The pollinator information network newsletter

November 5, 2025. Vol. 8, Issue 2

Welcome to the second issue of volume 8 of the *Pollinator Information Network Newsletter*

The *Pollinator Information Network Newsletter* is one of the planned outputs of the project “Diversity of Pollinating Diptera of the Afrotropical Region” funded by the Directorate–General for Development Cooperation and Humanitarian Aid (DGD), as part of the Cooperation Protocol with the RMCA, implemented through the multiannual programmes 2019–2024 and 2024–2029.

In this issue, we report on our sixth training course on the taxonomy and systematics of pollinating Diptera, which took place from 13–24 October at the Grootbos Environmental Centre, Gansbaai, South Africa. During the course, 23 young and emerging entomologists from sub-Saharan Africa received hands-on training. Two of our students also received preliminary training from some of our project partners - a short report on this is included.

John Midgley and Kurt Jordaens conducted a second visit to the African Natural History Research Trust in Leominster (UK) to identify its hover fly and nose fly collections.

This issue also features a spotlight on Tafadzwa Matengo from Sokoine University of Agriculture (Tanzania).

Additionally, you will find announcements of the 13th International Symposium on Syrphidae (ISS 13) and the 11th International Congress of Dipterology (ICD 11). The latest circular on ISS 13 can be found at the end of the *Newsletter* - more information on ICD 11 will come soon. Our latest policy brief on pollinator diversity as a bridge between conservation and agriculture is included at the end of this issue.

We warmly invite everyone interested to contribute to future issues of the *Newsletter* by submitting relevant information, including summaries of research and projects on pollination biology, publications to be highlighted, recent literature, upcoming conferences and symposia, as well as opportunities for collaboration and funding related to plant–pollinator networks. Please send your contributions before 1 February 2026.

Enjoy reading!
the DIPoDIP team

Would you like more updates on the DIPoDIP project ? follow us on Facebook and Instagram !

https://www.facebook.com/pollinatingdiptera/

dipodip.africa

Training course in taxonomy and systematics of African pollinating flies

Gansbaai, South Africa 13–24 October 2025

The objective of our group courses is to provide basic training on identification and biology of African Diptera to emerging African scientists working with insects in diverse contexts. The training consists of ex-cathedra lectures on morphology, classification, identification, identification methods, collection methods and conservation methods of Diptera, with a focus on the target families Syrphidae, Nemestrinidae and Calliphoridae. Practical exercises are used to comment on, and test, the topics presented in the courses. All participants received a basic set of entomological equipment (see picture on the right).

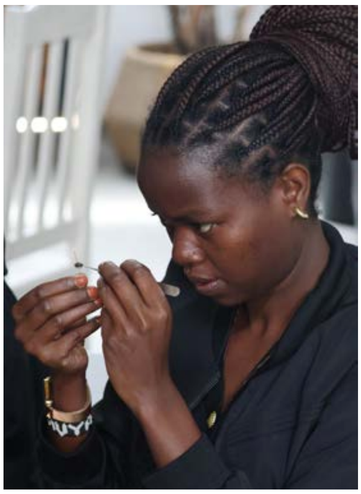
This year's 12 participants came from six different African countries:

Ezechiel Mvukiyemugakiza (Burundi)
Aynalem Sade (Ethiopia)
Anne-Christine Ochola (Kenya)
Kivivya Boniface (Kenya)
Natanael Ndilenga (Namibia)
Esther Sembeo (Tanzania)
Kim Van Den Heever (South Africa)
Kgomotso Morake (South Africa)
Happiness Baloyi (South Africa)
Nomathamsanqa Mkhize (South Africa)
Sarah Mokwena (South Africa)
Marelise Faul (South Africa)

In addition to the 12 participants selected from a competitive pool of applicants, further training was provided to two of our PhD students (Ben De La Fontaine and Thandwa Dlamini), two MSc students (Ivy Taetsane and Robyn Manuel), and two of our technicians (Jabulile Mzizi and Kerry Hunter). The training was led by a team of five senior trainers (Allan Ellis, Catherine Sole, Burgert Muller (see picture above), John Midgley and Kurt Jordaens). For the first time in the history of our courses, the senior trainers were supported by a group of junior trainers, who took the lead in delivering much of the hands-on instruction (see next page). This new approach allowed participants to benefit from a combination of experience and fresh perspectives, enriching the overall learning experience.

