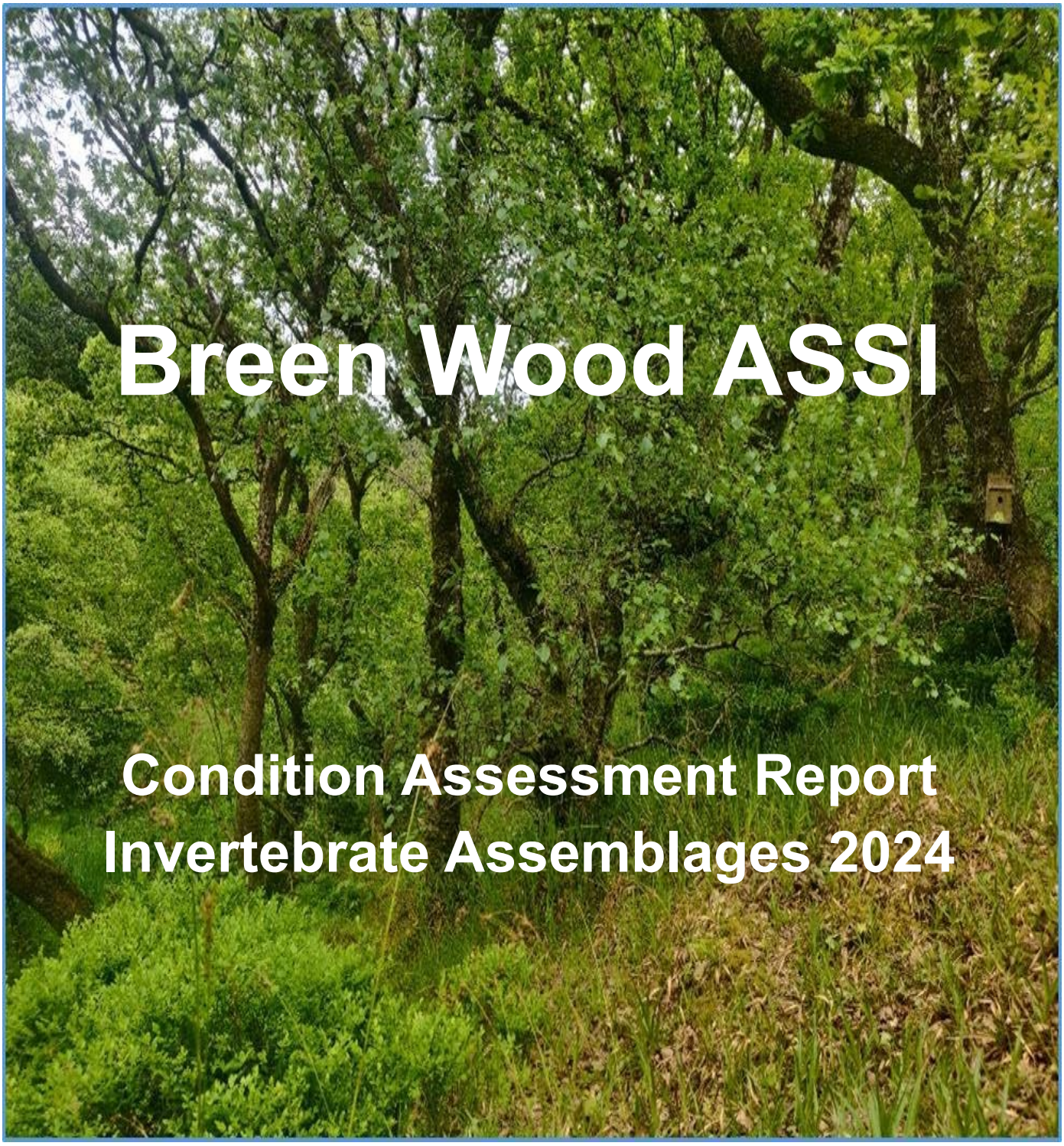
Northern Ireland Environment Agency
Gníomhaireacht Comhshaoil Thuaisceart Éireann
Norlin Airlan Environment Agency
www.daera-ni.gov.uk



Breen Wood ASSI

Condition Assessment Report
Invertebrate Assemblages 2024

Sustainability *at the heart of a living, working, active landscape valued by everyone.*

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An Agency wi'in the Depairtment o Fairmin, Environment an' Kintra Matthers

Breen Wood ASSI Condition Assessment Report
Terrestrial Invertebrate Features 2024

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Acknowledgements

The continued stewardship of the special lands within the ASSI, and access permission to undertake monitoring, is acknowledged and in particular the assistance of the DAERA Forest Service. Many protected areas in Northern Ireland are owned and managed by private landowners and farmers and are not accessible to the public.

Summary

Using JNCC Common Standards Monitoring methodology, the Terrestrial Invertebrate features of Breen Wood ASSI are currently defined as:

1. Decaying wood (epiphytic and saproxylic) assemblage – **Favourable**
2. Sheltered humid field layer assemblage – **Favourable**
3. Woodland moth assemblage – **Favourable**

Four assemblages were assessed in 2007 with separate assemblages for epiphytic and saproxylic invertebrate fauna. However there is considerable overlap between these feature assemblages and their locations within the site and it was concluded that a single assemblage would be more appropriate. As in 2007 all the assemblages were assessed as favourable condition.

An additional CSM assessment was undertaken by Buglife – the Invertebrate Conservation Trust over two years in 2017 & 2019 (woodland moths). Results were similar to 2007 & 2024, although a partial light-trapping session meant that the woodland moth assemblage was unfavourable.

Indirect attributes relating to habitat extent, canopy open-ness and retention of dead wood were all assessed as favourable.

Decaying wood and field layer invertebrates were sampled by a combination of sweeping and hand collecting on 31st May 2024. Additional species were obtained in a flight interceptor trap positioned at a similar location to the trap deployed in 2007.

The woodland moth assemblage was sampled by five actinic light traps at locations similar to those used in 2007. These records were augmented by additional trapping by a local moth expert.

Overall, Breen Wood ASSI retains much of its diversity and naturalness, and remains a special place.

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1. Condition Statement

The interest features of Breen Wood ASSI and their condition status are summarised in Table 1 below.

It is important to note that under the Common Standards Monitoring methodology, a site is classified as unfavourable if any primary attribute is failing. In many cases, these sites continue to represent excellent examples of Northern Ireland's best natural assets.

This report deals solely with the invertebrate assemblages listed in Table 1. The site contains other features of interest including Breeding bird assemblage, Oakwood, and Wet woodland.

Table 1: Breen Wood ASSI Interest Features summary results

ASSI Features	Reporting responsibility	Condition Assessment			
		2020-2025	2014-2019	2008-2013	2002-2007
Decaying wood (epiphytic & saproxylic) assemblage	Species – Invertebrate	Favourable 4 favourable attributes 0 unfavourable attributes	Unassessed	Unassessed	Favourable
Sheltered humid field layer assemblage	Species – Invertebrate	Favourable 2 favourable attributes 0 unfavourable attributes	Unassessed	Unassessed	Favourable
Woodland moth assemblage	Species – Invertebrate	Favourable 3 favourable attributes 0 unfavourable attributes	Unassessed	Unassessed	Favourable

*More detailed information on attribute breakdown is available in Section 7 and Appendix 1 of this report.

