



# PHENO

2025

# Towards a global phenology science



# July 28th to August 1st

BRAZIL

SÃO PEDRO - SP

## INTERACTIVE SUMMARY

05

PARTICIPANT  
DISTRIBUTION

06

OPENING  
CEREMONY

07

OPENING  
SESSION

08

PAY TRIBUTE

09

1ST ORAL  
SESSION

10

KEYNOTE  
SPEAKER

11

2nd ORAL  
SESSION PART I

12

2nd ORAL  
SESSION PART II

13

KEYNOTE  
SPEAKER

14

3rd ORAL  
SESSION PART I

15

3rd ORAL  
SESSION PART II

16

KEYNOTE  
SPEAKER





## INTERACTIVE SUMMARY

17

4th ORAL  
SESSION PART I

18

4th ORAL  
SESSION PART II

19

OFFICIAL  
PICTURE

20

1st POSTER  
SESSION

21

1st POSTER  
SESSION

22

FIELD  
TRIPS



23

MEETINGS

24

KEYNOTE  
SPEAKER

25

5th ORAL  
SESSION

26

6th ORAL  
SESSION

27

KEYNOTE  
SPEAKER

28

7th ORAL  
SESSION PART I

## INTERACTIVE SUMMARY

# 29

7th ORAL  
SESSION PART II

# 30

2nd ORAL  
SESSION

# 31

2nd ORAL  
SESSION

# 32

KEYNOTE  
SPEAKER

# 33

8th ORAL  
SESSION

# 34

SPECIAL  
ISSUES

# 35

CLOSING  
CERIMONY



# PHENO

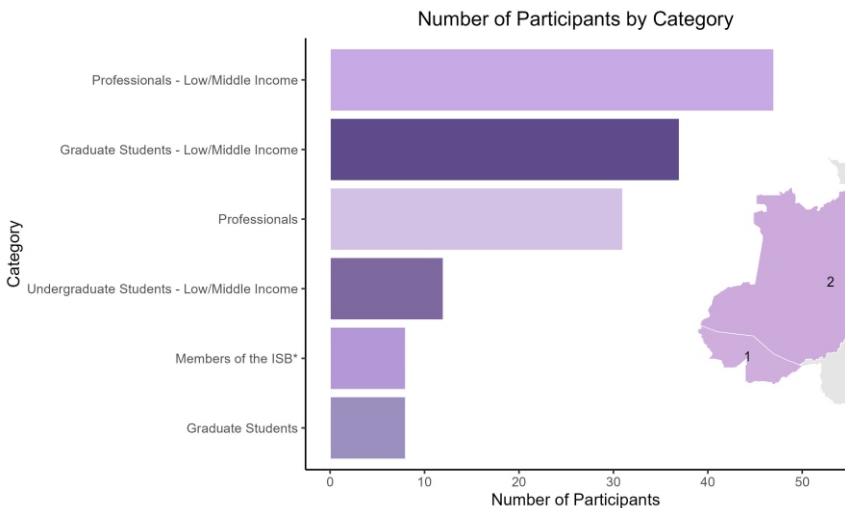
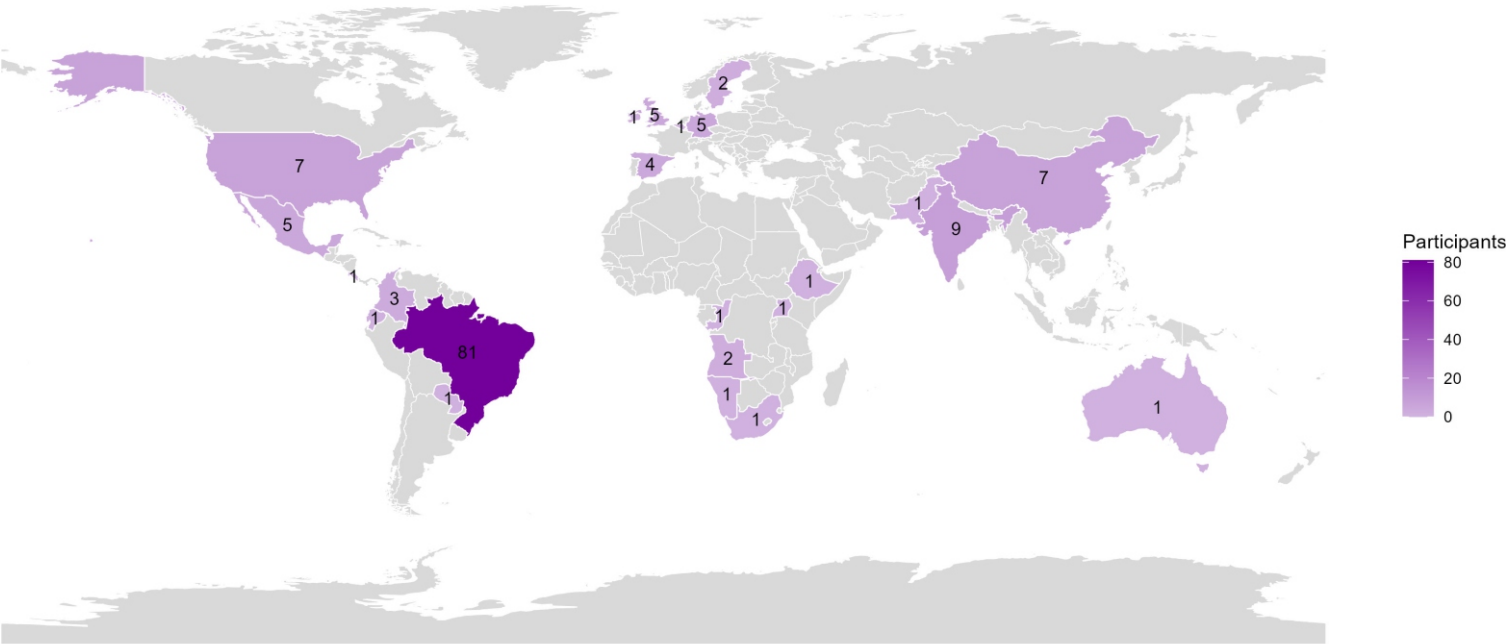
Towards a global  
phenology science

