

Scarce Vapourer Survey Methodology

Version 1 (2026)



Yorkshire
Wildlife Trust



UNIVERSITY
of York

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Introduction to the document

This methodology has been written with the aim of creating a standardised approach to surveying for Scarce Vapourer. A small group of professionals and volunteers have been carrying out Scarce Vapourer surveys in Yorkshire, the species status in other areas of the country remains uncertain. By documenting our methodology, we hope to encourage interested people to join a national surveying effort, particularly in historical hotspots outside of Yorkshire (e.g. Norfolk).

Standardised methodologies provide a level of quality assurance, ensuring all surveyors use an approach known to work, while minimising effort and disturbance. Importantly, standardised methods generate data which is easier to interpret, particularly when multiple sites and surveyors (who may change over the course of data collection) are involved. If a population shows a decline over years when using a standardised method, it is more likely to be a true observation than under non-standardised methods where there are a greater number of uncontrolled variables. Understanding the change in the range of Scarce Vapourer and gaining knowledge of the sites they continue to inhabit is key to our long-term objective of reducing the species vulnerability to extinction.

This document has been produced by colleagues of Yorkshire Wildlife Trust working on the Natural England Species Recovery Programme funded project 'Understanding Scarce Vapourer' and latterly on Nature for Climate funding. The project has been led by Yorkshire Wildlife Trust with collaboration from Butterfly Conservation, Natural England and University of York. Information provided in the document has been collected through 3 years of field work, historic records and consultation with multiple experts. We would like to thank Dave Wainwright (Butterfly Conservation), Julian Small (Natural England), Kanchon Dasmahapatra (University of York), Mike Gasson, Andrew Grayson and all volunteers for their time and expertise on this project.

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1. Background

Scarce Vapourer (*Orgyia recens*, referred to as SV in this document) is a day flying moth with a colourful larval stage, becoming brown with flashes of orange and white in adult form. Having once been widespread across England, the species has suffered severe declines with its current range restricted to Norfolk and the Humberhead Levels in north-east England. Due to the species threatened status, it is a UK Biodiversity Action Plan (UK BAP) priority species and listed under section 41 of the Natural Environment and Rural Communities Act 2016.

The caterpillar is an unfussy eater with many deciduous trees and shrubs being suitable but it's life cycle likely makes it vulnerable to habitat loss and certain management practices. The Vapourer (*Orgyia antiqua*) a close relative of SV, has similarly colourful larvae but a more uniformly brown adult stage. The two moths have similar habitat and food plant requirements and, where SV are found, they commonly coexist.

Many invertebrates are dimorphic, meaning females look different to males. In the case of SV and Vapourer, adult females are so different to males they look like a different species. Females focus their energy on producing as many eggs as possible, along with a pheromone to attract mates, rather than growing functional wings. Females are larger than males and are white to grey rather than brown.

Despite the similarity in life cycle, The Vapourer has fared markedly better and is still widespread across the country. To understand the decline of SV, it is important to identify locations of existing populations. Yorkshire Wildlife Trust and partner organisations have recently surveyed for SV in, and surrounding, the Humberhead levels. This document outlines a standardised methodology, considering our learnings so far, and is intended to provide guidance to other groups and volunteers to contribute to surveying nationally.

Surveying for SV is easiest during their larval stage, between exiting diapause in late spring and pupating in early summer. Anyone can search for larvae and no specialist equipment is required, just a keen eye and patience! For this reason, the current document focuses on surveying for larva with only basic information provided for Adult surveys (assembling).



Figure 1: Clockwise from top left: *O.recens* larva on bramble; *O. antiqua* larva on willow; adult male *O. recens*; adult male and female *O. recens*. Further pictures for Identification can be found in the appendix.

2. Description of Scarce Vapourer

Scarce Vapourer larvae have 6 growing phases (instars) throughout which they increase in size and change appearance, becoming more distinct from other species and easier to identify. With each instar the larvae shed their outer skin (cuticle) revealing a new one which allows them to continue growing.

When larvae hatch they are around one millimetre long and look entirely black to the naked eye. They have hairs longer than their bodies which they use to be blown by the wind and spread themselves amongst the vegetation (a behaviour called ballooning). The larvae rapidly increase in size and it soon becomes clear they have orange colouring on the side of their bodies. By the third instar, plumes of tightly packed (brown/black and possibly white) hairs appear on the upperside of their bodies, along with black hairs protruding from their rear, like a tail, and from close to their head in two 'antennae'. Through the final instars the larvae increase in size, reaching a maximum of around 4cm long. The plumes on their upperside generally become bright orange and orange stripes down their sides become more pronounced.

Despite having a relatively unique appearance in later instars, SV can be confused with other species, especially Vapourer and Yellow Tail moth. Below are some diagnostic differences between the species to aid ID (please see appendix for ID sheets to be used when surveying).

