

Madeiran Insects Bioblitz Project

Citizen Science Activities Report



Thais Coppen | Hugo Miguel Silva | Luena Soraya | Emily Hartop | Gonçalo Gomes
Paula Riccardi | Dora Aguín-Pombo

University of Madeira

October 2024



Madeiran Insects Bioblitz Project

Citizen Science Activities Report

Thais Coppen

Hugo Miguel Silva

Luena Soraya

Emily Hartop

Gonçalo Gomes

Paula Riccardi

Dora Aguín-Pombo

UNIVERSITY OF MADEIRA

OCTOBER 2024

Thais Coppen

Universidade da Madeira
Faculdade de Ciências da Vida, Campus da Penteada 9020-105
Funchal Madeira - Portugal

Hugo Miguel Silva

Universidade da Madeira Madeira - Portugal
Faculdade de Ciências da Vida, Campus da Penteada 9020-105
Funchal Madeira - Portugal

Luena Soraya

Universidade da Madeira Madeira - Portugal
Faculdade de Ciências da Vida, Campus da Penteada 9020-105
Funchal Madeira - Portugal

Emily Hartop

Norwegian University of Science and Technology - Norway

Gonçalo Gomes

Universidade da Madeira Madeira - Portugal
Faculdade de Ciências da Vida, Campus da Penteada 9020-105
Funchal Madeira - Portugal

Paula Riccardi

Museum für Naturkunde
Leibniz-Institut für Evolutions- und Biodiversitätsforschung
Berlin - Germany

Dora Aguíñ-Pombo

Universidade da Madeira
Faculdade de Ciências da Vida, Campus da Penteada 9020-105
Funchal Madeira - Portugal

Pictures taken by: Luena Soraya, Thais Coppen, Hugo Silva, Paula Riccardi, Emily Hartop.

How to cite this publication: Coppen TM., Silva HM., Soraya L., Hartop E., Gomes G., Riccardi P. and Aguíñ-Pombo, D. 2024. Madeiran Insects Bioblitz Project - Citizen Science Activities Report. University of Madeira, Madeira, Portugal. 20 + 4 pp

ACKNOWLEDGMENTS

The project team extends its gratitude to all people and organisations that contributed to the success of the project:

Institute of Evolutionary Biology (CSIC-Universitat Pompeu Fabra, Barcelona), the primary contractor for this project, which received support from the Biodiversity Genomics Europe (BGE) initiative. This contract was funded by the European Union's Horizon Europe research and innovation program (grant agreement no. 101059492), with additional co-funding from the Swiss and British governments.

Biologists Beatriz Gomes, Mafalda Abreu, and Rui Marques, along with Francisco Silva, all collaborating with the Insects Collection of the University of Madeira (UMACI), for their support in all stages of the project: fieldwork, workshop preparation, and the dissemination of citizen science activities, greatly enhanced the project's reach and impact.

Natural History Museum of Funchal, with especial appreciation for Dr. Ricardo Araújo, Director of the Museum, and the entomological curator Ysabel Margarita, for their warm hospitality in hosting the insect Bioblitz event. Their extensive support in organizing and promoting this important activity was crucial to its success.

Professor António Brehm and his team at the Human Genetics Laboratory, as well as **Professor José Câmara** and his team at the Chemistry Research Centre of the University of Madeira (CQM), for providing access to the -80°C freezers, which were essential for sample storage throughout the project.

Professor Dr. Rosa Gouveia, President of the Faculty of Life Sciences, who granted permission to use the Pedagogical Biology Laboratory, making possible the insect sorting and Diptera identification workshop.

Dr. Nuria Escudero and **Dr. Rita Monteiro** from the Institute of Evolutionary Biology (CSIC-Universitat Pompeu, Barcelona), for their critical financial support and assistance in managing the project's online databases, which ensured comprehensive documentation and accessibility.

University of Madeira Staff, particularly **Dr. Catarina Luís** (technician of the pedagogical laboratories), for their assistance with lab materials during sample sorting and the Diptera workshop, **Cristina Camacho** and **Ricardo Câmara** for coordinating laboratory access outside working hours; and the technicians from the Supply and Heritage Unit for their vital support in acquiring project materials and services.

Index

Acknowledgments	i
1. Introduction	2
2. Methodology	3
2.1. <i>Activity Locations</i>	3
2.2. <i>Participant recruitment and engagement strategies</i>	3
2.3. <i>Activities description</i>	4
2.4. <i>Contribution to Project Objectives</i>	5
3. Data Collection	6
3.1. <i>The Diptera Workshop</i>	6
3.2. <i>The insect Bioblitz</i>	8
4. Documentation	10
5. Ethical Considerations	12
6.2. <i>Participant's opinion about the activity content</i>	15
6.3. <i>Recommendation for Future Engagement of participants on activities</i>	16
7. Collaborations and Stakeholder Impact	18
8. Challenges and Future Recommendations	19
9. Conclusion	19
10. Appendices	20

1. INTRODUCTION

Citizen science activities engage members of the public in scientific research, typically through active participation on data collection, analysis, or reporting. This approach enables large-scale data collection that would be difficult, if not impossible, for professional researchers to achieve in their own.