2. Background

The Department of Agriculture, Environment and Rural Affairs (hereafter referred to as the Department) in its role as the Statutory Nature Conservation Body, undertakes regular monitoring of the special assets, or features, contained within specially protected sites across Northern Ireland. These sites include Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Areas of Special Scientific Interest (ASSIs). Further details can be found at https://www.daera-ni.gov.uk/topics/protected-areas.

This monitoring enables reporting on the status of the special features which are protected, enables objective feedback on current management measures and can inform any subsequent management intentions. Results can also contribute to the assessment of relevant policies in place, and also inform future policy development. In addition, the results inform the implementation of a range of obligations under both national and international policy and legislation. These include: the Convention on Biological Diversity (CBD), the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), the Bern Convention, the Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 (as amended), the Environment (Northern Ireland) Order 2002 (as amended), the Marine Strategy Framework Directive (MSFD), and the Water Framework Directive (WFD).

The monitoring undertaken is called Condition Assessment, as it is the condition of the special features that is being assessed. The approach is also known as Common Standards Monitoring, because the methodology aims to result in a *common standard* being reported across sites in NI and the rest of the UK. The Department aims to complete a rolling programme of ASSI Condition Assessment and reporting every six years.

The monitoring is focused, as outlined in the Joint Nature Conservation Committee (JNCC) guidance (JNCC, 2004a), primarily on the interest features for which the site has been notified or designated. They include habitat types, species and earth science features, as well as complex features such as habitat mosaics and species assemblages. Each interest feature must be identified, monitored, assessed and reported upon separately.
Monitoring and assessment of the condition of the interest features of individual sites enables relevant authorities, agencies and landowners to adapt management measures accordingly to ensure conservation objectives are achieved.

The Conservation Objectives for each site contain details of the attributes (measurable targets) for each interest feature within the site: the condition assessment determines the condition status of each interest feature when compared against relevant feature attributes.

The JNCC Statement on Common Standards Monitoring (JNCC, 2019) assesses interest features using one of the following four condition categories. These are all common standards:

- **Favourable**: Condition objectives are being met
- **Unfavourable**: Condition objectives are not being met
- **Partially destroyed**: The feature, habitat or processes essential to support it have been removed or irretrievably altered. A condition assessment should be carried out on the remaining, intact feature.
- **Destroyed**: The interest feature, its supporting habitat or processes, have been affected (completely or partially) to such an extent that there is no hope of recovery.

The JNCC has listed the following trend qualifiers which were previously considered part of the common standards as optional, which the Department may choose to use as required:

- **Favourable – maintained**: The conservation objectives which were met at the previous assessment are still being met.
- **Favourable – recovered**: The interest feature has gained favourable condition, having been previously recorded as unfavourable.
- **Favourable – declining**: All targets are being met, but identified pressures indicate that unfavourable condition will result if these pressures are left unaddressed.
- **Unfavourable – recovering:** The interest feature has begun to show, or is continuing to show, a trend towards favourable condition.
- **Unfavourable - no change**. The interest feature is unfavourable but neither declining nor recovering.
- **Unfavourable - declining**. The interest feature is declining as a consequence of damaging activity, but where recovery is possible, either spontaneously or if suitable management input is made.

3. ASSI Overview

Breen Wood is situated approximately 6.5km south of Ballycastle in the north-east of Northern Ireland. It is an oak woodland extending for approximately 36 Ha and is surrounded by semi-improved agricultural grassland to the north and commercial conifer plantations to the south.

The site is designated for its woodland habitats and fauna and is one of the best examples of an acidic oak woodland in Northern Ireland.

Breen Wood ASSI is a semi-natural, acid woodland dominated by mature oak and downy birch. As a consequence of glaciation, a series of dry ridges and narrow valleys provides different environmental conditions across the site. The site is relatively nutrient poor, reflected in the limited tree growth with gaps in the canopy allowing sunlight to reach the woodland floor. Conditions vary from dry gravel ridges to steep wet valleys with streams. Dead wood is frequent at the site both in the woodland canopy and on the woodland floor.

Species composition reflects the acid conditions. These include holly and rowan in the understorey, bilberry in the field layer with great wood-rush frequently dominating the ground flora.

Many protected areas in Northern Ireland are owned and managed by private landowners and farmers and are not accessible to the public.

Table 2: ASSI details

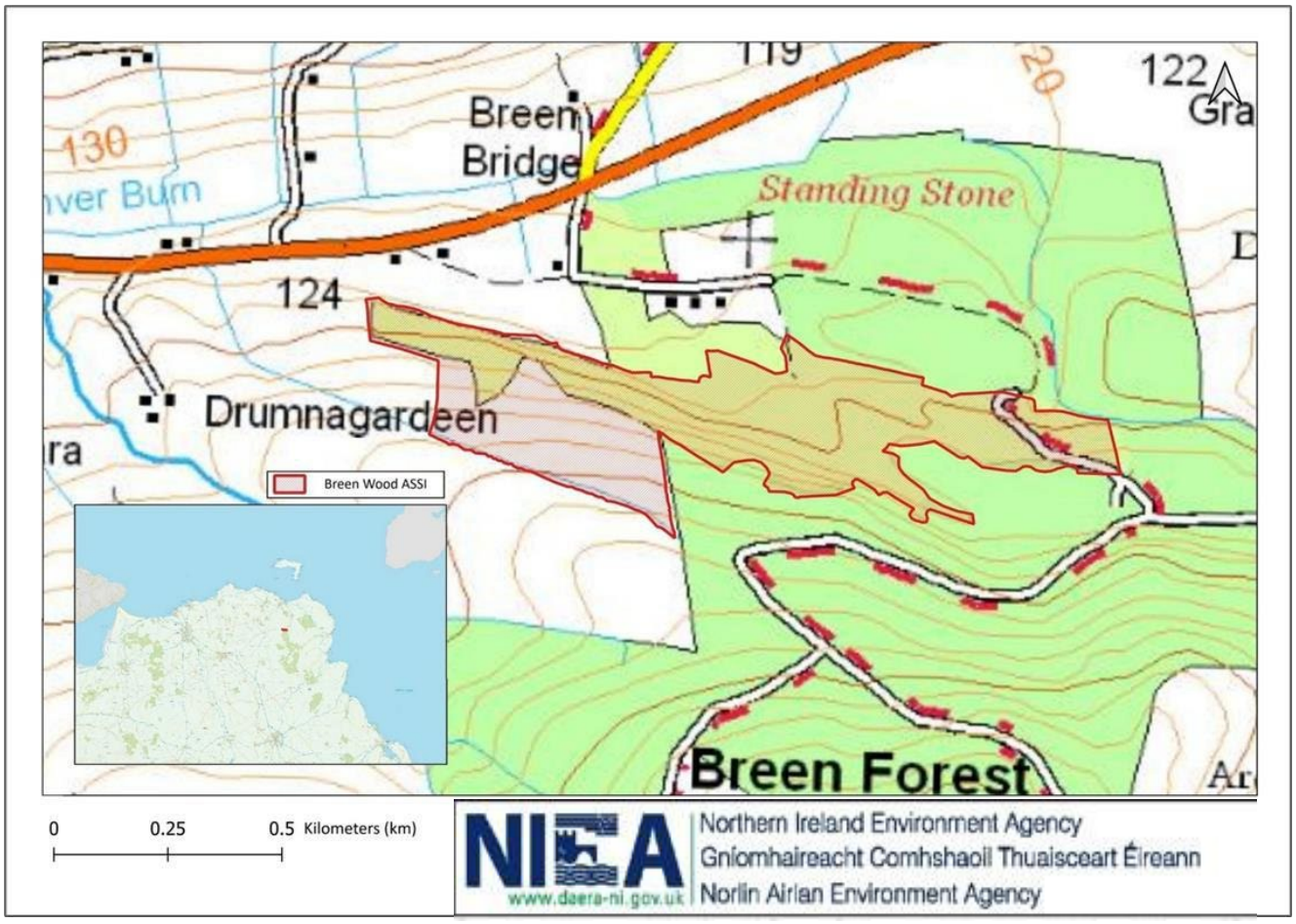
ASSI name	Breen Wood
ASSI code	ASSI 161
Council Area (s)	Causeway Coast and Glens Borough Council
Irish Grid Reference	D121338
Landowner details	Private & Public ownership
ASSI size	36ha
Date declared	31/07/1977