When the larva are ready to pupate they find a hidden spot to create a cocoon from their silk, protected by the hairs which make their caterpillar look so unique (and are irritant). Once their cocoon is complete they will shed their final cuticle and begin the process of metamorphosis into the adult form.

Adult Scarce Vapourer are of medium size (wingspan: 2cm to 2.5cm) and look to be a uniform rather drab brown when in flight. However, when sedentary flecks of orange and white can be seen with multiple shades of brown. This description covers the males and while it is rare to see a male Scarce Vapourer, it is even rarer to see a female. This is due to females having no functional wings, remaining sedentary where they emerged from their pupal case. This is where they will lay their eggs, on top of the cocoon. Females are covered in a grey downy fluff and their body is larger than males owing to the swollen abdomen which contains hundreds of eggs.



Figure 2: Early instars of SV larvae; first instar on the left with an almost transparent body between segments, second instar on the right showing more orange colouration.



Figure 3: Left; Two larvae likely to be 3rd and/or 4th instar, now with black and white plumes on their upperside and clearly showing 'antennae' hairs close to their heads. Right; two larvae likely to be from the final instar showing bright plumes of orange hairs, 'tail' and 'antennae' hairs and distinct orange stripes along the side (note these stripes)

Feature	Scarce Vapourer	The Vapourer	Yellow Tail
Plume colour (when present)	Black or white in early instars, brown or orange in late instars	Black or white in early instars, yellow or white in late instars	None present
Upperside spots on final segments	Clear or light orange	Orange or red	Orange
Antennae and tail hairs	Present	Present	None
Side appearance	Orange stripe	Orange/red spots	Orange stripe
Upperside appearance	Orange tramline connecting above the head	Mostly black with some orange/red spots	Orange stripe becoming tramline in later instars. Broken at around segment 5

Table 1 Feature comparison between Scarce Vapourer and selected other Moth larvae



Figure 4: From left to right: Scarce Vapourer, Vapourer and Yellow Tail Moth larvae.



Figure 5: Left to right: Scarce Vapourer pupa inside a silk cocoon containing irritating hairs (you can see its final cuticle disposed of in the top right, a pupa outside of its cocoon).



Figure 6: From left to right: Female and male Scarce Vapourer (adult female Common and Scarce Vapourer are almost indistinguishable and so we have not provided comparison picture); Male Scarce Vapourer (left) and Common Vapourer (right) on graph paper – Both are a similar uniform brown with white marks at the terminal edge of the forewing while Scarce Vapourer have diagnostic orange and white forewing tips which are not present on the Common Vapourer. Scarce Vapourer also appear generally more varied in brown and orange tones (note the Common Vapourer appears smaller here due to its wing position, both species are of a similar size).

3. Identifying a site to survey

Though Scarce Vapourer are not fussy in terms of their food plants, records suggest their range has always been more restricted than that of the Common Vapourer. Historic records mostly cover a triangle between York, Doncaster and Lincoln (especially the Humberhead Levels); while The North Norfolk Coast and the Norfolk Broads contain the majority of other historic records with further, sporadic records in the midlands and surrounding London. We would suggest focusing on sites with previous records of SV, prioritising those with the most recent records and the area surrounding them.