The Madeira Insect Bioblitz (MIB) project aims to explore the genetic diversity of insect species in the Madeira archipelago, focusing particularly on endemic and less studied insect species. The project seeks to generate reference genomes and DNA barcoding information to support species identification and phylogenetic studies, providing essential taxonomic characters for systematic research. Ultimately, the goal is to deepen knowledge of Madeira's rich entomological diversity.

To share project's goals with the public, two citizen science activities were organised. The first was a workshop for technicians and teachers, focusing on Diptera (flies) family identification. The second activity was a Bioblitz, where the public was taught to collect and identify insects in an urban garden.

These events were valuable not only for gathering data but also for raising awareness about the extraordinary diversity of Madeira's insects and the need for its conservation, which is little known to the public.

2. METHODOLOGY

2.1. Activity Locations

The two citizen science activities were conducted in Funchal, Madeira. As the largest city of Madeira, Funchal was chosen to maximize citizen participation. The Workshop on Diptera identification took place at the University of Madeira, aiming to involve participants in sorting specimens collected in the project using Malaise traps and learning to identify the main families of Diptera present in the samples. This activity was held in the Pedagogical Laboratory of the Life Sciences Faculty, which is equipped with all necessary laboratory materials. The Bioblitz was hosted by the Funchal Natural History Museum (MMF), taking place in a small, enclosed garden designed as a butterfly garden, providing an excellent place for observing insects. The project presentation occurred at the museum auditorium, and participants also had the opportunity to visit the entomological museum's collections.

2.2. Participant recruitment and engagement strategies

For the Diptera workshop, our target audience consisted of participants with backgrounds in entomology and taxonomy, who play critical roles in nature conservation efforts on the Madeira archipelago. This group included technicians from public service sectors, such as Agriculture and Forest and Nature Conservation, museum curators, municipal staff, and biology teachers. The maximum number of allowed participants was 15.

The Bioblitz was designed to attract a broader audience, including experienced naturalists and the local community, with participants of varying ages and expertise. This early contact with insects fosters curiosity and can inspire interest in studying Madeira's rich entomological diversity. The Bioblitz was divided into several activities, each with a limited number of participants to ensure a personalised learning experience, with a maximum number of 20 allowed participants.

To promote the workshop and the bioblitz, a poster was created (see Annex I), including information about the scheduled activities, registration links, and information on locations. This information was disseminated via email to potential participants and partners. The workshop details were shared through the University of Madeira Insect Collection (UMACI) social media platforms and across the university's communication channels, enhancing visibility and outreach. For the Bioblitz, the Natural History

Museum of Funchal employed additional recruitment strategies by promoting the activity through its communication channels.

To increase engagement, participants received certificates of participation, copies of presentations, and a flyer detailing the MIB project. At the end of both activities, participants' feedback and suggestions were collected using an online questionnaire.

2.3. *Activities description*

The Diptera workshop was led by Diptera specialist Dr. Paula Riccardi. It comprised a theoretical component that provided an overview of Diptera taxonomy, highlighting the key characters essential for identifying different families of flies, followed by a practical section where participants sorted and identified specimens collected during the MIB project using Malaise traps. The identification process was supported by pictorial keys. After identifying the specimens, each participant stored and labelled them. They compared and confirmed their identifications with a small reference collection of Diptera families prepared in advance by the instructor, which served as a voucher for the MIB project held at UMACI. This emphasis underscored the essential role of taxonomy in effective conservation strategies and species management, highlighting the need for new taxonomists in Portugal.

The Bioblitz began with a brief overview of the MIB project to provide the participants with essential context. A flyer containing key project information, covering both field and laboratory tasks, was distributed (see Annex II). Participants were then split into two groups, with each group having one hour session to visit the museum's entomological collections and received an introduction to basic insect anatomy using magnifiers under the guidance of the museum curator Dr. Ysabel Margarita, who utilized identification guides. The second hour consisted of an outdoor activity in the museum's garden, where participants collected and identified insects, learning about sampling techniques using sweeping nets and Malaise traps. Collected specimens were identified with the assistance of monitors. Participants were introduced to the citizen science platform iNaturalist, as a tool for ongoing species recording. The final gathering allowed each group to share and interpreted their observations.

The visit the natural History Museum aimed to engage participants in exploring Madeira's natural heritage by providing a historical context.

