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Dragonflies & Damselflies

Dragonflies and damselflies are among the largest and most colourful insects seen in the wetlands of Ireland. They are carnivorous and can hunt prey while flying about. They breed in water. The eggs hatch into a brown nymph which spends up to four years in the water before emerging as the colourful adult. Adult dragonflies and damselfies are insects of summer living for a few weeks. There are 28 species of dragonfly and damselfly in Ireland which includes both resident and migrant species.

What are Dragonflies & Damselfies?

Dragonflies and damselflies are large or moderate sized predaceous insects. The body is long, often slender. The head is big with very large and prominent eyes. The antennae are thin and very short. They have four wings which are approximately the same size. The wings are membraneous with many veins. They have six legs with hooks.



Dragonfly Nymph

A Dragonfly Nymph has a heavy body, three pairs of legs, large eyes and wing buds. Nymphs range in size from 2.5cm to 6cm.

Hooks are also found on the tail end of males for clasping females. Nymphs of dragonflies and damselflies are aquatic.

Dragonfly and Damselfly Taxonomy

Dragonflies and damselflies are insects belonging to the Order Odonata. There are two distinct sub orders: The Zygoptera are the damselflies and the Anisoptera are the dragonflies. In Ireland we have 17 dragonfly species and 11 damselfly species.

Life Cycle

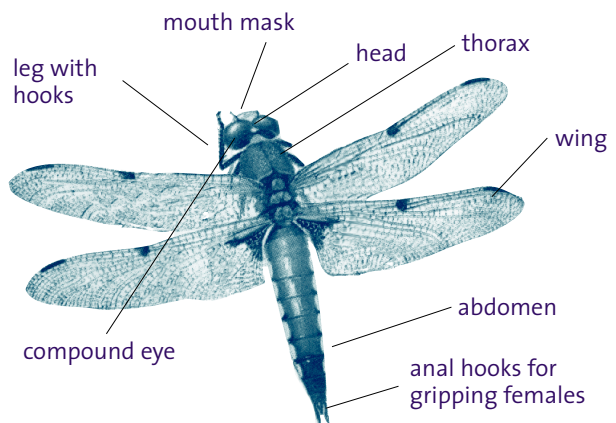
The mating of adults can take place in flight, on the ground or among vegetation depending on the species. The openings of the male and female genitalia are at widely separated parts of the body. This means that strange contortions of the bodies are needed to bring about fertilisation of the eggs. The male has special anal

claspers which are used for gripping the female in the back of the head or neck thus allowing the bodies to come into close contact for fertilisation of the eggs.

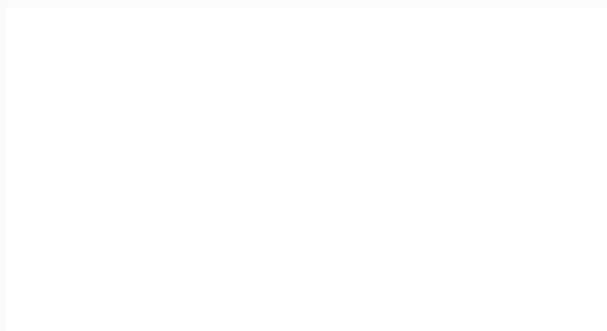
The eggs are laid in water, sometimes inside plant stems. The females of some species penetrate below the surface for egg-laying, and are helped in doing this by the male, who remains above the surface and keeps a firm grasp on the female.

Dragonfly and damselfly nymphs are carnivorous, possessing a 'mask' consisting of impaling mandibles, or hooks on an extensible limb, which is used for bringing the food to the mouth and for holding it there. The 'mask' is shot out with lightening speed when prey of suitable size approaches within reach, and the nymph may also dart forward to seize its victim, but at other times the creature is sluggish.