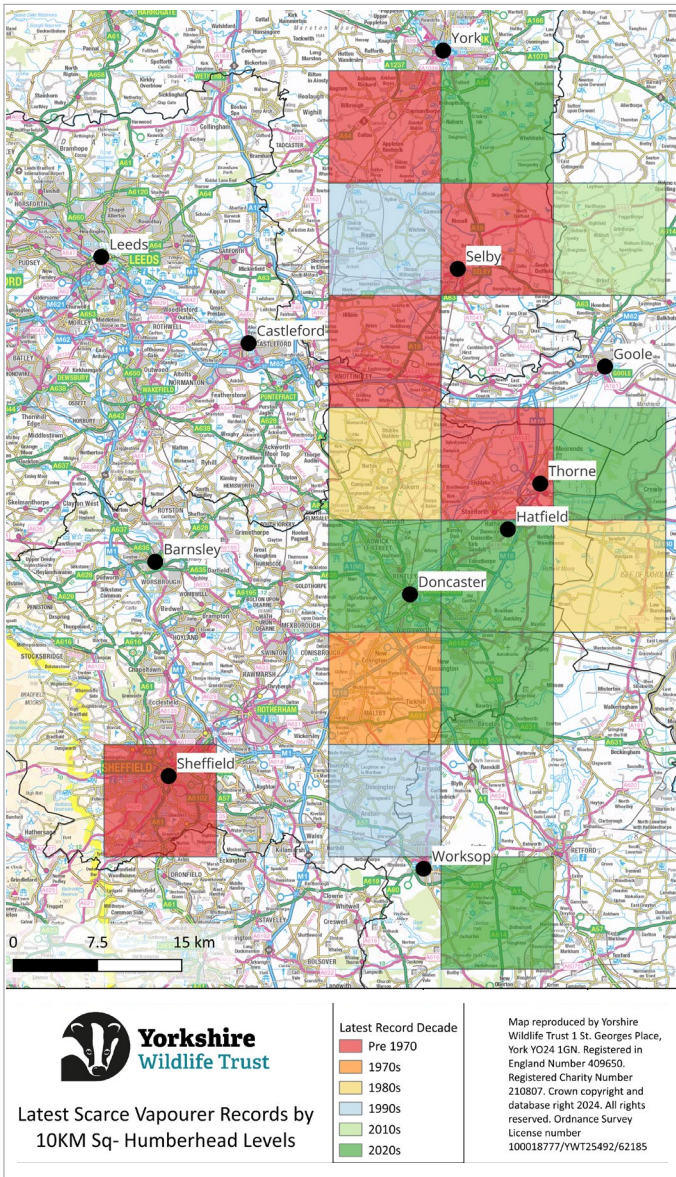


Figure 7: A map showing the recency of the latest records of Scarce Vapourer in the Yorkshire area by 10km square. The squares with the most recent records are clustered around Doncaster and the southern half of the Humberhead Levels.

3.1 Historic records

see appendix for larger maps

The maps on this page show confirmed records by recency for Yorkshire and Norfolk (full size versions are available in the appendices). More detailed information can be found on the NBN atlas (<https://nbnatlas.org/>), though as records are often fairly old, the resolution of grid references available are not granular enough to make them site specific.

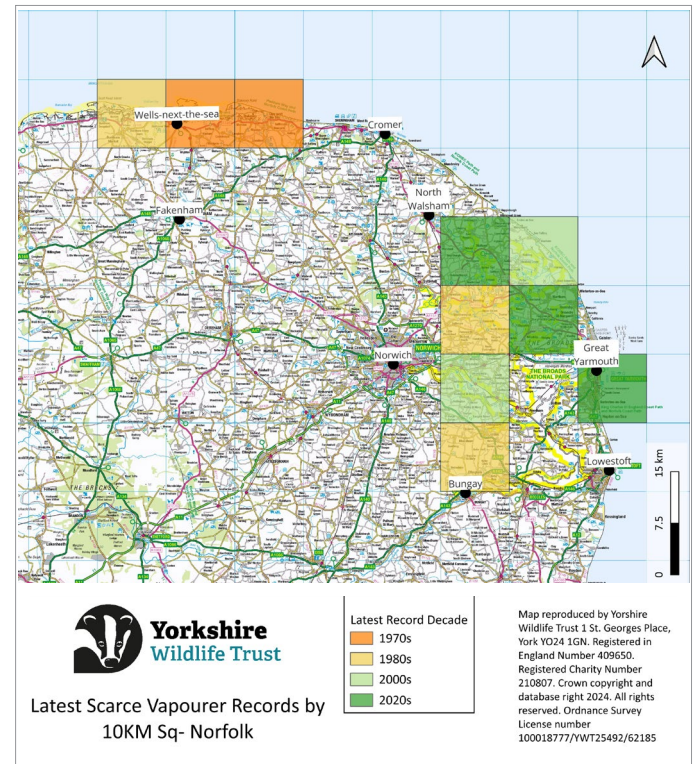


Figure 8: A map of the recency of the latest records of Scarce Vapourer in Norfolk by 10km square. The Norfolk broads have had records in the current decade while the species has not been seen on the North Norfolk coast since the 1980s.

3.2 Vegetation

The following is a list of the known food plants of the SV larvae:

- Willow/sallow species. The two most common species at sites with recent records are Grey Willow (*Salix cinerea*) and Goat Willow (*Salix caprea*)
- Birch – including Silver (*Betula pendula*) and Downy (*Betula pubescens*)
- Hawthorn (*Crataegus monogyna*)
- Brambles (*Rubus fruticosus* agg.)
- Oaks (*Quercus* sp)
- Rose such as Dog Rose (*Rosa canina* agg.)

Larvae have been found at between 0.5 and 3.5 meters from the ground on a range of young and maturing trees. Adults have also been assembled in areas with tall mature trees where surveying for larvae is difficult due to the height of lower branches. However, data such as this is likely to be biased by the range of heights a surveyor can reliably identify small larvae from, but it does illustrate that all vegetation of which the surveyor has a good view of should be surveyed.

Figure 10: Willow scrub that has arisen by a track at Thorne Moor, an ideal transect

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3.3 Setting a survey transect

A transect is a set route to enable an estimate of amount of habitat surveyed, and can enable resurvey of the same area year after year to enable trends to be discerned. It also allows the route to be checked out before hand and risks assessed.

Transects can be of varying length, with 100 to 500m being a good length. Too long a transect is very time consuming and liable to drop off in concentration creating unreliable results. A site can have several transects, to help cover larger areas, by picking likely locations within the wider site.

Transects are often best placed along existing paths, as many sites have tall, thick vegetation with large bramble patches, or ditches and deeper water. Paths along hedgerows, and fence lines are also often used, or where scrub has arisen alongside paths. This does limit the areas that will be covered, but is a good balance between safety and ease of survey and getting data that is useful.

