as 20cm at full stretch. Their backs and sides are very wrinkled with a noticeable foot rim; juveniles of *ater* are ivory-coloured with a black head becoming grey as they mature until the adult state when they become black. A fourth species, the Garden Slug, *Arion hortensis*, is much smaller, rarely more than 4cm with a nearly black back and two stripes that have light grey borders. Sometimes this slug produces yellow slime and can be found in fields and gardens particularly in humid weather when it climbs the plants it likes. It has been established that these slugs spend 68% of their time at rest, 27% travelling and only 5% of time feeding.

The best method of distinguishing one species from another, apart from colour, is the position of their respiratory opening in the mantle shield and the shape of the body. Determine the slug's body length, the respiratory hole's position in the front or rear of the mantle shield, and the tail parts showing an upper edge (the keel) in the rear half of the overall length. The mantle covering the shell rest has to fulfill a protection task and when you collect a slug it will try to pull itself together so that it becomes more difficult to get hold of. I find an old dinner fork and baked bean tin useful.

Most people prefer to rid themselves of slugs and, of course, they do a lot of damage to certain plants, but not all species do damage and not to all plants, so it seems a pity to throw them all out with the waste water. They can be beneficial to your compost, for instance, working away in the same way that worms do. Slug pellets, the favoured poison, disrupt the slugs' gastric system and most do this with the toxic chemical metaldehyde; but they kill other wildlife as well as slugs,

or those that eat the slugs once poisoned. As pellets are attractive to slugs they are likely to bring more molluscs into your garden thereby being attracted also to the plants you grow. As I have cats and garden organically you'll never find pellets around my plants, but here are some other methods to reduce your garden slugs if you feel you must:-

- a) The most humane method is to crush them then compost the bodies.
- b) A seaweed mulch is off-putting because they dislike salt.
- c) Train them to lie about and be eaten by thrushes.
- d) Use traps such as:-
 - i) Beer (expensive and wasteful).
 - ii) Large plastic bottles cut in half, the top inverted into the bottom and a syrup/water bait in the bottom half
 - iii) Half shells of citrus fruits, especially grapefruit.
 - iv) Dampened carpet.
 - v) Wilted comfrey leaves.
 - vi) Wilted grass cuttings.

The best method, however, is to grow only plants slugs leave alone and I have long since given up on pansies, they're merely a slug's supper, although grown in containers with a copper band they survive, and so will hostas in those conditions.

Water your plants in the morning, if you have to, as slugs prefer evening meals and gathering slugs is easier then. Make your garden drier, if you can with our climate, which helps to reduce their numbers as dry conditions are dangerous for slugs and they will always crawl towards places of greater humidity. Be careful with your mulches as they can be used as ground cover. Don't expect to win the battle!

If you are interested further reading can be obtained from:

'Field Guide to the Slug' David George Gordon,

'The Field Key to Slugs of the British Isles' Cameron, Jackson and Eversham, and if, like me, you hate the idea of slug pellets try Nemaslug from The Green Gardener, Tel. 01603-715096 or www.greengardener.co.uk or JustGreen Tel. 01621-785088. Or you could, of course, just resort to the old dinner fork and baked bean tin!

PURPLE RAMPING FUMITORY IN ORKNEY – A SURVEY

JOHN CROSSLEY



This article provides a brief description of a survey carried out in the summer of 2004. The full report is available from the Orkney Biodiversity Records Centre at the Orkney Library.

Purple rampion fumitory *Fumaria purpurea* is a scarce plant endemic to Britain, Ireland and the Channel Islands. It is an annual of disturbed ground; most often found in arable crops, though other situations such as waste ground, gardens and hedge banks can provide suitable conditions. It is a UK Biodiversity Action Plan Priority Species, because as well as being rare it is thought to be declining, mainly as a result of the increased use of herbicides in arable farming. Many records from Orkney in recent years indicate that it is commoner here than elsewhere. It is an attractive plant in flower, bearing as many as 25 small, pale pink or pinkish-purple flowers on each of many racemes. It is normally lax and scrambling, and may spread to over a metre in diameter in open conditions such as crop of turnips, or climb towards the light among the stems of a cereal crop.

In the summer of 2004 I carried out a survey to discover more about this plant. Because of the inevitable difficulties of gathering data on rare plants not a great deal has been known hitherto about its autecology and habitat. Available information has been recently reviewed and discussed by Lockton (2003), who came to some tentative conclusions. It was an obvious step after that to gather more data in a place where the plant could relatively easily be found. I set about this with some financial assistance from the Botanical Society of Britain and Ireland (BSBI) and the Royal Society for the protection of Birds (RSPB). RSPB have a particular interest because the plant has been recorded among crops on their Onziebust Reserve in Egilsay.

OBJECTIVES

- achieve an estimate of the frequency of occurrence of *F purpurea* in Orkney, in relation to potential favourable sites visited;
- define, if possible, the plant community or communities for which *F purpurea* shows strong preference in Orkney, using National Vegetation Classification (NVC) methodology, and determine the place of such a community or communities in the NVC. Also classify community by Ellenberg scores (light, wetness, pH and fertility);

- relate occurrence to various environmental factors, including soil type and accompanying crop type;
- gather information on field cultivation history, from which to infer seed bank longevity;
- compile records of occurrence, and supporting voucher specimens where possible;
- provide RSPB with data on non-avian biodiversity on some Orkney Reserves;
- make recommendations for management conducive to conservation.

FINDINGS

Survey visits were to the island of Egilsay and Orkney Mainland, in the middle of August. Here there were many fields that had not been treated with weed-killer, through RSPB growing arable crops for birds, and similar provision through the Scottish Executive's Rural Stewardship Scheme (RSS) for farmers. The RSPB fields were mainly on their Onziebust Reserve in the island of Egilsay, where a variety of crops have been grown in recent years to provide cover for corncrakes and a food source for wintering farmland birds. The Orkney Mainland fields, of similar quality, were mostly provided through RSS, and some by RSPB.

Though it was not possible to visit other islands, an effort was made to scatter recording over as wide an area as possible, to achieve some estimate of the status of *F purpurea* in Orkney, by relating the number of occurrences recorded to the number of visits to appropriate habitat. Thus while it soon became apparent that certain types of site were more likely to be fruitful, visits to fields of the types first decided upon continued without any seeking out of most likely sites.

In all, 52 sites were surveyed, and *F purpurea* was found at 17 of them (33%).

Quadrat recording by NVC methodology was carried out wherever *F purpurea* was found.

Quadrat groupings were matched to community and sub-community using the text and tables published in *British Plant Communities* Volume 5 (Rodwell 2000). Results were compared with scores produced by the 'MATCH' programme, produced by Andrew Malloch of Lancaster University, in the edition supplied as part of the MAVIS package (Modular Analysis of Vegetation Information System) by CEH. The same software was used to classify by Ellenberg score.

There was time in the project to record NVC quadrats only at sites where *F purpurea* was found, but species lists per field, which are quicker to do, were recorded at all sites. These were sorted and summarised in various ways to compare the weed floras of *F purpurea* - positive and *F purpurea* - negative fields and subjected to NVC-like analysis to compare results from field lists with actual NVC analysis of plots in the same fields.

The conclusion of the NVC analysis is that almost all of the vegetation containing *F purpurea* in Orkney can be placed in the OV4 *Chrysanthemum segetum-Spergula arvensis* community of the NVC (in spite of the fact that the two nominate species *C segetum* and *S arvensis*, though found, were not among the constants (i.e. recorded from at least 4 out of every 5 plots). OV4 is a common community of both cereal and root crops on light, fertile, acidic soils. However the match with OV4 is not very good and most of the vegetation appears to be transitional to a group of NVC communities typical of somewhat heavier and less acidic soils, in particular the OV10 *Poa annua-Senecio vulgaris* community.

However, there are consistent and distinctive characteristics to the Orkney vegetation that distinguish it from both these communities: in particular it appears to be unique for the presence of several fumitory species, two of these occurring at high frequency and abundance values, and the constancy of *Viola tricolor ssp tricolor*. This type of vegetation could legitimately be described as a distinctive variety of OV4.

The following species were the most frequent recorded:

<i>Fumaria purpurea</i>	Purple ramping fumitory
<i>Viola tricolor ssp tricolor</i>	Wild pansy
<i>Rumex acetosa</i>	Common sorrel
<i>Cerastium fontanum ssp vulgare</i>	Common mouse-ear
<i>Poa annua</i>	Annual meadow-grass
<i>Galeopsis tetrahit</i>	Common hemp-nettle
<i>Fumaria officinalis</i>	Common fumitory
<i>Elitrygia repens</i>	Couch grass
<i>Lamium confertum</i>	Northern dead-nettle
<i>Polygonum boreale</i>	Northern knotgrass
<i>Ranunculus repens</i>	Creeping buttercup
<i>Stellaria media</i>	Chickweed
<i>Matricaria discoidea</i>	Pineapple weed

At one site *F purpurea* was also found growing vigorously in vegetation that can be placed in the OV13 *Stellaria media-Capsella bursa-pastoris* community, typical of fertile, well-drained, loamy and less acidic soils, though this vegetation too was transitional to OV4.

Analysis results from comparing field species lists and quadrat data from the same fields differed little, though field lists were more heterogeneous. The list method is shown to be effective, and that the vegetation in the fields was quite consistent.

Using the field list method, some differences can be seen in the vegetation of fields with and without *F purpurea*. Though the OV4 community is still the best match the vegetation of fields without *F purpurea* demonstrates more affinities with communities typical of moderately or heavily trampled sites and wet, eutrophic soils. This result is consistent with field observation of conditions at the various sites. The shift in the results from MATCH is rather fine, but is indicative of the preference of *F purpurea* (and other fumitories) for more free-draining sites.

Ellenberg values for light, wetness, pH and fertility calculated from the lists of species with *F purpurea* are generally consistent with the NVC and field observations, and indicate fairly light, moist, moderately acid and fertile conditions – conditions better associated with OV4 than the other NVC communities. Soil tests results for pH were consistent with the Ellenberg value.

Soil type was almost entirely ‘clay loam’ of a fine, crumbly quality. In none of them was the clay fraction high enough to impart any shine, and sand particles, where detectable, were very fine. An exception was a dark sandy loam with high organic content, taken near a shell sand beach and a Burnt Mound.

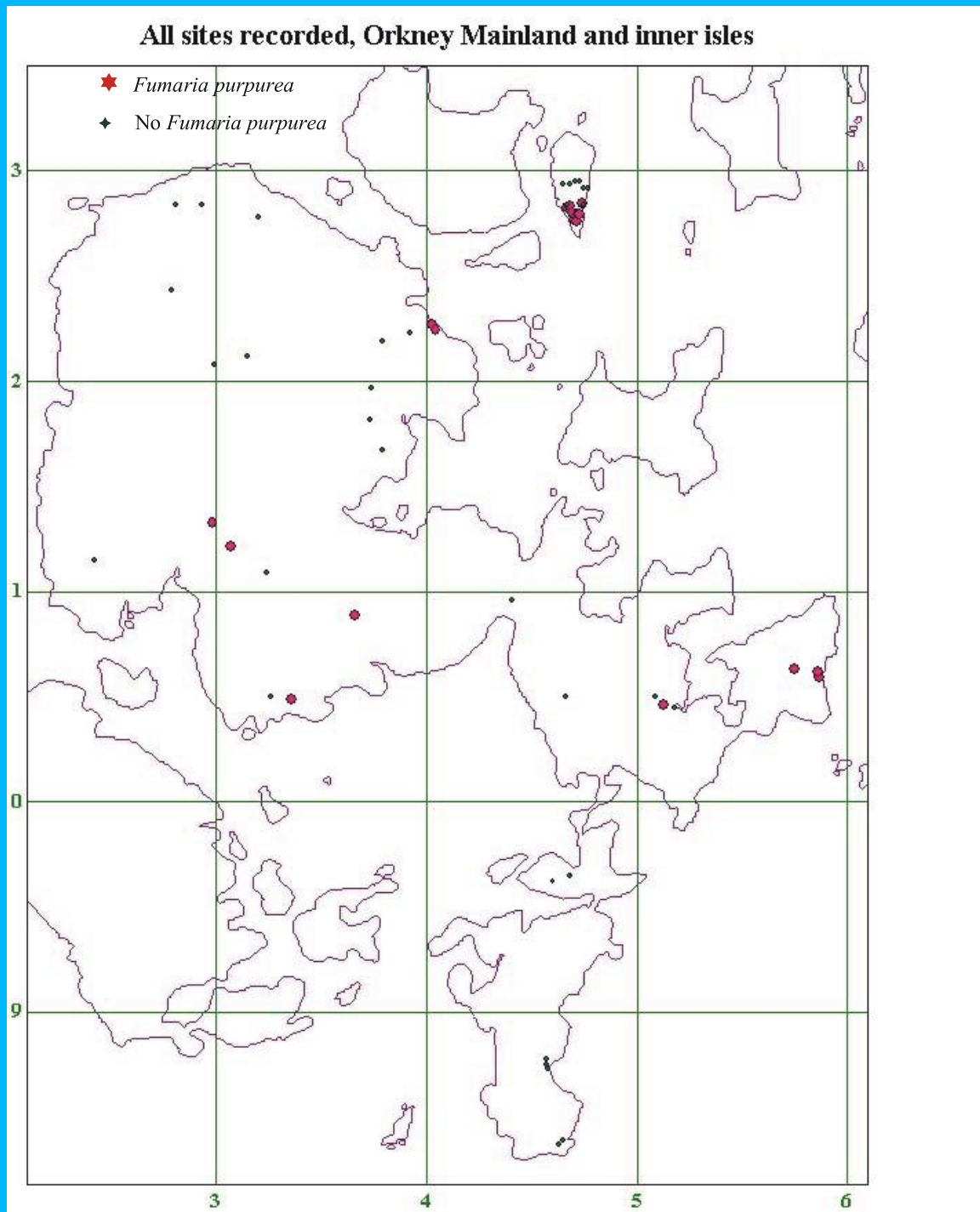
The plant was found growing with a variety of crops including barley, oats, kale, swedes and mixtures of these, around field margins and further into fields, scattered through the crop where light levels were sufficient, and in gaps among denser crops.

F purpurea has no obvious method of seed dispersal and it is assumed that, like *Fumaria officinalis* (Preston et al 2002, Lockton 2003), it regenerates from a long-lived seedbank. Thus it will depend for its survival on intermittent disturbance of the soil, followed by suitable conditions for a new generation of plants to set seed in sufficient quantity to replenish the seedbank. Most of the surveyed fields with *F purpurea* had been cultivated at intervals in the last ten to twenty years, thus providing no useful information on seedbank longevity. The exception was a number of fields in Egilsay, which were being cultivated after at least 25 years in permanent grass.

CONCLUSIONS

It appears that *Fumaria purpurea* is quite a common arable weed in Orkney. It also seems that its conservation status is favourable in Orkney, in view of evidence of an abundant and persistent seed-bank, together with the existence of Government schemes and the actions of the RSPB that provide conditions for the plant to flower, set seed and replenish that seed-bank. Such provision is likely to be needed in the future, as favourable conditions for the plant in the commercial farming environment are not as well provided, though there are likely to be habitat niches there too, at least at the present time. Imminent changes in the farming support regime may well alter that, as incentives to grow arable crops are removed.

Editor’s Note – text continues after the following map.



The red (large) and green (small) dots mark locations of site visits for this project.

The distribution shown is not representative of the occurrence of *F purpurea* as known from recent records: there are recent records from almost all the blank areas and those with green dots, except for the main part of the island of Hoy.

Maps produced by DMAP

It is a puzzle why the plant should be nationally uncommon when the conditions that favour it seem unexceptional. Similarly, there is no obvious reason why it should be more common in Orkney, as it seems to be, than anywhere else. The soil and climatic conditions in combination must be favourable. Otherwise, the reasons may be historical. This is speculative, but the scarcity could be due to the species being comparatively recently evolved: it may simply have not had long enough to find its way to many places (and the likeliest means of transport, through contaminated agricultural seed, has been practically stopped in modern times). In these circumstances, Orkney's long history of intensive arable cropping using traditional methods, up until about forty years ago, including the use, re-use and exchange of home-grown seeds, may well have played a part in spreading the seed to very many favourable sites.

