



photo: Barry Prater



photo: Helen Rowe

Revised Regional Action Plan  
for the  
Butterflies and Moths of East  
Scotland  
April 2013

Summary

This document is an update of the original Regional Action Plan (published in 2000) making use of information gained since then.

The primary objective of the plan is to indicate actions for each of the priority species identified with the ultimate aim of progressing activities for their conservation. Efforts have been made to prioritise the species for attention to give the plan a clear and limited focus which should make the actions more achievable.

The priority species are:

High Priority Butterflies

Small Blue  
Pearl-bordered Fritillary  
Large Heath

Medium Priority Butterflies

Northern Brown Argus  
Small Pearl-bordered Fritillary  
Mountain Ringlet



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## High Priority Moths

Mountain Burnet  
Kentish Glory  
Dark Bordered Beauty  
Northern Dart  
Small Dark Yellow Underwing

## Medium Priority Moths

Goat Moth  
Welsh Clearwing  
Slender-striped Rufous  
Heath Rivulet  
Netted Mountain Moth  
Rannoch Brindled Beauty  
Small Chocolate-tip  
Cousin German  
Broad-bordered White Underwing  
Rannoch Sprawler  
Sword-grass



For each of these species is given: the rationale for its priority, an outline of its distribution with any recent changes and itemised actions with an indicative timescale.

Some further, lower priority species are also covered in less detail; general survey work for these will be valuable.

The starting point for all species is the continuation and expansion of targeted survey work. To aid this, maps are available for most species on-line at <<http://eastscotland-butterflies.org.uk/actionplans.html>> which give details of site locations and an indication of when the species was last recorded there.

Species Champions have been identified in some cases and they will be developing ways of working with recorders.

It is important that all records of these species continue to be submitted to the Branch Butterfly Recorder and the various Vice County Moth Recorders, whose contact details can be found at <<http://eastscotland-butterflies.org.uk/butterflyrecords.html>> and <<http://eastscotland-butterflies.org.uk/mothrecords.html>>.

Progress updates will be published and the programme and site maps will be amended as appropriate.

Barry Prater  
April 2013

# Revised Regional Action Plan for the Butterflies and Moths of East Scotland

## 1. Background

The first Regional Action Plan (RAP) for East Scotland was published in December 2000. In summary, its functions were stated to be:

- to provide information on the status and requirements of key species
- to give guidance on priorities for BC East Scotland branch (*prime purpose*)
- to inform other organisations of conservation issues and seek their engagement as partners.

Since the issue of the RAP a number of actions have been taken for many of the species identified for attention and our knowledge of the current distributions of all species has improved considerably, largely through the on-going recording for the Butterflies for the New Millennium project and the establishment of the National Moth Recording Scheme.

Although the RAP did not go into great detail for any species, it contained a huge breadth of information and a substantial number of actions:

- 35 actions for butterflies spread among 7 species
- 50 actions for moths spread among 21 species

For almost all of the species identified for attention, actions included survey and/or monitoring work and for some of the moths this was the limit of the actions. For all the butterflies in the RAP and for some of the moths there were further conservation actions involving steps to work with landowners or managers, protect sites and improve habitats. Potential partners were indicated for all actions.

## 2. The Need for Revision

The original RAP had as its prime purpose to guide the East Scotland branch on conservation needs and the necessary actions to address these. Now, more than ten years on, its shortcomings as a practical document and guide are apparent. It only covered actions over the time period 2001-2005 and there was no clear prioritisation of the many actions listed which were too numerous and over-ambitious and it could be argued that some of them would not be readily achievable, especially where cooperation with partners was involved. Having said that, it should be noted that branch members and other volunteers have carried out a great deal of survey and monitoring work over the intervening years with a focus mainly on butterflies, but the results have not been fully collated or analysed to give a clear picture of how the priority species have fared over the past decade. The two nationwide recording schemes mentioned above have also contributed indirectly to the actions. Responsibility for some actions was taken by BC Scotland staff who have also advised landowners on habitat management for some species of butterflies and moths. The extent to which partners have been formally involved in completing actions is not clear.

Set against this background it was thought appropriate to review the RAP and produce a revised version for the period 2013- 2017.

## 3. Outline of Revised RAP

Although there has been a growing move towards landscape scale conservation measures since the original RAP was produced, in terms of mobilising volunteers and giving people a clear focus for their actions there is still a need for the RAP to be mostly species- and site-orientated. So this revision adopts a similar approach to the original RAP by identifying priority species and giving actions against these. However, the overall objectives have been somewhat changed, prioritisation has been highlighted and means of implementing the plan are discussed. The hope is that the new RAP will be more achievable, involve a

wider range of BC members and other volunteers and that the results produced are shared with all who can aid the conservation process.

Much of the background information in the original RAP (which can be accessed on line at <<http://eastscotland-butterflies.org.uk/downloads/Eastern%20Scotland%20Regional%20Action%20Plan%202000.pdf>>) is still relevant and of interest, but it is not repeated here.

The main functions of this revised RAP are:

- to indicate priority species for action within the East Scotland branch area.
- to specify actions for the priority species which will improve knowledge of their distributions, populations, habitat requirements and any perceived threats.
- to encourage joint work with landowners, land managers and others with influence on enhancing the condition and maintenance of important sites and habitats.
- to ensure that a knowledge base of information on key species and sites is established and to develop this as a reference source for future conservation activities.
- to enable a review of progress and hence update or amend the planned actions.

Throughout the revision process account has been taken of the differing priorities across the wide range of climate and habitats across the branch area. To get away from an unrealistic number of actions and unachievable timescales a lot of attention has been given to prioritising the species selected and the actions indicated. As for the original RAP, only macro-moth species have been considered.

The area covered by the branch is indicated in Figure 1; this also shows the 100km grid squares within the branch.