Here is the fantastic group of junior trainers! Junior trainers are participants who have already attended one of our previous training courses. They took over many of the training sessions from the senior trainers and were responsible for most of the instructional activities. This year's junior trainers were (from left to right in the picture below): Genevieve Theron (Agricultural Research Council, South Africa), Eugène Sinzinkayo (Burundian Office for the Protection of the Environment, Burundi), Cassandra Barker (KwaZulu-Natal Museum, South Africa), Arjan Engelen (Stellenbosch University, South Africa) and Carly Vlotman (Grootbos Foundation, South Africa). They are now fully capable of independently organizing and conducting similar training courses!

Participants acquired the necessary skills to become established entomologists of the Afrotropical Region which is an important step toward sustainable capacity building in the region. All participants received a well-deserved certificate of participation, and we hope they will share their newly gained knowledge with other young African researchers. In doing so, they contribute to strengthening and expanding the network of entomologists in the Afrotropical Region. The course concluded on a festive note with a pleasant reception, catered by the excellent team led by Alida Groenewald – a perfect ending to two inspiring weeks!



In our next issue of the *PINDIP Newsletter*, we will shine the spotlight entirely on all 12 selected participants !

Bringing Our Training to Life on Film : We were thrilled to welcome Jeremy Shelton from Fishwater Films during the first two days of our training course! Jeremy joined us to capture the excitement and energy of our activities, filming both hands-on fieldwork and classroom sessions. He also interviewed students, junior trainers, and senior trainers, bringing their passion for entomology and conservation to life on screen.

Together with his colleague Otto Whitehead, Jeremy is creating an inspiring promotional film that shows the real-world impact of our entomology training. The film highlights how these courses help early-career researchers grow, connect, and make a difference in understanding and protecting insects across the Afrotropical Region.

But that’s not all! Fishwater Films is also producing two short, captivating films: one exploring fly pollination in the stunning, mass-flowering landscapes of Namaqualand, and another celebrating the amazing diversity and ecological importance of fly pollination more generally.

These films aim to inspire curiosity and wonder, showing how even small creatures like flies play a big role in nature — and how training and research can help safeguard them for the future.

The films will be freely available online, making it easy for students, educators, researchers, and nature enthusiasts anywhere in the world to explore and learn from them. Beyond the digital space, the films will also be showcased in museums and visitor centers across South African nature reserves, bringing the fascinating world of fly pollination to a wider audience. By highlighting the critical role these often-overlooked insects play in ecosystems, the films aim to spark curiosity, inspire appreciation, and encourage people of all ages to recognize the importance of pollinators in maintaining healthy landscapes. Whether viewed on a screen at home, in a classroom, or in a natural history exhibit, these films will serve as an engaging educational resource and a celebration of nature’s hidden heroes.

For more information on Fishwater Films and their activities, please visit: https://www.fishwaterfilms.com/

During the weekend, we were joined by Devin Trull and his wife Talitha Noble. Devin is an outdoor enthusiast, filmmaker, and photographer. Together, we filmed 13 practical components of our training course. Our junior trainers will also record the theoretical sessions of the training course. Together with our publication of the practical aspects of the organisation of entomological training courses and all necessary documents, the tutorials will become part of our growing repository that will facilitate the organisation of similar training courses.

We began filming at 8:30 in the morning and continued until 6:30 in the evening, making it a long but highly productive day. The entire process went remarkably smoothly, thanks to the enthusiasm, creativity, and professionalism of Devin and Talitha. Their dedication ensured that every scene was captured efficiently and with great attention to detail.

In total, we successfully filmed thirteen different practical components of our training courses, far more than we had originally anticipated (see the list below). This achievement reflects not only the excellent preparation of the team but also the positive and collaborative atmosphere throughout the day.

The recorded material will now undergo careful editing and post-production to ensure clarity, accessibility, and educational value. We aim to make the final tutorials available online by early 2026. Once published, these videos will serve as high-quality instructional resources that can be freely accessed by students, technicians, and researchers.

