



# Protecting rare pollinators: Forester



**National Biodiversity Data Centre**  
*Documenting Ireland's Wildlife*

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How-to-guide 14



# About the Forester

The Forester (*Adscita statices*) is a fabulous green-blue, jewel-coloured day-flying moth that is on-the-wing from late May until the end of July. It can be found in a range of habitats from uncultivated damp grassland to fens and the margins of coastal wetlands. The larvae feed on Common Sorrel (*Rumex acetosa*) and Sheep's Sorrel (*Rumex acetosella*) while the adults feed on the nectar of many species of flowering plant. It has undergone widespread decline because of habitat loss and change of land use.

## Distribution

The Forester moth is found across Europe<sup>1</sup>. In Ireland, it is relatively widespread although very localised and is becoming increasingly restricted to coastal locations. In Northern Ireland, there is only one known breeding colony since 2020 although there is the possibility that it persists unrecorded in the western counties, particularly Fermanagh and Tyrone. In Great Britain, Forester has suffered major historic declines due to loss of habitat though it remains relatively widespread with a fragmented distribution across England, Wales, and western Scotland.

### 54.002 Forester (*Adscita statices*)

Status: Scarce

IUCN: Endangered

Earliest: 25 May (1896)

Latest: 04 Aug (2022)

Last Recorded in 2023

730 Individuals

287 Records

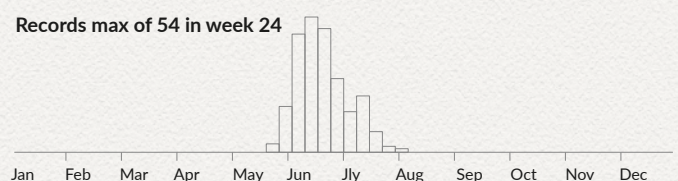
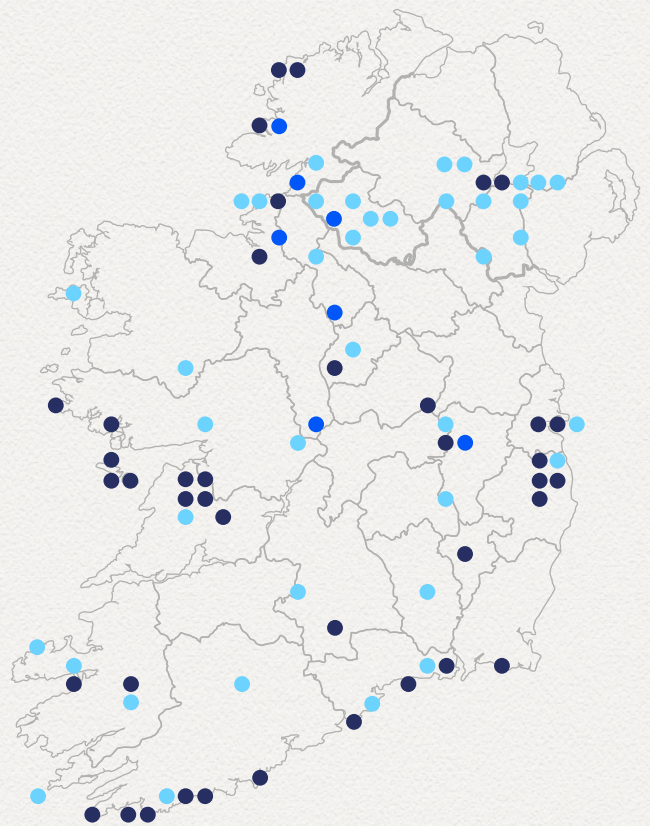
86 10km Squares

● 2010 to date

● 2000 to 2009

● Pre-2000

Updated 29 Feb 2024



Source: <https://www.mothsireland.com/163b/>

## Conservation status

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The Forester is listed as Endangered in the Irish Macro-moths Red List (2016)<sup>2</sup>. It is listed as an NI Priority Species under the Wildlife and Natural Environment Act (Northern Ireland) 2011.