2.4. Contribution to Project Objectives

Participants gained valuable insights into local fauna, the ecological roles of insects, and their significance for the conservation of natural habitats of the Madeira archipelago. The workshop attracted participants with diverse backgrounds, including technicians, educators and researchers. It contributed to capacity building through hands-on species identification, empowering participants to share this knowledge within their communities and strengthening local conservation efforts. Furthermore, participants become familiar with local regulations, promoting responsible stewardship of Madeira's biological heritage and its importance for supporting sustainable development models. Additionally, their collaboration in insect sorting and observation contributed to enhancing the University of Madeira Insect Collection (UMACI), an essential resource for ongoing research and future studies. Collaboration with local institutions responsible for Madeira's natural heritage has already sparked about future similar initiatives.

3. DATA COLLECTION

3.1. The Diptera Workshop

The insects used in the workshop were collected from samples obtained during the MIB project, using six Malaise traps placed at different locations across Madeira Island (Fig. 1A). As a result of the workshop, a Diptera reference collection was established, comprising 63 specimens representing 44 different species (Fig. 1B).

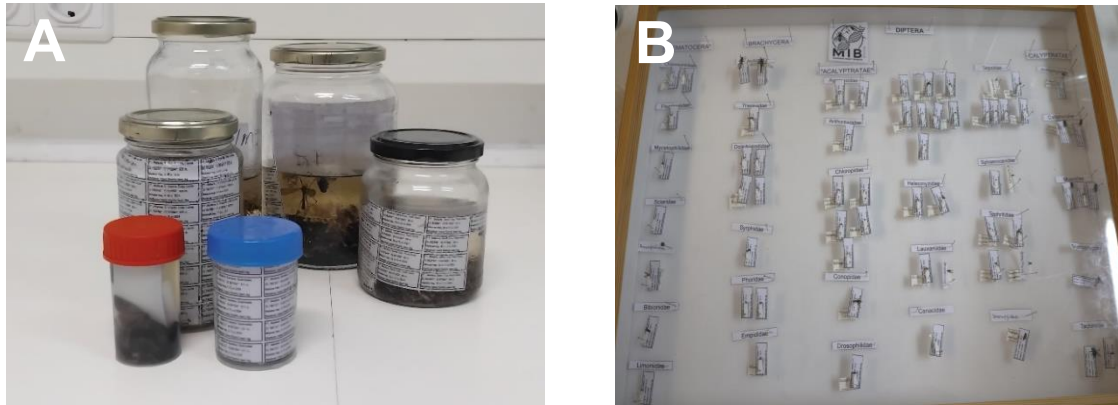


Figure 1. A. Biological samples collected by Malaise traps on six different locations on Madeira Island. B. The Diptera reference collection, used in the Diptera workshop.

Detailed information regarding each Malaise trap is detailed in Table 1.

Table 1. Geographic and ecological information of Diptera samples from Malaise traps studied by the participants in the workshop.

Malaise Trap	Locality	Latitude	Longitude	Altitude (m)	Date	Habitat
MT1	Chão dos Louros, São Vicente	32.760255°	-17.015994°	825	4-18/07/2024	Stinkwood Laurel Forest
MT2	Chão da Ribeira, Porto Moniz	32.793799°	-17.113664°	410	4-18/07/2024	Stinkwood Laurel Forest
MT4	Bica da Cana, São Vicente	32.754635°	-17.061207°	1530	29/06-10/07/2024	High-Heath Shrubland
MT5	Porto Novo, Santa Cruz	32.662846°	-16.811693°	66	30/06 - 12/07/2024	<i>A. barbujana</i> Laurel Forest
MT6	Rabaçal, Calheta	32.753462°	-17.128853°	1244	8-16/07/2024	High-Heath Shrubland
MT8	Queimadas, Santana	32.780733°	-16.907004°	911	5-13/07/2024	Stinkwood Laurel Forest

Participants were provided with laboratory and entomological materials for identifying insects at the family level (Annex III). They successfully identified 33 samples, resulting in a total of 18 identified families. In some rare instances, participants were also able to identify up to the genus and species level, with confirmations provided by Dr. Riccardi. The families and species identified are listed in Table 2.

Table 2. Families and species of Diptera identified by the participants on the Workshop of Diptera.