2025  
July 28th to August 1st

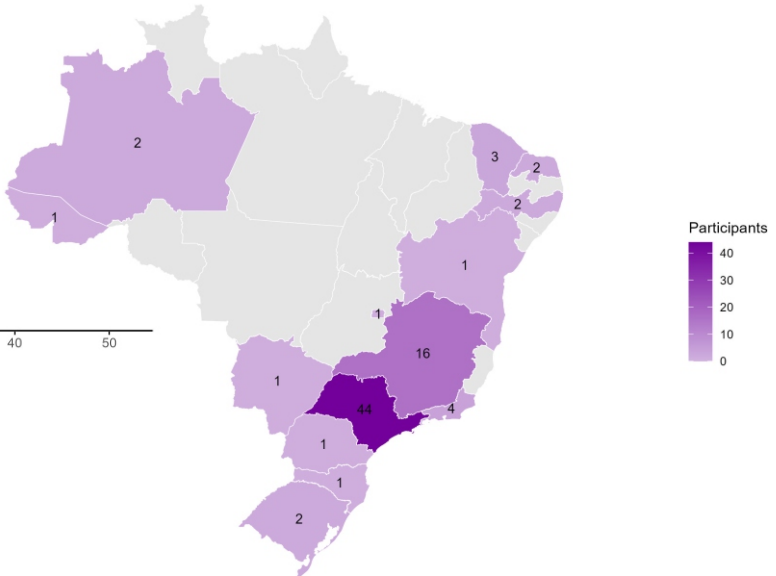


## Participant Distribution by Country PHENO2025

Participant Distribution by Country  
PHENO 2025 - Brazil



Participant Distribution by State  
Brazil – PHENO 2025  
Number of participants per state



## Opening ceremony with authorities kicks off PHENO2025

**T**he Phenology 2025 Conference “PHENO2025 - Towards a Global Phenology Science” began on Monday morning (28) in São Pedro, São Paulo. The opening ceremony was graced by the presence of several authorities. Professor Cesar Martins, vice-rector of São Paulo State University “Júlio de Mesquita Filho” (Unesp), currently serving as acting rector, declared the conference open.

Also participating in the opening ceremony were Professor Patrícia Morellato, chair of PHENO2025 and director of the Center for Research on Biodiversity Dynamics and Climate Change (CBioClima); Professor



Photos by: Dudu Coladetti

Adalgiso Coscrato Cardozo, director of the Institute of Biosciences at Unesp, Rio Claro; Professor Mark Schwartz, member of the International Society of Biometeorology (ISB) and from the University of Wisconsin; and Dr. Bruna Alberton, co-chair of PHENO2025 and associate researcher of CBioClima.



Mark Schwartz, Adalgiso Costrato Cardozo, Cesar Martins, Patricia Marollato, Bruna Alberton, Emerson José



## Professor Patricia Morellato begins PHENO2025 presentations

The opening ceremony was followed by an opening session with Professor Dr. Patricia Morellato (Unesp, Brazil) nominated Towards a Global Phenology Science. According to the professor, “although the number of phenology related studies in the tropics has increased in the last 20 years, research across the Neotropics is still limited compared to the Northern Hemisphere—especially for certain ecological topics. Since the Neotropics is the most species rich region on Earth, there are still many unanswered questions. It’s important to identify data and knowledge gaps and find ways to address them in future studies.”

The studies point out that “Climate change is modifying the phenological cycle of many species, directly affecting the functioning of ecosystems, species distributions, agriculture and the feedbacks between the biosphere and



the atmosphere. Phenology has become an important topic for many societal and economic issues.”

As a result, the community working on phenology has expanded considerably over the past 20 years, integrating actors other than scientists through participatory research action programs.





## Students and former students pay tribute to professor Patricia Morellato

**T**he professor was honored with a video reviewing her career and personal life. It was presented to her by her current and former students, who commended her for her meticulous work on phenology and for being an inspiration to them.