## How to recognise the Forester

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The Forester is a very striking and unmistakable day-flying moth. It's a relatively small species with metallic green-blue forewings, with a wing length of between 11-15mm. The males are slightly larger than the females and both sexes like to fly in warm sunny weather. It is rarely seen in large numbers and despite its eye-catching colouration, it is difficult to find and elusive. There are no similar moth species in Ireland (although it could be overlooked as another insect, such as a Green Lacewing, which appears similar in flight).

The caterpillar, in its last instars or moulting, is an attractive pale yellow-green and has a dark stripe along its back with fine white hairs arising from wart-like structures all over the body. It may be found feeding on its foodplants, Common Sorrel and Sheep's Sorrel.



## Ecology & lifecycle of the Forester

The Forester has only one generation or brood per year. Adults can be seen from mid-May through to July, with a few individuals occasionally recorded in early August. Adults are more active in warm, sunny weather, though can sometimes be found on flowers when it is cloudy.

Once mated, the female will lay her eggs in small batches on the larval host plant, most commonly on Common Sorrel (*Rumex acetosa*) but also on Sheep's Sorrel (*Rumex acetosella*). At first the newly emerged larvae feed by mining tunnels in the leaves. Later when more developed, they feed externally on the lower leaves of the foodplant, initially by creating 'windows' in the leaves from beneath, and later by making holes right through the leaf. The larvae overwinter low down in the vegetation. They emerge in spring and continue to feed until May, when they pupate in a white spindle-shaped cocoon, spun near the ground, and concealed by vegetation.



# What it needs

The Forester needs sufficient areas of suitable habitat - damp meadows, fens, dune slacks, and the margins of coastal wetlands where its foodplants grow and there is a good supply of nectar plants for the adult moth. The maintenance of a medium-tall sward with abundant Sorrel is essential, as is a range of nectars plants for the adults to feed from, which also prevents them from potentially dispersing too early in the mating season. Warm, sunny spells of weather during its adult flight period is ideal to ensure a good breeding season, while during dull weather it can be spotted resting on vegetation. The Forester is typically found in small, discrete colonies. It has a relatively poor dispersal ability<sup>3</sup>, with adults usually remaining close to the existing colony.

## Overwintering sites

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Forester overwinters as a larva low-down in vegetation, typically in tussocky areas with a good thatch layer on the ground. While it can be found across a range of habitats, vegetation is ideally medium-tall in structure which ensures it can safely complete its lifecycle.

## A supply of nectar for the adult moths

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Adult moths need abundant nectar plants during the flight period, from mid-May through to the end of July. The table on page 6 lists some of the plants that are known to be important food sources for adult Forester moths on the island of Ireland.

## Native plants that provide nectar for the adult Forester moths:

Forester flight period	May	June	July
Ragged-Robin ( <i>Silene flos-cuculi</i> )			
Buttercups ( <i>Ranunculus</i> species)			
Red Clover ( <i>Trifolium pratense</i> )			
Common Spotted-Orchid ( <i>Dactylorhiza fuchsii</i> )			
Marsh Cinquefoil ( <i>Comarum palustre</i> )			
Cuckooflower ( <i>Cardamine pratensis</i> )			
White Clover ( <i>Trifolium repens</i> )			
Meadow Thistle ( <i>Cirsium dissectum</i> )			
Marsh Thistle ( <i>Cirsium palustre</i> )			
Wild Angelica ( <i>Angelica sylvestris</i> )			
Field Scabious ( <i>Knautia arvensis</i> )			
Devil's-Bit Scabious ( <i>Succisa pratensis</i> )			

