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Welsh clearwing *Synanthedon scoliaeformis*

Gilfach Nature Reserve field guide


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Radnorshire Wildlife Trust
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'Exploring Gilfach Assistant Project Officer'

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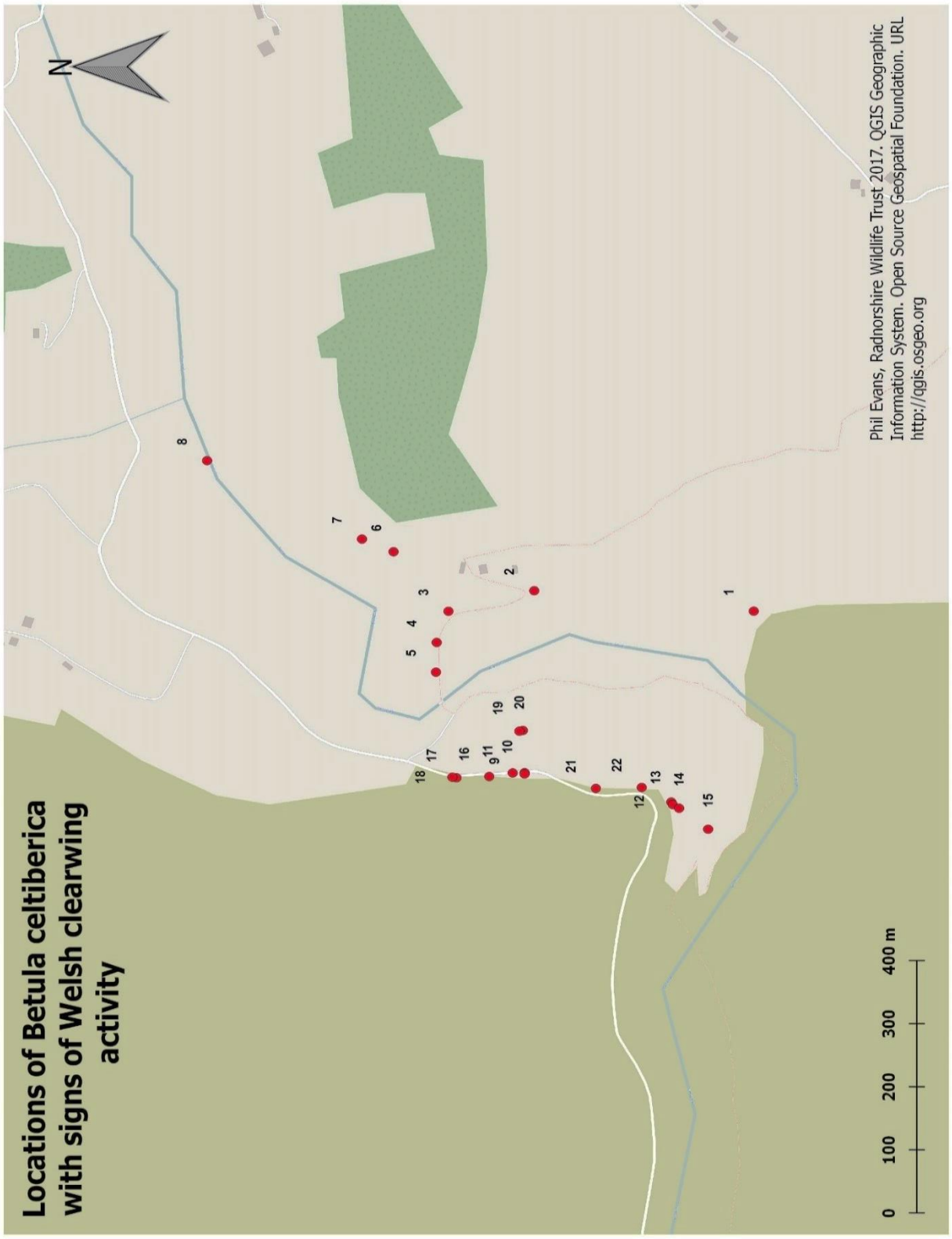
Contents

When and how to search and what to look for

Searching for the presence and the activity of the Welsh clearwing moth *Synanthedon scoliaeformis* should be carried out on warm sunny mornings throughout June and July. The adult moths can be found very often basking in the sun while at rest on the trunk of birch trees, in particular the Iberian White Birch, *Betula celtiberica*. Searches should be conducted within the first two metres of the trunk of the tree and on large exposed above ground roots, looking for either the very distinctive perfectly formed round 5mm holes that have been made by the larvae, or for the exuvia (pupal cases) still emerging from the holes. It is also worth noting that the exuviae can be found very often caught in spider webs or fallen into the grass at the base of the tree and mixed in with the leaf litter, so these areas should always be searched too. Searching for *S. scoliaeformis* should be conducted moving slowly and methodically, and preferable on more than one occasion so not to miss any signs, with the exposed roots given special attention. On a further note, when searching the trunk and roots of the birch tree, the surveyor should be mindful of their hands to ensure that no moths are harmed or that any exuviae are dislodged, as this could result in vital signs being missed.

