RARE PLANT MONITORING SCHEME 2021

Colchium autumnale (Meadow Saffron)

National Biodiversity Data Centre
A Heritage Council Programme

Glaucium flavum (Yellow Horned-poppy)
© Rodney Daunt

What is it?

The Rare Plant Monitoring scheme was launched by the National Biodiversity Data Centre in 2017. Where someone submits a casual record of a rare plant to the Centre, they are asked if they would be willing to visit their rare plant population once a year during its flowering period and to count the total number of individuals present. Data on the rare plant location, the count, and additional information about the site is submitted to the Centre. The project was discussed and agreed with the National Parks and Wildlife Service (NPWS). It is framed around the 2016 Vascular Plant Red List and is mainly focused on monitoring vulnerable, near threatened and rare least concern species, with a view towards contributing high quality data on these species for future Red Lists. In 2017, volunteers monitored 37 populations across 25 taxa. In 2021, this has increased to 183 populations across 78 taxa.

Why is it important?

When assessing the national conservation status of very rare species according to IUCN Red List methodology, it is recommended that you use annual population count data. Given the numbers of rare plant species a country might have, this information can be very difficult to collect in any volume. This citizen science project relies on the generosity of expert volunteers to 'keep an eye' on rare populations near them and to submit standardised count data once a year. When collated centrally over time, this information makes a very important contribution towards efforts to protect these species.

Who is involved?

The scheme is open to anyone. The main scheme is driven by where recorders happen to come across rare plants within their local area. We do not send people to search for species. The Rare Plant Monitoring Scheme has proved popular and we are very grateful for the support of our volunteers. They have been willing to become involved – partly because they clearly see how their data will contribute to conservation, but also because they are being asked to carry out a dedicated task that is not too time consuming, and that can be planned for annually. When recorders become aware of a rare plant population near them, many feel a protectiveness of the population and are keen to check on its status each year. By together doing this, and centrally managing the data, we can help preserve these plants into the future.

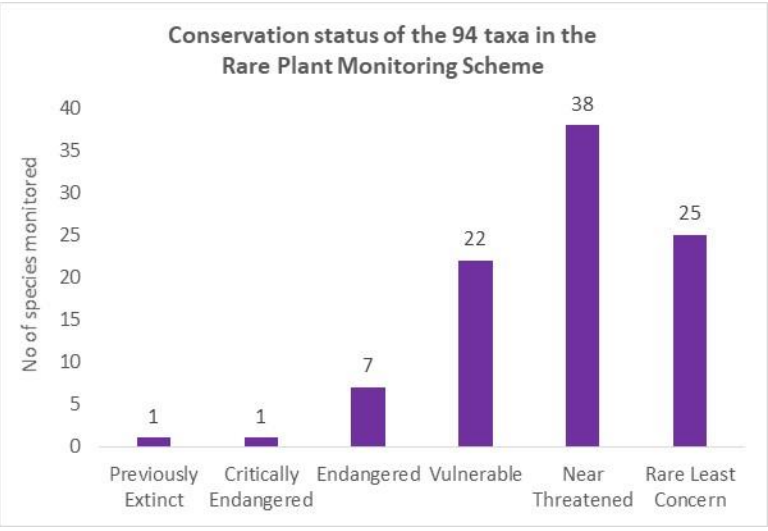
How has the Rare Plant Monitoring Scheme grown since 2017?

The current master dataset contains 242 populations across 94 taxa. This means that 242 populations have been monitored at least once since the scheme started in 2017. In a volunteer-driven citizen science scheme like this, not all populations will always be visited each year. COVID-19 has again had an impact in 2021, but in any year, individual volunteers may find it's simply not possible to visit their population and that is a fully accepted part of a scheme of this nature.

