

## Project Co-ordinator

### Tomás Murray

The National Biodiversity Data Centre  
Beechfield House  
WIT West Campus  
Carriganore, Waterford  
X91 PE03  
Tel.: 051 306 240  
tmurray@biodiversityireland.ie

## Key Partners

### Northern Ireland Environment Agency

#### Aoibhinn Corrigan

Aoibhinn.Corrigan@daera-ni.gov.uk

### Bumblebee Conservation Trust UK

#### Richard Comont

richard.comont@bumblebeeconservation.org

## All-Ireland Pollinator Plan

### Head of Steering Committee

#### Úna Fitzpatrick

ufitzpatrick@biodiversityireland.ie

### Project Officer

#### Erin Jo Tiedecken

etiedecken@biodiversityireland.ie

# Welcome to our 2017 Newsletter!

## March the 1st marks the start of the sixth field season of the Irish Bumblebee Monitoring Scheme.

Although things looked pretty dire mid-season in 2016 with reported numbers down by 26% on 2015, thankfully, both in terms of bumblebees and new recorders, the second half of the year exceeded expectations. Not only were counts up by an average of 30% on the previous year but we also now get to welcome 17 new recorders to the scheme and can now boast 101 transects across the island of Ireland! So a sincere thank you to everyone for their efforts in recording last year as you have all contributed to the successful

growth of this project and contributed vital knowledge that supports our efforts to conserve bumblebees and their habitats. In addition, the enormous success of the All-Ireland Pollinator Plan continues apace with the number of individuals, community groups, private companies, governmental and non-governmental organisations adopting the plan and begin to implement actions to protect our pollinators.

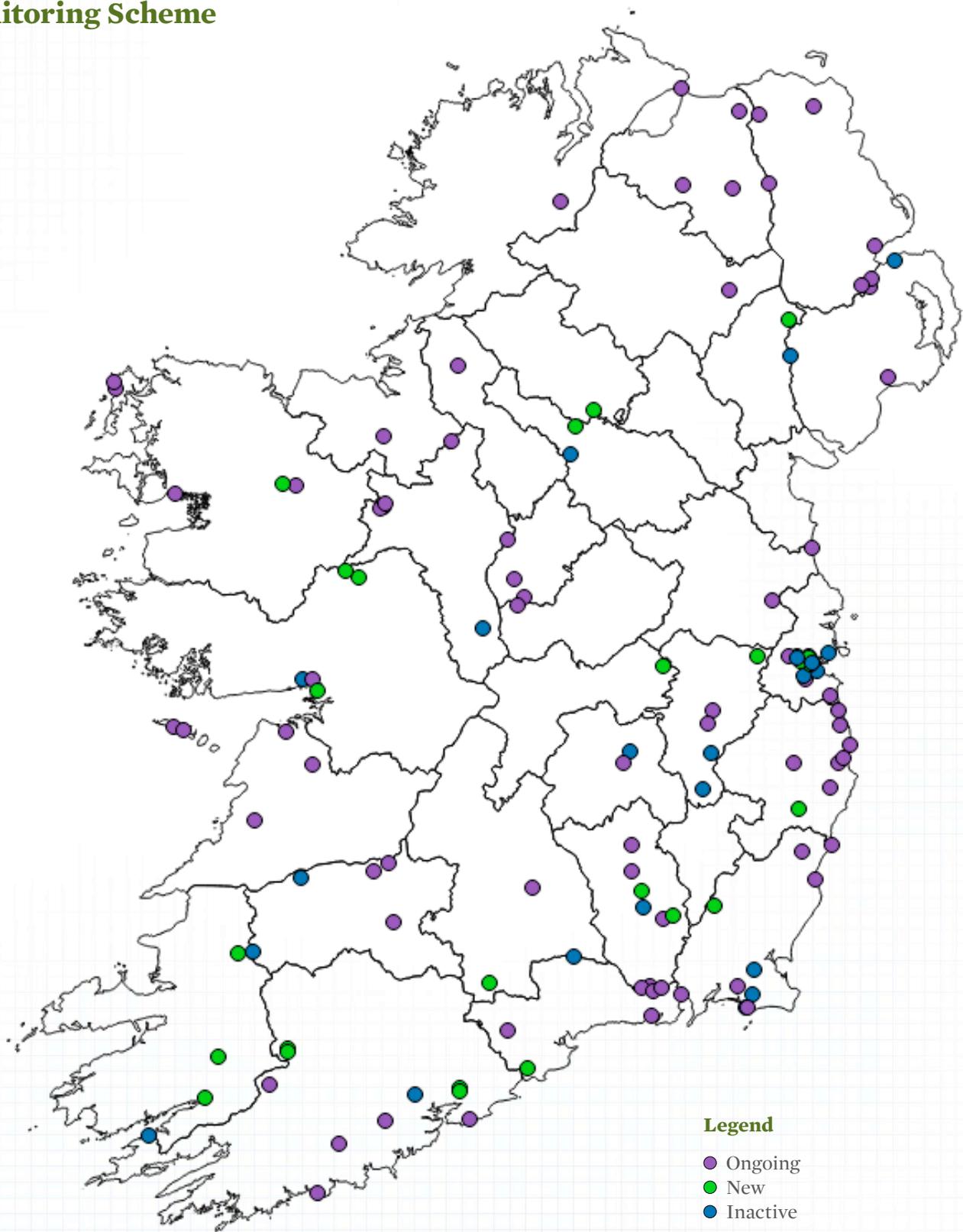
Underpinning the success of the Pollinator Plan is identifying which actions are having the most impact and where. This is why our monitoring scheme plays such a pivotal role: it engages people with bumblebees and increases appreciation for these amazing insects; it provides information on the current status of our bumblebees' populations to help us target conservation actions; and it also helps to identify where our actions are working, or if not, help us troubleshoot why. Not that we needed an excuse to go out and hunt along our transects for these wonderful beasts(!), but do I hope you appreciate the value we place on your efforts and the important role you can play in supporting Irish bumblebee populations.