#### 4. Identification of Priority Species - Butterflies

Table 1 lists the eight butterfly species considered for priority attention; these are the ones included in the original RAP together with the Grayling, which was added to the UKBAP Priority Species list when that was revised in 2007. The table also shows the numbers of 10km squares in the branch area which had records of each species during the two recording periods 1995-1999 and 2005-2009; these numbers were determined by simply counting dots on the distribution maps given in the Butterflies for the New Millennium Atlas and the updated maps published by Butterfly Conservation in 2010. They give a crude measure of distribution changes for each species but these do not necessarily relate to population changes. No account has been taken of any additional recording over the years 2010-2012. Furthermore, distribution data are strongly influenced by the level of recording, with intensive survey work leading to an apparent spread in some cases and a lack of recording implying a contraction. These concerns are also indicated in Table 1. The status given for each species relates to the situation across the whole of the UK (or just for Britain in the case of the IUCN assessment).

Table 1 East Scotland Butterflies for consideration

Species	No.10km squares occupied 1995-1999	No.10km squares occupied 2005-2009	% change in occupied squares	Status	Comments	Priority in 1 <sup>st</sup> edition RAP (2000)	Revised Priority (2013)
Small Blue	13	7	-46	UKBAP Priority Species IUCN - Near Threatened	Losses South Aberdeenshire, Angus & Borders	High	High

Northern Brown Argus	60	67	+12	UKBAP Priority Species IUCN - Vulnerable	Branch holds high proportion of UK population; trends not clear	High	Medium
Small Pearl-bordered Fritillary	92	88	-4	UKBAP Priority Species IUCN - Near Threatened	Losses in N but gains in S - recording effort?	High	Medium
Pearl-bordered Fritillary	23	14	-39	UKBAP Priority Species IUCN - Endangered	Losses in Perthshire; some intensive recent survey work	High	High
Mountain Ringlet	9	12	+33	UKBAP Priority Species IUCN - Near Threatened	No significant change; intensive recent survey work has better defined range	High	Medium
Scotch Argus	40	41	-2	IUCN - Least Concern	No significant change	Medium	Low
Grayling	26	26	0	UKBAP Priority Species IUCN - Vulnerable	No significant change	not rated	Low
Large Heath	38	23	-39	UKBAP Priority Species IUCN - Vulnerable	General decline - recording effort?	High	High

The final columns of table 1 show the priority given to each species in the original RAP and the priority assigned now. For three species a high priority has been maintained:

- Small Blue
- Pearl-bordered Fritillary
- Large Heath

For a further three species the priority has been reduced from high to medium:

- Northern Brown Argus
- Small Pearl-bordered Fritillary
- Mountain Ringlet

Two species have been given a low priority:

- Grayling
- Scotch Argus

The rationale for these decisions on priority is given under each species below, but in general the aim has been to sharpen priorities and a lower priority does not necessarily indicate that the species is not important but that the limited resources available should be targeted at higher priorities. Only a few actions are given for the low priority species.

Table 2 gives a breakdown of distribution changes at the 100km scale (see map), which acts as guide to the parts of the branch where actions should be focused for each species.



Table 2 Breakdown of Butterfly distribution changes 1995-2009

Species	100km square - No. 10km squares occupied 1995-1999 (2005-2009)						
	NJ	NN	NO	NS	NT	NY	total
Small Blue	3(1)	-	9(5)	-	1(1)	-	13(7)
Northern Brown Argus	5(5)	8(6)	18(19)	1(1)	28(36)	-	60(67)
Small Pearl-bordered Fritillary	13(10)	23(26)	44(36)	4(5)	7(10)	1(1)	92(88)
Pearl-bordered Fritillary	1(1)	13(5)	9(8)	-	-	-	23(14)
Mountain Ringlet	-	8(10)	1(2)	-	-	-	9(12)
Scotch Argus	13(9)	12(15)	9(7)	-	6(9)	0(1)	40(41)
Grayling	8(6)	-	9(11)	-	9(9)	-	26(26)
Large Heath	4(2)	15(6)	9(6)	0(1)	10(7)	0(1)	38(23)



Figure 1 Map showing East Scotland branch area and 100km grid squares

The species accounts which follow should be read in conjunction with the corresponding sections of the original RAP which give more background information. Butterfly Conservation has produced guidance documents ('Priority Species Factsheets') for most of the butterflies covered here; these documents describe the butterfly, its life cycle, foodplants and habitats and then go on to give advice on habitat management. They can be found at <<http://butterfly-conservation.org/3545/Butterfly-Factsheets.html>> and <<http://butterfly-conservation.org/2244/habitat-and-species-leaflets.html>>. Additionally, a general leaflet on moths and butterflies of the Scottish uplands, which covers many species, is available here <<http://eastscotland-butterflies.org.uk/downloads/moths%20&%20butterflies%20of%20the%20Scottish%20uplands.pdf>> .

## 5. High Priority Butterflies

### 5.1 Small Blue

This species was added to the list of UKBAP priorities in 2007 due to its substantial contraction in range over recent decades and there have been losses of several sites in the branch area in recent years. Having said that, a very small number of sites have been newly discovered (or re-discovered) in the same period and there is a growing momentum to both safeguard existing colonies and to encourage their spread to nearby suitable areas. These factors go together to make this a high priority species - it is threatened but there should be opportunities to help it.

The areas holding colonies are mainly the N Aberdeenshire coast and the Angus coast from Barry Buddon to St Cyrus with isolated colonies inland at Glamis (located 2008), on the Berwickshire coast near Lamberton and at Muchalls S of Aberdeen. Loss of sites has occurred on disused railway lines which have been allowed to scrub over.