Betula celtiberica locations – QGIS map

Locations of *B. celtiberica* with signs of *S. scoliaeformis* activity on the Gilfach nature reserve.



Betula celtiberica locations – Photographs

These images are intended to be used, along with the map, to locate the correct trees during any surveying work. Each image has a reference point and a grid reference corresponding to the location numbers on the map.

Tree 1 – SN 96417 71320

Tree 1 is located between the field compartment of **3e** and **8a**, on the path between the two compartments.

Tree 2 – SN 96456 71635

Tree 2 is located exiting the green lane towards the Gilfach centre road and can be accessed from the field compartment **3a**.

Tree 3 – SN 96426 71759

Tree 3 is located on the roadside up to the Gilfach centre before entering field compartment **2a**.

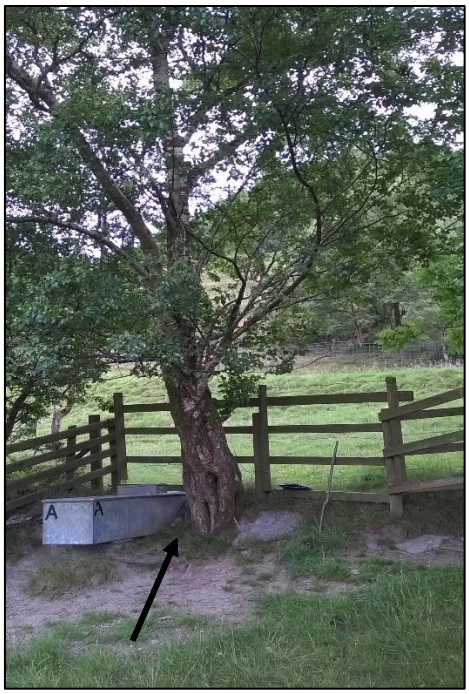
Tree 4 – SN 96377 71777

Tree 4 is located on the roadside up to the Gilfach centre between field compartments **2a** and **2c**.

Tree 5 – SN 96330 71779

Tree 5 is located on the roadside up to the Gilfach centre about half way up field compartment **2c**.

Tree 6 – SN 96522 71836



Tree 6 is located on the upper edge of field compartment **2a** by the kissing gate.

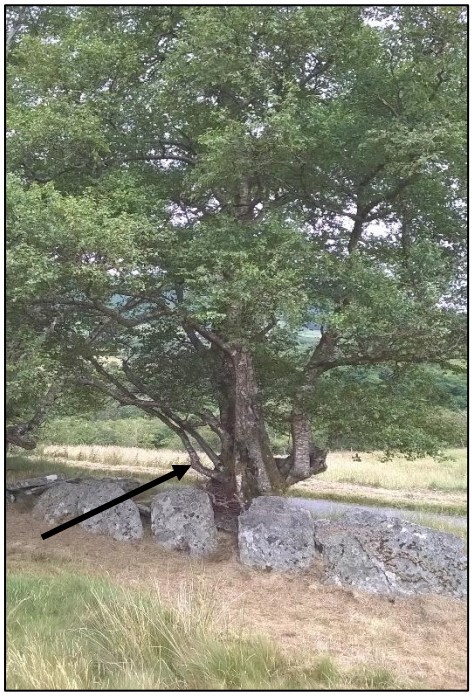
Tree 7 – SN 96543 71881

Tree 7 is located on the upper edge of field compartment **2a** in a wooded section before the gate leading into field compartment **6**.

Tree 8 – SN 96672 72101

Tree 8 is located in field compartment **6** near to the river's edge about halfway through the field.

Tree 9 – SN 96168 71655



Tree 9 is located along the roadside in field compartment **11b** on top of the old field boundaries.

Tree 10 – SN 96166 71655

Tree 10 is located along the roadside in field compartment **11b** on top of the old field boundaries.

Tree 11 – SN 96168 71672

Tree 11 is located along the roadside in field compartment **11b** on top of the old field boundaries.