Most important nectar plants based on experiences in Ireland



Ragged-Robin



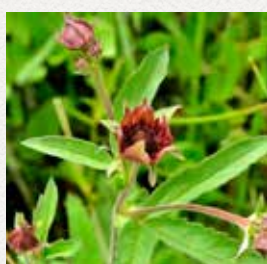
Buttercups



Red Clover



Common Spotted-Orchid



Marsh Cinquefoil



Cuckooflower



White Clover



Meadow Thistle



Marsh Thistle



Devil's-Bit Scabious



Wild Angelica



Field Scabious

Thanks to Zoë Devlin for the use of plant images <https://www.wildflowersofireland.net>

# Threats

## Loss of habitat

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The Forester has been declining across much of its European range<sup>4,5</sup>, primarily due to agricultural intensification of grassland sites. Land abandonment or under-management, leading to encroachment by scrub and trees, also plays a role<sup>6</sup>. It needs a landscape interspersed with unimproved damp grasslands<sup>7</sup> and other semi-natural habitats. Appropriate management of species-rich wet meadows is crucial to halt the loss of habitat and for the species survival.

## Climate change

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UK climate modelling studies<sup>4</sup>, suggest that the climate is likely to become less suitable for the Forester, meaning that climate change will play an increasing role in the species decline. Its preferred habitat of wet or damp meadows are likely to be negatively impacted if drier conditions are experienced across the summer. Wetter winter conditions may mean that habitats become grassier, which would be potentially detrimental to the Forester<sup>4</sup>. At that stage of its life cycle, it is dependent on a grassland sward that is rich in Sorrel plants. There are opportunities linking the retention of flood-meadows to combat climate change impacts to the species survival, providing an additional motivation to planners and land managers.

*The Forester needs a landscape interspersed with species-rich wet meadows*



# Management recommendations

The Forester needs medium-tall vegetation, which requires the right balance of light grazing and occasional scrub management where scrub becomes a threat. At the site level, it requires stable wet or damp meadow sites that are relatively flower-rich.

Habitats are constantly evolving or 'succeeding' to a climax community, so the habitat where Forester is found, such as fen, can scrub-up and become wet woodland without appropriate intervention. Land managers need to actively retain wet meadows using the range of tools that are available to them. This could be light conservation grazing to sensitive scrub management while minimising disturbance to the site.

## Retain the Forester where it occurs

**This recommendation is key.** Once lost from a site it will be very difficult for the species to naturally recolonise given that populations are currently very fragmented, and it is known to have a relatively poor dispersal ability. It is essential that currently known sites continue to be managed to protect the moth. Site management needs to ensure the maintenance of a medium-tall sward with abundant Sorrel and nectar plants.

Consideration should be given to:

- ✓ Any sites with a population regardless of population size.
- ✓ Sites that are less likely to be impacted by climate change such as those with good water supplies that are likely to remain damp.
- ✓ Sites where the land managers are sympathetic and prepared to adopt appropriate land management practices.

## Maintain a network of damp/wet meadow sites that are flower-rich

There needs to be improved recognition of the value of this habitat for biodiversity. In Europe, the moth is still regularly found in protected areas of wetlands<sup>4</sup>. These sites are maintained through appropriate grazing. Light grazing is required to prevent scrub encroachment. Heavy and prolonged grazing would significantly reduce the diversity of the flora, meaning that food plants and nectar sources would be at risk, and damage the grassland structure required by the caterpillars. A cessation of grazing risks an invasion of coarse grasses and scrub. Mowing is unlikely to be suitable as it destroys the grassland structure needed by the larvae for shelter and overwintering. In addition, any management decisions that will adversely impact the hydrology should be avoided, and those that raise the water-table need to consider what, if any, impact this will have on the species.



## Connectivity

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Where possible, areas of suitable habitat should be increased and improved to create nature recovery networks. Evidence from butterfly studies suggests that buffering existing sites by increasing the areas of suitable habitat around the site, or through the restoration or creation of species rich grassland<sup>8</sup> and other semi natural habitats<sup>9</sup> will also help build the resilience of existing populations. This would allow species to move across the landscape more easily, making them more resilient to threats, particularly in the face of climate change and land use change.

