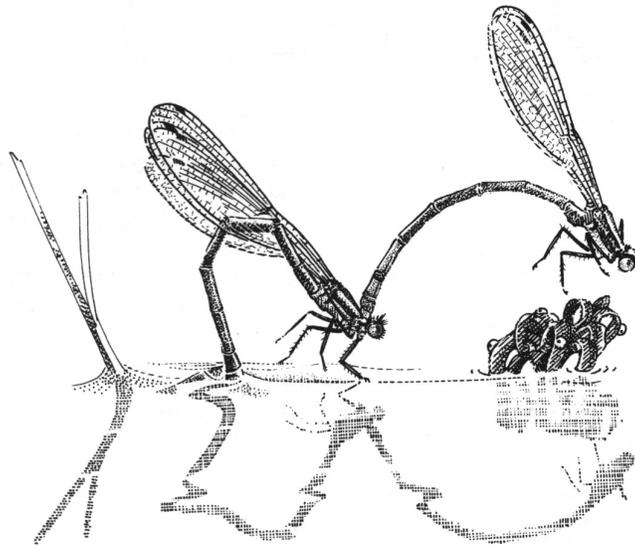


**Bristol Regional Environmental Records Centre**

# Dragonfly Recording Pack



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## **BRERC Dragonfly Recording Pack**

All text and illustrations, other than the front cover, by Vicky Hale of BRERC.

### **Acknowledgements**

I would like to thank everyone who helped to make this recording pack possible, particularly Abigail Pedlow and Tim Corner of BRERC, but also everyone else in the office for being so helpful and extremely patient!

My grateful thanks are also due to those people who gave their time to proof-read the text and offer comment; Mary Wood, Tim McGrath, Rupert Higgins, Ted Waring, Jean Matthews and Ray Barnett and to Simon Randolph for providing the illustrations on the front cover.

This pack has been produced with the support of Bristol Water.

Vicky Hale 2003

Minor text updates, July 2008

Please note that records provided to BRERC are deemed to be made available for BRERC to use in accordance with its role as a Local Records Centre. Records may be distributed to third parties in a variety of media but personal information is kept confidential. Names and addresses may be used by BRERC when mailing newsletters and other information.

BRERC is administered and supported by Bristol City Museum & Art Galleries and receives funding and support from the Avon Wildlife Trust, Bath & North-East Somerset Council, Bristol City Council, South Gloucestershire Council, North Somerset Council, Natural England and the Environment Agency.

## **Bristol Regional Environmental Records Centre (BRERC)**

There are local Environmental Records Centres all over Britain. The Bristol Regional Environmental Records Centre (BRERC) manages a huge database of records of plants, animals, geology and wildlife sites in the Bristol region. The centre was set up as part of the Natural Sciences Section of Bristol City Museum and Art Gallery and now receives funding and support from Bath and North East Somerset Council, South Gloucestershire Council, Bristol City Council, North Somerset Council, Natural England, Environment Agency and Avon Wildlife Trust.

BRERC aims to collect together all the environmental records that are made for both individuals and organisations in the former county of Avon area. Having checked that each record is valid we enter them on to our database and then file them along with the many thousands of records we already hold. Some records are kept confidential (the animal or plant recorded may be at risk, or landowners may not want information about their land given to anyone else) and these are not given out, without the recorders (and possibly the landowners) permission.

### **Why is wildlife recording needed and how are the records used?**

We need wildlife records to help us to protect our wild animals and plants, along with the habitats they live in. Records enable us to get a clearer picture of how wildlife is surviving in our area and are particularly useful when we need to know more about specific sites. For example, records concerning the type and the number of dragonflies living in our waterways can tell us a lot about how healthy the local environment is. They also help us to discover whether the things we do to encourage wildlife are actually working.

## What Are Dragonflies And Why Record Them?

Today, there are about 5,300 different species of dragonfly living in the world. About 120 of these species are found in Europe and 38 species breed in Great Britain and Ireland.

Dragonflies belong to the order of insects Odonata, which translates as 'toothed jaw'.

The Odonata are divided into three groups. These include: Zygoptera (damselflies), Anisoptera (dragonflies) and Anisozygoptera (a primitive group now almost extinct).

Odonata spend the majority of their life under water as nymphs, where they go through what are known as instars. A dragonfly or damselfly is said to be entering a new instar every time it moults its 'skin', which is necessary in order for the nymph to grow. Dragonfly and damselfly nymphs can go through six to 15 instars depending on species and living conditions before development is complete, a process that may take months or even years. As adults, the flying insects we are familiar with live only for days or weeks.

Adult damselflies are petite, delicate and slender looking insects. Their front and back wings are the same shape and when at rest they tend to hold their wings together. However, some damselflies hold their wings at 'half-mast', half way between open and closed. When in flight, they may be mistaken for butterflies at first glance, as they have a fluttering movement, especially the demoiselles.

Dragonflies on the other hand are larger and more robust. Their heads are almost completely covered by their extremely large eyes. Their wings are also different from those of damselflies in that the front pair are narrower than the back pair and, when the insect is at rest, both pairs of wings are held completely open.

Dragonflies are much stronger fliers than damselflies. Some species tend to rest on vegetation by water, whereas others seem to prefer to stay in the air. Damselflies in contrast usually stay close to the water on floating, emergent or marginal vegetation, as they are not only vulnerable to predators such as birds (as are dragonflies), they are also vulnerable to the dragonflies as well. Adult Odonata feed on smaller insects, usually midges and small flies, but the larger species will eat butterflies and bees.

The reasons for recording dragonflies and damselflies are simple, as well as being beautiful insects, they are an indicator of the quality and quantity of our wetlands. The main threat to Odonata fauna is loss of habitat and habitat fragmentation. Wetlands are increasingly being lost due to drainage.

Other threats to wetlands and dragonflies may include:

- Run-off fertilisers into our waterways from agricultural land, resulting in algal blooms, which spread over the surface of the water reducing light penetration and deplete the oxygen content of the water.
- The afforestation of heath and moorland resulting in the over shading of ponds.
- 'Improvement' schemes creating straighter, deeper watercourses and the excessive clearance of aquatic and marginal vegetation have adverse effects on dragonfly species.

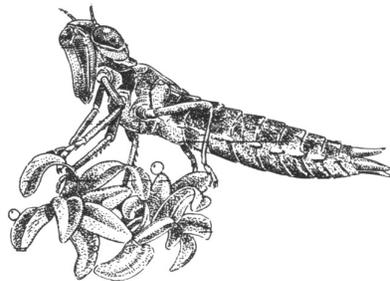
At present there are only two species of dragonfly protected by British law, the Norfolk Hawker and the Southern Damselfly. Both are protected under the Wildlife and Countryside Act (1981). It is imperative that we conserve dragonfly habitats to ensure that other species of dragonfly do not decline to the level where they also have to be specially protected.

If we all record the dragonfly species we see when out in the countryside, we can build up a better picture of what species are where and, as a result, try to take measures to conserve both the dragonflies and the habitats in which they are found.

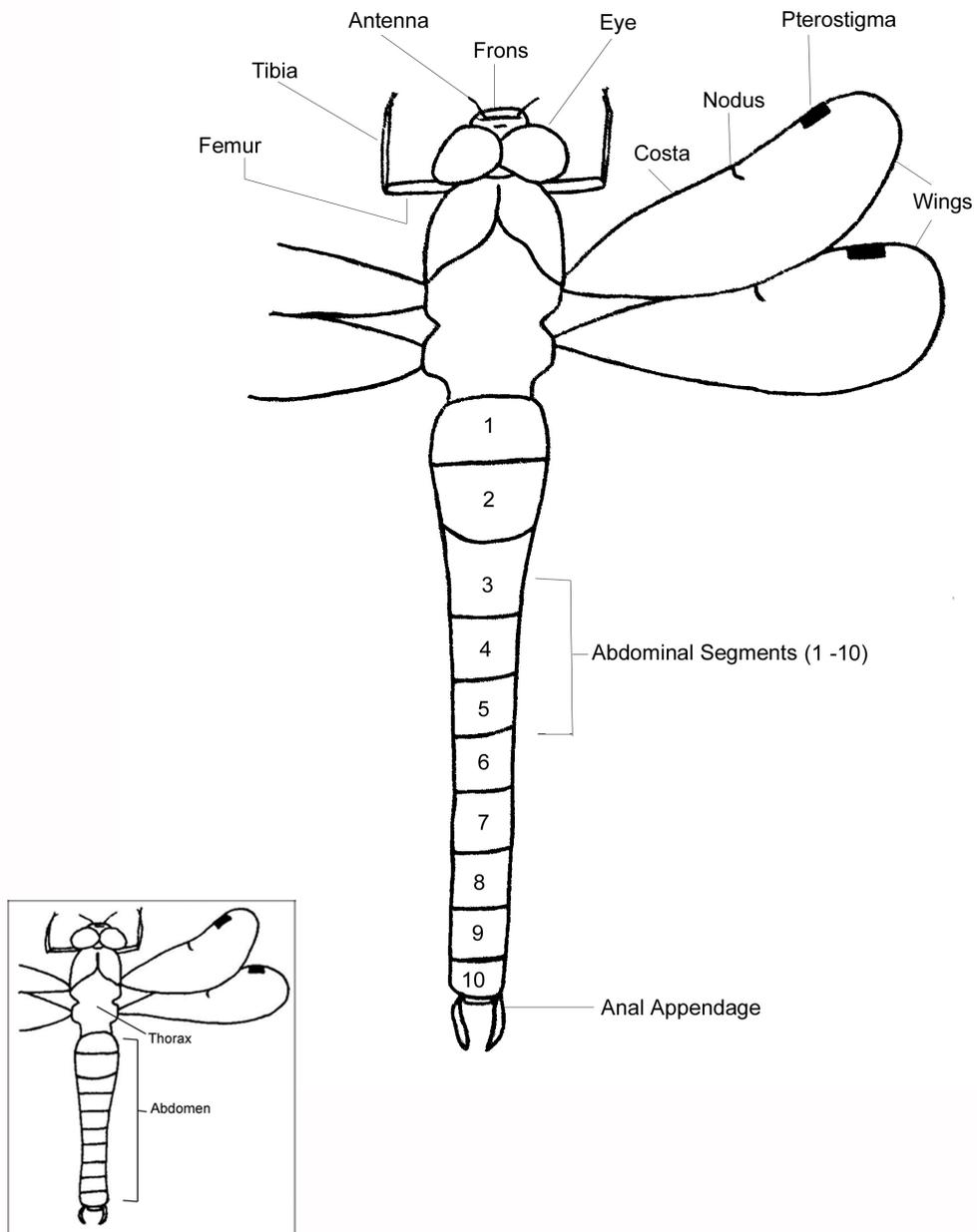
Close-up photographs are very useful in determining difficult species and provide proof of the record.

