



Abingdon

Seasonal Ecology and Species Assemblages

Version 1.0

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About this Booklet

This booklet forms part of an ongoing Field Notes Journal project — a personal record of place built from long-term observation, seasonal return and repeated encounters with the same landscape over time.

The material presented here is drawn from regular walks, field observations and ecological recording across Abingdon and the surrounding area. It does not attempt to describe everything that occurs, but rather what has been noticed, recorded and gradually come to feel characteristic of the local ecological year.

Alongside direct observation, the booklet also explores broader seasonal structure through comparative ecological modelling. The resulting analyses are intended not as definitive classifications, but as exploratory interpretations of how species appear, persist and overlap across the annual cycle.

At its centre, however, the work remains rooted in place — in the changing seasonal texture of familiar paths, river margins, verges, trees and open spaces observed repeatedly through time.

The work continues.

— Field Notes Journal

Dave Walker

Spring 2026

Introduction

The analyses in this booklet explore the seasonal structure of wildlife and flowering plants recorded in Abingdon using long-term observational data and fitted seasonal ecology models.

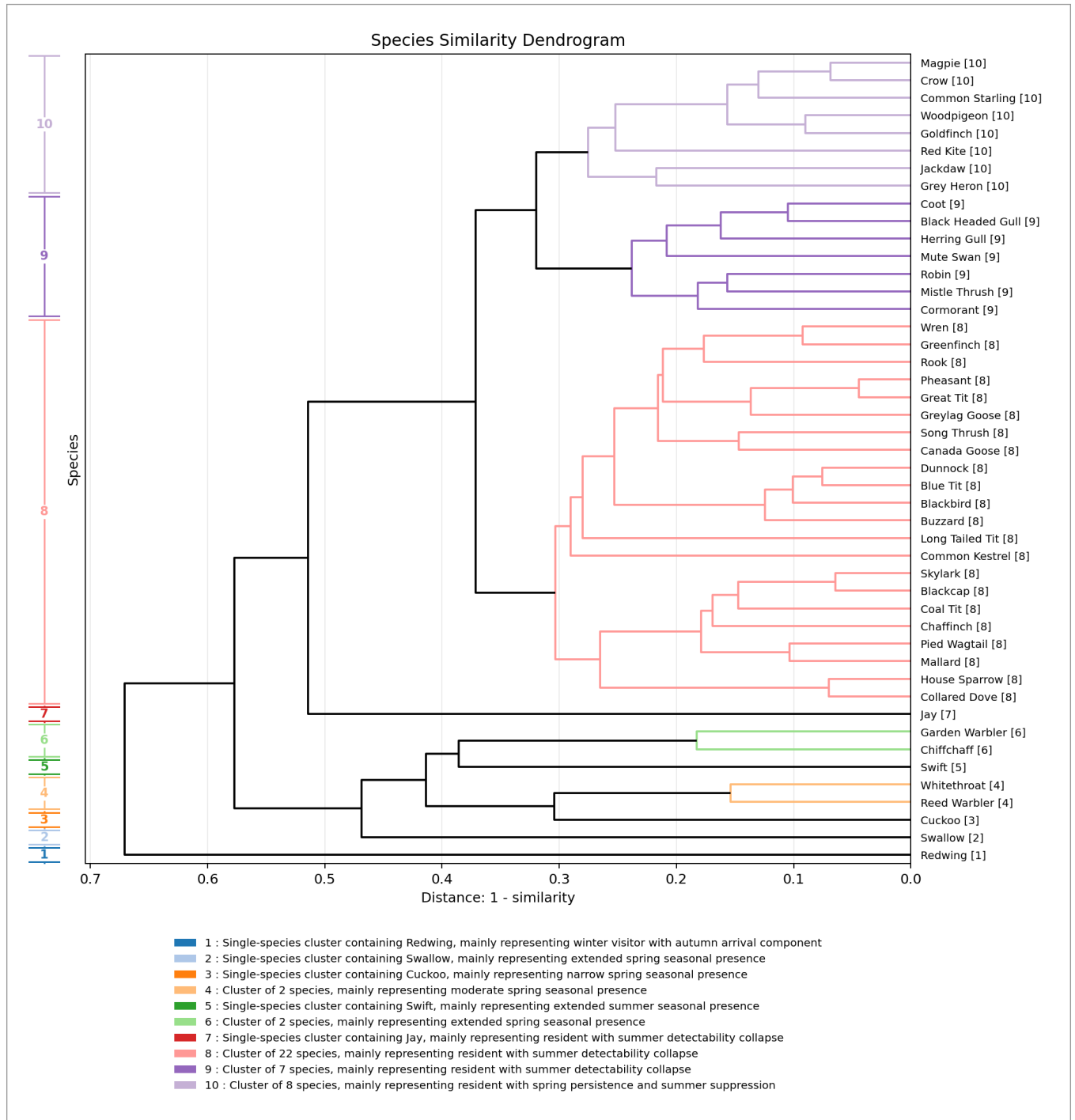
Species were grouped according to similarity in their annual seasonal behaviour rather than by taxonomy or habitat alone. The resulting dendrograms, similarity heatmaps and ecological calendars reveal recurring seasonal patterns within the local ecological community, including spring emergence groups, summer assemblages, winter visitors and year-round resident structures.

These analyses are intended as exploratory ecological interpretations rather than strict biological classifications. The clusters and similarity relationships represent shared seasonal timing and detectability patterns derived from observational records across the year.