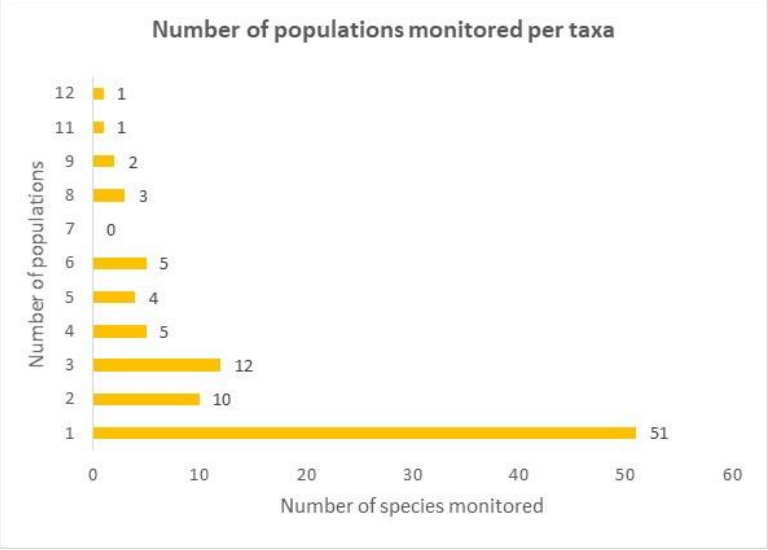
These are the most recent figures based on the current master dataset. They can differ slightly from year to year as additional data is sometimes retrospectively provided.

Number of populations and taxa monitored each year:

	2017	2018	2019	2020	2021
Number of populations monitored	37	102	150	160	183
Number of different taxa monitored	25	53	78	87	78



2021: Most taxa monitored in the scheme are Near Threatened



2021: 51 taxa are represented by one single population. Those taxa with most individual populations being monitored are: Fly Orchid (12 pops), Frog Orchid (11), Autumn Lady's-tresses (9), Narrow-leaved Helleborine (9)

Some quick facts:
24 populations have been monitored each year since 2017
130 populations have been monitored at least three times between 2017-2021
31 new populations were added to the scheme in 2021