That is the environmentally minded reason for recording dragonflies. However, people also record dragonflies because it is their passion. They are 'hooked' by the rush of adrenaline that fills them when they first spot a species they have yet to record. Dragonflies and damselflies are both complicated and beautiful. They are a delight to observe in their natural habitats, which is something that cannot be done when they are pinned to a board while gradually losing their iridescence.

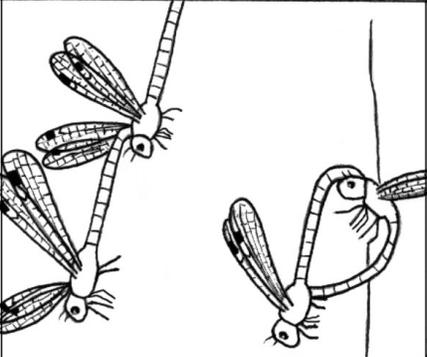
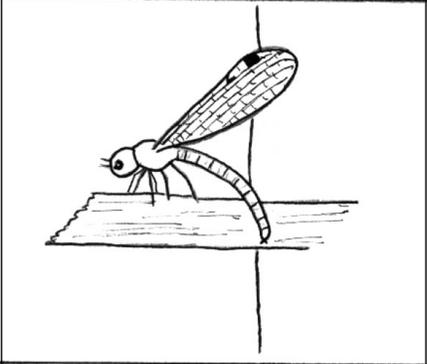
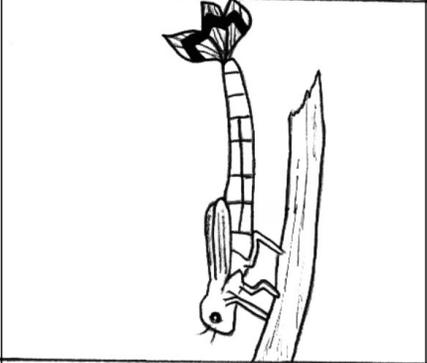
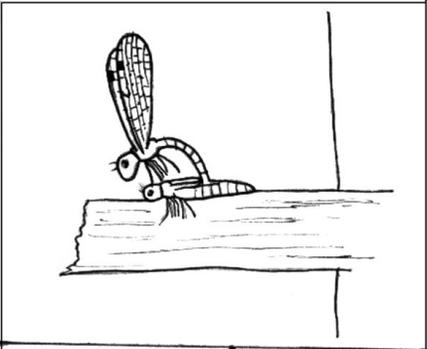
If you are interested in dragonflies, you can join the Bristol Dragonfly Recording Scheme co-ordinated by BRERC, [www.brerc.org.uk](http://www.brerc.org.uk). There is also a British Dragonfly Society, [www.dragonflysoc.org.uk](http://www.dragonflysoc.org.uk).



## Body parts of a dragonfly



## Life-cycle of the Large Red Damselfly

	<p>1) Before mating, the male grabs the female behind the head and they fly in tandem. When they decide to mate, the female swings her abdomen around to receive sperm from the male's abdomen.</p>
	<p>2) Eggs are inserted into the tissue of submerged plants.</p>
	<p>3) The larvae hatch from the eggs and spend one to three years (depending on conditions) maturing in the bottom debris of the pond/stream.</p>
	<p>4) When fully developed, the larvae climb up the nearest plant stem to the surface, where they shed their skin to become damselflies.</p>

## How to Record Dragonflies

Dragonflies are beautiful stimulating creatures to watch, which, like butterflies, makes them popular to record. Dragonflies are also useful environmental indicators. Their presence can show that a body of water is unpolluted. The variety of different types of dragonfly at a site is a good indicator of the diversity of the habitats around a body of water, as different species prefer different habitats.

Getting a good look at dragonflies and damselflies can be difficult at first but don't be put off – they do stop flying and perch occasionally. The best way, unless you have expertise with a net, is to use 'close-focusing' binoculars. The needs of dragonfly watchers have been thought of more and more recently and there are now a range of binoculars on the market that can focus on something 2 m away or even less. These are perfect for observing dragonflies, and butterflies as well. Using binoculars, and with a little practice, you should be able to identify the majority of the species that occur in our region.

Once you have had a good look at your dragonfly and decided what species it is, we need the record. Here at BRERC we have designed two dragonfly recording forms (see Appendix). The larger *BRERC Dragonfly Monitoring Form* is for recording regularly at one place during any one year. For example in your garden, or when you take your regular walk in a local nature reserve. The smaller *BRERC Dragonfly Field Recording Form (No.224)* is useful when you are only recording at a place once. You can also download an electronic Dragonfly Monitoring Form or a spreadsheet from our website [www.brerc.org.uk](http://www.brerc.org.uk).

The *BRERC Dragonfly Monitoring Form* can be used for a whole year, but you do not have to record every day or even every week. On one side of the form you will find a list of dragonflies and here you need to write along the top the date on which you saw any of the dragonflies and then fill in the boxes to show what you have seen.

**To fill in what you have seen** you can either just put a tick in the relevant box or you can try and count the dragonflies and put a number in the box.

On the other side of the monitoring form there are several boxes to fill in, as follows.

**Grid Reference:** See the "Telling us where you have seen something" section of this pack.

**Recording Year:** Write down the year in which you saw the dragonflies. Use a different form for each year.

**Recorder Name:** Write in your name and the name of anyone who helps you with the recording. Please make sure that we also have your address.

**Locality Name:** Fill in the name of the place where you have recorded the dragonflies.

**Habitat:** You do not have to fill this in, but it helps to know whether you are recording along a stretch of river or rhyne, or by a pond etc.

**Comments and other species:** You might spot an interesting beetle or bird or something else whilst you are out recording dragonflies. Here is your chance to make a note of it. You can also put any observational notes in this box.

**County:** This should either be Bath and North East Somerset, Bristol, North Somerset, or South Gloucestershire.

**Sketch Map:** This map is to show where you did your recording. It does not have to be very detailed, just showing what area you have recorded in or where your garden is etc.

The small *BRERC Dragonfly Field Recording Form* is very similar to the large form, but you only use it for one visit to a place. All the boxes are filled in exactly as described above. Either tick or fill in the number of each type of dragonfly you see.

## Telling Us Where You Have Seen Something

A wildlife record is only useful if we know WHERE the animal or plant was seen. It is important to be as accurate as possible when you record where you have seen dragonflies. Most recording forms ask for a locality (place) name and a grid reference, and sometimes there is a space to draw a sketch map to show where the record was made.

### Grid Reference

Grid references are very useful, as they can help pinpoint an exact spot at which you have seen a dragonfly.

To work out a grid reference, you need an Ordnance Survey (OS) map. The OS produce a series of Explorer maps for this area (at a scale of 1:25,000) which show public footpaths, contour lines etc. OS maps have lines on them which divide the map into one kilometre grid squares. These are the lines you use to construct a grid reference. Street atlases produced by OS also have grid lines.

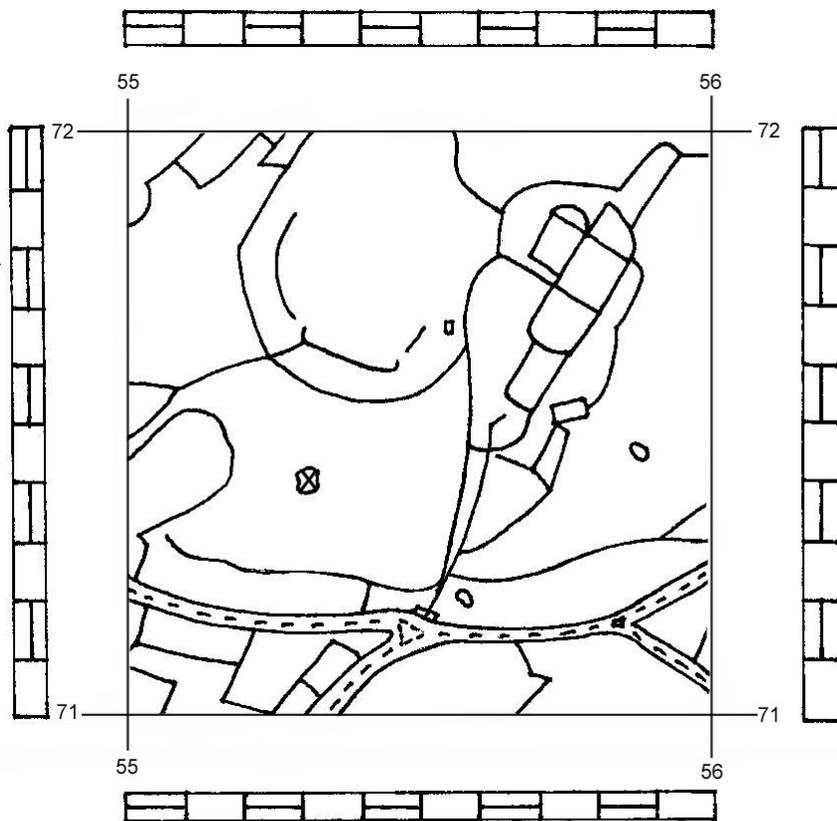
A grid reference can be very accurate (a six figure grid reference) or fairly general (a four figure grid reference).