So how did our bumblebee populations fare in 2016? It was a pretty mediocre year in terms of weather with a relatively cool spring with most of the rainfall in the south and east, followed by a mild but dull summer with western and southern counties receiving more rain, then an increasingly wet and windy autumn with above average temperatures, but below average sunshine. In contrast, it was our best year so far in terms of effort with 78 of us walking 1,215 km over 712 hrs across 101 transects and counting a total of 15,436 bumblebees and 1,767 honeybees. With five years of monitoring now completed, we're in a better position to undertake more involved analyses of the records submitted to the scheme and, despite some regional differences, overall populations were up by 30% on 2015 (more details on page 5).



Common carder bee (*B. pascuorum*) Mark Hosford,  
St. John's River Walk, Waterford 02/06/2016

## New, ongoing and inactive transects in the Bumblebee Monitoring Scheme



## Summary of recording effort 2012-2016.

Year	2012	2013	2014	2015	2016
Total transects	36	67	92	94	101
Total transect visits	216	444	598	627	662
Mean visits/ transect*	6.0	6.6	6.5	6.7	6.5
Total bumblebee abundance	4234	13190	11832	11900	15436
Mean bumblebee abundance/ transect/visit ( $\pm$ 95% CI)*	20.6 $\pm$ 7.0	27.6 $\pm$ 12.9	18.7 $\pm$ 2.1	17.7 $\pm$ 2.4	21.3 $\pm$ 3.8