We hope that these tutorials will become a valuable asset to the broader entomological community, particularly within the Afrotropical Region. By sharing our experience and methods, we aspire to inspire other entomologists and institutions to organize similar training courses, thereby strengthening regional expertise in Diptera research and pollination ecology.

The upcoming repository will feature tutorials covering a wide range of practical topics, including the following:

- setting up Townes style Malaise trap
- setting up Gressitt and Gressitt Malaise trap
- setting up and emptying coloured pan traps
- setting up and emptying a Tephri trap
- use of an insect hand net
- use of an insect sweep net
- preparation of an insect pooter
- emptying a pooter and sorting of flies by size
- pinning of large flies
- pinning and staging of small flies
- adding labels using a pinning block
- manipulation of pinned specimens
- preparing insect legs for DNA analysis

For more information on Devin's work, please visit: https://devintrull.com/

Old dogs teaching new tricks

Cassandra Barker, Catherine Sole & John Midgley

One of the targeted outputs of the DIPoDIP project is to teach emerging researchers and students on Diptera taxonomy and to improve their identification skills. This target is usually addressed during one of the numerous identification courses conducted during the project. The best outcome for the DIPoDIP project is when one of the students who attended a previous course goes on to share the knowledge they gained during the course.

The students: Ivy (left) and Thandwa (right)

During August, one of our past students, Cassandra Barker, travelled with Dr. John Midgley to Pretoria to help train two current DIPoDIP students, Thandwa Dlamini (PhD) and Ivy Taetsane (MSc) on how to identify Diptera for their degrees. Ivy and Thandwa are registered at the University of Pretoria under the supervision of Prof. Catherine Sole. Ivy is comparing Diptera diversity between gardens and natural areas and Thandwa is working on the taxonomy and systematics of Afrotropical *Monoceromyia (*hover flies).

The pair got up close and personal with the key to Diptera adults in the Manual of Afrotropical Diptera and, thankfully, there were more laughs and questions than tears and frustration. The two ladies did very well with a very difficult key, and we look forward to seeing them again for the longer Diptera taxonomy training course at Grootbos Private Nature Reserve later in the year.

John Midgley and Kurt Jordaens visit the African Natural History Research Trust (Leominster, UK)

John Midgley & Kurt Jordaens

In September 2025, Kurt Jordaens and John Midgley visited the African Natural History Research Trust (ANHRT) to study the collections held there. The main focus was to check the hover flies and nose flies collected by Ashley Kirk-Spriggs and his colleagues. A great place to visit and to work at. Thank you so much for the hospitality Ash!

Kurt Jordaens (left), Ashley KIrk-Spriggs(middle) and John Midgley (right)

MPhil Student Tafadzwa Matengo – Department of Wildlife, Ecology and Conservation, Chinhoyi University of Technology (CUT), Zimbabwe

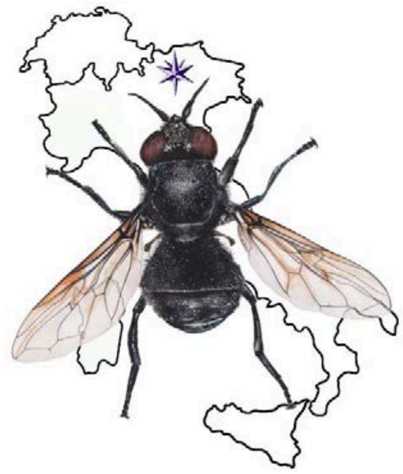
Tafadzwa Matengo

My name is Tafadzwa Matengo from Zimbabwe and I am an MPhil student and a Graduate Teaching Assistant in the Department of Wildlife Ecology and Conservation at CUT. I assist in teaching three modules; Insect Ecology and Apiculture, Ecology and Biodiversity, and Ornithology and herpetology.

