



Water Vole Survey Volunteer Handbook

Greater Manchester Ecology Unit

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Water Vole Survey Volunteer Handbook

Carbon Landscape Citizen Science Project

Contact us

Please contact the Greater Manchester Ecology Unit (GMEU) if you have any questions with regard to this survey handbook.

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Introduction

Thank you for volunteering to take part in the Carbon Landscape's Citizen Science Project to monitor key species through structured surveillance. The project's boundary, [view map: <https://gmwildlife.org.uk/mapapp/?project=carbonlandscape>] encloses the core of the Great Manchester Wetlands Nature Improvement Area (NIA) which supports a host of European and UK protected species, as well as UK Biodiversity Priority Species, all dependent on the mossland and wetland habitats which the project will enhance and restore.

The project will build on the existing survey work being undertaken and will also recruit and train new recorders, our Citizen Scientists. It aims to significantly increase survey coverage of target species, including water vole, across the key habitat restoration areas, and the wider Carbon Landscape. The surveys have been designed with the help of specialist county and vice-county recorders who between them have a wealth of experience in species monitoring in the North-west of England.

The survey methods are structured and repeatable allowing valuable data to be collected, not only during the three year lifetime of the project, but well into the future. Biological datasets are of most value when collected over a long time span. Monitoring the abundance and distribution of the target species is an important mechanism for measuring the success of the habitat works on the ground and changes to the landscape over time.

The robust data collected from the project's surveys and the subsequent survey effort will be used to monitor sites over time, allowing the success of habitat management works to be assessed and to influence future sustainable management. This will be of particular benefit to those owning or managing land within the Carbon Landscape, whilst providing ecologists and conservationists with biological data that can be analysed at landscape scale. This project will provide important insights into the factors influencing the abundance and distribution of some of our key species and most importantly, will be used to support future species conservation work.

Your contribution as a Citizen Scientist to the Carbon Landscape Project is greatly valued.

Survey Preparations

One kilometre square and site selection

The Carbon Landscape's Citizen Science Project survey unit is the 1km square and we aim, with your help, to survey as many of these as possible within the Carbon Landscape area by the end of June 2020. This will ensure the data collected is statistically robust and enable species distribution to be mapped at a landscape scale.

We have developed an online data portal which enables recorders to request 1km survey squares and view those already allocated, see gmwildlife.org.uk/carbon_landscape/survey_squares. Co-ordinating volunteers' survey effort will enable a large biological dataset to be compiled and ensure coverage is as comprehensive as possible, giving us a clear picture of the distribution of water vole at landscape scale.

Submitting your survey data

When carrying out your survey, please enter your data onto the field survey forms provided. Your data should ideally be submitted to GMEU as soon as possible after each survey visit. We are currently developing an online data entry portal and will inform you once this is live. However, as an interim measure survey forms should be scanned and emailed to carbonlandscape@gmwildlife.org.uk or posted to GMEU. If sending by post, please ensure you retain a copy of your data as a backup.

Land owner permissions

Landowners' permission for access onto private land where there are no public rights of way must be obtained. The Carbon Landscape Programme team are compiling a database of landowners and requesting access to their land. If you are unsure if you have permission to walk on land please check with GMEU before carrying out your surveys. Please pass on to us any information you obtain on landowners and their contact details as these will be added to the database.

You will be issued with a letter (also available to download from our website gmwildlife.org.uk/carbon_landscape/) which briefly explains that you require access to carry out ecological surveys and advising that you request the landowner to contact GMEU should they require additional information. We rely very much on the good will of farmers and landowners and are willing to share survey data with them if they are interested in knowing which species occur on their land with a view to sympathetically managing the habitats under their stewardship.

Survey timings

The Carbon Landscape Project surveys should be carried out at the specified time of year which varies depending on the target species or taxonomic group. The surveys have been designed so that they can be completed by one or a number of different volunteers over a year. The survey methodologies and dates are based on current national surveys which will allow the direct comparison of the results with national data and trends.