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BLOTCHNIE FIOLD REVISITED: 18TH JUNE 2004

EFFY EVERISS

Following on from a rather mixed Site Condition Monitoring trip to Rousay with SNH in May, John Crossley, Effy Everiss and Rosemary McCance revisited the area in June. The main aims were to see round-leaved wintergreen (*Pyrola rotundifolia*) in flower and to find the various species missed on the earlier outing and get an accurate GR for these sites. Neil McCance provided essential support and a smart cosy taxi. The weather thought it was February, cold, north-easterly wind to force 6, frequent hail showers, sunny spells. Full winter kit plus sunscreen! Three days before the midsummer solstice!

Wise Neil gave the group a lift to the old kirk at Ford (HY432 308) and spent the day bird-watching from the comfort of his car. A good start was made by fording the in spate burn and then noticing the bridge! Kidney vetch (*Anthyllis vulneraria*) along the sides of the track. Walked and paddled up the track to the Moss of Sheepal, it was very wet. Track poor, boggy and flooded in places, plenty of bryophytes to look at, but vegetation on the whole calluna heath and

spaghnum/juncus mire. Orchids seen were northern marsh (*Dactylorhiza purpurella*) Early marsh (*Dactylorhiza incarnata*) and spotted heath (*Dactylorhiza maculata ssp ericetorum*).

This area is a maze of peat banks and tracks and despite the fact that John and Effy had recently visited the sites (6th May) of the *Pyrola* they were not easy to re-find, first site (HY 41932 29758, HY41931 29779) small, not in flower and marked with a short piece of bamboo cane. Grows in dense *Eriophorum* turf with long central stem growing through the vegetation and with a vegetative rosette on surface. Not in the calluna heath (so don't look there). The larger site (HY41502 29852) was eventually found (with some gentle ribbing from Rosemary!) the plants were in full flower, the characteristic S-shaped stigma full developed and hundreds of tall flower spikes in sight. Well worth the effort! The group now struck due north up the hill through terraces of dense tussocky calluna and hare's tail (*Eriophorum vaginatum*) that was very heavy going. Rewarded by a completely new site for the *Pyrola* (HY 41384 29575) extending to 15x5 metres and after some debate we agreed on roughly 500+ plants. Healthy and in flower (to the east of a largish grassy/*luzula sylvatica* flush) before the start of calluna heath, on a more level part of the terracing.

The party continued to trudge up the terraces towards the two ridges that run N.E. from Blotchnie Field, due North of the High Brae of camps. Ridges, according to the soil survey map of Scotland as CTr, drift derived from Rousay flags, freely or imperfectly drained below thin iron pan. Surrounding area all classified as blanket bog. Luckily we fell over the large patch of serrated wintergreen (*Orthilia secunda*) (HY41373 29122) that is similar in habit to the *Pyrola* but it was not in flower with no sign of flower buds so would probably be in flower late July/August

These rather special parallel ridges have a nice series of rocky outcrops which overhang the base layer creating small dark hollows underneath (handy for lunch), here we found healthy populations of brittle bladder fern (*Cystopteris fragilis*), indusium evident but not inflated. We did not find Wilson's filmy fern although it is recorded from the site. Weather conditions really poor at this stage with hail showers and strong winds so we did not loiter. Tops of both ridges had several patches of fruiting alpine bearberry (*Arctostaphylos alpinus*), running along them (HY 41303 29128 and HY41300 29029). We felt it would be nice to revisit the site in more pleasant conditions to see the *Orthilia* in bloom and look for the other plants such as wild strawberry (*Fragaria vesca*), recorded from this site that we missed.

Then we climbed up to High Brae of Camps to join the RSPB track and a gentle descent to HY42171 28801 to a nice patch of Cowberry. Much discussion as to whether it was this or bearberry but in-rolled leaf and oval-obovate leaves belong to Cowberry, these two can be a bit confusing early in the season for some cold, tired and rusty botanists.

Followed the path to Knitchen Hill cairn and after a bit of scouting around found more alpine bearberry at HY 42826 28786 There is another site for this species directly north of the cairn, but we did not look for this... proceeded down to the road with a half-hearted look for hairy woodrush (*Luzula pilosa*) en-route...another one to return for. Where the track meets the road John pointed out a patch of greater bird's foot trefoil (*Lotus pedunculatus*) and nearer the village in the verge there was an atypical veronica. Fits the germander speedwell description, (*Veronica chamaedrys*) nicely, with opposite rows of long white hairs on some of the upper stems but the lower ones were hairy all round which was a bit confusing, fruit shorter than the calyx lobes. Plant a bit on the large size too so perhaps a garden escape or hybrid, but would definitely say on the germander speedwell side of the continuum.

Despite the weather a good botanical day much enhanced by Eric Meek's prior help and advice in respect to sites and route and by Neil providing transport at the start. This is a really nice, botanically interesting walk that could be walked in either direction, in fact it may be easier climbing the hill on the RSPB track rather than through the rough terrain we ploughed through. Armed with a GPS the sites we found should be easy to relocate leaving plenty of time to find the ones we missed and you surely would get more enticing weather!

HOUSE MARTIN NESTING IN ORKNEY IN 2005

DICK MATSON

House martins generally arrived several days later in 2004 than in the exceptional summer of 2003. Nest building was noted in Holm and Dounby on 8th May but the completed nests were taken over by sparrows. In fact these birds commandeered half the house martin nests built in Dounby and Stromness. In spite of the wet and windy summer there were surprisingly few nest collapses. Fortunately colonisation of new sites by the martins compensated for the losses to sparrows. Five nests were built on new houses at Scapa while the nesting area at Garson Drive, Stromness, was extended into Cairston Road.

The house on Westray which accommodated 3 nests yielding 6 broods in 2003 produced 5 broods from the same number of nests in 2004.

On Sanday in 2003 two nesting attempts at the school failed but in 2004 a single nest yielded 2 broods. The outcome of the nest built on the BT Exchange, where 2 broods were raised in 2003, was not recorded, but it may well have been successful.

While many nests have been built on top of the artificial nests installed by the Orkney Field Club early in 2001, occupation of the artificial nests themselves, had

never been confirmed until 27th May 2004, when birds were seen entering one of these nests on the eaves of a house at Netherbutton, Holm. This yielded 2 broods.

THE COMPARATIVE FIGURES FOR BROODS RAISED IN THE LAST 3 YEARS ARE AS FOLLOWS:

	Year	2001	2002	2003	2004
Dounby/Twatt		1	7	12	5
Harray		-	-	-	1
Finstown		-	-	-	1
Stromness		1	3	4	7
Holm		3	3	5	3
Burray		2	-	-	-
Orphir		2	-	-	-
Scapa		-	-	-	6
Westray		-	-	6	5
Sanday		-	-	3	2
Total Broods		8	13	30	30
Total Nests Completed/Re-occupied		9	13	30	30

(Note: It is coincidence that in 2002, 2003 and 2004 the number of broods were the same as the number of nests; this meant that the nests taken over by sparrows or brought down by weather were exactly compensated for by the fledging of 2, or, in one case, 3 broods from one nest).

In spite of adverse weather, and increased evictions by sparrows, breeding success in 2004 matched that of 2003. Provided that there is no problem with house martin migration and that the summer weather is no worse than in 2003 we should see a consolidation or even an increase in breeding success in 2005.

STRANGE GOINGS-ON IN GREAT WESTERN ROAD

DICK MATSON

It was another routine shopping trip to the great metropolis. There was nothing unusual about the day except that it was mid-summer's day, - yes- 21st June 2004. No great comfort in that - summer 2004 had been postponed indefinitely and next day the hours of daylight started to decrease. After a final abortive search for some item of household trivia I settled back into the driving seat of the car parked at the back of Jewson's yard and prepared to return to the wide-open unpolluted spaces of east Birsay. But the ornithological events of the next ten or so minutes were to cause me to believe that, either, birds or bird-watchers, could become unhinged by a passing attack of mid-summer madness!

As I applied car-key to ignition I happened to glance upward and there was a plump self-satisfied looking collared dove minding it's own business sitting atop the back wall of Jewson's yard. Nothing unusual about that, it was an attractive bird and was duly admired. Enter stage left the villain, - in fact left and a few feet below. Clinging to the wall was a bird with arched wings which I took at first glance to be a juvenile starling. But then a juvenile starling doesn't have a white stripe above the eye (supercilium) and another extending from the base of the bill down and round to the nape (sub-moustachial stripe) and anyway the bird wasn't quite big enough for a starling. The bird by now had become extremely agitated, maintaining the arched-wing posture, leaping up and down on top of the wall and making aggressive sallies towards the collared dove. The dove was completely unruffled, merely giving the intruder a "buzz-off brat" sort of glance.

Just for once I had remembered to put my binoculars in the car, although at a range of 15m I hardly needed them, and just for once I had superb close views of a difficult bird for several minutes. The stripes mentioned were virtually white and very conspicuous, additionally it had a black eye-stripe and a dark malar stripe bordering the sub-moustachial stripe; the throat was pale and the underparts streaked like a rock pipit but with a much paler background. The bill and legs were very dark brown bordering on black, but the most pleasing feature was the colour of the crown, nape and back, a lovely dove-grey. The flight feathers were similar in appearance to those of a rock pipit.

Back on the set the action was hotting up. In fact the negotiation stage was over and hostilities were breaking out. The bird proceeded to launch vicious attacks on the rear end of the dove and soft downy feathers drifted away on the breeze. The good old dove sat there completely unphased; those feathers were obviously surplus to requirement and it had been meaning to preen them out anyway. By this time I was not so much scratching my head as pulling out lumps of hair myself. Here was a bird with which I was totally unfamiliar, in the middle of Kirkwall, a place it obviously did not belong, attempting to perpetrate grievous bodily harm on a harmless giant more than ten times it's size. What was going on?..... Ah, yes, - it was June 21st, the mists would soon clear, the dove would turn into a cuckoo and the assailant a meadow pipit. But no, worse was to come. Enter stage left second villain. Looking very much like the first, this bird again appeared from the left, but from further down the wall. It was much more circumspect than the first, fussing around like a dunnoek about 10ft away from the dove, as if questioning whether such violent behaviour was really necessary. Although very similar, the markings on this bird were slightly less distinct and although the back and most of the nape were grey, the sides of the nape were slightly more brown like a rock pipit. The aggressive display and attacks continued for a little while longer; at one stage the collared dove flew off, more out boredom than irritation, but soon returned to the same spot. After another couple of minutes the dove disappeared and, shortly after, the pipits flew across the road, settled briefly on the roof of one of the Scarth buildings and then departed towards the Ayre Hotel.

So this was the situation: not just one, but a pair of strange birds, clearly away from their normal habitat, clearly away from their normal part of the world, were in the middle of Kirkwall, with one of them attacking, for no apparent reason, a bird of a non-threatening species many times their size and this in the middle or towards the end of the breeding season. If not mid-summer madness, bizarre in the extreme!

Unusually I had remembered to put in the car, not only my binoculars, but also my copy of Collins Bird Guide, and there staring me in the face on p247 was the bird in non-aggressive pose. They were indeed rock pipits (*anthus petrosus*), but with a difference. They were of the Baltic race (*ssp littoralis*).

This sub-species is only very occasionally recorded in Orkney, although probably under-recorded in winter because it is barely distinguishable then from our W European form. The only real confusion species is the water pipit, but in summer that bird has an unmistakable pink flush to its underparts.

Believe it or not, the above events are absolutely true. It couldn't have been mid-summer madness, we didn't have a summer in 2004. Guess where I'll be spending time on 21st June 2005.... I might even see a horde of Viking invaders pillaging the Police Station!

REDRESSING THE BALANCE - YEAR 8

DICK MATSON

April 2005 will see the completion of my eighth year of experiment, with assistance from the RSPB, to find the most valuable crops for sustaining farmland birds through the rigours of the Orkney winter. My bird crop site is a 10-acre field on a west-facing slope on the side of Swannay Loch at Dale Farm. The site is very exposed but some shelter is provided by an 80m belt of trees planted along the south side.

Changes in farming practices in the 1950s and -60s fuelled by the post-war drive for food production meant the loss of weedy winter stubbles and turnip crops and the disappearance of stack-yards leading to a crash in the populations of many farmland bird species. My sacrificial crops in common with those planted under various environmental schemes are being grown to compensate in some measure for these losses.

The poor summer of 2004 was followed by an exceedingly wet and windy autumn and winter. This meant on the one hand that many barley crops went unharvested, and on the other hand that the cereal components of bird crops were flattened at an early stage. Many finches and buntings which would otherwise have come to bird crops were able to find food on large acreages of ruined farm crops.

The most significant development at Dale was the success of the fodder radish crop. Having proved its value in the previous 3 winters I increased the area sown

to 1½ acres. The seeds attracted twite, linnets, bramblings, greenfinches, chaffinches, bullfinches, redpolls, a rosefinch, reed buntings and rock doves, while wrens and, in early autumn, various warblers fed on the insects it harboured. In addition members of the thrush family took advantage of the shelter it provided to forage for invertebrates; also up to 9 stonechats fed in this crop between late August and mid-November. Twites normally prefer to feed on smaller seeds such as rape or mustard. While they have fed on the larger fodder radish seed at Dale in previous winters, this crop has been of only secondary interest to them. In 2004/5 once the mustard component of the bird crop was exhausted the fodder radish became the twite's primary target. It would be interesting to know if this demonstrated a gradual education process as this crop is probably not available to them anywhere else in this part of Scotland.

In early October the linnet was the predominant finch peaking at 400. As usual, linnet numbers diminished as twite increased, although some linnets were still in evidence up to mid-February. Twite numbers peaked on Christmas Day at 600 while reed buntings peaked at 90 on the same day. Other maxima were: 30 brambling on 9/10; 40 greenfinches on 19/12 and again on 09/01; 20+ bullfinches on 20/10 and on 28/10; 250 mallard on 15/11; 53 fieldfares on 09/01; 48 jackdaws on 18/01 and 550 rock doves on 26/01. There were the usual regular visits from hen harriers and merlins, and occasional visits from sparrowhawks and kestrels. At the time of writing, mid-February, skylarks have only built up to around 40 but they usually increase to 100 plus by mid-March.

The eight years of experiment at Dale, and observation of bird crops elsewhere in Orkney, have led me to the following **conclusions**:

Fodder radish has been the most valuable and dependable bird crop component at Dale. Its seed is attractive to a wide range of finches, to reed buntings and to rock doves. It is easy to grow and does well on relatively poor soil. It is resistant to disease and may be grown repeatedly on the same ground. It yields large quantities of seed-pods which have a thick skin which protects the seed against the weather through the winter until late spring. The plant grows to a height of 2ft or so and the strong stem withstands wind and driving rain so that seeds are available to birds above moderate coverings of snow. Lastly it is not attacked by geese. (In Orkney geese are a serious threat to cereal-based bird crops and can destroy them in a short space of time)

The traditional (RSPB) bird crop mix of cereal (oats or barley), kale and mustard or rape is very attractive to a wide range of finches and buntings as well as other species. The kale acts as a support crop which holds the cereals, etc, off the ground, making them available to birds in moderate coverings of snow and helping to prevent premature germination. The kale, if thick and sturdy enough, prevents depredation of the cereals by geese. Like fodder radish the kale provides vantage points for small birds, particularly reed buntings, to keep watch for raptors. However, most of the cereals and brassicas utilised, if grown on the same ground repeatedly, are subject to disease and significant loss of yield. Moreover

on some soils kale does not grow strongly enough to provide effective support for the cereals and protect against geese.

Triticale (a cross between rye and wheat) is valuable in snowy weather. It has a strong straw, so stands up well to wind and rain. Also the seed ripens late – not until November or early December, so that it lasts through the winter until late spring. When the weather is mild finches and buntings only occasionally feed on triticale, but, in coverings of snow up to a foot deep, they will readily take advantage of the ears exposed above the snow blanket.

