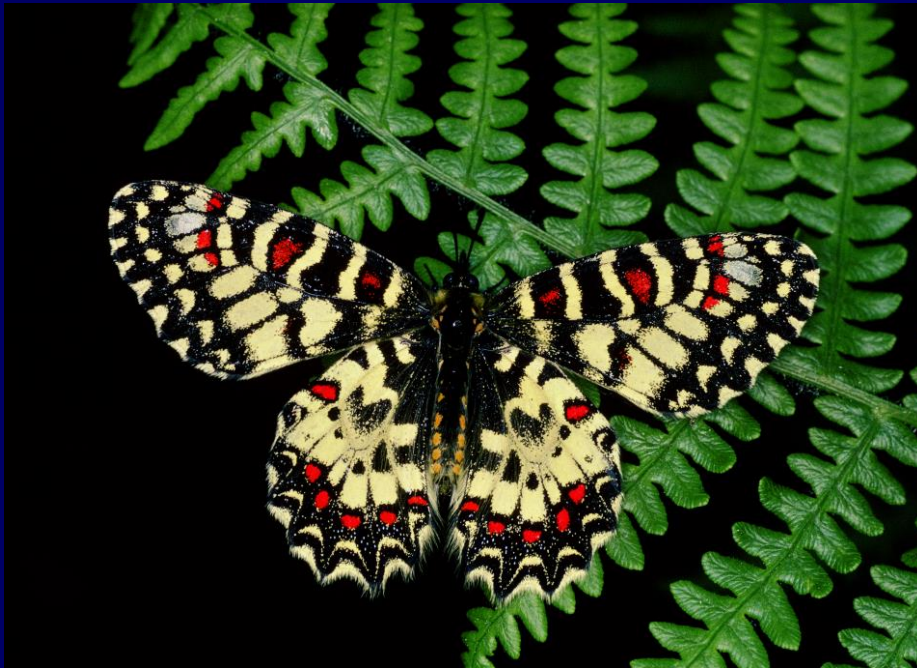


# DEVELOPING MONITORING IN SPAIN

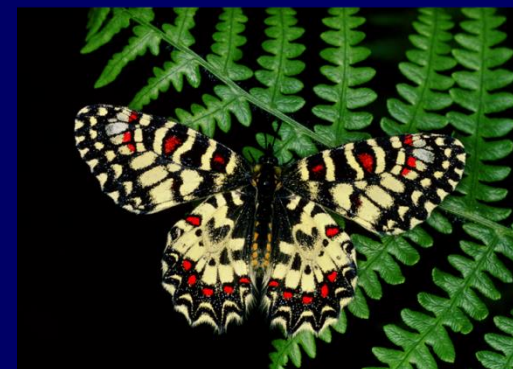


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Butterfly Conservation Europe Fifth  
Meeting of Partners  
Recording and monitoring butterflies  
across Europe

# DEVELOPING MONITORING IN SPAIN

- Background
- BMS in National Parks
- Actual situation
- Prospects
- Summary



# MONITORING IN SPAIN: background



- 2012: BCE and EFNCP supported the production of the document “Establishing a BMS in Spain”, a project to develop a BMS in Spain
- 2013: action journal



European Forum on  
Nature Conservation  
and Pastoralism



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# MONITORING IN SPAIN: background