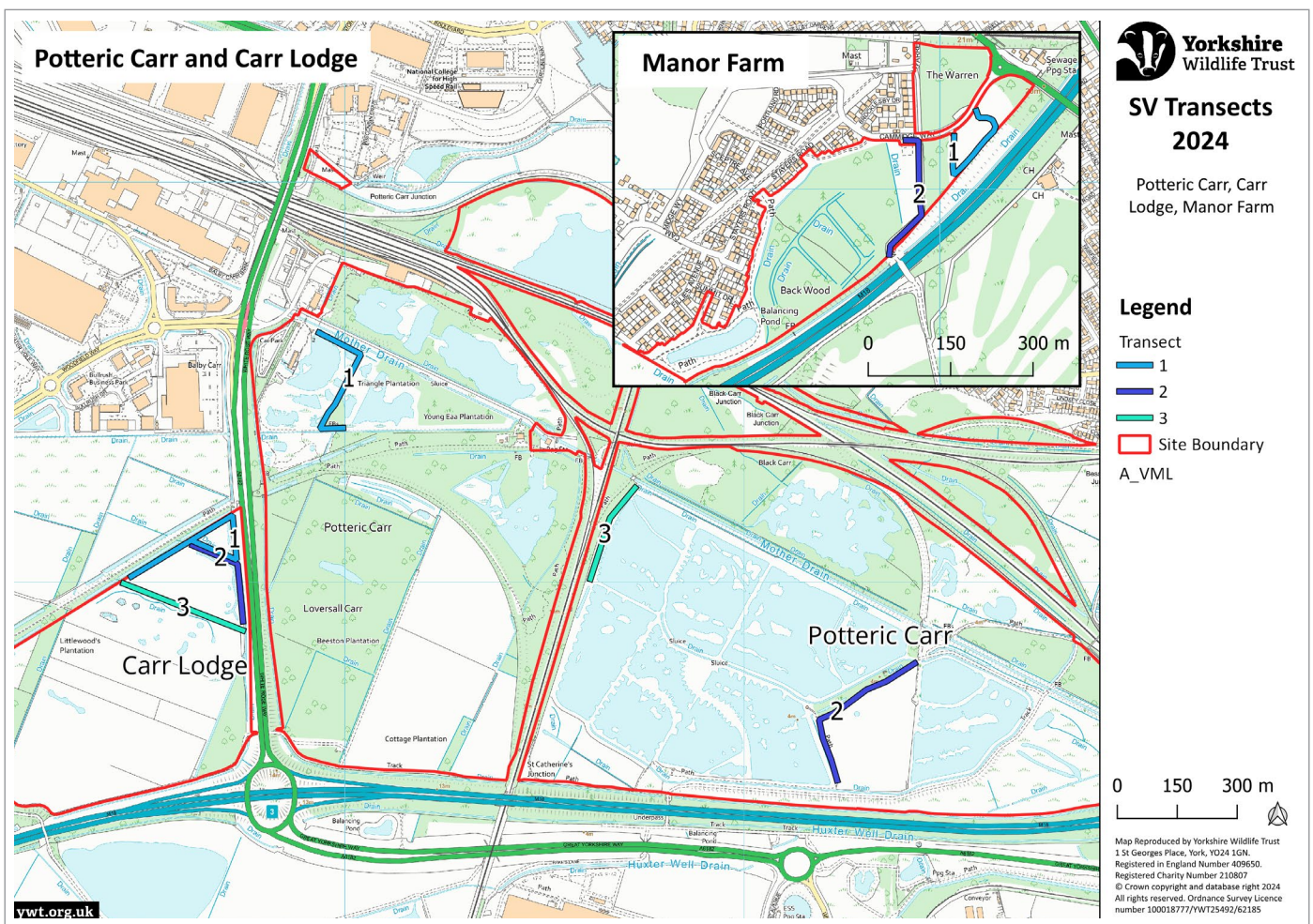


Figure 9: Transect map for Potteric Carr and surrounding nature reserves. Transects at Carr Lodge (1-3 in the west) might be too close together unless studying a known population, those at Potteric Carr (1-3 in the centre) give a good coverage over a larger site without too much effort.

4. Pre-surveying considerations

4.1 Time of year

Like butterflies, most moths have specific windows of activity throughout the year and Scarce Vapourer is no different. The flight period is relatively short, running from late June to mid to late July. Historically, a second flight period has been reported starting in late August, however, we have been unsuccessful in confirming this in recent surveys (though observed in captive reared specimens). Light traps are unlikely to work with SV (difficult to verify given their rarity, but no SV have come to light in over 50 years of light trapping at Potteric Carr), therefore the flight season is not the easiest time to survey. The methodology we have used during flight periods requires a captive lure trap in which a female moth is placed and observed on site, with males attracted to the trap when the female releases her pheromone or ‘vapour’ (the use of synthetic pheromone is an alternative, though it is an unproven and costly approach)

Surveying during the species larval stage is the more reliable approach for identifying populations. SV are present as larvae for much of the year but are not active from late autumn to early spring (entering a state known as diapause). Our team have surveyed for larvae from around the 10th of May to mid-June and late August to mid-September.