## Manage activities that could be detrimental

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- Overgrazing of sites will have negative impact on the sward-structure, food plants and nectar sources that the species needs.
- Mowing/cutting will also damage the required sward structure, though it could be used as a one-off tool to restore sites that have become rank through lack of management. This should be undertaken on a phased approach across the area.
- Avoid reseeding or the use of synthetic fertilisers and herbicide in areas of suitable habitat.
- Avoid drainage of wet/damp grassland sites as this will reduce the extent of suitable habitat available.
- Outdoor recreation and access need to be carefully planned where this pressure could have a negative effect on habitat extent, quality or connectivity.





# Other threatened species that will benefit from this management

Management of sites for the Forester could potentially benefit various other threatened species, some of these are listed below:

Group	Common name	Species name	Conservation status
Birds	Meadow Pipit	<i>Anthus pratensis</i>	Red* <span style="color: red;">●</span>
	Cuckoo	<i>Cuculus canorus</i>	Red** <span style="color: red;">●</span>
	Snipe	<i>Gallinago gallinago</i>	Amber * <span style="color: orange;">●</span>
	Willow Warbler	<i>Phylloscopus trochilus</i>	Amber** <span style="color: orange;">●</span>
Butterflies	Marsh Fritillary	<i>Euphydryas aurinia</i>	Vulnerable/Annex II <span style="color: red;">●</span>
Moths	Argent & Sable	<i>Rheumaptera hastata</i>	Vulnerable <span style="color: orange;">●</span>
	Narrow-Bordered Five-spot Burnet	<i>Zygaena lonicerae</i>	Vulnerable <span style="color: orange;">●</span>
	Yellow Shell	<i>Camptogramma bilineata</i>	Near Threatened <span style="color: blue;">●</span>

\* Birds of Conservation Concern Ireland; \*\*Birds of Conservation Concern UK; other conservation status from Nelson, B., et. al. (2019) Checklists of protected and threatened species in Ireland. Irish Wildlife Manuals, No. 116. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.



# Actions

Overarching objectives:

**1** Maintain populations on current sites

**2** Manage wet grassland sites for the Forester

**3** Raise awareness of the Forester

**4** Increase our knowledge of the Forester

POLLINATOR  
ACTION | 1

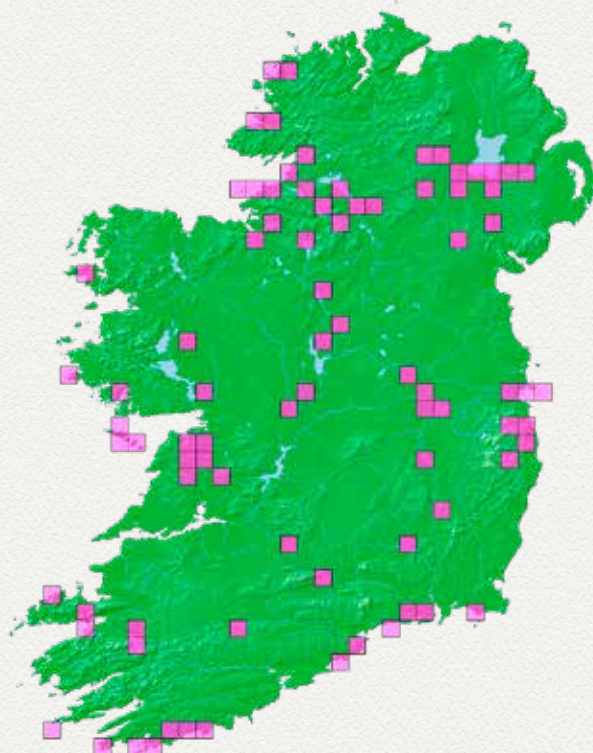
## Maintain populations on current sites

### ACTION

- A** Maintain as many existing populations as possible

### What is required

- Where known populations occur, this guideline document should be provided to land managers