For a **six figure grid reference**: Using the OS map trace your finger back to the vertical line to the left of where you are and make a note of the number at the top or bottom of this line – this two figure number makes up the first two numbers of your grid reference (this is known as the Eastings). The next two numbers of your grid reference are found by tracing your finger down to the horizontal line just below where you are and making a note of the number on the left or right end of this line – either side of the map. This two figure number makes up the fourth and fifth numbers of your grid reference (this is known as the Northings).

The two extra numbers that make up the third and the sixth numbers in your six figure grid reference are worked out as follows: Imagine that the one kilometre squares on the map are divided into ten equal parts like a ruler. Count along from the vertical line to the left of your location on the map and the number of tenths you count equals the third number of your six figure grid reference. Count up from the horizontal line below you and the number of tenths you count is the sixth number in your six figure grid reference.

Remember to read the numbers across the map first (the Eastings), and then go up the map (the Northings). A handy phrase to help remember this is: Go along the hall, then up the stairs.

The diagram at the top of the next page shows a 1 km grid square of Ashton Court. Can you determine a six figure grid reference for the pond marked with an **X** by using the instructions above?



Once you have your six numbers, to complete the grid reference you require two letters, which precede the numbers. The whole of Great Britain has been divided up into 100 kilometre grid squares and each of these squares is identified by two letters. The letters to use are given in the key of the OS Explorer maps. If you are recording in the Bristol region (Bath and North East Somerset, Bristol, North Somerset or South Gloucestershire) the letters you require are **ST**.

You do not have to work out the grid reference – as long as we have a place name and a sketch map, but it makes things much quicker at BRERC if you do.

**Answer – ST553714**

### Locality (place) Name

If the area you are recording in has a name, for example Biddle Street SSSI, Yatton, or Backwell Lake, Backwell, this should be written down as the locality name. If you do not know the name (you may by a small pond or rhyne that is not names on a map), then the nearest road, feature or village should be noted. For example: “Pond near Biddle Street, Yatton”, or “Small rhyne north of Rookery Farm, North Somerset”. This helps us to check that your Grid Reference is correct.

### Sketch Maps

Sketch maps can sometimes be very useful for explaining where you saw something. It is useful to draw roads, field boundaries, rivers, woodlands and buildings. It is also useful to attach names to any of these. Please remember to indicate where North is, as this saves us a lot of time here at BRERC.

## Identification Key and Notes for Dragonflies and Damselflies

These notes have been compiled by the Bristol Regional Environmental Records Centre (BRERC) to highlight particular features of the dragonflies and damselflies found in our area. We hope they help in identifying the different species.

To supplement these notes we would recommend that you buy; Brooks S. *Field Guide to the Dragonflies and Damselflies of Great Britain and Ireland*, British Wildlife Publishing – make sure you get the revised edition published in 2004 - and also useful might be Randolph S. (1992) *Dragonflies of the Bristol Region*, Bristol Museum and Art Gallery, BRERC, and Hammond C. (1983) 2<sup>nd</sup> edition, *The Dragonflies of Great Britain and Ireland*, Harley Books.

Species distribution information is based on Simon Randolph's book listed above and on BRERC's own database records.

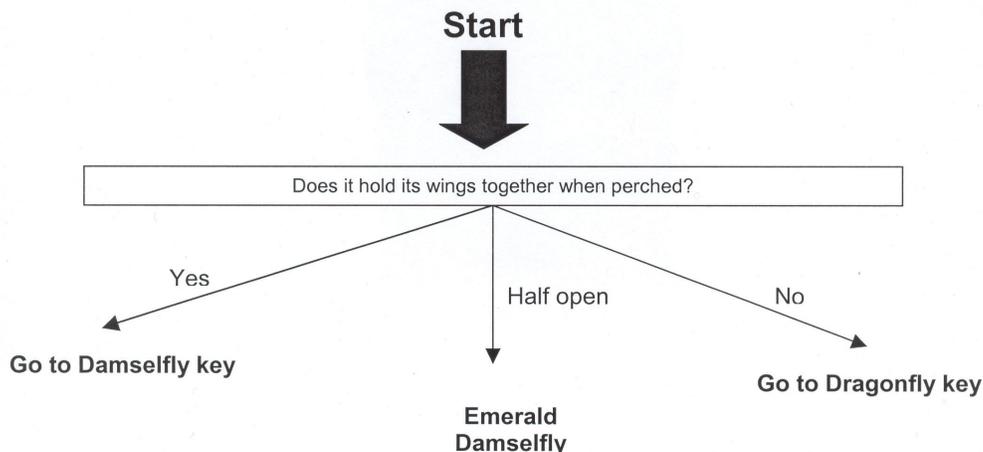
We have designed a key to help you identify dragonflies and damselflies. The keys should be followed from the top downwards.

These keys will only work with mature dragonflies and damselflies. When they first emerge (see Large Red Damselfly life-cycle) their colours are pale and take a few days to mature into the adult colouration.

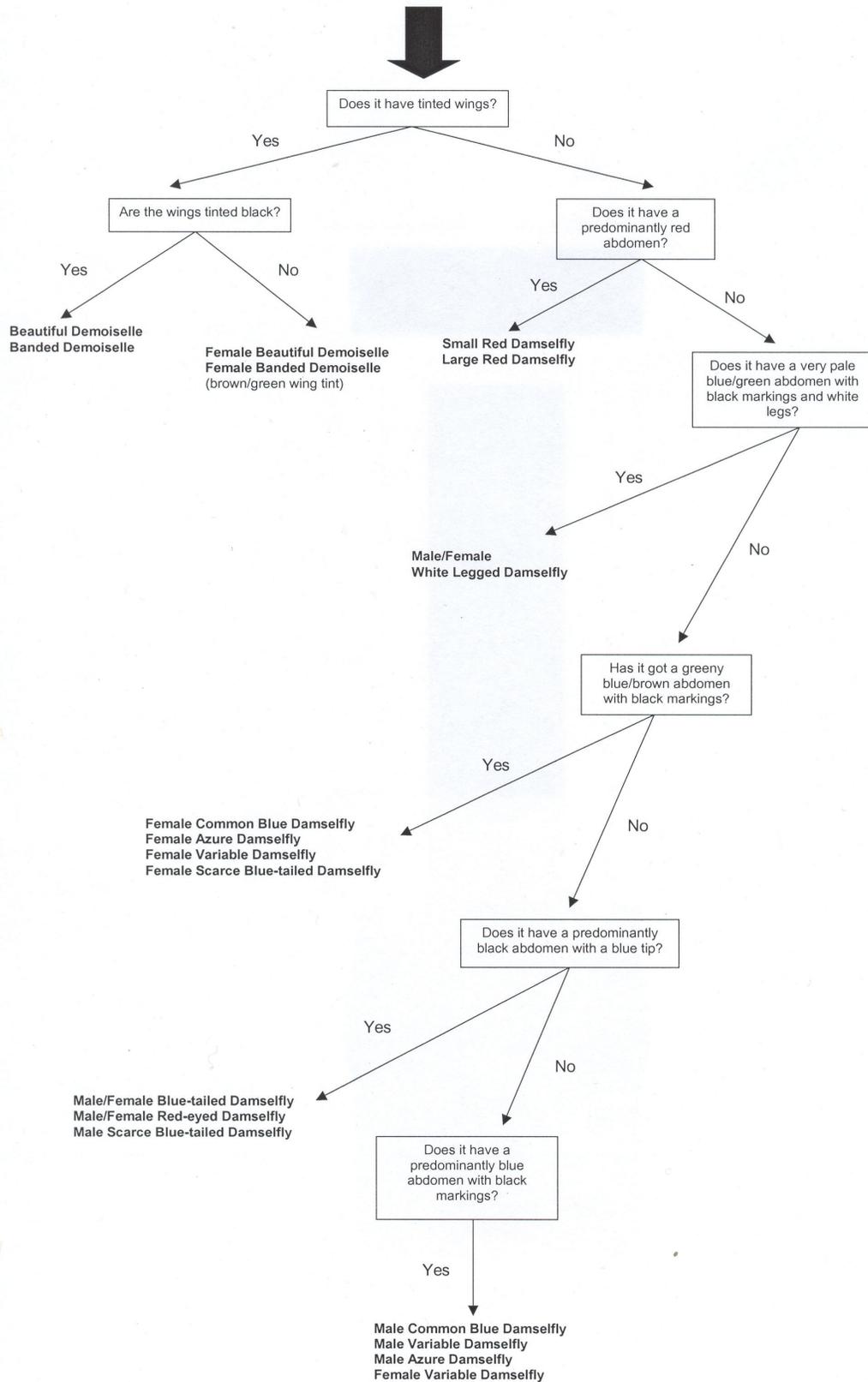
Once you have narrowed down the choice of possible species the notes and drawings should help you to get closer.