I have two years' experience in the field of Entomology and I developed a strong passion for insects from undergraduate studies and hence, the decision to pursue a career in Entomology. While working with Dr. Gugulethu Tarakini at the Research and Education for Sustainable Actions, I have gained valuable skills (pollinator sampling, pollinator preservation, taxonomy, data capturing, data analysis, writing, and teaching). Moreover, I have received an intensive 7-day training course on identifying Afrotropical flies at the family level from Mr. Sija A. Kabota at the Entomology Laboratory, National Sugar Institute (NSI), Morogoro, Tanzania. My goal is to improve my Dipteran taxonomic skills and develop future dipterists

I have a BSc in Wildlife Ecology and Conservation from CUT in which I graduated with a first-class and was awarded the Vice Chancellor's Scholarship of Excellence for me to carry out an inventory of Afrotropical pollinating flies in Matopos National Park (MNP), Zimbabwe. The work is being supervised by Dr. Tawanda Tarakini and Prof. Robert Musundire. The project aims to look at the community structure of Afrotropical pollinating flies in different habitats (riverine, mountains, and grasslands) across three main seasons (cool-dry, hot-dry, and hot-wet) in a world heritage site, MNP. The project has thus far equipped me with research method design, sampling, and taxonomy. More skills including species distribution modelling are expected to be acquired as I will be analyzing my data.

I am grateful to have been granted the chance to study this captivating group of species. My greatest wish is to contribute to providing solutions to the taxonomic impediments hindering Diptera research and mentor students in Zimbabwe and beyond to resuscitate the dwindling Dipterists' expertise.



13th International Symposium on Syrphidae
Fiera di Primiero – Italy
22-27 June 2026

It is a great pleasure to invite you to the 13th International Symposium on Syrphidae (ISS13). The symposium will be held in Fiera di Primiero (TN), located within the Paneveggio-Pale di San Martino Nature Park, in the Italian Alps.

The event will commence on the evening of Monday, 22 June 2026, and conclude on the morning of Saturday, 27 June 2026. The symposium schedule is as follows:

Important dates:

Arrival: 22 June 2026
Symposiom: 23-25 June 2026
Excursion: 26 June 2026
Departure: 27 June 2026

PANEVEGGIO
PALE DI SAN MARTINO
Parco Naturale

Contact address
Paneveggio-Pale di San Martino Nature Park
Villa Welsperg, loc. Castelpietra nr. 2, 38054,
Primiero San Martino di
Castrozza (Trento, Italy)
Website: https://parcopan.org/
E-mail: syrphidae13@gmail.com

All information on the 13th International Symposium on Syrphidae can be found at the end of the *Newsletter*

XI. International Congress of Dipterology

ZAGREB, CROATIA 10-16 July 2027

The **11th International Congress of Dipterology (ICDXI)** will be held from 10–16 July 2027 at the Westin Hotel in Zagreb, Croatia.

Organizing Committee
Chair: Marija Ivković

Organizing Committee:
Vlatka Mičetić Stanković (Co-Chair), Romana Gračan, Mirela Sertić Perić, Ana Klobučar and Mirela Gašpar.

More information will be forthcoming!

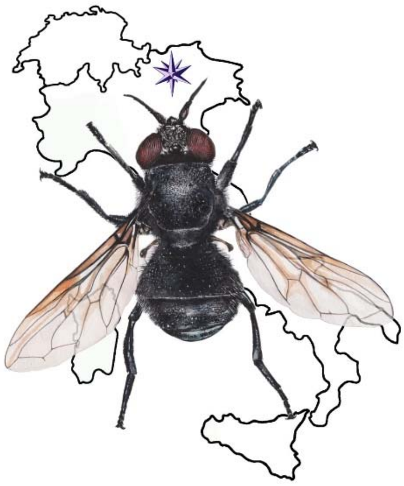
About the DIPoDIP and DIPoDIP2 projects

The “Diversity of pollinating Diptera in South African biodiversity hotspots” project (DIPoDIP) was a five year project (2019-2023) financed by the Belgian Directorate-general Development Cooperation and Humanitarian Aid through a framework agreement with KMMA. It was a collaboration between the University of KwaZulu-Natal (UKZN), the KwaZulu-Natal Museum (KZNM), Stellenbosch University (SU), the South African National Biodiversity Institute (SANBI), and the AfricaMuseum (RMCA, Belgium). The project is continued as the “Diversity of pollinating Diptera in Afrotropical biodiversity hotspots“ (DIPoDIP2) project (2024-2029) with the following partners: KZNM, SU, the University of Pretoria (UP, South Africa), the Burundian Office for the Protection of the Environment (OBPE, Burundi), the University of Rwanda (UR, Rwanda), and the RMCA. Click on the logos for more information or read more on the project in the forthcoming PINDIP *Newsletters* and on our Facebook page: https://www.facebook.com/pollinatingdiptera/.

