

Species Population Survey Instructions

The Species Population Survey is designed to assess the size and status of an individual population of a particular species gathering information on a number of different ecological, geographical and management factors. The population survey is being used as part of the Colour in the Margins project, but it may also be used elsewhere to survey species populations that you wish to monitor. Please feel free to use this method if you are outside of the project focus areas, but you will need to make sure that you have the landowners' permission to survey their land. If you are volunteering for the Colour in the Margins project, the landowner contact details will be supplied so that you can organise a convenient survey time, or you may be joining a group survey organised by the project.

What you will need to complete a Species Population Survey?

- Your survey pack, including a map with the location of the species to be surveyed marked (if you are in one of the Colour in the Margins target areas this will be supplied) and survey recording forms or download the recording form onto a mobile phone or pad if you wish to fill it in digitally.
- Plant identification sheets and/or wildflower key
- An OS map of the area and / or a GPS
- Pens / pencils (unless recording digitally)
- Hand lens
- Camera
- A trowel and bag to take a soil sample (only if you have been asked to take a soil sample by the project. Otherwise this equipment is not needed. See the section on how to take a soil sample for the method).

When to do a Species Population Survey?

Surveys should be carried out from late May / early June when the species are most recognisable in flower or fruit. They will need to be completed prior to the crop being harvested, which can be as early as the end of July. There are more details on the timings of the surveys under the individual species at the end of the report.

Which parts of the Species Population Survey should you fill in?

There are two Species Population Surveys, one that requires the collection of plant presence and abundance data within five quadrats (this information helps to classify the plant community using the National Vegetation Classification (NVC)). The second survey does not require the collection of this data, usually as the data has been collected in the recent past. A soil sample is also often required if plant species data is collected. Plant community data may be gathered in additional years if there has been a change in management, or the community of plants appears to be different or changing over time. An additional soil test may also be required.



SURVEY INSTRUCTIONS

How to carry out the survey

- 1. Contact the farmer to organise a survey date that is convenient for both of you.** Remember to ask the farmer whether they'd like to meet you before the survey and where the farmhouse is. You may not need to do this step if you are taking part in an organised group survey by Colour in the Margins.
- 2. Start the survey.** Meet with the farmer if this is what you have agreed beforehand, and then go to the location with the plant.
- 3. Survey each species population separately.** Each population needs to be surveyed separately so that an accurate count of the population in an area can be counted/estimated. A population is defined as within a discrete area that is part of the same management unit (field). This means that the population could be spread out around the entire field, or just in one margin or a single field corner. For example, if the species is present in an arable field margin, but there is a single plant on the other side of the field this is counted as part of the same population but noted as an outlier. It is useful to mark the main population and any outliers on an accompanying map. Treat populations separately if they fall into different management units (fields) or are scattered across a large area, such as a common, with gaps between the populations.
- 4. Fill in some basic information about the site on the recording form.** This is the first box on the recording form that asks for the species that you are surveying, date, site name and number/code (if it has one), site grid reference, whether it is protected and the names of the surveyors/recorders.
- 5. Record the extent of the population.** The extent of a population is the area within which all individuals fall on the ground. Extent should be recorded in 100 m cells (six figure grid reference). You may want to walk the entire area of the population before doing this so that you know the entire area within which the species grows. There are details of how to take a grid reference in the last section of these instructions including apps that will provide 6, 8 and 10 figure grid references. Alternatively, you can draw the extent of the population on a sketch/base map and identify the 100 m squares using online systems after finishing the survey such as Grab a Grid Reference: bnhs.co.uk/focuson/grabagridref/html/.
- 6. Tell us what growth stage and growth type you are recording.** These are specific for each species as you may be recording individual plants where these can be separated or clumps of plants. See the section on individual species to find out how to count them.
- 7. Estimate or count the population.** For large populations choose the size of the population, and if you've counted the population put the count in the bottom cell.
- 8. Estimate cover of the population, describe the density of the plant and describe the site.** These are free text fields that you can use to describe the conditions around the plant, for example if they are growing with a field margin, just in the field corner, and individual plants are widely scattered or in dense patches.
- 9. Describe the management of the site.** This could be anything from when the site was cultivated or last disturbed to whether the site is liable to flooding or there are wet areas around gateways

where the target plant is growing. Indicate the level of grazing, shading across the area where the target species is present, disturbance (i.e. cultivation or vehicle movements etc.) and average sward height (where the vegetation is thickest / the most dense).

10. **Describe the habitat type and condition.** This includes anything from the broad habitat to details of the soil, or whether the area is seasonally flooded.
11. **Is there an agri-environment scheme option or conservation measure present?** Enter the name or a description of any conservation measure that the landowner is applying to the location where the target species is present.
12. **Is the target species growing within an arable crop? And what type of crop?** This usually only applies to arable plants where there is a crop associated with the field. Tick yes or no, and identify the type of crop that the target species is growing within.
13. **Make a note of any threats to the species.** Tick any threats that apply and make a note of any other threats in the 'other' box.
14. **Identify if there is any management of water body margins.** Tick the relevant box for whether the water-body margin is grazed, has been recently cleared, or affected by drainage. This is not completely relevant for arable plants, except where they may be growing in areas with shallow pools, such as gateways or tracks.
15. **Record the outcome of any soil samples taken.** There is space for a number of different attributes, such as phosphorous, potassium and magnesium levels, and the soil texture. Soil texture should be filled in during the survey, and the nutrient information can be filled in after the survey once the test results have been returned. Not every site may have a soil sample, and if you are surveying for Colour in the Margins you will be asked to take a soil sample if required.
16. **Answer the questions about the ecology, geography and management of the site.** These are on the regeneration potential, additional information on shade, disturbance and sward height (where the vegetation is the most dense).
17. **Answer questions about cultivation / disturbance.** Has any formal cultivation been undertaken and identify the depth of cultivation into one of the four options? The month and year of the last cultivation is particularly important for arable plants, as this may affect germination and survival.
18. **Answer questions on type and application of herbicide.** Tick the relevant option about whether any herbicide has been applied to the area with the target species, and enter the month and year of the last application (if it is within two years of the survey).
19. **Answer questions on the type and application of fertiliser.** Tick the relevant option about whether any fertiliser has been applied to the area with the target species within the last two years, and enter the month and year of the last application.
20. **Estimate the percentage bare ground and height of vegetation.** Placing 5 1x1 m quadrats centred over 5 different individual plants estimate the percentage of bare ground within the

1x1 m square and the height of vegetation where it is most dense. Enter this information in the boxes provided. If you are doing the NVC survey these questions are repeated in this part of the survey form, so do not need to be filled in here. But they must be filled in if the NVC is not being completed on this occasion.

21. Do a quadrat survey for five individuals / clumps of the target species

This is an NVC survey using 1x1 m quadrats. We lack information about the types of communities that individual species grow in. For example, we would like to know if some like very sparse open habitats while other species are more often found growing within a crop or dense vegetation. Ideally five quadrats should be completed for each population centred on an individual or scattered throughout more densely populated areas. Each quadrat should have an individual of the target species at the centre and the quadrats should not overlap. Record the quadrat grid reference, percentage bare ground and estimate the height of vegetation where it is most dense. Then identify all of the vascular plants present within the quadrat using the DOMIN scale to record percentage cover.

22. Fill in any uncompleted information once back home and Return the form to the Colour in the Margins Officer (if the survey has been organised through the project). The project officer will use the Species Population Survey to feedback information to the landowner.