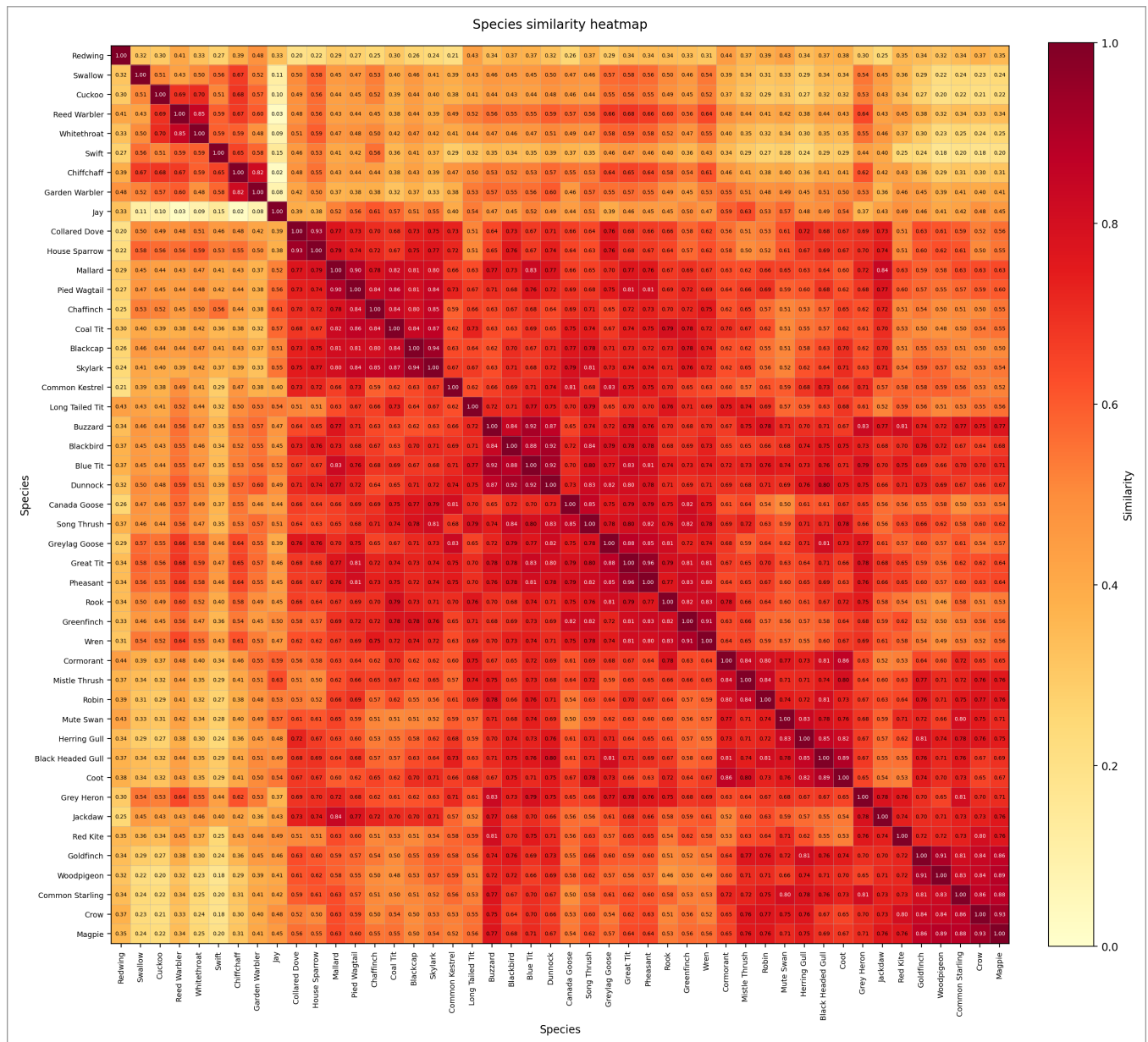
Birds, butterflies and flowering plants are analysed separately, allowing different forms of seasonality — migration, emergence, flowering and seasonal detectability — to be interpreted within their own ecological contexts.

Bird Seasonal Ecology

The bird seasonal ecology analysis reveals a strongly structured annual community organised around migration, winter visitation and varying forms of resident seasonal detectability.

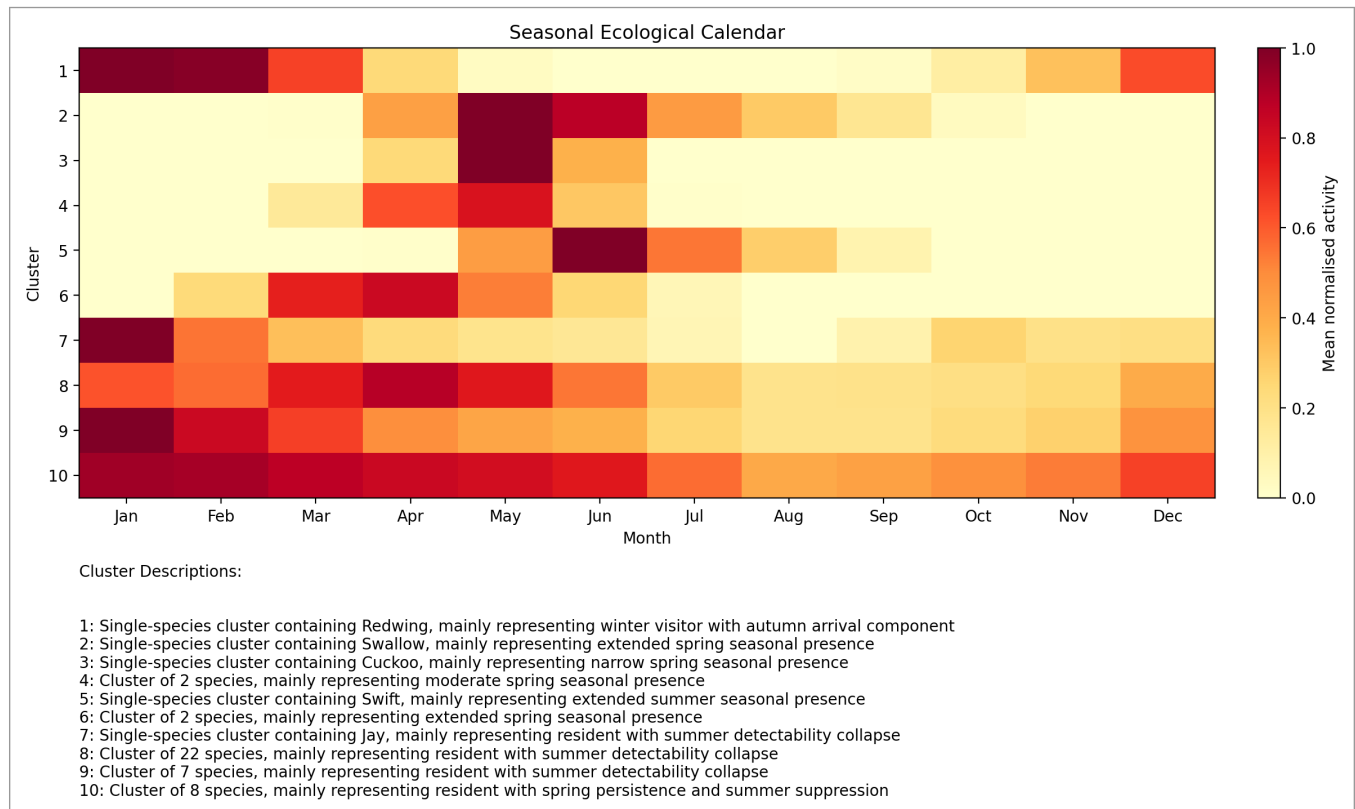


Bird Species Similarity Clustering Dendrogram for Abingdon



- A more persistent resident assemblage maintaining elevated spring presence before gradual summer decline

These broad resident neighbourhoods include many familiar urban and farmland species such as tits, thrushes, corvids, gulls and waterbirds. The similarity relationships suggest that shared seasonal behaviour often transcends habitat boundaries, linking species through common annual rhythms rather than ecological niche alone.