In many parts of Orkney because of the goose problem it is virtually a waste of time growing **cereals on their own**, or, without a sturdy support crop to deter the geese. Cereals do however form an important component of the RSPB bird mix and are almost essential for attracting buntings.

Mustard and rape seed are extremely attractive to finches, - twite and linnets in particular. If grown on their own they are consumed too soon. They are more valuable as part of a bird crop mix when they are not targeted so exclusively and last much longer.

In parts of Scotland **quinoa** (a plant from the high Andes) yields heavy plumes of valuable seed. To date it has not done well at Dale and its success in other parts of Orkney has only been patchy. I suspect that it may have particular fertilizer requirements and this probably merits further experiment.

Where possible bird crops should be sown adjacent to **substantial tree cover**. There are few finch and bunting species in Orkney (perhaps only twite, linnet and snow buntings) which will make regular visits to bird crops with no available cover, presumably because of the ever-present threat from raptors. Similarly there are some species which will definitely not tolerate the absence of cover, eg bullfinch and redpoll. While thick and extensive cover is most desirable the presence of just a few trees or large bushes does make a bird crop more attractive.

Leaving bird crops for a second winter without re-cultivation and re-seeding is largely unsuccessful in Orkney. Some kales will provide useful seed in the second year but this is mainly consumed by late autumn. But the main problem is the growth of rank grasses in Orkney; these form an impenetrable mat which prevents birds accessing any seed still remaining on the ground. Thus annual ploughing and re-seeding are almost essential.

WHERE NEXT?

The problems with growing thick, sturdy crops of kale to support the cereals and deter geese have been mentioned. Kale apparently takes a high percentage of the available P and K from the soil and normal balanced fertiliser applications will not restore these in a form that the kale can readily take up. For 2005/6 I hope to experiment with more specialist fertilisers for this crop component.

Can fodder radish be used as a support component in a bird crop mix? I have yet to try this out but can see no reason why not. Even at the minimum density drill setting fodder radish grows very thickly and the main problem will be sowing it

thinly enough so as not to swamp the other crop components. A possible answer is to mix it with sawdust to dilute it. Again this will be the subject of experiment in 2005/6. A thin fodder radish sowing grown together with the traditional bird crop mix components could provide the best of all worlds.

A further problem has yet to be solved and this is to find break crops which provide a useful seed yield. Growing cereals and brassicas on the same ground repeatedly is undesirable from the point of view of disease and nutrient depletion, even with biannual rotation. Linseed has been the most reliable cropper but the birds have shown no more than occasional interest in it. Suggestions for alternatives would be welcomed.

Many thanks again to the RSPB and Andy Knight, in particular, and also to Michael Stevenson of Midhouse Farm who patiently undertakes the cultivation and drilling of the field.

PEAK BIRD NUMBERS AT DALE FOR THE WINTERS 1999/2000 TO 2004/5

Year	99/00	00/01	01/02	02/03	03/04	04/05
R Bunting	200	150	200	90	200	90
Twite	400	1,000	750	1,000	700	600
Linnet	70	20	10	200	44	400
Brambling	3	4	100	50	22	30
Rock Dove	600	n/r	500	400	550	550
Mallard	70	n/r	50	180	200	250
Skylark	23	120	160	180	65	40*

n/r = not recorded

*40 at time of writing (18.02.05), Skylark numbers normally peak in mid-March.

THE FIELD STUDIES COUNCIL NEIL AND ROSEMARY McCANCE

Field Club members may be interested in the Courses offered by the Field Studies Council at their Centre in Perthshire and we have been asked to repeat the short article we produced for the 1997 Bulletin. In addition to the Perthshire Centre there are 13 others in England. The one we have been to is at Enochdu, on the A942 between Pitlochry and Blairgowrie, in a very pleasant part of Perthshire. The courses, which cater for all levels of skill and experience, run from early March to the end of October. A wide variety of courses are on offer and include Birds, Mammals, Moths, Mosses, Botanical, Photography, Painting, Geology etc, etc. Family and children's courses are also run.

Accommodation is provided in comfortable twin bedded rooms and small single rooms are also available. There are comfortable lounges with facilities provided for making tea and coffee. A bar is open in the evenings. All meals are included as are the makings for the midday packed lunch. Transport is also provided during the course.

We have been to a number of these courses over the past few years and can recommend them for their relaxed and friendly atmosphere and excellent tuition. Further information can be obtained from

Kindrogan Field Centre, Enochdu, Blairgowrie, Perthshire, PH10 7PG

Tel 01250 870150 or, E-mail:enquiries.kd@field-studies-council.org & www.field-studies-council.org/kindrogan

PLANTS IN A DROWNED WINTER LANDSCAPE

ROBERT M.M. CRAWFOI

Looking out over a wet, winter landscape makes one wonder how much plants suffer from this annual drowning. Even when no water is visible on the surface the soil below remains saturated often for many months. This is a drastic environmental change for roots as flooded soils are always oxygen-deficient unless water is percolating through the soil profile. The soil bacteria immediately consume the small amount of oxygen that may diffuse below the soil surface and nothing is left for the plants. Not surprisingly such conditions are very unfavourable for many over-wintering plant species. What is however more astonishing is that some plants are able to tolerate prolonged periods of winter flooding without suffering any ill-effects. From the poles to the tropics flooding is a powerful discriminator in plant distribution. Any body of water, a lake, a river or just a small stream, strongly influences the zonation of neighbouring plant communities. The fringes of willow, alder, reeds, rushes and sedges, that flourish at the water's edge provide striking evidence for the ability of certain plant species to survive in these marginal situations with ever-fluctuating water tables. Plants that can inhabit this border between dry and wetland can be considered as the botanical equivalent of amphibious animals, as they possess an ability to live in two very contrasting environments, namely an aerobic and an anaerobic soil.

Flooding in winter differs from flooding in summer. During the growing season, flooding is generally brief and many species are able to use what can be best described as escape mechanisms. These are mechanisms that depend on being able to grow while flooded. If plants are growing they can develop new roots nearer the surface of the soil with greater internal air spaces which allow diffusion of oxygen from the shoot to the root. Also, in the growing season, plants are actively producing oxygen in their green tissues. In species with green stems or basal leaves this internally produced oxygen can diffuse readily to the roots and alleviate the soil oxygen shortage. The plant therefore has evolved an escape mechanism which avoids having to endure a deficiency of oxygen. Other escape mechanisms also exist for over-coming oxygen shortages. In some species, such as the common reed (*Phragmites australis*) plants can use the energy of the sun to pump oxygen from their shoots to their roots. This works particularly well in cool oceanic climates such as Orkney. In cool air the oxygen molecules have a short

vibrational path. When they diffuse into green leaves through small leaf-pores the internal gases become warmer as a result of the action of sunlight on the plant surface. The vibrational energy of the gas molecules in the internal spaces of the plant then increases and their vibrational path extends so that they can no longer escape through the small leaf pores. However, more cold oxygen molecules can still enter, and this creates a positive pressure that drives oxygen down to the roots, through the buried or submerged rhizome, and then out again through old stalks. If the underground rhizome is anaerobic, and therefore fermenting its sugars, the exiting gas can even carry with it a whiff of alcohol! This is particularly noticeable in aquatic species that also use this method of solar oxygen pumping. The yellow water lily *Nuphar lutea* is sometimes called the brandy bottle due to this ventilation system ridding its tissues of alcohol vapour. In many aquatic species extension growth of shoots and petioles, enables leaves and flowers to be raised up to or above the water surface, and restores access to air to the submerged parts of the plant, thus providing another means of escape from the dangers of oxygen deprivation.

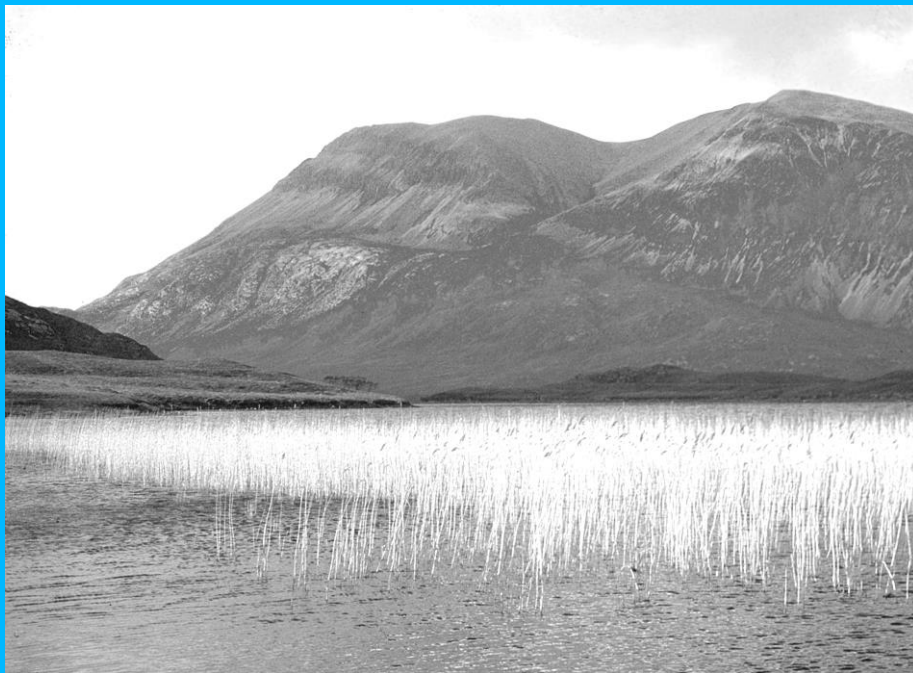


Fig. 1. The common reed (*Phragmites australis*) in winter on Loch Stack (Sutherland). When wind blows across the tops of broken reeds it creates a pressure differential which sucks air into the underground system (Photo R.M.M. Crawford).

In winter, growth is much restricted and few plants have any access to escape mechanisms. Rushes (*Juncus spp.*) are among the small number of species that still aerate their roots effectively in winter due to the base of their stems remaining green and producing some photosynthetically-generated oxygen. However, overwintering herbs that die down and lose their aerial parts may have to endure many months of water-saturated soils and consequently, survival depends not on escape but on tolerance of low-oxygen regimes. In the common reed (*Phragmites australis*) and Club-rush (*Schoenoplectus lacustris*) the dead stalks that survive above the level of winter-flooding can act in winter as a ventilating system for the

submerged rhizomes. When wind blows across the tops of broken reeds it acts in a manner similar to air being blown over the holes of a flute, and a pressure differential is created across tall dead culms, which sucks air into the underground system (Fig. 1). Consequently, areas prone to regular and prolonged winter-flooding become the preferred habitats for a distinctive wetland flora where monocotyledons usually outnumber dicotyledonous species. For trees, flooding can be particularly hazardous. The limits to tree growth in flooded soils are well illustrated in the restriction of tree colonization and survival in the fringes of forest that grow around the edges of bogs. Only a few specialized woody plants can withstand prolonged flooding with their roots, and often the lower parts of their trunks, under water.



Fig. 2. The Club-rush (*Schoenoplectus lacustris*) in the Loch of Bosquoy (Harray). The submerged rhizomes of this species can survive long periods without any access to oxygen and new shoots are able to emerge in spring even when buried in anaerobic mud (Photo. R.M.M. Crawford).

Experimental studies in which the over-wintering organs, instead of being merely submerged in water, are incubated in completely anoxic environments have shown that in many amphibious species these perennating organs can survive months of total anoxia (lack of oxygen). Some of these species are even able to resume shoot growth in spring from a depth in anaerobic mud without the need for an air supply, while others wait for the floodwaters to subside before resuming growth. Examples of species found in Orkney which can emerge from a depth of flooded-soil or from under water where there is no oxygen include the Club-rush (*Schoenoplectus lacustris*), and the Cat's-tail or Bulrush (*Typha latifolia*) which are both capable of sustaining a viable growing shoot under total anoxia for several weeks (Fig. 2). This tolerance of prolonged anoxia is normally accompanied by an ability to reduce metabolic activity and thus minimize the

risk of exhausting their carbohydrate reserves and accumulating toxic metabolites such as ethanol.

RETURNING TO AIR AFTER A WINTER OF PROLONGED OXYGEN DEPRIVATION (POST-ANOXIC INJURY)

Species that live by the water's edge or in seasonally-flooded communities are exposed to a double jeopardy in relation to the level of the water table. The first is flooding, and the second is un-flooding. The physiological problems that can arise from the first stress include cellular dysfunction due to a reduction in metabolic energy and an increase of tissue acidity (cytoplasmic acidosis), which can lead to rapid cell death.

With the coming of spring plants that have endured a long winter of oxygen-deprivation through flooding, have to face the additional hazard of post-anoxic injury when the soil profile once again becomes aerated or emerging shoots restore a pathway for oxygen diffusion to underground organs. This second stress, namely unflooding, is potentially more dangerous than flooding due to the rapid and often irreversible damage that can be caused when air is re-admitted to tissues that have been deprived of oxygen for a lengthy period. This type of damage that takes place, post-anoxic injury, as it is termed in plants, is similar to post-ischaemic injury in animal and human organs which arises when they are suddenly re-exposed to air after interruption of the blood supply, as after a heart attack or a transplant operation. The return to air generates reactive oxygen species (free radicals) to which the tissues of many plant species become vulnerable after a prolonged absence of oxygen and cessation of aerobic metabolism. Tissues prone to this type of injury become soft and spongy on return to air, and rapidly lose their cell constituents. In these cases, oxygen exerts a definite toxic effect and membranes are destroyed irreversibly.

Plants that are able to survive prolonged oxygen-deprivation followed by a return to air avoid post-anoxic injury to their cell membranes by having a protective anti-oxidant system. The yellow flag iris (*Iris pseudacorus*), which grows so successfully in Orkney, has a remarkable ability to survive post-anoxic injury as it can produce under anoxia anti-oxidant protectants which are immediately state ready for use on return to air.

TIMING OF GROWTH RESUMPTION IN SPRING

When to resume growth after a flooded winter is a decision fraught with danger. To start too soon risks being exposed to late floods. To wait too long allows competitors that take the risk of enduring late floods to pre-empt the space that is necessary for new growth. Such a case can be seen in the competitive relationship between Queen of the Meadow (*Filipendula ulmaria*) and Reed Sweet-grass (*Glyceria maxima*). In a study of competition between these dominant species in a series of dune and slack communities over an interval of 24 years it was found that *G. maxima* was expanding its territory into areas that had formerly been dominated by *F. ulmaria*. Recent changes in local drainage arrangements had resulted in the area being newly subjected to shallow flooding in spring, whereas in the past the flooding had been deeper and more prolonged which inhibited the spread of *Glyceria*. This species is less tolerant of anoxia than *Filipendula ulmaria* and like many *Juncus* spp. referred to above maintains green basal leaves during the winter that act as an escape mechanism provided flooding is only shallow. Under these conditions *G. maxima* will resume growth in spring before *F. ulmaria*, which does not extend its new season's shoots until the water level has fallen below the surface of the soil. Thus, when flooding is shallow the less-tolerant species has the competitive

advantage due to a more precocious resumption of growth. When flooding is more prolonged, maintaining a depth of 10 cm or more, *Glyceria maxima* cannot compete with the more anoxia tolerant *F. ulmaria*. For *Glyceria maxima*, taking the risk that late floods will only be shallow, is a powerful strategy for out-competing the more anoxia-tolerant and playing-safe *Filipendula ulmaria*.

FUTURE IMPACTS OF WARMER, WETTER WINTERS IN NORTHERN EUROPE

Decisions for conservation and agricultural practices depend only partly on current experiences. More important for successful management policies is the assessment that is made of future risks and opportunities. Climatic trends suggest that mild, wet winters are likely to be more frequent in the future than they were in the past. Examination of precipitation in Europe over the last three decades indicates that there has been a tendency for a northward movement of the rain belts. Higher winter water tables will present a threat to tree survival in the more oceanic regions of northern Europe. Warmer and wetter winters will have also noticeable effects on agriculture, interfering with the potato harvest and the sowing of winter cereals in the autumn as well as delaying field operations in spring. An inevitable consequence for oceanic regions will be greater soil saturation, and a general tendency for increased paludification (bog growth) of which there are already signs in Orkney. Heavy periods of winter rain will also deplete soils of nutrients and warm winters combined with increased nitrogen pollution will accelerate the process of paludification.