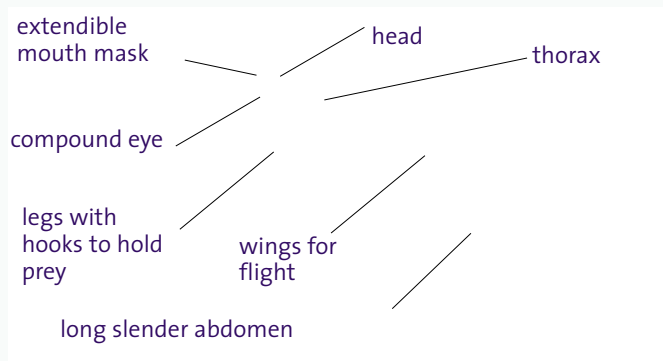
Although metamorphosis is incomplete in the dragonflies and damselfies, the fully grown nymphs do not bear a close resemblance to the adult insects.



Structure of a Dragonfly



Damselfly Nymph



Structure of a Damselfly

A Damselfly Nymph has a long body, three pairs of legs, four developing wings, and three leafy gills at the end of the tail. Nymphs range in size from 2cm to 3cm.

The nymph leaves the water after a larval period of about two years in the case of the damselflies and three years in that of the dragonflies. It then climbs up a reed or other projection above the surface. Here the final transformation takes place, the nymphal skin splits and the imago wriggles out. The wings then expand and the abdomen becomes elongate and slender; the colouration takes a certain time to develop, and this waiting or 'teneral' period may last for several days.

Habitats of Dragonflies & Damselflies

As most of a dragonfly or damselfly lifecycle is spent as an aquatic larva which can last for two to four years,

Dragonfly Life Cycle

The Dragonfly Life Cycle can take up to four years to complete. The egg hatches into the aquatic nymph which emerges from the pond as the colourful adult.

it is the conditions the larva need which determine where the species will be found. Lakes, turloughs, bogs and fens are amongst the best places for these insects in Ireland, supporting both large numbers of species including some of the rarest Irish species and large populations of individual species.

Dragonflies and damselflies prefer sheltered ponds with water unaffected by enrichment in which the larvae will live, with few if any fish, as these are predators of dragonfly and damselfly larvae. Adult dragonflies and damselflies require good feeding areas so sites with additional habitats such as woodland, scrub or unimproved grassland and wetland vegetation close to breeding sites will support the strongest dragonfly and damselfly populations.

Identifying Dragonflies & Damselfies

The first task in identifying dragonflies and damselfies is to separate a dragonfly from a damselfly.

Dragonflies are big and acrobatic in flight. They like to attract attention. Damselflies are small and dainty and only fly short distances. They might remind you of a cranefly or daddy long-legs, as they flit about. Another difference between the two insects is that a dragonfly resting or feeding holds its four wings straight out from its body. Damselflies at rest hold their wings folded or slightly spread, but close to their bodies.

The fore and hind wings of a damselfly are the same shape. They all have narrow bases at the point of attachment to the abdomen. The

wings of a dragonfly are different shapes. The fore wings have narrow bases while the hind wings are wide at the base.

The aquatic nymphs of dragonflies and damselflies are also different. Nymphs of the damselflies have three tail like projections. These are gills, and are absent in dragonfly nymphs.

One group of damselfies that are easy to distinguish are the demoiselles or jewelwings. These have large coloured patches on their wings, a little like a butterfly. Other damselfies have really colourful bodies - red, bright blue or emerald green. To identify these to an individual species you need the help of a book or identification chart (see Field Guides).

You can begin to identify dragonflies by recognising five different groups.

The biggest dragonflies found in Ireland are the Emperors which are between 7 and 8cm long. These are powerful insects and seemingly tireless in flight. Look out for the Blue Emperor (*Anax imperator*) in southern coastal wetlands of Ireland. Male Emperor's have an amazing blue body while females have an apple green body. This

Banded Demoiselle



Large Red Damselfly

at the base of its hind wings next to its body.

The darters include four bright red species and one black species. The skimmers have blue bodies. Once again, to sort these out you need the help of a book or identification chart (see Field Guides).

dragonfly nymphs and to include plenty of plants around the pond and sheltered conditions for adult dragonflies to feed.