Bird Species Ecological Calendar for Abingdon

The ecological calendar highlights the overall annual transition of the bird community:

- Winter visitor dominance in midwinter
- Rapid spring expansion through March–May
- Concentrated summer seasonal peaks among migrants
- Followed by late-summer detectability collapse and autumn reorganisation

Rather than forming a simple migrant-versus-resident divide, the Abingdon bird community appears structured as a continuum of overlapping seasonal strategies.

Redwing

Seasonal Analysis and Species Classification

Model Family : Winter presence

Summary

Redwing

Winter visitor with autumn arrival component

Redwing is classified as winter visitor with autumn arrival component. The fitted winter component peaks around February, with a moderate autumn component centred around December. The model has low baseline presence and moderate summer suppression centred around July. The fitted response dynamics suggest slow arrival fast departure.

Confidence	Medium
Fit score	0.109
Winter peak	February
Lowest detectability	May

Traits

year wrapping winter presence

core winter winter peak

moderate autumn component

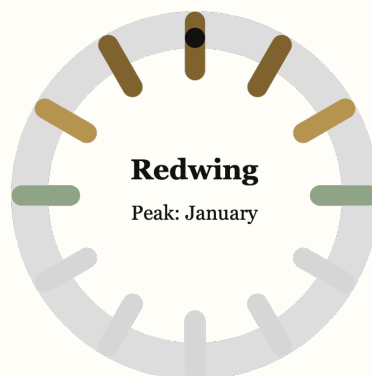
moderate summer suppression

low baseline presence

moderate winter bump

slow arrival fast departure response dynamics

Seasonal wheel



Calendar strip

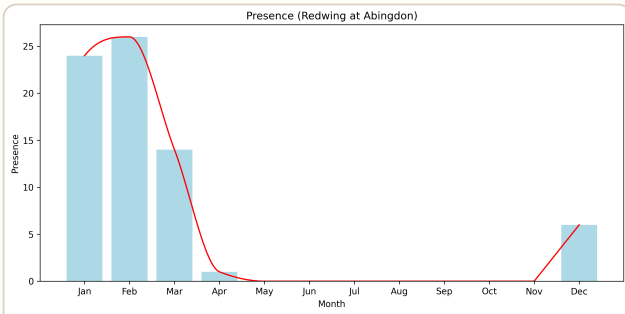


Highlighted months indicate stronger modelled presence or detectability. A ring marks the fitted peak; a hollow mark indicates the trough where available.

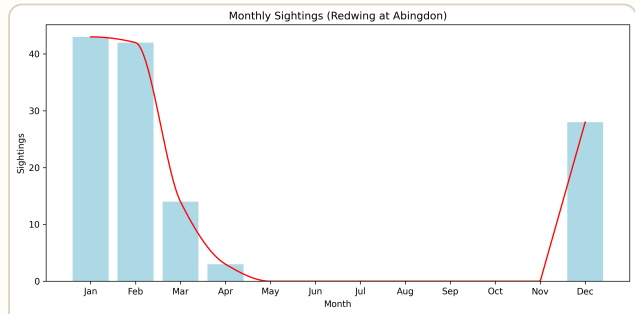
Classification evidence

Winter peak month	1.53
Winter peak label	February
Autumn peak month	11.67
Autumn peak label	December
Summer low month	6.55
Summer low label	July
Autumn to winter weight ratio	0.266
Decay to growth ratio	3.723
Target peak month	1
Target peak label	January
Target trough month	5
Target trough label	May

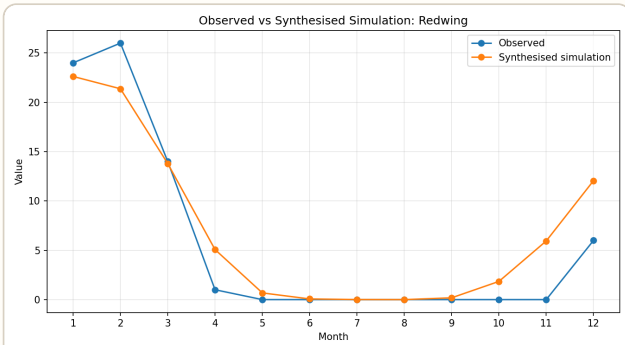
Observed and Simulated Seasonal Patterns



