



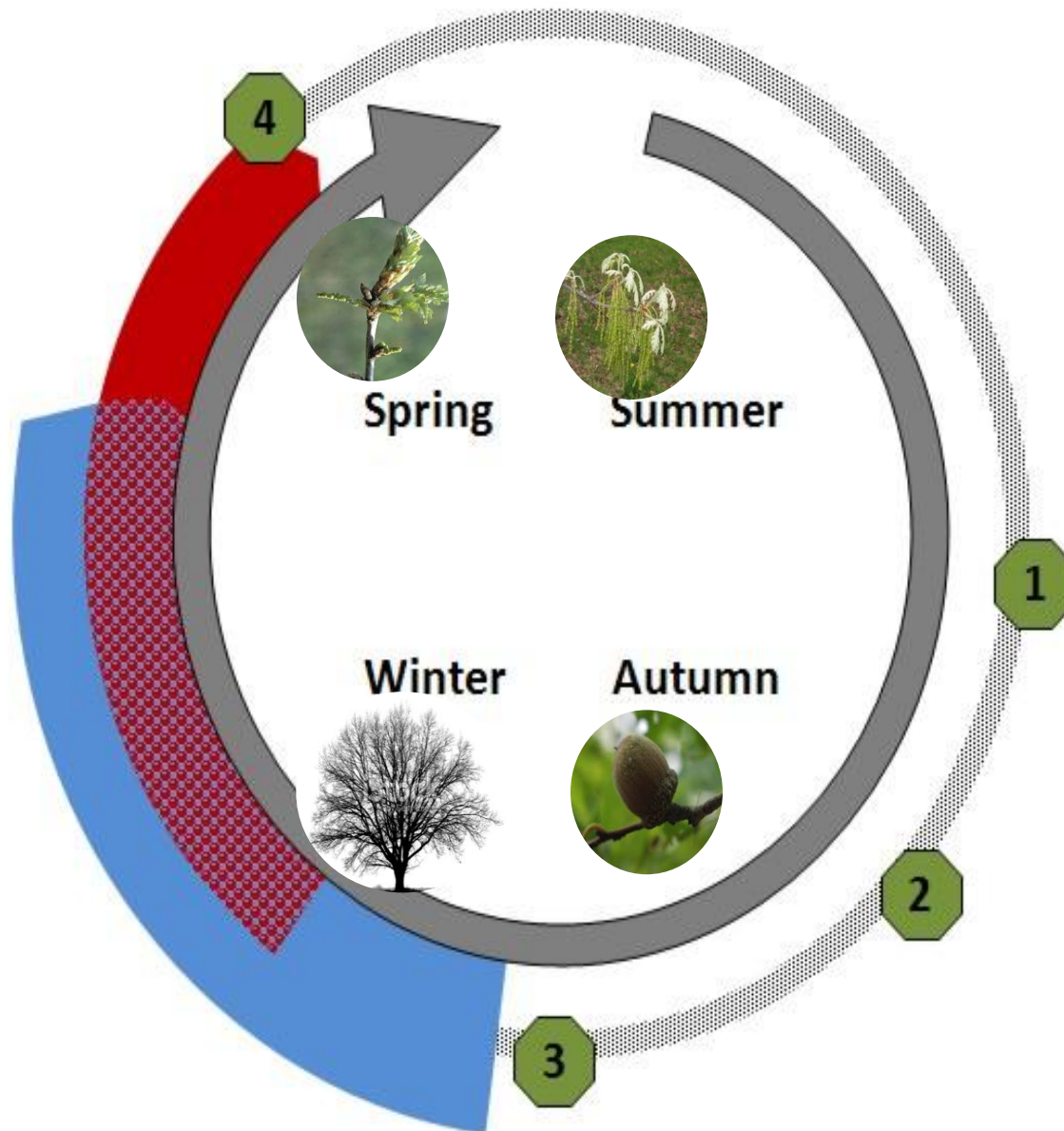
Phenology:

3 MAR

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Nature's Calendar





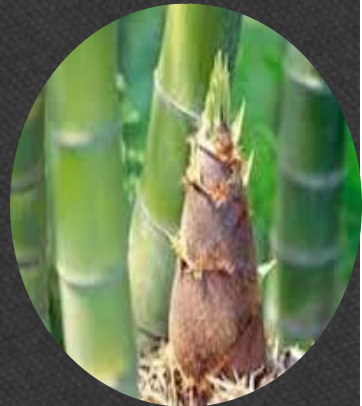
Physical parameters:

- Temperature
- Precipitation
- Solar radiation

1 OPTIMAL CONDITIONS

Phenological events

- 1) Bud set
- 2) Leaf coloration
- 3) Leaf fall
- 4) Budburst



Phenology surveys across the world

**Find out about citizen
science phenology
projects in other countries
around the globe**



Ireland



France



Holland



USA



Canada



Australia



New Zealand



India



WTP/L Shaun Nixon

Dog rose 12 May.
24 days earlier than normal
and the earliest on the
database



WTP/Katherine Jarrett

Orange tip 13 April.
26 days earlier than normal.
The earliest record we have
for this species



Northeastwildlife.co.uk

Holly blue 15 April.
26 days earlier than normal
and the earliest this century



Northeastwildlife.co.uk

**Green veined white
19 April.**
23 days earlier than normal.



WTP/L Pete Holmes

Pedunculate oak 16 April.
20 days earlier than normal



WTP/L

Rowan 5 April.
18 days earlier than normal



WTP/L Christine Martin

Beech 14 April.
18 days earlier than normal



WTP/L Pete Holmes

Ash 24 April.
16 days earlier than normal



Istock/Andrew Howe

Turtle dove 9 April.
21 days earlier than usual



WTP/L Margaret Bampton

Blackcap 23 March.
16 days earlier than usual



Northeastwildlife.co.uk

House martin 24 April.
7 days earlier than usual



Northeastwildlife.co.uk

Swallow 16 April.
9 days earlier than usual

Climate Change 2013: The Physical Science Basis

Working Group I contribution to the IPCC Fifth Assessment Report

Intergovernmental Panel on Climate Change (IPCC)—which found that spring onset has been advancing at a rate of between 2.3 and 5.2 days per decade since the 1970s—emphatically concluded that phenology “is perhaps the simplest process in which to track changes in the ecology of species in response to climate change” (Rosenzweig et al., 2007).

Key Findings of the IPCC WG1 AR5

Fredolin Tangang
IPCC WG1 Vice-Chair



08.08.2013 13:00

Phenology and Climate Change

Research, spring timing and range

A three-way mismatch



English Oak



Pied Flycatcher



Winter Moth

EARLIER

SAME TIME EACH YEAR

Both et al. 2006 Nature



In which week or month did the peach's first flower appeared in 2013?



Had the first peach's flower appeared at same week or month in Trashiyangtse and Bumthang in 2013?



Has the peach flowering time changed in 2000 and 2010?

So, lets learn to observe, record and submit phenology