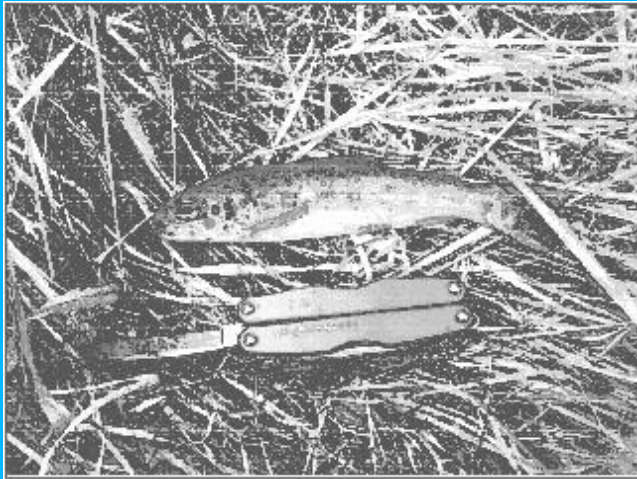
Despite the negative features of an increasing trend towards more oceanic conditions in Northern Europe in general and Orkney in particular, there are many benefits that will accrue to Orkney if climatic warming continues. Freedom from drought, all year-round growth of grass, earlier and more productive harvests will all be beneficial to both arable and pastoral farming. Longer growing seasons may also play a role in increasing the diversity of warmth-demanding species, which are currently limited by late springs and long winters.

FURTHER READING

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2004 SURVEYS OF ORKNEY TROUT POPULATIONS

MALCOLM THOMSON



In last year's bulletin, I described the practical application of electrofishing as a method for surveying juvenile trout populations in Orkney burns. I am glad to say, that 2004 was a really productive year in terms of gathering information on wild brown trout populations in Orkney, particularly on sea trout. The electrofishing equipment was put to good use throughout the year by the Orkney Trout Fishing

Association, which started what will hopefully be an annual survey of spawning burns across Orkney. This will yield useful information on the health of trout populations and also provide information on the distribution of the two alien species, stone loach and minnow, which we have in Orkney. This was complemented by my own PhD work on the sea trout smolt migration which focussed on the Burn of Ireland. The results of these surveys are summarised below.

OTFA ELECTROFISHING SURVEYS

A total of 25 sites in 16 Orkney burns were electrofished between July and October 2004. In general, sea trout burns were chosen, i.e. those flowing directly into the sea. A number of burns in the lochs of Harray, Stenness and Kirbister were also included. The Harray burns were included as this loch is the most important in the Orkney brown trout fishery. The lochs of Stenness and Kirbister are also of interest for their potential to produce more sea trout in the future.

Fully quantitative surveys were carried out at 17 sites, single run surveys at four sites and presence/absence surveys at four sites. In order to study juvenile trout effectively, particularly the 0+ age group, sites were chosen in areas where there was suitable spawning or nursery habitats. This generally meant areas that were accessible to spawning fish and of a suitable physical nature, e.g. a loose stony substrate with adequate bankside cover. The area of survey sites varied from 40 – 127m². Where it was judged necessary, more than one site per burn was surveyed, e.g. if there was more than one significant tributary.

ELECTROFISHING RESULTS

Brown trout (*Salmo trutta*) were found at all of these sites, although in widely varying numbers. Other species found included the European eel (*Anguilla anguilla*) the three-spined stickleback (*Gasterosteus aculeatus*) and flounder (*Platichthys flesus*). Species present at each site are listed in Table 1. Information

on trout density and biomass are presented in Table 2. Alien species found during the course of 2004 included the stoneloach (*Noemacheilus barbatulus*) and the minnow (*Phoxinus phoxinus*). Brown trout were found alongside alien species at all sites. The sites surveyed for these species are listed in Table 3.

As this is the first year of work, comparisons can only be made between the survey sites for the moment. However, some caution is required in doing so and points to remember include:

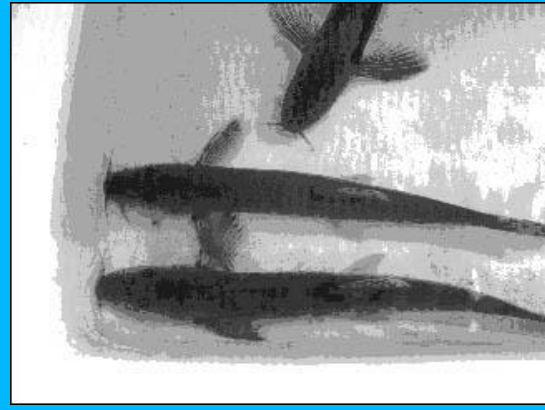
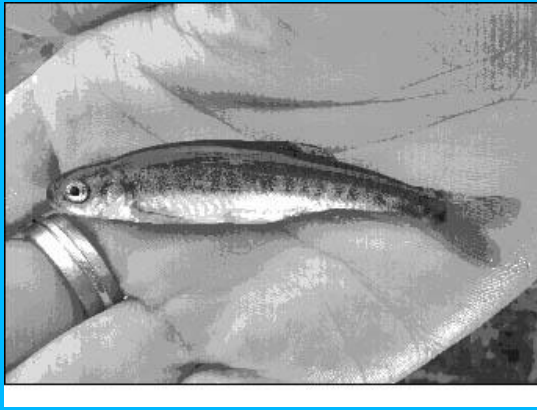
Results are valid only for the site surveyed – trout density may vary along the length of a burn.

Trout numbers decrease naturally over the course of the summer, especially fry numbers. Therefore, care is required when comparing data from sites which were surveyed many weeks or months apart. This is an important factor and it also necessitates that individual sites are surveyed at a similar date each year in order to make annual comparisons.

Apart from verifying the presence of trout at each site, the main use of this data will come in due course, after several years of data have been collected for each site. This will allow any changes in trout numbers at the survey sites to be detected, which may be indicative of wider changes to a burn system. If any declines in trout numbers are observed, action can be taken to a) find out why this is happening and b) what measures are required to reverse the decline.

Despite the above, it is still possible to make some broad conclusions from the results of 2004. Firstly, it seems clear that the highest trout densities are found in loch burns, i.e. those which run into lochs, e.g. Tormiston, Bigswell and Naversdale. The vast majority of trout at these sites were fry hatched in spring 2004, which is effectively shown in the length frequency distribution graph for one of the Tormiston sites (Figure 1). While sea trout may spawn in these burns, it is likely that resident brown trout from the lochs in each catchment make up the vast majority of the spawning population. Both Harray and Kirbister lochs contain large populations of resident brown trout. Stenness probably does not support anywhere near the resident population of these two lochs and the high numbers of juvenile trout in its burns are partly or mainly due to OTFA stocking of unfed fry in April 2004.

Trout densities in sea burns (burns which drain directly to the sea) tended to be lower than in loch burns. This may partly reflect physical habitat differences. However, it is also possible that these burns are used by a much smaller spawning population, comprising resident trout and any mature sea trout which run in from the sea. While these burns may never have supported the density of fish present in loch burns, the decline in sea trout numbers observed over the last few decades may have resulted in lower densities of juvenile trout in sea burns.



A minnow and a stone loach caught from the burn by Kirbister Farm Museum

The stone loach has been reported previously and it is thought that it occurs commonly throughout the burns in the Boardhouse/Hundland catchment. The minnow was first reported from the Loch of Boardhouse in 2003 and was found in the Kirbister Burn in 2004. It is not known if it has spread to other burns in the catchment. It was also found in the burn flowing out of the Loch of Swanney, by Swanney Farm. It is unclear what impact these species have had on trout populations, but it is likely that there is at least some degree of competition for food between the three species. The fisheries in Boardhouse and Hundland do not seem to have suffered in recent years, but given that the minnow is a more recent introduction it would be worthwhile to continue monitoring its presence and find out more about its current distribution.

SMOLT TRAPPING

A smolt trap was installed in the lower reaches of the Burn of Ireland between 30th March and 5th June 2004. During this period, a total of 186 brown trout were caught descending the burn, ranging in size from 89-223mm. The majority were smolts on their way to becoming sea trout. The downstream migration formed a distinct run with the majority of trout descending between the 9th and 30th of April (Figure 2). The highest daily catch was 32 trout, on the 19th April, which coincided with a period of high water flow. The smolt run consisted mainly of two year old fish (109) with a significant number of one year olds (69) and a small number of three year olds. The larger older fish moved downstream earlier than the younger smaller fish. It has been shown that larger smolts can cope better with the physiological stress associated with the transition to saltwater and that younger, smaller fish tend to delay their downstream movement so they can grow as big as possible before migrating.

All the trout were tagged using a visual implant elastomer (VIE) tag. In the case of the Burn of Ireland, a red tag was injected immediately posterior of the right eye. The hope was that some would later be recaptured, thus revealing information about their post-migration movements. Sure enough, four fish were recaptured by one local angler in October 2004. One was caught at Stenigar in Stromness, one in the Bush and two down at Houton. A fifth fish was caught

back in the Burn of Ireland in November, in a fyke net set to capture returning adult sea trout. This revealed some valuable information about the movements of Orkney sea trout after they enter the sea and also showed that, like salmon, they can remain faithful to their natal burn. Scale reading also confirmed that they had grown very quickly after entering the sea, indicative of the rich marine feeding which is a possible reason why juvenile brown trout choose to migrate to sea rather than remain in the relatively resource limited freshwater environment.



Scale sample from a two year old smolt caught from the Burn of Ireland in Spring 2004. Arrows indicate the end of winter (slow) growth

A great deal was achieved during 2004. The availability of robust data on sea trout is long overdue. Now we are quickly finding out which burns in Orkney are likely to support sea trout populations and the smolt trapping work gives an idea of how many sea trout smolts can be produced from a typical Orkney burn each spring. Repeat surveys in 2005 and beyond will further improve our understanding of this elusive member of Orkney's wildlife.

I am grateful to many people for assisting with this work, particularly OTFA members John Leask and Duncan Clarke, who contributed many hours of voluntary effort. The OTFA is also grateful to SNH and the Crown Estate for funding the training and the purchase of equipment necessary to undertake the electrofishing surveys. I would also like to thank SULA Diving for sponsoring my PhD work.

TABLE 1: SPECIES PRESENT AT 2004 SURVEY SITES

Site	NGR	Species			
		Brown trout	European eel	3-spined stickleback	Flounder
KB1	HY 36000 08900	X			
KB2	HY 36893 06868	X	X	X	X

TABLE 1: SPECIES PRESENT AT 2004 SURVEY SITES (*continued*)

Site	NGR	Species			
		Brown trout	European eel	3-spined stickleback	Flounder
BG1	HY 30900 11900	X	X	X	
BG2	HY 31850 10800	X			
TM1	HY 32106 11917	X	X	X	
TM2	HY 33120 12516	X	X	X	
IR1	HY 30641 08919	X	X		
IR2	HY 31684 08835	X	X		
NB1	HY 32513 17534	X			
NB2	HY 34231 18204	X	X		
RM1	HY 37779 11694	X	X	X	
RM2	HY 38654 12082	X			
DS1	HY 36800 25600	X			
DS2	HY 36965 25970	X	X	X	
VY1	HY 23998 15009	X			
VY2	HY 25200 14900	X	X	X	X
WF1	HY 47020 08388	X	X	X	X
WF2	ND 46221 08069	X			
OR1	HY 28363 93329	X			
WN1	HY 24562 01516	X			
QN1	HY 28550 11250	X			
PG1	ND 29132 97587	X			
PG2	ND 29246 97556	X			
LY1	ND 29031 98725	X			
HD1	ND 28368 91240	X			

TABLE 2: TROUT DENSITY AND BIOMASS DATA FOR EACH SITE SURVEYED IN 2004.

Date	Burn	Site	NGR	Survey type	Total caught	Trout biomass g/m ²	Trout per m ² (Zippin)
10/07/04	Naversdale	KB1	HY 36000 08900	Single	85	-	1.70

TABLE 2: TROUT DENSITY AND BIOMASS DATA FOR EACH SITE SURVEYED IN 2004. (continued)

Date	Burn	Site	NGR	Survey type	Total caught	Trout biomass g/m ²	Trout per m ² (Zippin)
18/07/04	Waulkmill	KB2	HY36893 06868	Full	24	-	0.65
26/07/04	Bigswell	BG1	HY30900 11900	Full	160	17.28	4.00
27/07/04	Bigswell	BG2	HY31850 10800	Full	252	-	5.60
05/08/04	Tormiston	TM1	HY32106 11917	Full	263	16.64	4.29
06/08/04	Tormiston	TM2	HY33120 12516	Full	297	16.97	5.25
10/08/04	Ireland	IR1	HY30641 08919	Full	52	6.47	0.42
18/08/04	Ireland	IR2	HY31684 08835	Full	19	6.07	0.36
12/08/04	Nether brough	NB1	HY 32513 17534	Full	40	5.12	0.36
13/08/04	Nether brough	NB2	HY 34231 18204	Full	89	-	1.24
02/09/04	Rossmyre	RM1	HY 37779 11694	Full	68	13.02	1.64
03/09/04	Rossmyre	RM2	HY 38654 12082	Full	13	6.66	0.25
05/09/04	Desso	DS2	HY 36965 25970	Full	4	0.40	0.07
05/09/04	Voy	VY1	HY 23998 15009	Full	73	4.28	1.36
07/09/04	Voy	VY2	HY 25200 14900	Full	8	2.64	0.12
29/09/04	Widford	WF1	HY 47020 08388	Full	18	2.59	0.24
01/10/04	Widford	WF2	HY 46221 08069	Single	7	0.74	0.07
02/10/04	Ore	OR1	ND 28363 93329	Full	32	6.88	0.31

03/10/04	Whaness	WN1	HY 24562 01516	Full	59	2.90	0.38
19/10/04	Quina	QN1	HY 28550 11250	Single	6	-	0.07

TABLE 2: TROUT DENSITY AND BIOMASS DATA FOR EACH SITE SURVEYED IN 2004 *continued*

Date	Burn	Site	NGR	Survey type	Total caught	Trout biomass g/m ²	Trout per m ² (Zippin)
05/09/04	Desso	DS1	HY 36800 25600	P/A	4	Quick surveys only to verify presence of trout.	
03/10/04	Pegal	PG1	ND 29132 97587	P/A	3		
03/10/04	Pegal	PG2	ND 29246 97556	P/A	3		
03/10/04	Lyrawa	LY1	ND 29031 98725	P/A	5		
02/10/04	Heldale	HD1	ND 28368 91240	P/A	6		

Notes:

- * = minimum estimate
- Fully quantitative survey = three run survey, allows accurate calculation of fish density for a site.
- Single = single run survey, density calculation is therefore a minimum estimate for the site.
- P/A = presence/absence (only to verify presence of trout).

TABLE 3: SITES WHERE STONELOACH AND MINNOW WERE FOUND IN 2004.