Redwing Observed Presence, Abingdon



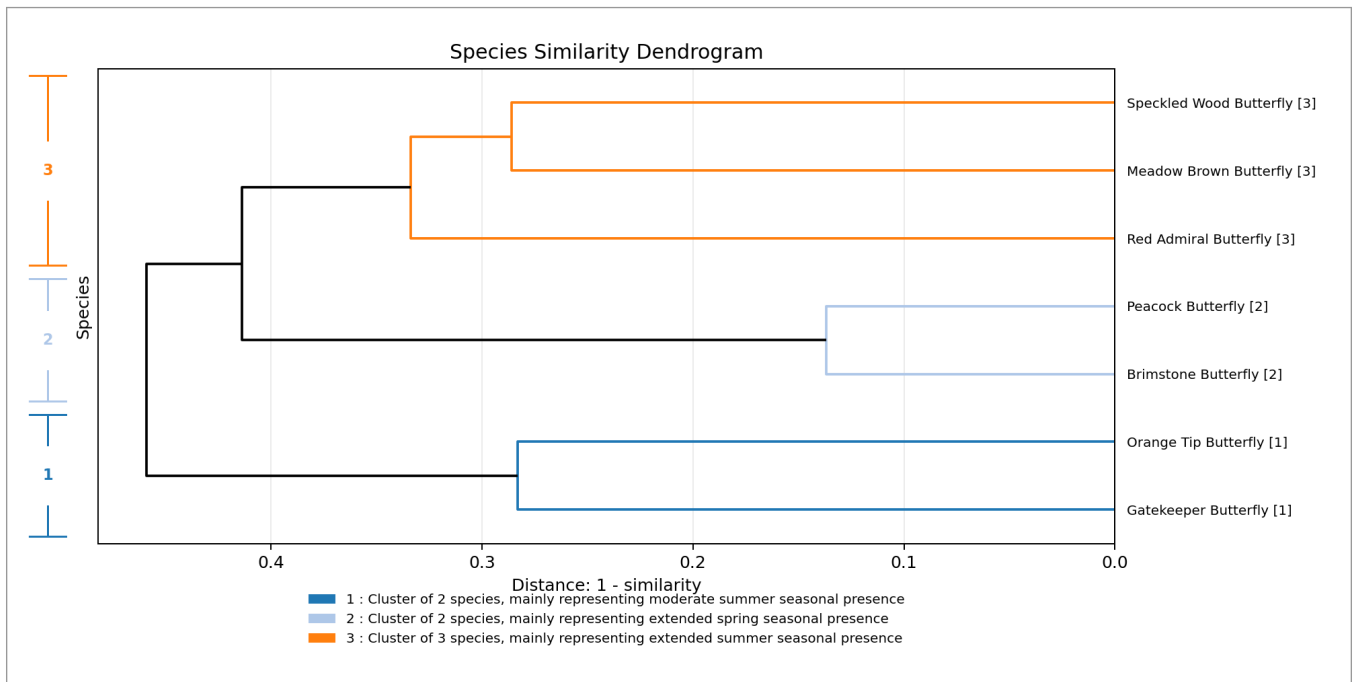
Redwing Observed Totals, Abingdon



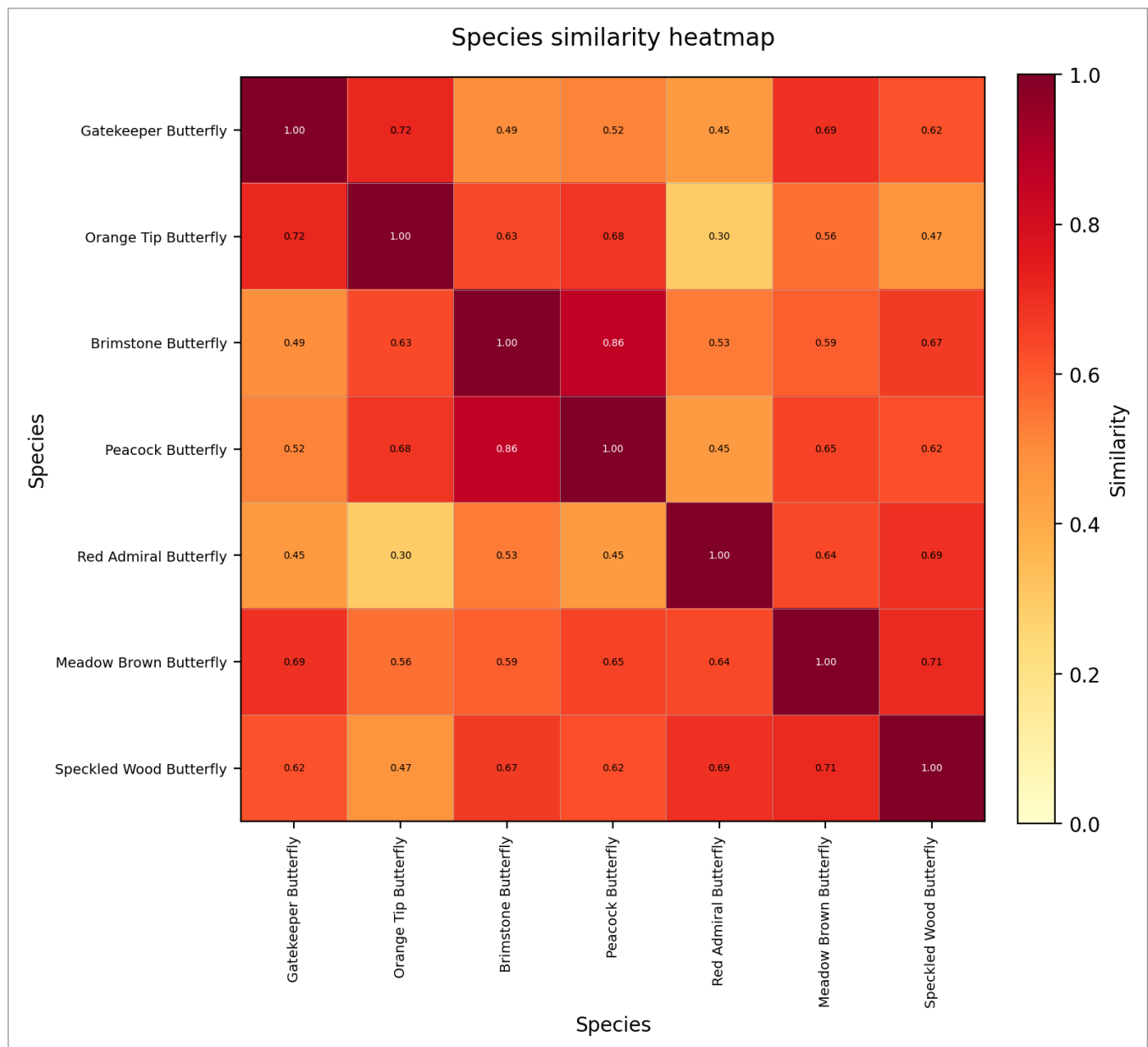
Redwing Simulated Presence, Abingdon

Butterfly Seasonal Ecology

The butterfly seasonal ecology analysis reveals a comparatively compact but strongly seasonal community structured primarily around emergence timing and duration of summer activity.



Butterfly Species Similarity Clustering Dendrogram for Abingdon



Butterfly Species Similarity Heatmap for Abingdon

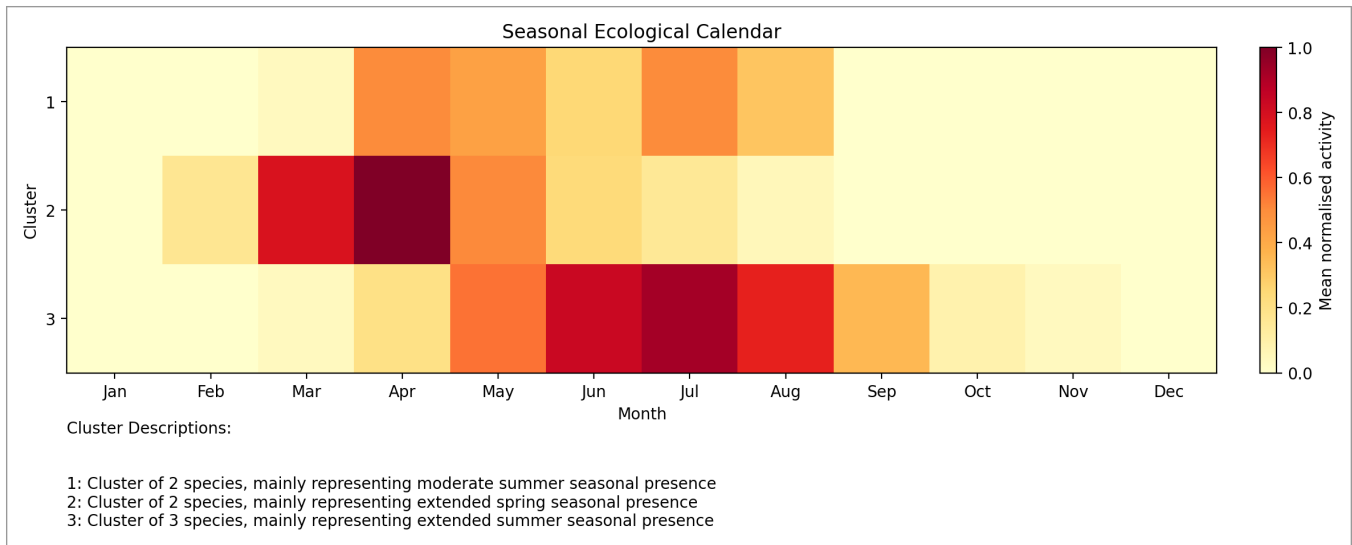
Unlike the bird assemblages, which are dominated by complex resident and migratory behaviours, the butterfly clusters form clear phenological bands associated with spring emergence, extended summer presence and late-summer persistence.