Further information on Breen Wood ASSI is available via:

- DAERA website;
- NIEA map viewer;
- NBN (National Biodiversity Network) Atlas NI

4. Location map

Map 1 – Breen Wood ASSI boundary and Northern Ireland location



5. Feature description

This report outlines the invertebrate assemblages associated with oakwood and wet woodland habitats, specifically the decaying wood (epiphytic and saproxylic) assemblage, a humid field layer assemblage and the woodland moth assemblage.

Decaying wood (epiphytic & saproxylic) assemblage

This feature is a combination of two attribute assemblages identified in 2007, when epiphytic and saproxylic assemblages were treated separately (see Section 8). Beetles and flies are the most important groups, although lepidoptera (moths) can also be an important constituent of the epiphytic fauna. There is therefore slight overlap with the woodland moth assemblage.

The assemblage is defined by the presence of identified key target species in addition to a broader representation of saproxylic / epiphytic species.

Sheltered humid field layer assemblage

Sheltered humid field layer includes both the leaf litter and moist areas such as seepages on the woodland floor. Originally a single target species of ground beetle was identified *Pterostichus oblongopunctatus* but this was expanded in 2007 by the addition of the bug *Lygus wagneri* and the Neglected Rustic macro-moth *Xestia castanea.* The latter species has now been removed from the

target list (see Section 8). The target list has been further expanded by the discovery of several species of interest during CSM assessment work in 2017 and 2024.

Woodland moth assemblage

Four target species were identified in 2007, including Dotted Carpet *Alcis jubata* which was listed as a mandatory species. Three additional species (all NI priority species) have been added to the target list:

- Slender Brindle *Apamea scolopacina*
- Saxon *Hyppa rectilinear*
- Bilberry Pug *Pasiphila debiliata*

This feature requires the obligatory presence of Dotted Carpet plus at least 2 of the other 4 target species.

Indirect Attributes

The 2007 CSM report identified 2 Indirect Attributes relevant to the decaying wood and sheltered humid field layer assemblages, but perhaps less so for the woodland moth assemblage.

Canopy open-ness is important to enable light penetration to all layers of the woodland, which is relevant to both the decaying wood and sheltered humid field layer assemblages. *Retention of decaying wood* is critical for all saproxylic species. The woodland moth assemblage is most dependent upon the *habitat extent* including the diversity of tree species within the woodland area.

6. Common Standards Monitoring Methodology

The condition of the terrestrial species features of Breen Wood ASSI have been assessed following the Common Standards Monitoring (CSM) guidance Common Standards Monitoring guidance | JNCC - Adviser to Government on Nature Conservation for invertebrates

The attributes to be measured are dependent upon the specific interest features and are derived from a combination of direct and indirect attributes from the tables in the CSM guidance.

Site specific methodology

The assessment of the decaying wood and humid field layer assemblages was undertaken by a team of three entomology experts for Allen and Mellon Environmental on behalf of DAERA [Date 31 May 2024]. The methods used by all of the ecologists were a combination of hand-searching, sweeping and beating. Earlier a flight interceptor trap was installed at a similar location to the one deployed in 2007. The contents were sorted and *Diptera* were sent to an expert in England for identification. Some additional epiphytic species were obtained through light trapping for moths (see below).

The woodland moth assemblage was assessed through the use of light traps on 24th July. Five heath traps with actinic bulbs were deployed in similar locations to the previous CSM monitoring, although more recent local knowledge was used to inform locations for target species such as Dotted Carpet and Slender Brindle. Trap locations are illustrated in Appendix 2 and co-ordinates are provided in Appendix 4.

The timing of late July is appropriate for 4 of the 5 target species, but not for Saxon which flies earlier (May/June). As the site was trapped in May/June 2024 by a local moth expert, this data was incorporated into the CSM results.

7. Results

At Breen Wood ASSI, 3 invertebrate features were assessed against targets.

As in the previous round of invertebrate assemblage CSM monitoring, indirect attributes were assessed by visual assessment and recommendations are made for additional assessment where required.

The detailed condition assessment attributes are displayed in Appendix 1 Attribute Table where they are measured against set condition assessment targets.

Decaying wood (epiphytic & saproxylic) invertebrate assemblage

Table 3: Summary table of all attributes assessed against set criteria

2 Direct Attributes assessed	2 Favourable
	0 Unfavourable
2 Indirect Attributes assessed	2 Favourable
	0 Unfavourable

Breen Wood ASSI feature decaying wood invertebrate assemblage has 4 attributes in favourable condition and 0 attributes in unfavourable condition.

The ASSI feature is therefore in Favourable condition. See discussion for full details on reasoning.

Sheltered humid field layer assemblage

Table 4: Summary table of all attributes assessed against set criteria

1 Direct Attribute assessed	1 Favourable
	0 Unfavourable
1 Indirect Attribute assessed	1 Favourable
	0 Unfavourable

Breen Wood ASSI feature sheltered humid field layer invertebrate assemblage has 2 attributes in favourable condition and 0 attributes in unfavourable condition.

The ASSI feature is therefore in Favourable condition. See discussion for full details on reasoning.

Woodland moths assemblage

Table 5: Summary table of all attributes assessed against set criteria

2 Direct Attributes assessed	2 Favourable
	0 Unfavourable
1 Indirect Attribute assessed	1 Favourable
	0 Unfavourable

Breen Wood ASSI feature woodland moths assemblage has 3 attributes in favourable condition and 0 attributes in unfavourable condition.

The ASSI feature is therefore in Favourable condition. See discussion for full details on reasoning.

8. Discussion

Decaying wood (epiphytic & saproxylic) invertebrate assemblage

This feature combines the original separate tree epiphytic and tree saproxylic features. This approach was initially discussed prior to the first CSM survey (Alexander 2006) which states that "in practice wood-decay and epiphyte invertebrates tend to be grouped together as both depend on the availability of trunks and boughs, and their conservation management involves management of light levels".

This is emphasised by Natural England (2007) Research Report NERR005 in the section on wood-decay assemblages - *"The majority of species are associated with wood decay and the fungi causing decay (saproxylic species), but there is a significant number of species grazing on algae, lichens and mosses on the surface of trunks and branches."*

The decaying wood invertebrate assemblage of Breen Wood ASSI is in **Favourable** condition because both of the direct attributes of the assemblage were present:

a) 5 species were recorded from the list of 12 key targets.
b) 20 saproxylic / epiphytic species from a longer list of 38 species were recorded (see Appendix 1A).