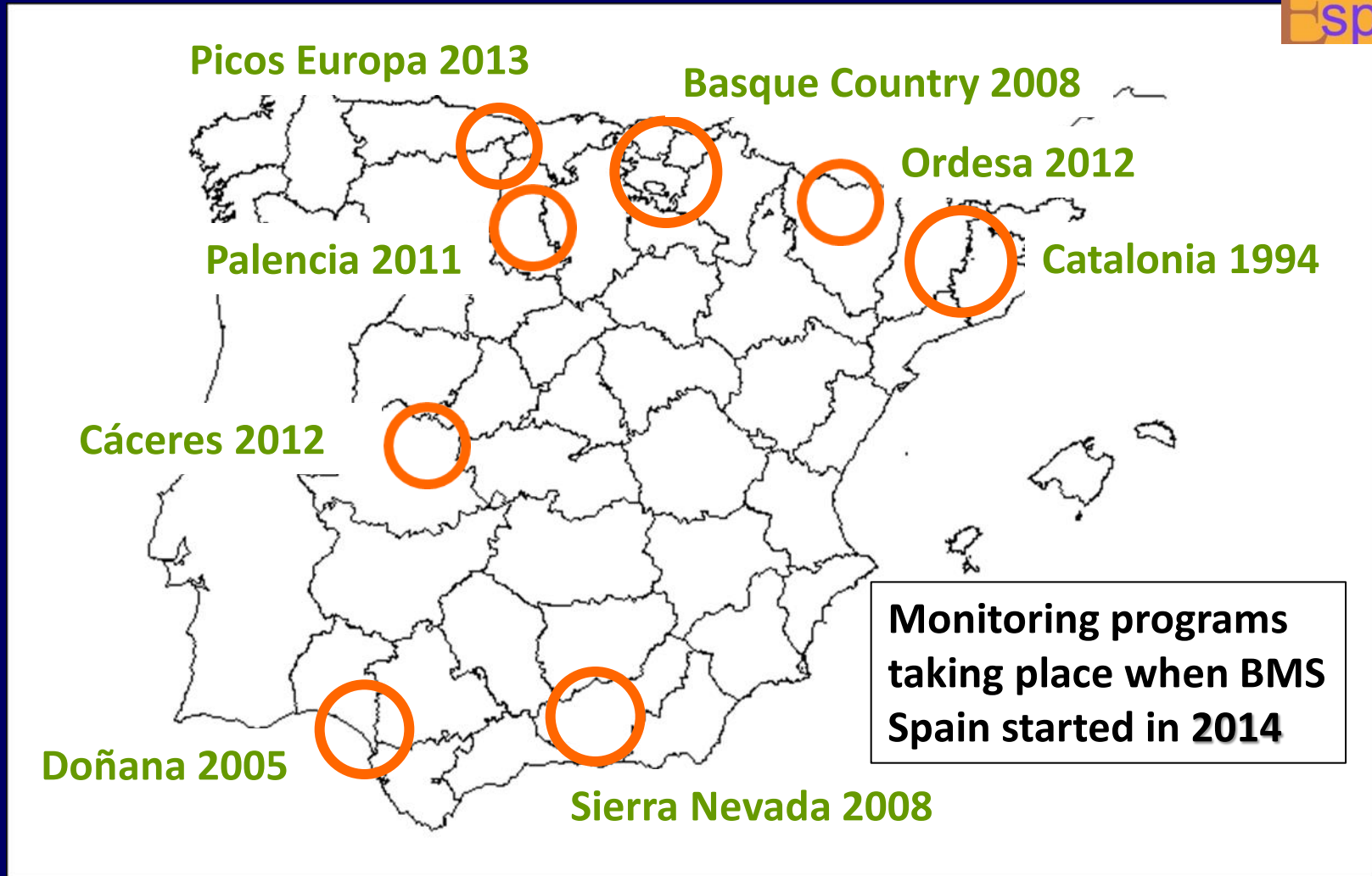


2014: a paper in  
a popular natural  
history journal  
explained what  
is a BMS and  
called for  
volunteers to  
establish new  
transects



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# MONITORING IN SPAIN: background



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## MONITORING IN SPAIN: background



At the end of 2014 the people involved in ongoing monitoring projects met in Madrid to launch the joint BMS Spain project, with the help of C. Stefanescu from Catalan BMS



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# MONITORING IN SPAIN: background