DIP-O-DIP

Diversity of pollinating Diptera in the Afrotropical Region

©Genevieve Theron



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PANEVEGGIO
PALE DI SAN MARTINO
Parco Naturale

Paneveggio-Pale di San Martino Nature Park

Villa Welsperg, loc. Castelpietra nr. 2, 38054, Primiero San Martino di Castrozza (Trento, Italy)

Website: https://parcopan.org/

E-mail: syrphidae13@gmail.com

Registration for ISS13 is now open.

To complete your registration, please fill out the **registration form** available here: https://forms.gle/yCQZbRtjCG6a7gRW7.

Payments are possible starting from January 1, 2026. Take advantage of the **early registration discount** available until the end of February. Please note that your registration will only be considered valid once the required fee has been received.

The **payment** must be made **via bank transfer** to the UniCredit bank account held by the Parco Paneveggio-Pale di San Martino Authority.

Following are the bank details:

Bank: UniCredit Bank

Bank account holder: Ente Parco Paneveggio - Pale di San Martino

IBAN code: IT 87 W 02008 05615 000004479811

BIC SWIFT code: UNCRITMM

Please note that the fees paid must be considered **net of any bank charges or deductions**.

Participation in the conference is limited to a maximum of 100 participants.

Basic registration
Basic fee (including congress, lunches, coffee breaks, welcome dinner and gala dinner) = **€ 230,00**

The basic registration includes:

- Access to all Symposium Sessions
- Coffee breaks and lunches during the sessions.
- Welcome dinner (on Monday, June 22) and gala dinner (on Thursday, June 25).

The basic registration fee does not include accommodation and excursion.

Regular registration

The regular registration fee also includes accomodation. It includes:

- Participation to the congress and to the excursion (on June 26)
- 5- or 4-night stay in a 3-stars hotel (located approx. within a 1.5 km radius of the conference venue)
- All the meals (breakfasts, lunches and dinners, in addition to coffee breaks during the sessions)
- Shuttle service from the train stations of Trento and Feltre (if required).

* City tax not included

The 5-night stay also includes the excursion.

The **prices** for regular registration are as follows:

<u>SENIOR</u>

Early registration (within February 28, 2026)

SENIOR	**5 nights**	**4 nights**
single room	€ 850,00	€ 750,00
double room	€ 750,00	€ 650,00
multiple room (triple or quadruple)	€ 650,00	€ 550,00

Late registration (from March 1, 2026)

SENIOR	**5 nights**	**4 nights**
single room	€ 950,00	€ 850,00
double room	€ 850,00	€ 750,00
multiple room (triple or quadruple)	€ 750,00	€ 650,00

<u>JUNIOR</u>

Early registration (within February 28, 2026)

JUNIOR	**5 nights**	**4 nights**
single room	€ 750,00	€ 700,00
double room	€ 650,00	€ 600,00
multiple room (triple or quadruple)	€ 550,00	€ 500,00

Late registration (from March 1, 2026)

JUNIOR	**5 nights**	**4 nights**
single room	€ 850,00	€ 800,00
double room	€ 750,00	€ 700,00
multiple room (triple or quadruple)	€ 650,00	€ 600,00

In the registration form, you can let us know who you want to be accommodated with.

A limited number of single rooms are available at the hotel, and will be assigned in order of registration.

Alternatively, several other hotels are available in Fiera di Primiero and surrounding villages.
For any information about accommodations, please contact the **Tourist Office in Fiera di Primiero**:
+39 0439 62407
infoprimiero@sanmartino.com
https://www.sanmartino.com/

The junior registration is available for pre-graduate students as well as Ph.D. students. Students must submit a letter from their supervisor / advisor / head of department on a university letterhead confirming their status as full-time students. Such letter / certificate must be sent at the time of registration by e-mail to syrphidae13@gmail.com, with subject “Student_YourName_Surname”.

Special packages are available for accompanying persons (family members of delegates etc.). We kindly ask you to contact the organizing committee as soon as possible (syrphidae13@gmail.com) to receive a personalized offer.

Binocular microscopes will be available for delegates wishing to examine specimens in the Symposium rooms.