Only survey in May and June has proved successful, with large larvae in late instars being easier to find. In captivity larva have been observed to exit diapause from the start of April so earlier surveying could be beneficial, but larvae are likely to be smaller and so less obvious on vegetation and possibly more difficult to distinguish from other species such as Common Vapourer.

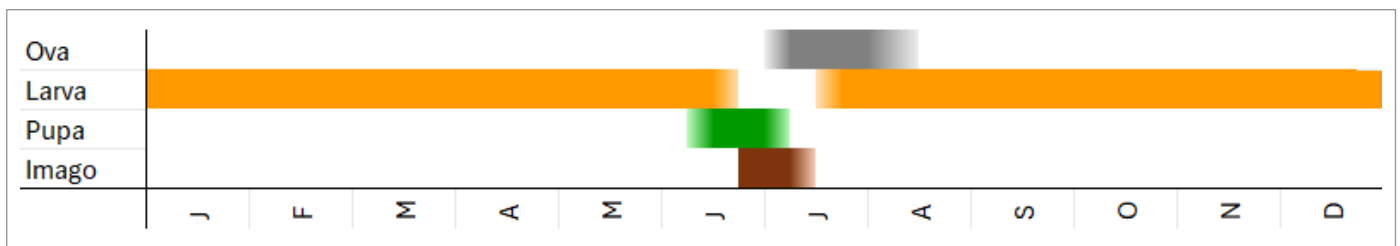


Figure 11: Stages of the *O. recens* life cycle. The flight period for SV lasts for 3-4 weeks before mid-summer while larvae are present for much of the year. A second flight period at the end of summer has been suggested historically.

4.2 Weather Conditions and time of day

Due to the rarity of the species, it is hard to draw any concrete conclusions as to the best conditions in which to survey, however we can make some suggestions to hopefully increase success. Most of our finds have come where temperatures have been between 15 and 20 degrees, often with spells of warm sunshine, or continuous sunshine. Still to breezy conditions seem to provide the best results, though records have been made in gusty conditions. Constant strong winds are sub optimal, though this may be due to difficulties in surveying vegetation rather than larvae hiding away.

Our surveying has all taken place during working hours, often not starting until after 10am and finishing before 4pm due to time for traveling. Larvae most regularly have been observed between 11am and 2pm, though they have also been seen as late as 5pm. This data is likely to have been biased by the time at which surveyors arrived and left site, along with observer fatigue but it is likely the larvae are more active once temperatures have had a chance to rise.

The presence of larvae under certain conditions or at specific times does not necessarily prove a preference for those conditions, nor that larvae are more active at those times. Therefore, we encourage a level of survey to be completed outside of the above suggestions, though success may be less likely.

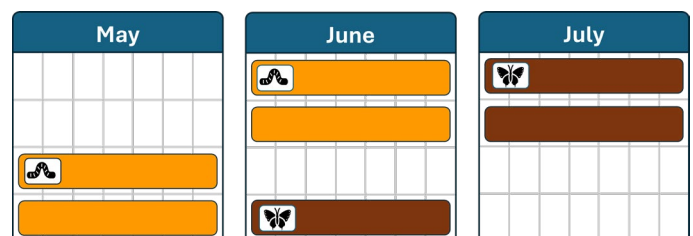


Figure 12: Prime survey times for larval surveys and for observing adults on the wing. Larvae (orange) are most obvious for a month between mid-May and mid-June while adults (brown) begin to emerge in late June and can be seen until the first weeks of July.

5. Survey Methodology

When carrying out larval surveys two methods can be used:

- **Visual** – inspecting vegetation for larvae or discarded cases
- **Beating** – using a stick to knock any invertebrates from vegetation on to a tray where they can be identified.

Surveying currently pauses once larvae pupate as the likelihood of observing a pupae is much diminished. Surveying resumes during the flight season where adults (imago) emerge from their pupal case and can be seen on the wing. The surveying method for adults is called ‘assembling’.

5.1 Visual Search

Visual searches cause the least disturbance to wildlife and are unlikely to result in any damage to vegetation. However, it requires a lot of concentration and can be intense on eyes so regular breaks should be taken, this will help avoid eyestrain and keep you focused and able to provide accurate results. When completing a lot of surveying, fatigue can set in and therefore, the chance of missing larvae increases as time passes. You should try to search as much of the vegetation in your survey area as possible, checking the upper and underside of leaves, looking out for any SV larvae or molted cuticles. Feeding signs can help focus your search, spending extra time in these areas, however larvae may be in areas without obvious signs of feeding. There are distinct feeding signs for younger vs older SV larvae with smaller larvae creating holes in the internal structure of the leaf and larger larvae feeding from the border of the leaf toward the main rib. There are some example images below of SV feeding signs.