Source: <https://maps.biodiversityireland.ie/Map/Terrestrial/Species/78603>

# Manage wet grassland sites for the Forester

ACTION	What is required
<p><b>A</b> Adoption of positive land management for the Forester across Natura 2000 designated land in the Republic of Ireland</p>	<ul style="list-style-type: none"> <li>• Where appropriate, integration of appropriate measures within Conservation Objectives for Natura sites by the National Parks and Wildlife Service (NPWS).</li> </ul>
<p><b>B</b> Adoption of positive land management for the Forester across the National Site Network and designated land in Northern Ireland</p>	<ul style="list-style-type: none"> <li>• Where appropriate, integration of appropriate measures within Conservation Objectives for National Site Network sites by the Northern Ireland Environment Agency (NIEA). e.g. Peatlands Park ASSI.</li> </ul>
<p><b>C</b> Adoption of positive land management for the Forester across wet grassland sites on farmland</p>	<ul style="list-style-type: none"> <li>• Continuation of positive land management for the Forester at wet grassland sites and particularly by farmers in relevant agri-environment schemes. Land in the west of Northern Ireland (Fermanagh and Tyrone) identified as a priority, where there are historic records.</li> </ul>
<p><b>D</b> Adoption of positive land management for the Forester across wet grassland sites managed by eNGOS and NIEA in Northern Ireland</p>	<ul style="list-style-type: none"> <li>• Identification of all relevant reserves and designated sites.</li> <li>• Species considered within conservation management plans, where updates are occurring and where it is appropriate.</li> </ul>
<p><b>E</b> Adoption of positive land management for the Forester across wet grassland sites managed by the OPW and BirdWatch Ireland</p>	<ul style="list-style-type: none"> <li>• Identification of any relevant sites.</li> <li>• Species considered within conservation management plans, where updates are occurring and where it is appropriate.</li> </ul>
<p><b>F</b> Site specific management plans should be developed for some of the key Forester populations</p>	<ul style="list-style-type: none"> <li>• To be developed as appropriate and where funding allows e.g. Peatlands Park ASSI Forester Management Plan.</li> </ul>





# Raise awareness of the Forester

ACTION	What is required
<p><b>A</b> Develop and promote reference sites to illustrate best practice and as an educational resource</p>	<ul style="list-style-type: none"> <li>• Identify a suitable existing site that could be promoted in this context in both RoI and NI e.g., Peatlands Park as an example of a fen site.</li> </ul>
<p><b>B</b> Create an online webinar on management of wet grassland sites for the Forester</p>	<ul style="list-style-type: none"> <li>• Creation of a freely available short webinar aimed at site managers.</li> </ul>
<p><b>C</b> Forester signage templates and information board templates developed for use on sites where it occurs</p>	<ul style="list-style-type: none"> <li>• These resources to be developed and made freely available.</li> </ul>

*Where possible, areas of suitable habitat should be increased and improved to create nature recovery networks.*



# Increase our knowledge of the Forester





ACTION	What is required
<p><b>A</b> Commission a survey of the current distribution of the Forester</p>	<ul style="list-style-type: none"> <li>• Funding for a re-survey of all known sites since 2010 in both the Republic of Ireland and Northern Ireland .</li> </ul>
<p><b>B</b> Encourage targeted surveying for the species at suitable sites and submission of casual records if species found</p>	<ul style="list-style-type: none"> <li>• Moth promoted by all partners with record submission encouraged.</li> <li>• Sites that would be useful to be rechecked flagged to expert recorder networks where possible.</li> </ul>
<p><b>C</b> Develop a monitoring programme on a subset of sites</p>	<ul style="list-style-type: none"> <li>• Known breeding sites monitored annually by recorders and land owners engaged and involved</li> </ul>
<p><b>D</b> Develop a spatial strategy for conservation of the species</p>	<ul style="list-style-type: none"> <li>• Using information on current distributions as well as existing land cover and land-use maps, identify areas for habitat creation as corridors for dispersal or stepping-stone habitats.</li> </ul>
<p><b>E</b> Undertake detailed studies on the ecology of species in an Irish context</p>	<ul style="list-style-type: none"> <li>• MSc projects to be developed to carry out additional work to refine the habitat requirements of the species in Ireland, and to understand the likely impact of climate change.</li> </ul>