Three principal seasonal neighbourhoods emerge.

The first consists of Gatekeeper and Orange Tip, representing comparatively narrow seasonal presences associated with concentrated emergence periods. Orange Tip is especially spring-focused, while Gatekeeper occupies a more restricted midsummer window.

A second cluster links Brimstone and Peacock, both of which exhibit extended spring seasonal persistence and broad early-season activity. Their strong similarity reflects prolonged detectability across much of spring and early summer.

The third and broadest grouping contains Red Admiral, Meadow Brown and Speckled Wood. These species represent extended summer seasonal presence, maintaining activity across much of the summer and early autumn period.



Butterfly Species Ecological Calendar for Abingdon

The ecological calendar reveals a progressive seasonal succession:

- Early spring emergence dominated by Brimstone and Peacock
- Expansion into late spring and midsummer assemblages
- Followed by broad summer persistence among Meadow Brown, Speckled Wood and Red Admiral

Compared with the bird assemblages, butterfly seasonal structure appears more tightly compressed into the warmer months of the year, producing clearer and more coherent seasonal neighbourhoods.

Orange Tip Butterfly

Seasonal Analysis and Species Classification

Model Family : Seasonal presence



Orange-Tip Butterfly (Anthocharis cardamines), Oxfordshire, UK

David Walker, Pixelfed (CC BY 4.0)

Source - No changes made

Summary

Orange Tip Butterfly

Moderate spring seasonal presence

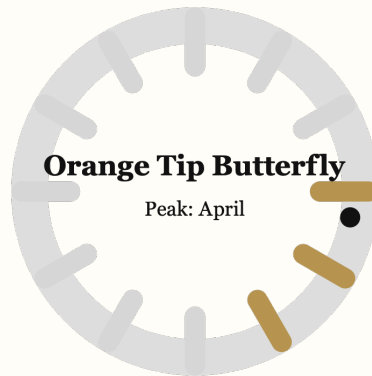
Orange Tip Butterfly is classified as moderate spring seasonal presence. The fitted seasonal window runs from about April to June, with a spring peak around April. The season is moderate, with a sharp active window, strong post-peak decline, and strong off-season suppression.

Confidence	Medium
Peak	April
Season	April–June

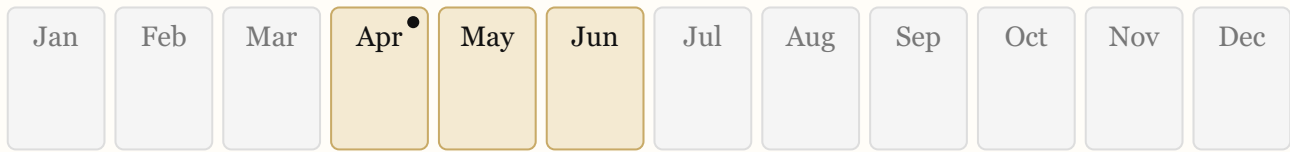
Traits

- spring peak
- moderate season
- sharp seasonal window
- strong post peak decline
- strong offseason suppression
- central peak alignment

Seasonal wheel



Calendar strip

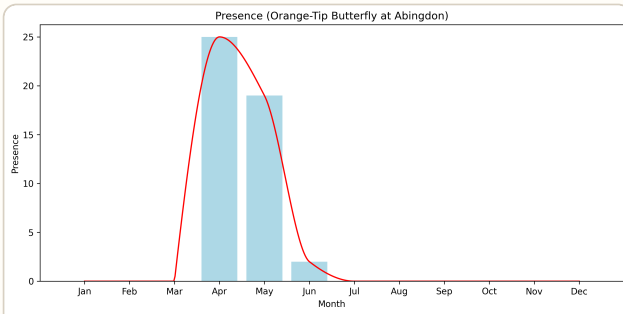


Highlighted months indicate stronger modelled presence or detectability. A ring marks the fitted peak; a hollow mark indicates the trough where available.

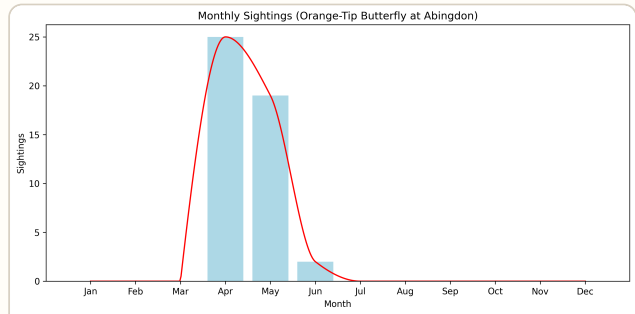
Classification evidence

Season start month	3.75
Season end month	6.255
Forcing peak month	4.315
Season width months	2.505
Season midpoint month	5.003
Season start label	April
Season end label	June
Forcing peak label	April

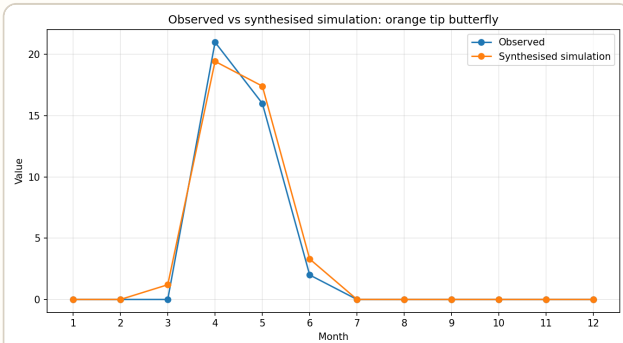
Observed and Simulated Seasonal Patterns