Malaise trap	Families	Genus/Species
MT1	Calliphoridae	<i>Stomorphina lunata</i>
	Anthomyiidae	
	Tipulidae	
MT2	Syrphidae	<i>Melanostoma wollastoni</i>
	Agromyzidae	
	Sepsidae	
MT3	Dolichopodidae	
	Anthomyiidae	
	Lauxaniidae	
	Sciaridae	
	Dolichopodidae	
	Sciaridae	
	Chiromonidae	
	Lauxaniidae	
	Tipulidae	
	Ceratopogonidae	
	Psychodidae	
	Sciaridae	
	Agromyzidae	
	Cecidomyiidae	
	Asilidae	
MT5	Tachinidae	<i>Anthomyia pluvialis</i>
	Anthomyiidae	
	Calliphoridae	
	Dolichopodidae	
	Lonchaeidae	
	Tephritidae	
MT6	Drosophilidae	<i>Episyrphus balteatus</i>
	Agromyzidae	
	Sciaridae	
	Calliphoridae	
	Anthomizidae	
	Syrphidae	
Lauxaniidae		

3.2. The insect Bioblitz

The species identified by the two groups of participants during the Bioblitz activity are shown in Table 3. A total of 22 different species were recorded, with 14 species identified by Group 1 and 16 species by Group 2.

Table 3. Insect species observed by participants of both groups, along with the number of individuals and their origin. **NAT** = Native, **END** = Endemic, **int** = introduced, **?** = uncertain status, **N/A** = Not Applicable, **99*** = many individuals observed.

Group 1 (10h00-11h00)			Group 2 (11h00-12h00)		
Classification	Nº individuals	Origin	Classification	Nº individuals	Origin
<i>Danaus plexippus</i>	4	?	<i>Danaus plexippus</i>	3	?
<i>Nezara viridula</i>	3	int	<i>Nezara viridula</i>	6	int
<i>Syritta pipiens</i>	1	NAT	<i>Syritta pipiens</i>	1	NAT
<i>Amegilla quadrifasciata</i>	3	END	<i>Amegilla quadrifasciata</i>	1	END
<i>Spilostethus pandurus</i>	99*	NAT	<i>Spilostethus pandurus</i>	99*	NAT
<i>Harmonia axyridis</i>	99*	int	<i>Harmonia axyridis</i>	99*	int
<i>Paragus sp.</i>	1	NAT	<i>Lampides boeticus</i>	1	NAT
<i>Leptotes pirithous</i>	2	int	<i>Eristalis tenax</i>	1	NAT
<i>Pieris rapae</i>	2	int	<i>Sceliphron caementarium</i>	1	int
Syrphidae	1	N/A	<i>Polistes dominula</i>	1	NAT
Vespidae	1	N/A	<i>Episyrphus balteatus</i>	2	NAT
Culicidae	1	N/A	<i>Hippodamia variegata</i>	99*	int
Aphididae	3	N/A	<i>Anthydium sp.</i>	3	int
Miridae	1	N/A	Miridae	1	N/A
-	-	-	Aphididae	99*	N/A
-	-	-	Formicidae	1	N/A

Both groups were able to observe seven native and introduced species, along with an endemic subspecies (Fig. 2). All participants successfully identified species, six were identified to the family level. All participants successfully identify the following species: *Danaus plexippus*, *Amegilla quadrifasciata* spp. *maderae*, Aphididae, *Syricta pipiens*, *Spilostethus pandurus*, *Nezara viridula*, Miridae and *Harmonia axyridis*. The most frequently observed species were *Harmonia axyridis*, and *Spilostethus pandurus*.

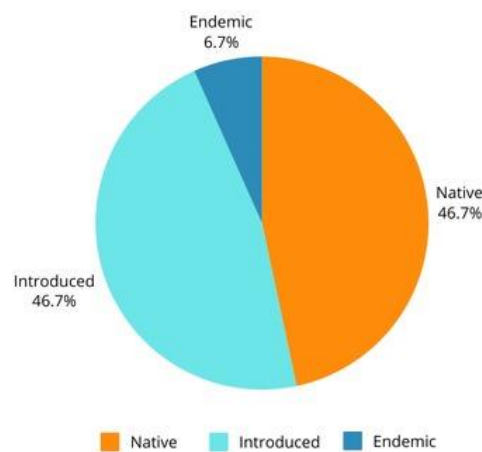


Figure 2. Insect species observed classified according to their origin.

The collected data contribute to understanding insect diversity and abundance in urban gardens, information that is largely unknown in Madeira. Notably, the presence of endemic species in urban gardens underscores their importance for conservation. Despite being environments where people live and interact daily, gardens are playing a crucial role in fostering greater public appreciation of insects.

Urban ecosystems are valuable for explaining the establishment of many new alien species in gardens, which often become invasive, a significant concern in Madeira. By encouraging the public to observe, photograph, and report these species, the scientific community can obtain updated information necessary for authorities to manage and mitigate the impacts of invasive species.

4. DOCUMENTATION

Public participation in the workshop and Bioblitz activities was documented through photography (Fig. 3 and Fig. 4). Over 100 photos were taken, capturing key moments and interactions. At the end of both activities, a group photo of all participants was always taken (Fig. 5).



Figure 3. Photos of activities of participants in the Diptera workshop taken by the MIB team.



Figure 4. Bioblitz photos taken by the MIB team.