Burn	Date	Species
Karbister (HY 328300 25400)	28/3/04	stoneloach
	13/2/05	stoneloach, minnow
Hillside (HY 32000 22700)	28/3/04	stoneloach
Swanney, outflowing burn (HY 29500 29150)	28/3/04	minnow

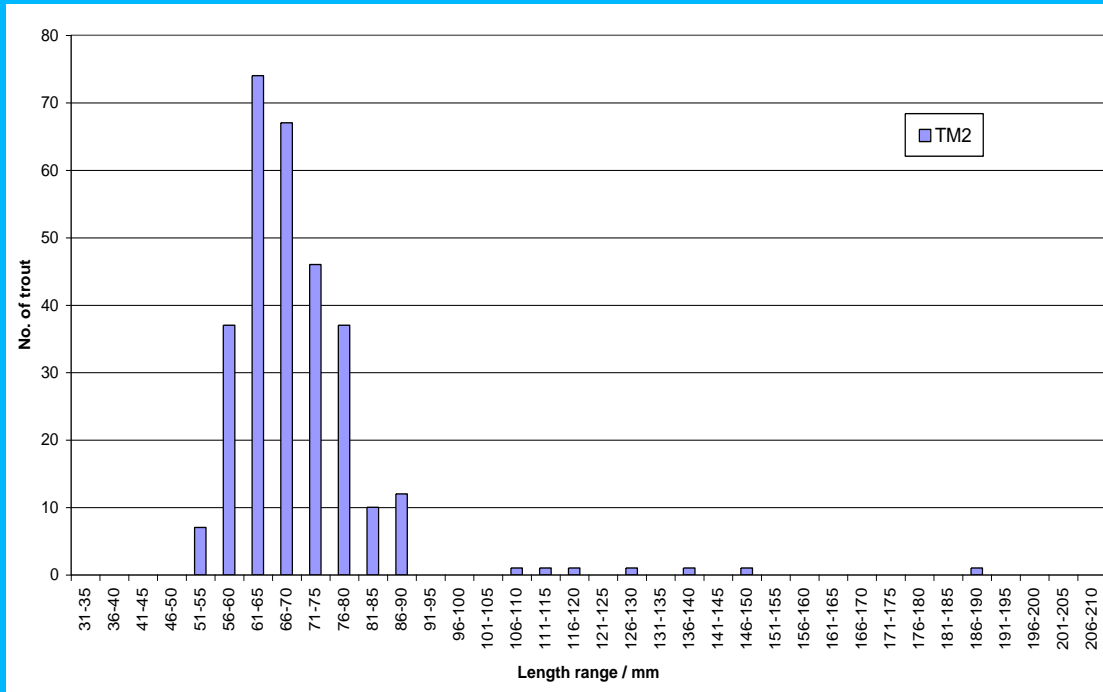


Figure 1: Length frequency distribution of trout caught at site TM1 on the Burn of Tormiston catchment.

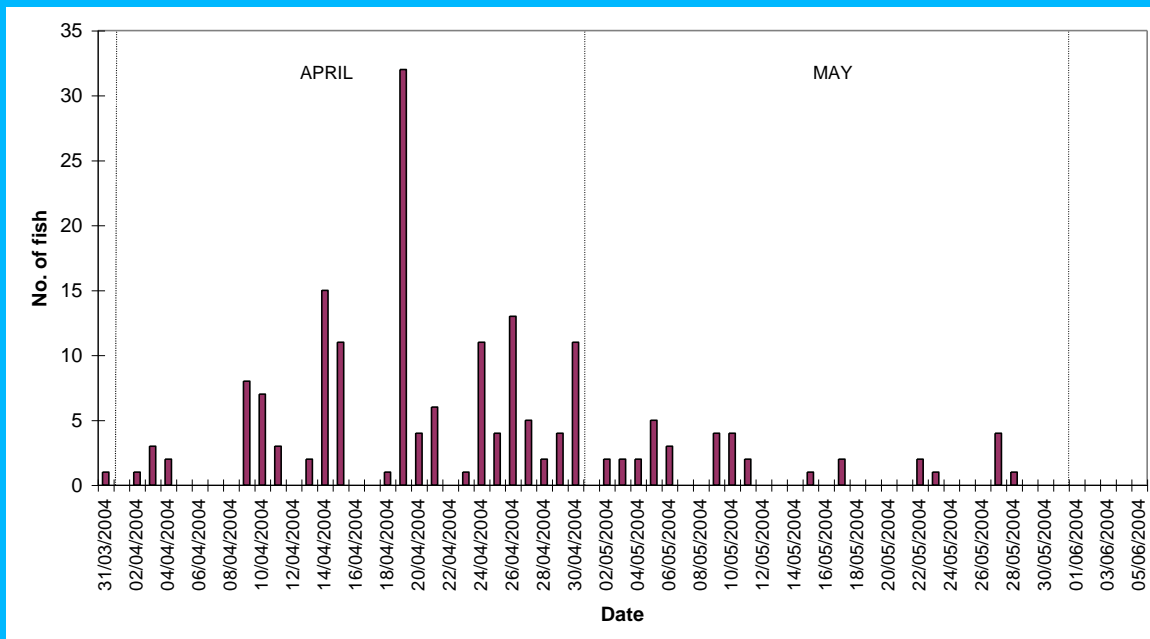


Figure 2: Daily catch of trout in the Ireland smolt trap from 30th March to 5th June 2004.

With no OFC recording subcommittee meeting since early 2003, no specific projects were set up for 2004. As a result, considerably fewer records were made than in 2003 - 2,390 as against 2,595 the previous year. Most of those were submitted by two recorders although another eight submitted smaller batches and several extremely worth-while single records. During the year, however, two more recorders took up Map Mate and made it possible to forward to the BSBI the last of the Local Change records made in 2003. The full results will be published but already the indications are that, on a national scale, there will be far more records than in the 1987/88 project. This is believed to be due, not so much as a real increase in the flora but a marked increase in the recording effort, aided by the introduction of Map Mate. In Orkney this increase was repeated except for one tetrad where there was a clear decrease in the flora.

The increase in the number of local users of Map Mate has also resulted in large batches of older records coming in, bringing the grand total to 13,119 including one for January 2nd, 2005!.

The most exciting records for 2004 were the Bog Orchid, *Hammarbya paludosa*, the Oblong-leaved Sundew, *Drosera intermedia*, and the re-finding, almost too late, of *Juncus balticus*. The orchid had been recorded in 1931 but although 14 plants were then reported, in a very short time they had all disappeared, due probably to zealous "collecting". Several unsuccessful attempts have been made since to re-find them at the original site. Then in the last few years a visitor to Orkney reported finding the species and although he would not reveal the exact site, the Hectad was given so it does appear in the new Atlas 2000. By then some idea of the type of habitat was available and Barry Jones made determined efforts which were rewarded in August 2004. Barry showed the plant to a few other local botanists - great care is needed not to trample a very fragile habitat - and, having "got their eyes in", further small colonies were found. This is a very difficult plant to "see". It is confined to sites in which midges breed and flowers at the height of the midge "season". It grows in places too wet to kneel in but requires almost eye-level inspection to find. And very oddly for an orchid, it proliferates from tiny bulbils carried at the edges of its leaves. It has probably been around ever since 1931 or even before that date and has just required dedicated searching and an observant eye.

The Sundew was found by Chris Vasey and when fully confirmed will be a New County Record. This again is a lover of boggy, midgey places and it takes a sharp eye to distinguish it from our two other *Drosera* species. Its main distinguishing characteristic is that the peduncles are curved and arise at the side of the leaf rosette, which is not shared by any of the other species or hybrids. We hope Chris will be able to help others, as with the bog Orchid, to "get their eye in".

Juncus balticus was found by Liz Charter, "two big clumps", in 1997 but no great effort was made by anyone else to have a look at it. Luckily Eric Meek managed

to locate a very battered clump in 2004 and rescue it from under a pile of old fishing tackle. Later he and I found a few more shoots a short distance away. All are growing on a rather precarious site. This rush is easy to overlook later in the season when it might be any scruffy rush. Again this is a plant as many people as possible should familiarise themselves with. Like the orchid, it is on OBAP Priority list.

2004 records were made by R G Adams, Elaine R Bullard, Tom Eggeling, Barry Jones, David and Midge Leather, Eric R Meek, Rosemary McCance, Brian Ribbands, Andrew Upton and Chris Vasey.

One undertaking for the more experienced botanists in OFC has been the “Schoenus Flush” project. We have noticed for some years that the lowland Schoenus Flushes in the far north of Scotland do not tie up with the Classified montane type, with *Saxifraga azoides* as a constant species, nor with the Classified lowland type which seems almost confined to England. So we set out to get simple lists from as many samples in Orkney as possible. Although no attempt was made to assess the cover and abundance of the different species the lists will provide ample material for assessing the species' Constancy Class and it is interesting to see how often the tiny Alpine Meadow-rue appears in the West Mainland, Hoy and North Isles samples but is absent from the East Mainland and South Isles samples. To date 28 “flushes” have been listed although two of these probably belong to the “montane” type. A total of 1,063 records were made, averaging 37 per site and the project includes 132 different species. This number may need to be reduced, both to excluded the “montane” type and a few species which were not strictly part of the flush vegetation.

Another experimental project has been to carry out some vegetation analysis on the verges of roads now assessed as of conservation value. In order for these records to be available for entry into Map Mate, it has not been possible to use the correct DOMIN cover/abundance value and something nearer the Braun-Blanquet Continental system has been adopted. The samples have consisted of 100m lengths using GPS to establish as far as possible the SW “corner” of the length chosen. The choice has been rather “experienced” subjective the sampling repeated as the verge vegetation is seen to change. The results so far have been quite astonishing and have confirmed how rich much of our roadside wildlife is. But few sites as artificial as a roadside verge can be maintained without some form of management and it is clearly necessary to know first exactly what type of plants do grow on any particular verge. Trials carried out on roadside verges in the south seem to indicate an annual autumn cut but in our much damper and milder climate, this will not always work - it seems obvious that some species of wildflowers actually benefit by having the coarser neighbours cut in the spring before they have had a chance to set seed. Once in flower, many “undesirable” species will continue to set seed long after they have been cut and left to lie.

MAP MATE AND BSBI “NEWS”.

The BSBI has made available the long awaited basic Schedules for compiling a Local BAP Schedule and a County Rare Species Schedule. The program does already show all the species with any national or international status, including the national BAP list. Map Mate is almost worth having for that alone. It also has lots of other useful things including the ordinary “status” terminology. Maybe a bit of an anti-climax after Atlas 2000, but the new Vice-county Census Catalogue was also published last year. Very very much smaller than the Atlas, it lists all species and ssp for the British Isles, their national and local status and presence or absence in every Vice-county.

Since the original *Atlas of the British Flora* was published in 1962, the idea of showing the distribution of almost anything by recording its presence or absence in every Hectad (10 x 10 Km) in the British Isles caught on. and much of recorders' time was occupied by “square-bashing” which sometimes acquired a twitching fascination but could result in the loss of detailed information on locations and anyway, a group of islands does not fit into boxes very easily. Now we have Map Mate we can locate our records to anything between 4 and 6 figure Grid references. Inevitably there has so far been a natural and desirable inclination to record rare or “interesting” plants. “Parish and Island” records in Map Mate are still woefully short of common species records but there has been a steady improvement in 2004.

Our “most widespread species” now are:

<i>Festuca rubra</i> , Red Fescue	<i>Deschampsia cespitosa</i> , Tufted Hair-grass
<i>Plantago maritima</i> , Sea Plantain	<i>Prunella vulgaris</i> , Selfheal
<i>Holcus lanatus</i> , Yorkshire-fog	<i>Potentilla erecta</i> , Tormentil
<i>Plantago lanceolata</i> , Ribwort Plantain	<i>Trifolium repens</i> , White Clover
<i>Agrostis stolonifera</i> , Creeping Bent.	<i>Ranunculus flammula</i> , Lesser Spearwort
<i>Ranunculus acris</i> , Meadow Buttercup	<i>Potentilla anserina</i> , Silverweed
<i>Bellis perennis</i> , Daisy	<i>Armeria maritima</i> , Thrift / Sea Pink
<i>Carex flacca</i> , Glaucous Sedge	<i>Rumex acetosa</i> , Common Sorrel
<i>Hydrocotyle vulgaris</i> , Marsh Pennywort / White-rot	<i>Leontodon autumnalis</i> , Autumnal Hawkbit
<i>Euphrasia officinalis</i> agg., Eyebright	<i>Carex nigra</i> , Common Sedge
<i>Calluna vulgaris</i> , Heather / Ling.	<i>Stellaria media</i> , Common Chickweed

This list does omit some other widespread species, especially rushes, sedges and grasses. Maybe if everyone made a point of recording at least five species whenever they take a Grid Reference reading, it would rectify this situation.

Botanical recording in Orkney virtually ceased between 1937 and 1953, and of the species recorded before 1937, 62 have never been re-found. But of species recorded between 1953 and 1974, another 56 species have never been re-found. This represents a massive loss to the County's flora. Many of these old records are definitely extinct while others were "casuals", unlikely to survive, but the missing species include a number which are definitely still around but have just not been recorded. They include fairly obvious plants like *Ruppia maritima* and *Brachypodium sylvaticum* and many "critical" species in the dandelion, eyebright and hawkweed groups. A challenge?

BEES AND WASPS 2004

JOHN CROSSLEY

2004 was the first poor year for bees since I have been observing them in Orkney, with a cooler, wetter spring and early summer than usual, and the availability of late summer forage much reduced by a gale in August. The number of bumblebees to be seen for most of the year appeared to be much less than usual, though at the usual summer peak in early August there were good numbers of the common species.

BUMBLEBEES

Bobby and John McCutcheon again produced the 'earliest first sighting' record, by a long way, of a white-tailed bumblebee *Bombus lucorum* on 5 March at Herston, South Ronaldsay. Bobby and John also recorded the garden flowers visited by bumblebees, confirming the importance of gardens for early and late forage, including *Salix* and *Ribes* species and *Pulmonaria* in early spring and *Escallonia*, *Echinops*, *Impatiens* and *Lythrum* in autumn. They also recorded a nest of *B. lucorum* that was active until 27 October, an unexpectedly late date after weeks of poor weather and an indication despite it of the ability of the species to forage effectively. I have sufficient records now, by date and of forage plants visited, to be able to produce tables of earliest and latest sightings and preferred forage species – see next year's Bulletin!

Bombus distinguendus - Great Yellow bumblebee

A most interesting addition to the known range of this species is three records, each of a single individual, by Bob Adam and Chris Booth on Auskerry HY6715 and HY6716 on 15th and 16th July. It is possible, but unlikely, that this was the same bee on all sightings. Auskerry has an area of about 100 hectares and is very exposed, so it would be surprising if a species that appears to exist at low population density in Orkney could maintain a self-sustaining population there. Yet Auskerry is 3 km from the nearest land (Stronsay), so more than occasional immigration seems unlikely. The Auskerry sightings echo recent records from other offshore islands around Orkney and in the west of Scotland, so perhaps this species has an ability to expand its range over considerable distances in

favourable years, or it can persist at low population density in difficult conditions. Either case would contradict the supposition, which has been made, that the low population density is a sign of a declining population 'hanging on'. It will be interesting to see if there are more sightings from Auskerry and other small islands in the next few years.

Chris Booth recorded a single bee at Rackwick, Hoy ND1999 on 25th July 2004. This is the first record of the species for Hoy (not including South Walls), and in view of the amount of attention given to that area by naturalists a confirmation of the apparent absence of this species from moorland habitats.

Paul Holinrake found and photographed a queen at Sandsend, Shapinsay HY5119 on 23rd June 2004 - a first record for that island.

Bombus muscorum

Three to eight individuals on 15th and 16th July were recorded by Bob Adam on Auskerry, a new record for the island and evidence of at least one colony.

Paul Holinrake found a queen close to his *Bombus distinguendus* in Shapinsay and on the same day, the first record for the island since 1975. The species has almost certainly been present, and probably quite common, but difficulties of identification have prevented definitive recording.

OTHER SPECIES

Of the other five bumblebee and cuckoo bee species resident in Orkney, I received almost a hundred records. These records add to the detailed knowledge of species' distribution and seasonal occurrence, and many records also provided details of forage and other useful data. These continuing records add to the sum of data that can be analysed in various ways, as well as filling out the detail of occurrence at more and more sites. I would be pleased to get more records of all species seen at particular sites.

SOCIAL WASPS

Four species of social wasps are now resident in Orkney. The red wasp *Vespula rufa* and the wood wasp *Dolichovespula sylvestris* appear to be recent arrivals. It is believed that their arrival is the result of hibernating queens being imported to the islands in vehicles, although flight across the Pentland Firth is quite possible.