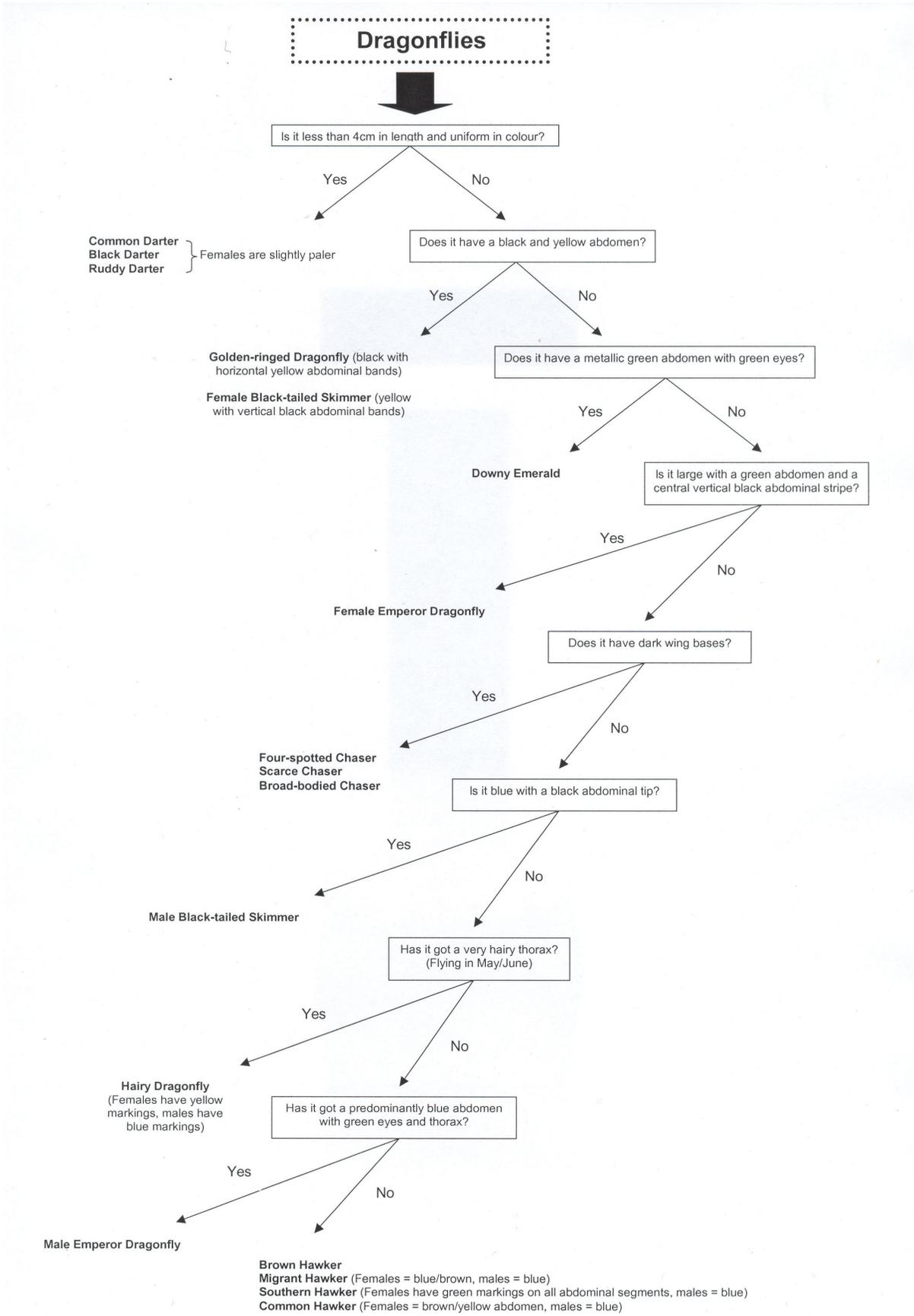
Below is the first part of the key. This is to help you decide if what you are looking at is a damselfly or a dragonfly. More detailed information on the distinguishing characters of damselflies and dragonflies can be found from page 14 onwards.

The majority of damselflies tend to hold their wings together when perched. Dragonflies tend to hold their wings fully open. The only exception to the rule is the Emerald Damselfly that tends to hold its wings half-open.



## Other Damselfly Species





Dragonfly Flight Periods	April	May	June	July	August	September	Oct	Nov	Dec
Banded Demoiselle									
Beautiful Demoiselle									
Emerald Damselfly									
White-legged Damselfly									
Large Red Damselfly									
Small Red Damselfly									
Blue-tailed Damselfly									
Common Blue Damselfly									
Variable Damselfly									
Azure Damselfly									
Red-eyed Damselfly									
Scarce Blue-tailed Damselfly									
Hairy Dragonfly									
Common Hawker									
Brown Hawker									
Southern Hawker									
Migrant Hawker									
Emperor Dragonfly									
Downy Emerald									
Broad-bodied Chaser									
Scarce Chaser									
Four-spotted Chaser									
Black-tailed Skimmer									
Common Darter									
Ruddy Darter									
Black Darter									
Red-veined Darter									
Golden-ringed Dragonfly									

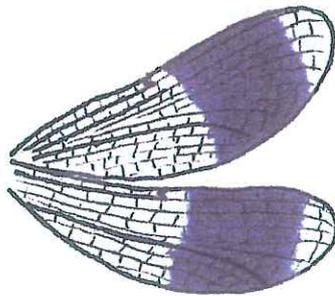
 = Best time to see mature adults  
 = Immature or very mature adults present  
 = Extension of flight season due to exceptional conditions

## Banded Demoiselle *Calopteryx splendens*

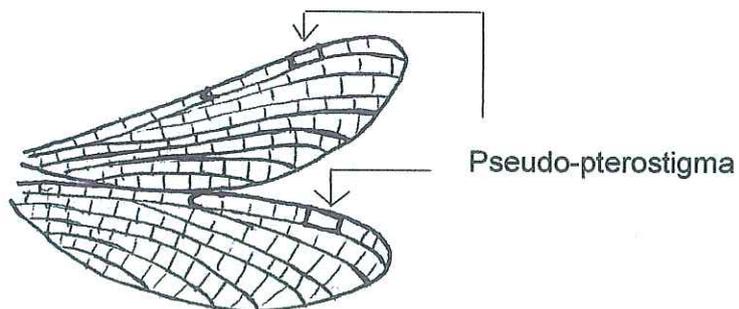
The Banded and Beautiful Demoiselles are our largest damselflies, they can be identified by their fluttering flight and the dark wings of the males.

The female will often totally submerge during egg-laying. She can breathe whilst under water by trapping a layer of air between her wings continuous with her respiratory system.

Male:                   Metallic blue-green body with dark blue-black wing pigment.



Female:                Metallic green with a white wing cell (pseudo-pterostigma) about  $\frac{3}{4}$  of the way along the top of the wing. The wings are more or less clear with a slight greenish tint.



Size:                   Overall length - 45 mm. Wingspan - male 61 mm, female 65 mm.

Distribution:        Locally (in the BRERC recording area), it is quite widely spread, including records located in the North Somerset Levels and along the River Avon. Banded Demoiselles prefer slow-flowing streams, usually with muddy bottoms.

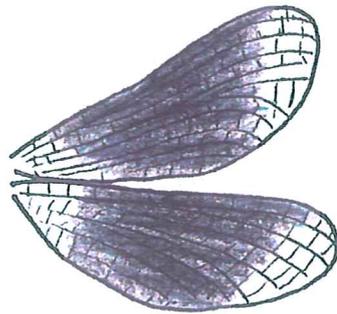
Flight Period:      Mid May - September.

## Beautiful Demoiselle *Calopteryx virgo*

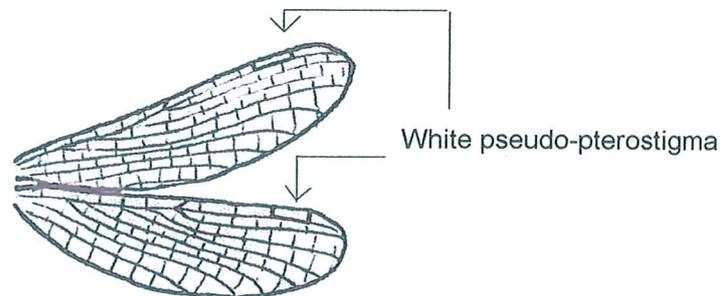
Banded and Beautiful Demoiselles are our largest damselflies, they can be identified by their fluttering flight and the dark wings of the males.

The female will oviposit for up to 30 minutes, laying 250-300 eggs, which take about 14 days to hatch.

Male:           Metallic blue-green body with broad, dark brown-black wings.



Female:           Metallic green. Wings more or less clear with a brownish tint.



Size:            Overall length - 45 mm. Wingspan - male 58 mm, female 63 mm.

Distribution:   Locally the Cam and Wellow Brooks support good populations. The Beautiful Demoiselle has also been recorded on stretches of the River Avon. Beautiful Demoiselles prefer fast-flowing streams with gravel and stone bottoms.