Tree 12 – SN 96117 71445

Tree 12 is located on the old boundary between field compartments **10c** and **10a**.

Tree 13 – SN 96113 71443

Tree 13 is located on the old boundary between field compartments **10c** and **10a**.

Tree 14 – SN 96107 71434

Tree 14 is located on the old boundary between field compartments **10c** and **10a**.

Tree 15 – SN 96073 71393

Tree 15 is located on the old boundary between field compartments **10c** and **10a**.

Tree 16 – SN 96163 71706

Tree 16 is located along the roadside in field compartment **11b** on top of the old field boundaries.

Tree 17 – SN 96162 71753

Tree 17 is located along the roadside in field compartment **11b** on top of the old field boundaries.

Tree 18 – SN 96163 71759

Tree 18 is located along the roadside in field compartment **11b** on top of the old field boundaries.

Tree 19 – SN 96235 71656

Tree 19 is located in the corner between field compartments **9e** and **9g**, on the **9e** side of the field.

Tree 20 – SN 96234 71661

Tree 20 is located in the corner between field compartments **9e** and **9g**, on the **9e** side of the field.

Tree 21 – SN 96141 71553

Tree 21 is located along the road to the right of the gate leading into field compartment **9b**.

Tree 22 – SN 96141 71487

Tree 22 is located along the road just before the bend above field compartment **9b** leading into field compartment **10b**.

Betula celtiberica identification features

This section of the report provides images and descriptions of what features to look for when searching for Iberian White Birch *Betula celtiberica*. Despite its name this birch is believed to be a true native that has been previously overlooked since it displays characteristics of both *B. pendula* and *B. pubescens* and in consequence was frequently incorrectly reported as a hybrid between the species (Ray Woods personal communication, 2017). It takes on two of the main features of *B. pendula* and *B. pubescens* visibly, the orange-brown resinous glands (spots) on the younger shoots of *B. pendula* and the hairs from *B. pubescens* with searches for these specific features made on branches with new growth, ideally using a 10x magnification hand lens (Ray Woods personal communication, 2017).

Hairs

Looking at the new growth on the branches the hairs can be located near the tip using a 10x magnification hand lens.

Glands

Looking at the new growth on branches the orange-brown resinous glands (spots) can also be located near the tip using a 10x magnification hand lens. Do not confuse with the lighter brown nodules.

Leaf shape

The margins of birch leaves are serrated or toothed. In *B. pubescens* the serrations are small and even. In *B. pendula,* the leaves have large teeth that themselves are serrated. *B. celtiberica* is intermediate in being mostly evenly serrated but with occasional slightly larger serrations. The shape of the leaf in *B. celtiberica* takes on a very distinctive diamond shape, while our other birches have more heart-shaped leaves. A pressing of a branch with leaves can be found in the field guide.

Three leaf shapes from the three different tree species. Betula celtiberica **left**, B. pendula **centre** B. pubescens **right**

Evidence of *Synanthedon scoliaeformis* activity

This section provides images and descriptions of what features to look for when searching *B. celtiberica* for the signs of *S. scoliaeformis* activity.

Emergence holes

One of the easiest ways to find *S. scoliaeformis* is to look for the perfectly formed 5mm diameter holes that have been made by the emerging adults. These emergence holes can be located either on exposed roots or on the lowest part of the trunk, usually within the first 2m from the base of the trunk and not always surrounded by moss or lichen. Another effective way is to search for the exuvia (pupal case) still in situ in the hole.

Note - These holes should **not** be confused with other holes made by other wood-boring insects such as the Longhorn beetle, *Rhagium mordax*, as they make similar holes in birch trunks. However, these holes appear more frequently in decaying wood and do not take on the perfect 5mm hole, whereas *S. scoliaeformis* will only use living tissue.

Exuviae

The exuvia (pupal case) measuring 15-20 mm can be seen protruding out of the hole or sometimes can be found in the grass surrounding the trunk of the tree or caught in spider webs underneath the emergence holes. An example of an exuvia can be found with this field identification guide.

Synanthedon scoliaeformis identification features

S. scoliaeformis is a large and conspicuous day flying clearwing moth with the adult having a wing span measuring 12-15mm. The moth is characteristically black in colour with two yellow bands on the abdomen, one narrower upper band and one thicker lower band and with large black antennae with yellowish/white tips. The most prominent and most distinctive feature of *S. scoliaeformis* is the tail fan which is large and orange in colour. They have large clear wings with black patches on the outer edge of the forewing with a very distinctive black heart shaped spot on each wing.