Dolichovespula norvegica - Norwegian wasp

Reported from Kirkwall HY4410 on 4th August and Weyland Bay St Ola HY4511 on 9th September (CJB); and from Crantit, St Ola HY4409 on 9th, 12th May and 14th August (RGA).

Dolichovespula sylvestris - Wood wasp

Reported again this year from its site of several years past at Crantit, St Ola HY 4409 on 5th, 9th, 12th, 30th May and 11th, 21st, 22nd August (RGA). Reported from Kirkwall HY4410 23rd, 26th May, 31st July and 4th, 9th August (CJB). Two records from late May/early June from a new site at Dale, Costa HY3227 (DM).

Vespula vulgaris - Common wasp

Reported from Herston, South Ronaldsay ND4291 on 22nd and 25th April (B and J McCutcheon); Kirkwall HY4410 on 14th, 18th May and 16th, 30th August (CJB); also from Kirkwall HY4510 on 26th June and 14th August (RGA).

Vespula rufa - Red wasp

This presumed new arrival to the county, first reported in 2003, was again present in Herston, South Ronaldsay ND4291 in 16th, 21st May and 6th August (B & JM).

SOLITARY BEES AND WASPS

Ancistrocerus scoticus - Mason wasp

At least 20 individuals were foraging and sunning themselves on walls at East Side, South Ronaldsay ND4791 on 7th July. This is the largest colony so far reported (JC).

CONTRIBUTORS

Bobby and John McCutcheon (B & JM); Chris Booth (CJB); Bob Adam (RGA); Dick Matson (DM); Paul Holinrake; Murdo Macdonald; John Crossley (JC).
Many thanks to all.

FISH 2004

C.J.BOOTH

There were the following fish records of interest reported during the year:

Basking shark - *Cetorhinus maximus*

Sightings, all of single sharks, were: off North Hill, Papa Westray on 6th June (T. Dodman), off Harraborough Head, South Ronaldsay 14th August (K. Anderton) and in Hunda Sound on 26th October (R. Hearn).

Bass - *Dicentrarchus labrax*

One was caught in a creel off Sanday on 24th November (per R. Thorne). It was 67cm in length and weighed 2.7 kg.

Trigger Fish – *Balistes capriscus*

One was found dead on 29th September on North Wick beach, Papa Westry. It was c 40cm. In length (T.Dodman).

AMPHIBIA 2004

C.J.BOOTH

Smooth newt - *Triturus vulgaris*

3 newts were found on 14th August when a pond was being cleaned at Harraborough, South Ronaldsay, one was definitely of this species. Both Smooth and Palmate newts had been introduced into this pond in the 1980's (G. Anderton).

Common toad - *Bufo bufo*

Tadpoles were seen at Rackwick, Hoy on 20th May; the south end of Sandy loch and at South Dams Hoy on 26th June, reported earlier by T.D and R.E.M, although it is thought that the survival rate was poor. Six adult toads were found at Hundasaeter, Birsay (A.K.J.& J.H.J.) between 22nd May and 13th September,

all were over 90gms in weight the largest being 106gms and 90.8mm in length. An immature toad was found at the Burn of Ore (E.R.M.) on 15th August.

Common frog - *Rana temporaria*

First report of the year was of one found injured at Hundasaeter, Birsay (A.K.J.& J.H.J.) on 24th January. There were no further sightings until 3rd March when one was in Willow Road, Kirkwall and a minimum of 12 Hundasaeter, Birsay (A.K.J. & J.H.J.). First spawn was observed on 8th March at Rinnibar, Hoxa (J.R.L.H.) then on 9th March at Rosebank, Harray (E.E.). Further batches of spawn reported were at Cruan Foad, Finstown (D.&S.W.) on 14th, Rinnibar, Hoxa and Hundasaeter, Birsay 16th, West End, Burray (N.McC & R.McC) on 17th, Dale, Birsay (R.E.M.) and St Rognvald Street, Kirkwall (S.B.) on 18th. In the last week of March from Berstane Road, Kirkwall (D.W.& S.W.) and a quarry on Kirkwall Golf Course (J.B.), while on 1st April from 2 sites on Sanday - Nearhouse and Salties (R.T.). Apart from the above sites breeding frogs were reported from Skail, Eday (M.C.), Petertown, Orphir (R.J.) and Stromness (D.S.); adult frogs from Sunnybank, Deerness (P.W.), Reid Crescent, Kirkwall (W.W.), Papdale playing fields (L.R.) and Weyland, Kirkwall (N.H.). A large frog, 96mm in length, was found at Hundasaeter, Birsay on 13th October. The latest sighting was of one at the Durkadale plantation on 1st November (R.E.M.).

My grateful thanks to the following for providing records:

S. Beaven, J. Booth, M. Cockram, T. Dean, E. Everiss, N. Hewison, J.R.L. Hogarth, A.K.& J.H. Johnson, R. Johnston, R.E. Matson, N.& R. McCance, E.R. Meek, L. Rosie, D. Stout, R. Thorne, D.& S. Walls, W. Watters, P. Wilson.

BATS 2004

C.J.BOOTH

Common Pipistrelle - Pipistrellus pipistrellus

Bats, thought to be of this species and calling at 45 khz, were seen regularly in the Finstown area in July and August. Sightings were mainly of 1 to 2 but a maximum of 6 was seen together in July. It seems probable that a summer roost had been formed in the locality. My thanks to James Miller, Malcolm Russell and Alan Thoms for information on these sightings.

One was found dead at Howan, Sandwick, Mainland (per E. R. Meek) on 30th October. Its identity was confirmed by Jerry Herman from the National Museums of Scotland, in Edinburgh.

ORKNEY CETACEAN REPORT 2004

C.J.BOOTH

A mixed year for cetacean enthusiasts with sightings of Killer whales and also Minke whales, although mainly confined to the period May to July. Common dolphins made a rather brief appearance in Scapa Flow as did a Humpback whale

off Eynhallow. There was the 3rd stranding of a Striped dolphin, otherwise reports of Harbour porpoises and other dolphin species were few and far between.

Megaptera novaeanglia - **Humpback whale**

One spent some time around a dive boat west of Eynhallow on 13th August. It was estimated to be between 7 and 10 metres in length. The fourth sight record for Orkney.

Stranding: The body of a long dead whale was washed ashore near the Broch of Gurness, Evie on probably the 27th February. It was estimated that the whale would have been about 10 metres in length, the width of the tail fluke was 3.28 metres. The first reported stranding of this species in Orkney.

Balaenoptera acutorostrata - **Minke whale**

Two were seen off the Talisman jetty, Flotta on 23rd January then no more reports until the 9th May when 1 was seen in the Pentland Firth. There were regular sightings in the Pentland Firth from mid May until the end of June involving 1 to 3 whales. From 16th May to 26th June 1 to 2 whales were reported west off South Ronaldsay from Swona to Stanger Head, Flotta. Elsewhere 2 were seen east of Hundland, Papa Westray on 12th May and 2 east of Shapinsay on 2nd June, while one was off Rackwick, Hoy on 1st July. In September, 1 was seen to breach 6 times off Hoy from MV Hamnavoe on 4th and there were sightings of single whales on 7th off Rackwick, Hoy and Hundland, Papa Westray.

Stranding: One freshly dead ashore at Hooking, North Ronaldsay on 28th May, length 7 metres.

Phocoena phocoena **Harbour porpoise**

Much scarcer in 2004 with comparatively few sightings. Recorded in January and then from June to November. Reports mainly from Hoxa and Herston Head areas of South Ronaldsay ; off Rackwick, Hoy and around Papa Westray. Most involved 1 to 3 animals but 10 were recorded on two occasions and there was an exceptional sighting of several hundreds in Cantick Sound on 1st November. There were 2 records of a cow and calf - from Papa Westray on 30th July and Hoxa Head on 14th August.

Stranding: A male stranded alive at Sands of Essonquoy, Tankerness on 22nd January but had to be destroyed

Delphinus delphis - **Common dolphin**

A minimum of 3 was seen in Burra Sound on 25th May and on the next day a school of between 30 and 50 spent 2 to 3 hours off the west side of No.1 Barrier. They were very active, often breaching and were watched by a large crowd of people.

Stenella coeruleoalba - **Striped dolphin**

A juvenile stranded alive on 31st March at Scapa Beach, but died. It was 1 metre in length. The 3rd record for Orkney.

Lagenorhynchus albirostris - **White-beaked dolphin**

The only sighting was of 3 off Yesnaby, Sandwick on 30th June.

There were 2 strandings, both of single animals: on Glimps Holm on 25th March, length 2 metres, dead some time, and a juvenile, dead several days, on Skail Beach, Sandwick, 17th June, length 1.18 metres.

Orcinus orca - **Killer whale**

Another good year for this species and, as in 2003, there were reports from all round the islands with passengers on the North Isles ferries getting some excellent views. The first sighting was of at least 3 off Papa Westray on 7th March then no more until 8 were seen North east of Papa Westray on 24th April. In May, 4 were observed in the Bay of Ireland on 22nd and 4 were off Marwick Head on 26th. Sightings were frequent throughout June and July and usually involved from 3 to 8 individuals but on 6 occasions at least 10 and up to a maximum of 15 was reported. Most pods had one adult male, but 3 males were recorded on three occasions, they also often included 1 to 2 juveniles. The only August report was on 6th when 7 were seen south of Westray.

The whales were recorded attacking seals and also taking Common guillemots that were resting on the water.

Globicephalus melas - **Pilot whale**

The only sighting was of 6 close to Scapa pier on 30th April.

Grampus griseus - **Risso's dolphin**

A poor year with just one sighting, that of 2 in the Pentland Firth on 6th September.

Stranding: a very decomposed dolphin on Rackwick beach, Hoy on 22nd May. The length was 3.04 metres.

Unidentified cetaceans

There were the following reports where identification could not be made with absolute certainty :

16th May 1 probable Minke whale off Hoxa Head, South Ronaldsay

8th June 1 probable Minke whale Cantick Sound

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Please send details of cetacean sightings to Chris Booth, 34 High Street, Kirkwall, KW15 1AZ.

BEARDED SEAL 2004

C.J.BOOTH



On August 29th 2004, a juvenile Bearded seal *Erignathus barbatus*, length 1.5 metres, hauled out on the Corn slip in Kirkwall Harbour. It spent about 3 hours there and was fairly tame, allowing a close approach. This was the 3rd record for Orkney. Bearded seals are rare in British waters and it is amazing that this seal hauled out at the same place as did another juvenile Bearded seal (the 2nd Orkney record) on May 16th 1988.

Bearded seals are usually found in the shallow waters of the Arctic and feed mainly on molluscs.

LEPIDOPTERA REPORT FOR 2004

S.V.GAULD

This year has not been an outstanding one, although a steady flow of migratory species has been seen. Once more the number of moth traps being run has increased, with traps appearing at Quoyangry, South Ronaldsay (Paul Higson); Roo, Sanday (Rosemary & Thomas Newton) and Rose Bank, Burray (Tracy & Jen Hall). Jen is one of the youngest trappers we have. The trap that Rosemary and Thomas now run was won by the Orkney Lepidoptera Group in a national competition organised by Butterfly Conservation. The trap is an "ALS Skinner Moth Trap" which was donated by Anglian Lepidopterist Supplies. The trap was presented to Rosemary at a special ceremony in the Sanday School in May. During this ceremony Sue Agnew and the writer had the opportunity to talk to the pupils about moths and butterflies.

This report sees ten new species added to the Orkney list, four from 2004 and six from past years, from recently identified specimens. These are *Ostrinia nubilalis* European Corn-borer, *Ephestia elutella* Cocoa Moth, *Eligmodonta gnoma* Lesser Swallow Prominent and *Amphipyra* Copper Underwing for 2004. *Coleophora otidipennella*, *Coleophora tamesis*, *Elachista humilis*, *Agonopterix angelicella*, *Platyptilia pallidactyla* and *Idaea straminata* Plain Wave from pre 2004.

MIGRANT BUTTERFLIES

Pieris brassicae Large White was seen from 17 May through to 28 Sep with counts mostly in the low teens; there was no point at which it was apparent that there was a definite influx of insects from outside Orkney. *Vanessa atalanta* Red Admiral was seen from 10 Jun through to 5 Oct with the highest numbers being seen during the first two thirds of June. The highest daily count was from North Ronaldsay on 12 Jun with 35 being seen. *Cynthia cardui* Painted Lady was seen from 10 Jun through to 7 Jul and then five were seen between 10 Aug and 14 Sep. The highest daily count was from North Ronaldsay on 12 Jun with 30 being seen.

In common with the rest of Scotland *Inachis io* The Peacock was seen in good numbers here in Orkney from 11 Aug till 18 Sep with 15 records being made.

In the list that follows the following abbreviations are used: -

R	Resident	I	Immigrant	C	Recent colonist
R?	Resident Uncertain	RI	Resident + Immigrant	C	Recent colonist Uncertain
V	Vagrant	U	Status Uncertain		

NEW SPECIES TO ORKNEY 2004

Ostrinia nubilalis European Corn-borer (V); one taken by trap 15 Aug Echna View, Burray (TD). This moth was a rare immigrant to Britain until the 1930s, when it became established in an area around the Thames estuary, then in various towns along the south coast as well as Fountainstown in southern Ireland. The larva feeds on *Artemisia vulgaris* Mugwort; *Humulus lupulus* hop *Cannabis sativa* hemp and a pest on *Zea mays* maize. On the wing during June and July.

Ephestia elutella Cocoa Moth (V); one take by trap 15 Jun Northolme, St Ola (RGA). Identified by K Bland. Widespread throughout Britain where the larva are polyphagous on all kinds of stored materials, especially on cacao and tobacco, also a serious pest on stored cereals. On the wing from June to October.

Eligmodonta gnoma Lesser Swallow Prominent (V); one taken by trap 26 Jul Quoyberstane, St Ola (SVG). Widespread throughout Britain on lower ground, the larva feeds on *Betula pendula* Silver Birch and *Betula pubescens* Downey Birch. On the wing twice late April to June and also July to August in the south, One flight period in the northern Scotland late May to early August.

Amphipyra Copper Underwing (V); as yet to be specified.

NEW SPECIES TO ORKNEY PRE 2004

Coleophora otidipennella (R); one taken on 18 Jun 2000 Loch Side, Harray (SVG). Identified by K Bland. Found throughout British Isles up to Sutherland, the larva feeds on the seeds of *Luzula campestris* Field Wood-rush or *Luzula multiflora* Heath Wood-rush. On the wing during May and July.

Coleophora tamesis (R); one taken on 6 Jul 2003 Blows Moss, South Ronaldsay (SVG & JC).

Identified by K Bland. Distributed locally through the British Isles as far north as the Hebrides, wherever its food plant *Juncus articulatus* Jointed Rush grows. It is probably under recorded from many places. On the wing from June to August.

Elachista humilis (R); one taken on 12 Jul 1998 Bendigo, St Ola (SVG). Identified by K Bland. Found throughout the British Isles up to the Moray coast. The larva feeds on various grasses e.g. *Deschampsia cespitosa* Tufted Hair-grass, *Poa pratensis* Smooth Meadow-grass. Being univoltine (single brooded) in the north. On the wing during July.

Agonopterix angelicella(R); one taken by trap 24 Jul 2003 Northolme, St Ola (RGA). Identified by M Young. Found throughout the British Isles as far as Northeast of Scotland. The larva feeds on *Angelica sylvestris* Wild Angelica and

sometimes on *Heracleum sphondylium* Hogweed. On the wing from July and September.

Platyptilia pallidactyla (V); one taken by light 20 Jul 2003 West End, Burray (N&RMcC). Identified by M Young and confirmed by K Bland. Found locally throughout the British Isles.

The larva feeds on *Achillea* Yarrow and possibly on *Tanacetum* Tansy. On the wing during June and July.

Idea straminata Plain Wave (V); one taken by light 19 Aug 1996 Quoyberstane, St Ola (SVG). Identified by K Bland. Found throughout the British mainland. The food plants in the wild are not known, in captivity will eat *Taraxacum* Dandelion, *Polygonum* Knotgrass and other herbaceous plants. On the wing from late June to early August.