Flight Period:  End of May - September.

## **Emerald Damselfly**

### ***Lestes sponsa***

Emerald Damselflies are the only damselflies to hold their wings half open when perched. Emerald Damselfly larvae can feed twice as fast as other damselflies of a comparative size.

Male: Metallic green with a bluish pruinescence on the thorax between the wings, on the first two abdominal segments and the tail of the abdomen.

Female: Dull green, turning to pale brown on the sides of the thorax and abdomen.

Size: Overall length – 38 mm. Wingspan – male 42 mm, female 45 mm.

Distribution: This is a very localised species. The Emerald Damselfly is often associated with acid bog pools and with fairly brackish water, but it also occurs in ponds, ditches, canals and lake margins with plenty of emergent vegetation.

Flight Period: Late June – end of September.

### **White-legged Damselfly *Platycnemis pennipes***

The female of this species lays her eggs in a zig-zag pattern on the underside of floating vegetation. This species is very susceptible to pollution.

Male: Pale blue body with broad white legs.

Female: Pale green body with broad white legs.

Size: Overall length – 36 mm. Wingspan – 44 mm.

Distribution: In the BRERC area, it is found on the River Avon. This species prefers unshaded slow-flowing stretches of rivers and canals with plenty of floating and emergent vegetation.

Flight Period: From late May – mid August

### **Large Red Damselfly *Pyrrhosoma nymphula***

Usually the first species to be seen in Spring. The females' egg clutches can have up to 750 eggs.

Both sexes are red with black markings. There are three female forms that vary in the amount of black markings.

Size: Overall length – 36 mm. Wingspan: male 44 mm, female 48 mm.

Distribution: In the BRERC recording area this species is well established on the North Somerset levels around Congresbury and Puxton. The Large Red Damselfly habitat requirements are not very specific, it occurs in ponds, canals, ditches and acid bogs.

Flight Period: Late April to mid August.

### **Small Red Damselfly *Ceriagrion tenellum***

Both the male and the female of this species have red eyes with a black head and thorax. This species has several different colour forms. In males and females of the *erythrogastrum* form, the abdomen is red, whereas in the other female forms, the abdomen is black. Both sexes have red or yellowish legs and red pterostigma.

Size: Overall length – 31 mm. Wingspan – 36 mm.

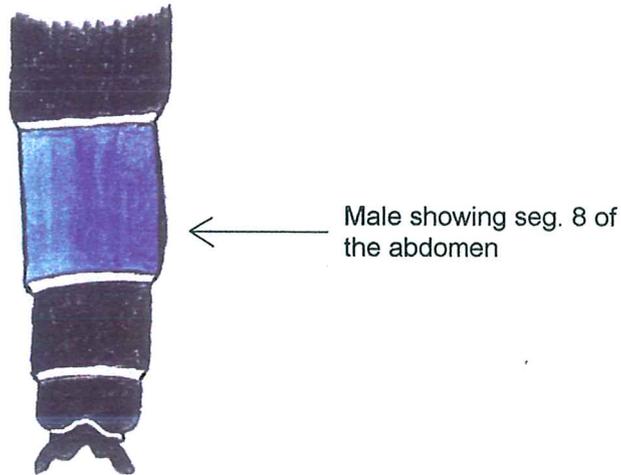
Distribution: Locally there has been an unconfirmed sighting of Small Red Damselfly in Bath and North East Somerset. This species is associated with shallow acidic bog pools, and slow flowing streams.

Flight Period: Early June – early September.

## Blue-tailed Damselfly *Ischnura elegans*

The females' eggs are deposited in slits cut in aquatic vegetation.

**Male:** Metallic black abdomen, but with a bright blue segment 8 and a green or blue thorax.



**Female:** May have the same colouration as the male, although there are a number of age related colour forms. The *rufescens* form which has a reddish-pink thorax with a black stripe along its back and a blue tail end (seg. 8) and the *violacea* form which has a violet thorax with a black stripe along its back and a blue abdominal tip (seg. 8).

**Size:** Overall length - 31 mm. Wingspan - 35 mm.

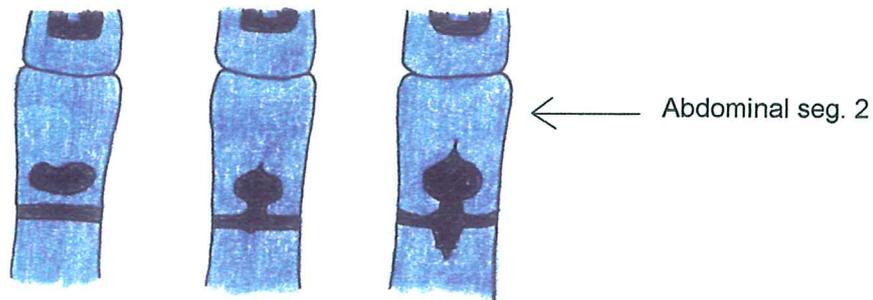
**Distribution:** This is the commonest species of damselfly in Britain. Locally there are over 150 recorded breeding sites. The Blue-tailed Damselfly is an early coloniser of new ponds. It breeds in highly contrasting habitats; acid pools, fast flowing rivers, rhynes, and ditches. The Blue-tailed Damselfly can also tolerate a higher level of pollution than other damselflies and dragonflies.

**Flight Period:** May - September.

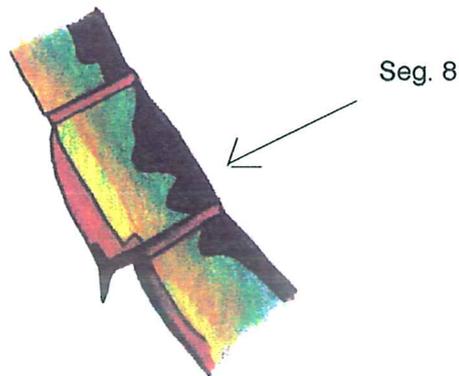
## Common Blue Damselfly *Enallagma cyathigerum*

The female can spend up to 60 minutes underwater depositing her eggs in the stems of plants, such as Canadian Waterweed.

**Male:** Alternating blue and black markings down the abdomen, which look very similar to the Azure and Variable Damselfly. They can be distinguished from other blue damselflies by the club-shaped black mark on the top of segment 2 of the abdomen and by the all blue upper surface of segments 8 and 9. This shape is not always regular! See below.



**Female:** The abdomen is yellowish or blueish with black markings. Females can be distinguished from other species of blue damselfly, except the Blue-tailed Damselfly by the spine on the underside of segment 8 of the abdomen.



**Size:** Overall length - 32 mm. Wingspan - 38 mm.

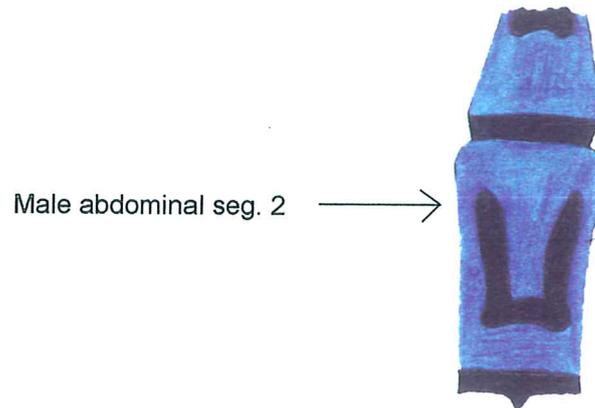
**Distribution:** One of the commonest damselflies in all of Britain and Ireland. This is a fairly widespread species locally. Common Blue Damselfly prefer large open lakes, ponds, canals and streams with plenty of marginal vegetation.

**Flight Period:** May - early September.

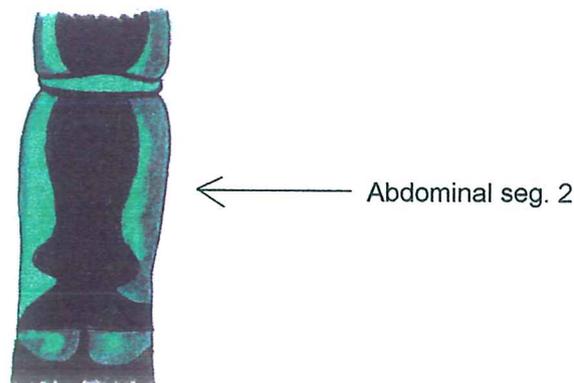
## Azure Damselfly *Coenagrion puella*

The average lifespan of a mature adult Azure Damselfly is only 5.5 days.

**Male:** Closely resembles other blue damselflies, being blue with black markings. Azure males have a U shaped mark on the second abdominal segment, which distinguishes them from the males of other blue damselfly species.



**Female:** Predominantly black with green or blue sides to the thorax. The markings on segment 2 of the abdomen should also be noted.



**Size:** Overall length - 33 mm. Wingspan - 41 mm.

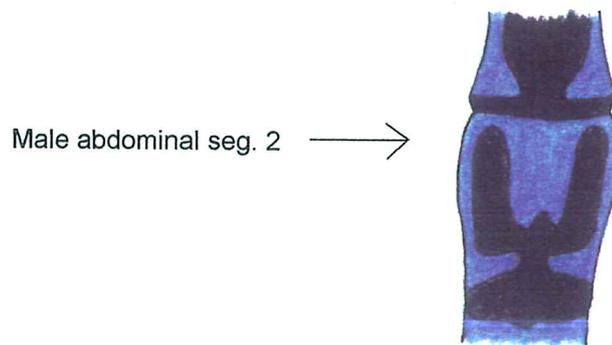
**Distribution:** This is the second most common species of damselfly in the BRERC recording area and is often abundant where it occurs. The majority of records are around the River Avon and the North Somerset Levels. The Azure Damselfly is found in a wide range of water bodies, but prefers smaller, sheltered ponds. This species will tolerate eutrophic sites, but is sensitive to pollution.