2015: we develop a computer application that allows easy input and storage of data for BMS Spain

host of the application



Butterfly Monitoring Scheme Spain

Nuevo Censo Censos Obs Censo Obs Tramo Obs Especie Impactos MIGUEL LÓPEZ MUNGUIRA Salir

Censador\* MIGUEL LÓPEZ MUNGUIRA Recorrido CANTOBLANCO Fecha\* (dd/mm/aa)

Hora Inicio\* (hh:mm) Temperatura Inicio Viento Inicio\* Nubosidad Inicio\*  
Hora Fin\* (hh:mm) Temperatura Fin Viento Fin\* Nubosidad Fin\*

**Nueva Especie**

Especie:

Sexo	Tramo 1	Tramo 2	Tramo 3	Tramo 4	Tramo 5
Indeterminado					
Macho					
Hembra					

Añadir Recuento

**Recuentos**

Especie	Sexo	Tramo 1	Tramo 2	Tramo 3	Tramo 4	Tramo 5
Ningún recuento añadido.						

+ Impactos

**Comentarios**

Guardar censo

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# MONITORING IN SPAIN: BMS in National Parks



**2015: the Spanish National Park Service financed a project to implement a BMS in the National Parks (Peninsula & Balearic Islands)**



**We visited the parks and planned 71 transects, 56 were active in 2016 and 61 in 2017**



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# MONITORING IN SPAIN: BMS in National Parks



*Euphydryas beckeri*

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# MONITORING IN SPAIN: BMS in National Parks

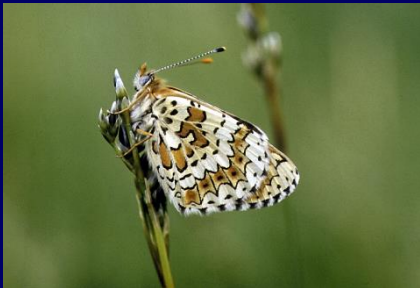


- Park transects are monitored with the coordination of Park Officials:



- By volunteers and/or
- By environment agents working in the parks

- Funding:



- Some parks allocate specific budgets to cover butterfly monitoring, and rely on external butterfly experts to do the job
- Others cover the costs as part of the park's current activities in which wildlife monitoring is always mandatory

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# MONITORING IN SPAIN: BMS in National Parks



2018: the National Park Service will support a project to set transects in the four National Parks of the Canary Islands. Thus the 15 National Parks will be monitored



Involvement of National Parks has been very important for the growth and consolidation of BMS Spain

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# MONITORING IN SPAIN: actual situation



## BMS Spain/Provinces in 2017 (107 transects)



Transects  
in National  
Parks  
represent  
56% of the  
network



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## MONITORING IN SPAIN: actual situation



- In 2016 we recorded 73% of Iberian species
- 4 Habitats Directive species & 13 Iberian endemics