Very importantly, don't use moss peat in the garden. The mining of moss peat from our bogs is removing the habitat of our dragonflies and damselfies and threatening their future. Go peat free in your garden by recycling all the organic material to make compost. When you visit the garden centre only buy peat free garden products.

Another way to help is not to burn turf that comes from a Natural Heritage Area or a Special Area of Conservation in your home. Drainage of wetlands and bogs is a serious threat to dragonflies and damselfies as these are insects of wetlands.

Choose eco-friendly detergents and cleaning products for use in your home or work place. Reducing the amount of phosphates in waste water will help to avoid eutrophication of wetlands.

Black-tailed Skimmer

species was first recorded in Ireland in 2000.

The hawk dragonflies are also very large, with long bodies (5-7.5cm) and strong, fast flight. They can fly for hours and hours, and it's not unusual to see them far away from water. The Spring Hawker (*Brachytron pratense*) is usually the first of this group to be seen flying - from May onwards - long before the other species are about. Another dragonfly in this group that's easy to spot is the Amber-winged Hawker (*Aeshna grandis*), which has brown-tinted wings and a brown body. To recognise the other hawk dragonflies you need an identification chart (see Field Guides).

The three other families of dragonflies are the chasers, skimmers and darters. These are smaller dragonflies than the emeralds and hawkers and range in length from 3 to 5cm.

Chaser dragonflies have short, chunky bodies. Look out for the Four-spotted Chaser (*Libellula quadrimaculata*) which has two dark patches on each of its four wings, making eight in all plus a dark patch

Threats to Dragonflies and Damselfies

With the loss of bogs and fens and the eutrophication of waterways, our dragonfly and damselfly species are undoubtedly in decline. Two species in particular are of concern. The Irish Damselfly or Irish Bluet (*Coenagrion lunulatum*) is a very local species found on mesotrophic lakes, fens and cutover bogs. Some 30 colonies are known mostly in Armagh, Fermanagh, Monaghan and Tyrone. Although this species was only found in Ireland some twenty years ago, already some colonies appear to have been lost. Eutrophication of sites is believed to have been the main factor.

The status of our rarest Irish dragonfly the Northern or Moorland Emerald (*Somatochlora arctica*) is also of concern as it is apparently confined to the Killarney National Park in Co. Kerry. Here it breeds in shallow pools in bogs. However it is an elusive insect which has been rarely seen and there are few known breeding sites. The Northern Emerald is threatened by habitat change and also by longer-term climate change as it is, like many of our bog dwelling insects, a northern, cold-adapted species.

What You Can Do

Create a dragonfly haven in your garden by building a pond. Make sure to exclude fish as they eat

Web Sites to Visit

Further information about dragonflies and damselfies and their habitats can be found at the following sites:

Information on the Dragonfly-Ireland project can be found at www.habitas.org.uk/dragonflyireland

The web site describes all the Irish species of dragonfly and damselfly and gives lots of other information about these fabulous insects.

Information on wetland habitats of Ireland such as bogs, fens and cutover bogs can be found at the Irish Peatland Conservation Council website at: www.ipcc.ie