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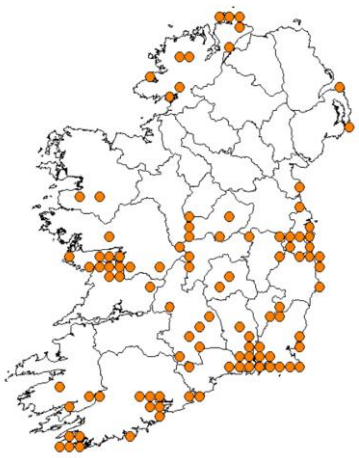
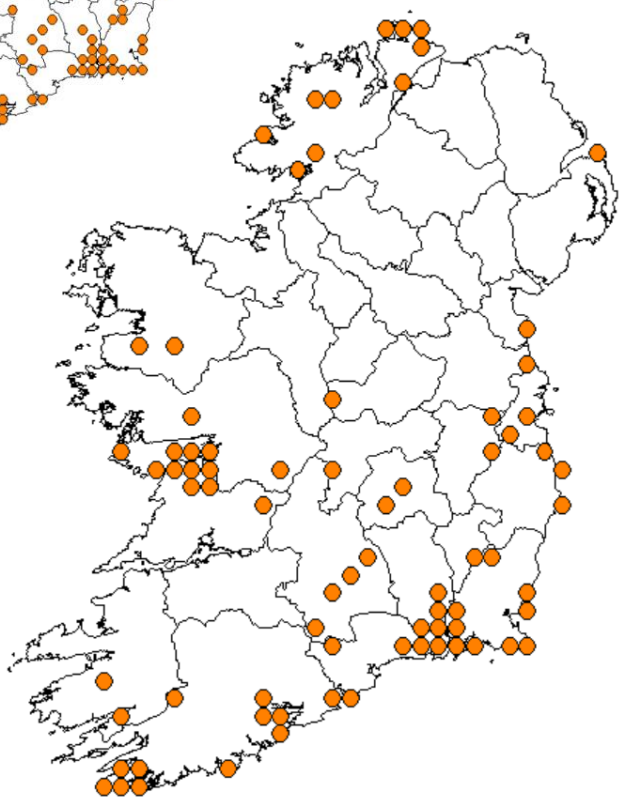
Species	No. pops	Species	No. pops
Achillea maritima (Cottonweed)	1	Ligusticum scotium (Scots Lovage)	1
Agrimonia procera (Fragrant Agrimony)	1	Linum bienne (Pale Flax)	3
Ajuga pyramidalis (Pyramidal Bugle)	5	Lithospermum officinale (Common Gromwell)	4
Allium ampeloprasum var. babingtonii (Babington's Leek)	1	Logfia minima (Small Cudweed)	1
Alopecurus aequalis (Orange Foxtail)	2	Lotus subbiflorus (Hairy Bird's-foot-trefoil)	1
Althaea officinalis (Marsh-mallow)	1	Lycopodiella inundata (Marsh Clubmoss)	1
Anacamptis morio (Green-winged orchid)	8	Mertensia maritima (Oysterplant)	2
Anthriscus caucalis (Bur Chervil)	1	Neotinea maculata (Dense-flowered Orchid)	6
Arenaria norvegica (Arctic Sandwort)	3	Neottia cordata (Lesser Twayblade)	1
Artemisia absinthium (Wormwood)	1	Neottia nidus-avis (Bird's-nest Orchid)	1
Asparagus prostratus (Wild Asparagus)	3	Oenanthe fistulosa (Tubular Water-dropwort)	2
Asplenium obovatum (Lanceolate Spleenwort)	1	Oenanthe pimpinelloides (Corky-fruited Water-dropwort)	1
Ballota nigra (Black Horehound)	1	Ophioglossum vulgatum (Adder’s-tongue)	1
Betonica officinalis (Betony)	5	Ophrys apifera var chlorantha	1
Campanula trachelium (Nettle-leaved Bellflower)	3	Ophrys apifera var flavecens	1
Cardamine impatiens (Narrow-leaved Bittercress)	1	Ophrys apifera var fusca	1
Carex divisa (Divided Sedge)	1	Ophrys apifera var trolli	1
Centaurium pulchellum (Lesser Centaury)	2	Ophrys insectifera (Fly Orchid)	12
Centunculus minimus (Chaffweed)	1	Papaver argemone (Prickly Poppy)	1
Cephalanthera longifolia (Narrow-leaved Helleborine)	9	Parentucellia viscosa (Yellow Barsia)	3
Chaerophyllum temulum (Rough Chervil)	1	Pseudorchis albida (Small White Orchid)	1
Clinopodium acinos (Basil Thyme)	3	Puccinellia fasciculata (Borrer’s Saltmarsh Grass)	2
Clinopodium ascendens (Common Calamint)	1	Pyrola media (Intermediate Wintergreen)	1
Coeloglossum viride (Frog Orchid)	11	Pyrola rotundifolia (Round-leaved Wintergreen)	1
Colchium autumnale (Meadow Saffron)	6	Pyrola rotundifolia subsp. maritima (Round-leaved Wintergreen subsp. maritima)	1
Crambe maritima (Sea-kale)	8	Rumex pulcher (Fiddle Dock)	3
Cuscuta epithymum (Dodder)	3	Salvia verbenaca (Wild Clary)	6
Cynoglossum officinale (Hound's-tongue)	1	Sarcocornia perennis (Perennial Glasswort)	1
Dactylorhiza incarnata subsp. pulchella (Early Marsh Orchid)	1	Saxifraga granulata (Meadow Saxifrage)	3
Dactylorhiza traunsteinerioides (Narrow-leaved Marsh-orchid)	1	Scilla verna (Spring Squill)	3
Epipactis dunensis	2	Scleranthus annuus (Annual Knawel)	1
Epipactis palustris (Marsh Helleborine)	1	Scrophularia umbrosa (Green Figwort)	1
Epipactis phyllanthes (Green-flowered Helleborine)	3	Silene gallica (Small-flowered Catchfly)	1
Eriocaulon aquaticum (Pipewort)	4	Silybum marianum (Milk Thistle)	2
Euphorbia exigua (Dwarf Spurge)	1	Sisyrinchium bermudiana (Blue-eyed Grass)	1
Filago vulgaris (Common Cudweed)	2	Sorbus hibernica (Irish Whitebeam)	1
Galeopsis angustifolia (Red Hemp-nettle)	3	Spiranthes romanzoffiana (Irish Lady's-tresses)	1
Gentianella campestris (Field Gentian)	6	Spiranthes spiralis (Autumn Lady's-tresses)	9
Geranium pratense (Meadow Crane's-bill)	1	Teucrium scordium (Water Germander)	4
Geranium purpureum (Little-Robin)	6	Torilis nodosa (Knotted Hedge-parsley)	1
Geranium rotundifolium (Round-leaved Crane's-bill)	1	Trichomanes speciosum (Killarney Fern)	2
Glaucium flavum (Yellow Horned-poppy)	8	Trifolium glomeratum (Clustered Clover)	1
Gnaphalium sylvaticum (Heath Cudweed)	1	Trifolium ornithopodioides (Bird's-foot Clover)	1
Hordeum secalinum (Meadow Barley)	5	Verbena officinalis (Vervain)	2
Huperzia selago (Fir clubmoss)	1	Viola persicifolia (Fen Violet)	1
Hypericum hirsutum (Hairy St John's-wort)	1	**Total**	**242**
Hypopitys monotropa (Dutchman's pipe)	4		
Lamiastrum galeobdolon subsp. montanum (Yellow Archangel)	4		
Lathraea squamaria (Toothwort)	5		