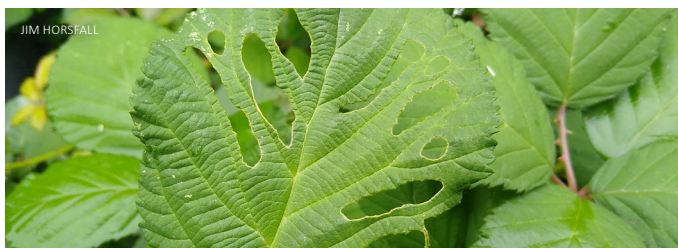


Figure 13: Leaves showing damage from SV larvae feeding. The bramble leaf on the left shows damage characteristic of younger larvae, likely to be seen earlier in the surveying season or once any eggs hatch (mid July to August). The collection of Hawthorn leaves on the right show a mixture of younger larval feeding patterns (second from the left) and older larval feeding patterns. Older larvae can chew through woodier material such as veins and ribs.

Please note feeding signs matching those below could belong to a wide range of species and presence of SV cannot be inferred by these feeding signs alone. Although turning over of every leaf is not recommended, as it takes a lot longer, occasional turning of leaves with feeding signs can show up larvae feeding from the underside. Ensure you do not limit your search to branches at head height, vegetation both above head height and down to the ground should be searched. Higher branches can be gently pulled toward you and manipulated to give you the clearest view. It can also be helpful to view larger vegetation from underneath by standing below branches and scanning the leaves and stems.

Carry this method out on all food plants in the transect, even if you are to carry out the below beating method. If you find any Scarce Vapourer larvae or cuticles, count how many there are and take pictures and measurements using a ruler or tape measure (it is best practice to take pictures both from above and side on for as it allows for a higher degree of confidence when being verified), trying your best not to unseat them from the vegetation. If you feel more comfortable making an estimate as to size then do so but record the data as an estimate on your survey sheet (see the ‘Recording your survey’ section below). If you find any larvae you think could be SV but are not sure, take a picture and record the same data, making a note that you are not certain of the ID. When data is submitted it can be double checked; identifying from photos is very possible with good photos so please try and get close, in focus images of both top and side angles.

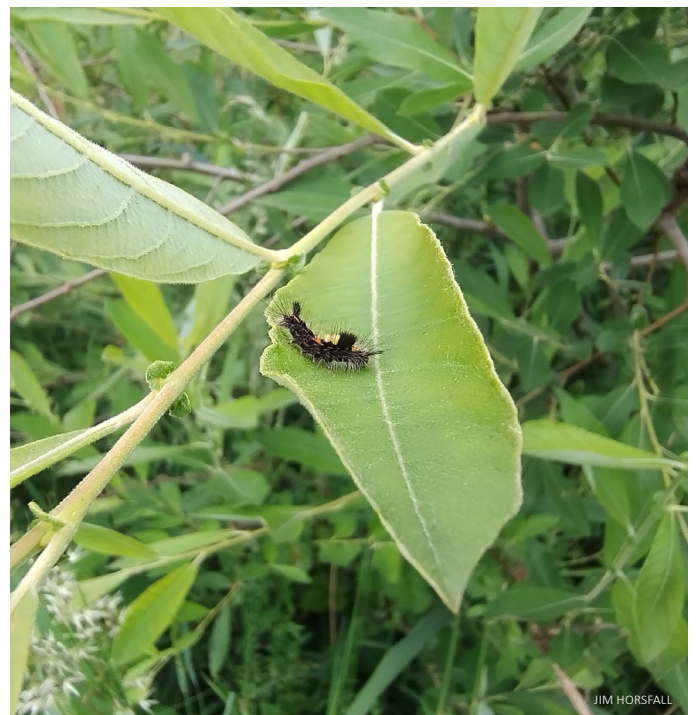


Figure 14: Scarce Vapourer larva on a leaf without the presence of any feeding signs.

5.2 Beating

Beating needs to be carried out sympathetically, it can cause damage to the vegetation and will unseat a lot of non-target species. It is also possible that you will not catch 100% of those you dislodge, which could mean SV larvae are missed or that some species are unable to find their way back on to vegetation. Therefore, due to the targeted nature and amount of vegetation to be surveyed, beating should be limited to a maximum of 10% of vegetation on any given transect. Beating should not be carried out without a tray on which to catch anything you dislodge, if these conditions cannot be met, visual searches will suffice. Beating should also be avoided in windy conditions as invertebrates could be blown away from your beating tray and poses a risk to the tray being upended and the contents lost. Unfold the beating tray and hold it underneath the target branch and with a stick firmly hit the branch 3 or 4 times. Repeat this on several branches before setting the tray on the ground and checking the contents. Pick up any leaves, sticks, catkins and fruits, checking them for larvae and removing them before searching through any remaining invertebrates. If SV are found take pictures and record data on a survey sheet.