Excursion

The excursion will be held in Val Canali (GPS: 46.2019N, 11.8571E), in the Paneveggio-Pale di San Martino Nature Park, which is a spectacular protected area in the heart of the Dolomites, a UNESCO World Heritage Site. Dominated by the dramatic spires of the Pale di San Martino massif, the park offers a stunning alpine landscape. Its diverse ecosystems range from the iconic Paneveggio Forest - famous for its resonance spruce used in violin making - to high-altitude meadows, glacial lakes, and rugged peaks. The park is home to rich wildlife including red deer, chamois, marmots, and golden eagles, and hosts over 1,000 species of lichens and a wide variety of alpine flora.

The excursion will consist of guided tour in the strictly protected areas, where insect collecting is prohibited. The excursion will be guided by personnel from the park, who will provide insights into the area's natural features.

As the excursion takes place within a protected area, insect collecting is not permitted. In 2025, however, the park launched a research project focused on Syrphidae fauna. As part of this initiative, a limited number of permits may be exceptionally granted for collections aimed at supporting the project. Participants interested in contributing are kindly asked to contact the organizing committee for further information.

The excursion fee is included in the 5-night Accommodation solution. If you are interested to take part to the excursion but planning to use the 4-night Accomodation solution, please let us know by answering the specific question in the registration form.

Abstract submission and presentation details

Abstract submission starts immediately. Abstracts are required for both oral and poster presentations. They must be submitted by e-mail to syrphidae13@gmail.com, with subject "Abstract_YourName_Surname". Please, send the abstracts in an attached file in an editable format (e.g. doc, docx, odt) **until 20th April 2026**.

Each abstract has a limit of 250 words (only text, excl. names and affiliations). Only registered delegates abstracts will be considered for presentations. The abstracts will be proceeded to Scientific Committee for a review. We primarilly recommend to present just one contribution per delegate. If you have more topics to present, let us know via e-mail and the Scientific Committee will make the decision.

Oral presentations should take 10 minutes followed by a 5 minute discussion. Presentations should be in Microsoft PowerPoint format saved as ppt or pptx, or in a pdf file.

Posters can be in formats up to A0. Poster boards and mounting materials will be available during the first day of the symposium.

Location

Fiera di Primiero is a charming alpine town nestled in the eastern Trentino region of northern Italy. Historically a center for ironworking and trade during the late Middle Ages, it flourished thanks to its strategic location and rich natural resources. Today, it stands as a gateway to one of the most stunning natural areas in the Dolomites: the Paneveggio-Pale di San Martino Nature Park. Surrounded by dramatic peaks, dense spruce forests, and pristine alpine meadows, Fiera di Primiero offers visitors a unique blend of cultural heritage and breathtaking landscapes. Its proximity to the Pale di San Martino massif makes it an ideal base for hiking, nature observation, and geological exploration. The town's harmonious integration with its environment reflects a deep commitment to sustainability and the preservation of mountain traditions.

Transport and other practical information

Fiera di Primiero is accessible by public transport. The nearest airports are Treviso (approx. 90 km), Bolzano (approx. 97 km), and Venice Marco Polo (approx. 123 km). From these airports, reaching Fiera di Primiero typically involves a combination of train and bus services, often with multiple transfers. From the airport the best way to reach Fiera di Primiero is by train until Feltre or Trento, followed by a regional bus to Primiero - San Martino di Castrozza, Passo Rolle. The organizing committee will provide a dedicated shuttle service from Trento or Feltre to Fiera di Primiero, and back. Details about the shuttle schedule and booking procedures will be shared in due course. If you are interested in the possibility of having this shuttle service, please let us know by answering the specific question in the registration form.

Foreign nationals intending to visit Italy should familiarize themselves with the visa requirements for entry into the country. Italy is a member of the Schengen Area, which allows citizens of certain countries to enter without a visa for short stays of up to 90 days within a 180-day period. Additionally, Italy has visa-free agreements with several other countries, including the United States, Canada, Australia, Japan, South Korea, and many others.

Citizens of EU countries that are not part of the Schengen Area – such as Bulgaria, Croatia, Cyprus, and Romania – do not require a visa for short-term stays in Italy. However, it is important to note that entry rules may differ from those of Schengen countries, and travelers are strongly advised to verify their specific requirements.