Hairy Hawker

Common Darter

Four Spot Chaser

Checklist of Irish Dragonflies and Damselflies

Common English Names	Latin Name	Irish Name
Banded Demoiselle/Banded Jewelwing	Calypteryx splendens	Brideog Bhandach
Beautiful Demoiselle/Beautiful Jewelwing	Calypteryx virgo	Brídeog
Emerald Damselfly/Common Spreadwing	Lestes sponsa	Spré-eiteach Coiteann
Scarce Emerald Damselfly/Turlough Spreadwing	Lestes dryas	Spré-eiteach Turlaigh
Azure Damselfly/Azure Bluet	Coenagrion puella	Goirmín Spéiriúl
Variable Damselfly/Variable Bluet	Coenagrion pulchellum	Goirmín Luaineach
Irish Damselfly/Irish Bluet	Coenagrion lunulatum	Goirmín Corránach
Common Blue Damselfly/Common Bluet	Enallagma cyathigerum	Goirmín Droimriabhach
Blue-tailed Damselfly/Common Bluetip	Ischnura elegans	Rinnghorm Coiteann
Scarce Blue-tailed Damselfly/Small Bluetip	Ischnura pumilio	Rinnghorm Beag
Large Red Damselfly/Spring Redtail	Pyrrhosoma nymphula	Earr-rua an Earraigh
Hairy Dragonfly/Spring Hawker	Brachytron prtense	Seabhaic an Earraigh
Southern Hawker	Aeshna cyanea	Seabhaic an Deiscirt
Brown Hawker/Amber-winged Hawker	Aeshna grandis	Seabhaic Ómrach
Common Hawker/Moorland Hawker	Aeshna juncea	Seabhaic an Fhortaigh
Migrant Hawker/Autumn Hawker	Aeshna mixta	Seabhaic an Fhómhair
Emperor Dragonfly/Blue Emperor	Anax imperator	Impire Gorm
Lesser Emperor/Yellow-ringed Emperor	Anax parthenope	Impire Buifhainneach
Black-tailed Skimmer	Orthetrum cancellatum	Scimire Earrdhubh
Keeled Skimmer/Heathland Skimmer	Orthetrum coerulescens	Scimire na Sruthlán
Ruddy Darter	Sympetrum sanguineum	Sciobaire Cosdubh
Common Darter	Sympetrum striolatum	Sciobaire Coiteann
Red-veined Darter	Sympetrum fonscolombii	Sciobaire Dearghéitheach
Yellow-winged Darter	Sympetrum flaveolum	Sciobaire Buí-eiteach
Black Darter	Sympetrum danae	Sciobaire Dubh
Four-spotted Chaser	Libellula quadrimaculata	Ruagaire Ceathairbhallach
Northern Emerald/Moorland Emerald	Somatoclora arctica	Smaragaid an Mhóintigh
Downy Emerald	Cordulia aenea	Smaragaid Umha-dhaite

Recording Dragonflies & Damselflies

DragonflyIreland was a four year project organised by the Ulster Museum and supported by National Parks and Wildlife and the Environment and Heritage Service (N. Ireland) which aimed to record the distribution of the Irish dragonflies and document important sites and habitats.

The information obtained in the all Ireland survey was published in *The Natural History of Ireland's Dragonflies* in 2004. This magnificently produced book was written by two of the co-ordinators of the project - Brian Nelson and Robert Thompson. A web site for the project was launched by the Ulster Museum at www.habitas.org.uk/dragonflyireland. In the four years of the project over 13,000 records of dragonflies in Ireland were received.

Dragonfly Watching

Some of the best sites to see dragonflies and damselflies are as follows:

Ballynahone Bog National Nature Reserve, Co. Derry

Brackagh Moss National Nature Reserve, Co. Armagh

Glenveagh National Park, Co. Donegal

Killarney National Park, Co. Kerry

Lough Boora Parklands and Finnermore's Lake, Co. Offaly

Lough Conn, Co. Mayo

Lough Gealain and the Burren National Park, Co. Clare

Pollardstown Fen National Nature Reserve, Co. Kildare

Upper Lake, Glendalough, Co. Wicklow

Field Guides & Further Reading

Anonymous (2001) Guide to the Dragonflies of Ireland. Ulster Museum, Belfast.

Brooks, S. & Lewington, R. (2002) Field Guide to the Dragonflies and Damselflies of Great Britain and Ireland. British Wildlife Publishing, Hampshire.

Nelson, B. & Thompson, R. (2004) The Natural History of Ireland's Dragonflies. The National Museums & Galleries of Northern Ireland, Ulster Museum, Belfast.

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Printed on recycled paper
by Print & Promotions
Tel: 087 2567205
March 2005