Photos by: Dudu Coladetti



# 1st Oral Session

The first oral session of the PHENO 2025 Thematic Axis - "Phenological Methods, Standards, Protocols, and Cutting-Edge Approaches" was chaired by Vanessa Stagemeyer (UFRN) and Carmen Benítez Benítez (University of Seville, Spain). The speakers were:

Voluntary Contribution - João Custodio Fernandes Cardoso (UFMG, Brazil) |

*Are We Going in the Right Direction with Phenological Analysis? Revisiting Circular Statistics*

Voluntary Contribution - Alessandro Mainardi (University of Freiburg, Germany) |

*A New Perspective on Tropical Phenology: How Time-Lapse Canopy Cameras Are Changing the Game*

Voluntary Contribution - Carmen Benítez Benítez (University of Seville, Spain) |

*Flowering Phenology in Mediterranean Forests: Combined Effects of Phylogeny, Reproductive Traits, Habitat, and Altitude in Andalusian National Parks (Spain)*

Volunteer Contribution - Mark Schwartz (University of Wisconsin-Milwaukee, USA) | *Changes in L48 USA - Spring Onset Since 1900. |*

Prior to these oral sessions, there was a book signing with Dr. Mark Schwartz. *Phenology: An Integrative Environmental Science, 3rd ed.*



João Custodio Fernandes Cardoso



Alessandro Mainardi



Carmen Benítez Benítez



Mark Schwartz

Photos by: Dudu Coladetti

## Geetha Ramaswami talks in PHENO 2025 about *Tree seasonality and citizen science*

**T**he keynote speaker on Monday afternoon at the conference was Indian Geetha Ramaswami from the Nature Conservation Foundation. The theme of her exhibition was “Tree seasonality and citizen science - making phenology mainstream”.

Geetha Ramaswami from SeasonWatch, an initiative of the Nature Conservation Foundation of India, highlights the importance of integrating citizen science with phenological research to monitor tree seasonality. The presentation emphasizes the following key points:

- Citizen Science in Phenology;
- Data Utility and Challenges;
- SeasonWatch Initiative;
- Cultural and Ecological Insights.



Geetha Ramaswami

The future goals this work is validating forecasting models and expanding educational resources. The main goal this cooperation is underscores how citizen science democratizes ecological monitoring while addressing data limitations through robust collaborations and open science.



Photos by: Dudu Coladetti





# 2nd Oral Session Part I

The 2nd Oral Session took place: Thematic Axis - "Phenology Networks from North and South: Towards a Global Phenology Science" - PART I. The chairs were researchers Mario Marcos (Unimontes) and Desirée Marques Ramos (ITV, Brazil).

Invited Speaker - Desirée Marques Ramos | *PhenoChange: Towards a Dry Tropics Global Phenological Monitoring Network*;

Invited Speaker - Italo Antonio Cotta Coutinho (UFC, Brazil) | *Phenological Patterns of Woody and Groundcover Caatinga Species*;

Invited Speaker - Francisco Maiato Pedro Gonçalves (Mandume Ya Ndemufayo University, Angola) | *Leaf Phenology Across Southern African Woodlands, a Perspective from Bicular National Park, SW Angola*.



Photos by: Dudu Coladetti



Desirée Marques Ramos, Italo Antonio Cotta Coutinho, Francisco Maiato Pedro Gonçalves



## 2nd Oral Session Part II

Oral Session 2: Thematic Axis -  
*"Phenology Networks from North and South:  
Towards a Global Phenology Science" - PART II*

Invited Speaker - Vera De Cauwer (Namibia  
University of Science and Technology) |  
*Phenological Patterns in Namibia's Woodlands:  
from Satellite Data to Ground-based  
Observations;*

Invited speaker - Mário Marcos do Espírito Santo  
(Unimontes, Brazil) | *Long-term ecological  
research in Brazilian dry ecosystems: linking*

*plant phenology and functional traits across  
scales;*

Invited Speaker - Jonathan Ilunga Muledi  
(University of Lubumbashi) | *PhenoCam project in  
Haut-Katanga: phenological monitoring of tree  
species for sustainable management of the  
Haut-Katanga Miombo;*

Voluntary Contribution - Ola Langvall (Swedish  
University of Agricultural Sciences, Sweden) |  
*Swedish phenology for short-term forecasts and  
long-term scenarios of climate change effects.*



Mário Marcos do Espírito Santo, Jonathan Ilunga Muledi , Vera De Cauwer, Ola Langvall



## Jin Wu presents a lecture on connecting individual trees to regional scales

**J**in Wu, from the University of Hong Kong, explores in his presentation at PHENO 2025 the critical role of fine-scale phenology variability in understanding forest ecosystems and their responses to climate change. The presentation highlights innovative remote sensing (RS) technologies to bridge the observational gaps between individual trees and regional scales. These are the Key Points from his research:

Phenology's Global Significance;

Observational Dilemma;