You can consult the list of countries whose citizens must apply for a visa. For detailed information on visa requirements and application procedures, please visit the official website of the Italian Ministry of Foreign Affairs:

https://www.esteri.it/en/sportello_info/domandefrequenti/sezione_visti_entrare_in_italia/

https://www.esteri.it/en/servizi-consolari-e-visti/ingressosoggiornoinitalia/visto_ingresso/paesi_soggetti_visto/

The currency of Italy is Euro. Credit cards or Debit cards are accepted in almost all shops and in the majority of restaurants and pubs, but some exceptions can be found. Travelers holding non-euro currencies are advised to exchange them at the airport, as currency exchange services may be limited in Fiera di Primiero.

More detailed informations will be provided in the Third Circular.

Organising Commitee

Valentina Gasperoni, Parco Naturale Paneveggio Pale di San Martino, Italia

Piergiovanni Partel, Parco Naturale Paneveggio Pale di San Martino, Italia

Walter Taufer, Parco Naturale Paneveggio Pale di San Martino, Italia

Bärbel Koch, Museo Cantonale di Storia Naturale, Lugano, Svizzera

Lucia Pollini Paltrinieri, Museo Cantonale di Storia Naturale, Lugano, Svizzera

Umberto Maritano, University of Turin, Italia

Daniele Sommaggio, University of Modena and Reggio Emilia & National Biodiversity Future Center, Palermo, Italy

Scientific Committee

Tamara Tot, University of Novi Sad, Novi Sad, Serbia

Gunilla Ståhls, Finnish Museum of Natural History, Helsinki, Finland

Wouter van Steenis, Independent Researcher, Breukelen, Netherlands

Daniele Sommaggio, University of Modena and Reggio Emilia & National Biodiversity Future Center, Palermo, Italy

Ante Vujić, University of Novi Sad, Novi Sad, Serbia

Ximo Mengual, Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany

Giovanni Burgio, University of Bologna, Italy

Kurt Jordaens, Royal Museum for Central Africa, Belgium

Antonio Ricarte, University od Alicane, Spain

Umberto Maritano, University of Turin, Italia

Bärbel Koch, Museo Cantonale di Storia Naturale, Lugano, Svizzera

Lucia Pollini Paltrinieri, Museo Cantonale di Storia Naturale, Lugano, Svizzera

We are looking forward to meeting you in Italy!

Pollinator Diversity as a Bridge Between Conservation and Agriculture: Insights from South African Blueberry Crops

Vanessa Couldridge (UWC), Pia Addison (SU), Colin Schoeman (UV), Zion Jodamus (SU),
Marc De Meyer (RMCA), Kurt Jordaens (RMCA), John Midgley (KZNM)

The Man and the Biosphere programme

The Man and the Biosphere (MAB) programme is an intergovernmental scientific programme by UNESCO that aims to establish a scientific basis for enhancing the relationship between people and their environments. It combines the natural and social sciences with a view to improving human livelihoods and safeguarding natural and managed ecosystems. This, therefore, promotes innovative approaches to economic development that are socially and culturally appropriate and environmentally sustainable.

The global network includes 759 reserves, 90 of which are in Africa. South Africa is the continental leader of the network, with ten of these reserves. This makes research on South African MABs of local and continental importance.



The Cape Winelands Man and the Biosphere Reserve with a blueberry farm in the front and the nature reserve in the back, is one of the largest porduction sites of blueberries (middle, right) in South Africa. Left: © RMCA ; middle and right: © Francois Bekker.

The Western Cape, home to the globally unique Cape Floral Kingdom, is a biodiversity hotspot that conserves over 2.3 million hectares across national parks, nature reserves, mountain catchments, and marine protected areas. These mountainous conservation regions are interspersed with agricultural production systems with unique climates.

One such system is the production of blueberries in the Western Cape of South Africa, where 60% of the country’s blueberries are grown. As a high-value crop, blueberries offer promising economic opportunities both locally and for export.

Blueberries are considered a superfood and have a low ecological footprint, which makes them ideal for integrating with natural areas. In the Western Cape, blueberry farms are often found near established MAB reserves such as the Cape Winelands and the Kogelberg.