These photos not only provide a visual record of the activities conducted during the citizen science activities of MIB project but will also be used for future outreach efforts. The best photos were selected and organised in a folder with an open access [link](#)



Figure 5. Group photos of participants in the MIB citizen science activities. A. Participants in the Diptera Workshop. B. participants in the Bioblitz activity.

5. ETHICAL CONSIDERATIONS

All participants in the citizen science events sign an image consent form provided by the BGE, granting permission for the use of their images in social media posts by the organising entities. The specimens used in the workshop activities were collected after obtaining the necessary permits for capturing and transporting entomological specimens from the Institute for Forests and Nature Conservation (IFCN). All collected specimens were from non-threatened species, and their habitats were disturbed. The conservation status of each species was previously verified using the IUCN Red List prior to collection.

This topic was discussed with all the participants, emphasizing key measures to protect biodiversity and minimize disturbance during the activities.

To share the results of the activities fairly and equitably, this report will be sent to the project's main partners via e-mail and will also be accessible on our website: www.entomoteca.web.uma.pt/mib, where can be download and read it.

6. SOCIETAL IMPACT

6.1. General Feedback from participants about the activities

The Diptera workshop significantly impacted the participants, as reflected in the feedback from 10 out of 15 participants. Overall, the workshop was well-received, with 100% of attendees rating their experience as “Very Satisfactory” to “Satisfactory” (Fig. 6).

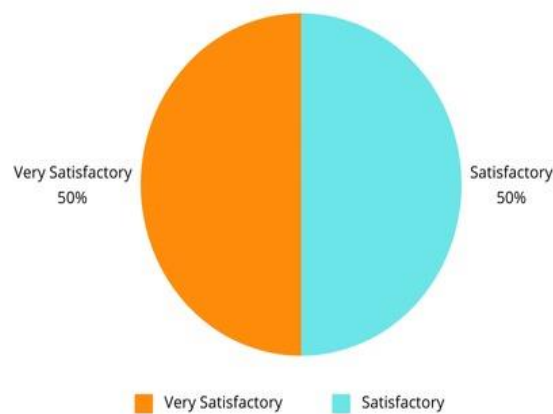


Figure 6. Participants' opinion on the Diptera workshop. Answers to the question “How do you rate the Diptera Workshop overall?”, with “Very satisfactory”, “Satisfactory”, “Neutral”, “Unsatisfactory”, and “Very Unsatisfactory” as possible answers.

Participants expressed appreciation for the quality of instruction, the relevance of the content of the theoretical content, and the opportunity to engage with peers in the field of entomology. All participants rated the facility conditions as “Good” to “Excellent”. However, 40% of the participants said that the workshop duration was “Very Short,” suggesting that more time would enhance their learning experience. Regarding event promotion of the events and workshop materials, nearly all of participants (90%) found them to be clear and informative. The Bioblitz event was also positively evaluated, with 10 out of 20 participants responding to the questionnaire. Eighty per cent rated the overall activity as “Very Satisfactory”, while 20% rated it as “Satisfactory” (Fig. 7).

When asked about facility conditions, 80% found that the Natural History Museum to be an "Excellent" location for the activities (Fig. 8).

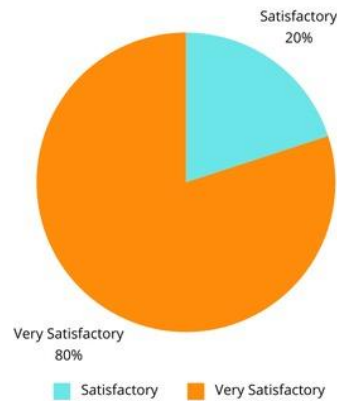


Figure 7. Participants' opinion on the Bioblitz event. Answers to the question "How do you rate the Bioblitz activity overall?", with "Very satisfactory", "Satisfactory", "Neutral", "Unsatisfactory", and "Very Unsatisfactory" as possible answers.

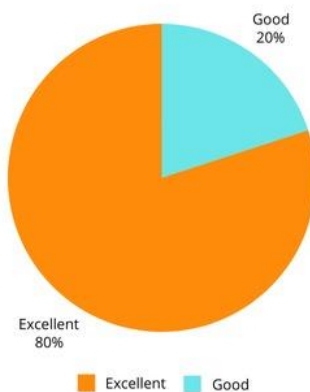


Figure 8. Participants' opinion on the question "How do you rate the facility conditions?", with "Excellent", "Good", "Adequate", and "Insufficient" as possible answers.

Regarding the duration of the activities, 30% felt it was "Very Short", suggesting that extending the duration could improve participant engagement and learning. As for the promotion of activities, 80% stated that the information provided was clear and informative. Most participants reported learning about the activities through personal connections (50%) and social media (50%), highlighting the need to enhance outreach efforts for wider community engagement.