The original CSM report required 3 key target species from each community to be recorded along with a longer list of typical epiphytic or saproxylic sub-target species. This has been revised for the new combined feature, so that 5 key target species are required in addition to at least 20 of the listed typical epiphytic / saproxylic species (see Appendix 1A).

The 12 key target species and their recording history are set out in Table 6 below.

Table 6 Decaying wood invertebrate assemblage – key targets

Order	Species	CSM 2007	Buglife 2017	CSM 2024
Stylommatophora	*Limax cinereoniger*	Y	Y	X
Lepidoptera	*Alcis jubata*	Y	Y	Y
Psocodea	*Loensia fasciata*	Y	X	X
Coleoptera	*Malthodes fuscus*	Y	Y	Y
Coleoptera	*Malthodes guttifer*	Y	Y	Y
Coleoptera	*Rhizophagus ferrugineus*	Y	X	X
Coleoptera	*Phloeonomus punctipennis*	Y	X	X
Coleoptera	*Agathidium rotundatum*	X	Y	X
Diptera	*Helina consimilis*	X	Y	Y
Diptera	*Phaonia mystica*	X	X	Y
Diptera	*Leia bilineata*	X	Y*	X
Diptera	*Brachypeza bisignata*	X	Y*	X

*new to Ireland in 2017

Two Indirect Attributes set out in the 2007 CSM report have been carried forward to this assessment.

1. Canopy open-ness

This attribute is essential for many species which require light penetration through the canopy, both at the field layer and for epiphytic / saproxylic species. The target for this attribute is:

- Substantial areas with c50% sun penetration to field layer, especially in lower-lying wetter areas.

The visual assessment of the woodland habitat was favourable in that sufficient sun penetration was occurring in most key areas. At the woodland edge the thinning or clearance of conifers would assist in light penetration.

2. Retention of decaying wood

- i) tree surgery along main routes kept to minimum necessary for public safety; ii) retention of fallen dead wood *in situ* except where displacement required for access.

This attribute is critical for saproxylic species. At the time of the surveys no significant evidence woodland management or dead wood clearance was noted.

Sheltered humid field layer assemblage

The sheltered humid field layer assemblage of Breen Wood ASSI is in **Favourable** condition because 3 of the 5 target species were recorded. The species recorded were:

- *Pterostichus oblongopunctatus* (Coleoptera)
- *Dicranomyia distendens* (Diptera)
- *Dicranophragma separatum* (Diptera)

The two target species not recorded were:

- *Lygus wagneri* (Hemiptera)
- *Tricyphona schummeli* (Diptera)

The ground beetle *Pterostichus oblongopunctatus* is the original target species for this feature and this has been added to over the ensuing CSM projects. The plant bug *Lygus wagneri* was added following the 2007 CSM fieldwork, and the fly *Tricyphona schummeli* was recommended for addition following the Buglife survey in 2017.

A further 2 targets have been added following the 2024 surveys. One of the target Diptera recorded in 2024, the cranefly *Dicranomyia distendens* is new to Ireland, whilst the other (*Dicranophragma separatum*) was first recorded in 2017.

The Neglected Rustic moth *Xestia castanea* has been removed from the original target list. The reasons for inclusion of this species are unclear as it is predominantly a moorland species which feeds on *Calluna vulgaris* or *Erica* species.

One Indirect Attribute set out in the 2007 report has been carried forward to this assessment.

1. Canopy open-ness

This is important for the species in this assemblage which frequent sheltered, but not necessarily shaded areas. The latter would be more appropriate in a shaded field and ground layer assemblage. The visual assessment of the woodland habitat was favourable in that sufficient sun penetration was occurring in most key areas.

Woodland moth assemblage

The woodland moth assemblage of Breen Wood ASSI is in **Favourable** condition because both of the direct attributes of the assemblage were present:

a. Dotted Carpet *Alcis jubata.* This is a required target species. 15 were recorded between 9th July and 13th August 2024.
b. All 4 of the other target species were recorded.
    - Satin Beauty *Deileptenia ribeata* – 7 recorded 24th July 2024
    - Slender Brindle *Apamea scolopacina* – 2 recorded 24th July 2024
    - Saxon *Hyppa rectilinear* – 1 recorded 16th June 2024
    - Bilberry Pug *Pasiphila debiliata* – 6 recorded 24th July 2024

Two of the original target species were removed prior to the 2024 survey. Neglected Rustic *Xestia castanea*, also originally included in the sheltered humid field layer assemblage, has been removed since it is primarily at moorland species. Oak Nycteoline *Nycteola revayana* has been removed since it not been previously recorded from Breen Wood. Satin Beauty *Deileptenia ribeata* was retained as a target species.

The three new target species are all NI priority species which are scarce or localised in Northern Ireland and associated with long-established woodlands.

One Indirect Attribute has been identified for this feature:

1. Habitat Extent & Species Diversity

Amongst the key factors influencing the numbers and diversity of moths in woodland are the size of woodland patches and the diversity of native tree species (Fuentes-Montemayor et al 2012). The interim targets for this new Indirect Attribute should therefore be:

- No reduction in woodland habitat area and native species representation

A more quantitative approach should be adopted for the next CSM round based on the number of native tree species in sample areas (see Section 9).

No habitat loss or reduction in native species was detected during the CSM monitoring.

9. Feature Recommendations

Decaying wood (epiphytic & saproxylic) invertebrate assemblage

- Management of the adjacent commercial forestry should aim to create a buffer zone where light can penetrate the oak wood more easily, by thinning of conifers or removal and natural regeneration.

Sheltered humid field layer assemblage

- As above

Woodland moth assemblage

- In future, if data is not available from local moth recorders, light trapping will be required in both June and late July to ensure that sufficient targets can be recorded.

- The Indirect Attribute for this feature in relation to diversity of native tree species should be quantifiable in future CSM rounds. It is recommended that a target number of species is identified for the main sample area based upon ASSI habitat monitoring or other field data available for the site.

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11. Appendix 1 – Attribute tables

Table 7 Decaying wood (epiphytic & saproxylic) assemblage Attribute Table

Attribute	Target	Method of Assessment	Monitoring Results 2024	Assessment	Monitoring Results 2007
Direct Attributes					
Presence of key target species	At least 5 out of 12 key target species	Hand searching, beating, sweeping and light trapping Flight interceptor trap	5 target species were recorded: • *Alcis jubata* • *Malthodes fuscus* • *Malthodes guttifer* • *Helina consimilis* • *Phaonia mystica*	**Favourable**	**Favourable**
Presence of typical epiphytic / saproxylic species	Minimum of 20 species	Hand searching, beating, sweeping and light trapping Flight interceptor trap	20 target species were recorded (see Appendix 1A)	**Favourable**	**Favourable**
Indirect Attributes					
Canopy open-ness	Substantial areas with approx. 50% sun penetration to field layer, especially in lower lying wet areas	Visual assessment in key areas	Favourable	**Favourable**	**Favourable**
Retention of decaying wood	(i) Tree surgery along main routes kept to a minimum necessary for public safety (ii) Retention of fallen dead wood in situ except where displacement required for public access.	Visual assessment in key areas	Favourable	**Favourable**	**Favourable**