General equipment list

Some of the surveys require specialist equipment, details of which can be found in the individual survey methodologies, However, there are a number of items that should be taken on every survey: -

- Survey route map
- Field survey form
- Clipboard, recording form and pencil
- Note book
- Waterproof clothing
- Sturdy walking boots
- First aid kit
- Food and drink (if required)
- Hat and suntan lotion (strongly recommended from April to September, even during cloudy conditions)
- Whistle
- Camera (may be useful)
- Mobile phone, in case of emergency (do not rely on smart phones for navigation)
- Warm clothing (if required)
- Insect repellent (if required)

Optional equipment

- Global positioning system (GPS), available to loan from GMEU
- Compass

Health and safety

We want you to remain safe. Before any survey is attempted, the route should be pre-walked and any potential risk assessed. Listed below are a wide variety of general hazards that you might encounter when working in the field along with precautions to reduce the risks: -

<i>Example risk</i>	<i>Example precautions</i>
<i>Undulating / rough terrain and steep slopes</i>	<i>Select appropriate footpath / route. Wear appropriate footwear with good soles and ankle support.</i>
<i>Weather</i>	<i>Ensure you are aware of the forecast prior to your work. This is of particular importance in the winter or when visiting remote areas.</i>
<i>Dense vegetation</i>	<i>Hazards such as holes, burrows, tree stumps or fencing may be obscured. Work with care in such conditions.</i>
<i>Protruding stems</i>	<i>Take care when bending to survey vegetation to avoid injuries to eyes.</i>
<i>Streams and rivers</i>	<i>Cross streams or rivers only by footbridges or other purposely built structures. Avoid any structures that appear damaged or poorly maintained.</i>
<i>Poorly maintained footpaths, stiles, etc.</i>	<i>Avoid these if possible and report to the appropriate agencies.</i>
<i>Lone working</i>	<i>Conduct survey work in pairs whenever possible</i>
<i>Secluded sites</i>	<i>If in doubt err on the side of caution and do not walk alone. Inform another person of where you are going, your route and estimated time of return and arrange for them to contact the authorities and GMEU if you do not contact them to say you have arrived back safely.</i>
<i>'People' Hazards - might include poachers, strangers in isolated sites, irate owner/occupier, people with dangerous dogs, etc.</i>	<i>Exercise good judgement and assess the situation. Avoid confrontation and withdraw if threatened. Record any incident and inform the appropriate authorities and GMEU. Carry a mobile phone. Operate lone working system and if in doubt do not work alone.</i>
<i>Farm animals</i>	<i>Heed any warning signage and avoid entering fields containing dangerous livestock.</i>
<i>People with firearms</i>	<i>If shooting is legal make yourself known audibly and visibly. If illegal, withdraw and report to the authorities and GMEU.</i>
<i>Railways</i>	<i>NO fieldwork on active railways.</i>
<i>Hypothermia</i>	<i>Wear appropriate warm and waterproof clothing. Carry extra clothing and high energy food (e.g. chocolate).</i>

Biosecurity

In the wake of the recent ash die back emergency, the Forestry Commission have updated their biosecurity guidance and produced a 13 page booklet on the subject. It is recommended that this is downloaded and read at

[http://www.forestry.gov.uk/pdf/FC_Biosecurity_Guidance.pdf/\\$file/FC_Biosecurity_Guidance.pdf](http://www.forestry.gov.uk/pdf/FC_Biosecurity_Guidance.pdf/$file/FC_Biosecurity_Guidance.pdf).

For low risk biosecurity control, ensure that footwear is clean prior to the visit (visually free from loose soil and plant debris). If necessary, brush or wash in soapy water before your visit. Keep vehicular access to a minimum, where practicable, keep to established hard tracks. Clean accumulated mud from vehicles. Observe signage at sites and follow any site specific biosecurity instructions.

Where a damaging tree pest is known or suspected to be present and there is a risk of spreading the pest further, a higher level of biosecurity control will be needed. Please refer to the above document. Higher level controls will be required if the site is under animal health control, for example foot and mouth disease.

Water Vole Survey

Background

Nationally, the populations of Water Voles have declined dramatically, initially as a result of degradation and loss of habitat and subsequently due to the spread of American Mink.

Water voles are protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and it is important that this survey is carried out without causing disturbance to any water voles. Please take great care to avoid damage to banks and when searching through vegetation.