Action	Timescale	Partners and links
<b>Angus</b> <ul style="list-style-type: none"> <li>➤ resurvey coastal areas for butterfly and Kidney Vetch</li> <li>➤ check inland railway sites</li> <li>➤ ensure landowners &amp; managers are aware of colonies</li> <li>➤ monitor and report on main sites</li> <li>➤ develop plans to extend colonies</li> </ul>	2012-2013  2012-2013  2013 onwards  annually  2013	Tayside Biodiversity Partnership, SWT, NTS, SNH
<b>Berwickshire</b> <ul style="list-style-type: none"> <li>➤ search previous and potential coastal sites</li> <li>➤ monitor and report on main site</li> </ul>	2012-2013  annually	Berwick Wildlife Group, Berwickshire & N Northumberland Coast European Marine Site Implementation Officer, SWT, SNH, Borders LBAP, NTS
<b>Aberdeenshire</b> <ul style="list-style-type: none"> <li>➤ check known previous sites</li> </ul>	2013-2014	SNH
<b>Site Register</b> <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	Local Authorities, Local Biodiversity Partnerships, Biological Records Centres, Forestry Commission, SRDP
<b>Review this Plan</b>	2015	

## 5.2 Pearl-bordered Fritillary

This is a UKBAP Priority species which continues to decline sharply, especially in England and Wales but also perhaps within the branch area. It is one of the primary focuses of Butterfly Conservation's efforts in England with several projects completed or underway. Scotland's colonies appear to be relatively stable and so a high priority has been given to ensuring their survival. It is a high priority species in the Scottish Forestry Strategy of Forestry Commission Scotland.

Its main stronghold remains on Deeside where it appears to be doing well, but it also occurs widely across upland Perthshire. There has been recent intensive survey work around Lochs Tummel and Rannoch which should be built on. There are no colonies further south.

Action	Timescale	Partners and links
<b>Site Surveys</b> <ul style="list-style-type: none"> <li>➤ check all known sites and assess habitats over a four year period</li> <li>➤ continue to search previous and potential sites</li> </ul>	<p>2013-2016</p> <p>2013 onwards</p>	SNH, FCS, RSPB, NTS
<b>Conservation</b> <ul style="list-style-type: none"> <li>➤ identify core sites</li> <li>➤ continue to work with FCS and other landowners of core sites and provide them with management guidelines</li> </ul>	<p>2013</p> <p>2013-2015</p>	FCS
<b>Site monitoring</b> <ul style="list-style-type: none"> <li>➤ continue monitoring on established sites in BMS</li> </ul>	annually	SNH, FCS
<b>Site Register</b> <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	Local Authorities, Forestry Commission, Local Biodiversity Partnerships, Biological Records Centres, SRDP
Review this Plan	2015	

## 5.3 Large Heath

The data in Table 1 show a roughly 40% drop in the number of 10km squares with records of this UKBAP butterfly in the branch area between 1995-1999 and 2005-2009. While it is quite possible that this is partly a result of a reduced recording effort for this species, some additional sites were confirmed in the intervening years 2000-2004. Some, but not all of the apparent losses are in lowland areas, where the impacts of climate change on its habitats may be occurring, but there is not enough information to be sure whether this is a trend. This confusing picture requires clarification.

Action	Timescale	Partners and links
<b>Site Surveys</b> <ul style="list-style-type: none"> <li>➤ check recently unrecorded sites and assess habitats over a four year period</li> </ul>	2013-2016	SNH, SWT, NTS, FCS
<b>Conservation</b> <ul style="list-style-type: none"> <li>➤ identify core sites</li> </ul>	2013	



<ul style="list-style-type: none"> <li>➤ talk to landowners of core sites and provide them with management guidelines</li> </ul>	2013-2015	
<b>Site monitoring</b> <ul style="list-style-type: none"> <li>➤ continue monitoring on existing BMS sites</li> <li>➤ establish a further suitable lowland site for timed counts</li> </ul>	annually  2013	SNH
<b>Site Register</b> <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	Local Authorities, Forestry Commission, Local Biodiversity Partnerships, Biological Records Centres, SRDP
<b>Review this Plan</b>	2015	

## 6. Medium Priority Butterflies

### 6.1 Northern Brown Argus

Eastern Scotland probably holds the majority of sites in the UK for this UKBAP Priority species and for this reason alone it should be retained as a priority for the branch. It appears to be holding its own in many areas, although there has been a significant drop in numbers recorded at UK Butterfly Monitoring sites (these may not be in the branch area).

Important areas for this species are Deeside, Western Perthshire, the Sidlaw Hills and much of the Borders. Searches have revealed new sites in recent years, but some sites have been lost or are threatened by over-grazing, scrub invasion and tree-planting.

Action	Timescale	Partners and links
<b>Site Surveys</b> <ul style="list-style-type: none"> <li>➤ targeted surveys and searches in under-recorded areas or those with potentially threatened sites e.g. Deeside and Perthshire</li> </ul>	2013 onwards	SNH, NTS, FCS
<b>Site monitoring</b> <ul style="list-style-type: none"> <li>➤ continue timed counts or other regular monitoring at specific sites</li> <li>➤ increase the number of these by two</li> </ul>	annually  2014	SNH
<b>Conservation</b> <ul style="list-style-type: none"> <li>➤ identify core sites in each area and publicise these</li> </ul>	2014	
<b>Site Register</b> <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	Local Authorities, Forestry Commission, Local Biodiversity Partnerships, Biological Records Centres, SRDP
<b>Review this Plan</b>	2015	

### 6.2 Small Pearl-bordered Fritillary

This was added to the UKBAP Priority species list at the 2007 review on account of a very substantial reduction in its distribution (89% over 25 years), although much of this has occurred in England and Wales, with low, if any, recent reduction in Scotland. Across much of the branch area it appears to be stable but has been given a medium priority because of the overall national (UK) situation.

Colonies are found in all parts of the branch, but it is scarce in NE Aberdeenshire, lowland Angus, much of Fife, the Lothians and the Borders.

Action	Timescale	Partners and links
Site Surveys <ul style="list-style-type: none"> <li>➤ search previous known sites where no recent records</li> </ul>	2013 onwards	
Site monitoring <ul style="list-style-type: none"> <li>➤ continue monitoring on established sites in BMS</li> <li>➤ start timed counts at an additional site</li> </ul>	annually 2013	SNH
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	Local Authorities, Forestry Commission, Local Biodiversity Partnerships, Biological Records Centres, SRDP
Review this Plan	2015	

### 6.3 Mountain Ringlet

This BAP Priority species is mostly confined to Scotland and the branch area includes a significant proportion of the known UK sites and for this reason it has been given a medium priority here as it does not appear to be under threat at the present time. There have been suggestions that the extent of suitable habitat could be reduced from climate change impacts, but evidence for this is missing. Recent survey work has revealed a number of new sites in the Breadalbane Hills area, which is the main stronghold for the species in the branch. Survey work for this montane or sub-montane butterfly can be hampered by poor weather conditions during the flight period.