Table 8 Sheltered humid field layer assemblage Attribute Table

Attribute	Target	Method of Assessment	Monitoring Results 2024	Assessment	Monitoring Results 2007
Direct Attributes					
Presence of target species	At least 2 out of 5 target species	Hand searching, beating, sweeping. Flight interceptor trap	3 target species were recorded: • *Pterostichus oblongopunctatus* (Coleoptera) • *Dicranomyia distendens* (Diptera) • *Dicranophragma separatum* (Diptera)	**Favourable**	**Favourable**
Indirect Attributes					
Canopy open-ness	Substantial areas with approx. 50% sun penetration to field layer, especially in lower lying wet areas	Visual assessment in key areas	Favourable	**Favourable**	**Favourable**

Table 9 Woodland moth assemblage Attribute Table

Attribute	Target	Method of Assessment	Monitoring Results 2024	Assessment	Monitoring Results 2007
Direct Attributes					
Presence of obligatory target species	Presence of: • *Alcis jubata*	Light trapping	15 specimens of Dotted Carpet *Alcis jubata* were caught at light between 9th July & 13th August 2024	**Favourable**	**Favourable**
Presence of key species	At least 50% of the listed species (2 out of 4)	Light trapping	All 4 additional target species were recorded: • Satin Beauty *Deileptenia ribeata* • Slender Brindle *Apamea scolopacina* • Saxon *Hyppa rectilinear* • Bilberry Pug *Pasiphila debiliata*		
Indirect Attributes					
Habitat extent	No reduction in woodland habitat area and native species representation	Visual assessment in key areas	Favourable	**Favourable**	**Not Assessed**

12. Appendix 1A

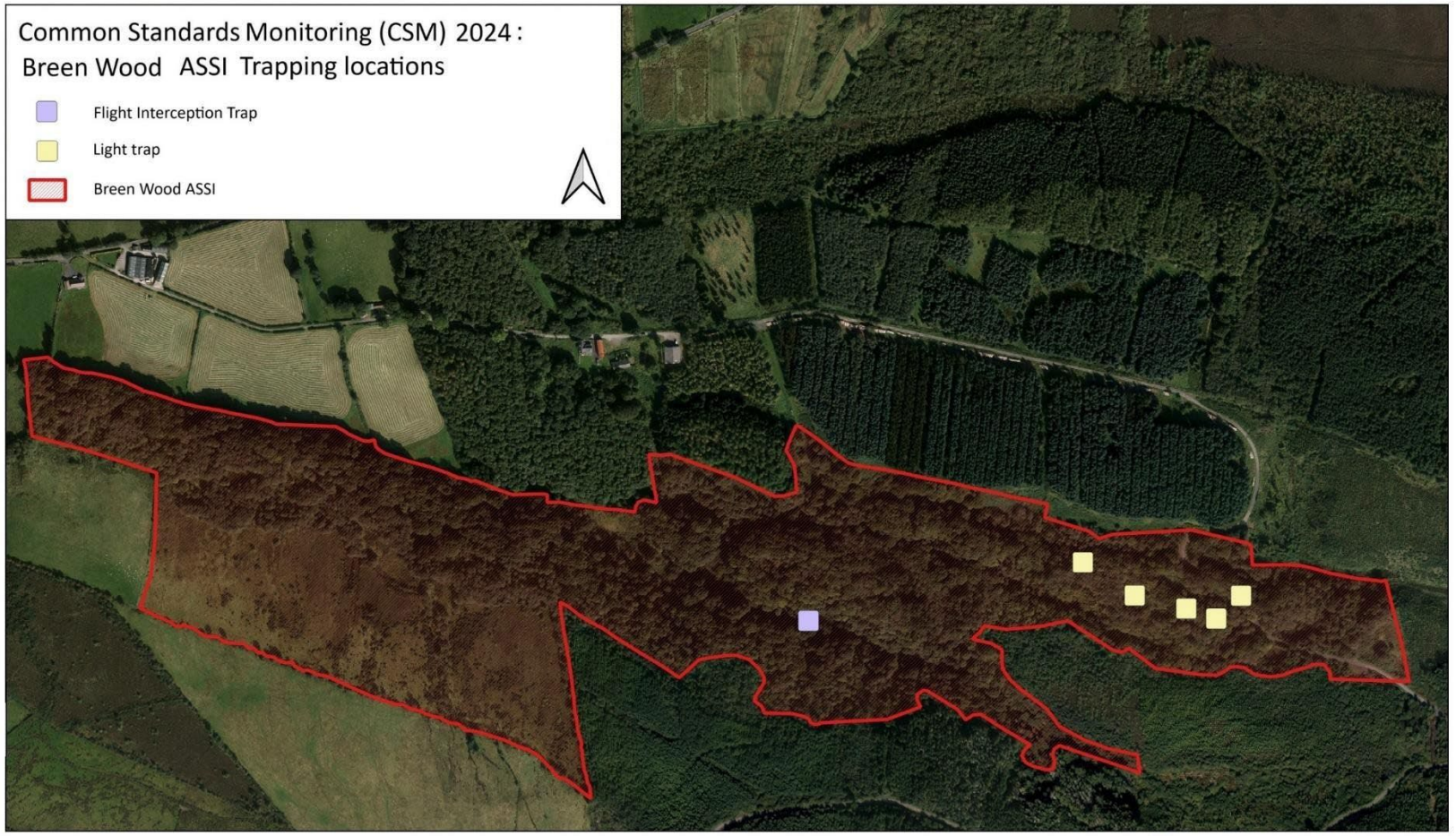
Table 10 List of epiphytic / saproxylic species for decaying wood (epiphytic & saproxylic) assemblage

