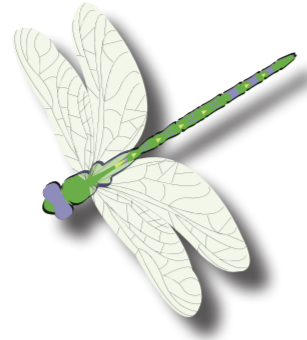


*Is Ireland's Climate Changing?
How can we find out?
How will it affect our plants and animals?*



How Planet Earth Keeps Working

The Earth works because all living and non-living things on it need each other. If one thing stops working, then something else will stop working.

How Living Things need the soil and sun

All plants and animals need the rocks, the soil, the sun and rain. For example, if there is no soil, plants cannot grow; if there is no sun, plants cannot grow. If there are no plants, many animals will not survive. If many animals die, then humans will suffer. So you can see that everything is linked to everything else.

Living Things need Each Other

All plants and animals need each other. For example, a bird needs a tree to nest in and the tree needs the bird to spread its seeds.

Everything Happens at the Right Time

We all like to use a calendar to see when it will be the weekend or when we will get holidays. Calendars are important. Nature has its own calendar which it follows it very carefully. For example, some flowers (bluebells) come out in February before the leaves come on the trees. This allows the flowers to enjoy the sunlight before the trees block it out. In March when winter is nearly gone the sun shines for longer and it is stronger and warm. The trees notice this and its buds begin to open (bud burst occurs) and new leaves appear to catch the sun. The leaves use the sunlight to make food so the tree grows and it produces seeds in April and May (catkins). Birds eat some of the seeds (in the catkins) and feed their young in the nest in May and June. So nature has its own special calendar to record natural events. The leaves use the sunlight to make food so the tree grows and it makes its seeds in April and May (catkins). Birds eat some of the seeds and feed their young in the nest in May and June. So nature has its own special calendar.

Who made Nature's Calendar?

The weather makes the calendar for all of Nature. When there is very little sun shining in winter, some trees do not have leaves. When there are no seeds on the trees some birds cannot feed themselves or their young.

What is the Nature's Calendar Project?

It is a project to find out if the weather is keeping Nature's Calendar in time every year. If the weather is changing, Nature's Calendar will change and this will change how plants and animals will behave. For example, if the temperature in spring is warmer than usual leaves will appear on trees earlier, birds like the swallow (*Hirundo rustica*) will arrive earlier and butterflies will appear earlier too.

How can we see if Nature's Calendar is changing?

We can watch to see at what time the leaves are coming out on the trees each Spring, or if the swallows arrive on time, or if hawthorn flowers are budding in the month of May. The Internet web site www.biology.ie will help you do this.



1. THE HORSE CHESTNUT

Watch for the first LEAVES opening. At the first signs of green, record this as bud burst.

Who saw the budburst? _____
What date was it seen? _____
Where was it seen? _____
Has the observation been put on biology.ie? _____

2. ASH TREE

The flowers open first, but ignore this and record bud burst only - the leaves opening out.

Who saw the leaves opening? _____
What date was it seen? _____
Where was it seen? _____
Has the observation been put on biology.ie? _____

3. SILVER BIRCH

Watch for the first LEAVES and CATKINS opening. At the first signs of the LEAVES opening, record this.

Who saw the LEAVES opening? _____
What date was it seen? _____
Where was it seen? _____
Has the observation been put on biology.ie? _____

4. THE HAWTHORN

Watch for the first FLOWERS opening. At the first signs of the petals opening, record this as first flower.

Who saw the flowers opening? _____
What date was it seen? _____
Where was it seen? _____
Has the observation been put on biology.ie? _____

5. PRIMROSE

Watch for the first FLOWERS opening. At the first signs of the petals opening, record this as first flower.

Who saw the flowers opening? _____
What date was it seen? _____
Where was it seen? _____
Has the observation been put on biology.ie? _____

6. BLUEBELL

Watch for the first FLOWERS opening. At the first signs of the blue of the petals, record this as first flower.

Who saw the flowers opening? _____
What date was it seen? _____
Where was it seen? _____
Has the observation been put on biology.ie? _____

7. SWALLOW

You may hear them before you see them. The swallow has a forked tail and make a screeching call as it swoop for insects.

Who saw the swallows first? _____
What date were they seen? _____
Where was it seen? _____
Has the observation been put on biology.ie? _____

8. ORANGE TIP BUTTERFLY

The Orange Tip appears in April/May. Its looks like the cabbage white, but the orange tip cannot be missed.

Who saw the butterfly first? _____
What date was it seen? _____
Where was it seen? _____
Has the observation been put on biology.ie? _____

WHAT TO LOOK FOR ON THIS YEAR'S NATURE CALENDAR

March is important month for many phenological events in Ireland. Keep an eye out for the opening of the **Horse Chestnut** leaves. This is called 'bud burst'. Bud burst is identified the moment you see the green of the leaves pushing out of the bud.

All the **Horse Chestnut** trees in Ireland should have their leaves out by mid **April**. If a tree in your area is late, just be patient.

The Hawthorn is found mainly in hedgerows. Tiny white flowers will start to open on the **Hawthorn** bush in **April** but mainly in **May**. It is often called the May Bush. By the end of **May** the **Hawthorn** will be in full bloom.

The **Primrose** is common near hedges and at the edge of woodland. The flowers appear any time from **February** to **May**. Record them on the map even if you missed seeing the first ones appearing this year.

Every GAA supporter must know the **Ash!** Hurley sticks are made from ash trees. They flower before the leaves open. In this survey just watch for the opening of the leaves. This will occur during April and May.

Swallows travel from South Africa to Ireland every Spring. They enjoy spending the summer here feeding on insects. Their tails are forked. Don't confuse them with Swifts or House Martins. Remember the 'forked' tail and the word 'swallow'.

The **Silver Birch** is a beautiful tree. Its beauty lies in the slim trunk and the silver-white bark. It often grows on damp ground. Its leaves and catkins open in **March** and **April**. Research the word 'catkins'.

When bluebells open, the darkest woodland is transformed to a sea of blue. They open in **April** and **May**. Ireland used to have the finest bluebell carpets in the world, but now due to decreasing biodiversity, they are dying out. Research the word Biodiversity.

The Orange Tip butterfly is often ignored as being simply a Common White. However the splash of orange on the wing tips make it easy to identify. It is a sure sign of the end of Spring and the beginning of summer.

Can I get involved if I don't have Broadband?

Yes, of course. Just email your observations to info@biology.ie and put the phrase *Submit a sighting* in the subject line. Don't forget to say **(a)** what you saw **(b)** where you saw it **(c)** when you saw it.

Identification Project

You can learn to identify these eight species by doing some research in your school library, or on the Internet. When you find a good specimen, send a photo to info@biology.ie. We will publish the best examples on the web site with full credit given to the the photographer. All photographs must be your own work.