A small number of species have been included, not because they are rare nationally, but because they are very rare in their county e.g., Marsh Helleborine in Wicklow



Map showing the hectads within which rare plants have been monitored at least once between 2017-2021



Map showing the hectads within which rare plants have been monitored in 2021

Thank you to all the volunteers who monitored rare plant populations in 2021

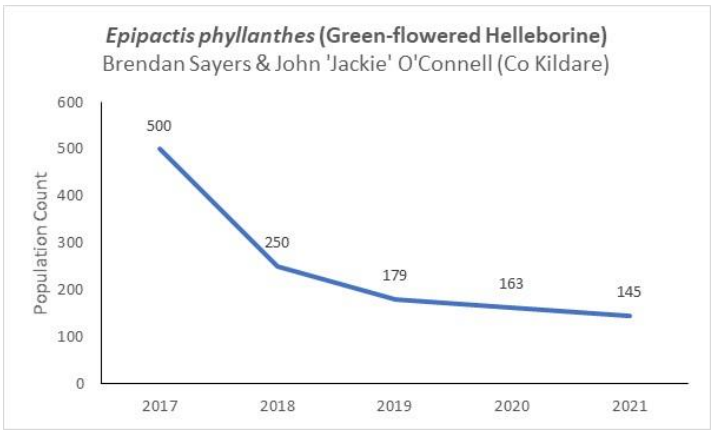
We hugely appreciate the generous efforts of all those volunteers who participate in this scheme