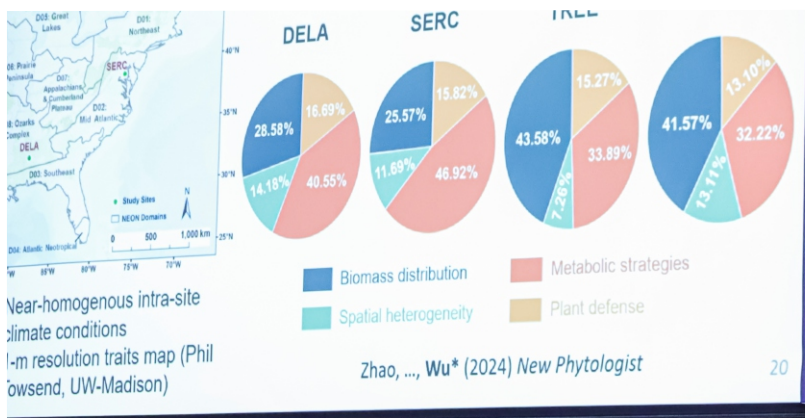
Case Studies:

Temperate Forests;

Tropical Forests;

Innovations & Implications.

Jin Wu



Photos by: Dudu Coladetti



# 3th Oral Session Part I

Thematic Axis – “Remote Phenology: from near-surface to orbital sensors and modeling integration” – PART I – Bruna Alberton (UNESP) and Alison Donnely (University of Wisconsin) chaired this session. The speakers and their presentation topics were:

Voluntary Contribution – Bruce Walker Nelson (INPA, Brazil) | *Delayed brown-down response to severe drought in a Central Amazon Forest;*

Voluntary Contribution – Maria Maraíza Pereira dos Santos (Unesp) | *Long-term phenological*

*responses are driven by climatic variability and drought events in seasonal tropical forests;*

Voluntary Contribution – Andeise Cerqueira Dutra (INPE, Brazil) | *Vegetation Composition and Cover Drive Land Surface Phenology in Drylands: Insights from Near-Surface and Satellite Data in the Southern Hemisphere;*

Voluntary Contribution – Mateus Geovane Lima da Silva (Unesp) | *Linking leaf canopy phenology and leaf traits to herbivory in a Central Amazonian forest using digital cameras.*



Maria Maraíza Pereira dos Santos, Bruce Walker Nelson, Andeise Cerqueira Dutra, Mateus Geovane Lima da Silva



# 3th Oral Session Part II

Thematic Axis - "Remote Phenology: from near-surface to orbital sensors and modeling integration" PART II - Chairs - Bruna Alberton (UNESP) & Alison Donnelly (University of Wisconsin)

Voluntary Contribution - Marjane Myriam Sakina Kaddouri (University of Liège, Belgium) |

Monitoring leaf phenology and stem growth dynamics in central African Tropical forests using Phenocams and electronic dendrometers

Voluntary Contribution - Alison Donnelly (University of Wisconsin-Milwaukee, USA) | The last ones standing: how leaf senescence and chlorophyll degradation in native and nonnative shrubs shape autumn phenology dynamics in a temperate

Voluntary Contribution - Yi Xiao (INRAE, France) | Phenology Monitoring of Deciduous Broadleaf and Evergreen Needleleaf Forests Using Sentinel-1 SAR and Deep Learning Methods

Voluntary Contribution - Drew Terasaki Hart (CSIRO, Australia) | Global phenology maps reveal the diversity, convergence, and asynchrony of ecosystem function



Marjane Myriam Sakina



Alison Donnelly



Yi Xiao



Drew Terasaki Hart

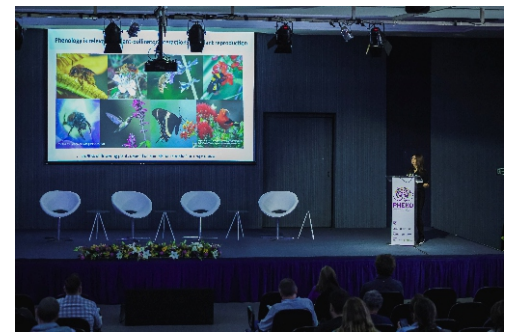
Photos by: Dudu Coladetti

## Silvana Marten-Rodriguez talks about climate change effects on phenology

**S**ilvana Marten-Rodriguez from Universidad Nacional Autonoma de Mexico addressed Climate change effects on the phenology and other organismal traits of plants and pollinators at PHENO2025: a global review.



Silvana Marten-Rodriguez



Photos by: Dudu Coladetti





# 4th Oral Session Part I

The fourth oral session of PHENO2025 took place on Tuesday afternoon (29), the second day of the conference. The proceedings were led by Professors Pedro Bergamo (UNESP) and Silvana Marten-Rodriguez (UNAM, Mexico).

Voluntary Contribution - Paulo Eugênio Oliveira (UFU, Brazil) | *Phenology across complex landscapes: the importance of habitat temporal complementarity in plant-animal interactions in the Brazilian Cerrados;*

Voluntary Contribution - Irene Gélvez Zúniga (Unesp, Brazil) | *Ancient and diverse: reproductive phenology, floral traits and visitors of Vellozia species from campo rupestre;*



Invited Speaker - Mauricio Quesada (Universidad Nacional Autonoma de Mexico) | *Global change drivers cause changes in flowering phenology, pollinator decline, and loss of floral resources that maintain plant-pollinator interaction.*



Photos by: Dudu Coladetti

 Back to summary

Paulo Eugênio Oliveira, Irene Gélvez Zúniga , Mauricio Quesada

# 4th Oral Session Part II

The second part of the fourth oral session of PHENO2025 took place on Tuesday afternoon. It was chaired by Professors Pedro Bergamo (UNESP) and Silvana Marten-Rodriguez (UNAM, Mexico).