MOTHS AND BUTTERFLIES OF NOTE SEEN DURING 2004

Yponomeuta evonymella Bird-cherry Ermine (I); three taken by trap two 12 Aug Viewforth, Swannay (KF) and one 15 Aug Northolme, St Ola (RGA).

Depressaria pastinacella Parsnip Moth (U); eight taken by trap between 12 Aug and 4 Sep Northolme, St Ola (RGA). This is the second record of this moth. The first record was from Smyril, Stenness by E R Meek when one was taken by trap 30 Sep 1987.

Crambus pascuella (U); one taken by trap 27 Jul Quoyberstane, St Ola (SVG). This is the second record of this moth. The first record was from Scorradale, Orphir by R I Lorimer when one was taken by trap 28 Jul 1973. This moth's range includes Shetland and Iceland, which suggests that this moth is being under recorded.

Udea uliginosalis (R?); one taken by trap 10 Jun Echna View, Burray (TD). This is the second record of this moth. The first record originally identified as *U. alpinalis*, came from an unnamed locality on the Orkney mainland by B Goater Jul 1973.

Udea ferrugalis Rusty-dot Pearl (I); one taken from a window on 1 Nov Quoyberstane, St Ola (SVG).

Pleuroptya ruralis Mother of Pearl (V); three taken by trap one each 27 Jul Echna View, Burray (TD) 6 Aug West End, Burray (N&RMcC) and 11 Sep Viewforth, Swannay (KF).

Nymphalis antiopa Camberwell Beauty (V); one was seen on 25 Aug Ford of Hoy, Hoy (LS).

Timandra griseata Blood-vein (V); two records both by traps one each 12 Aug North Wads, Evie (A&SK) and 15 Aug Echna View, Burray (TD).

Orthonama vittata Oblique Carpet (U); two taken by trap between 22 and 31 Jul Hundasaeter, Birsay (C&JB/A&JJ).

Xanthorhoe designata Flame Carpet (R); two records both by trap one each 2 May Trumland House, Rousay (SA) and 22 May Bayview, Herston, South Ronaldsay

(J&RMcC). This is the second and third record of this moth. The first record was from Muckle Ocklester Moss, Holm 14 Jun 2004.

Thera obeliscata Grey Pine Carpet (C); one taken by trap 16 Jul Bayview, Herston, South Ronaldsay (J&RMcC).

Perizoma alchemillata Small Rivulet (R); one taken by trap 30 Jul Viewforth, Swannay (KF).

Semiothisa wauaria The V-moth (R); two taken by trap between 4 and 7 Aug 34 High St, Kirkwall (CJ&J Booth).

Agrius convolvuli Convolvulus Hawk-moth (I); two records both by trap one each 10 Aug Hundasaeter, Birsay (C&JB/A&JJ) and 13 Aug Orakirk, Orphir (SA).

Laothoe populi Poplar Hawk-moth (R); two taken by trap between 22 Jun and 16 Jul West End, Burray (N&RMcC).

Macroglossum stellatarum Humming-bird Hawk-moth (I); one seen 26 Oct Quoyangry, South Ronaldsay (PH).

Hyles gallii Bedstraw Hawk-moth (I); five records, four taken by trap one each 11 Jul West End, Burray (N&RMcC), 4 Aug Viewforth, Swannay (KF), 12 Aug Echna View, Burray (TD) and first week Aug Rose Bank, Burray (T&JH). One record relates to an insect bred from a larva found at Dyke End, South Ronaldsay last year.



Agrotis ipsilon Dark Sword-grass (I); four records all from traps one 11 Jul Northholme, St Ola (RGA) and three between 11 Jul and 30 Oct Echna View, Burray (TD).

Noctua fimbriata Broad Bordered Yellow Underwing (V); one taken by trap 12 Aug West End, Burray (N&RMcC).

Peridroma saucia Pearly Underwing (I); one taken by trap 30 Oct Northholme, St Ola (RGA).

Naenia typica The Gothic (U); two records both by trap one each 23 Jul Hundasaeter, Birsay (C&JB/A&JJ) and 31 Jul Lobady, Birsay (C&JB/J&JT).

Eurois occulta Great Brocade (I); nine records all from traps two each between 4 and 12 Aug West End, Burray (N&RMcC) and 11 and 13 Aug Northholme, St Ola (RGA). One each 7 Aug Hundasaeter, Birsay (C&JB/A&JJ) 11 Aug Queenamida, Rendall (BR) and Viewforth, Swannay (KF), 13 Aug Orakirk, Orphir (SA) 14 Aug Smyril, Stenness (ERM).

Anaplectoides prasina Green Arches (V); one taken by trap 14 Aug 34 High St, Kirkwall (CJ&J Booth). This is the second record of this moth, the first record was 18 Jul 2003 Quoyberstane, St Ola (SVG) when one was taken by trap.

Orthosia gracilis Powdered Quaker (R); three taken by trap between 24 Apr and 9 May Echna View, Burray (TD). This is the second record of this moth; the first was of a larva found in Aug 1977 Hoy (MWH).

Xylena vetusta Red Sword-grass (R?); one taken by trap 24 Sep Echna View, Burray (TD).

Eupsilia transversa The Satellite (RI); Two taken by trap one each 22 Oct Northholme, St Ola (RGA) and 6 Nov Viewforth, Swannay (KF).

Amphipyra tragopoginis Mouse Moth (U); one taken by trap 14 Aug Echna View, Burray (TD).

Apamea ophiogramma Double Lobed (V); one taken by trap 6 Aug Viewforth, Swannay (KF). This will be the third record of this moth, the first was Aug 1969 Quoyberstane, St Ola (SVG) and the second 27 Jul 1980 Bellfield, St Ola (SVG).

Apamea lithoxylaea Light Arches (U); one taken by trap 29 Jul 34 High St, Kirkwall (CJ&J Booth).

Rhizedra lutosa Large Wainscot (RI); three taken by trap; one 12 Sep Viewforth, Swannay (KF) and two between 17 and 18 Oct Echna View, Burray (TD).

Autographa gamma Silver Y (RI); was seen between 30 May and 28 Nov, with a notable increase in numbers on the 10 and 11 Aug with 150 being seen on North Ronaldsay.

Rivula sericealis Straw Dot (V); 16 taken by trap five between 7 and 13 Aug Orakirk, Orphir (SA); one 14 Aug Queenamidda Rendall (BR); seven 15 Aug Echna View, Burray (TD); one 16 Aug Bayview, Herston, South Ronaldsay (J & R McC), and two between 16 and 17 Aug Smyril, Stenness (ERM).

My thanks are given to all who supplied records and gave me help over the last year; R G Adams, S Agnew, C J & J Booth, E R Bullard, K Bland, A Casey, J Crossley, L Campbell, A Duncan, T Dean, E Everiss, B Flett, K Fairclough, L Fettes, N Fairbairn, A Groundwater, D Hodge, L Hogarth, P Higson, T & J Hall, A K & J Johnson, A & S Knight, E R Meek, J & R McCtcheon, K Masson, N & R McCance, R & T Newton, B Ribbands, E Rose, J & D Stuart, L Shields, J & J Thomson, J Willams, M Young

STONEWORT RECORDS 2004

EFFY EVERISS

This was, once again another excellent year for recording stoneworts in the Northern isles. I targeted Sanday updating old records and locating new records for the Loch of the Riv and Roos Loch. The Loch of the Riv is quite exceptional for its size with 7 recorded species. I spent many hours searching Roos Loch, which up to now has only yielded one species of stonewort; this is poor by Sanday standards. The time and effort was well rewarded as we now have a record for the nationally rare *Chara curta* for the site as well as for *Chara aspera*. I did not get to Rummie and the North Loch, which by coincidence Nick Stewart monitored later on in the season. We have still to update the *Chara curta* record (1898!) for

Bea Loch, despite a thorough search on several occasions by both Nick and myself, the south end of the Loch having extensive beds of *Chara aspera*, the two species often grow mixed together and are very difficult to distinguish without checking individual specimens with a microscope.

Mill burn, Hoy continues to be an interesting area both botanically and for stoneworts. The mixture of *Shoenus* flushes and acid heath mingled with the semi drained 'ox-bows' of the burn provides diverse habitats for a number of interesting species, not least the *Hammarbya paludosa*, the bog orchid which was flowering so prolifically in this area it was hard not to step on it! There are now three stonewort species recorded in this area. The area is also a good dragonfly hotspot on a warm day.

There was a new record for Echna Loch, a tiny piece of *Chara Contraria* was found in the strand line after a particularly fierce northerly gale. The most surprising and exciting discovery was Lurdy Quarry. One of several quarries in Burray excavated to build the Churchill barriers. This deep quarry provides the water for the neighbouring farm and the farmer has made an especial effort to keep it clean and unpolluted. The water is very clear and the whole quarry is carpeted with dense beds of *Chara aspera* and *Chara vulgaris* var. *papillata*. The site had never been recorded before despite being right next to the road with easy access. A lovely place in its own right and well worth a visit even if you are not turned on by stoneworts! The quarry gives a good indication of what many of the Orkney standing waters must have been like before the agricultural influences of the past 100 years or so.

Nick Stewart and I were in Shetland recording at different times this summer. I managed to get c.50 records from around 30 sites that were complementary to those sites that Nick sampled. There is a lot more potential to record stoneworts in Shetland due to the geology, the huge number of lochs and lochans and the lack of pollution.

Diffuse pollution continues to be a serious problem throughout Orkney. Those lochs that have a well developed marginal zone and restricted access for animals are the best protected and tend to have a more diverse and rich aquatic flora. The water-margin vegetation amplifies the biodiversity of the site by providing habitat and cover for nesting and over-wintering birds and the aquatic invertebrate fauna as well as protecting the site from enrichment. The pollution problems are slowly being addressed by the implementation of good agricultural practices supported by financial incentives.

The Mill Dam of Rango, a site of national importance due to the exceptional stonewort flora including two red data species is currently under review by SEPA. This site has currently no designations attached to it and has been subject to severe enrichment in recent years. SEPA intend implementing a management plan in the near future, which may rescue the site.

A management plan is being put forward for the Loch of Isbister and the Loons by the RSPB for Birds. This area is exceptionally rich in stoneworts and Potamogeton spp. including nationally rare and threatened species. Historically the site has had the water levels manipulated artificially over a long period and

has severe enrichment problems magnified by the shallowness of the loch. The management plan may improve the area if the requirements of all the flora and fauna are considered as a whole. The Loch of Isbister was thoroughly surveyed this year by Nick Stewart for site condition monitoring so any changes in management in the near future should be apparent quite quickly. Sadly, the RSPB were very tardy in consulting either local or national stonewort experts when developing the plan for this SSSI and SAC.

EXAMPLES OF STONEWORTS:

Chara baltica



Nitella flexilis



Tolpella nidifica



2004 RECORDINGS.

Stonewort	Site	Ref.	Date	Observer
<i>Chara virgata</i>	Quoys Graemsay	HY 2575 0549	24.05.04	(EE)
<i>Nitella opaca</i>	Rackwick Hoy	ND 206 986	27.05.04	(EE,RMc&JM)
<i>Chara virgata</i>	Rackwick Hoy	ND 206 986	27.05.04	(EE,RMc&JM)
<i>Chara virgata</i>	Rackwick Hoy	ND 203 001	27.05.04	(EE,RMc&JM) in toady pool by stone bridge
<i>Chara virgata</i>	Stanger Head Flotta	ND 3742 9275	23.06.04	(EE)
<i>Chara virgata</i>	Stanger Head Flotta	ND 3765 9247	23.06.04	(EE) large lower quarry
<i>Chara aspera</i>	Stanger Head Flotta	ND 3765 9247	23.06.04	(EE) large lower quarry
<i>Chara aspera</i>	Bea Loch Sanday,	HY 6511 3980	27.07.04	(EE) South end
<i>Chara aspera</i>	Bea Loch Sanday	HY 6525 4021	27.07.04	(EE) N. end by waterworks
<i>Chara aspera</i>	Bea Loch Sanday	HY 6525 4021	27.07.04	(EE) N. end by waterworks
<i>Nitella flexilis</i> agg.	Loch of the Riv Sanday	HY 685 466	30.07.04	(EE) New for site
<i>Chara vulgaris</i> var.papillata	Loch of the Riv Sanday	HY 685 466	30.07.04	(EE) Update
<i>Chara curta</i>	Loch of the Riv Sanday	HY 685 466	30.07.04	(EE) Update
<i>Chara hispida</i>	Loch of the Riv Sanday	HY 685 466	30.07.04	(EE) Update

Stonewort	Site	Ref.	Date	Observer
<i>Chara curta</i>	Loch of the Riv Sanday,	HY 685 466	30.07.04	(EE) Update
<i>Chara vulgaris</i> var. <i>papillata</i>	Loch of the Riv Sanday	HY 685 466	30.07.04	(EE) Update
<i>Chara curta</i>	Roo's Loch Sanday	HY 6535 4494	02.08.04	(EE) New for site
<i>Chara hispida</i>	Loch of Langamay Sanday	HY 745 443	02.08.04	(EE) Update
<i>Chara curta</i>	Loch of Langamay Sanday	HY 745 443	02.08.04	(EE)
<i>Tolypella glomerata</i>	Loch of Isbister Sandwick	HY 258 235	17.08.04	(NS & EE) New for site
<i>Chara vulgaris</i> var. <i>papillata</i>	Mill Burn Hoy	ND 29488 95614	22.08.04	(EE & BJ)
<i>Chara virgata</i>	Sandy Loch Hoy	HY 219 032	18.08.04	(NFS) Update?
<i>Chara virgata</i>	Mill Burn Hoy	ND 29488 95614	22.08.04	(EE)
<i>Chara contraria</i>	Loch of St. Tredwell Papay Westray	HY 49 50	22.08.04	(ERM) Update
<i>Nitella opaca</i>	Northfield Quarry Burray	ND 4843 1830	28.08.04	(EE)
<i>Chara virgata</i>	Northfield Links Quarry Burray	ND 4808 9848	28.08.04	(EE)
<i>Chara vulgaris</i>	Northfield Links Quarry Burray	ND 4808 9848	28.08.04	(EE)
<i>Chara aspera</i>	Echna Loch Burray	ND 4761 96517	28.08.04	(EE) South side
<i>Chara contraria</i>	Echna Loch Burray	ND 4761 96517	28.08.04	(EE) South side
<i>Chara contraria</i>	Echna Loch Burray	ND 4761 96517	28.08.04	(EE) In strand line
<i>Chara aspera</i>	Echna Loch Burray	ND 4731 3672	28.08.04	(EE) North end
<i>Chara aspera</i>	Lurdy Quarry Burray	ND 4848 9579	28.08.04	(EE)
<i>Chara vulgaris</i> var. <i>papillata</i>	Lurdy Quarry Burray	ND 4848 9579	28.08.04	(EE)
<i>Chara virgata</i>	Quoyorally Winwick S. Ronaldsay	ND 4605 8618	28.08.04	(EE)
<i>Nitella flexilis</i> agg.	Quoyorally Winwick S. Ronaldsay	ND 4605 8618	28.08.04	(EE)
<i>Nitella opaca</i>	Quoyorally Winwick S. Ronaldsay	ND 4605 8618	28.08.04	(EE)

Stonewort	Site	Ref.	Date	Observer
Chara virgata	Burn of Eastalet Stromness	HY 223 115	06.11.04,	(EE) Mouseland Burn
Chara aspera	Loch of Isbister Sandwick	HY258 235	17/08/2004	NFS/EE
Chara curta	Loch of Isbister Sandwick	HY258 235	17/08/2004	NFS/EE
Chara contraria	Loch of Isbister Sandwick	HY258 235	17/08/2004	NFS/EE
Chara vulgaris	Loch of Isbister Sandwick	HY258 235	17/08/2004	NFS/EE
Tolypella glomerata	Loch of Isbister Sandwick	HY258 235,	17/08/2004	NFS/EE
Chara aspera	Loch of Isbister Sandwick,	HY25 23	21/08/2004	NFS/RJS
Chara curta	Loch of Isbister Sandwick	HY25 23	21/08/2004	NFS/RJS
Chara contraria	Loch of Isbister Sandwick	HY25 23	21/08/2004	NFS/RJS
Chara vulgaris	Loch of Isbister Sandwick	HY25 23	21/08/2004	NFS/RJS
Chara aspera	North Loch Sanday	HY75 45	18/08/2004	NFS/RJS
Chara curta	North Loch Sanday	HY75 45	18/08/2004	NFS/RJS
Chara contraria	North Loch Sanday	HY75 45	18/08/2004	NFS/RJS
Chara vulgaris	North Loch Sanday	HY75 45	18/08/2004	NFS/RJS
Tolypella glomerata	North Loch Sanday	HY75 45	18/08/2004	NFS/RJS
Chara virgata	Muckle Water Rousay	HY33	20/08/2004	NFS/RJS
Nitella flexilis agg.	Muckle Water Rousay	HY33	20/08/2004	NFS/RJS
Chara virgata	Muckle Water Rousay	HY42	20/08/2004	NFS/RJS
Nitella flexilis agg.	Muckle Water Rousay	HY42	20/08/2004	NFS/RJS
Chara aspera	Loch of Harray	HY29 15	22/08/2004	NFS/RJS
Chara curta	Loch of Harray	HY29 15	22/08/2004	NFS/RJS
Chara conrtraria	Loch of Harray	HY29 15	22/08/2004	NFS/RJS
Chara vulgaris	Loch of Harray	HY29 15	22/08/2004	NFS/RJS
Tolypella glomerata	Loch of Harray	HY29 15	22/08/2004	NFS/RJS
Chara curta	Loch of Harray	HY31	22/08/2004	NFS/RJS
Chara virgata	Loch of Harray	HY31	22/08/2004	NFS/RJS
Chara contraria	Loch of Harray,	HY31	22/08/2004,	NFS/RJS

ACKNOWLEDGMENTS

Many thanks to Rosemary and Neil McCance (RMc), Barry Jones(BJ), Ethel Mowat (EM),Sydney Gauld (SG), Eric Meek (ERM), Nick Stewart

(NFS):National Recorder, Rosie Stewart(RJS), Jackie Muscott (JM), John Crossley (JEC), Martyn, Rosemary, Thomas and Bryony Newton, for their help and hospitality.