The survey is based on the People's Trust for Endangered Species National Water Vole Monitoring Programme (NWVMP) survey guidelines (2015). Collecting records in this way will enable your survey results to be utilised by the National Monitoring Programme and locally, contributing valuable information for the Carbon Landscape Programme.

Useful/essential equipment

- Binoculars
- Walking pole / stick
- Gardening gloves
- GPS or phone with a grid reference location app (accuracy of 10m) e.g. GPS Status & Toolbox (Android) or GridPoint GB (iOS)
- A camera (particularly one which can take close up photos)
- Ruler (for scale)

Planning your survey and establishing new survey transects

A map showing your allocated 1km square will be provided. Use this, in conjunction with a site visit to plan your survey transect. Aerial photographs may also be helpful in planning your route before you go to the site. Typical lowland habitats for water voles include: grasslands (both improved grasslands used for grazing livestock and semi-natural grasslands), arable farmland, mires, reed beds and lowland heathland. Water voles generally prefer slow flowing, meandering rivers and streams or ditches, canals or pools with plenty of tall and lush vegetation. The banks need to be suitable for making burrows.

The survey should be conducted from public rights of way whenever this is possible. Where access to private land is required, please refer to the earlier section on landowner permissions.

The survey will be carried out on a single visit between April and September (May is the optimal month) along one bank of a waterway (a 500 metre stretch is ideal). If the site does not contain a 500m stretch of waterway, shorter lengths (in 100m denominations) can be surveyed. Prior to the recording survey, a transect needs to be set up and a basic habitat survey carried out. This should be carried out on a separate visit during April in order to ensure the area is suitable to survey and to assess any specific site risks. The same survey transects will be used for all subsequent surveys (unless there is a compelling reason to change them).

An 8 figure grid reference is recorded at the start of each 100m section. The final grid reference at the end of the last section is recorded. Accurate grid references, together with photographs and / or notes of features will help to identify the start of each section. Storing the route in a GPS as you set it up, will save time on future visits and ensure accuracy when carrying out the surveys.

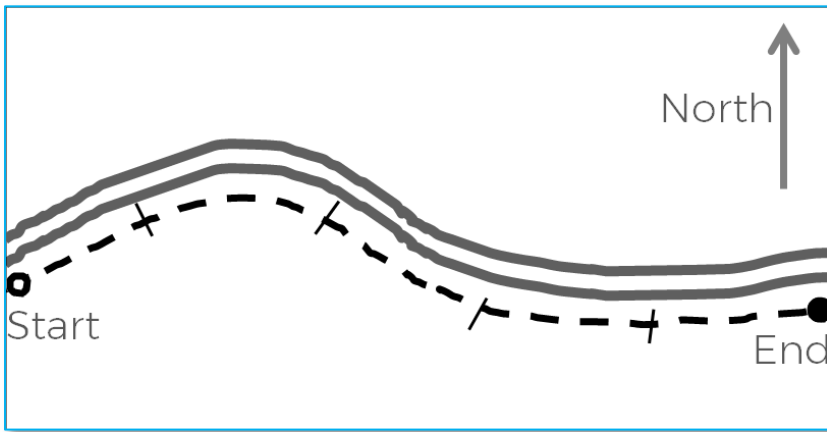


Figure 1 – 5 x 100m sections along the south bank of a watercourse

Additional Safety Considerations

Carrying out this survey requires access to the edge of waterbodies and although the survey should be carried out without entering the water, there are specific hazards associated with working close to water. Please ensure that you do not put yourself at risk.

In addition to the earlier generic health and safety advice please assess the risks which are specific to your own survey site including the access route to the site. An ideal survey area would have good access and good paths close to the edge of the water with a clear view of the bank and shallow, slow flowing or standing water; however, some sites may not have all of these positive attributes. If you are not happy that you can survey an area without putting yourself or others at risk, do not carry out the survey. Please consider the following specific hazards and adopt adequate control measures to prevent harm from the following: -

1. If waterbodies are fast flowing / in flood, falling into fast flowing water can be very dangerous. This is not suitable water vole habitat and should not be surveyed. If encountered whilst accessing the survey area, always remain a safe distance away from this type of water and walk on safe paths / surfaces. Never stand in fast flowing water, even if it is shallow. Avoid surveying during flood conditions.
2. If waterbodies are deep, falling in has the potential to be very serious. Ensure that there is a safe surface to stand on next to the water.

