



When? Between 28 August and 14 October (inclusive):

Summary: Select 4 leaves, count the number of bird attacks on the leaf and record the overall damage caused by alien moths.

1. **Find a horse-chestnut tree** which has been attacked by the leaf-mining moth. It will have brownish or whitish blotches on the leaf. Write down the nearest postcode or the tree's location.
2. **Select a leaf** from the bottom of the tree (e.g. one leaf from each side of the tree) which has signs of the leaf mine damage.
 - a) Count the number of bird attacks.
 - b) Give the whole leaf a 'damage score' (see diagrams on page 2).
3. **Choose 3 more leaves** from different parts of the bottom of the same tree. For each leaf, count the bird attacks and give it a damage score.
4. Repeat this as many times as you want and for as many trees as you want from July onwards.



Remember:
one 'leaf' is *all*
seven 'leaflets'

Bird attack

- ✓ Part of the top surface of the leaf mine appears to have been peeled or torn away. This is usually where the leaf miner has pupated.
- ✓ Sometimes the damage is triangular (matching the bird's beak shape).
- ✓ The inside of the leaf mine is revealed – it is silvery or dark greyish-brown in colour.
- ✗ Small splits on the leaf or leaf miner and abrasion of the surface are **not** bird attacks.



A leaf mine attacked by a bird

Damage scores



0. The leaf is completely green. No evidence of moth attack. (Select another leaf)



1. Just a couple of whitish/brown patches on the leaf



2. There is more green than white/brown on the leaf



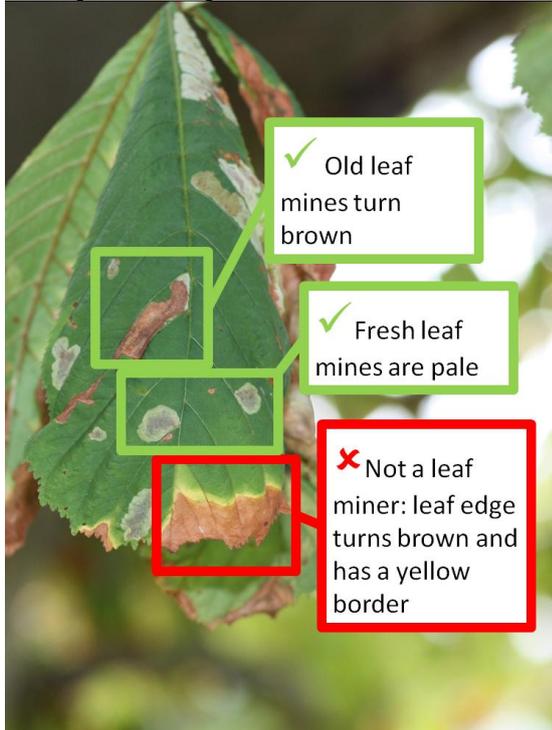
3. It's about half green leaf and half whitish/brown patches



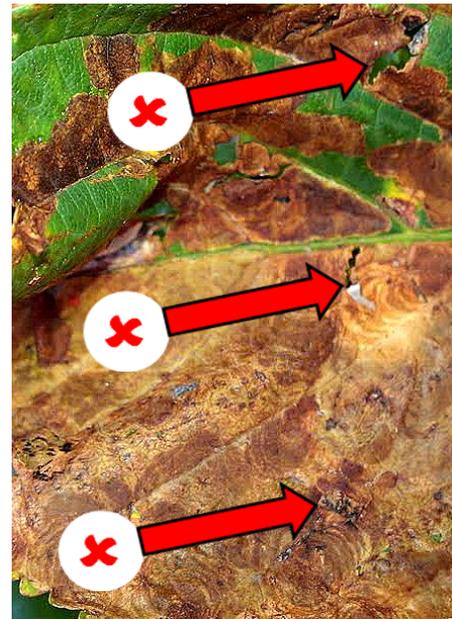
4. The whitish/brown patches definitely cover more than half the leaf.

Is it a leaf miner?

When giving the leaf a damage score, ignore damage that is not the leaf miner



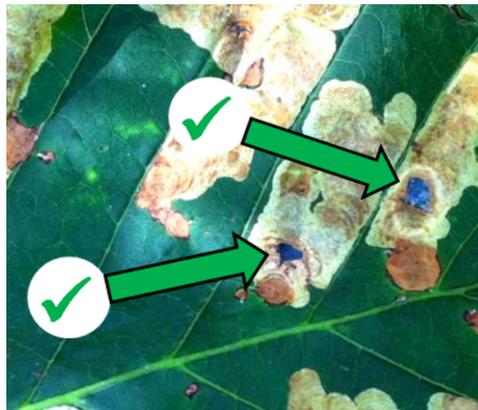
Is it a bird attack? NO



This leaf has turned almost completely brown with damage from the leaf mining moth.

There are small splits and abrasion on the surface of the leaf, but they do not look like the distinctive damage of a bird attack

Is it a bird attack? YES



About this mission

- The purpose of this mission is to understand how likely it is that the alien leaf-mining moths are to be attacked by birds. This is the first large scale study of bird attacks on these leaf-miners anywhere in Europe!
- We predict that there will be more bird attacks in places where moths have been present for longest.
- We also predict that where birds are attacking the leaf-mines, they prefer to attack leaf mines on the most infested trees.
- Will the data support our predictions?
- The birds attacking the leaf miners are most probably tits, especially blue tits. They seem to feed mostly on the moth pupae.

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