



1. Desenvolupament de nous indicadors ecològics en quiròpters per avaluar efectes del canvi climàtic i de modificació del paisatge

2. La plataforma [www.ratpenats.org](http://www.ratpenats.org) com a mostra de l'evolució del seguiment de ratpenats als espais naturals

Contents lists available at ScienceDirect

Ecological Indicators

journal homepage: <http://ees.elsevier.com>



Ecological indices in long-term acoustic bat surveys for assessing and monitoring bats' responses to climatic and land-cover changes

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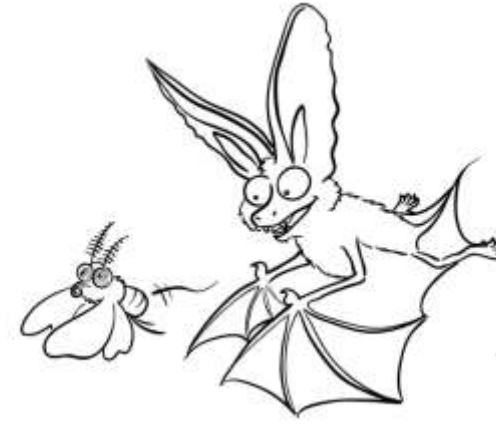
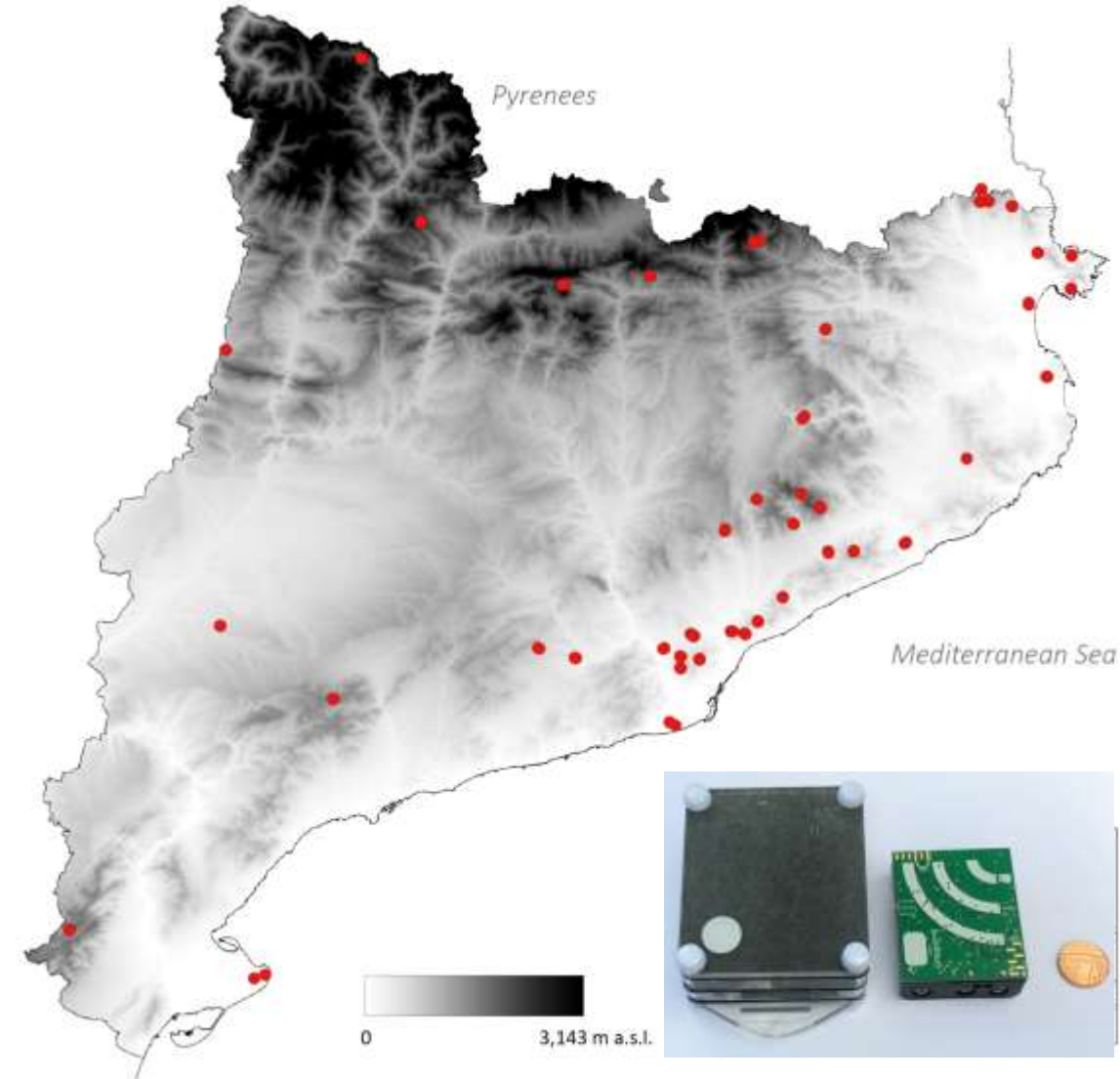
Àrea d'Infraestructures  
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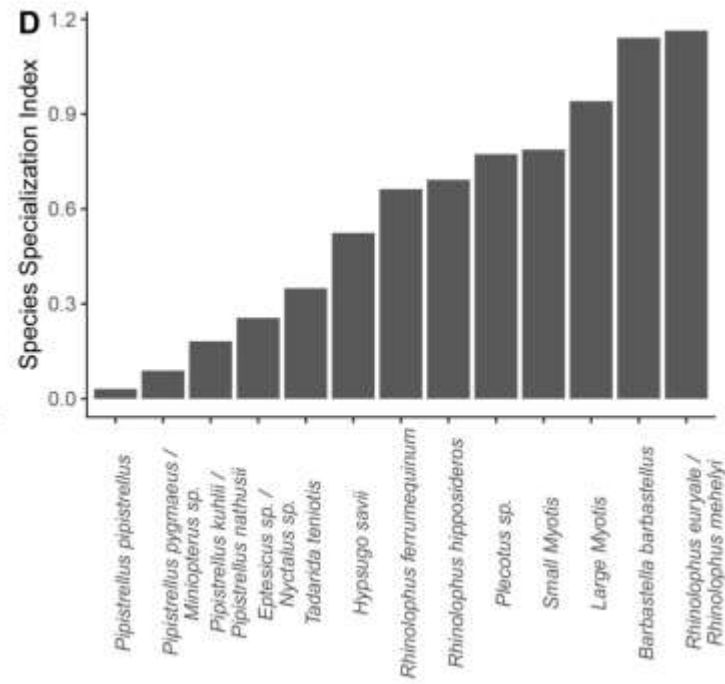
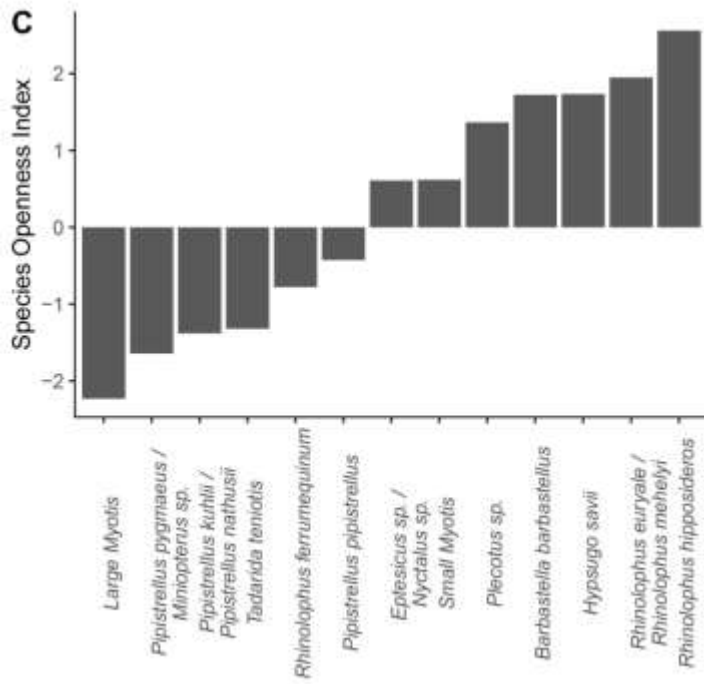
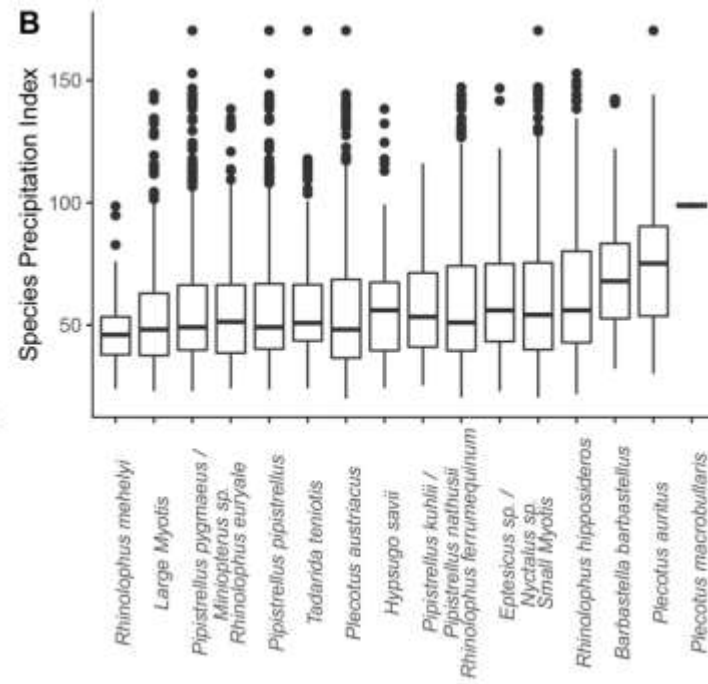
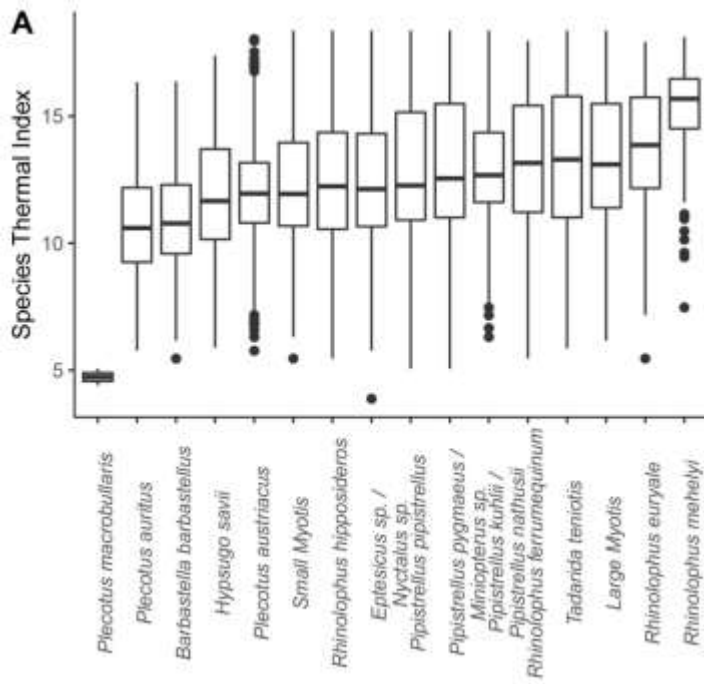
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### Estacions amb detectors d'ultrasons Quirohàbitats

**90 sampling points** (localities) in over 10 different habitats at altitudes ranging from 0 to 1842m a.s.l. Twenty-six sampling points were established in **coniferous forests**, 17 in ***Quercus ilex* forests**, 10 in **mixed deciduous forests**, 10 in **shrublands**, six in **arable land**, five in **urban areas**, four in ***Fagus sylvatica* forests**, four in **wetlands**, three in ***Quercus suber* forests**, three in **tree crops** and two in **meadows**

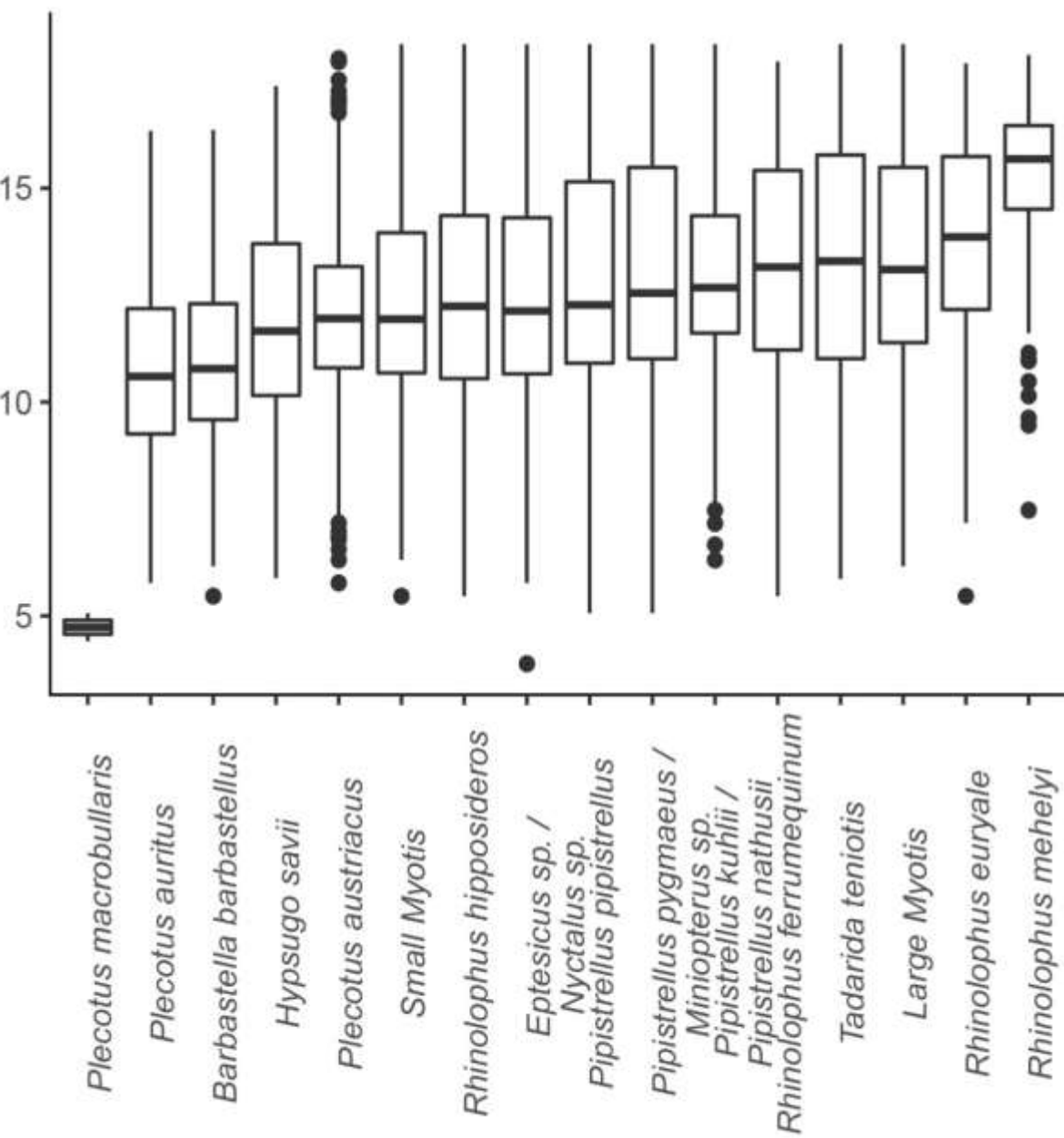


## Índexs testats per primer cop amb ratpenats

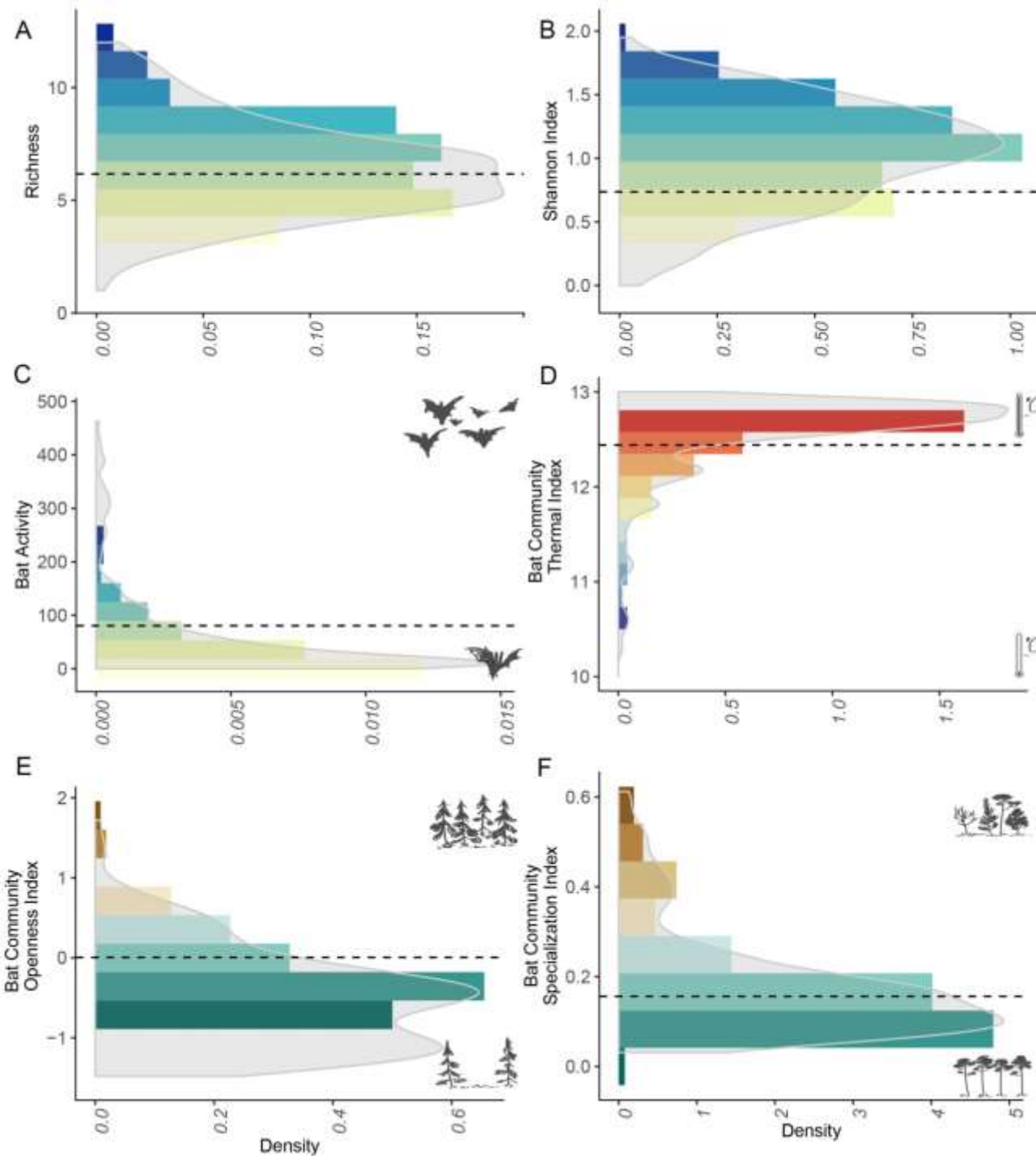
Species-specific indices for: **(A)** Species Thermal Index (STI), arranged from coldest to hottest values; **(B)** Species Precipitation Index (SPI), arranged from driest to most humid values; **(C)** Species Openness Index (SOI), arranged from open-associated (negative) to forest-associated (positive) values; **(D)** Species Specialization Index (SSI) obtained for each species/sonotype, arranged from generalist to specialist values.

**A**

Species Thermal Index

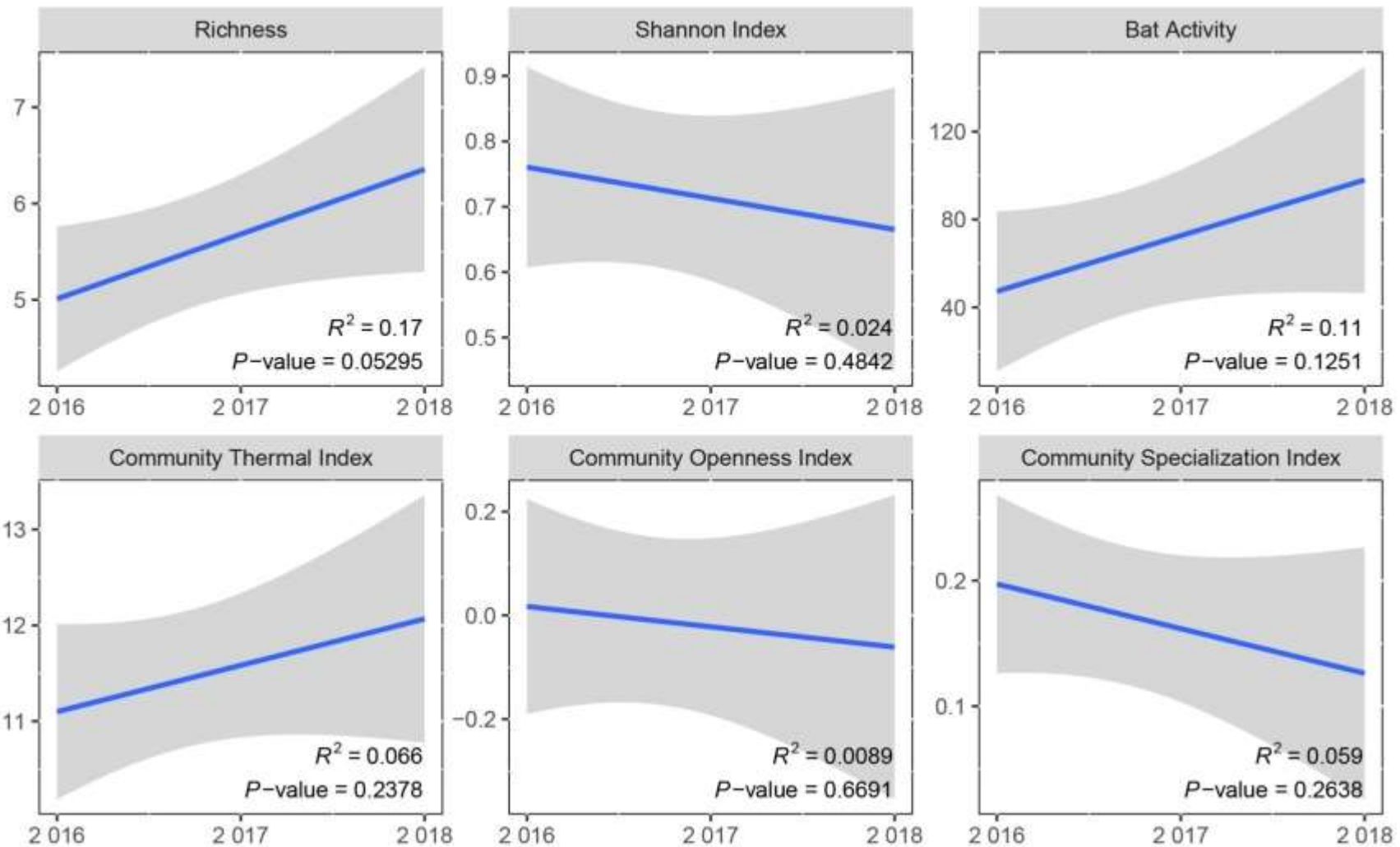


**A)** Species Thermal Index (STI), arranged from coldest to hottest values (average temperature in the Spanish occurrence range of the species).



## Exemple de què permeten representar els índexs

Kernel density histograms of the value distributions for all indices obtained per night for a certain type of habitat (e.g. coniferous forest) in a single year (e.g. 2018): **(A)** Richness, **(B)** Shannon Index, **(C)** Bat Activity, **(D)** Community Thermal Index (STI), **(E)** Community Openness Index (SOI), **(F)** Community Specialization Index (SSI). The dotted black line represents the position of the corresponding averaged index value obtained from the selected locality (Molleres de Gresolet).



## Exemple de tendències

Temporal trends of all indices obtained from Molleres de Gresolet in 2016–2018. Blue lines represent the trend lines for each index with their corresponding p-values and  $R^2$ . The shaded area corresponds to the 95% confidence interval for predictions from each generalized linear model.

Plataforma per crear una base de dades conjunta que inclogui tots els seguiments i estigui al servei dels Ciutadans

<http://www.ratpenats.org/>



## Bat Monitoring Program

The Bat Monitoring Program, led by the Natural Sciences Museum of Granollers, is an online platform to effectively monitor bat populations across the territory based on a joint effort by a network of professionals and volunteers.



This initiative includes 4 different protocols that have been developed and optimised during the last years: the [ChiroRivers](#), the [ChiroHabitats](#), the [ChiroBoxes](#) and the [ChiroRoosts](#). Each one of them has been specifically designed for monitoring a certain group of [species](#), either forest-dwelling species, cave-dwelling species, urban species, etc. with the aim that the combination of all 4 monitoring programs would provide a complete image of the health status of all bat species populations in all environments.

If you would like to participate chose a program and contact us for further information! [info@batmonitoring.org](mailto:info@batmonitoring.org)



### Rivers

Monitoring of bat species present in aquatic ecosystems, used as Ecological Indicators of water and riparian forest quality.

[Read more...](#)



### Habitats

Monitoring of bat species in all habitats across the territory in passive acoustic monitoring.

[Read more...](#)



### Boxes

Monitoring of fissure-dwelling and forest-dwelling bat species using bat boxes across a network of bat box stations.

[Read more...](#)

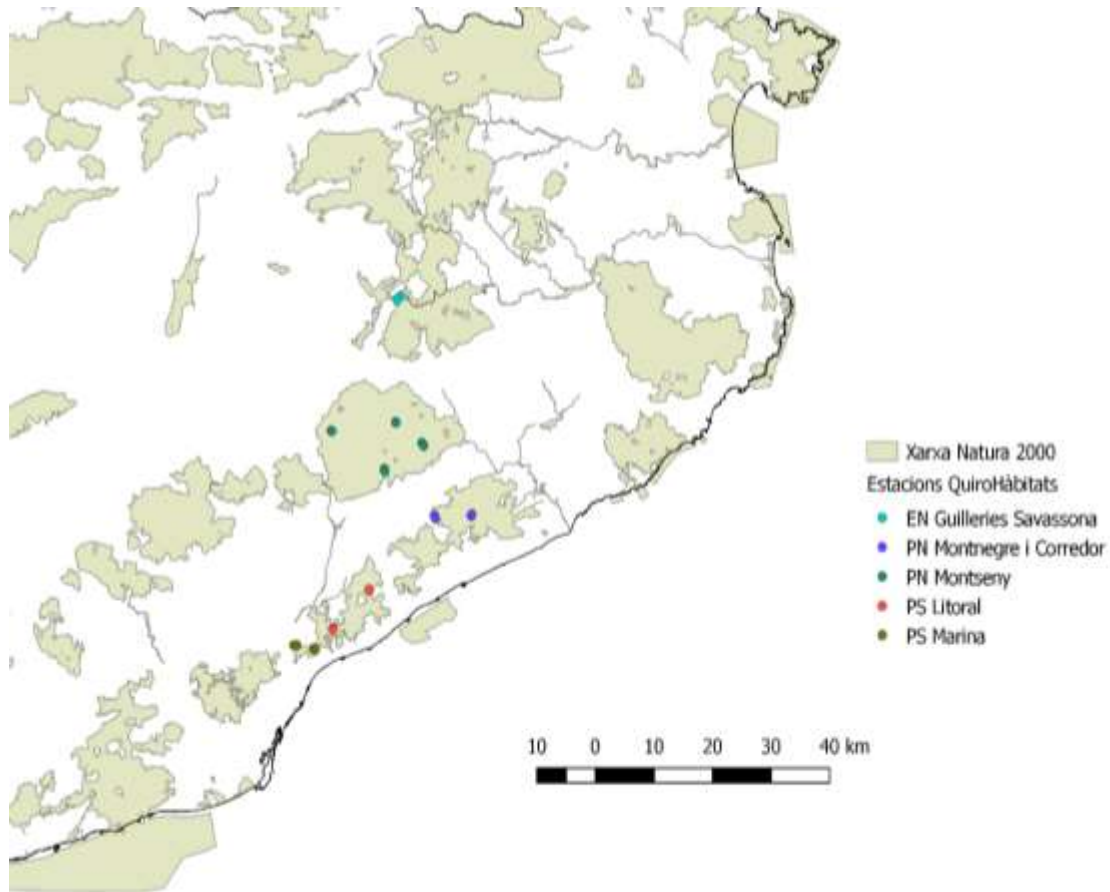


### Roosts

Monitoring of bat colonies in natural and artificial roosts (e.g. caves, mines, tunnels, churches, old buildings, etc.)

[Read more...](#)

## Estacions professionals a la Serralada Litoral Central i Montnegre i el Corredor



### Olzinelles\_2

DADES GENERALS	
Sol	Sorrida a les 07:42 i posta a les 17:27 (UTC+2)
Coordenades geogràfiques	41.668, 2.500
Coordenades UTM	31T 4613064 458359
Altura	196
Municipi	Sant Celoni
Habitat	Aizinar
Sessions	3
Especies i grups fonics	11

Especie / grup fonol	Contactes totals
Pipistrellus kuhlii / Pipistrellus nathusii	4776
Pipistrellus pygmaeus / Miniopterus sp.	2000
Pipistrellus pipistrellus	2288
Eptesicus sp. / Nyctalus sp.	1888
Hypsugo sevil	240
Tadarida teniata	158
Myotis sp.	20
Plecotus sp.	6
Rhinolophus euryale	4
Rhinolophus ferrumequinum	4
Rhinolophus hipposideros	4







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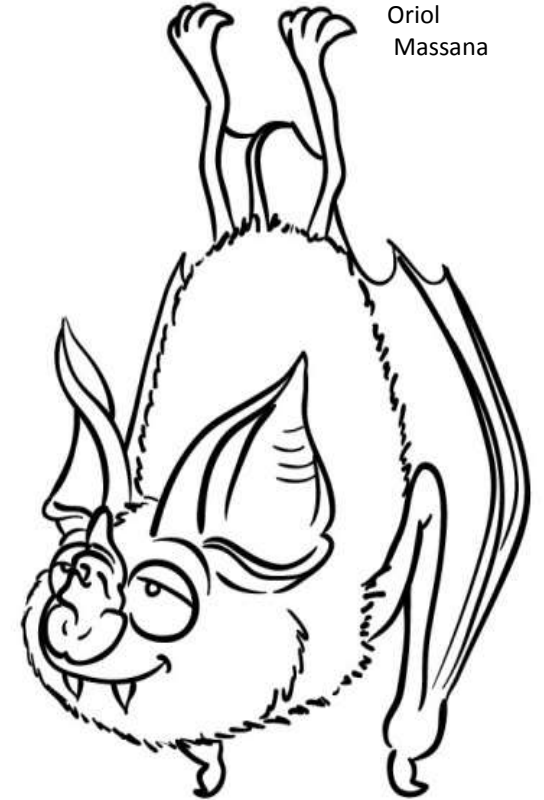


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# Gràcies!!



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