DRAFT MINUTES OF THE 2005 ANNUAL GENERAL MEETING

HELD AT 7.30PM ON FRIDAY 28TH JANUARY, 2005, IN THE SUPPER ROOM, COMMUNITY CENTRE, KIRKWALL

Present:

Elaine Bullard, President; Mildred Cuthbert, Vice-president, in attendance. Peter Ford, chairing the meeting; Jeff Barrett, Kate Barrett, Chris Booth, Sydney Gauld, Ray Hallam, Sally Hallam, Dick Matson, Joan and David Peppitt.

Apologies:

Joan Batchelor, John Crossley, Olaf Cuthbert, Eric Meek, Dennis Paice, Nadine Russell.

1. Minutes of the previous meeting were accepted as a true record, proposed by Dick Matson, seconded by David Peppitt.

2. Matters arising - Constitutional change: A change to Clause 27 in the constitution, although read to the assembly and agreed by those present was counted as non-constitutional owing to a lack of prior publicity and therefore this was delayed for a further year, i.e. to AGM 2006.

3. Adoption of accounts: In the absence of the treasurer, the accounts and financial report were placed on the table. These were accepted, proposed by Jeff Barrett, seconded by Elaine Bullard.

4. Subscriptions: It was proposed that club subscriptions should remain the same for the forthcoming year. With the deletion of the Junior section the committee agreed at their meeting in November 2004 that in order to satisfy the conditions of the insurance policy non-members of the public attending outdoor meetings should pay for temporary membership at the rate of £2 for individuals (adults only) and £3 for families.

5. President's address: The president, who celebrates her 90th birthday in May this coming year, thanked all who had contributed to the Club throughout the past year and emphasised the need to encourage participation in Club activities by members of the public. Miss Bullard also reiterated her desire to see the workload spread to include all interested parties, member or not, and stressed the importance of fostering good relations with OIC, especially as the Council was responsible for the launch of the Club in 1959.

6. Elections: The president then took the chair to hold elections as follows:-

	Officer	Proposer	Second
Chairman	Peter Ford	Dick Matson	Kate Barrett
Vice chairman	Kate Barrett	Peter Ford	Nan Trail Thomson
Secretary	David Peppitt	Alison Skene	Jeff Barrett
Treasurer	Dennis Paice	David Welch	Effy Everiss
Bulletin	David Peppitt	by default	

Walks & Talks	Dick Matson Officer	Mildred Cuthbert Proposer	Margaret Rinder Seconder
Members	Sally Hallam John Crossley Ray Hallam Jeff Barrett Chris Booth Sydney Gauld	Kate Barrett Sydney Gauld Jeff Barrett Joan Peppitt Dick Matson Peter Ford	David Peppitt Dick Matson Sydney Gauld Pat Matson Peter Ford Jeff Barrett

7. Date of next AGM: Some discussion took place about delaying the customary January date for 2006 and it was agreed this should be considered by the new committee. **ALL**

8. Date of next committee meeting: This was arranged for Tuesday 15th February in Room 1, Community Centre, Kirkwall at 7.30pm.

Following the business meeting, the chairman then arranged for quiz sheets to be put on each table and announced a literary quiz which took place while wine was served. After the quiz, supper was announced and a social period followed, ending just before 10pm.

PF/DM//KB

15/3/05

STATEMENT OF ACCOUNTS 2004

INCOME	2004	2003	EXPENDITURE	2004	2003
Subscriptions	966.00	1008.00	Advertising	174.30	165.50
Club nights	120.00	147.88	Room Hire	172.30	113.70
Charities Bazaar	225.50	185.24	Insurance	100.00	100.0
Bank Interest	57.70	115.10	Subscriptions	53.50	53.50
Gift Aid	231.56		Bulletin & Newsletter	531.67	545.53
Grass Verge Survey (2003)	183.24	64.00	Other Expenses	371.96	417.96
Other	48.75	26.00			
			Total Expenditure	1403.73	
			Surplus	429.02	
	1832.75			1832.75	
Summary			Bank Details		
Cash in hand @ 31 st December 2003		8723.15	Premier Account	6766.85	
Income over expenditure @ 31 st December 2004		429.02	Treasurer's Account	2385.32	
		9152.17		9152.17	

*Audited: J. Watson
15 March 2005*

RECORDERS AND RECORDING, ORKNEY, VC111, 2005 UPDATE

Please read carefully for alterations since the last OFC Bulletin.

NOTES

No records should be published until verified by the appropriate Recorder. With few exceptions, Orkney County Recorders submit copies of their records to their appropriate national specialist society and to OBRC.

ABBREVIATIONS

A.Rec. = Assessment of Records

BSBI = Botanical Society of the British Isles

Hb.Ab. = Aberdeen University Herbarium

Hb.Kew = Royal Botanic Gardens, Kew

OBRC = Orkney Biodiversity Records Centre

OIC = Orkney Islands Council

Rec. = Recorder

Up. = Update

BM/NH = British Museum of Natural History

DL = Definitive Lists

Hb.Ed. = Royal Botanic Garden, Edinburgh

N/N = The Natural History of Orkney

OCL = Orkney County Library

ONHS = Orkney Natural History Society, Museum, Stromness

SOC = Scottish Ornithologists Club

	Recorder
MAMMALS (excepting seals, bats and cetaceans)	Ray Hallam, Krokrinn, 1 Belleview Park, Kirkwall KW15 1XL. DL. N/N. Up. OFC <i>Bulletin</i> and Stromness Museum. Records, including bones, etc., can be accepted, with full details.
BATS	Chris Booth, Ronas, 34 High Street, Kirkwall, Orkney. DL in Booth, C. and J. (1994), <i>The Mammals of Orkney</i> . Up. OFC <i>Bulletin</i> .
FISH	Chris Booth, Ronas, 34 High Street, Kirkwall, Orkney Up. OFC <i>Bulletin</i> .
CETACEANS (whales and porpoises.)	Chris Booth, Ronas, 34 High Street, Kirkwall, Orkney. DL in <i>The Mammals of Orkney</i> , op. cit. Up. OFC <i>Bulletin</i> . A.Rec. if required – National Museum of Scotland.
SEALS	Lesley Sinclair, Riff Cottage, Rendall, Orkney, KW17 2PB

	Recorder
AMPHIBIANS & REPTILES (toads etc.)	Chris Booth, Ronas, 34 High Street, Kirkwall, Orkney). DL in <i>The Mammals of Orkney</i> , op. cit. Up. OFC <i>Bulletin</i> . A.Rec. by Recorder.
BIRDS	(SOC) Jim Williams, Fairholm, Finstown, Orkney. DL in Booth, C.J., Cuthbert, M.F. and Reynolds, P (1985), <i>The Birds of Orkney</i> , The Orkney Press. Up. <i>The Orkney Bird Report</i> (published annually). A.Rec. national rarities, The British Birds Rarities Committee; Scottish rarities, The Scottish Birds Records Committee; local rarities, The Orkney Records Committee.
JELLYFISH	Ray Hallam, Krokrinn, 1 Belleview Park, Kirkwall KW15 1XL. DL, N/N.
LAND & FRESHWATER MOLLUSCS (slugs and snails)	No Rec. at present. DL to 1985 in OCL.
MARINE MOLLUSCA (seashells)	.Rec. Alan Skene, The Mount, Stromness, Orkney. DL, N/N.
ECHINODERMATA (sea urchins, starfish, etc.)	Duncan Clarke, 107 Victoria Street, Stromness, Orkney KW16 3BU
HIRUDINIA (worms, leeches, etc.)	No Rec. at present. DL, N/N.
COLEOPTERA (beetles)	Brian Ribbands, Queenamidda, Rendall KW17 2PA. DL, N/N. A.Rec by recognised experts. Keith has Vincent Lorimer's beetle collection and notes.
ODONATA (dragonflies and damselflies, adults and larvae)	Keith Fairclough, Viewforth, Swannay, DL, N/N. Up. OBRC and OFC <i>Bulletin</i> . For species already on the Orkney list, a written or verbal record (to Keith), with full details will suffice. If new species, ideally a photograph, or, at least, a FULL description.
ANTS	Keith Fairclough, Viewforth, Swannay,
BUMBLEBEES, SOCIAL WASPS, SOLITARY BEES AND WASPS	John Crossley, North Flaws, South Ronaldsay, Orkney KW17 2RW. A.Rec. DL for social wasps: see note in OFC Bulletin No.1/1986. DL for bumblebees: see OFC <i>Bulletin</i> 2002. DL for solitaries: see OFC <i>Bulletin</i> 2004. Up. OBRC, OFC <i>Bulletin</i> .

	Recorder
SAWFLIES	Jenni Stockan, The Macaulay Institute, Craigiebuckler, Aberdeen AB15 8QH
ORTHOPTERA (grasshoppers)	Keith Fairclough, Viewforth, Swannay, DL, N/N. Acceptance of records as for Odonata (above).
CADDIS FLIES (adults and larvae)	R.Andrew, Millfield Cottage, Costa, Evie, Orkney and J Walker, Twargarn, Harray, Orkney. DL, N/N, BRC Monks Wood. Up. BRC Monks Wood, OFC <i>Bulletin</i> . Also MAYFLIES, adults and larvae, and HOVERFLIES, adults.
DIPTERA (true flies)	R.Andrew, Millfield Cottage, A. Rec. by comparison with names material in reference material collections; and to BM/NH. Also FLESH FLIES, BLOW FLIES and PARASITIC FLIES.
STONEFLIES	R.Andrew (as above). DL, N/N. Up. OBRC and OFC Bulletin.
LEPIDOPTERA (butterflies and moths)	Sydney Gauld, Quoyberstane, St. Ola, Orkney. DL, N/N and in Lorimer, R.I. (1983), <i>The Lepidoptera of the Orkney Islands</i> , E.W. Classey Ltd, Oxford. Up. OFC <i>Bulletin</i> . Voucher specimens, The Royal Museum of Scotland.
ARACHNIDA (spiders and OPILIONES harvestmen)	Edward Milner, 80 Weston Park, London, N8 9TB. DL, N/N.
CRUSTACEA (mainly marine, but will attempt terrestrial (ISOPODS, slater etc))	Helen Snooks, 107 Victoria Street, Stromness, Orkney KW16 3BU
MYRIAPODS (centipedes and millipedes)	No Rec. at present.

	Recorder
VASCULAR PLANTS	(BSBI): E. R. Bullard, Toftwood, Kirkwall, Orkney KW15 1SB. DL, N/N. Records in <i>Watsonia</i> and <i>OFC Bulletin</i> . A. Rec. Voucher specimens in Hb.Ed. An Orkney <i>Flora</i> in preparation; also Threatened Plants database and local Scarce Species. Please be sparing in collecting any plant material for identification, 'critical' species require identification by national referees.
ROSA SPECIES	Hugo Shearer, Cromwell Road, Kirkwall, Orkney. Referees usually require specimens of fruit, mature foliage and pieces of stem showing prickles.
CHAROPHYTES (stoneworts)	Effy Everiss, Rosebank Cottage, Harray, Orkney KW17 2JA. DL, N/N. Specimens must be preserved quickly, so please rinse, press until really dry before posting.
BRYOPHYTE (S mosses and liverworts)	Rosemary McCance, West End House, Burray, Orkney KW17 2SS. DL, N/N.
FUNGI including MYXOMYCETES (slime fungi)	No current Recorder DL, N/N, Up.: <i>OFC Bulletin</i> . A.Rec.Hb.Ed. Voucher specimens are held in Hb.Ab. Hb.Ed. and Hb.Kew. The current list is held by OBRC.
LICHENS	Dr. D H Dalby, 2, West Park, Stanley, Perthshire. PH1 4QU. Voucher specimens and recording materials held in OFC archives.
MARINE ALGAE (seaweeds)	Dr. Martin Wilkinson, School of Life Sciences, Heriot-Watt University, Riccarton, Edinburgh EH14 4AS. DL, N/N.
FRESHWATER ALGAE.	Eileen Summers, OIC Environmental Unit, Harbour Authority Building, Scapa, Orkney KW15 1TB.

GENERAL ADVICE

All records are worthwhile. The essential four pieces of information, accompanying all records, must be:

WHAT WHERE WHEN WHO BY

Record cards for some groups can be obtained from the Recorders listed above. Records, including completed cards, should be sent to the appropriate Recorder. If no Recorder is listed, send records to OBRC, Orkney Library, Junction Rd, Kirkwall, Orkney, e-mail biodiversity@orkney.gov.uk. A stamped, addressed

envelope is appreciated if you want a reply, and is necessary when specimens have to be sent for identification. Be sparing in collecting specimens. If in doubt, and you would like more information about records on a particular plant, bird, mammal or invertebrate, ask the appropriate County Recorder.

Both individual Recorders and OBRC hold details of recording schemes for a large assortment of plants and beasts. Many of the organisers welcome and help beginners, so why not 'take up' something? Details are also available of helpful textbooks and study courses

GUIDELINES FOR BULLETIN CONTRIBUTORS

All contributions (2005/2006) should be addressed in the first instance to:

OBRC Bulletin
C/O County Library & Archive
44, Junction Road
Kirkwall, KW15 1AT

Last date for contributions: 28th. February 2006.

Contributions on all subjects relating to the natural and cultural environment of Orkney are welcomed.

PRESENTATION OF ARTICLES

All contributions are edited into the “house” format using Microsoft Word and Publisher.

PC disc, CD, DVD	Text, html, native word processor text such as Microsoft Word, Sun OpenOffice, or, PDFfiles..
Macintosh format	As html.
E-Mail	As text or as an attached file as html, rich text, Windows compatible format, or plain text. If illustrations are required best to send as rich text. E-mail addresses for editorial subcommittee members are available from the OFC Secretary, or, can be directed to the convenor of the editorial subcommittee (currently David Peppitt) at ofcbulletin@swartland.demon.co.uk .
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