

METHOD

Aims: To find out if Brown Galingale is i) present, ii) get an approximate idea of its location and abundance, iii) collect physical data that can be used to assess the reasons for any change recorded on future visits, and iv) look in any adjacent sites to see if Brown Galingale is present or absent.

- **Equipment:** It's helpful to take a camera (e.g. mobile phone camera) to take confirmatory photos of Brown Galingale, to take photos of your survey site for the record, and to take a photograph of your sketch maps if you don't have access to a scanner – alternatively you can give your survey forms to your regional officer.
- **Survey timing:** Brown Galingale can be hard to identify in its vegetative form as it is easily confused with other sedges – so unless you are very confident in your identification, the best time to survey it is in summer when it is flowering. Brown Galingale typically flowers from late July until September, although it can still flower in October.
- **Where to look:** Its habitat is best described as winter wet; where standing water collects during the winter, draining away to leave patches of muddy bare ground in the summer. This includes the outer edge of pools and other areas with naturally fluctuating water levels. Typically these pools are found on traditionally grazed meadows in the lowlands, where the disturbance by animal hooves creates exposed mud.
- **Survey the area indicated on your map:** The site will have a previous record for Brown Galingale, although the plant may not have been recorded for some time. Search the area indicated in your site pack for Brown Galingale plants, and if found, estimate the number of plants (see below). Draw a sketch map to show the location and extent of Brown Galingale – this may help you and others in the future to search the same area. Fill out the survey form overleaf.
- **How to estimate abundance:** If Brown Galingale plants are found in the survey area, count the number of plants, or make an estimate of the number of plants present, and record the results as an abundance category (over page). It can sometimes be hard to estimate the number of plants, if they are small or very numerous, so if you can't count every plant, the best approach is to count the plants in a small area (e.g. 10 cm² or 1 m²), and multiply this by the area in which Brown Galingale plants are found. If Brown Galingale occurs in different densities within the area searched, make separate calculations for each area, and sum them to give a total (see table over page). **Note: we only need the overall total for the area surveyed.**

If Brown Galingale is **not found**, please record this, and **continue to fill out the environmental sheet**. The findings will help identify reasons for the plant's absence.

- **Check other habitats in the surrounds:** Finding out if Brown Galingale occurs in other likely habitats within the same site helps us to understand if the species is part of a larger population, which may be important for its survival. Visit other likely habitat patches within the site to see if Brown Galingale is present. You don't need to record numbers, or environmental data at these other sites, just the presence/absence of Brown Galingale.

It will be helpful to revisit these other areas in future years, even if you don't find Brown Galingale. So, to ensure they can be found again by yourself or others please (a) provide an accurate grid reference and/or mark the locations on a base map, or (b) make a sketch of the locations where you have searched and (c) take photos. Then, upload the maps and photos to the website.

What it looks like: Brown Galingale is a small plant that can grow up to 25cm high. It is best **recognised by the clusters of chestnut-brown 'flowers' and the three curled-back, leafy bracts which sit below them.**

We have produced a "Species Information Sheet" to help if you need some more hints and tips to recognise Brown Galingale from other plants which occur in the same habitat www.freshwaterhabitats.org.uk/projects/pondnet.

Once completed, enter your results online: www.freshwaterhabitats.org.uk/projects/waternet, or give your recording forms and maps to your regional project officer and we can enter data for you.



Brown Galingale: (a) Close up of Brown Galingale flowers with its three leaf-like bracts below © Tim Wilkins/Plantlife, (b) Brown Galingale plant with its characteristically scruffy, curved-back leaves and chestnut brown flowers © Ron Porley

Your name	<input style="width:95%;" type="text"/>	Date	<input style="width:95%;" type="text"/>
Square: 4 figure grid ref e.g. SP1243 (see your map)	<input style="width:95%;" type="text"/>	Survey location: 8 figure grid ref e.g. SP 1235 4325 (see your map)	<input style="width:95%;" type="text"/>
Site name (if known)	<input style="width:95%;" type="text"/>		
Determiner name (<i>optional</i> - if someone confirms the identity of the species you've recorded)	<input style="width:95%;" type="text"/>	Voucher material (<i>optional</i> - comment if you've taken a photo to confirm identification)	<input style="width:95%;" type="text"/>

Number of Brown Galingale in your search area

Record the number of Brown Galingale plants found in your search area using the following **categories**: **1, 2-5, 6-10, 11-20, 21-50, 51-100, 101-200, 201-500, 501-1000, 1000+**. If there are many plants, count the number in a small area and multiply up. We've put a table below to help you keep track and make notes, but for the analysis we only need a total.
 If you find Brown Galingale please take a confirmatory photo, especially if it's the first time the pond has been surveyed for PondNet. You can also take a photo of your pond or your maps (or scan them if you have a scanner) and upload them with the record.