Voluntary Contribution - Lucas Benício de Castro (Instituto de Biodiversidade, Brazil) | Phenological overlap and morphology drive high niche partitioning in a butterfly-flower interaction network;

Voluntary Contribution - Pedro Joaquim Bergamo (Unesp, Brazil) | Phenological regulation of indirect interactions in pollination networks;

Voluntary Contribution - Heloisa Ribeiro (UFPR, Brazil) | Trait Similarity in Co-flowering Modules in a Hummingbird Pollination System;

Voluntary Contribution - Daniel Pareja Bonilla (Universidad de Sevilla, Spain) | Functional traits predict changes in floral phenology under climate change in a highly diverse Mediterranean community;

Voluntary Contribution - Andrea Lizeth Silva Cala, (FSU Jena and MPI for Biogeochemistry), (Germany) | Space-for-time substitution approach in flowering phenology under climate change.



Photos by: Dudu Coladetti

Daniel Pareja Bonilla, Lucas Benício de Castro, Heloisa Ribeiro, Pedro Joaquim Bergamo, Andrea Lizeth Silva Cala



# Official photo of PHENO2025



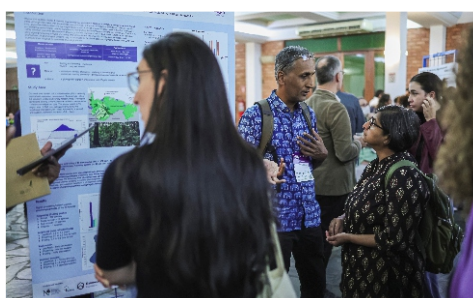
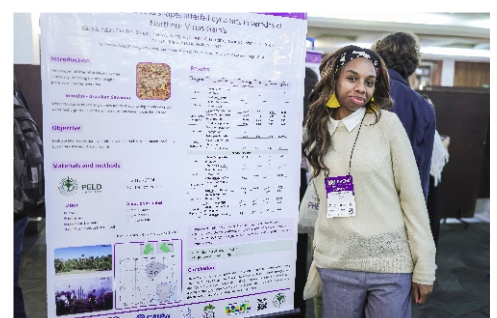
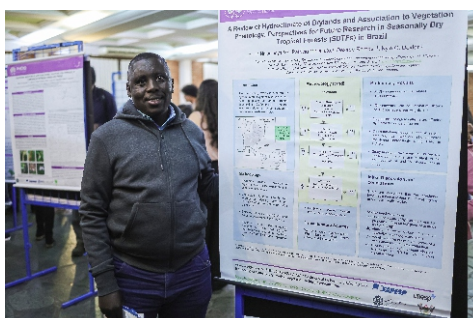
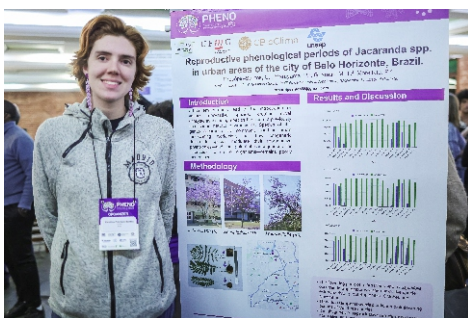
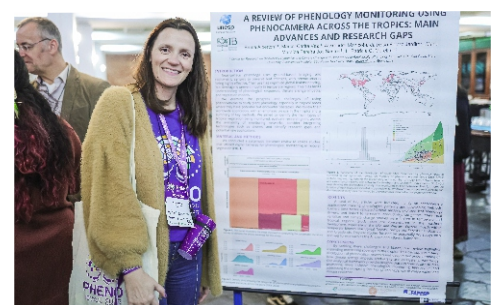
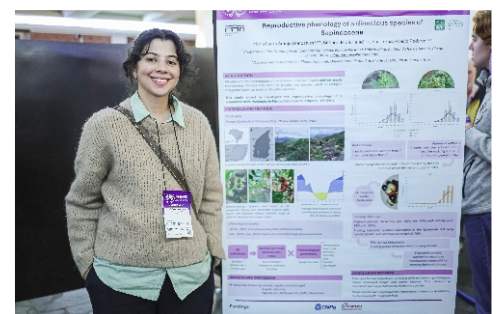
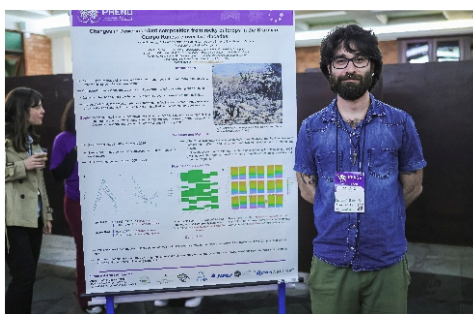
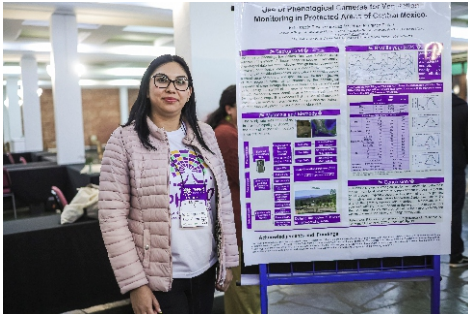
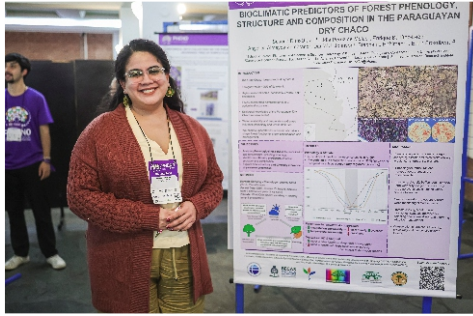
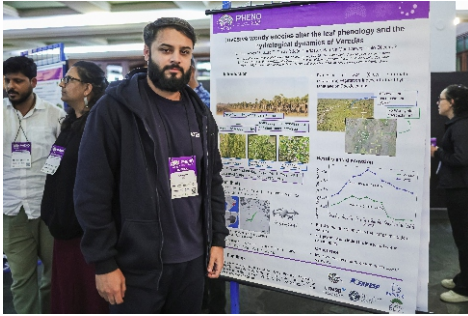
Conference participants  
gathered on Tuesday afternoon  
(29) to take the official event  
photo. Check it out!