Orange Tip Butterfly Observed Presence, Abingdon



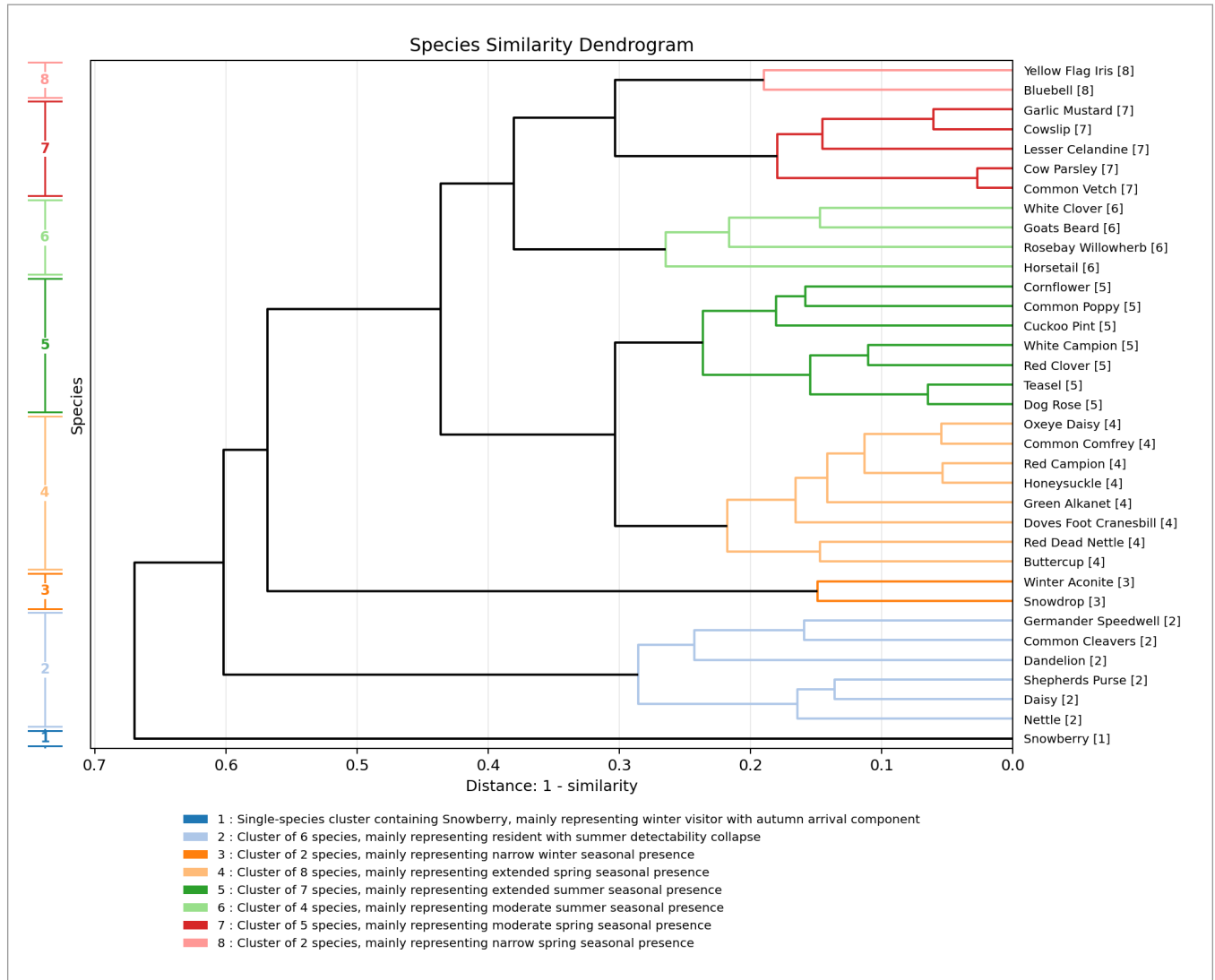
Orange Tip Butterfly Observed Totals, Abingdon



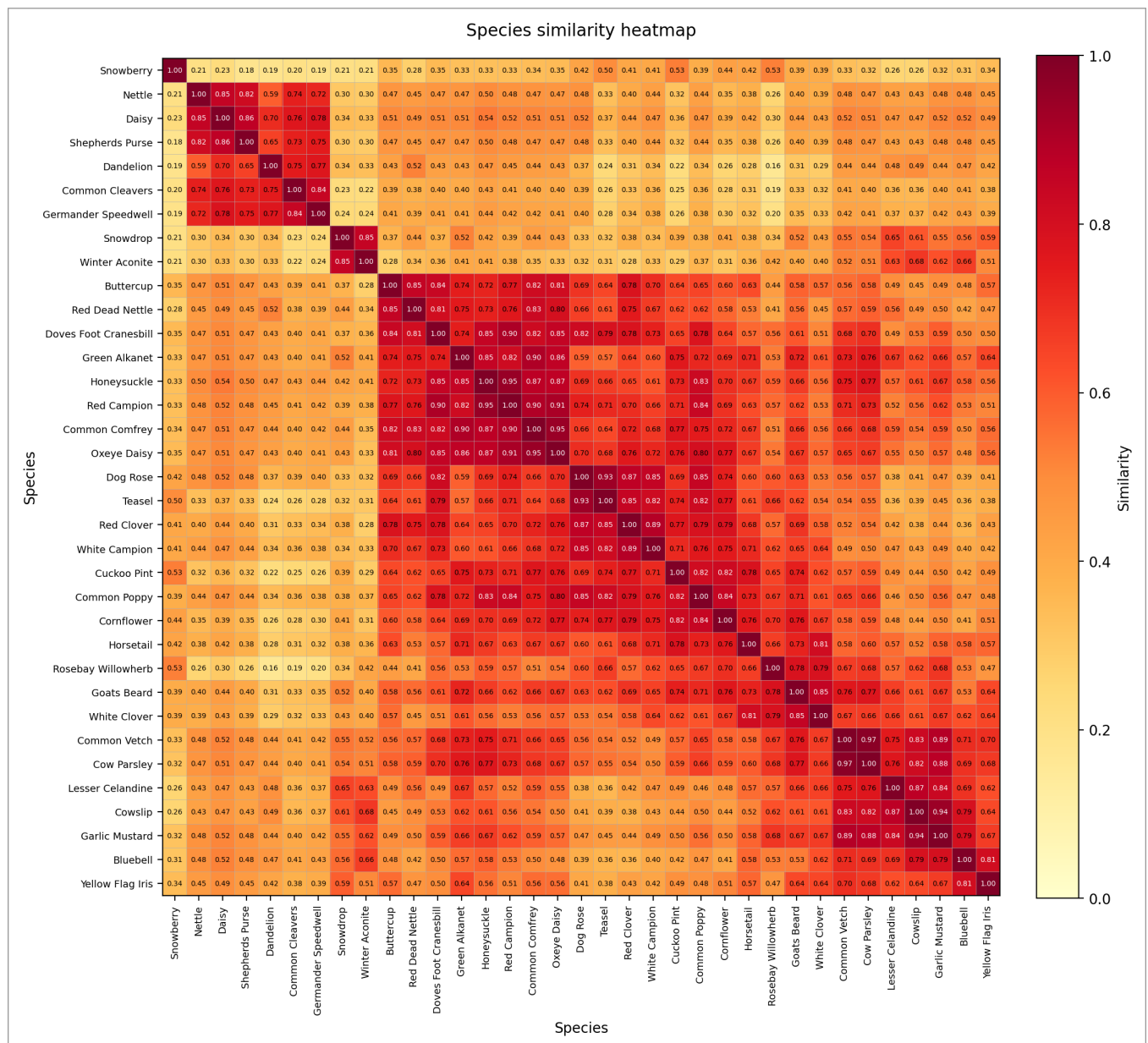
Orange Tip Butterfly Simulated Presence, Abingdon