**Flight Period:** Mid May to mid June - late August.

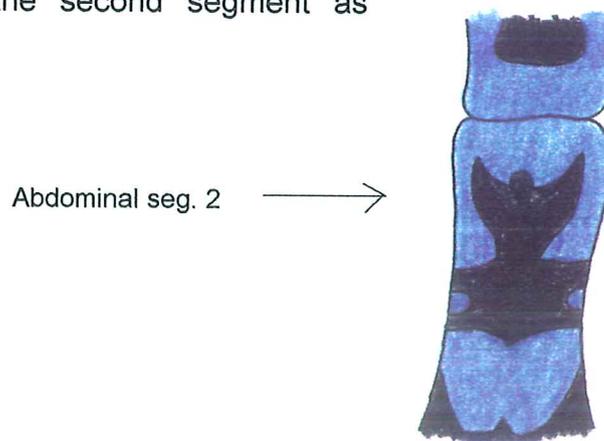
## Variable Damselfly *Coenagrion pulchellum*

During egg-laying, the female descends partially below the water to reach suitable plant material. After a batch of eggs has been laid the male helps the female clear of the water.

**Male:** Blue with black markings. Easily confused with the Azure and Common Blue Damselfly. The Variable Damselfly is slightly darker and more slender than the other species. Males can be distinguished from the males of other species by the black markings on segment 2 of the abdomen, resembling a wine glass with a black stem extending to a black ring below. In most cases, males also have broken thoracic stripes.



**Female:** Blue with black markings. Females have a similar mark on the second segment as males.



**Size:** Overall length - 33 mm. Wingspan - 42 mm.

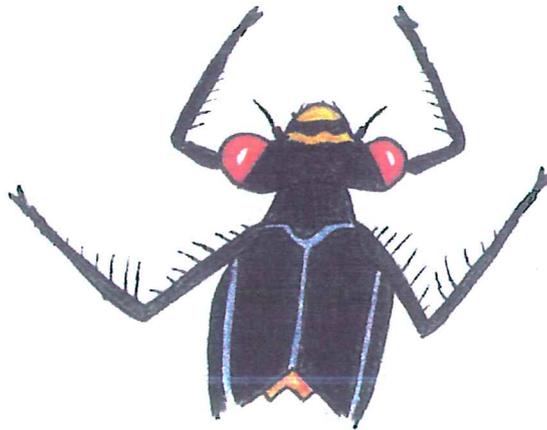
**Distribution:** In the BRERC recording area the Variable Damselfly occurs in two areas; the North Somerset Levels, between Clevedon and Yatton and the Somerset Levels around Cheddar. This species occurs close to slow moving waters, such as ponds and ditches.

**Flight Period:** Mid May or early June - August.

## Red-eyed Damselfly *Erythromma najas*

Red-eyed Damselflies are usually seen on lily-pads and other floating vegetation. Tandem pairs of Red-eyed Damselflies will often descend more than 0.5 metres under water during egg-laying.

**Male:** Black with a blue abdominal tip and large blood-red eyes.



**Female:** Brown-red eyes. Less distinctive in colour, lacking the blue abdominal tip.

**Size:** Overall length - 35 mm. Wingspan - 43 mm.

**Distribution:** This species has a southern distribution in England, where it is locally common. It prefers still-water habitats with large expanses of floating vegetation.

**Flight Period:** Mid May - mid August.

## Scarce Blue-tailed Damselfly *Ischnura pumilio*

This rare species is very like the common Blue-tailed Damselfly. It is often found in shallow and temporary wetlands.

**Males:** Typically black with a blue abdominal tip and with green-blue sides to the thorax.  
Segment 9 of the abdomen is predominantly blue with two small black dots and a small portion of the posterior dorsal surface of segment 8 is also blue.



**Female:** Do not resemble males. Females go through age related colour changes, from bright orange to a more greenish-brown when fully matured.

**Size:** Overall length - 29 mm Wingspan - 33 mm.

**Distribution:** Locally this rare species has been recorded in the South Gloucestershire and Bathampton area. It has a strong preference for shallow water with little vegetation.

**Flight Period:** Late May - early September.

### **Hairy Dragonfly *Brachytron pratense***

The Hairy Dragonfly is usually the first dragonfly (as opposed to damselfly) of the year, so if you see a large species in May or early June it is likely to be this species.

Male: Hairy thorax, long thin pterostigma and blue pear shaped abdominal spots.

Female: Hairy thorax, long thin pterostigma and pale yellow abdominal spots.

Size: Overall length - 55 mm. Wingspan - 72 mm.

Distribution: The Avon and Somerset Levels are an important stronghold nationally. The Hairy Dragonfly is found near clean, still waterbodies, although well-vegetated sites such as canals are favoured.

Flight Period: Early May - late June/early July.

### **Emperor Dragonfly *Anax imperator***

The Emperor Dragonfly is the largest of the hawkers. The males are strong fliers, with a slightly drooping abdomen.

Male: Greenish-blue eyes, green thorax and a blue abdomen with black markings along the dorsal surface.

Female: Green abdomen, however, during warm weather it may become blue.

Size: Overall length - 78 mm. Wingspan - 106 mm.

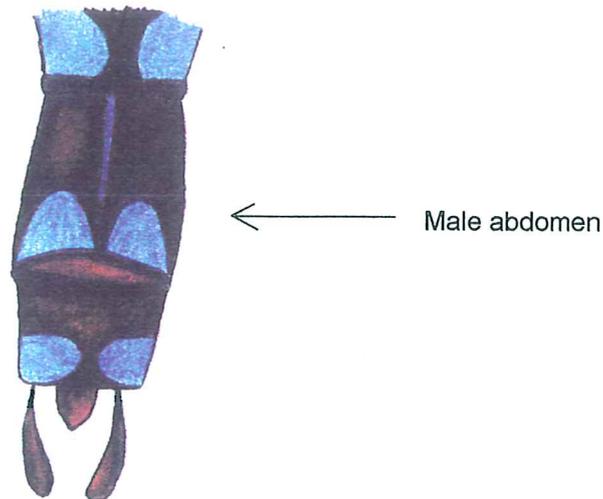
Distribution: Restricted to southern counties of Britain. Locally it occurs widely throughout the BRERC recording area. Emperors are to be found flying over large ponds and lakes, where they usually stay out over the water.

Flight Period: Early June - late August

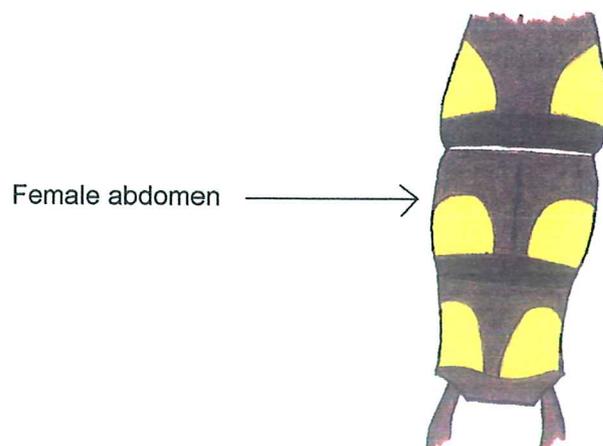
## Common Hawker *Aeshna juncea*

Larval development takes three to four years in the British Isles. This is an upland species in our area.

Male: Blue and yellow markings on the abdomen.



Female: Brown with yellow markings, but the abdominal spots may be greenish. There is also a form where the spots are blue.



Size: Overall length - 74 mm. Wingspan - 95 mm.

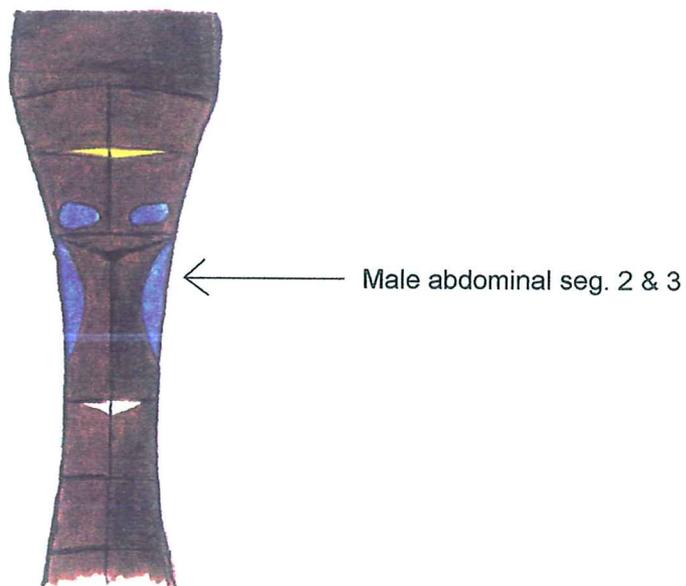
Distribution: Locally confined mostly to the Mendip Hills area. Common Hawkers breed in a variety of still waters, from small pools to large lakes. It also usually avoids alkaline waters.

Flight Period: Late June - can extend into the autumn.