# 1st Poster Session

The first PHENO2025 poster session excited conference participants early Tuesday evening (29). Check out images of the works and their creators.



Photos by: Dudu Coladetti



# 1st Poster Session

**Ana Luisa Sotelo Caballero** - *Do Elevation Gradients Influence The Temporal Availability Of Floral Resources? A Case Study With Andean Ornithophilous Plant Communities*

**Izabela Fonseca Aleixo** - *Long-Term Phenological Dynamics of Amazonian Trees Reveal Species-Specific Responses to Climate Variability*

**Ellen G Denny** - *Phenobase: An open-access, integrated database of global plant phenology*

**Natumanya Ezrah** - *A hydrological view of drylands and association to vegetation phenology: perspectives for future research in the Caatinga seasonally dry tropical forests in Brazil*

**Ola Langvall** - *Swedish PhenoCam Network reveals improved quality, coverage and availability of phenology monitoring data in Sweden*

**Nathan Felipe Alves** - *Invasive woody species change the vegetation phenology and hydrological dynamics in Veredas*

**Shady Susana Ruiz Díaz Medina** - *Bioclimatic predictors of forest structure, composition, and phenology in the Paraguayan Dry Chaco*

**Erika Rocio Reyes Gonzalez** - *Use of Phenological Cameras for Vegetation Monitoring in Protected Areas of Central Mexico*

**Bruna Alberton** - *A review of phenology monitoring using phenocamera across the tropics: main advances and research gaps*

**Srinivasan Kasinathan** - *Phenology of 50 tree species across 8 years in a South Asian tropical*

*rainforest indicates complex influence of climate, traits, and phylogeny*

**Yule Roberta Ferreira Nunes** - *Phenological Patterns and Litter Accumulation in Veredas: Sustained Ecological Monitoring*

**Lucas Heleno Lopes** - *Reproductive Phenology of *Erythroxylum ovalifolium* Peyr. (Erythroxylaceae)*

**Marly Antonielle de Ávila** - *How drought stress shapes litterfall dynamics in veredas of Northern Minas Gerais*

**Pedro Amaral Anselmo** - *Changes in flowering plant composition from rocky outcrops in the Brazilian Campo Rupestre over two decades*

**Maria Laura Araujo Gonçalves** - *Reproductive phenology of a dioecious species of Sapindaceae*

**Thalita Surian** - *Historical Data Collection on the Phenology of Tree Blue Jacaranda of Purple Flowers*

**Carolina Ovalle Romero** - *From Classroom To Campus Community: Initial Strategies For Participatory Plant Phenology Monitoring At The UPTC*

**Leonardo César Rocha Ganz** - *Phenological monitoring of Blue Jacaranda in Brazilian urban green spaces: assessing social media engagement to boost citizen science programs*

**Carolina Pontes Santos** - *Reproductive phenological periods of Jacaranda spp. in urban areas of the city of Belo Horizonte, Brazil*

**Maria Luisa Passos Frigero** - *Can Urban Surface Temperature Be Associated With Flowering Patterns Of A Brazilian Species Widely Used In Urban Afforestation?*

## Field trips delight PHENO2025 participants

Check out the images from the Serra do Itaqueri Viewpoints tour. The tour includes a visit to Aureliano Esteves Park, Marcelo Golinelli Park, the Free Flight Ramp, situated at an altitude of 900 meters, Morro do Fogão (Cruzeiro do Facão),

the highest point of the Serra do Itaqueri at 1,040 meters above sea level, and Jaracatiá Doces e Artes, a charming local shop that offers traditional handmade sweets and regional crafts.