Action	Timescale	Partners and links
Site Surveys <ul style="list-style-type: none"> <li>➤ continue searches in areas of suitable habitat, particularly in Perthshire west of the A9</li> <li>➤ include habitat scores in searches</li> </ul>	2013 onwards	
Site monitoring <ul style="list-style-type: none"> <li>➤ continue monitoring at Ben Lawers BMS site</li> </ul>	annually	SNH

➤ identify a further site for timed counts	2013	
Site Register ➤ establish and maintain a register of all sites and habitat scores ➤ ensure Planning and other authorities have access to this and to guidance on habitat management	2013 onwards	Local Authorities, Forestry Commission, Local Biodiversity Partnerships, Biological Records Centres, SRDP
Review this Plan	2015	

## 7. Low Priority Butterflies

### 7.1 Scotch Argus

Although this is not a UKBAP species and there is no indication of any range contraction in the branch's area, there have been concerns that in time climate change will reduce the extent of suitable habitats. The long-term population trend in Scotland shows a significant increase in numbers. In some parts of its range in the branch, recent searches have revealed colonies at apparently new sites. The low priority given is because the overall situation seems satisfactory at the moment with no obvious threats.

Colonies are present in Banffshire, upper Deeside, much of N Perthshire and SW Borders.

Guidance for land managers on the creation and maintenance of suitable habitats for this butterfly has been published: <<http://eastscotland-butterflies.org.uk/downloads/Scotch%20Argus%20leaflet.pdf>>.

Action	Timescale	Partners and links
Site monitoring ➤ continue monitoring on established sites in BMS	annually	SNH
Site Register ➤ establish and maintain a register of all sites ➤ ensure Planning and other authorities have access to this and to guidance on habitat management	2013 onwards	Local Authorities, Forestry Commission, Borders Forest Trust, Local Biodiversity Partnerships, Biological Records Centres, SRDP
Review this Plan	2015	

### 7.2 Grayling

This butterfly was added to the UKBAP Priority list when it was revised in 2007 on account of substantial reductions in both distribution (45%) and abundance (51%) which occurred in the UK over a thirty five year period. It remains widespread across the UK and in the branch area there has been no significant change in the number of occupied 10km squares and for this reason it has been assigned a low priority for action.

It is almost entirely restricted to coastal sites and colonies occur in most areas with the exception of much of the Fife coast. A few have been recorded at sites a short distance inland.

Action	Timescale	Partners and links
Site monitoring ➤ continue monitoring on established sites in BMS	annually	

<b>Site Register</b> <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and are provided with guidance on habitat management</li> </ul>	2013 onwards	Local Authorities, Local Biodiversity Partnerships, Biological Records Centres, SRDP
Review this Plan	2015	

## 8. Identification of Priority Species - Moths

Consideration has been given to all the moths which were included in the original RAP with either high or medium priority for action (21 species), together with a further 24 species, many of which have definitely or apparently undergone significant losses either across the UK or more locally. Others are scarce species which are often found in upland habitats. Some are ones which can be attracted using pheromone lures or lend themselves to surveys by less experienced recorders.

Table 3 lists those moths from the whole group of 45 species which have now been given a high priority (5 species) or a medium priority (11 species) for action. It also includes brief comments on the status of each species and how this might have changed with time. Data on the distribution and abundance of moths are in different forms and over different timescales than those for butterflies and so the approaches taken to decide on priorities are somewhat different too. The distribution maps from the National Moth Recording Scheme, published in late 2010, although provisional, give a good picture of the current distribution of all macromoths and they can also sometimes give an indication of changes in distribution which have occurred. However, caution is needed when comparing present-day distributions with those from many years ago because the bulk of modern moth records come from light-trapping, whereas in former times there was an emphasis on other methods of finding moths and this may have resulted in apparent recent losses for species which are not attracted to light. Some habitats which are more remote or otherwise difficult to access may not have been studied so much recently and this too could lead to apparent declines for species which rely on such habitats.

Table 4 shows the remaining 29 species which have been assigned a low priority.

Table 3 East Scotland Moths assigned high or medium priority

British checklist number	Species	Status from UKBAP, Heath, NMRS, other recent data, etc.	Priority in 1 <sup>st</sup> edition RAP (2000)	Revised Priority (2013)
166	Mountain Burnet	RDB; extremely localised with all sites in branch area; already covered by Burnet Study Group; day-flying.	Medium	High
1644	Kentish Glory	Na; localised; branch holds significant part of population; probable range contraction; day- and night-flying.	Medium	High
1908	Dark Bordered Beauty	RDB; UKBAP Priority; of only 3 known Scottish populations branch holds one cluster of sites	High	High

		in Aberdeenshire and most English sites lost; day- and night-flying.		
2125	Northern Dart	Na; UKBAP Priority; branch holds maybe 50% of current distribution; fewer recent records to the west.	High	High
2143	Small Dark Yellow Underwing	Na; UKBAP Priority; few post-2000 records despite some targeted recording but could still be under-recorded; day-flying.	Medium	High
162	Goat Moth	Nb; UKBAP Priority; general decline S of Great Glen; no post-2000 records Perthshire where it has occurred in branch area.	---	Medium
376	Welsh Clearwing	RDB; very localised with some sites in branch area at Rannoch; adult male attracted to pheromone lures.	Medium	Medium
1780	Slender-striped Rufous	Na; found at a thin scattering of sites across N Scotland with some in branch area; could be under-recorded; flies in sunshine and at night; larval foodplants in wild unconfirmed.	Medium	Medium
1805	Heath Rivulet	Nb; really rather scarce; possible losses across Scotland; could also be under-recorded. Habitat is moorland and other upland areas plus some coastal sites; largely diurnal and also comes to light.	---	Medium
1895	Netted Mountain Moth	RDB; UKBAP Priority; branch holds several areas with the moth; appears fairly stable; day-flying.	High	Medium
1929	Rannoch Brindled Beauty	Na; status not clear as not recorded from most sites in branch since 2000, so could be in decline.	Medium	Medium
2017	Small Chocolate-tip	Nb; apparent large decline with several former records in branch area. Comes to light but most easily recorded as larva.	---	Medium
2116	Cousin German	Na; UKBAP Priority; branch holds maybe 50% of UK distribution; appears fairly stable.	High	Medium
2144	Broad-bordered White Underwing	RDB; not recorded post-2000 from some sites; could be under-recorded; day-flying.	Medium	Medium
2228	Rannoch Sprawler	RDB; situation appears stable with some sites in branch area.	Medium	Medium
2242	Sword-grass	Nb; UKBAP Priority; appears to have been lost from many UK sites S of the Forth; could be a stronghold in N of branch.	High	Medium