Do not carry out beating on vegetation in which you have found SV larvae already as this will cause unnecessary disturbance. All wildlife unseated during beating should be placed back on the vegetation they came from where possible. All larvae should be placed back on their food plant (whether SV or not) other species can be replaced by hitting the back of the beating tray while holding it over the vegetation. Make sure you take pictures and measurements of any SV larva or those you think may be SV but aren't sure prior to placing back on their food plant.



Figure 15: Left, Beating tray held under vegetation, with stick used to beat branches above. Right, larvae are sometimes still holding onto leaves dislodged, so care needs to check all dislodged vegetation.

5.3 Assembling

Adult Scarce Vapourer are rarely observed resting and have a rapid, unpredictable flight seeming to prefer an indirect path. It is a very unusual species to be seen on the wing and accurate identification is tricky given its colouring is mostly brown. The flight time of Common Vapourer, which appear very similar on the wing, can also partially overlap that of the Scarce Vapourer. Therefore, even in areas with healthy populations, it is unlikely you will be able to confidently identify the species on the wing. Male Scarce Vapourer moths are fly in search of females, attracted by pheromones emitted by females. Therefore, captive females can be used as a lure by surveyors. Female moths are placed into a semi-open cup within the trap, from which their pheromone can disperse via the breeze passing through the device. The trap is then hung on vegetation and observed for 30 minutes from around 10 meters away. Scarce vapourer often do not enter the trap, rather they flutter around the outside looking for a way in. After a time they may fly away from the trap if they are unable to find the female. Therefore, it is important to remain vigilant and watch the trap. If you notice a moth flying around the trap you should investigate and make an ID. You may need to catch the moth by either gently capturing in a net or using your hands to push it in to the trap. Images to support ID can be found in the appendices.

As with larval surveys, use a predetermined transect (if you have previously completed larval surveys use the same one(s) regardless of whether you found any). You do not need to place the trap in every bit of good habitat, rather you should aim to survey every 200m along the transect. For a 500m transect you could use two survey points, one at 150m and a second at 350m. Think about your positioning in terms of the direction of the wind to ensure the pheromone travels in the most appropriate direction. Placement should also ensure the trap is out of direct sunlight, to protect the females from the heat.



In terms of suitable weather conditions, sunny to somewhat overcast but warm appear to return the best results. Surveying in temperatures of up to 31degrees have returned positive results (we haven't surveyed above this temperature) down to 19 degrees. It is likely a gentle breeze will help diffuse the pheromone vapours, and these conditions have returned the best results so far. However, surveys in slightly gusty but not strongly windy conditions have also been successful. Surveys have not been completed in rain as it is unlikely for males to fly in such conditions.

As females do not continuously produce pheromone, multiple females are often placed in the same trap and/or in multiple traps. Be careful to ensure males are unable to mate with the females, this could involve placing thin tissue or a section of net around the lure cup. Females may be less likely to produce pheromone once mated and therefore results may be skewed.

The current project has a captive stock of Scarce Vapour which allow us to complete adult assembling surveys. It must be noted that Scarce Vapourer are rare and should not be taken from the wild without permission. All the sites we have successfully surveyed have been on Sites of Special Scientific Interest (SSSIs) and discussion with Natural England is essential before either taking larvae from the wild, or using a lure to attract adults.

Surveying as a volunteer for Yorkshire Wildlife Trust would be the best method to be able to use captive bred Scarce Vapourers to lure adult males.

5.4 Equipment

While visual surveys do not require specialist equipment a hand lens will help with identification if you find smaller specimens. A low magnification example will be enough to see the key identifying features (such as a 10x lens), these can be brought from www.nhbs.com. Binoculars can also be helpful for scanning vegetation which may be out of reach, however, as you will likely to be unable to get close enough to take a good picture of any larvae it may be difficult to confirm your record. Other helpful equipment is listed below:

- Ruler or Tape measure
- Smart phone or camera
- Device for taking grid references such as a smart phone (grid references can usually be found by dropping a pin on the phones mapping software (e.g. Google or Apple Maps). gridreferencefinder.com can be helpful also along with other mapping apps.
- Thermometer (optional), place this in the shade when you are completing your survey and take a reading whenever you find SV larvae.

If you wish to carry out beating in your survey, you will need a tray. These devices consist of a fabric 'bag' which folds out into a rectangle, attached to wood and plastic frames. They are not a cheap item so may only be viable if you are working for an organisation who can provide one. An example beating tray can be found here: nhbs.com/rectangular-beating-tray. You'll also need a sturdy stick to hit the vegetation with.

For assembling surveys you will need a lure trap, as noted in the assembling section, these are not always successful in trapping Scarce Vapourer. We are investigating alternative devices and this information will be updated should a better product be identified. We currently use traps to the same design as these: www.harrodhorticultural.com/box-tree-caterpillar-moth-pheromone-trap-pid10932.html.