Habitat type or areas where the plant is found (list): use this table to help with your number calculations, and so you / others can re-find plants	Number of plants
1.	<input style="width:95%;" type="text"/>
2.	<input style="width:95%;" type="text"/>
3.	<input style="width:95%;" type="text"/>
4.	<input style="width:95%;" type="text"/>
<u>Total number of Brown Galingale plants (category)</u>	<input style="width:95%;" type="text"/>

Brown Galingale looked for, but not found: (tick box if none found)

Note if you don't find evidence of Brown Galingale, this is an important result so please still enter these findings online

Species notes: Please add any views on site condition for Brown Galingale, and thoughts on why it may be abundant / declining / absent.

Sketch map: Use this box to show the location of Brown Galingale plants in your search area. Use shading if they covered a broad area, or x marks the spot if there were just a few plants (an extra map space is provided on the back of this recording form).

Search other ponds and pools in the surrounds

Please search other likely habitat patches in the area to see if Brown Galingale is present or absent. Then complete the following summary questions about the additional pond search.
 To help re-find these other areas: (a) mark their locations on your PondNet base map (in your site information pack) and indicate whether Brown Galingale was present or absent.

1. Was Brown Galingale found in any additional locations?
 Yes No (tick)

2. How many additional areas did you search (if no other areas were searched put a zero in both these boxes)?

<input style="width:95%;" type="text"/>	Number of additional locations with a <u>positive</u> record for Brown Galingale. Excluding the original search area, how many other locations within the site had Brown Galingale?
<input style="width:95%;" type="text"/>	Number of additional locations with a <u>negative</u> record for Brown Galingale. Excluding the original search area, how many additional locations within the site did not have Brown Galingale?

BROWN GALINGALE HABITAT SURVEY:

This is a really important part of the survey. Please complete this Habitat Survey for your search area, whether or not you find Brown Galingale at the site.

Each variable provides information known to be linked to habitat quality and community type, and can be used to investigate the reason for change in Brown Galingale occurrence.

Altitude
 m

You can find altitude using a GPS, mobile phone app, OS map, or online resources such as 'Google Earth' or 'Grid reference finder'.

Area surveyed
 m²

Note: This is the *total area* within which you searched for Brown Galingale. It could be the drawdown zone of a pond, or a series of winter wet depressions within grassland. In the latter example the total area provided by the winter wet depressions should be recorded.

Measure by pacing (single pace = 0.8-1m) or use online maps.

Does the area dry out periodically?

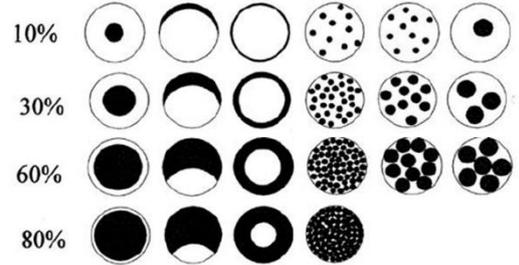
- 1 = never dries
- 2 = rarely dries
- 3 = sometimes
- 4 = annually

1 = Never dries ,

- 2 = Rarely dries:** no more than 2 years in any 10 year period, or only in drought,
- 3 = Sometimes dries:** dries between three years in ten to most years,
- 4 = Dries annually.** Deduce permanence from local knowledge (e.g. landowner) and personal judgement e.g. water level at the time of the survey. Areas that dry out annually usually have a hard base.

Overhanging trees & shrubs

% of area surveyed overhung by trees and shrubs
 This is an estimate of how much of the area is *directly* overhung by trees and shrubs, i.e. that would be shaded if the sun was overhead (use the diagram (right) as a guide).


Aquatic vegetation: includes emergent, floating and submerged plants

 %

% of the whole area (wet and dry) occupied by vegetation – incl. plants like grasses, water mint and rushes, and any floating (e.g. pondweeds) or submerged (e.g. water-crowfoot) species.