Table 4 East Scotland Moths assigned low priority

British Checklist number	Species	Status from UKBAP, Heath, NMRS, other recent data, etc.	Priority in 1 <sup>st</sup> edition RAP (2000)	Priority (2013)
163	Forester	UKBAP Priority; just one or two Borders records from early twentieth century; day-flying.	---	Low
371	Lunar Hornet Moth	Apparent decline across UK which could be due to recording method; recent records mostly from Aberdeenshire; could be more widespread. Adult rarely seen so effective surveys depend on searching for larval signs.	---	Low
381	Large Red-belted Clearwing	Nb; apparent decline across UK; recent records mostly Aberdeenshire. Adult male attracted to pheromone lures.	---	Low
383	Thrift Clearwing	Nb; probably stable across UK but branch has colonies with only pre-2000 records on East coast; post-2000 records on Moray Firth. Adult male attracted to pheromone lures.	---	Low
1723	Red Carpet	Apparent decline across S part of range; could be under-recorded. High moorland habitats.	---	Low
1733	Lead Belle	Apparent losses in parts of range; looks stable in N. Distinction from July Belle can be difficult.	---	Low
1743	Yellow-ringed Carpet	Nb; apparent decline but thin and limited distribution. Could be under-recorded. Habitat generally upland, rocky areas.	---	Low
1749	Dark Spinach	National and local losses; mostly a southern species but scattering of records in branch.	---	Low
1753	Striped Twin-spot Carpet	NMRS shows only about half of records are post-2000; may be under-recorded. Habitat mostly moorland, often with rocks.	---	Low
1757	Spinach	Previously fairly widespread in branch area; many losses perhaps. Larval foodplants blackcurrant, redcurrant.	---	Low
1774	Beech-green Carpet	Appears to have declined greatly in England & Wales but still records from Aberdeenshire and Perthshire.	---	Low
1787	Argent & Sable	Nb; UKBAP Priority; very few sites in branch area and western populations and distribution appear stable.	High	Low
1788	Scarce Tissue	Around half of NMRS records are pre-2000; could be more widespread. Utilises cultivated		



		<i>Berberis</i> in gardens, etc. as well as Barberry.	---	Low
1880	Barred Tooth-striped	Na; UKBAP Priority; just one recent record in branch from Perthshire.	High	Low
1865	Broom-tip	Nb; good number of sites in branch area; possible losses Angus and Perthshire; big decline in England.	Medium	Low
1866	Manchester Treble-bar	Possible losses across N England into SW Scotland; branch contains a remaining stronghold. Habitat is wet moorland.	---	Low
1896	Rannoch Looper	Na; apparent losses in branch area, though may be under-recorded. Day-flying in woodland glades with blaeberry.	---	Low
1897	V-Moth	Major losses across whole of UK; a few recent records from branch area. Larval foodplants are blackcurrant, redcurrant and gooseberry.	---	Low
1963	Scotch Annulet	Nb; exclusively Scottish; apparent loss of sites in branch area; could be under-recorded. Habitats are mountains and moorland.	---	Low
1965	Black Mountain Moth	Na; really quite scarce but appears stable; branch area holds several sites. A montane species which flies in sunshine; adults mostly in odd-numbered years.	---	Low
1969	Grey Scalloped Bar	Possible national decline but a scatter of records across branch area including recently.	Medium	Low
1982	Narrow-bordered Bee Hawkmoth	Nb; UKBAP Priority; a few recent records from Aberdeenshire and one from Borders; could still be more widespread; day-flying.	High	Low
2093	Sand Dart	Nb; branch area holds all post-2000 Scottish records; could be under-recorded. Habitat is coastal sand dunes.	---	Low
2105	Dotted Rustic	Branch area holds one of the few remaining concentrations of post-2000 records; distribution fluctuates for unknown reasons.	---	Low
2108	Lunar Yellow Underwing	Nb; UKBAP Priority; only recorded recently from one site in branch; many former British colonies lost.	High	Low
2131	Square-spotted Clay	Nb; only one recent record, from Pitlochry area; always a rarity.	High	Low
2149	Silvery Arches	Nb; apparent major decline across England & Wales; Scottish Branches appear to hold most of remaining sites, but possible losses here too. Habitat is	---	Low

		scrubby woodland on moorland		
2288	Sweet Gale Moth	Na; Highland & East Branch hold most sites; possible decline. Habitat is moorland	---	Low
2324	Northern Arches	Na; endemic Scottish subspecies, wide scatter of records in N of branch; possible decline.	Medium	Low

Looking firstly at the 21 species from the original RAP, two have been retained at high priority:

- Dark Bordered Beauty
- Northern Dart

Another three species have had their priority raised from medium to high:

- Mountain Burnet
- Kentish Glory
- Small Dark Yellow Underwing

Three species have been reduced from high to medium priority:

- Netted Mountain Moth
- Cousin German
- Sword-grass

Six species have been retained as medium priority:

- Welsh Clearwing
- Slender-striped Rufous
- Rannoch Brindled Beauty
- Broad-bordered White Underwing
- Rannoch Sprawler

A further eight species have been reduced from high or medium priority to low priority:

- Argent & Sable
- Barred Tooth-striped
- Broom-tip
- Narrow-bordered Bee Hawkmoth
- Lunar Yellow Underwing
- Square-spotted Clay
- Grey Scalloped Bar
- Northern Arches

Of the additional species considered (i.e. those not in the original RAP) three have been assigned a medium priority:

- Goat Moth
- Heath Rivulet
- Small Chocolate-tip

All other moths considered have a low priority.