- The bank can be hazardous if the surface is slippery, has roots / trip hazards, is unstable / undercut and could collapse or if dense vegetation obscures the edges. Avoid hazardous sections by 'scalloping' the bank (see Figure 2 below) and viewing from areas which are suitable. A walking pole / stick can be used to look through dense vegetation. Protective gloves e.g. gardening gloves may be useful when checking through vegetation. Binoculars can be used to observe areas which are difficult to access. Stand still on firm ground whilst looking through binoculars.

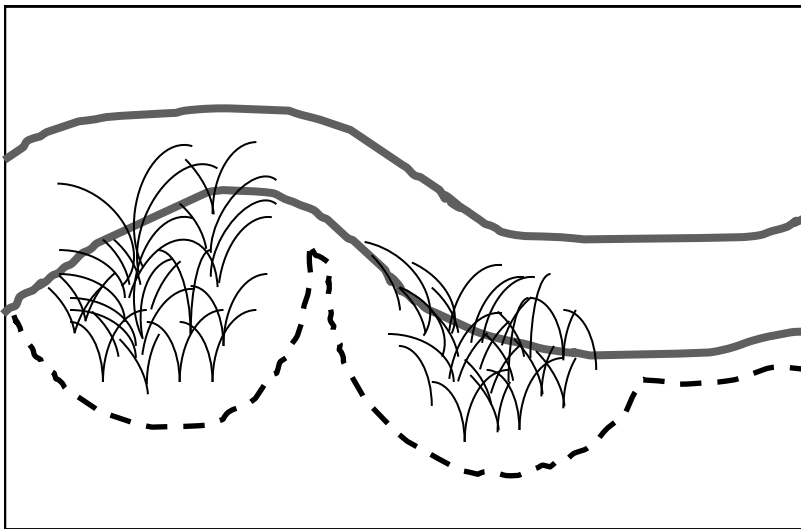


Figure 2 - Scalloping around inaccessible or unsafe areas of the bank

- The beds of watercourses can be extremely slippery and waterbodies may contain a deep layer of mud on the bottom. Carry out the survey from the bank.
- Weil's disease and other infections are potential hazards around waterbodies. Cover all cuts and broken skin with waterproof plasters and adopt good hygiene (hand washing and use of hand gel). For more information about Weil's disease, refer to the Health and Safety Executive website www.hse.gov.uk/pubns/indg84.pdf

The habitat survey

This needs to be carried out before the water vole survey and can be conducted as the transect route is set up in April. The vegetation needs to have enough of the new season's growth for the surveyor to confidently identify the broad types of habitats which are present. Walk the survey route and for each 100m section, note the waterbody type and the main vegetation types which are present for the area within 2m of the bank on survey side of the water course. Habitat descriptions are available on the Habitat Survey Form. Please estimate the % coverage of these in each 100m transect section.

Survey methodology

- **One survey visit** should be conducted between April and September at any time of the day and should take approximately 45 minutes to one hour to complete. However, May is the optimal survey month as this will allow population data to be collected prior to the start of the breeding season and permit comparison between sites across the Carbon Landscape. In addition, as the season progresses and bankside vegetation grows, surveying becomes more difficult.
- Surveys should **not** be conducted during times of flooding or heavy rain. Please wait at least two days after the water levels have subsided to allow field signs to accumulate and be visible.
- Walk as close to the water's edge as possible (while remaining safe). Carry out a continuous search for field signs (latrines, feeding signs, burrows/nests) and water vole sightings along each of the transect sections. Record the number of these, together with the grid reference on the survey sheet.
- If the bankside vegetation is particularly dense, such that a continuous metre by metre search is not appropriate, "scallop" the bank (Figure 2 above). Aim to go to the water's edge at 2m intervals and sample up to 0.5m each side of the sampling point.
- Please record mink or otter sightings. If mink scat or otter spraint are seen (and you are confident with the identification), please record these on the survey form.

- Where possible, please take photographs of any water vole, mink and otter field signs (using a ruler for scale).
- **Additional surveys** – if you wish to carry out more than one survey during the season please request an additional 1km survey square. This will help to maximise coverage across the Carbon Landscape.