## Brown Hawker *Aeshna grandis*

Individuals have been seen using their wings to flush prey, such as midges, from vegetation.

**Male:** Brown wing venation and amber-tinted membrane. Two yellow bars on the side of the thorax, blue spots along the side of the abdomen and blue-tinted eyes.



**Female:** Pale yellow abdominal markings and yellow-tinted eyes.

**Size:** Overall length - 73 mm. Wingspan - 102 mm.

**Distribution:** The BRERC recording area represents the western limit of this species in southern England. The River Avon and the Kennet and Avon canal around Bathampton is one of the best places to see this species. The Brown Hawker breeds in garden ponds, dykes, lakes, canals, slow-flowing streams and gravel pits.

**Flight Period:** June - October.

## Southern Hawker *Aeshna cyanea*

The Southern Hawker is the most inquisitive of the dragonfly species, flying very close to, and even perching, on humans.

**Male:** Marked bright green, turning blue towards the tip of the abdomen with two complete horizontal blue bands on abdominal segments 9 and 10.



Complete bands on seg. 9 & 10

**Female:** Stout abdomen than the male. Yellow and green abdomen with two complete bands on abdominal segments 9 and 10.

Female abdominal seg. 9 & 10



**Size:** Overall length - 70 mm. Wingspan - 100 mm.

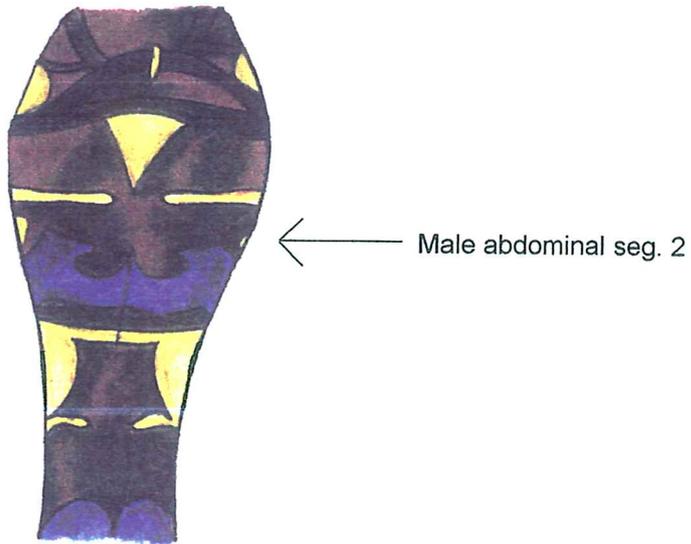
**Distribution:** Of the four species of *Aeshna* in the BRERC recording area, this species is the most widespread. Southern Hawkers breed in many types of still water habitat and are often found in urban areas.

**Flight Period:** Mid-late June - October.

## Migrant Hawker *Aeshna mixta*

The Migrant Hawker breeds in England and the population is increased by migrants from the continent.

Male: Predominantly blue with a creamy yellow triangle on the 2nd abdominal segment.



Female: Brown with dull yellow markings and a yellow triangle on segment 2, as in males.

Size: Overall length - 63 mm. Wingspan - 85 mm.

Distribution: This species is well distributed throughout the BRERC area. There are well established breeding sites along the River Avon and the Kennet and Avon canal, south-west of Bath. The larvae can be found in ponds, lakes, gravel pits, canals and slow-moving rivers.

Flight Period: Late July - late October.

### **Downy Emerald Dragonfly *Cordulia aenea***

Downy Emeralds often fly earlier and later in the day and in cooler weather than other dragonflies.

Male: Metallic green with a club-shaped abdomen and green eyes and thorax.

Female: Similar to the male, although the abdomen is not club-shaped.

Size: Overall length - 48 mm. Wingspan - 68 mm.

Distribution: Locally the only known breeding sites are widely separated with one in the Mendips and the other on the edge of the Cotswolds. Larval habitat includes nutrient-poor acidic to slightly basic sheltered woodland ponds, lakes and canals, usually with some sections containing overhanging trees.

Flight Period: Early May - mid July.

### **Broad-bodied Chaser *Libellula depressa***

Males tenaciously defend their territory and win over 90% of the battles against rival males. The Broad-bodied Chaser likes to perch on twigs near water.

Male: Broad, flattened abdomen which is blue with yellow lateral spots.

Female: Broad, flattened abdomen which is yellowy-brown with yellow lateral spots.

Size: Overall length - 44 mm. Wingspan - 76 mm.

Distribution: This species is well distributed throughout the BRERC recording area. Broad-bodied Chasers quickly colonise new sites, including garden ponds. This species favours small, open ponds and ditches.

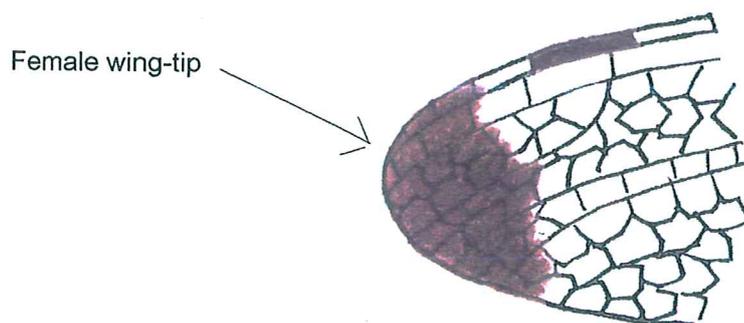
Flight Period: Mid May - early August.

**Scarce Chaser *Libellula fulva***

The larvae of this species usually take about two years to develop.

Male: Blue abdomen with at least three black segments at the tip.

Female: Brown abdomen with black markings centrally arranged from abdominal segment 3 or 4 to the end.  
Both sexes have brown patches at the wing bases, with females also having brown patches at the tip of the wings.



Size: Overall length - 44 mm. Wingspan - 74 mm.

Distribution: This species is scarce throughout its range in southern and eastern England. Locally most of the sightings have been in Bath and North East Somerset, around the River Avon. Scarce Chasers prefer river floodplains and water meadows.

Flight Period: May - early August.

### **Four-spotted Chaser *Libellula quadrimaculata***

This species can often be found feeding well away from water.

Both sexes have a narrow tapering dark brown abdomen with yellow sides and a black tip. The hind wings have dark patches at the base but all wings have an additional dark patch in the middle of the leading edge (the four spots).

**Size:** Overall length - 43 mm. Wingspan - 75 mm.

**Distribution:** Locally the Four-spotted Chaser is found on the North Somerset Levels. This species occurs in a wide range of habitats, including bogs, canals, dykes, fens and slow-flowing streams.

**Flight Period:** Late May - mid August.

### **Black-tailed Skimmer *Orthetrum cancellatum***

The Black-tailed Skimmer is often an early coloniser of new wetlands, where it likes to bask on bare ground.

**Male:** Blue abdomen with a black tip.

**Female:** Yellow abdomen with two longitudinal black bands along the dorsal surface. The pterostigma is black in both sexes.

**Size:** Overall length - 50 mm. Wingspan - 77 mm.

**Distribution:** Locally this species' stronghold is the North Somerset Levels. The Black-tailed Skimmer prefers lakes and slow-flowing rivers, although it is sometimes found in marshes and small ponds.

**Flight Period:** Late May - early August.

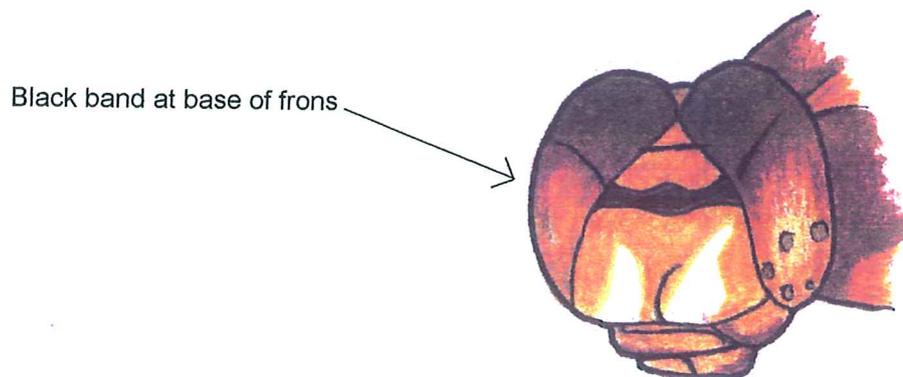
## Common Darter *Sympetrum striolatum*

This species is able to remain active at temperatures of below 12° C that are too cold for other species of a similar size.

Male: Orange/red abdomen.

Female: Yellow to light brown abdomen. Old females may become reddish.

Both sexes have a black line across the top of the frons that does not continue down the sides of the eyes (see Ruddy Darter). Both sexes also have yellow stripes down the outer sides of the legs.



Size: Overall length - 37 mm. Wingspan - 58 mm.

Distribution: The Common Darter is our most widespread species and occurs around a wide range of waterbodies, from ponds and lakes to ditches and rivers.

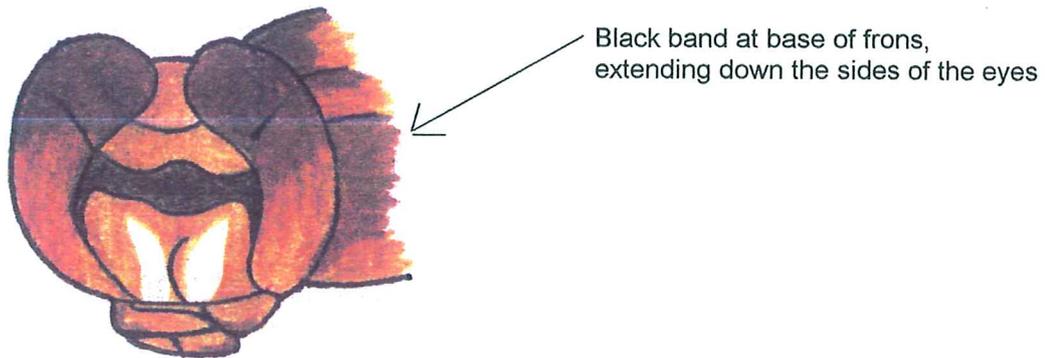
Flight Period: Mid June - October (November if mild).

## Ruddy Darter *Sympetrum sanguineum*

The eggs of the Ruddy Darter are drought-resistant and will not hatch until they are covered with water.

**Male:** Waisted blood-red abdomen with dark sides to the thorax. The black line over the frons, extends down the sides of the eyes. Black legs help distinguish this species from Common Darter.

**Female:** Yellowish-light brown abdomen with thin black lines and black legs.



**Size:** Overall length - 34 mm. Wingspan - 55 mm.

**Distribution:** The Ruddy Darter is fairly well distributed throughout the BRERC area, preferring shallow, well-vegetated ponds, lakes and canals.

**Flight Period:** Late June - late autumn.

### **Black Darter *Sympetrum danae***

The Black Darters' dark markings have a thermoregulatory function that helps its body to warm up for activity during cold conditions.

Male: Waisted, black abdomen with yellow markings.

Female: Yellow with black markings.

Both sexes have black legs, a black triangle at the top of the thorax and black pterostigma.

Size: Overall length – 32 mm. Wingspan – 46 mm.

Distribution: Locally this is the BRERC recording area's second rarest species, restricted to just six breeding sites, four of which are on the Mendips. The Black Darter prefers shallow, acidic, nutrient poor pools with abundant emergent vegetation.

Flight Period: Mid July to mid September.

### **Red-veined Darter *Sympetrum fonscolombii***

Male: Red abdomen with red wing veins.

Female: Yellow-brown abdomen with yellow wing veins.

Both sexes have a yellow pterostigma with a black border.

Size: Overall length – 40 mm. Wingspan – 60 mm.

Distribution: This species is a frequent migrant to Britain and is most common in the south-west of England. They favour a wide range of habitats, such as shallow ponds, lakes and ditches. Red-veined Darter will also tolerate brackish water.

Flight Period: From July onwards.

## **Golden-ringed Dragonfly *Cordulegaster boltonii***

The female Golden-ringed Dragonfly is the largest dragonfly in the UK. It breeds in streams that are often less than two metres wide.

Both sexes have a black thorax and abdomen with yellow bands. The abdomen is also slightly swollen at the tip. Both have green eyes. Females have long pointed ovipositors.

Size: Overall length – male 74 mm, female 84 mm. Wingspan – 101 mm.

Distribution: Locally, the only records that seem to indicate the possibility of a breeding site are in the vicinity of Black Down, Mendip. The habitat preferences of the Golden-ringed Dragonfly include small, often acidic moorland and heathland streams or bogs, but not standing water.

Flight Period: End of May until September.

## Managing Your Pond For Dragonflies

As aquatic habitats in the wider countryside become more and more fragmented, the humble garden pond can act as a much needed refuge for many aquatic inhabitants, such as frogs, toads, newts and more specifically dragonflies and damselflies.

The larger the pond the better, as it is more likely to be happened upon by flying adult insects. Nevertheless, if you only have room for a small pond, it is well worth making the most of it.

If you have decided that your pond is to be for wildlife rather than for exotic fish, here are a few important points that need to be addressed.

Your pond should have gently sloping slides to provide access for amphibians and lots of shallow water which will warm up quickly in Spring.

It is best not to shade out your pond too much, therefore, plant tall vegetation to the north side of your pond. Also do not create your pond under trees, as these not only shade out the pond, but fallen leaves clog up the pond, decreasing the oxygen levels significantly.

The best pond plants for wildlife are native plants, for example;

Curled Pondweed *Potamogeton crispus*  
Hornwort *Ceratophyllum demersum*  
Water-violet *Hottonia palustris*  
Frogbit *Hydrocharis morsus-ranae*  
Yellow Flag *Iris pseudacorus*  
Branched Bur-Reed *Sparganium erectum*  
Water Mint *Mentha aquatica*  
Lady's Smock *Cardamine pratensis*  
Meadowsweet *Filipendula ulmaria*  
Purple Loosestrife *Lythrum salicaria*

Some native plants are best avoided however, because they may be too large, vigorous or invasive, for example; White Water-lily *Nymphaea alba* or Greater Reedmace *Typha latifolia*. There are also a number of imported plants which have escaped into the wild, causing damage and putting our wildlife under threat, for example; Small-leaved Duckweed *Lemna minuta* and Parrot's-feather *Myriophyllum aquaticum*.

You should never take plants or animals from your pond and put them in the countryside as they can spread disease or compete with native wildlife.

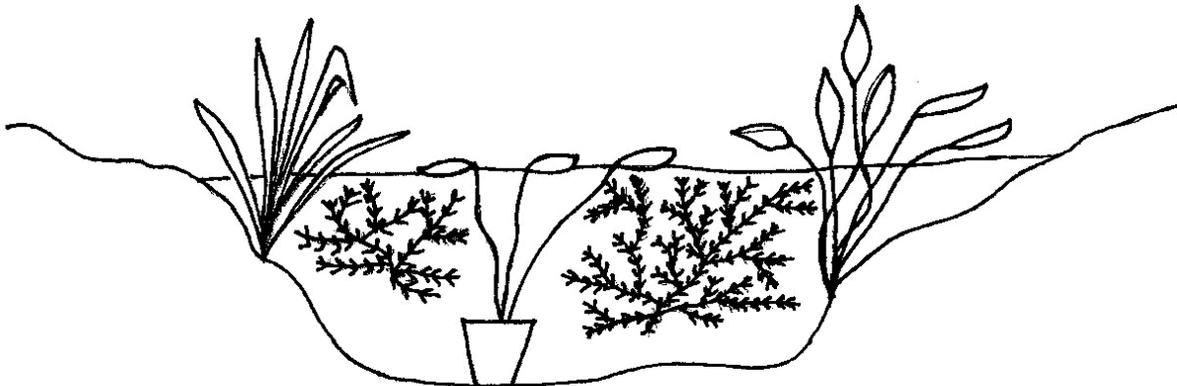
It is also a good idea to put your plants into baskets in the pond, rather than directly into an added layer of soil, as too much soil creates an excess of nutrients, which encourages algae growth. Baskets also give the plants support and helps to control them.

A successful wildlife pond has a mixture of plants at different levels. Oxygenators are plants that have most of their foliage under water. Marginal plants create excellent refuges and look-out points for dragonflies and damselflies and are very important for emerging nymphs.

You can also create a boggy area that is an extension of your pond. This provides valuable cover and food for wildlife.

One important point is not to introduce fish into your pond, as these feed on small aquatic invertebrates, such as damselfly and dragonfly nymphs. You should also not introduce frogspawn or amphibians into your pond, as these may carry diseases that could pass to your pond. It is best to wait for the amphibians to arrive naturally.

### Example of pond structure



## **Dragonfly Recording Forms**

Electronic forms are also available on our website [www.brerc.org.uk](http://www.brerc.org.uk)



# Dragonfly Monitoring Form

<b>Grid Reference</b>							
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6-figure grid reference is ideal, but a 4-figure grid reference is also acceptable. All grid references in old 'Avon' begin **ST**.

<b>Recording Year</b>						
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<b>Recorder Name &amp; Address</b>	
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all personal information is treated as confidential, and is held in compliance with the Data Protection Act.

<b>Other Recorders</b>	
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<b>Location name (as much detail as possible please)</b>	
--	--

<b>Other species/Notes</b>	
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This form is designed for use over a period of **one year at one locality** only. Please add the date of your visit at the top of the form (as in the example) and use a separate column for each visit.

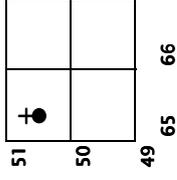
Tick in the column where a dragonfly is present. If possible give the sex and number seen instead of a tick.

**Please do not add anything to the columns unless a dragonfly is present.**

Please return your records to: BRERC, Third Floor, Central Library, College Green, Bristol BS1 5TL

An electronic version of this form is available at [www.brerc.org.uk](http://www.brerc.org.uk)

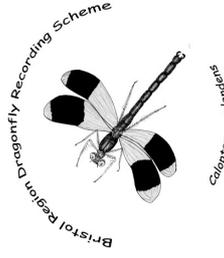
### How to construct a grid reference



4-figure grid reference for the church: ST6550

6-figure grid reference for the church: ST653505

**Sketch map of locality (please indicate North). This will help us if you are unable to provide a 6-figure grid reference.**



Records provided to BRERC are deemed to be made available for BRERC to use in accordance with its role as a Local Records Centre. As such, records may be widely distributed by BRERC to third parties, in a variety of formats and media, such as through the National Biodiversity Network Gateway and other websites. Personal information is not supplied by BRERC to data enquirers but names and addresses may be used by BRERC when mailing newsletters, recording forms, invitations to meetings and other information or publicity material. More details of BRERC policies can be found on our website at: <http://www.brerc.org.uk>.