Micromoths have not been considered here, although it is recognised that there are significant gaps in our knowledge of their distributions and that many are deserving of detailed study and conservation.

The species accounts which follow give brief reasoning for the priority assigned to all the high and medium priority species (sections 9 and 10) and should be read in conjunction with the corresponding sections of the original RAP which give more background information. An action plan is given for each of these moths.

The reasons for reducing species' priorities from those in the original RAP to low priority are also given (section 11) together with comments on some further low priority moths (section 12).

Whilst no actions are specified for any of the low priority moths, these are, nevertheless, all relatively scarce or localised species and so targeting previously-known areas with no recent records remains very worthwhile.

## 9. High Priority Moths

### 9.1 Mountain Burnet

All of the known UK sites for this extremely localised RDB species are within the branch area and, although its status appears stable, as a primarily montane species it could be threatened by climate change so it is appropriate to remain vigilant, hence the high priority given for it. A survey for the Montane Insects Project carried out in 2009 located 6 colonies in addition to 6 already known, but there is the potential to find further colonies. The Burnet Study Group reviews work on this species annually.

Action	Timescale	Partners and links
Site surveys ➤ searches in areas of suitable habitat and at the right elevation near Braemar	2013-2015	
Site Register ➤ establish and maintain a register of all sites ➤ ensure Planning and other authorities have access to this	2013 onwards	LBAPs, Local Authorities, SNH, NTS
Review this Plan	2015	

### 9.2 Kentish Glory

This species has a very localised distribution, now confined to areas of upland Scotland with suitable extensive young birch. The branch holds a significant proportion of the total UK population. Although it has been a continuing focus of attention for lepidopterists to some extent for a long while there is still a need for a more coordinated approach. Deeside and the Rannoch area hold populations, but there are no post-2000 records from the latter.

The habitat requirements of the moth are well established.

Action	Timescale	Partners and links
Site surveys ➤ search previous and potential sites, especially in the Rannoch and	2013-2015	

Tummel areas and assess site condition		
Site monitoring <ul style="list-style-type: none"> <li>➤ identify core site(s) and establish regular monitoring</li> </ul>	2013 onwards	
Conservation <ul style="list-style-type: none"> <li>➤ be alert for developments in areas holding the moth</li> <li>➤ provide guidance to land managers on habitat maintenance techniques</li> </ul>	2013 onwards	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

### 9.3 Dark Bordered Beauty

In Scotland there is currently known to be just three populations, from a total of four in the UK, and one of these is in the branch area. There are old records from the Borders. This moth is both a Red Data Book species and is on the UKBAP Priority list, so it remains a high priority for attention. This species flies by day and also comes to light which aids searches and survey work. Work is overseen by the UKBAP Steering Group comprising Butterfly Conservation Scotland, RSPB, SNH and Cairngorm National Park Authority.

Guidance on habitat maintenance is available.

Action	Timescale	Partners and links
Site surveys and monitoring <ul style="list-style-type: none"> <li>➤ continue to monitor Aberdeenshire sites</li> <li>➤ continue to search areas of potentially good habitat elsewhere, including in the Borders</li> </ul>	2013-2015 2012-2015	UKBAP Steering Group Aberdeenshire Council and Balmoral Estate Rangers  Tweed Forum, SWT
Conservation <ul style="list-style-type: none"> <li>➤ continue to liaise with land managers re appropriate management and assist with vegetation cutting if required</li> </ul>	2013 onwards	Balmoral and Invercauld Estates
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2012 onwards	Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

#### 9.4 Northern Dart

Restricted to areas over 450m, this UKBAP Priority species only occurs in the Scottish uplands and there are signs of a decline, although this may be linked to under-recording in some areas. It has a two-year life-cycle - adults may only be seen in alternate years, but larvae searches are also possible. The branch holds around half the known and previous sites and so it remains an important moth for action, hence the high priority. Post-2000 records have only come from four Aberdeenshire 10km squares and there have been no records from the area south of Loch Rannoch since 1978, but it may still occur there as it is a difficult species to survey. As a primarily montane species it could be threatened by climate change.

Action	Timescale	Partners and links
Site surveys ➤ check areas S of Loch Rannoch where previously seen	2013-2015	
Site Register ➤ establish and maintain a register of all sites ➤ ensure Planning and other authorities have access to this and to guidance on habitat management	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

#### 9.5 Small Dark Yellow Underwing

An upland species which is restricted to Bearberry heath habitat in central northern Scotland and which was added to the UKBAP Priority list when this was revised in 2007. There may have been losses from some areas on the basis of relatively few 10km squares with post-2000 records and targeted surveys have produced few recent records. However, recent survey work has confirmed that the moth occurs at two sites in the Rannoch area but most of the former sites in W Aberdeenshire have no post-2000 records. The moth is active by day but its exact requirements are not understood. Afforestation, poor heathland management and development are the main threats. Because of its localised distribution and the branch holding a good proportion of sites and its possible decline it has been given high priority.

Action	Timescale	Partners and links
Site surveys ➤ check known or previous sites, especially in Aberdeenshire	2013-2015	
Conservation ➤ be alert for developments in areas holding the moth	2013 onwards	
Site Register ➤ establish and maintain a register of all sites ➤ ensure Planning and other authorities have access to this and to guidance on habitat management	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

## 10. Medium Priority Moths

### 10.1 Goat Moth

A species added to the UKBAP Priority list when this was revised in 2007. It has declined over much of England, but has always been localised in Scotland, mainly to the north of the Great Glen. There are several sites with records in Perthshire, but no recent sightings. It would be worthwhile revisiting these.