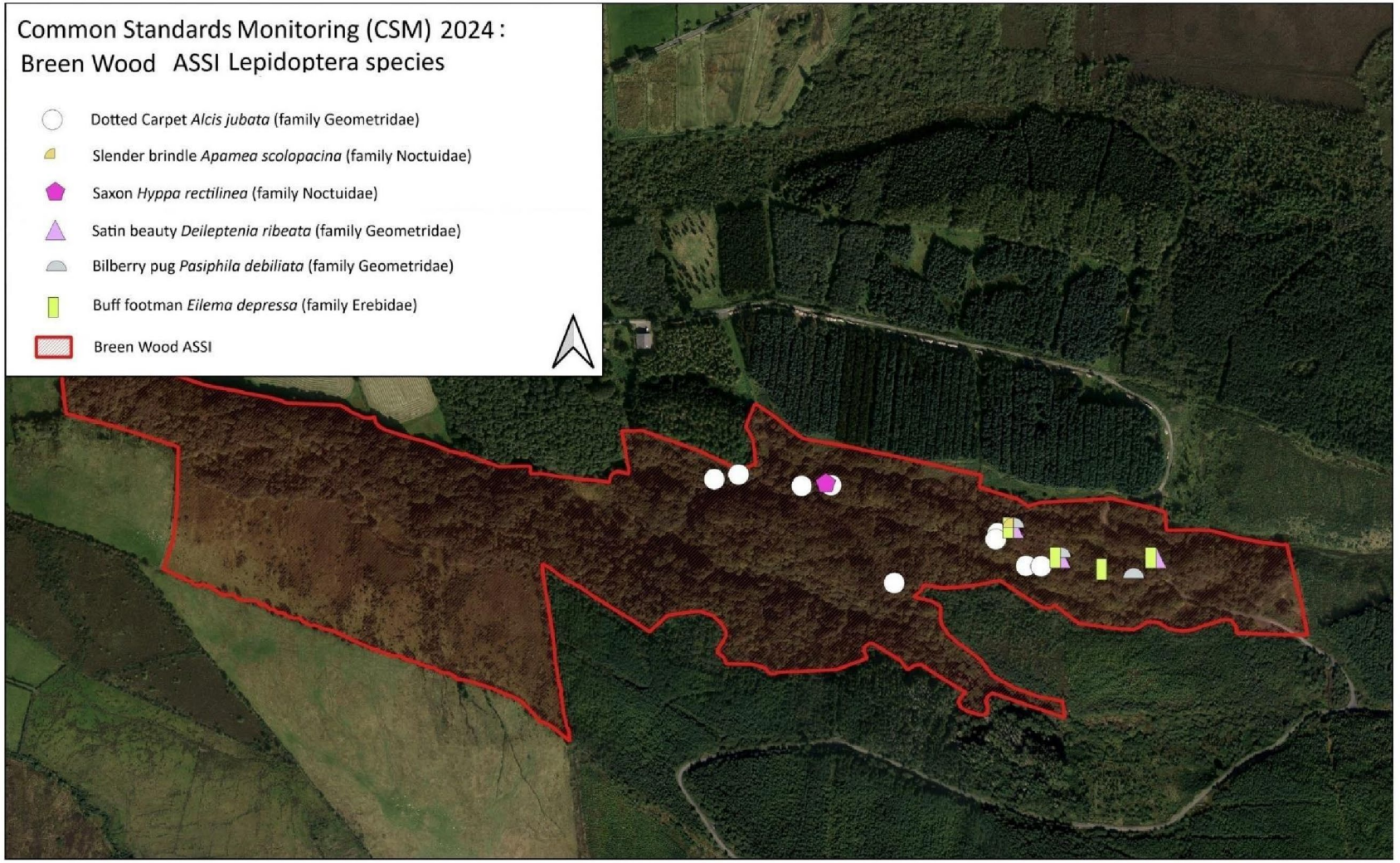
Order	Species	CSM Origin	Recorded 2024
Diptera	*Austrolimnophila ochracea*	2007	Y
	Elipsocus hyalinus	2007	X
	Euthyneura myrtilli	2007	X
	Meliscaeva cinctella	2024	Y
	Myathropa florea	2007	Y
	Mycetobia obscura	2017	X
	Mycetophila confluens	2017	X

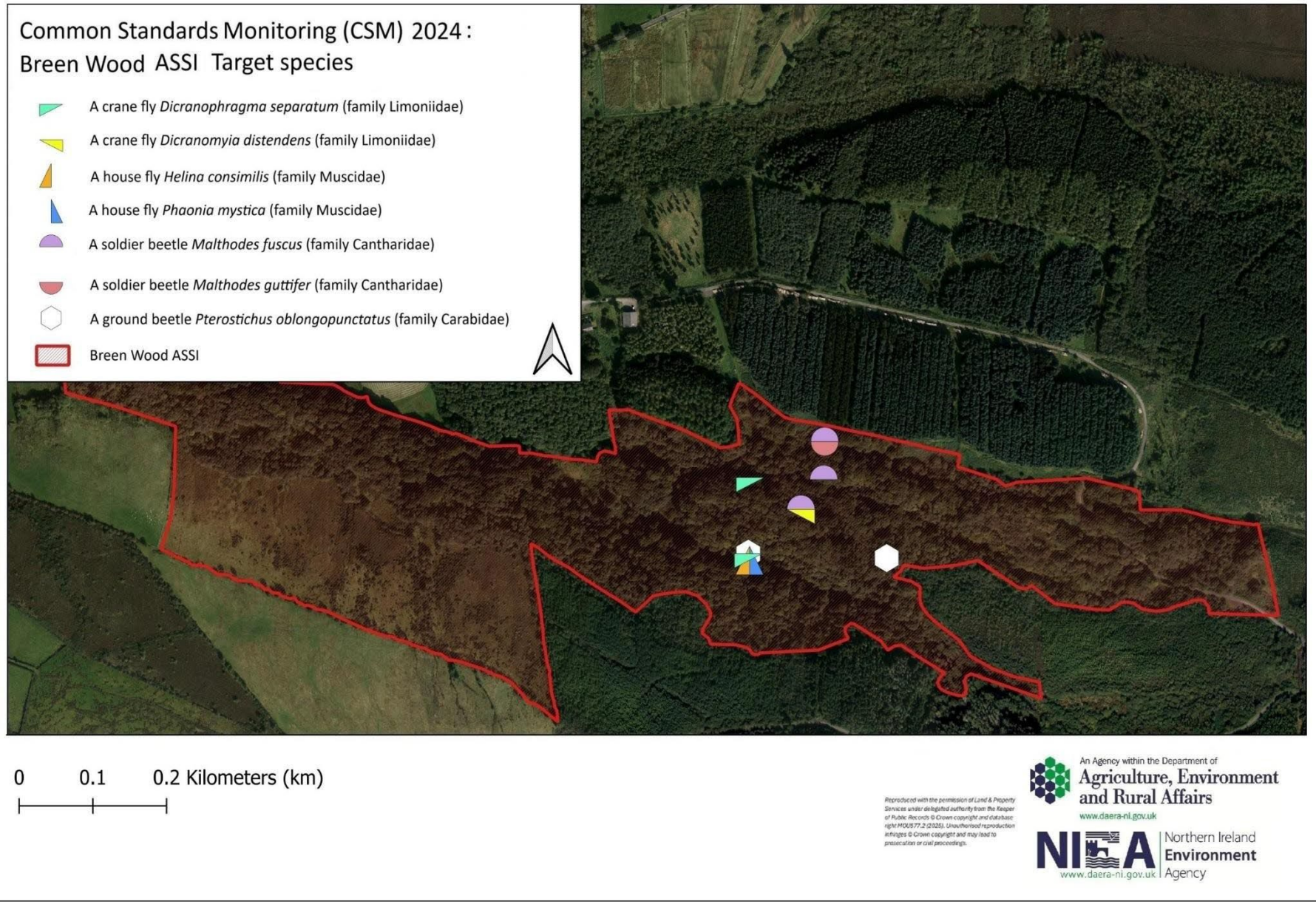
	Mycomya cinerascens	2007	X
	Mycomya insignis	2017	X
	Neolimnia dumetorum	2024	Y
	Neoplatyura flava	2024	Y
	Oedalea zetterstedti	2007	Y
	Phaonia palpata	2024	Y
	Rhipidia maculata	2007	Y
	Saigusaia flaviventris	2007	X
	Sylvicola cinctus	2024	Y
	Tephrochlamys rufiventris	2024	Y
	Tipula irrorata	2007	Y
	Triarthria setipennis	2007	X
	Ula sylvatica	2007	X
Coleoptera	*Anaspis rufilabris*	2007	X
	Atrecus affinis	2007	Y
	Crypyophagus pubescens	2017	X
	Malthinus flaveolus	1994	X
	Malthodes marginatus	2007	X
	Ocys tachysoides	2024	Y
	Salpingus ruficollis	2007	X
	Rhagium bifasciatum	2024	Y
	Rhizophagus dispar	2007	X
Stylommatophora	*Lehmannia marginata*	2007	Y
	Columella aspera	2007	X
	Balea heydeni	2007	Y
	Balea sarsii	2007	X
	Euconulus cf. fulvus	2024	Y