6.2. Participant's opinion about the activity content

Participants evaluated the theoretical section of the Diptera workshop, positively noting the clarity and organisation of the content. One participant remarked, "The theoretical component was very well explained, showcasing the instructor's experience and passion for the subject". Eighty percent of the participants felt that the theoretical activities were well-planned, although some suggested incorporating more images and detailed captions (Fig. 9).

For the practical activities, many participants appreciated the hands-on experience, emphasizing the value of working with real specimens and using taxonomic keys to enhance their understanding. Suggestions for improvement included offering additional practical sessions, extending time for identification activities, and providing guided observations to reinforce learning.

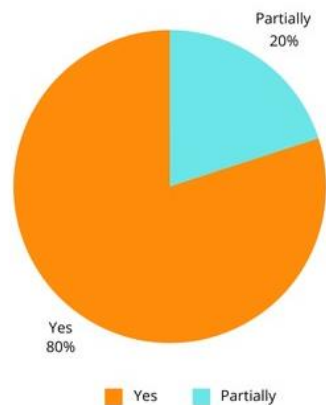


Figure 9. Participants' opinion on the Diptera Workshop. Answers to the question "Were the theoretical activities well-planned and organised", with "Yes", "Partially", and "No" as possible answers.

Feedback on the Bioblitz event highlighted the high quality of instruction received, with participants noting that the instructors were clear and effective in their explanations. Most participants (80%) rated the educational materials as adequate. However, some suggested including additional resources, such as guides or reference materials. For the outdoor activity 60% reported that their expectations were met, and 60% stated that the content was well-organized and informative. Many participants (40%) expressed a desire for longer hands-on activities.

6.3. Recommendation for Future Engagement of participants on activities

70%

of the participants reported that the Diptera Workshop had significantly contributed to their knowledge about **flies taxonomy and identification**, increasing the confidence to apply new skills.

Participants expressed strong interest in future workshops. They indicated a willingness to recommend this experience to potential future participants, and all expressed a desire to participate in additional workshops organised by the UMACI. They emphasised that such workshops could play an important role in increasing a community of informed entomologists and conservationists.

100%

of the participants reported that the Bioblitz expressed a newfound enthusiasm for **engaging in future citizen science activities**.

In summary, the Diptera workshop not only enhanced the participant's knowledge and skills but also contributed to building a network of professionals committed to biodiversity study and conservation in Madeira. Positive testimonials and constructive feedback highlight the societal benefits of the workshop and its potential for ongoing impact in Madeira.

Regarding the Bioblitz, despite challenges such as the limited duration of activities and the need for improved communication strategies, participant feedback was overwhelmingly positive. All attendees expressed their intent to recommend the activities to others and showed interest in participating in similar initiatives organised by UMACI in the future. Participants reported an increased in skills related to taxonomy and entomology, as well as greater confidence in engaging with scientific research. Many expressed a stronger commitment to environmental stewardship, underscoring the project's role in raising awareness of local environmental issues and encouraging residents to engage in scientific inquiry and advocate for local conservation concerns.

7. COLLABORATIONS AND STAKEHOLDER IMPACT

Local organisations, in addition to becoming active partners in the project, played a crucial role in the disseminating activities. Overall, the project positively impacted various stakeholders. Collaborating with local entities-built network capacity and fostered a sense of community and belonging. Through citizen science activities, the project reached a diverse audience and stimulated discussions on the importance of preserving local ecosystems and lesser-known groups, such as insects. These collaborations between scientific researchers and governmental agencies enhanced the credibility of our project.

The partnership with the Natural Museum of Funchal proved fruitful, supporting the logistical aspects of the Bioblitz event and emphasizing the importance of natural collections and the historical context of natural history studies in Madeira. Staff from the environmental education division of the Funchal Ecological Park, a municipal branch of the Funchal City Hall, dedicated to nature conservation, participated in the Diptera workshop to deepen their knowledge of taxonomy and entomology for future inclusion of insects in their educational programs. Additionally, staff from the Regional Secretariat for Agriculture, Fisheries, and Environment engaged in our activities to develop expertise in monitoring insect populations.

The Institute of Forests and Nature Conservation provided the necessary sampling permits for our fieldwork, ensuring compliance with environmental regulations. The participation of teachers from the Francisco Franco Secondary School was also significant; their goal was to enhance their knowledge of insect taxonomy, which is expected to benefit future generations engaged in citizen science activities.

8. CHALLENGES AND FUTURE RECOMMENDATIONS

A significant challenge of the project was engaging an audience with diverse backgrounds, as participants and stakeholders exhibited varying levels of familiarity with scientific concepts. Additionally, the short duration of the project-imposed time constraints on execution and participant engagement. Communication strategies also required improvement; the limited number of followers on our social media channels, coupled with the absence of communication professionals, hindered effective promotion of activities to a broader public.