The problem

© RMCA

While many varieties are self-fertile, blueberry plants bear even better quality and size fruits when they are cross-pollinated with another variety. Blueberry pollination remains under-researched and presents a major challenge. South Africa lacks native bumblebees that are typically effective buzz pollinators of blueberries, relying instead on honeybees. However, honey bees are considered largely inefficient and are vulnerable to global climate change, parasites and diseases. The region lacks other native social bees that are typically effective buzz pollinators.

Additionally, in regions like the Western Cape, sporadic hailstorms, strong winds, or intense sun can damage the delicate berries and plants. Netting provides a protective barrier against adverse weather events and may also modify the orchard's microclimate, which can improve plant performance and reduce water loss through evapotranspiration.

Netting, however, also reduces honey bee foraging activity and colony strength, and lowers pollen flow in blueberry orchards. The effects of netting on other putative pollinators, such as wild bees and flies, are unknown. Evidence-based decision support systems to optimize pollination and yields in blueberry production systems are, therefore, urgently required.

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The solution

By promoting a greater diversity and abundance of alternative pollinators, while retaining the positive benefits of netting, blueberry production can be enhanced. The blueberry plant belongs to the Ericaceae family, and the crop may benefit from transferable pollination services. Particularly, flies (Diptera) and wild bees (Hymenoptera) are well known pollinators of native *Erica* species that form an essential component of the Cape flora.

Research on the interactions between MABs and blueberry farms will not only contribute to the assessment of the biodiversity and ecosystem services of MABs, but also provide valuable insights into the potential pollinator communities associated with blueberry cultivation, and potentially other agricultural crops in this region.

Strengthening collaborative research and outreach with stakeholders, including farmers and local communities, will further support the conservation and enhancement of pollinator habitats within MABs in the Western Cape Province of South Africa.

The following key research areas and topics are recommended

1. Insect and Pollinator Biodiversity in Natural Areas and Blueberry Production Sites

• To compare the diversity of Diptera and Hymenoptera between the MABs and the surrounding agricultural landscape.
• To conduct geospatial analyses of Diptera and Hymenoptera diversity across land-use types.
• To identify Diptera and Hymenoptera flower visitors on blueberries.
• To monitor the seasonal dynamics of pollinators in core areas and blueberry production sites within MABs.
• To characterize plant–pollinator interaction networks in natural areas and agricultural fields and to investigate to what degree MABs serve as sources of pollinators for the agricultural landscape.

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2. Diptera and Hymenoptera Pollinators of Blueberries

• To identify the key Diptera and Hymenoptera species pollinating blueberries.
• To compare the pollination efficiency of Diptera and Hymenoptera (including honey bees) through single- and double-flower visits and pollen load analyses.
• To evaluate the impact of pollination on blueberry yield and fruit quality, including size and taste.

3. Effects of Netting and Cultivar on Insect and Pollinator Diversity and Abundance in Blueberry Fields

• To assess the diversity of Diptera and Hymenoptera in blueberry fields with and without overhead netting.
• To determine diel flower visitation patterns of pollinator species under netted and open-field conditions.
• To compare pollinator diversity and efficiency, and seasonal dynamics, among different blueberry cultivars.

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4. Integrated Pest and Pollinator Management (IPPM)

• To establish mass-reared populations of common South African hover flies (Syrphidae: Syrphinae) and evaluate the potential of syrphine larvae as biological pest control agents on blueberry pests.
• To develop mass-reared populations of common South African blow flies (Calliphoridae) and assess their potential to enhance blueberry pollination.
• To determine the negative impacts of commonly used pesticides on Diptera and Hymenoptera pollinators of blueberries.
• To provide science-based recommendations to farmers for enhancing pollinator services and improving pest management strategies in blueberry cultivation.

To learn more about the Man and the Biosphere Reserves in South Africa, visit https://researchbiosphere.org/south-african-biosphere-reserves/

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About the project

The AGRIMAB project is a collaboration between the University of Western Cape (UWC, South Africa), Stellenbosch University (SU, South Africa), the University of Venda (UV, South Africa), the KwaZulu-Natal Museum (KZNM, South Africa) and the AfricaMuseum (RMCA, Belgium). The project is funded by the National Research Foundation (NRF) of South Africa and the Belgian Science Policy (Belspo), and is supported by the Belgian Development Cooperation.