

# Dragonfly Survey Guidance



**The following document provides advice for recorders wanting to carry out more in depth dragonfly surveys, for example, to assist in Priority Site Assessment, or for site monitoring and conservation purposes.**

This level of surveying requires continued recording into the medium-long term, so an appropriate level of commitment is needed.

## **Weather conditions**

Dragonfly activity is highly dependent on environmental conditions; therefore, surveys should be carried out during sunny (< 60% cloud), calm (< Force 4) and dry weather conditions, preferably with a shade temperature of  $\geq 17^{\circ}\text{C}$ .

Recorders looking to carry out yearly comparisons should consider recording weather conditions as this may account for some variations in records.

## **Timing**

The main Dragonfly flight period is between May and September.

**Surveying species diversity:** Different species have different flight periods. Thus, at least 3 site visits should be made, spread out through the Dragonfly flight season, in order to encounter as many different Dragonfly species as possible.

**Surveying an important species:** If the survey project has a target species then at least 2 site visits should be carried out within its flight period in order to ascertain its maximum abundance.

## **Standardisation**

Before launching into recording, complete a preliminary site visit to plan how you are going to carry out the survey. It is important that the survey route and method are identical during each visit as any variations will influence the results. It is therefore recommended that recorders map their survey site and route, and take notes to guide themselves, and others, during subsequent visits.

## **Equipment**

Binoculars, a camera or a net may be needed to identify the more difficult species. Remember to note what equipment to use. If using a net, please ensure you have the landowner's permission.

## **Species-specific design**

You will also need to take into consideration the life cycle, behaviour, identification, and protected status of different species that could potentially be encountered at a site and the best way to survey them.

Some examples are given below:

Species	Species information	Suggestion
Southern Damselfly, <i>Coenagrion mercuriale</i>	Legally protected species.	Need to acquire a licence to handle adults or carry out larval surveys.
Norfolk Hawker, <i>Aeshna isoceles</i>	Legally protected species.	Need to acquire a licence to handle adults or carry out larval surveys.
Common Clubtail, <i>Gomphus vulgatissimus</i>	Elusive. Only returns to water to lay eggs.	Exuviae surveys are the best option.
Willow Emerald Damselfly, <i>Chalcolestes viridis</i>	Egg-lays into willow, alder, bramble and other vegetation overhanging water	A search for ovipositing scars in bark in winter can be used to identify breeding populations.
Scarce Emerald Damselfly, <i>Lestes dryas</i>	Very similar in appearance to Emerald Damselfly	Close focus binoculars or a camera will be of use in identification.

## Transects vs. point count surveys

### Transects

A transect survey consists of walking along a set route and recording what you see on the way. This is the best methodology when recording along linear waterbodies, such as rivers or canals, or for surveying around the edge of a large waterbody, such as a lake or loch.

Standardise how far you record out from each side of your transect. The norm is 2m inland and up to 5 metres over the water. For example, when surveying a stream 3m wide, walk down one side, recording 2m inland and across the whole width of the stream. If surveying a river 20m wide, walk down one side, recording 2m inland and 5m out over the water, then, if possible, cross over and do the same on the other side.

### Point counts

A point count survey consists of standing at a specific point within or at the edge of a wetland and recording what you can see from that point. This is the best methodology for small waterbodies where the whole waterbody is visible from one point, or when recording larger or linear waterbodies with limited viewpoints.

The amount of time you spend at each point count should be standardised. For example, you may limit each point count to 20 minutes. Another option would be to finish the count if you fail to see any new species after a certain amount of time.

**You can use a mix of point counts and transects to survey a site. The most important thing is to ensure you note in detail your route and methodology so that subsequent surveys are repeated in the exact same manner.**

### Surveying multiple wetland areas within a site

If your site contains separate, different types of wetland habitat (for example, a pond, a stream and a ditch), you will need to survey these habitats separately, as different species have different habitat requirements. This will help you better understand the distribution of Dragonflies within your site. For larger sites, please try to record each monad (1km<sup>2</sup>) separately, because this is the basic unit used for data analysis for dragonfly trends and similar studies.