The insights gained from these challenges provide a valuable foundation for future initiatives. Based on our experience, it is advisable that future outreach for citizen science activities be planned during the initial phase of the project, clearly defining objectives for the community to enhance our understanding and participation.

Moreover, it is essential for financial entities to implement standardized, clearly written communication protocols to facilitate institutional collaboration. Simplifying paperwork with user-friendly templates and clear terminology would reduce errors and streamline processes.

9. CONCLUSION

This report has demonstrated that Madeira Insect Bioblitz (MIB) project, while focusing on exploring the genetic diversity of native, endemic and lesser-known insects in the Madeiran archipelago, successfully engaged the community through the integration of citizen science activities. These events not only provided new research data but also received positive feedback from participants and partners, underscoring the effectiveness and relevance of the activities.

The MIB project expanded scientific knowledge about Madeira's entomological diversity while strengthening education and collaboration with local community. It established new partnerships for biodiversity studies and future conservation initiatives, showcasing the potential of citizen science to foster engagement and enhance scientific understanding in the region.

10. APPENDICES

Annex I. Posters used in the dissemination of the citizen science activities

 **Inscribe-te**



Workshop
Prático de Identificação
No âmbito do projeto "Madeira Insects Bioblitz" (MIB)

Máx. 15 participantes

O Fantástico
Mundo das Moscas da Madeira

Tem interesse em entomologia?
Quer aprender sobre a diversidade de moscas na ilha da Madeira e adquirir habilidades para identificá-las?

 **22**
Julho

9h30 - 13h00
Campus da Penteada,
Universidade da
Madeira

Organização:
 **COLUÇÃO DE INSETOS**
Universidade da Madeira

 **UNIVERSIDADE da MADERA**

 **fan Natur**
MUSEUM FÜR
NATURKUNDE
BERLIN

Co-Financiador:
 **European Union**
 **ERDF**
 **ERDF**



Formadora
Dra. Paula Riccardi

Inscreva-se



Máx. 10 participantes

Bioblitz de Insetos

No âmbito do projeto "Madeiran Insects Bioblitz" (MIB)

O Fantástico Mundo dos Insetos do Funchal

Tem interesse em entomologia?
Quer aprender sobre a diversidade de insetos
que existem na zona urbana do Funchal?



09h30 - 12h00

Museu de História
Natural do Funchal

Organização:



Co-Financiador:




Anfitrião:




MMF
MUSEU DE
HISTÓRIA
NATURAL
FUNCHAL

Annex II. Informative flyer with project content used in Bioblitz Workshop

FIELD
TEAM





LAB





CITIZEN SCIENCE







<https://entomoteca.web.uma.pt/mib/>


Scientific Coordination:



Scientific Partners:



Financed by:



PI's

Dora Aguin-Pombo
Paula Riccardi

Scientific Comission

António Franquinho (Researcher)
Emily Hartop (Researcher)
Hugo Silva (Researcher)
Gonçalo Gomes (Student)
Luena Soraya (Student)
Thais Coppem (Intern)

INTRODUCTION
METHODOLOGY
PRELIMINARY RESULTS

INTRODUCTION

The Madeiran Insects Bioblitz (MIB) project is a short-term initiative (April – October 2024) developed in close collaboration with the Biodiversity Genomic Europe (BGE) consortium. The project aims to provide essential reference genomes for the correct identification of insect species from Madeira through genomics. MIB results will be fundamental to addressing the global biodiversity crisis in vulnerable environments, such as island systems.

OBJECTIVES


- Create Reference Genomes**
Metadata will improve taxonomic knowledge and species identification practices using molecular tools.
- 100 Species Sampling**
Sampling will be focused on hyperdiverse and little-known taxa (= dark taxa), of small size and complex taxonomy.
- Improve Endemism Knowledge**
Promoting fundamental advances in conservation, science and policy within the BGE.

PROJECT RELEVANCE

Around 60% of the species included in the main groups studied are endemic and 74% are not listed in GOaT (Genomes on a Tree) or do not belong to any other genomics project.


Field

Insects were collected using Malaise traps and tapping the vegetation, in various parts of Madeira and Porto Santo.


Lab

Genomic studies were based on genetic and molecular analysis to classify species.




Taxonomic Classification

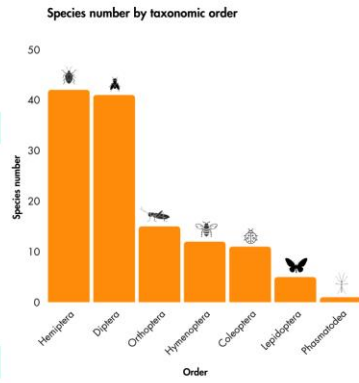
The specimens identification was carried out through morphological analysis, and was based on knowledge of biosystematics.