Flora Seasonal Ecology

The flowering plant seasonal ecology analysis reveals a strongly ordered progression of flowering activity across the year, forming one of the clearest examples of seasonal ecological succession within the Abingdon dataset.



Flowering Plant Species Similarity Clustering Dendrogram for Abingdon

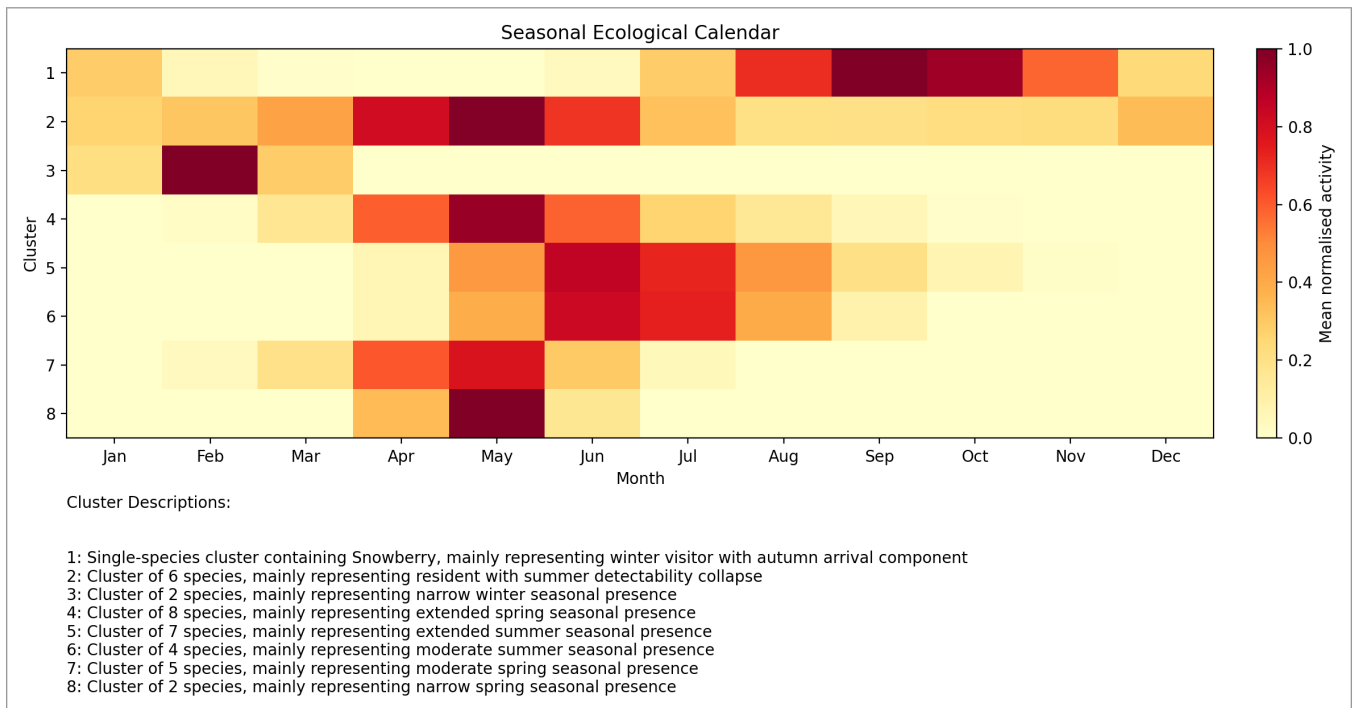


Flowering Plant Species Similarity Heatmap for Abingdon

The dendrogram separates species into several coherent flowering assemblages associated with winter emergence, spring pulse flowering, extended summer persistence and late-season continuation.

At one extreme are highly seasonal early-flowering species such as Snowdrop and Winter Aconite, forming narrow winter and very early spring clusters. These species are among the earliest ecological signals of seasonal transition within the yearly cycle.

A large spring as



Flowering Plant Species Ecological Calendar for Abingdon

The ecological calendar reveals a continuous seasonal relay:

- Winter emergence
- Rapid spring expansion
- Midsummer flowering saturation
- Followed by gradual autumn decline

Unlike the bird community, which is heavily shaped by migration and changing detectability, the flora assemblages form a comparatively smooth temporal gradient, with neighbouring clusters often representing successive flowering waves rather than sharply separated ecological states.

The similarity heatmap further suggests that flowering overlap creates a highly interconnected seasonal network across much of the summer flora community.

Lesser Celandine

Seasonal Analysis and Species Classification

Model Family : Seasonal presence

Summary

Lesser Celandine

Moderate spring seasonal presence

Lesser Celandine is classified as moderate spring seasonal presence. The fitted seasonal window runs from about February to May, with a spring peak around April. The season is moderate, with a moderate active window, moderate post-peak decline, and strong off-season suppression.

Confidence	High
Fit score	0.006
Peak	April
Season	February–May

Traits

spring peak moderate season

moderate seasonal window

moderate post peak decline

strong offseason suppression

central peak alignment

Seasonal wheel



Calendar strip

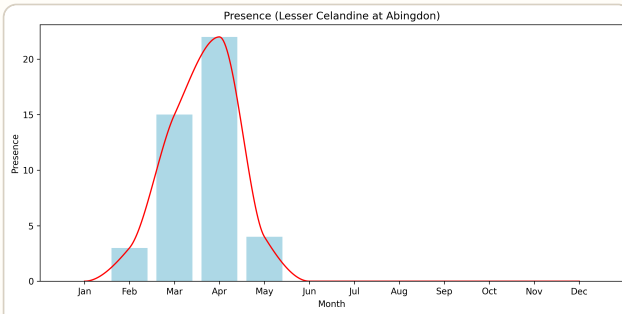


Highlighted months indicate stronger modelled presence or detectability. A ring marks the fitted peak; a hollow mark indicates the trough where available.