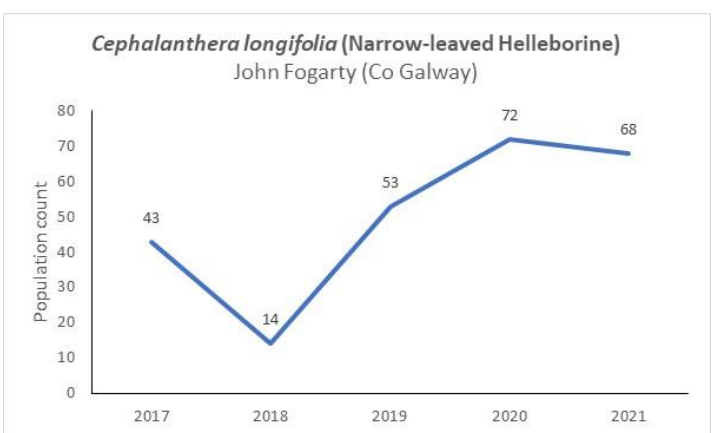
2021 monitoring scheme volunteers: Adrian Allen, Áine Ryan, Amanda Browne, Ann Trimble, Anne Harrington-Rees, Brendan McSherry, Brendan Sayers & John 'Jackie' O'Connell, Brian Gaynor, Brian Moran, Brian Power, Carol Gilroy, Catherine McLoughlin, Chris Huxley, Ciara O'Brien, Damaris Lysaght, David Rees, Deirdre Burns, Des Finnamore, Eamonn Twomey, Emer Magee, Eoin McGreal, Finola Finlay, Geoff Newell, Gonçalo Santos, Hammy Hamilton, ISSA - Deirdre Morrissey, Jacintha Cloney & Margaret Scally, Jamie O'Neill, Jim Hurley, John Brennan, John Fogarty, Jonathan & Martine Derham, Julie Kendall, Laurence Laide, Leon van der Noll, Lynda Weekes, Lynn Stringer & Jacky van Zyl, Margaret Brennan, Mary Fitzsimons , Mary Howard, Mary Mahoney, Miriam O'Regan, Oisín & Máiréad Duffy, Patricia O'Leary, Paul Green, Paul Murphy, Paul O'Flaherty, Paula O'Meara, Rachel McKenna, Ralph Sheppard, Rodney Daunt, Sam Connolly, Saorla Kavanagh, Shona MacDonald, Therese Kelly, Úna FitzPatrick, Valerie Pedlow, Vera Roche Murphy.

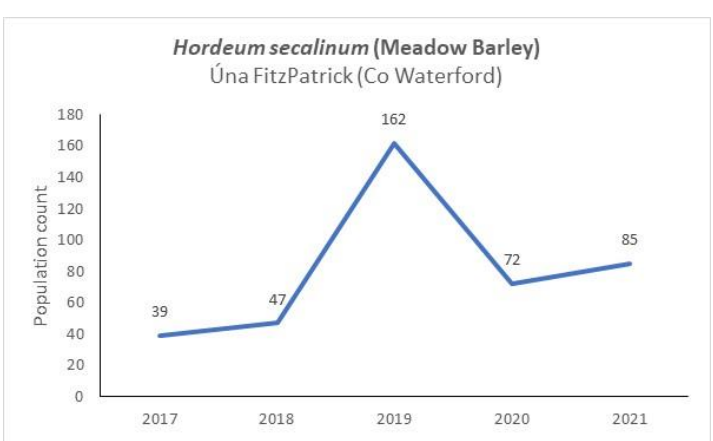
Some of you were still impacted by the COVID-19 pandemic and associated restrictions. In a long-term scheme like this, that is not a significant problem and hopefully many of those can be revisited again in 2022.

Graphs showing counts in some of the populations that have five years of data

What these graphs show most clearly, is that rare plants populations can fluctuate significantly from year to year. This will depend on various factors, including climate, and not all species will respond in a similar way. It is by having long-term data, that we will be able to pick up statistically significant trends, and get early warning signs of real declines.







Plans for 2022



Rare Plant Workshops

Due to Covid-19, we were unfortunately unable to run any rare plant workshops in 2021. Pending funding, it is hoped that these can return again in 2022. The format used is that each workshop is free and is open to **local** participants only. During the workshop a series of rare plant populations are visited, with participants given the opportunity to then adopt the population and monitor themselves going forward.