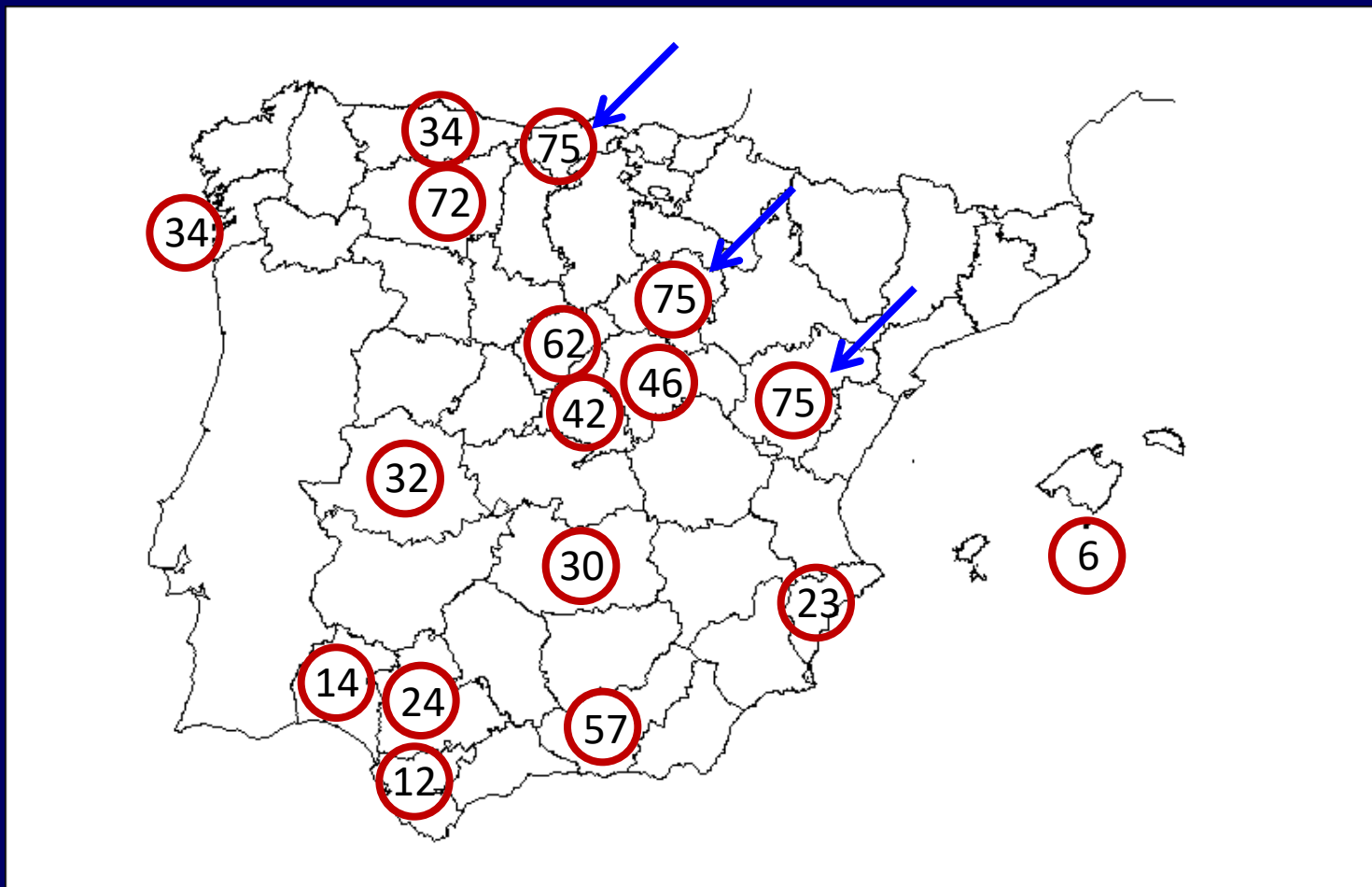
	No	Species	Transects
2015	27,429	158	60
2016	59,308	166	81



*Polyommatus golgus*,  
HD and endemic species

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## Species richness from BMS data (2016)