Photos by: Dudu Coladetti

### Tanquã Boat Tour

Have you ever heard of the small Pantanal in the state of São Paulo? Tanquã Boat Tour (Birdwatching) is an immersive birdwatching experience through the Tanquã wetlands, ideal for observing a wide variety of bird species in their natural habitat.

Image credits: Rodolfo Almeida, Daiane Carreira.



Photo by Rodolfo Almeida, Daiane Carreira

### Cruzeiro do Facão

Some scientists attending PHENO2025 took the hike called "Cruzeiro do Facão." This trail covers a distance of 2.8 km. The trail leads to Cruzeiro do Facão, a 30-meter sandstone formation at the top of Morro do Fogão, which, at 1,040 meters, is the highest point in the region.

Image credits: Rodolfo Almeida



Photo by Rodolfo Almeida



# Meetings

The afternoon of Wednesday (31) at PHENO2025 was reserved for specific group meetings. There were meetings on: C2 NET; The Blue Wave - Jacaranda Project; Phenological Botanical Gardens Network and International Society for Biometeorology (ISB).



Meeting: C2 NET

Meeting: The Blue Wave  
- Jacaranda Project



Meeting: Phenological  
Botanical Gardens Network

Meeting: International Society for Biometeorology (ISB)



Photos by: Dudu Coladetti



# Keynote Speaker

## Dr. Jennifer Fitchet spoke about Tracking Phenology in the Global South

**T**hursday's PHENO2025 activities began with Keynote Speaker Dr. Jennifer Fitchett (University of the Witwatersrand, South Africa), who spoke about Tracking Phenology in the Global South: Phenological networks, creative data sources, and traditional knowledge.



Jennifer Fitchett



Photos by: Dudu Coladetti



# 5th Oral Session

The 5th Oral Session of PHENO2025 took place on the morning of the 4th day of the conference. The Thematic Axis was: "Phenology from Legacy and Herbarium Data to Botanical Gardens for Global Forecasting Climatic Change". The chair of the session was scientist Patricia Morellato (UNESP, Brazil).

Invited Speaker - Juan Arroyo Marin (University of Sevilla, Spain) |

*The value of natural historical collections in retrospective and prospective analysis of phenological change in Mediterranean*

*ecosystems of Andalusia (S Spain);*

Voluntary Contribution - Robert Rauschkolb (Friedrich-Schiller-University Jena, Germany)

| *The Intensity Of Flowering In Herbaceous Species Is Strongly Influenced By Their Competitive Ability And Phenological Niche;*

Voluntary Contribution - Vanessa Grazielle Staggemeier |

*Flowering Niche and Range Dynamics Under Global Warming Scenarios: an Atlantic Rain Forest.*



## Phenology, Traditional knowledge, and Citizen science

Oral Session 6 was held late Thursday morning (31) at PHENO2025. The theme was "Phenology, Traditional Knowledge, and Citizen Science." The session coordinator was Jennifer Fitchett (University of the Witwatersrand).

Voluntary Contribution - Per Bengtson (Swedish Nature Interpretation Center, Sweden) |

*Counting on Change - An exhibition that activates Nature Center visitors in Phenology to raise awareness of Climate Change;*

Voluntary Contribution - Udo Busch (Deutscher Wetterdienst, Germany) |

*Report Phenological Observations by Citizens*

*using the new DWD Warn-Wetter app;*

Voluntary Contribution - Jociene Oliveira Vitoria Nascimento (Bahia Department of Education, Brazil) |

*Is the "Fulorar" Mandacaru "During Drought" a Sign of Coming Rain in the Sertão? Phenology and Local Ecological Knowledge in Quilombola Communities of the Caatinga;*

Voluntary Contribution - Rodolfo Augusto de Araújo Almeida |

*Visualizing the Blue Jacaranda Phenology Data: Connecting People with Local Indicators of Climate Change.*





## Decadal Flowering Phenology by Mauricio Quesada

The keynote speaker on Thursday afternoon (31) was Mauricio Quesada (Universidad Nacional Autonoma de Mexico), who spoke about Decadal Flowering Phenology and Pollen Metabarcoding Reveal Climate-Linked Shifts in a Tropical Montane Forest.



Mauricio Quesada





# 7th Oral Session Part I

Thematic Axis - "Tropical Phenology, Biodiversity Conservation and Restoration under global change". Beatriz Lopes Monteiro (UNESP, Brazil) & Aparajita Datta (Nature Conservation Foundation, India) were the presenters of the session.