Grazing

Tick if there is evidence the area is grazed by livestock. If **yes** complete the following boxes:

 %

% of whole area grazed (note: stock can wade into shallow ponds to graze).

Grazing intensity: rank 1-5 (1=infrequent or low intensity to 5 = margins heavily poached and almost bare).

Management (tick): Use the tick boxes to list management in the search area within the last 12 months.

- | | | | |
|---|--|---|--|
| <input style="width: 40px; height: 20px;" type="checkbox"/> Fully dredged | <input style="width: 40px; height: 20px;" type="checkbox"/> Partly dredged | <input style="width: 40px; height: 20px;" type="checkbox"/> >5% vegetation removed | <input style="width: 40px; height: 20px;" type="checkbox"/> <5% vegetation removed |
| <input style="width: 40px; height: 20px;" type="checkbox"/> Trees planted | <input style="width: 40px; height: 20px;" type="checkbox"/> Trees clear-felled | <input style="width: 40px; height: 20px;" type="checkbox"/> Trees cut back / coppiced | <input style="width: 40px; height: 20px;" type="checkbox"/> Area mown |

Add other or more detail

Water chemistry: Complete this section if suitable kits and are available, and water is still present in the habitat (or leave blank):

 pH

 Conductivity (µS cm⁻¹)

Nitrate (NO³-N ppm): PPW kits provided by FHT (tick one from the following range categories)

<0.2	0.2-0.5	0.5-1	1-2	2-5	5-10	10 +
<input style="width: 40px; height: 15px;" type="checkbox"/>						

Phosphate (PO₄³-P ppm): PPW kits provided by FHT (tick one from the following range categories)

<0.02	0.02-0.05	0.05-0.1	0.1-0.2	0.2-0.5	0.5-1	1 +
<input style="width: 40px; height: 15px;" type="checkbox"/>						

Turbidity / water clarity: Estimate turbidity looking down into c.20cm depth of water.

 1 = clear; 2 = moderately clear; 3 = moderately turbid; 4 = turbid

Substrate:

This refers to the *geology* (i.e. rock-type) that immediately underlies the area searched. You may know, or be able to see the underlying geology. If not, check a geology map or leave this section blank.

Choose one of the following to categorise the % composition of **the area searched**: 1= 0-32%, 2= 33-66%, 3= 67-100%
 Silt/ clay Sand, gravel, cobbles Hard rock Peat Other (please specify)

Surrounding land use:

Estimate the percentage of surrounding land-use in distance zones from the perimeter of your search area.

Habitat	0-5m	0-100m	Examples
Trees, woodland & scrub	%	%	Deciduous and coniferous woodland, individual trees, scrub and hedgerows.
Heath & moorland			Lowland and upland heathland, moorland and mountain; includes bracken.
Rank vegetation			Unmanaged grass, neglected and abandoned land, set-aside, verges and buffer strips.
Unimproved grassland			Herb-rich, calcareous and acid grassland (good quality plant indicators usually present). Low percentage of agricultural grasses. Not fertilised, little or no drainage.
Semi-improved grassland			A transition category. Grasslands modified by fertilisers, drainage, herbicides or intensive grazing, but retaining elements of natural grassland types in the area.
Improved grassland			Fertile agricultural grass, often bright green and lush; including parks and golf greens.
Arable			All crops. Includes flower and fruit crops (e.g. strawberries) and ploughed land.
Urban buildings & gardens			Areas in curtilage (associated with buildings); including glass-houses and farm yards.
Roads, tracks & paths			Including car-parks and footpaths.
Rock, stone & gravel			Cliffs, rock-outcrops, gravel-pits, quarries, areas of sand and gravel or stone.
Bog, fen, marsh & flush			Wetland vegetation and blanket bog.
Ponds & lakes			Permanent and seasonal waterbodies; including trackway pools.
Streams & ditches			Rivers, streams, ditches, springs and canals.
Other (state)			E.g. maritime vegetation, saltmarsh, sand-dune, orchards and railways.

Is the search area in a protected site? (e.g. nature reserve, SSSI, etc.)
 (choose one option - *yes, no, unknown*)

Comments box: e.g. new ownership, changes since previous visit, any other information.

Sketch map (cont. from page 2): Use this box to show the location of Brown Galingale plants in your search area. Use shading if they covered a broad area, or x marks the spot if there were just a few plants.