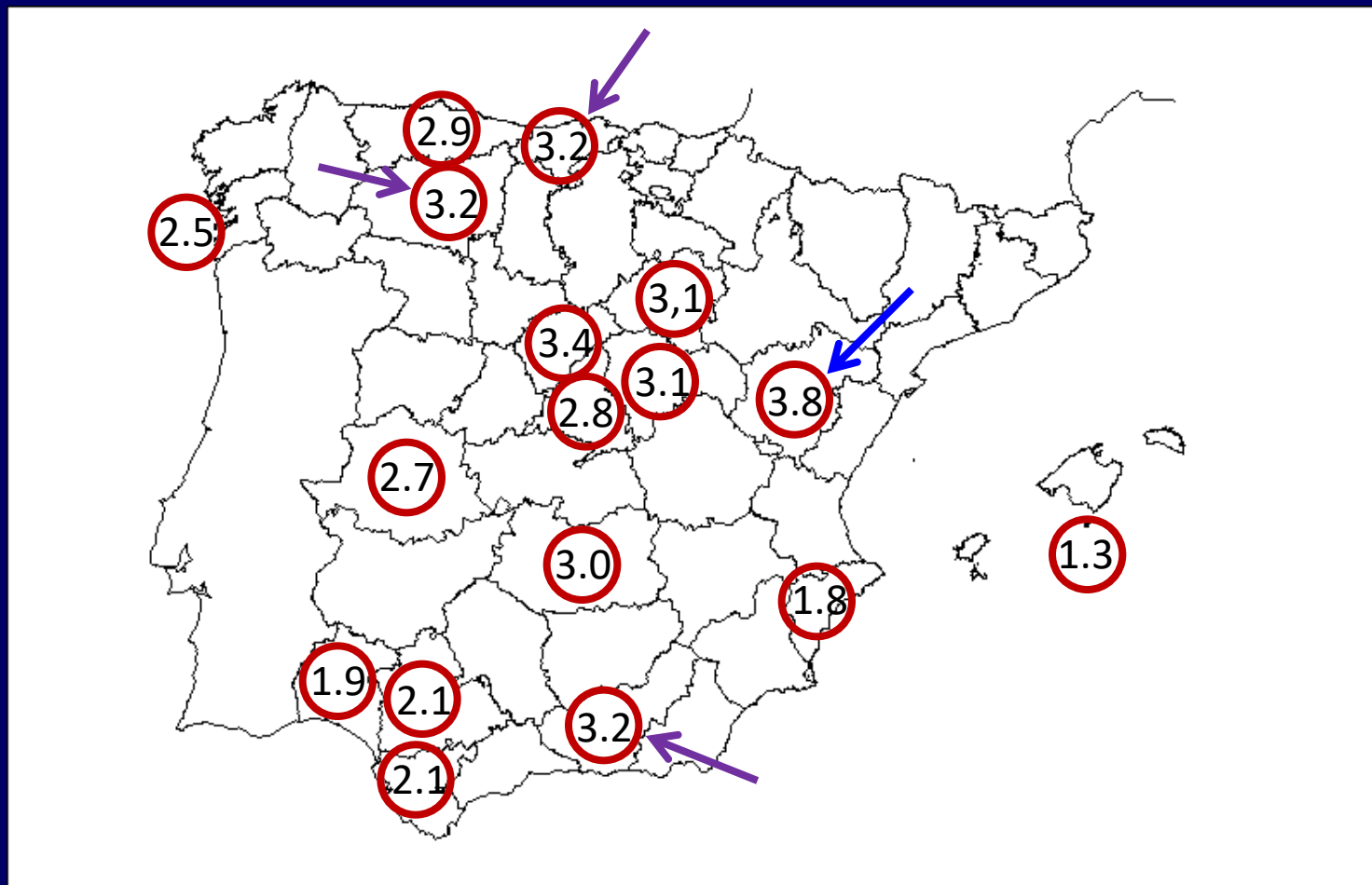




# MONITORING IN SPAIN: actual situation



## Shanon H' Diversity index (2016)



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# MONITORING IN SPAIN: actual situation