Figure 16: Pheromone trap, housing female scarce vapourer, hanging in scrubby Hawthorn.

5.5 Recording your survey

It is important to record your survey results whether you were successful in finding specimens or not. Including results from unsuccessful surveys helps map locations unlikely to contain populations, prioritise future effort and understand possible reasons for range contraction. We use two forms when completing surveys, one to record the details of the transect and a second recording details of any SV larvae found. The forms, along with completed examples, have been included in the in this document. Opposite are descriptions of the fields present on the survey forms:

Transect information:

- **Survey Code** – This links the two forms so we know which larvae were found on which survey. One way of doing this would be to use an initial for the site followed by the visit number. For example if you were visiting Thorne Moor to complete your second survey you might use the code TM2.
- **Site name**
- **Date** – in combination with other data this allows us to understand how early SV are emerging and how developed they are and whether this is changing.
- **Grid references at start and finish** – these enable us to accurately map areas which have been surveyed. Alternatives to grid references such as what3words can also be used. When submitting your results it may be useful to additionally provide map showing your transect.
- **Survey methods:** did you complete a visual survey and did you carry out any beating.
- **Start and finish times** – this helps us know how much effort has been spent in locations and improve our understanding of when SV may be most active (and therefore when it is best to survey).
- **General description of the transect and vegetation** – include species of flora present, especially any food plants of SV, and an estimate of their height (or young/mature). It is also useful to include any signs of management (e.g. if the transect is along a hedgerow, does it get trimmed, is this by a tractor mounted flail?), presence of footpaths or wet features such as boggy ground, streams, ditches, ponds etc. Aspect to the sun can also be useful, is the vegetation south facing etc.
- **Weather conditions** (sun, cloud cover, rain, wind strength) and temperature range.
- **Date and start/finish times**

Information regarding any larvae found (record for each larva/group of larvae):

- **Specific location** – grid reference, what3words or other location data point
- **Survey method** – what were you doing when you found the larva, did you find while visually searching the vegetation or did you find while beating.
- **Time** at which the larva was found
- **Temperature and weather** at the time of finding the larva
- **Description of the vegetation** the larva was found on – species, total height, height at which the larva was found and its location on the vegetation (e.g. found on underside of leaf at 2 meters from the ground on a young 4 meter tall willow facing south)
- **Number observed**
- **Size of larva** – take a measurement if possible or roughly estimate the larva length.
- **Take a picture** of the larva so the identification can be confirmed and an estimate as to how developed the larva is can be made.

5.6 Summary

- Carry out visual searches, looking for feeding signs to help focus attention.
- Look on the upper and underside of leaves and do not neglect stems and branches.
- Search vegetation both low down and above head height to as high as is convenient.
- Take pictures and record data on the survey sheet of any SV or potential SV larvae
- If you have a beating tray, carry out beating after visual searches have been completed. Only beat a maximum of 10% of vegetation and do not carry out on vegetation close to or on which SV have been found.
- Replace as many of the unseated invertebrates to vegetation as possible.
- Visit the transect on multiple occasions and repeat the previous steps.



Recorder Name: _____

Survey Code	Date	Site	Start and Finish Grid References	Survey Methods	Start & end time	Temperature range & weather	Notes on vegetation	SV present?
TM1	13/05/2025	Thorne Moor	SE 71649 16483 SE 72318 15775	Visual	10.30 12.30	15 to 17 degrees, sunny, gentle breeze	Young willow, 3m tall, understory of bramble	Y
WI1	14/05/2025	Wheldrake Ings	SE 70201 44285 SE 70577 44100	Visual & Beating	10.30 13.10	24 to 29 degrees, sunny, no breeze	Mostly young willows with occasional hawthorn	N
HM1	25/05/2025	Hatfield Moor	SE 69149 05786 SE 70352 05211	Visual	10.30 12.30	20 to 23 degrees, sunny with overcast spells, gusts	Mature willows 15m tall, spreading, brambles	N
TM2	26/05/2025	Thorne Moor	SE 71649 16483 SE 72318 15775	Visual & Beating	15.00 16.30	18 to 21 degrees, overcast windy	Young willow, 3m tall, understory of bramble	Y
PC1	27/05/2025	Potteric Carr	SK 59057 99767 SK 59995 99886	Visual & Beating	10.30 12.30	15 to 18 degrees, sunny but post rain, strong breeze	Small willow on managed path. Parallel to ditch.	N
PC2	02/06/2025	Potteric Carr	SK 59057 99767 SK 59995 99886	Visual & Beating	13.00 15.00	18 to 21 degrees, overcast windy	Small willow on managed path. Parallel to ditch.	Y

Record the details of each transect you visit and provide as much detail as possible.

Scarce Vapourer Larvae



Credit: Andrey Pomonarev

Common Vapourer Larvae



Credit: Nicholas Mitchell (left & right), Jim Horsfall (middle)

Scarce Vapourer Adult



Credit: Andrey Pomonarev