Identification resources

The People's Trust for Endangered Species has produced an excellent guide to signs of water voles and other river bank species. This is available at <https://ptes.org/wp-content/uploads/2015/03/Your-guide-to-looking-for-signs-of-water-voles-and-other-riverbank-species.pdf>. In addition to the field signs of water vole, otter and mink, this guide shows some of the confusion species and their signs.

Additional confusion signs and species

Field voles, and other small mammals also cut pieces of vegetation (particularly grasses, sedges & rushes), in a similar manner to water voles; however, vegetation in field vole piles will be cut at about 2-5cm long whereas water vole tend to cut longer sections. Water voles eat a wider variety of different wetland vegetation and will tackle thicker and woodier species (such as willow stems). Field vole burrows are usually no more than 2 fingers in size; whereas, you can usually fit 3-4 fingers into a water vole burrow. Field vole droppings are the same colour and shape as water vole droppings but much smaller. Field vole droppings are similar in size to a grain of rice. Adult water vole droppings are slightly bigger than 'tic tac' size.

Brown rats commonly live along the water's edge and their burrows are similar in size and shape. However, rats leave excavated spoil piles outside the entrance and usually have bare, well-worn pathways (rat runs) leading up to them. Rat droppings are usually slightly larger than water vole; they have a pointed end and foul smell.

Additional Records

Any additional biological records of other species (including records of brown rat) that are observed whilst carrying out the survey will be very welcome and these can be submitted together with the survey results.

Feedback

Once you have carried out the surveys, we would welcome your feedback on this survey manual and the accompanying recording forms. Please email carbonlandscape@gmwildlife.org.uk with your suggestions for clarifying / improving the survey instructions and whether it would be beneficial to include additional information.

Appendices

Grid references

GPS often display grid references of 10 figures which would imply an accuracy of 1m². Most GPS will give a ± accuracy number. If this number is 10m or less, an 8 figure grid reference can be recorded to reduce this false accuracy (i.e. a grid reference which has an accuracy of 10m rather than 1m).

If you have a 10 figure grid reference (accurate to 1m) and you want to obscure it to an 8 figure grid reference (accurate to 10m), the following example shows you how to remove the final digits from the easting and northing to reduce the precision.

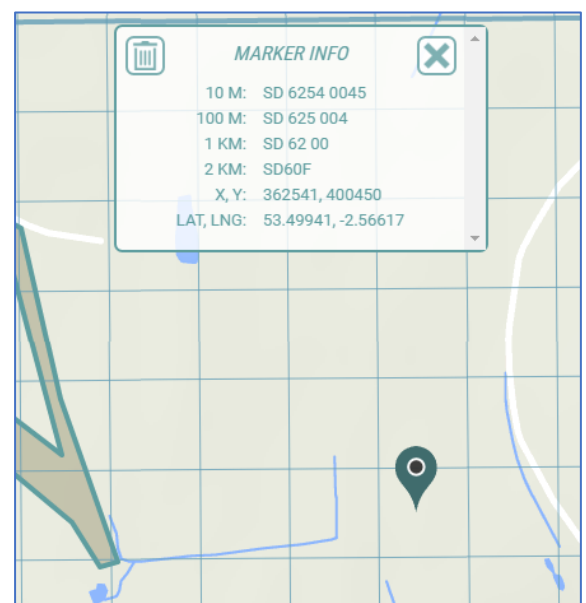
GPS Reading SD 58315 03315 → Recorded Grid Reference SD 5831 0331

If you have an 8 figure grid reference (accurate to 10m) and you want to obscure it to a six figure grid reference (accurate to 100m), the following example shows you how to remove the final digit from the easting and northing.

8 Figure Grid Reference SD 5837 0337 → 6 Figure Grid Reference SD 583 033

Be careful – never round the numbers up when reducing the accuracy of a grid reference as it would move your record to an adjacent grid square north-east of the actual location.

The screenshot here shows different levels of precision for the same marker location on the map. Click this link and then click on the marker to try this yourself - <https://gmwildlife.org.uk/mapapp/?path=SD6254500455>



END OF INFORMATION