Hemiptera	*Pentatoma rufipes*	2024	Y
Lepidoptera	*Eilema depressa*	2007	Y
	Eudonia delunella	2024	X
	Eudonia truncicolella	2024	Y

13. Appendix 2 – Maps




Common Standards Monitoring (CSM) 2024 :
Breen Wood ASSI Lepidoptera species
Dotted Carpet *Alcis jubata* (family Geometridae)
Slender brindle *Apamea scolopacina* (family Noctuidae)
Saxon *Hyppa rectilinea* (family Noctuidae)
Satin beauty *Deileptenia ribeata* (family Geometridae)
Bilberry pug *Pasiphila debiliata* (family Geometridae)
Buff footman *Eilema depressa* (family Erebidae)
Breen Wood ASSI
0 0.1 0.2 Kilometers (km)
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Common Standards Monitoring (CSM) 2024 :
Breen Wood ASSI Target species
A crane fly *Dicranophragma separatum* (family Limoniidae)
A crane fly *Dicranomyia distendens* (family Limoniidae)
A house fly *Helina consimilis* (family Muscidae)
A house fly *Phaonia mystica* (family Muscidae)
A soldier beetle *Malthodes fuscus* (family Cantharidae)
A soldier beetle *Malthodes guttifer* (family Cantharidae)
A ground beetle *Pterostichus oblongopunctatus* (family Carabidae)
Breen Wood ASSI
0
0.1
0.2 Kilometers (km)
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14. Appendix 3 – Photographs



Common sexton beetle (*Nicrophorus vespilloides*) (family Silphidae)



A ground beetle (*Pterostichus oblongopunctatus*) (family Carabidae)



Red-legged shieldbug (*Pentatoma rufipes*)

(family Pentatomidae) final instar nymph



Banded Meliscaeva (*Meliscaeva cinctella*) (family Syrphidae)



Yellow-barred pollen-moth (*Micropterix aureatella*) (family Micropterigidae)



Standing dead wood



Habitat in the ground and scrub layer



Searching through leaf litter.



Holly leaf miner (*Phytomyza ilicis*) (family Agromyzidae)



Large emerald (*Geometra papilionaria*) (family Geometridae)



Bilberry pug (*Pasiphila debiliata*) (family Geometridae)



Satin beauty (*Deileptenia ribeata*) (family Geometridae)



Pebble prominent
(*Notodonta ziczac*)

(family Notodontidae)





Lesser swallow prominent (*Pheosia gnoma*)

(family Notodontid)





Light trap 4 (D1281833634)



Light trap 3 D1278933606



Light trap 2 D1269133631



Light trap 1 D1262833669



Setting up a light trap 5 (D1275333617) at Breen Wood.



Canopy



Drinker (*Euthrix potatoria*) (family Lasiocampidae)



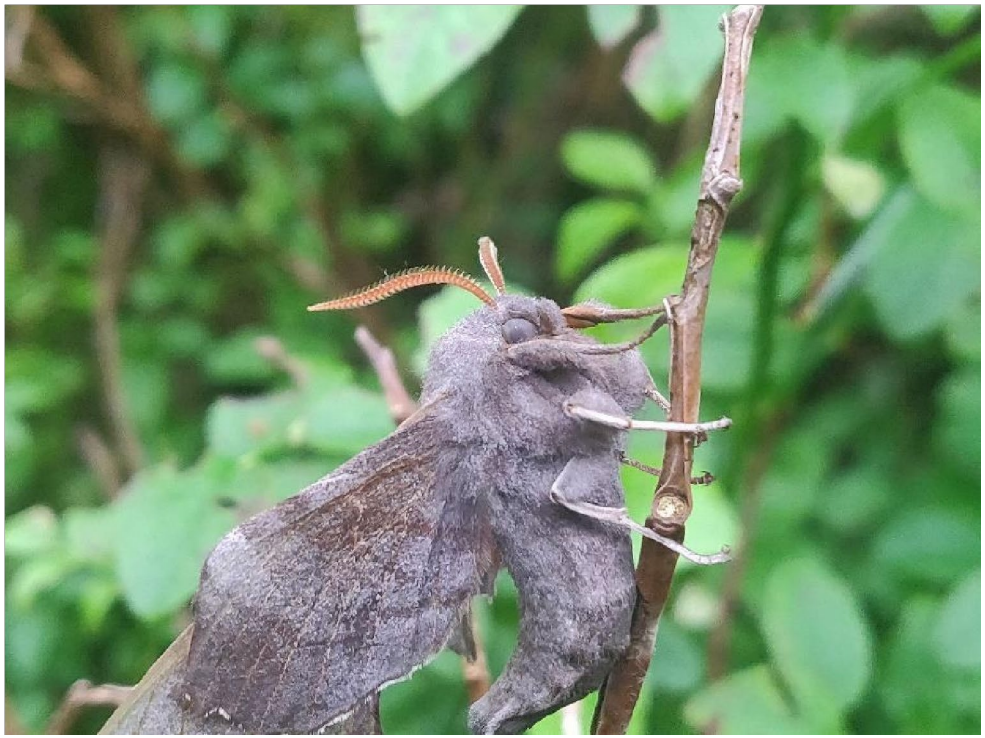
Slender brindle (*Apamea scolopacina*) (family Noctuidae)



Satin beauty (*Deileptenia ribeata*) (family Geometridae)



Flight Interception Trap (D1230233591)



Poplar hawk-moth (*Laothoe populi*) (family Sphingidae)

15. Appendix 4 – Survey dates

Table 11: Survey dates and locations monitored

Survey dates	Total Days	Locations Monitored	Weather Conditions
31/05/2024	3	Entire site except locations where access was denied	Warm, sunny and still – ideal invertebrate survey conditions.
24/07/2024	2	Moth traps were located at • D1262833669 • D1269133631 • D1278933606 • D1281833634 • D1275333617	Cloud 7/8, wind SW3 16C
16.06.2024 13.07.2024 28.07.2024 03.08.2024 09.08.2024	n/a	Additional moth trapping by local expert at the following locations • D1237833721 • D1260733661 • D1223033723 • D1238533719 • D1264633619 • D1247233592 • D1226233730 • D1266633619	n/a

16. Appendix 5 - Species list

Table 12: Species recorded from Breen Wood 2024 CSM monitoring

Taxon	Status
Abraxas grossulariata	
Acronicta psi	

Agonum fuliginosum	
Alcis repandata	
Anaplectoides prasina	
Anelosimus vittatus	
Anthomyza elbergi	
Apamea monoglypha	
Apamea remissa	
Apamea scolopacina	NI Priority Species CSM Target
Apotomis betuletana	
Argyresthia brockeella	
Argyresthia conjugella	
Argyresthia goedartella	
Atrecus affinis	CSM Target
Austrolimnophila ochracea	CSM Target
Autographa pulchrina	
Balea heydeni	CSM Target
Bibio pomonae	
Bicellaria nigra	
Bicellaria vana	
Biston betularia	

Taxon	**Status**
Bombus lucorum sens. lat.	