PRELIMINARY RESULTS

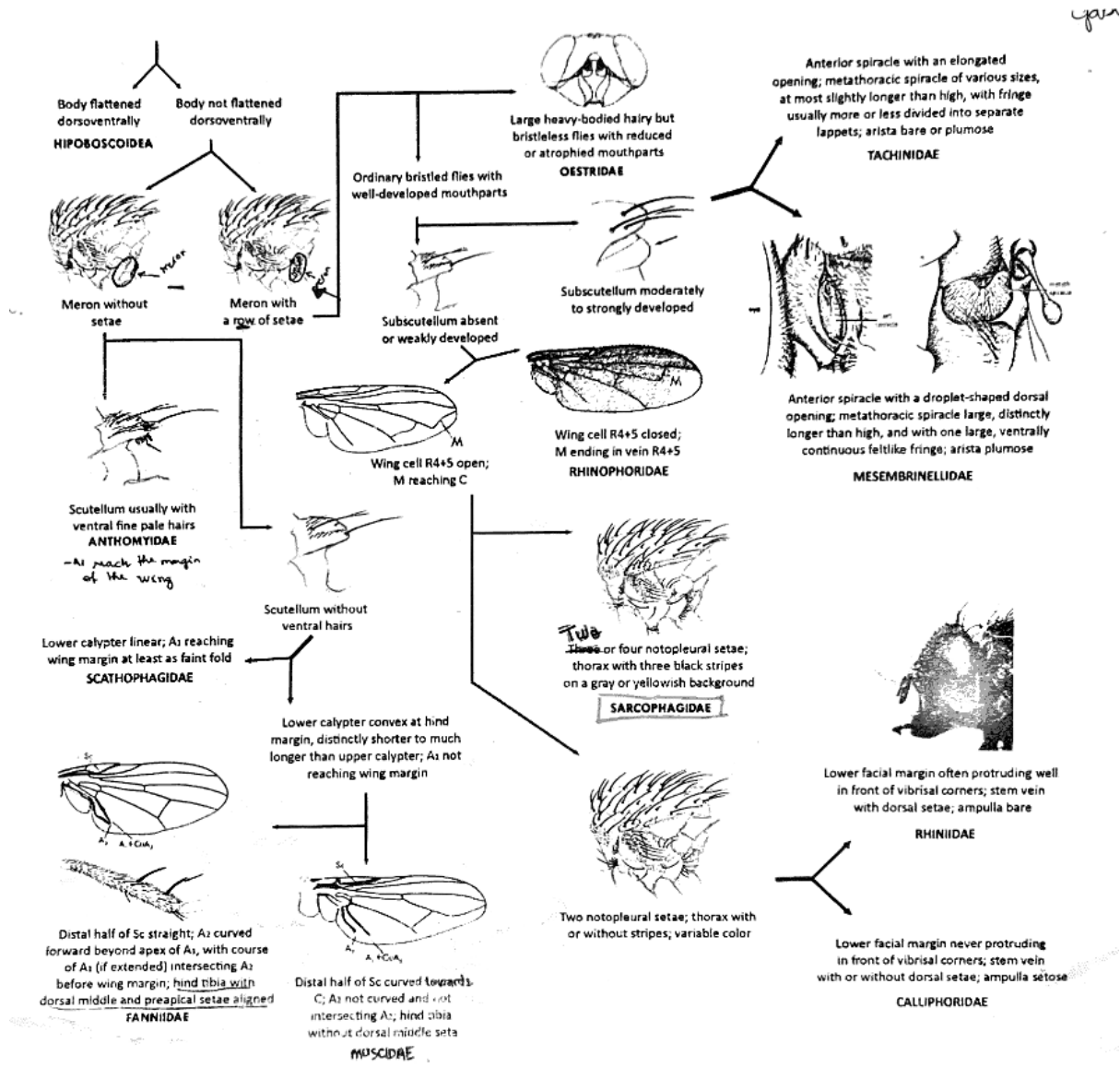
159 Counted species 991 Genome samples 326 Baiting samples 33 Biobanking samples 487 Vouchers

Species number by taxonomic order



The graph illustrates the number of insect species processed by taxonomic order. The orders with the greatest representation were Hemiptera (bedbugs and leafhoppers), Diptera (flies and mosquitoes) and Orthoptera (crickets and grasshoppers).

Annex III. Support documents for the identification of Diptera families, provided to the participants



Plus:

Chapter Diptera in Rafael, J. A., Melo, G. A. R. D., Carvalho, C. J. B. D., Casari, S. A., & Constantino, R. (2024). Insetos do Brasil: diversidade e taxonomia. pp 783-831.