Action	Timescale	Partners and links
Site surveys ➤ check areas in Perthshire where previously seen	2013-2015	
Site Register ➤ establish and maintain a register of all sites ➤ alert landowners to 'infected' trees ➤ ensure Planning and other authorities have access to this	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

### 10.2 Welsh Clearwing

A very localised RDB species with all branch records coming from the Loch Rannoch area and because of the moth's rarity it remains a priority for survey work and conservation. Recent survey work has confirmed some sites and also indicated new ones; some historical sites have yet to be re-examined. Survey techniques, although time-consuming, are well-established and include the use of pheromone lures.

Action	Timescale	Partners and links
Site surveys ➤ searches in areas to the W of L Rannoch and at its E end	2013-2015	
Site monitoring ➤ identify and monitor suitable key site(s)	annually from 2013	
Site Register ➤ establish and maintain a register of all sites ➤ ensure Planning and other authorities have access to this	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

### 10.3 Slender-striped Rufous

This is a scarce moth with a scattering of records, mostly post-2000, across N Scotland having a slight western bias. It may be under-recorded on account of its late flight season (September - October), damp, upland habitat and uncertainty about the larval foodplant(s). However, it is day-flying in sunny conditions and also comes to light.

The branch holds a number of sites but those N of Pitlochry have no recent (post-2000) records.



Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ searches in previously known areas of suitable habitat</li> </ul>	2013-2015	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

#### 10.4 Heath Rivulet

This is a generally very rather scarce upland/coastal species mostly confined to Scotland, which has been recorded to a limited extent since 2000. Within the branch, sites around Peterhead and W Perthshire, including the Rannoch area need checking. It is active by day and also comes to light.

Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ check known or previous sites, especially in Perthshire and S of Peterhead</li> </ul>	2013-2015	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

#### 10.5 Netted Mountain Moth

This UKBAP species which only occurs in Scotland is limited in its distribution to Bearberry heath and the branch holds several sites which are of importance because of the restricted habitat. Spring surveys of bearberry habitat suggest it may now be more common and widespread than the Small Dark Yellow Underwing. Recent survey work has confirmed the presence of the moth in the Rannoch area, but there are sites elsewhere which need checking.

Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ continue surveys and checks on known or previous sites in the Dee valley and Rannoch areas</li> </ul>	2013-2015	
Conservation <ul style="list-style-type: none"> <li>➤ be alert for developments in areas holding the moth</li> </ul>	2013 onwards	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH

authorities have access to this and to guidance on habitat management		
Review this Plan	2015	

### 10.6 Rannoch Brindled Beauty

This species qualifies for medium priority mainly because of its relative rarity (it is limited to upland areas of Scotland) even though new sites were found in the latter part of the twentieth century, particularly across western Perthshire. The branch holds a significant proportion of currently known sites but many of these have not been confirmed post-2000. It occurs in wet, boggy habitats and can be found by day, but its ecology is not well understood.

Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ searches (daytime and light-trapping if practicable) in previously known areas to confirm distribution</li> </ul>	2013-2015	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

### 10.7 Small Chocolate-tip

Formerly quite widespread across much of Britain, this moth has progressively declined in most areas, although it may also be under-recorded in recent years as it is most easily found in the larval stage. There are no post-2000 records from the branch area according to the NMRS. For these reasons it has been given a medium priority.

Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ larval searches at previous known sites plus light-trapping</li> </ul>	2013-2015	
Conservation <ul style="list-style-type: none"> <li>➤ describe and assess habitats holding the moth</li> </ul>	2013 onwards	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

### 10.8 Cousin German

Although the distribution of this UKBAP Priority species appears to be stable, because the branch area holds around half the known UK sites it remains important to check on these to confirm the situation is satisfactory. Hence the medium priority assigned to the moth. It occurs on higher ground with birch woodland and heather and bilberry in the Dee valley and Perthshire, including the Rannoch area.

Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ encourage checks on known or previous sites in the Dee valley and Rannoch areas</li> </ul>	2013-2015	
Site monitoring <ul style="list-style-type: none"> <li>➤ identify and monitor suitable key site(s)</li> </ul>	annually from 2013	
Conservation <ul style="list-style-type: none"> <li>➤ be alert for developments in areas holding the moth</li> </ul>	2013 onwards	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

### 10.9 Broad-bordered White Underwing

A day-flying, montane species which only occurs at altitudes over about 600m and, although the NMRS map suggests possible losses, the lack of post-2000 records from previous sites is almost certainly a result of the habitat being little visited. Recent searches in the Rannoch area and the Borders have located new sites and so this moth could be quite widespread where conditions are suitable. However, a warming of the climate will have impacts and reduce the extent of available habitat, so monitoring of known sites at lower elevation is recommended.

Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ check known or previous sites, especially in Perthshire</li> <li>➤ encourage searches in unexplored areas of suitable high ground</li> </ul>	2013-2015  2014	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

### 10.10 Rannoch Sprawler

Two of the four areas holding this RDB moth are within the branch - around Loch Rannoch and Braemar and there have been recent records from both areas; in particular surveys along the N and S sides of L Rannoch have confirmed its presence at a number of sites. However, there is a need for searches around the loch and in other nearby areas of suitable birchwood habitat. Because of the localised nature of this species it retains a medium priority.

Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ continue and extend surveys in the Loch Rannoch area and to other sites with suitable habitat</li> </ul>	2013-2014	
Conservation <ul style="list-style-type: none"> <li>➤ be alert for developments in areas holding the moth</li> <li>➤ continue to supply data and habitat management information to landowners and managers</li> </ul>	2013 onwards	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

### 10.11 Sword-grass

A formerly widespread UKBAP Priority species which appears to have been almost completely lost from England and Wales but still occurs quite widely across the branch's area, although there have only been two post-2000 records south of the Forth. It is important that the status of the moth in areas which still hold it is carefully monitored to see if the distribution is continuing to shrink or being maintained.