## Most abundant species (2016)

*Pieris rapae* 3,816

*Colias croceus* 3,587

*Maniola jurtina* 3,337

*Lysandra coridon* 2,916

*Arícia cramera* 2,359

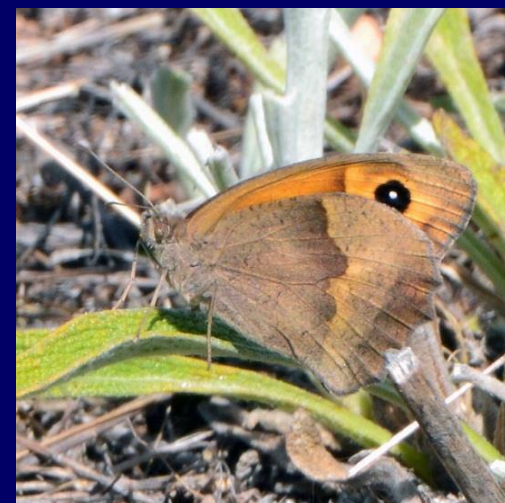
→ *Euphydryas beckeri* 2,318

*Melanargia lachesis* 2,293

*Coenonympha pamphilus* 2,220

*Pararge aegeria* 1,907

*Leptotes pirithous* 1,716

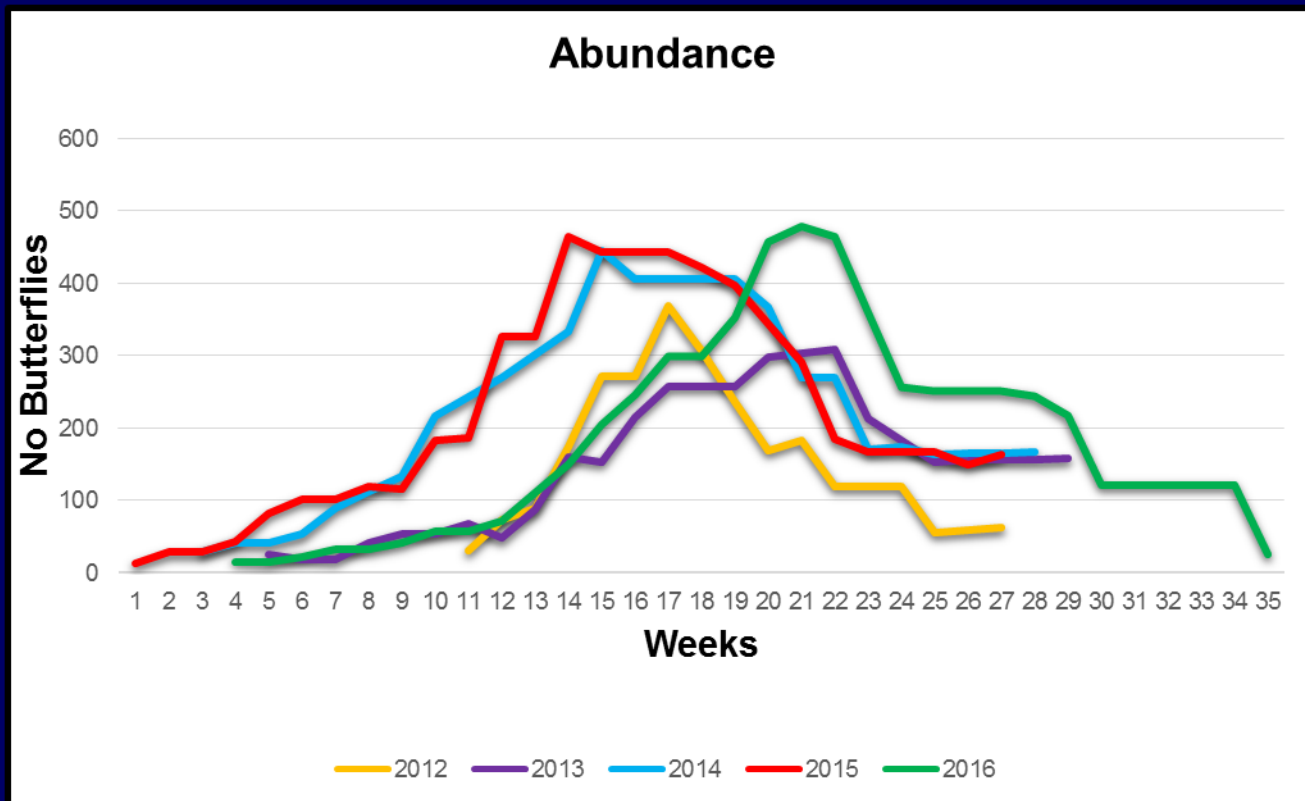


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# MONITORING IN SPAIN: actual situation



First results show relevant numbers for some sites: Garganta (Extremadura), 3,115 butterflies in 2015, 4,022 in 2016



M. Melero 2017, unpublished

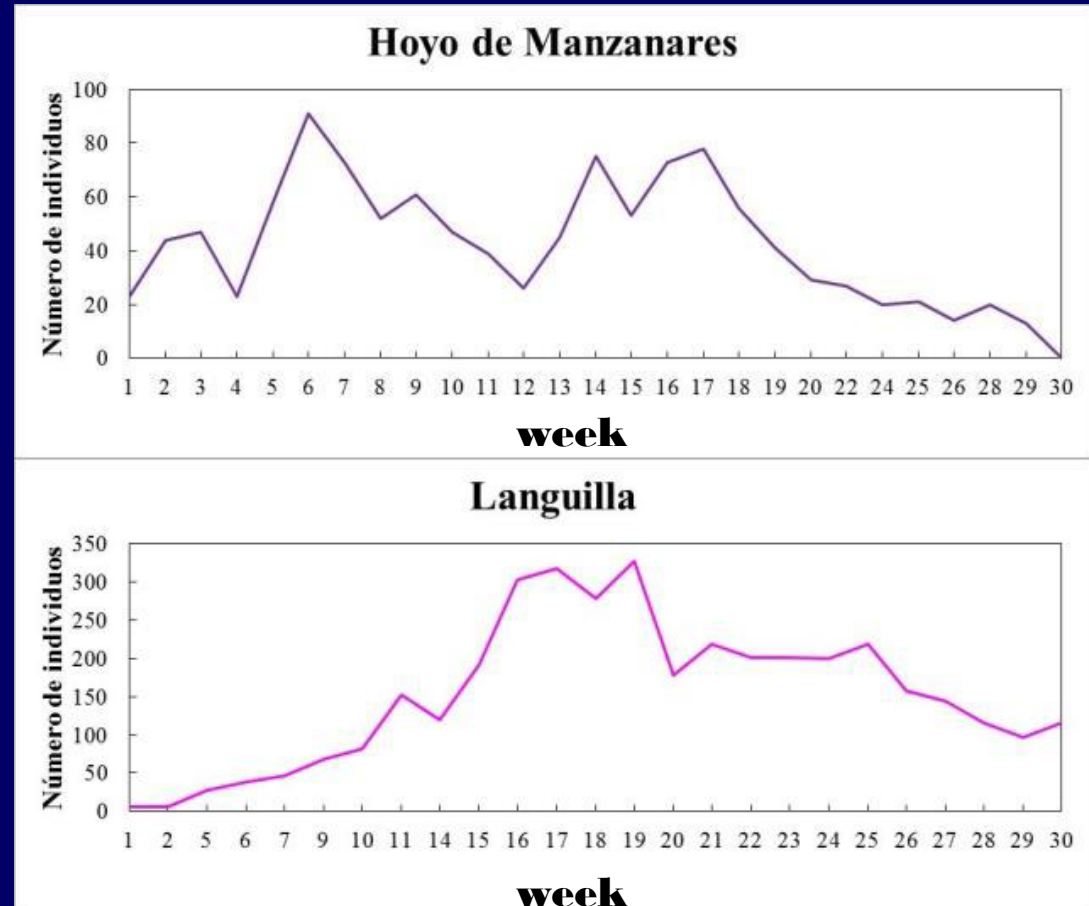
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# MONITORING IN SPAIN: actual situation



Phenological patterns are also interesting to compare, with bimodal curves in typical mediterranean sites



E. Valencia 2015, unpublished

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**We need to increase the geographical coverage of transects. Wide areas and many species are still not covered by the network**

**The computer application is an excellent tool for data storage and volunteer participation, but we need to improve its performance and make it useful for the production of regular reports and data analysis**

# MONITORING IN SPAIN: summary

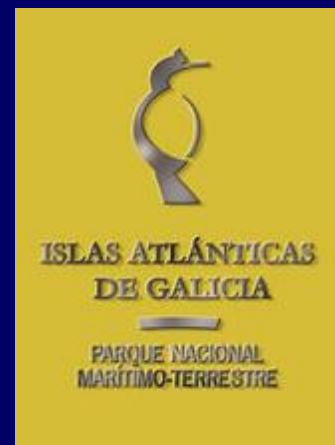


- BMS Spain started in 2014 with a call for new transects and the collaboration of different projects that were already monitoring butterflies at that time
- BMS implementation has been quite successful due to the existence of previous schemes and the involvement of National Parks
- The network is widespread in Spain, with 107 active transects and a yearly increase of the number of data
- Future improvements need to be made with the addition of new transects and the refinement of the computer application that hosts the data

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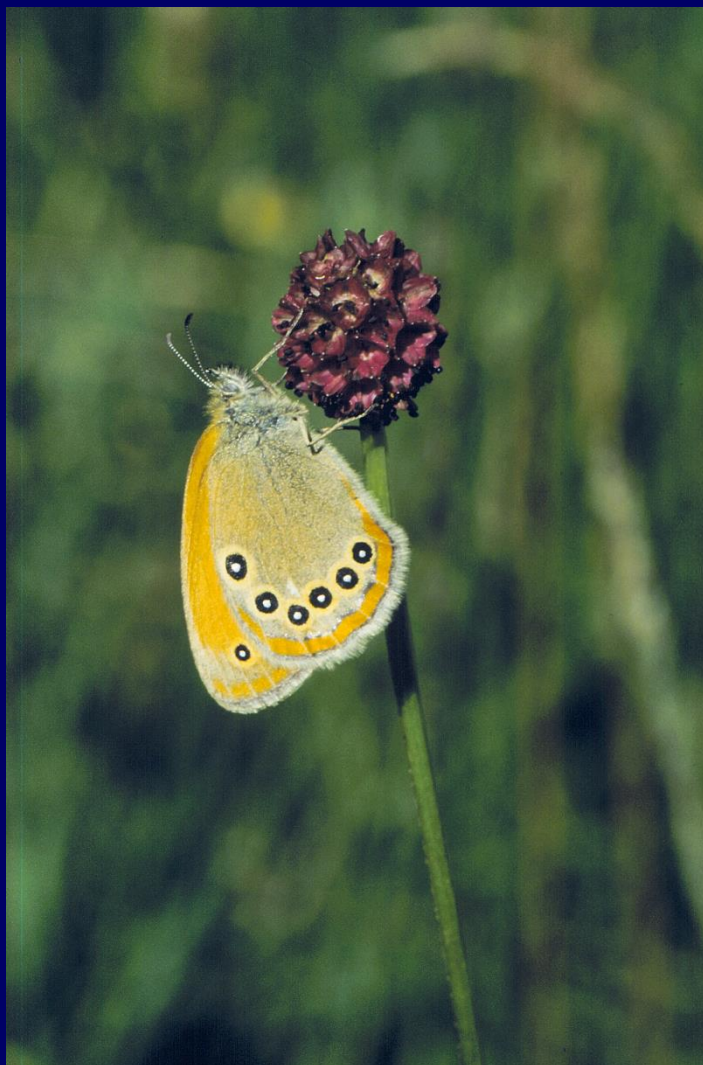


# DEVELOPING MONITORING IN SPAIN: Organizations



Miguel L. Munguira

# DEVELOPING MONITORING IN SPAIN: Coordinators



José Miguel Barea-Azcón

Enrique García-Barros

David Gutiérrez

Fernando Jubete

Amparo Mora

David Paz

Marisol Redondo

Helena Romo

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**Miguel L. Munguira**