## 6. Key References

<sup>1</sup> [www.gbif.org/species/1348742/](http://www.gbif.org/species/1348742/) accessed 15/01/24

<sup>2</sup> Allen, D., O'Donnell, M., Nelson, B., Tyner, A., Bond, K.G.M., Bryant, T., Crory, A., Mellon, C., O'Boyle, J., O'Donnell, E., Rolston, T., Sheppard, R., Strickland, P., Fitzpatrick, U., & Regan, E. (2016). Ireland Red List No. 9: Macro-moths (Lepidoptera). National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

<sup>3</sup> Van der Meulen, J., & Groenendijk, D. (2005). Assessment of the mobility of day-flying moths: an ecological approach. In Proc Exp Appl Entomol (Vol. 16, pp. 37-50).

<sup>4</sup> Natural England and RSPB, 2019. Climate Change Adaptation Manual - Evidence to support nature conservation in a changing climate, 2nd Edition. Natural England, York, UK.

<sup>5</sup> Pettersson, L., Nilsson, S. G., & Franzén, M. (2013). Land-use changes, farm management and the decline of butterflies associated with semi-natural grasslands in southern Sweden. Nature Conservation, 6, 31.

<sup>6</sup> Fox, R. (2013). The decline of moths in Great Britain: a review of possible causes. Insect Conservation and Diversity, 6(1), 5-19.

<sup>7</sup> Franzén, M. (2002). Occurrence patterns of butterflies (Rhopalocera) and burnet moths (Zygaenidae) in semi-natural pastures in southeastern Sweden and their potential as indicators of species richness (Doctoral dissertation, Institutionen för entomologi, Sveriges länbruksuniv.).

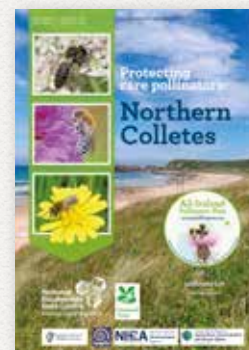
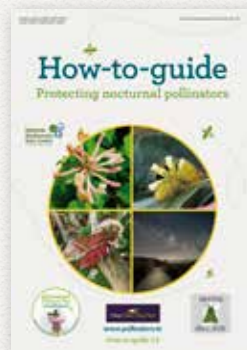
<sup>8</sup> Bergman, K. O., Ask, L., Askling, J., Ignell, H., Wahlman, H., & Milberg, P. (2008). Importance of boreal grasslands in Sweden for butterfly diversity and effects of local and landscape habitat factors. Biodiversity and Conservation, 17(1), 139-153.

<sup>9</sup> Slancarova, J., Benes, J., Kristynek, M., Kepka, P., & Konvicka, M. (2014). Does the surrounding landscape heterogeneity affect the butterflies of insular grassland reserves? A contrast between composition and configuration. Journal of insect conservation, 18(1), 1-12.

*Appropriate management of species-rich wet meadows is crucial to halt the loss of habitat and for the species survival.*



This booklet is one of a series of Guidelines produced to help different sectors take actions under the All-Ireland Pollinator Plan. For more information and other useful resources, please see [www.pollinators.ie](http://www.pollinators.ie)



## About the National Biodiversity Data Centre

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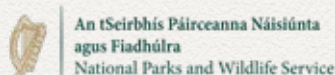
The National Biodiversity Data Centre is a national organisation that collects and manages data to document Ireland's wildlife resource, and to track how it is changing. Find out what biodiversity has already been recorded in your local area: [maps.biodiversityireland.ie](http://maps.biodiversityireland.ie)

Help us to build up the knowledge of biodiversity in your local area by submitting sightings to [records.biodiversityireland.ie](http://records.biodiversityireland.ie)

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