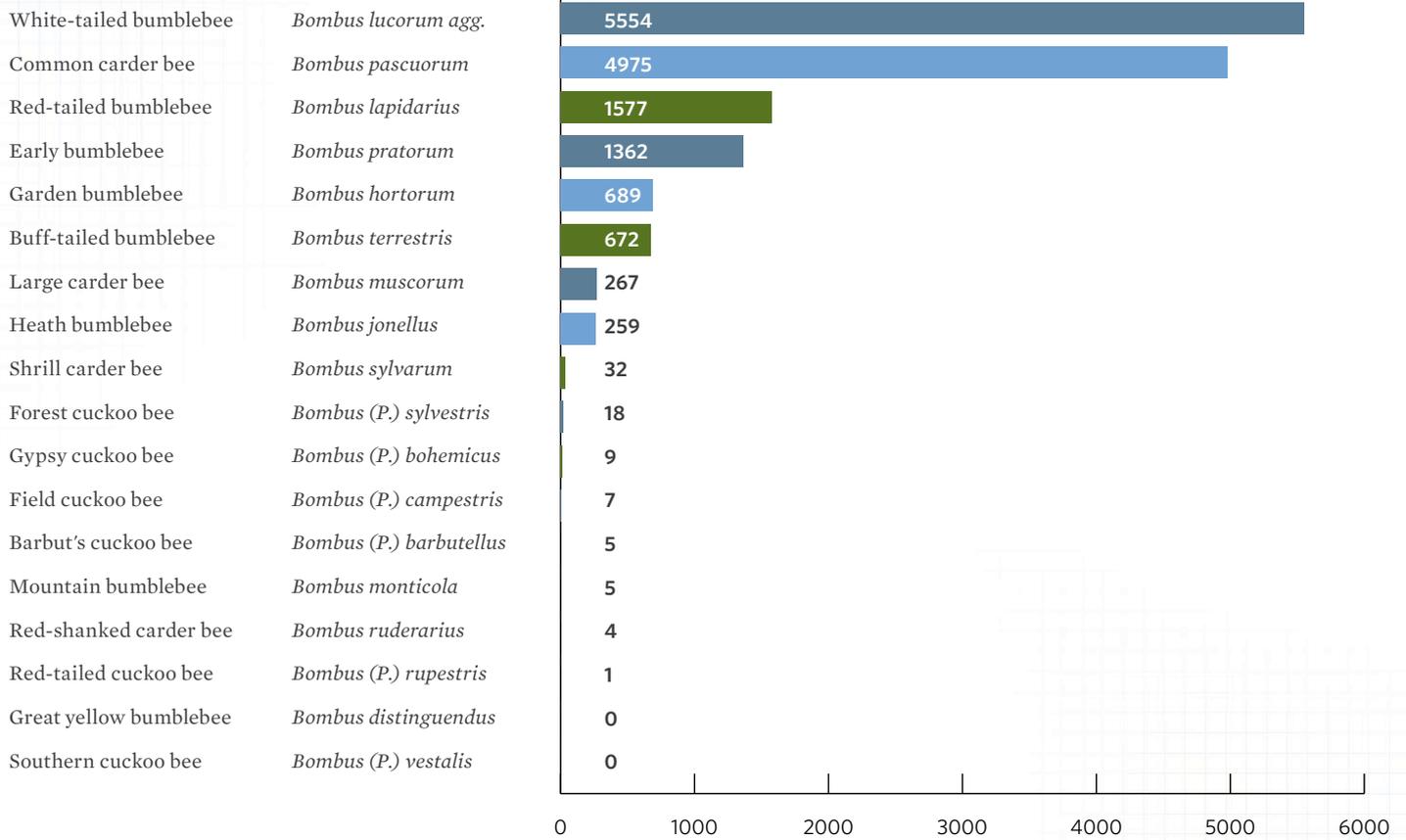
\*From raw data, not totals in table

## List of currently inactive transects

If you know of anyone living locally to any of the below areas and who would like to begin bumblebee monitoring, please let us know!

County	Site	Grid Ref.	Latitude	Longitude
Armagh	Scarva Towpath	J063449	54.34200	-6.36455
Cork	Beaumont Quarry	W702709	51.89030	-8.43160
Cork	Ardgroom Inward	V696573	51.75386	-9.88859
Dublin	Bull Island	O224374	53.37291	-6.15931
Dublin	UCD	O185304	53.31062	-6.22157
Dublin	Dodder Valley Park	O137289	53.29892	-6.29359
Kerry	Abbeyfeale Park	R105256	52.37511	-9.31336
Kildare	Castledermot	S777861	52.92047	-6.84433
Kildare	Bog Lane	S804997	53.04240	-6.80082
Laois	Sluggory	S506999	53.04766	-7.24417
Limerick	Aughinish	R284528	52.62258	-9.05622
Roscommon	Curramore Road	M964450	53.45526	-8.05343
Tipperary	Poulakerry	S299233	52.36127	-7.55969
Wexford	Baldwinstown	S971100	52.23369	-6.57730
Wexford	Forth Mountain	S979192	52.31652	-6.56401

## Species Summary for 2016



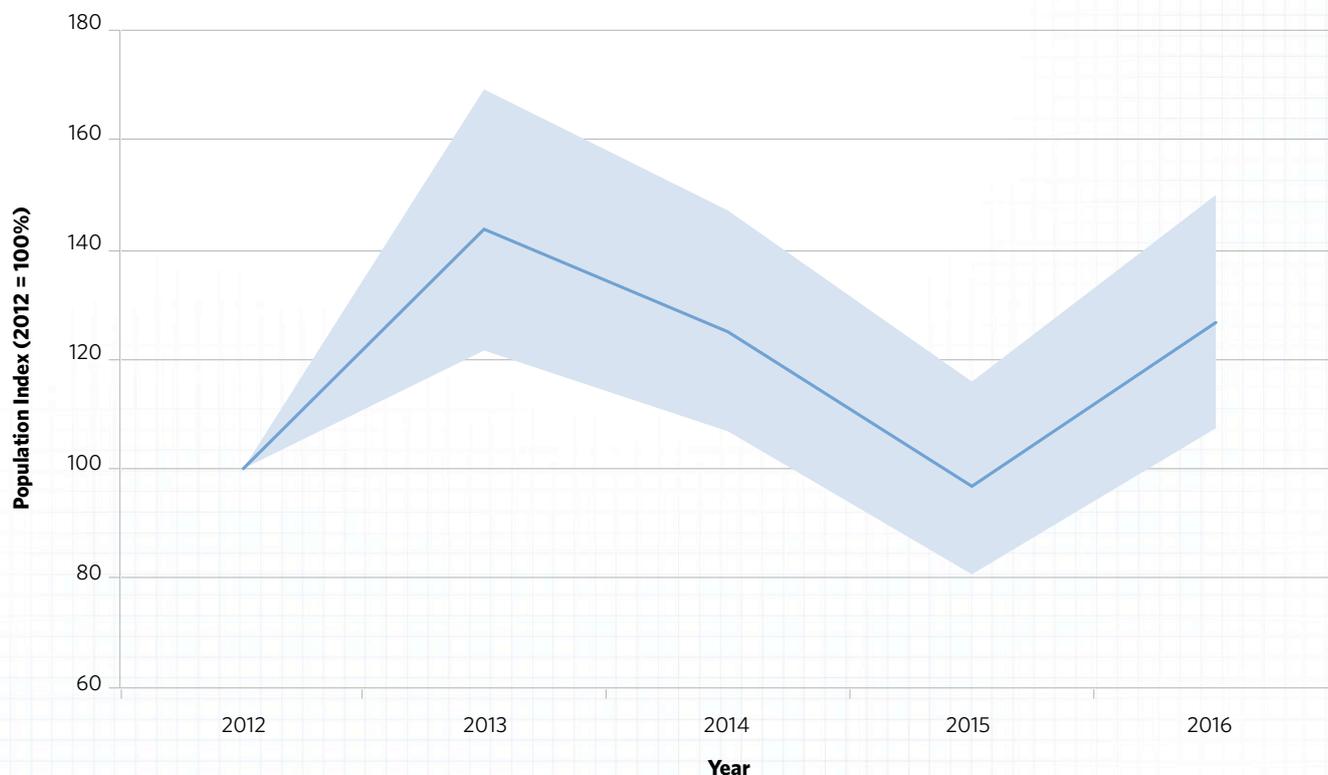
Mountain bumblebee (*B. monticola*), Gillian Steward, Glendalough, Co. Wicklow 09/08/2016

## Irish bumblebee population trends 2012-2016

We've grown from a 36 transect scheme in 2012 to now over 101 transects in 2016. In combination with this growth in bumblebee monitoring, there is also year-to-year variation in the number of months each individual recorder successfully completes. Given these underlying changes in monitoring effort, it is clearly important that we implement rigorous statistical testing to identify real changes in our bumblebees' populations and not just statistical red herrings. Thankfully, there are internationally recognised best practice approaches for analysing citizen science monitoring data and with five years of monitoring now completed, we're now in a position to undertake these analyses. After accounting for the differences in the number of completed transect walks per site within each year and across years, the graph below charts the changes in Irish bumblebee populations from 2012-2016. At present, there is no strong trend of increase or decline, but as expected for insects we're seeing large fluctuations from year-to-year ( $\pm 18$  to 44%). Just like for birds and butterflies, it may take another 3-5 years before we can see if the number of bumblebees flying in the Irish landscape is 'fluctuating up', 'fluctuating down' or neither.