Existing populations that need to be reallocated

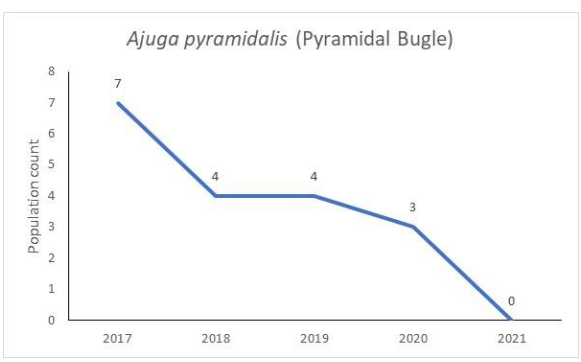
In a citizen science scheme like this, people's personal circumstances can change making it no longer feasible for them to continue monitoring rare plant populations that they may have been visiting annually. This has happened over the course of the project. We now have 31 populations that have previously been monitored, but that need to be reallocated to a new volunteer if possible. They are mainly in counties Dublin, Offaly, Westmeath and Wexford. It is hoped that next year's workshops can be used to help reallocate some of these populations and ensure that they remain in the scheme going forward.

Do populations ever disappear?

There are quite a few zero sighting populations in the scheme. In come cases, these are rare populations that were known in the recent past and that are being annually rechecked in case they reappear. It is worth continuing this over a number of years to confirm that the species has definitely been lost from the site.

In other cases, extreme weather or very significant management changes can result in zero sightings in a particular year. In this case, collecting annual data is incredibly useful in understanding the species recovery.

Other populations may be extremely small, and may fluctuate from year to year, including some years when they disappear entirely. Collecting annual data helps us better understand these fluctuations.



This small Pyramidal Bugle population in the Burren recorded a zero sighting in 2021 (Mary Howard). It will be interesting to see if it reappears in 2022.

What happens to the data?

Each population in the scheme has a rare plant recording card which is managed as a word document (see page 8). Each year the volunteer updates table 2 with the date, count and any notes for that year and returns it by email. All data submitted is double checked. It is held within a dedicated Rare Plant Monitoring Database within the National Biodiversity Data Centre. It is not made publicly available. A updated copy of the database is provided to the NPWS annually.

How will it be used?

The true value of these data are in the longer-term trends that they will provide. If annual counts are carried out on the populations into the future it will provide early warning signs of threats. It will also help improve the accuracy of future conservation assessments of the species. It is the intention of the Data Centre that this is a longer-term data stream to support rare plant conservation in Ireland.

How were the species being monitored selected?

Species were not deliberately selected. The scheme has been developed organically around those recorders who happened to submit casual records of very rare species. These species were cross referenced with the 2016 Irish Plant Red List to select those that it would be most valuable to have trend data on. It does not involve deliberately searching for rare species. It is the intention that the scheme continue to grow in this way.

Can I monitor other species?

Yes, if you are aware of other rare species near you that you feel it would be useful to monitor annually, please get in touch.

Can I take part?

Yes, we are always grateful for new volunteers. If you have not participated before, but are aware of a rare plant population that you would like to monitor, please get in touch directly. As the monitoring data is not made publicly available, this allows me to minimise the chance of the same population being inadvertently monitored by multiple people ufitzpatrick@biodiversityireland.ie

Thank you again to all the existing volunteers in the Rare Plant Monitoring Scheme

Citation*: Rare Plant Monitoring Scheme – 2021 Newsletter.* National Biodiversity Data Centre, Waterford.

The National Biodiversity Data Centre is a programme of the Heritage Council and is operated under a service level agreement by Compass Informatics. The Biodiversity Data Centre is funded by the Heritage Council and the Department of Housing, Local Government and Heritage.

Rare Plant Recording card, showing the fields to be completed

RARE PLANT MONITORING SCHEME

This table is completed on joining the scheme

Species	
Site name	
Grid reference	
Start year	
Recorder(s)	
Brief description of the site	
Brief description of the rare plant population	
Current management (if known)	
Threats	
Details that would help locate the population	
Other	

This table is updated each year with the date and annual count

Date	Count (number of individuals)	Area the population covers (m2)	Notes

Photos: