Annual report 2021-2022

Italian Butterfly Monitoring Scheme

Annual Report Italian Butterfly Monitoring Scheme

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Online resources

Further information on the Italian Butterfly Monitoring Scheme, support material and how to participate in the butterfly monitoring scheme can be found at:
https://butterfly-monitoring.net/it/italy-bms
Link for Italian Lepidopterological Association (ALI) **https://www.lepidoptera.life**
For online data entry: **https://butterfly-monitoring.net/mydata**
For any doubts or questions write to: **help.itbms@gmail.com**

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Ochlodes sylvanus

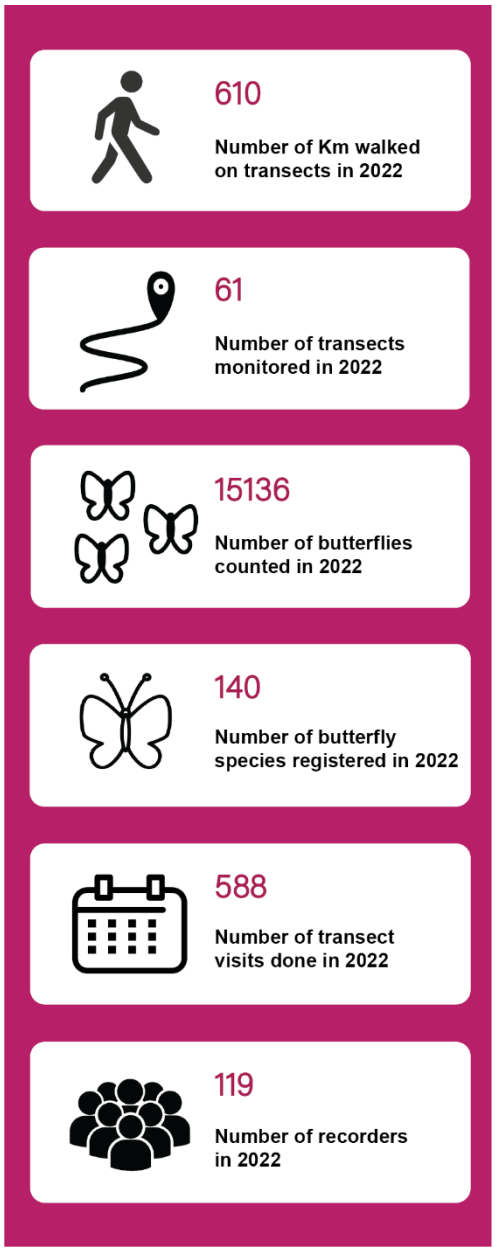
Summary

The Italian Butterfly Monitoring Scheme (ITBMS) started in 2019, although for some transects the first monitoring data date back to 2016.

The present paper is the second report of the BMS Italy project, summarising the data from the monitoring carried out in the years 2021 and 2022, also reporting some data from the years 2020 and 2019, already indicated in the previous report. The Butterfly Monitoring Scheme had a rapid increase already in the first months of 2020, despite the COVID-19 pandemic, which continued also during the following years. At the end of 2022, there were 61 active transects within the country, monitored by 119 volunteers, with a total of 610 km covered on transects. Since 2019, the ITBMS has been following a standardised methodology for monitoring butterflies and in the years 2021 and 2022 has achieved an average of about 10 visits in all monitored transects.

The biodiversity of butterflies on the Italian peninsula is very high. In 2021, 143 species of butterflies were detected on the Italian transects and 140 in 2022, for a total of 22,219 and 15,136 butterflies in 2021 and 2022 respectively. The ITBMS community continues to grow more and more, as is also shown by the expansion of the monitoring network in almost all regions of Italy and also outside Italy, with a transect in the state of San Marino as of 2023.

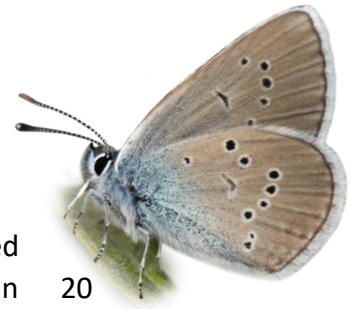
Italian volunteers are making an excellent effort to better understand their natural heritage and the pressures that affect butterflies. Thanks to their contribution to data collection, the European BMS and the Italian BMS can support the conservation of butterflies and other pollinators, as well as their habitats.



1. Butterfly Monitoring

In recent years, there has been a global decline in the diversity and abundance of terrestrial insects (Van Swaay et al., 2020). Since insects comprise more than half of all described species and since they play important roles in the functioning of ecosystems, the assessment of their conservation status appears urgent in order to plan and monitor specific conservation objectives over time (Van Swaay et al., 2020, Warren et al., 2020). For this purpose, butterflies appear to be perfect biological indicators as they are widely studied and react quickly to environmental changes (Thomas, 2005).

In Europe, there are 482 species of butterflies. Butterflies represent one of the best monitored insect groups in Europe thanks to monitoring schemes that have been active in some countries for decades. The first Butterfly Monitoring Scheme (BMS) was established in the UK in 1976 (UKBMS). Since then, the same aim has been pursued by many other European countries, encouraged in particular by Butterfly Conservation Europe (BCE) and its partners, enabling the collection of essential butterfly data. The standardised data are stored in a central database, the European Butterfly Monitoring Scheme (eBMS) - created by BCE and the UK Centre of Ecology and Hydrology (UKCEH) - and used to assess the population dynamics of the monitored species and develop indicators useful for the planning and evaluation of conservation policies. In turn, this contributes not only to reducing biodiversity loss, but also to raising public awareness of the importance of butterflies and biodiversity in general. All general information on butterfly monitoring is available on the eBMS website (www.butterfly-monitoring.net). The eBMS is a powerful network created by more than 20 partners, which collects standardised data from 28 BMS in 23 European countries. So far, the database has collected almost 15 million counts over 44 years (1976-2020) from more than 10.392 transects. However, butterfly monitoring in the South and East of Europe does not have the characteristic regular and systematic structure of a BMS. In 2018, a pilot project, Assessing Butterflies in Europe (ABLE), started with the aim of extending the eBMS network and creating new BMS across Europe. Italy was one of the first countries to start its own national BMS (ITBMS) with the help of ABLE. In fact, thanks to the large coordination structure, the support of materials, workshops and training seminars promoted in many areas of the country, Italy has developed a solid network of volunteers, thus enabling the design of a national scheme for the systematic counting of butterflies. Field monitoring and the training of volunteers have been essential to ensure the smooth running of the counts, especially if supported by field guides and an efficient online data recording system.



The purpose of this report is to present the 2021 and 2022 records of the Italian Butterfly Monitoring Scheme, including information on monitoring activity and results on the richness and abundance of the main butterfly species. The results shown also make it clear that the monitoring effort is constantly growing over the years.

Butterfly Transects Count

The transect method for counting butterflies is the main sampling tool used by Butterfly Monitoring Schemes (BMSs). It is a **standardised method**, developed by Ernie Pollard in the UK in 1974 (see Pollard and Yates, 1993), which consists of counting butterflies along fixed routes (transects), with frequent (ideally weekly) visits in good weather conditions. Transects are typically 1 km long and are divided into sections representing different habitat areas or simply separate components of the same site. During a walk along the established route, only individuals sighted within an imaginary cube 5 m wide, 5 m high and 5 m in front of the observer are counted. The period in which monitoring is carried out varies between different European regions according to regional variability in the butterfly's period of activity (i.e. the length of the local flight season). butterfly abundance is at its highest. Once all butterfly observations of a transect have been recorded, e.g. using a field sheet or notebook, the data can be entered directly on the eBMS website or sent to the BMS coordinator. The manual with information on the transect monitoring method can be downloaded from www.butterfly-monitoring.net/bms-materials. For an extended description, please refer to Sevilleja et al. (2019).

Explanations on butterfly monitoring with the transect method.

ButterflyCount app & 15-minute counts

The new multilingual ButterflyCount application, for Apple devices (iPhones, iPads) and Android, is now available for download from the leading digital app stores. Launched by Butterfly Conservation Europe and the UK Centre for Ecology & Hydrology as part of the ABLE project, it offers users many features

- a new method for monitoring species: the **15-minute count**. This is equipped with a stopwatch and a GPS tracking system that automatically records the route taken. Observations can be easily added by writing the name of each species and selecting the +1 option each time a new individual is spotted. In addition, the app records the coordinates for each individual, allowing the data to be downloaded;
- the ability to apply the **15-minute count on an individual species** to support monitoring of protected or threatened species;
- access to your own **eBMS transects** by simply logging into the app with your eBMS account;
- a comprehensive list of the different butterfly species found throughout Europe (around 500 in total) and guides for each country also available offline.

The app is still under development with plans to include new and improved features. The recorded data is extremely useful to scientists and other professionals as a tool for implementing ecological analyses and conservation actions. In addition, eBMS also contributes to the assessment of the conservation status of other insect groups. In the updated version of the ButterflyCount app, it is also possible to select between moths, bumblebees and dragonflies. The group to be monitored can be easily selected in the app's settings. Simultaneous monitoring of several groups within the same 15-minute count is also permitted. However, it is recommended to select a maximum of 2 groups for practical reasons, especially when monitoring in areas of high biodiversity.

2. Italian Butterfly Monitoring Scheme

The Italian Butterfly Monitoring Scheme (ITBMS) is part of the European Butterfly Monitoring Scheme (eBMS), contributing data and knowledge to the assessment of the status of European butterflies. The ITBMS has been active since 2019 thanks to the coordination of expert butterfly scientists and the recent European project ABLE (Assessing ButterfLies in Europe) and still continues its pollinator monitoring work under the coordination of the SPRING project (Strengthening Pollinator Recovery through INdicators and monitorinG)

Italian volunteers performing a butterfly transect

The diversity of habitats in Italy is also reflected in its diversity of butterfly species. After Turkey, in fact, Italy is **the European country with the largest number of butterfly species** (290 species; Balletto et al., 2014), of which 17 (6.0%) are Italian endemics and 20 (7.1%) have very narrow ranges (sub-endemics). Italy, due to its wide north-south extension (from 47°29' N to 35°29' N) and the altitudinal gradient (from 0 to 4810 m a.s.l. at Mont Blanc), is characterised by great variability in climate and environmental types. Furthermore, its location in the centre of the Mediterranean basin favours the presence of species originating from different zoogeographical sub-regions. On a national level, the diversity of butterflies is greater in the northern regions, as the Alpine areas are characterised by an important variety of habitats. For these reasons, the butterfly richness is not homogeneous throughout Italy and changes in the different transects. The number of species detected within a given transect is also related to the sampling effort and, finally, to the ability of the volunteer to recognise each species.

The Mediterranean weather exerts a dominant influence over much of Italy, which means a long butterfly monitoring season that can last from February to October in some areas. To cover the entire latitudinal range, the coordination of the scheme was established in Northern, Central and Southern Italy. As part of the project, several workshops were organised to train volunteers in the identification of butterfly species and the creation of a transect. Often the workshops took place within National and Regional Parks, or protected areas, to strengthen the relationship with these institutions and involve the technical staff of the parks in monitoring. Two workshops were organised on the territory of two national islands (Elba and Sicily). As support material, volunteers were provided with some ad hoc produced guides for the field identification of butterflies at a regional level and a technician was provided to help design transects and identify the butterflies. In addition, a system for evaluating the identification of detected species was planned. Through an iNaturalist project, the ITBMS planned the intervention of expert taxonomists belonging to the **Italian Lepidopterological Association (ALI)** to validate the determinations made by the volunteers. Collaboration between the various stakeholders, including authorities, associations and NGOs proved vital for the development of the ITBMS. The broad participation in the activity by the public and Italian biodiversity are the two pillars of the ITBMS and also the reason for the excellent results achieved in a short time. The keys to success are certainly excellent regional coordination and an ever-expanding network thanks to the arrival of new volunteers.

3. Monitoring activity

Transects

In Italy, butterfly communities have been monitored and included in the eBMS since 2016, from a few transects located in the north of the peninsula. However, only since 2019 have counts been carried out following a standardised method. Therefore, 2019 is considered the year that marks the official start of the ITBMS activities.

In 2021, 69 transects were regularly monitored and 61 in 2022, thus more than doubling the number of transects monitored in the first year of the project (25 transects, Fig. 1). A further increase in the number of monitored transects is expected due to the increased number of volunteers involved. In fact, the number of registered operators increased from 63 in 2021 to 119 in 2022 (Fig. 2). Fig. 3 shows that almost every region of the country has at least one transect within it, with a greater concentration in the north-west. 2022 was a particularly dry and hot year for the whole of the

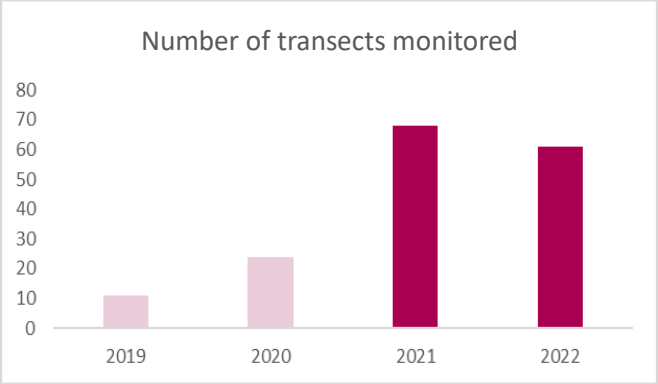


Figure 1 Number of transects in each year from 2019 al 2022

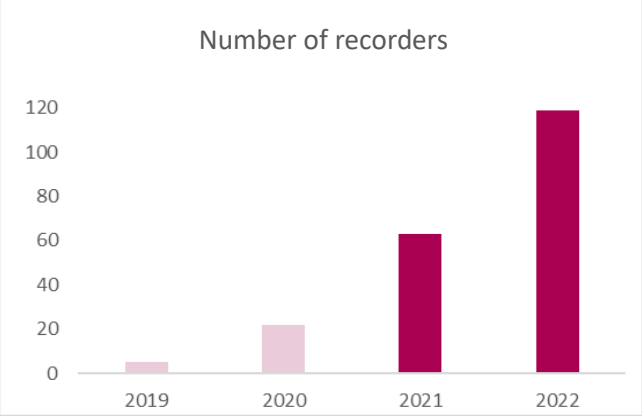


Figure 2: Number of recorders in each year from 2019 al 2022

Figure 3: Distribution of ITBMS transects in 2022

Italian peninsula and this affected the possibility of sampling some areas in some cases, but, despite this, the sampling effort was considerable as it covered as many as 35 weeks in 2021 and 39 in 2022, with the first sampling taking place on 23 February in both 2021 and 2022. Since the start of the ITBMS, a large number of new transects have been defined and monitored. The complete list of registered operators, with the names of the sites visited, is presented in Annex IIAs previously mentioned, the Italian territory presents a considerable diversity of habitats in terms of geological and climatic characteristics. The diversity of habitats represented in the transects monitored in the years 2021 and 2022 is shown in Figure 4. The two most represented habitat types are agricultural habitat followed by grassland (28% and 26% respectively), as these may appear to be the most suitable to conduct a monitoring activity following a transect. On the other hand, ecotone habitat is the third most represented (24%), while wetlands, which are home to several rare species (e.g. *Lycaena dispar*), are only 9% of the total. The more we manage to obtain an equal distribution of transects between the various Italian regions, the clearer the representation of habitats in the ITBMS will be.

Regarding the land ownership of the areas within which the Italian transects monitored in the years 2021 and 2022 are developed (Fig. 5), public areas are mostly represented (22%), while agricultural land and protected natural areas are slightly lower, accounting for 21% of the total areas sampled.

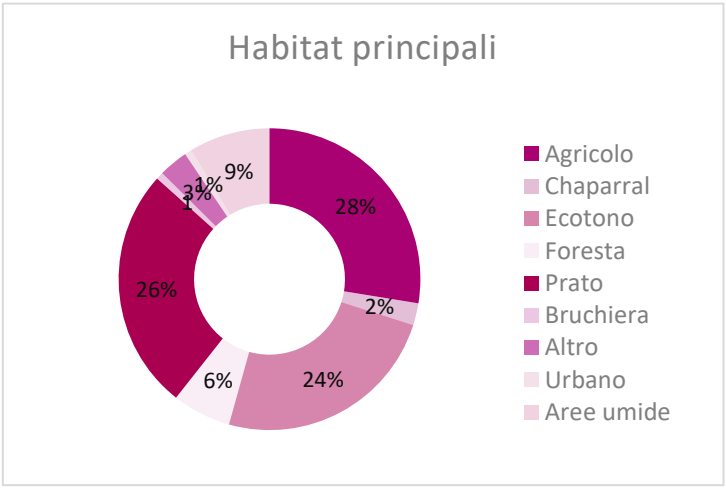


Figure 4: Primary habitat of ITBMS transects in 2021-2022

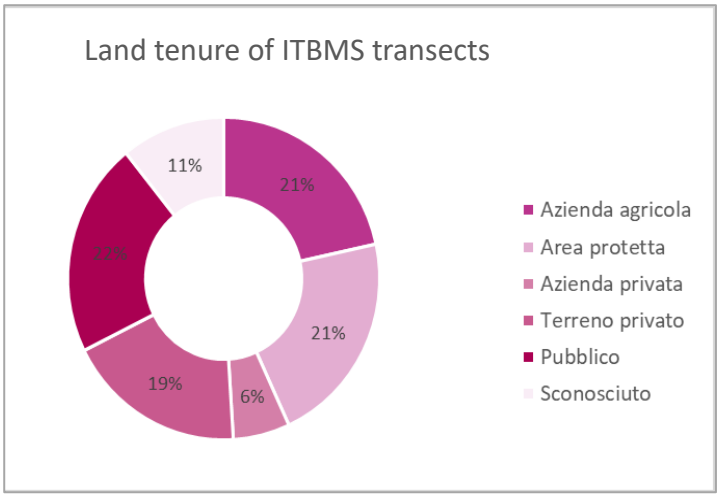


Figure 5: Land tenure of ITBMS transects in 2021-2022

Number of visits

The number of visits to each transect and the relative average over the total number of transects monitored each year provide useful information on the sampling effort of the ITBMS.

Calculating the average of all transects in both 2021 and 2022, the average number of visits per transect is approximately 10 (SD = 7.8, i.e. a very high variability between the different transects) (Fig. 6), thus fulfilling the BMS protocol requirement of at least 10 visits during the butterfly flight season. Two transects in particular, La Rosa and Davoli, were monitored most frequently, counting 45 and 27 visits respectively. These two transects are located respectively in the countryside around Siena and Calabria, where the concentration of the number of transects is actually lower than in the rest of Italy.

The butterfly monitoring season lasted from February to October in 2021 and from February to November in 2022. The frequency of visits varied throughout the season (Fig. 7), with a peak between May and June (between the 20th and 25th week) in both years, when a higher specific abundance of butterflies can be recorded.

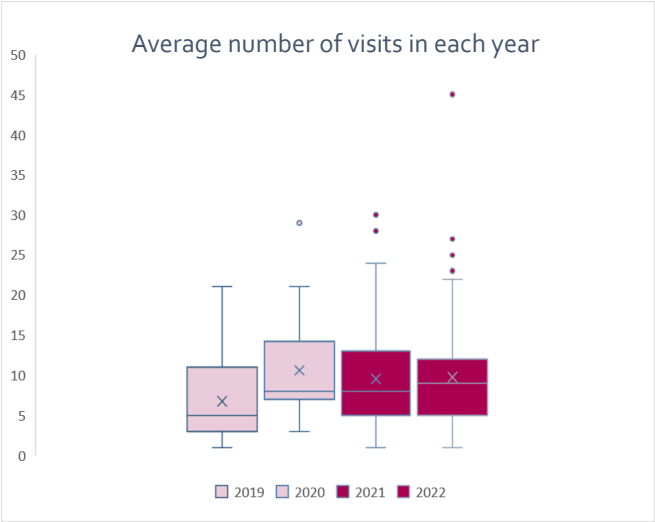


Figure 6: Average number of visits per transect in each year dal 2019 al 2022.

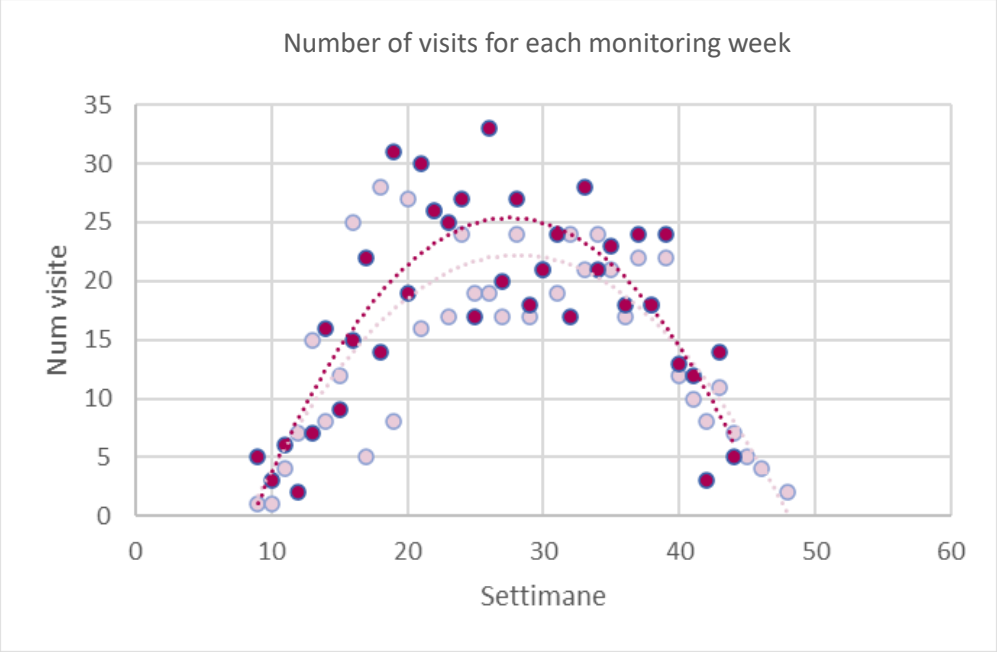


Figure 7: Number of visits in each butterfly monitoring week in 2021-2022

4. Butterflies in numbers

As the number of transects and operators has progressively increased over the years, both greater species richness (Fig. 8) and greater abundance of individuals were detected in 2021 than in previous years (Fig. 9). In particular, 143 species of butterflies were detected with more than 22,219 individuals counted in total. In 2022, however, a slight decrease was observed in both the number of species (140) and the number of individuals (15,136). This decrease can easily be attributed to the particular climatic conditions, which saw 2022 as a very hot and dry year.

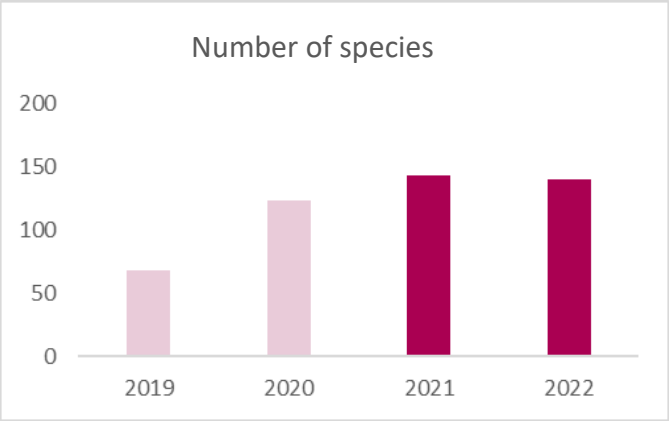


Figure 8: Number of species detected in each year from 2019 al 2022

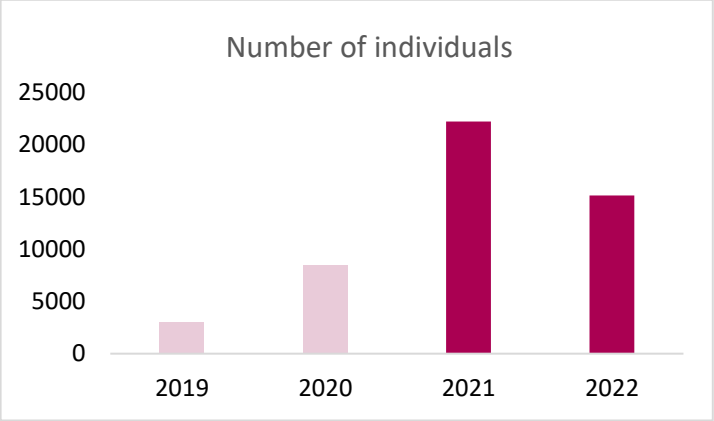


Figure 9: Number of individuals counted in each year from 2019 al 2022

Species richness

The last graphs summarise the total number of species and abundance of individuals detected in the period 2019-2022. The Italian transects that are distributed in various habitats show great variability in the number of species and abundance of individuals.

Figure 10 shows the annual species richness. The year 2021 shows a distribution of data concentrated around a high number of species. In 2021, an average of around 20 species per transect was recorded, while in 2022 the average drops slightly to 16. The result is to be considered reliable considering that species-poor transects, such as those located in urban or agricultural areas, were also monitored. With regard to the number of species detected in 2022, this varies from transect to transect (Fig. 11). The map shows that some transects are characterised by a high number of species, while others are represented by a low specific richness.

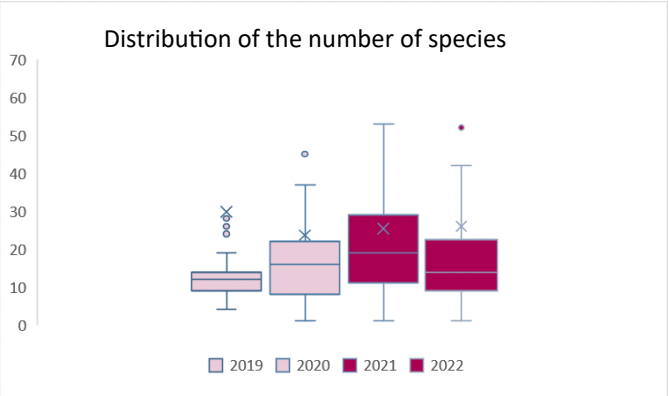


Figure 10: Distribution of the number of species in each year from 2019 al 2022

Areas with a higher number of species are mainly found in the Alps, with some spots also in other Italian regions. This confirms a great diversity of butterflies throughout Italy, with sampling being carried out both in areas richer in species, but also in other areas with poorer coenosis, but equally important to monitor.

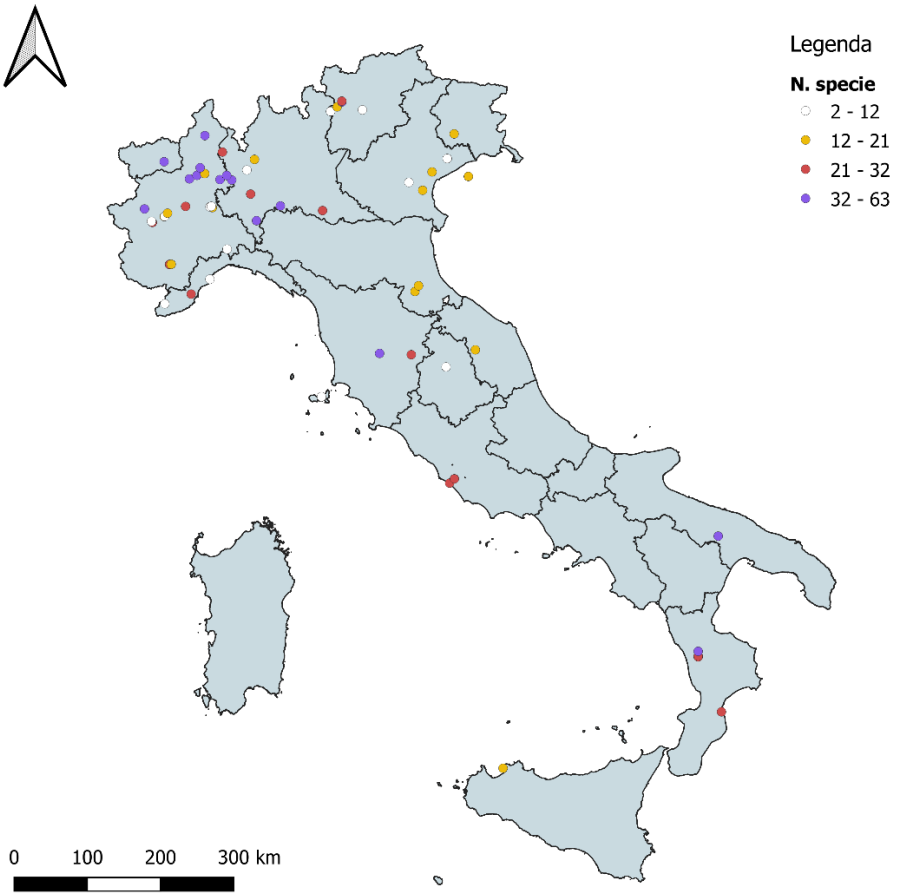


Figure 11: Distribution and species richness of each transect in 2022

The number of species detectable in each transect varies greatly during the butterfly monitoring season (Fig. 12). However, it is always advisable to start counting at the beginning of the season, even though it is characterised by a lower specific richness. In both 2021 and 2022, the greatest number of species was recorded in the weeks between June and July (between the 25th and 35th week), whereas fewer and fewer species fly at the end of the summer. It is important to remember that the trend described by the curve in Figure 12 is the result of the variability in the flight period of different butterfly species. Indeed, while some species are characterised by having several generations per year, others have only one spring or summer generation. For this reason, it is necessary to visit transects frequently in order to cover the flight period of all species.

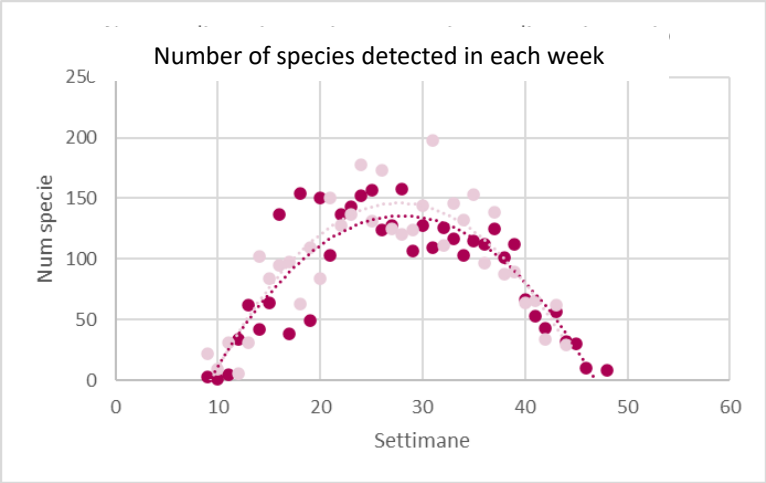


Figure 12: Number of species detected in each butterfly monitoring week in 2021 and 2022

Figure 13 shows the number of individuals observed for each monitoring week in 2021 and 2022. The trend is similar to that observed in Figure 12, which considers the number of species observed, with a peak concentrated more towards the summer months. The curve depicts how the number of individuals observed increases steadily up to the peak in the first few months of the monitoring season, but decreases rapidly immediately after the peak at the end of the season.
An important fact that emerges from this graph is how the number of individuals during the entire field season is lower in 2022 than in 2021, probably due to the particularly dry year

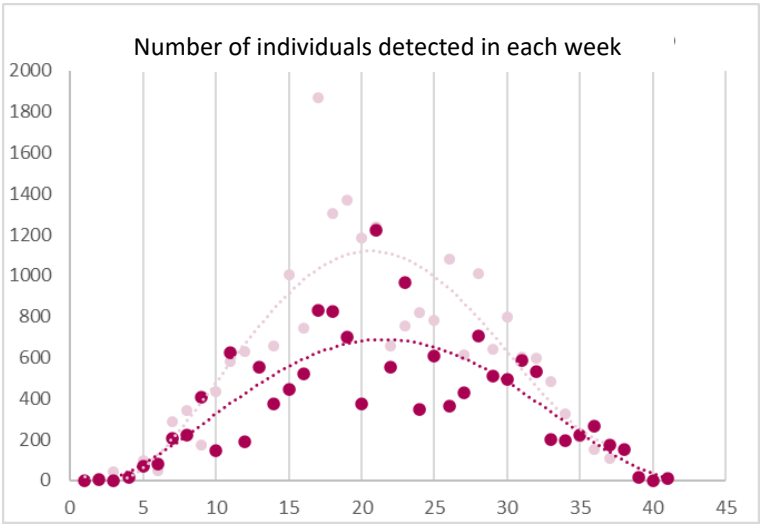


Figure 13: Number of individuals counted in each butterfly monitoring week2021-2022

Annex I shows the complete list of 140 observed during the last sampling year. In addition, an overview of the 10 most commonly observed butterfly species recorded during the last four sampling years is presented in Table 1, from 2019 to 2022. It can be seen that the most common species do not vary much over the years, with species such as *Polyommatus icarus, Coenonympha pamphilus, Pieris rapae* and *Maniola jurtina* at the top of the list.

Table 1: 10 most common species from 2019 to 2022

2022	2021	2020	2019
Polyommatus icarus	Polyommatus icarus	Polyommatus icarus	Polyommatus icarus
Maniola jurtina	Pieris rapae	Coenonympha pamphilus	Pieris rapae
Coenonympha pamphilus	Maniola jurtina	Pieris rapae	Coenonympha pamphilus
Pieris rapae	Coenonympha pamphilus	Melanargia galathea	Colias crocea
Melanargia galathea	Pieris napi	Maniola jurtina	Cupido argiades
Lasiommata megera	Colias crocea	Lasiommata megera	Pieris napi
Melitaea didyma	Pieris	Colias crocea	Melitaea didyma
Aricia agestis	Lasiommata megera	Pieris napi	Thymelicus lineola
Colias crocea	Melanargia galathea	Cupido argiades	Maniola jurtina
Pieris napi	Aricia agestis	Papilio machaon	Vanessa cardui

5. Milestones of 2023

The ITBMS is putting a lot of effort into planning the extension of the monitoring scheme to all Italian regions and cover most of the different habitat types. Importantly, new transects have been implemented in 2021 in many areas of Italy, including some islands. The total number of transects included in the Italian scheme is now 141, covering 15 of the 20 Italian regions. Despite the achievement of these important milestones, the monitoring network does not stop and there are plans to extend it further and further with the aim of covering the whole country. The effort of volunteers is still very high and in 2023 sampling has already started in January. As proof of the great success of the Italian monitoring scheme, starting in 2023, there will also be sampling outside Italy, in particular in the state of San Marino, which has begun with the monitoring of a transect with the support of the Butterfly Monitoring Scheme Italy.

A great driving force for the implementation of the monitoring network certainly comes from the continuous national workshops that are organised throughout the country with the aim of involving new volunteers. supported by local bodies and associations.

Join the Italian Butterfly Monitoring Scheme

If you enjoy spending time in nature and love butterflies, you are welcome to join the Italian Butterfly Monitoring Scheme. Participating in the scheme is simple:

1. visit our website (https://butterfly-monitoring.net/it) to create your personal account;
2. choose a place near your home, or a convenient place where you can observe butterflies;
3. contact your national coordinator and propose your transect by writing to help.itbms@gmail.com
4. design your transect together with our technicians;
5. download our App;
6. download our manual and identification guides.

Should you experience any problems with the website or app, please do not hesitate to contact us at help.itbms@gmail.com.

Enjoy your time in nature monitoring butterflies!

6. Acknowledgements

The ITBMS coordination would like to thank all those who contributed to the creation of the national scheme. The wonderful results that have been achieved are the result of the support of the many volunteers, institutions, and all parties involved.

Special thanks also go to the Italian Lepidopterological Association, which sponsors each national BMS Italy workshop.

References

Balletto, E., Cassulo, L. A., & Bonelli, S. (2014). An annotated checklist of the Italian butterflies and skippers (Papilionoidea, Hesperiioidea).

Pollard, E., & Yates, T. J. (1994). Monitoring butterflies for ecology and conservation: the British butterfly monitoring scheme. Springer Science & Business Media.

Sevilleja, C. G., van Swaay, C. A. M., Bourn, N., Collins, S., Settele, J., Warren, M. S., … & Roy, D. B. (2019). Butterfly transect counts: manual to monitor butterflies. Wageningen: Butterfly Conservation Europe & De Vlinderstichting/Dutch Butterfly Conservation.

Thomas, J. A. (2005). Monitoring change in the abundance and distribution of insects using butterflies and other indicator groups. Philosophical Transactions of the Royal Society B: Biological Sciences, 360(1454), 339-357.

van Swaay, C. A., Dennis, E. B., Schmucki, R., Sevilleja, C. G., Aghababyan, K., Åström, S., … & Roy, D. B. (2020). Assessing Butterflies in Europe-Butterfly Indicators 1990-2018: Technical report.

Warren, M. S., Maes, D., van Swaay, C. A., Goffart, P., Van Dyck, H., Bourn, N. A., … & Ellis, S. (2021). The decline of butterflies in Europe: Problems, significance, and possible solutions. Proceedings of the National Academy of Sciences, 118(2).

Lycaena alciphron

Annex I: Butterfly species counts in 2022

Table 2: Species detected in 2022

Specie	Individui	Specie	Individui	Specie	Individui	Specie	Individui
Aglais io	44	Cupido minimus	14	Leptidea sinapis/juvernica	2	Phengaris alcon	1
Aglais urticae	18	Cupido osiris	4	Leptotes pirithous	113	Phengaris arion	3
Albulina optilete	1	Cyaniris semiargus	33	Libythea celtis	7	Pieris brassicae	181
Anthocharis cardamines	256	Erebia aethiops	117	Limenitis camilla	8	Pieris ergane	1
Apatura ilia	25	Erebia albergana	104	Limenitis reducta	31	Pieris mannii	16
Aphantopus hyperantus	3	Erebia epiphron	7	Lycaena alciphron	6	Pieris napi	395
Aporia crataegi	39	Erebia euryale	12	Lycaena dispar	21	Pieris rapae	1025
Argynnis paphia	119	Erebia ligea	23	Lycaena phlaeas	327	Plebejus argus	122
Aricia agestis	485	Erebia melampus	130	Lycaena tityrus	209	Plebejus argyrognomon	3
Boloria dia	11	Erebia montana	43	Lycaena virgaureae	124	Plebejus idas	74
Boloria euphrosyne	2	Erebia pronoe	192	Lysandra bellargus	37	Polygonia c-album	53
Boloria napaea	1	Erebia tyndarus	153	Lysandra coridon	37	Polyommatus icarus	1470
Boloria selene	4	Erynnis tages	91	Lysandra hispana	9	Polyommatus thersites	40
Boloria thore	2	Euchloe ausonia	11	Maniola jurtina	1076	Pontia daplidice	4
Boloria titania	17	Euchloe crameri	10	Melanargia arge	7	Pontia edusa	136
Brenthis daphne	15	Euphydryas aurinia	3	Melanargia galathea	607	Pseudophilotes baton	4
Brintesia circe	237	Fabriciana adippe	9	Melanargia russiae	31	Pyrgus alveus	1
Cacyreus marshalli	26	Fabriciana niobe	9	Melitaea athalia	57	Pyrgus armoricanus	12
Callophrys rubi	18	Favonius quercus	10	Melitaea celadussa	86	Pyrgus malvoides	80
Carcharodus alceae	50	Gegenes nostrodamus	3	Melitaea cinxia	12	Pyrgus sidae	1
Carcharodus lavatherae	1	Glaucopsyche alexis	31	Melitaea deione	1	Pyronia cecilia	9
Celastrina argiolus	156	Gonepteryx cleopatra	36	Melitaea diamina	21	Pyronia tithonus	21
Charaxes jasius	35	Gonepteryx rhamni	142	Melitaea didyma	502	Satyrium ilicis	17
Coenonympha arcania	84	Hamearis lucina	1	Melitaea ornata	1	Satyrium spini	7
Coenonympha gardetta	365	Hesperia comma	12	Melitaea phoebe	75	Satyrus ferula	55
Coenonympha pamphilus	1002	Heteropterus morpheus	1	Melitaea varia	1	Scolitantides orion	43
Coenonympha pamphilus ssp. lyllus	1	Hipparchia fagi	13	Minois dryas	84	Speyeria aglaja	41
Colias alfacariensis	10	Hipparchia semele	17	Neptis rivularis	20	Spialia sertorius	9
Colias crocea	543	Hipparchia statilinus	16	Nymphalis antiopa	1	Thecla betulae	1
Colias hyale	2	Hyponephele lycaon	5	Nymphalis polychloros	17	Thymelicus acteon	40
Colias palaeno	11	Iphiclides podalirius	139	Ochlodes sylvanus	114	Thymelicus lineola	22
Cupido alcetas	59	Issoria lathonia	67	Ochlodes venata	7	Thymelicus sylvestris	30
Cupido argiades	93	Lampides boeticus	18	Papilio machaon	157	Vanessa atalanta	194
Lasiommata maera	42	Lasiommata petropolitana	4	Pararge aegeria	191	Vanessa cardui	97
Lasiommata megera	563	Leptidea sinapis	104	Parnassius apollo	28	Zerynthia cassandra	24

7. Annex II: Recorders list for 2022

Table 3: : List of recorders with the relative site name for 2022

Transetto	Volontari
Cittadella	Deandrea Giuseppe/ Allera Beatrice/Pilotto Paola
Val di Viso	Lorenzetti Lucrezia
Grotta Sant'Antonio	Maria Giovanna Casanova
Cirimilla	Giacomo Gola
Colla di Ortovero (monte Chiesa)	Matteo Serafini
Infusino Taverna	Martco Infusino
Bosco Vedro	Marco Ricci, Antonio Gennaro, Cecilio Uglietti e Giancarlo Zaccala
Costaz 1	Gianna Bosio
Monte Mao	Marco Bonifacino
La Rosa	Leonardo Favilli
Costa del Vento, Montalto Pavese PV - IOLAS 01	Associazione Iolas
Rocca de Baldi_Campo Alessandro Gioda	Comizio Agrario di Mondovì,
Curino, ex miniera a cielo aperto	Lucio Bordignon
Riserva naturale Bessa	Ticino e Lago Maggiore, E.G.A.P.
Riserva Naturale Orientata Monticchie	Matteo Grechi, Alice Locatelli, Marco Piacentini, Tiziana Impollonia Laura Codecà, Linda Mazzoleni, Giulia Mazzocchi, Angelo Dadda, Marco Polonioni
GOLENA BASTIONI BUOVO E CORNARO	Associazione Comitato Mura di Padova,
Una Garlanda	Azienda "Una Garlanda"
Attiggio Cesi	Tania Pecci
Tor Paterno	Marica Furini
Cornalin	Cecilia Noce
Leonardo Favilli	Favilli, Leonardo
Santa Lucia Portoferraio	Giulio Colombo
CantonTea1	Simone Bocca
Riserva di Decima Malafede 1	Arianna Giannini, Giulia Bacco
Zoom Torino	Yari Roggia
Turin Mirafiori	Lorenzo Bianco, Guido Doglione
Valle Morosina - Ghebo storto	Luca Sattin
Santa Teresina Via Grassaga	Raffaella Marcon
San Donà di Piave (Grassaga)	Raffaella Marcon
Foresteria dell'Oasi	Alma Cozzolino, Marco Dogliotti, Laura Martinelli, Beatrice Gammino
Nuovi Stagni	Alma Cozzolino, Marco Dogliotti, Laura Martinelli, Beatrice Gammino
Bosco Campagnazza	Vanni Polo
Pertusella/Cesate	Dario Donzelli
Capo Rama	Laura Genco
Parco Nazionale Val Grande	Andrea Mosini, Alessandra Pollo
Meisutera	Elio Giuliano
Lama lunga	Gianluca Stasolla
Isola di Sant' Erasmo	Carlo Marinello
Canale Acque Alte	Fausto Leandri
Stablet - TN	Luca Pedrotti
Pejo paese	Luca Pedrotti
Maleda - Forborida	Luca Pedrotti
Pravedela	Luca Pedrotti
casale	Italian Butterfly Group,
Borgata Piane	Roberto Galati
Turin - Parco Piemonte	Lorenzo Bianco, Guido Doglione
Orto Botanico Università della Calabria	Antonio Mazzei
La Cassinazza 1	Roberto Garavaglia
Davoli	Margherita Lombardo
Bosco di Agognate	Marco Ricci
SIC Fontana del Guercio	Parco delle Groane e della Brughiera Briantea
SIC pineta di Cesate	Parco delle Groane e della Brughiera Briantea
Bernate Ticino MI - IOLAS 02	Associazione Iolas
Sentiero delle lavandaie	Filippo Bargelli
Rocca Delle Caminate	Silvia Versari
Risorgive del Vinchiaruzzo	Vniccolò Fagotto
JRC Ispra	Xavier Rottlan-Puig, Maria Luisa Paracchini, Ana Montero Castano, Adara Pardo,
Località Anzan Vervò	Elisa Zandra
VIVERE IL PO A CASALE MONFERRATO - Oltreverde	Maria Teresa Bergoglio, Giuseppe, Matteo Paveto, Bruschini, Michele Massone, Alessandra, Valentina, Matteo Paveto
Tontola01	Giuseppe Molinari
Li Rocchi	Margherita Lombardo