At present, the above graph reflects a compilation ("multispecies index") of the populations of our eight most abundant and widespread species (tables on next page). As the scheme continues to grow we aim to have more transects targeting rarer species and will then be able to include more species in these formal analyses. However, for those species we can analyse, we can now begin to make firm statements about how their populations are changing across the island of Ireland. Of the eight species analysed from 2012 to 2016, two were increasing (+11 to 14%), two were decreasing (-13 to 17%) and four were too variable to assign a trend ( $\pm >5\%$  per year) over this five year period. The winners include those species currently known to be responding positively to climate change: the Buff-tailed bumblebee (*B. terrestris*) and the Red-tailed bumblebee (*B. lapidarius*), the former is also known to benefit from urbanisation. Sadly the losers, namely the Heath bumblebee (*B. jonellus*) and the Large carder bee (*B. muscorum*), are both still widespread in Ireland but both require relatively intact habitats (intact heath areas and flower-rich grasslands, respectively) to thrive. The Large carder bee in particular was identified in 2006 as being of 'near threatened' status in Ireland and as of 2014, elevated to 'vulnerable' status across Europe.

**Graph of population index per year where 2012 is the baseline (100%) and the shaded area is the  $\pm 95\%$  confidence interval.**



## Population changes per species 2012-2016

Species	Change 2012-2016	Statistical Confidence
Buff-tailed bumblebee <i>Bombus terrestris</i>	Strong Increase (> +5% p.a.)	95%
Red-tailed bumblebee <i>Bombus lapidarius</i>	Moderate Increase (< +5% p.a.)	95%
Large carder bee <i>Bombus muscorum</i>	Moderate Decline (< -5% p.a.)	99%
Heath bumblebee <i>Bombus jonellus</i>		95%
Garden bumblebee <i>Bombus hortorum</i>	Uncertain (> ±5% p.a.)	
White-tailed bumblebee <i>Bombus lucorum</i> agg.		
Common carder bee <i>Bombus pascuorum</i>		
Early bumblebee <i>Bombus pratorum</i>		

Mean abundance per site per year			
< 10	> 10		
<b>Group A</b> Barbut's Cuckoo Bee <sup>EN</sup> ( <i>B. barbutellus</i> ) Field Cuckoo Bee <sup>VU</sup> ( <i>B. campestris</i> ) Forest Cuckoo Bee ( <i>B. sylvestris</i> ) Gypsy Cuckoo Bee <sup>NT</sup> ( <i>B. bohemicus</i> ) Mountain Bumblebee ( <i>B. monticola</i> ) Red-shanked Carder Bee <sup>VU</sup> ( <i>B. ruderarius</i> ) Red-tailed Cuckoo Bee <sup>EN</sup> ( <i>B. rupestris</i> ) Southern Cuckoo Bee ( <i>B. vestalis</i> )	<b>Group B</b> Great Yellow Bumblebee <sup>EN</sup> ( <i>B. distinguendus</i> ) Shrill Carder Bee <sup>EN</sup> ( <i>B. sylvarum</i> )	< 25	<b>No. of sites where recorded at least once</b>
<b>Group C</b> Buff-tailed Bumblebee* ( <i>B. terrestris</i> ) Heath Bumblebee ( <i>B. jonellus</i> )	<b>Group D</b> Common Carder Bee ( <i>B. pascuorum</i> ) Early Bumblebee ( <i>B. pratorum</i> ) Garden Bumblebee ( <i>B. hortorum</i> ) Large Carder Bee <sup>NT</sup> ( <i>B. muscorum</i> ) Red-tailed Bumblebee <sup>NT</sup> ( <i>B. lapidarius</i> ) White-tailed Bumblebee** ( <i>B. lucorum</i> agg.)	> 25	



Large carder bee (*B. muscorum*),  
Ciaran Taylor, Dun Laoghaire, Dublin  
11/09/2016.

Breakdown of species according to abundance per site and no. of sites where they are recorded. At present, those in Group C and Group D can be formally analysed. EN, endangered; VU, vulnerable; NT, near threatened.

\*Based on queens only. \*\*Cryptic species group of *B. cryptarum*, *B. lucorum* and *B. magnus*.

## 2016 Workshops and Field Meetings

A big thank you to everyone who hosted and attended our 11 workshops and field meetings last year. Here's a selection of 'family photos' and we hope you'll join us again in the field in 2017.



Annual Recorders Event in Barleycove Co. Cork ably hosted by Damaris Lysaght 13/08/2016



Monitoring workshop in Duhallow Co. Cork, kindly hosted by Dr. Brin McDonald, IRD Duhallow, 16/04/2016



Monitoring workshop in Rossmore Forest Park Co. Monaghan kindly hosted by Carol Lambe, Monaghan Co. Council, 28/05/2016



Monitoring workshop in Cahersiveen Co. Kerry kindly hosted by Lisa O'Shea, Cahersiveen Tidy Towns, 21/05/2016



Caption: Monitoring workshop in Whitepark Bay Co. Antrim kindly hosted by Aoibhinn Corrigan, Northern Ireland Environment Agency, and Tiérna Mullan, Causeway Coast and Glens Heritage Trust, 27/05/2016

# Upcoming Workshops and Events in 2017

## Annual Recorders Field Meeting, Belmullet, Co. Mayo 29-30th July.

This year we will hold our annual field meeting for everyone who participates in the bumblebee and butterfly monitoring scheme in and around the beautiful Belmullet peninsula, Co. Mayo. Unlike previous annual recorders' meetings, the Saturday 29th will be focussed on a single priority species: the Great Yellow Bumblebee (*B. distinguendus*). Locally, there are two BirdWatch Ireland reserves where the bee is currently in abundance but sadly there are only a handful of areas around the peninsula, north Clare and Sligo where populations of this endangered bee persist. The goal of the workshop is to highlight the plight of this large charismatic bee and establish more transects targeting this species. On the day, we'll have introductory talks on its biology and ecology in Ireland, followed by guided walks with Dave Suddaby on the BirdWatch Ireland reserves, and then a 'team challenge' to locate the bees at sites where it was known and sites where it may be but has yet to be recorded. As always, you're welcome to join us for a meal in the evening in the Talbot Hotel, Belmullet, and have the

opportunity to socialise afterward. The following morning on Sunday 30th will then be a general recording day for both bumblebees and butterflies finishing up at lunchtime. The meeting is free to attend but spaces will be limited, so if you'd like to provisionally book your place please contact me (details on the front page) specifying which days (Saturday/Sunday) you'd like to attend and whether you'd like to join us for dinner on Saturday evening.

## Monitoring Scheme Workshops

There will be a series of workshops on bumblebee identification and monitoring in 2017. These will cover all aspects of the monitoring scheme including species identification, how to monitor bumblebee populations and how to use our online data recording forms. Weather permitting it will include an afternoon walk to put the identification and monitoring skills into practice. The list of workshops for 2017 has not been finalised, so please keep an eye on the [News & Events section of our website](#) for any updates.

County	Location	Date	Time	Booking Information
Kerry	Dingle, TBA	8th April	10:00 – 16:00	Máire Léime, leimemaire@gmail.com
Kerry	Tralee Bay Wetlands Centre	9th April	10:00 – 16:00	David McCormick education@traleebaywetlands.org 066 712 6700
Tipperary	Emly, St. Ailbe's Community Hall	22nd April	10:00 – 16:00	Sharon Heffernan sharon.heffernan@tipperarycoco.ie
Tipperary	Cloughjordan Heritage Centre	23rd April	10:00 – 16:00	Gearoid Ó Foighil gearoid.foighil@gmail.com
Mayo	Castlebar, TBA	6th May	10:00 – 16:00	Deirdre Cunningham dcunningham@mayococo.ie
Mayo	Ballina, TBA	7th May	10:00 – 16:00	Deirdre Cunningham dcunningham@mayococo.ie
Donegal	Ballybofey, College Court	20th May	10:00 – 16:00	Chirs Ingram chrisingram43@hotmail.com
Donegal	Glenveagh NP Education Centre	21st May	10:00 – 16:00	Clare Bromley Clare.Bromley@ahg.gov.ie