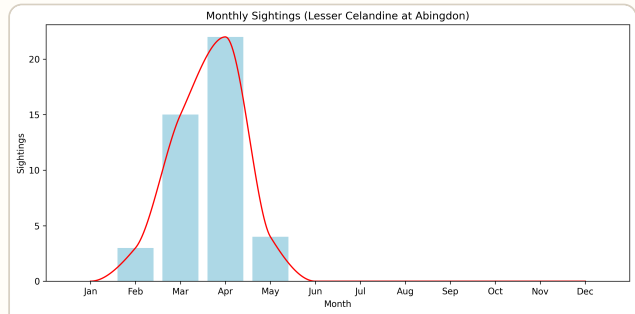
Classification evidence

Season start month	2.28
Season end month	5.25
Forcing peak month	4.36
Season width months	2.97
Season midpoint month	3.765
Season start label	February
Season end label	May
Forcing peak label	April

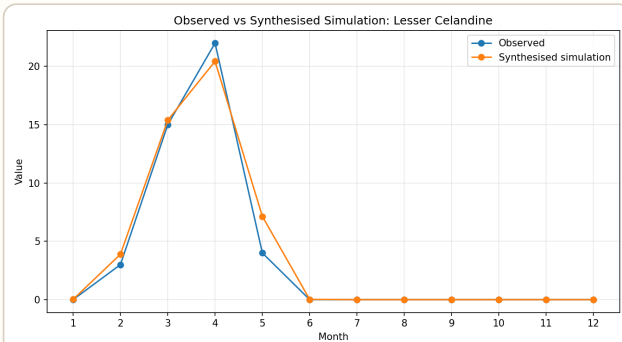
Observed and Simulated Seasonal Patterns



Lesser Celandine Observed Presence, Abingdon

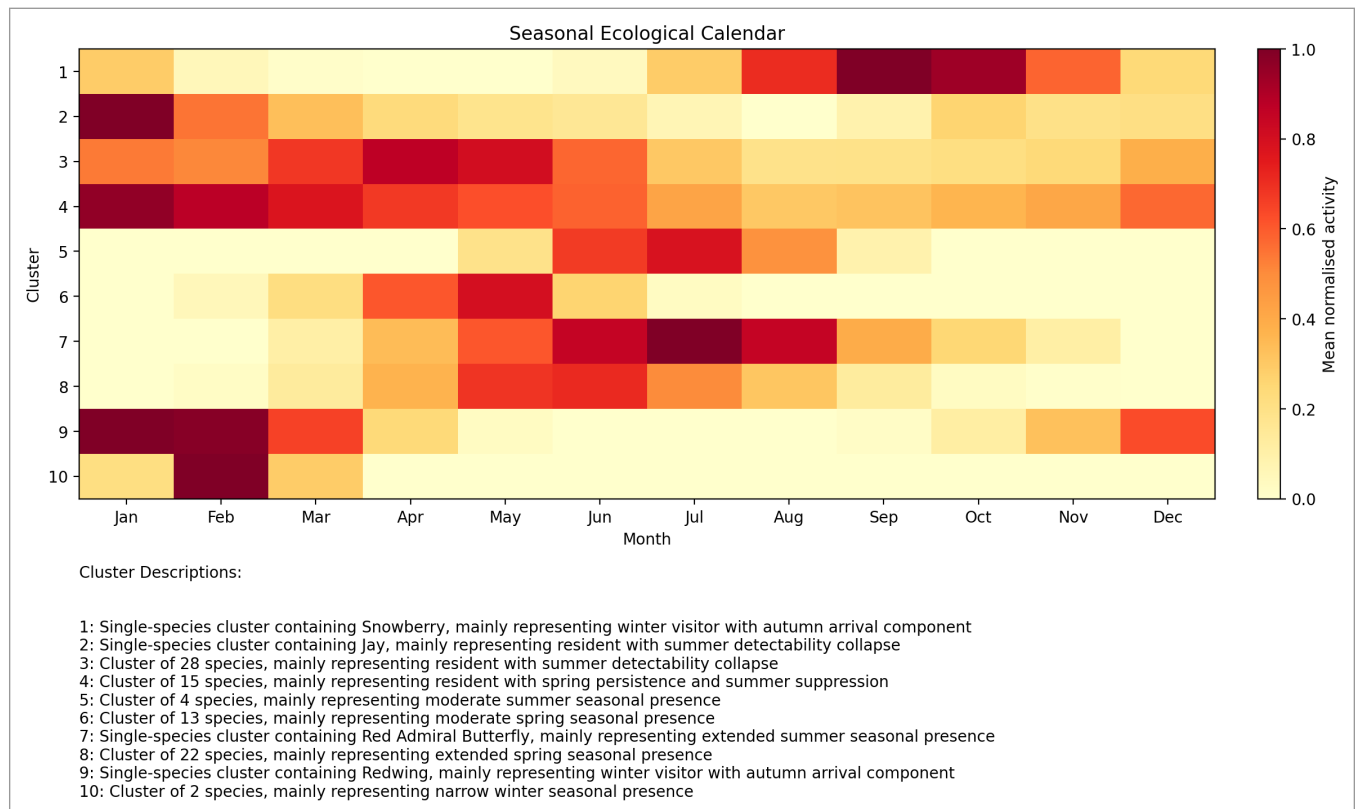


Lesser Celandine Observed Totals, Abingdon



Lesser Celandine Simulated Presence, Abingdon

The Ecological Year of Abingdon



All Species Ecological Calendar for Abingdon

When birds, butterflies and flowering plants are analysed together, a broader seasonal ecological structure emerges across the Abingdon landscape.

Rather than clustering primarily by taxonomy, many species group according to shared seasonal timing and persistence. Winter-flowering plants, winter visitors and early spring species form coherent seasonal neighbourhoods, while summer butterflies, flowering plants and migratory birds converge into broad midsummer assemblages.

The resulting ecological calendar reveals the year as a sequence of overlapping seasonal waves:

- Winter contraction and persistence
- Rapid spring ecological expansion
- Midsummer saturation
- Gradual autumn simplification

Several clusters combine species from different biological groups that nonetheless occupy similar positions within the annual ecological cycle. Early spring flora, migrant warblers and spring butterflies, for example, appear within closely related seasonal neighbourhoods associated with the expanding spring landscape.

The analysis suggests that the seasonal ecology of Abingdon is organised less by strict taxonomic divisions than by shared participation in recurring annual ecological phases.