Bombus pascuorum	
Cabera exanthemata	
Cabera pusaria	
Campaea margaritaria	
Campsicnemus curvipes	
Campsicnemus loripes	
Celypha lacunana	
Cheilotrichia cinerascens	
Chloroclystis v-ata	
Chloromyia formosa	
Chromatomyia milii	
Chrysogaster solstitialis	
Clausilia bidentata	
Cleigastra apicalis	
Boreoclytocerus ocellaris	
Colostygia pectinataria	
Cosmorhoe ocellata	
Crocallis elinguaria	
Ctenicera cuprea	
Cydia splendana	
Deileptenia ribeata	CSM Target
Deilephila elpenor	
Denticucullus pygmina	
Deporaus betulae	

Taxon	Status
Diarsia brunnea	
Diarsia mendica	
Diarsia rubi	
Dicranomyia autumnalis	
Dicranomyia chorea	
Dicranomyia distendens	CSM Target - New to Ireland
Dicranomyia modesta	
Dicranophragma separatum	CSM Target
Dilophus febrilis	
Dioryctria abietella	
Discus rotundatus	
Dolichopus discifer	
Dysstroma truncata	
Ecliptopera silaceata	
Eilema depressa	CSM Target
Elophila nymphaeata	
Empis aestiva	
Eristalis tenax	
Euconulus fulvus	CSM Target
Eudonia lacustrata	
Eudonia mercurella	
Eudonia truncicolella	CSM Target

Eulithis populata	
Eulithis testata	
Eurithia connivens	

Taxon	**Status**
Euthrix potatoria	
Geometra papilionaria	
Graphomya maculata	
Gymnopternus aerosus	
Habrosyne pyritoides	
Iberina montana	
Helina consimilis	CSM Target – p Nationally scarce in GB
Hilara intermedia	
Hilara litorea	
Hybos culiciformis	
Hydrellia albiceps	
Hydriomena furcata	
Hydrotaea irritans	
Idaea aversata	
Idaea biselata	
Korscheltellus fusconebulosa	
Laothoe populi	
Lehmannia marginata	CSM Target
Leistus terminatus	

Limonia nubeculosa	
Lomaspilis marginata	
Lonchoptera lutea	
Lycophotia porphyrea	
Macrocera stigmoides	
Meiosimyza platycephala	

Taxon	**Status**
Meliscaeva cinctella	CSM Target
Mesapamea secalis agg.	
Metellina mengei	
Micropterix aureatella	
Mniotype adusta	
Myathropa florea	CSM Target
Mycomya neohyalinata	
Neolimonia dumetorum	CSM Target
Neon reticulatus	
Neoplatyura flava	CSM Target
Neriene peltata	
Nicrophorus vespilloides	
Noctua pronuba	
Notiophilus biguttatus	
Notodonta ziczac	
Ocys tachysoides	CSM Target

Oedalea zetterstedti	CSM Target
Oedothorax gibbosus	
Oligia fasciuncula	
Oligia strigilis agg.	
Oniscus asellus	
Opisthograptis luteolata	
Opomyza germinationis	
Ourapteryx sambucaria	
Pammene fasciana	

Taxon	**Status**
Pandemis cerasana	
Pandemis heparana	
Pasiphila debiliata	CSM Target NI Priority Species
Pegoplata aestiva	
Pegoplata infirma	
Pentatoma rufipes	CSM Target
Pericoma pseudoexquisita	
Perizoma alchemillata	
Phalera bucephala	
Phaonia angelicae	
Phaonia errans	
Phaonia erronea	

Phaonia mystica	CSM Target – pNationally Scarce in GB
Phaonia pallida	
Phaonia palpata	CSM Target
Phaonia rufiventris	
Phaonia subventa	
Phaonia valida	
Pheosia gnoma	
Pherbellia dubia	
Phronia conformis	
Phronia forcipata	
Phyllodromia melanocephala	
Phytomyza ilicis	

Taxon	**Status**
Platycheirus albimanus	
Platycheirus clypeatus	
Plusia festucae	
Polia nebulosa	
Polietes lardarius	
Polietes meridionalis	
Potamia littoralis	
Protodeltote pygarga	
Psychoda phalaenoides	
Pterostichus oblongopunctatus	CSM Target

Ptilodon capucina	
Ptychoptera albimana	
Rhagio lineola	
Rhagium bifasciatum	CSM Target
Rhagonycha fulva	
Rhamphomyia erythrophthalma	
Rhamphomyia tibiella	
Rhingia campestris	
Rhipidia maculata	CSM Target
Rivula sericealis	
Scathophaga stercoraria	
Schrankia costaestrigalis	
Sciapus platypterus	
Selenia dentaria	
Sylvicola cinctus	CSM Target

Taxon	**Status**
Sylvicola punctatus	
Synapha vitripennis	
Tachypeza nubila	
Tenuiphantes tenebricola	
Tephrochlamys rufiventris	CSM Target
Tetragnatha montana	
Thaumatomyia notata	

Thyatira batis	
Tipula fulvipennis	
Tipula irrorata	CSM Target
Tipula submarmorata	
Tipula variicornis	
Tricholauxania praeusta	
Trichopeza longicornis	
Tricyphona immaculata	
Udea prunalis	
Venusia cambrica	
Xanthorhoe designata	
Xestia baja	
Xestia triangulum	
Ypsolopha parenthesella	

Additional Pitfall Trap Species

Taxon	**Status**
Aegopinella nitidula	
Arion ater ater	
Arion intermedius	
Arion subfuscus	
Clausilia bidentata	
Cylindroiulus punctatus	
Deroceras reticulatum	

Discus rotundatus	
Lehmannia marginata	
Limacus maculatus	
Limax maximus	
Lithobius variegatus	
Nebria brevicollis	
Oxychilus cellarius	
Tachyerges salicis	
Tachypodoiulus niger	
Glomeris marginata	
Polydesmus inconstans	
Proteroiulus fuscus	
Enallagma cyathigerum	
Pyrrhosoma nymphula	
Myrmica ruginodis	
Paradelphomyia senilis	
Archarius pyrrhoceras	

Taxon	**Status**
Athous haemorrhoidalis	
Atrecus affinis	
Cantharis nigricans	
Cantharis pallida	
Cantharis paludosa	

Grynobius planus	
Cyphon coarctatus	
Dalopius marginatus	
Denticollis linearis	
Leistus terminatus	
Malthodes fuscus	CSM Target
Malthodes guttifer	CSM Target
Ocys tachysoides	
Otiorhynchus singularis	
Polydrusus tereticollis	
Rhagium bifasciatum	
Rhagonycha lignosa	
Rhagonycha limbata	
Stenus flavipes	
Strophosoma melanogrammum	
Anaspis maculata	
Anaspis regimbarti	
Anaspis rufilabris	
Anthocoris nemorum	
Aplotarsus incanus	

Aplotarsus incanus	
Archarias pyrrhoceras	
Taxon	**Status**
Tachyerges salicis	
Tachypodoiulus niger	
Rhagonycha lignosa	
Polydrusus tereticollis	
Phyllobius argentatus	
Otiorhynchus singularis	
Orchestes quercus	
Lithobius forficatus	

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