Action	Timescale	Partners and links
Site surveys <ul style="list-style-type: none"> <li>➤ check known sites/areas in Aberdeenshire, Perthshire (including Rannoch) and Tayside</li> </ul>	2013-2015	
Site monitoring <ul style="list-style-type: none"> <li>➤ identify and monitor suitable key site(s)</li> </ul>	annually from 2013	
Site Register <ul style="list-style-type: none"> <li>➤ establish and maintain a register of all sites</li> <li>➤ ensure Planning and other authorities have access to this and to guidance on habitat management</li> </ul>	2013 onwards	LBAPs, Local Authorities, Forestry Commission, SNH
Review this Plan	2015	

## 11. Moths reassigned from high or medium to low priority

### 11.1 Argent & Sable

Although this is a UKBAP Priority species and was given a high priority in the original RAP, it is almost entirely confined to the western parts of Scotland, where it appears to have a stable distribution. Within the branch area there are post-2000 records from just two 10km squares from near Glen Garry. For these reasons it has been given a low priority.

### 11.2 Barred Tooth-striped

There is just a single record of this species from the branch area and doubt has been cast on the accuracy of this so, although it is justifiably a UKBAP species it is not appropriate for effort to be directed to it and so it has a low priority. The type of habitat it uses in Scotland is relatively widespread which would add to the difficulty of locating such an uncommon species.

### 11.3 Broom-tip

This moth has undoubtedly declined in southern Britain but may be little changed in Scotland. In the branch area there are recent records from Aberdeenshire but large areas of Perthshire and Angus have had no records since 2000.

### 11.4 Grey Scalloped Bar

Although this moth has only been recorded in about six 10km squares in the branch area since 2000, it seems probable that this is a result of limited recording effort in suitable habitats. However, some recent records have been from sites not close to moorland areas. A low priority is appropriate and no actions are given here.

### 11.5 Narrow-bordered Bee Hawkmoth

Although primarily a western species, there are post-2000 records for this UKBAP Priority moth from several Aberdeenshire sites and from one in the Borders. It has apparently declined greatly across most of England and Wales.

Guidance on habitat management is available; loss of damp areas with the larval foodplant Devil's-bit Scabious is probably the major threat. The adult is active and feeds by day.

### 11.6 Lunar Yellow Underwing

This UKBAP Priority species was formerly recorded at a small number of widely scattered sites across the branch area. Those in the south had been lost by 1960 and there is only one post-2000 record, from Tentsmuir. Although it remains a national (UK) priority, it is inappropriate for it to retain its high priority status in East Scotland, not least because of the slim chance of locating further sites.

Guidance on this moth's habitat requirements is available here <[http://eastscotland-butterflies.org.uk/downloads/lunar\\_yellow\\_underwing.pdf](http://eastscotland-butterflies.org.uk/downloads/lunar_yellow_underwing.pdf)>.

### 11.7 Square-spotted Clay

This moth is a UKBAP Priority species, although it remains quite widespread in the SE quarter of England with records also coming from Wales and northern England. It has always been very rare in Scotland and some doubt has been cast on the very few records from the branch area. For these reasons and the fact that it occurs in a wide range of broad-leaved habitats (which makes targeted searches problematic) it has been given a low priority and no actions are proposed.

## 11.8 Northern Arches

The branch area holds a fair proportion of known sites for this species which inhabits upland moorland areas. Its true distribution remains somewhat unclear, however, as although there is a scattering of recent records across Aberdeenshire there are no recent records from previous sites in the Rannoch area and yet it has been found for the first time at four sites in the Borders in the past decade. So it may be more widespread than previously thought and is of low conservation concern. No actions are proposed.

## 12. Comments on some other Low Priority Moths

### 12.1 Forester

This species was added to the UKBAP Priority list when this was revised in 2007 as it has undergone a large decline over much of England and Wales, although it has always occurred only in a few small areas north of the Tees. It is active by day and feeds at flowers, but there are only two records in the branch area and these were in the Borders early in the twentieth century. Although apparently suitable open habitats may be widespread, the lack of records suggests that it must be extremely scarce if it still exists here. For these reasons it has a low priority and no actions are given.

### 12.2 Large Red-belted Clearwing

The lack of post-2000 records for this species across most of its British range suggests that it is in decline; this is the picture in the branch area as well. An up-to-date assessment of its status should be obtained, hence the medium priority which is assigned. The male is attracted to pheromone lures.

### 12.3 Thrift Clearwing

Scottish sites for this entirely coastal moth are few and mostly restricted to the branch area - on the Moray Firth, S of Aberdeen and Angus, although only the Moray sites have post-2000 records. It warrants a medium priority on account of its rarity and lack of clarity over its current status. It is day-flying and attracted to pheromone lures.

### 12.4 Spinach

There are concerns nationally over the decline of this species as measured by RIS data. It was formerly fairly widespread across the branch, but there are only records from two 10km squares in the NMRS and its current status requires clarifying. Pest control on its larval foodplants (blackcurrants and redcurrants) and the increasing use of poly tunnels, including by organic growers, will have greatly limited their availability.

### 12.5 Scarce Tissue

There are old records and one very recent record of this species from the Borders and it has recently colonised the Banchory area of Aberdeenshire. It has apparently experienced losses in England and has been given some priority because its larvae use cultivated berberis plants as well as wild barberry, so it can be searched for in urban gardens.

### 12.6 Rannoch Looper

This species has a resident population which is localised to central northern Scotland, including sites in Perthshire and Aberdeenshire, but it has a limited distribution and its current status is not well defined. Males are active by day and the moth also comes to light. Its habitat requirements are quite well understood - long-established pine and birch woodland with extensive Blaeberry and open areas.



### 12.7 V-Moth

Formerly widespread across much of Britain, this species has suffered a major decline as measured by the RIS data and the NMRS maps, hence its priority. The reason is probably the reduced availability of soft fruit larval foodplants (currants, gooseberries) as these are less grown by the public and commercial growers often apply insecticides and increasingly use poly tunnels.

### 12.8 Scotch Annulet

There are widespread records of this moth from upland areas, but plenty of former sites in Aberdeenshire and Perthshire have no recent sightings and so the current status need clarification - hence the priority.

### 12.9 Silvery Arches

This moth appears to have been lost from most of its English and Welsh sites but could still have a stable distribution in Scotland. However, in the branch area only three of the eleven 10km squares with records shown on the NBN and NMRS maps have post-2000 records, so the situation is not clear and priority should be given to this species.

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