Speaker - Aparajita Datta (Nature Conservation Foundation, India)|

*Shifts in phenology patterns of trees and hornbills linked to climate variability in the Eastern Himalayas;*

Voluntary Contribution - Arun Poornima Madhavan (Nature Conservation Foundation, India)|

*Tree phenology in relation to climate and dispersal mode in a tropical wet evergreen forest in South Asia;*

Voluntary Contribution - Monize Altomare de Paula (Unesp, Brazil)|

*Trends and Gaps in Neotropical Flowering Phenology.*



Photos by: Dudu Coladetti



Arun Poornima Madhavan, Monize Altomare de Paula, Aparajita Datta



# 7th Oral Session Part II

Thematic Axis - “Tropical Phenology, Biodiversity Conservation and Restoration under global change” - PART II

Voluntary Contribution - Soumya Banerjee (Nature Conservation Foundation, India) |

*Effects of the El Niño Southern Oscillation (ENSO) on Long-Term Reproductive Phenology of Trees in the Indian Eastern Himalayas;*

Voluntary Contribution - Beatriz Lopes Monteiro (UNESP, Brazil) |

*Reproductive Phenology after Fire: A Brief Assessment of a Plant Community in a Biodiversity Hotspot;*

Voluntary Contribution - Mauricio Talebi Gomes (UNIFESP, Brazil) |

*Phenological Cycles of Staple Diet Items for the*

*Southern Muriqui (Brachyteles arachnoides - PRIMATES, CR) in the Atlantic Forest of Southeastern Brazil;*

Voluntary Contribution - Priscila Tunes (Unesp, Brazil) |

*Effects of Drought on Flowering Phenology of a Global Crop: Possible Consequences for Pollination and Food Security.*

Voluntary Contribution - Yang Dasheng | *Automatic Observation Instruments for Phenology Deployed Nationally in China;*

Voluntary Contribution - Hannelise de Kassia Balduino (UNESP, Brazil)

*You Shall Not Starve: The Presence of Leaves Guarantees Nectar for Ants All Year Round*



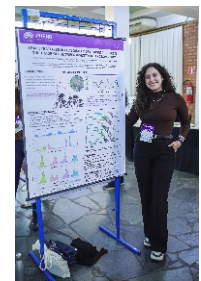
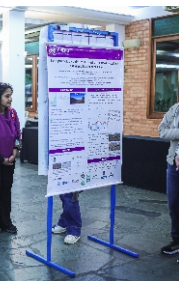
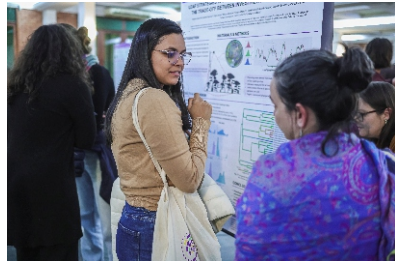
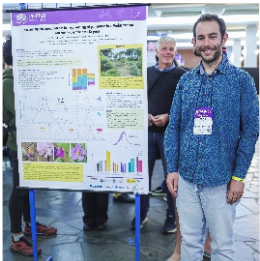
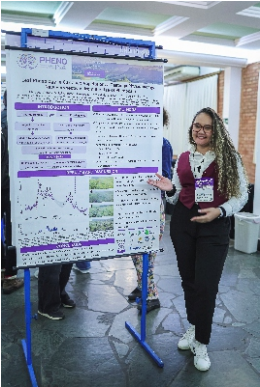
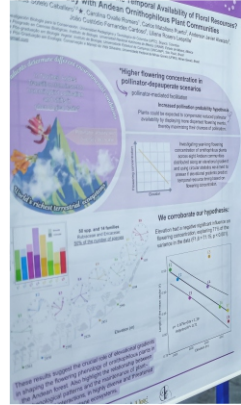
Photos by: Dudu Coladetti

Mauricio Talebi Gomes, Soumya Banerjee, Yang Dasheng, Hannelise de Kassia, Priscila Tunes, Beatriz L. Monteiro



# 2nd Poster Session

Look how wonderful the second PHENO2025 poster session was on Thursday afternoon! Congratulations and thank you to all the researchers/scientists who shared their work with us.



Photos by: Dudu Coladetti



## 2nd Poster Session

**Robert Rauschkolb** - *PhenObs 2.0 - Extending A Phenological Observation Network In Botanical Gardens To The Tropics*

**Ellen G Denny** - *The USA National Phenology Network's Recent Growth and Advancements*

**Antonia Mirelle Lopes Marques** - *Leaf Phenology in Carrasco Vegetation, a Caatinga Physiognomy: New Perspectives from the Use of Phenocameras*

**Paula Maria Montoya Pfeiffer** | *Spatial -Temporal Centrality of Plant-Pollinator Interactions in a Campo Rupestre Ecosystem*

**João Custódio Fernandes Cardoso** - *Blooming Lies: Unveiling the Timing Behind Batesian Floral Mimicry*

**Daniel Pareja Bonilla** - *Keeping up the pace: Changes in the phenology of pollinators in a Mediterranean community over the past 35 years*

**Marsal Danrlei de Amorim** - *Floral trait similarity between neighbors increases reproductive success suggesting facilitation through pollinator sharing*

**Andrea Lizeth Silva Cala** - *Space-for-time substitution approach in flowering phenology under climate change*

**Adnan Arshad** - *Impact of Climate Warming on Cotton Phenology in China and Pakistan*

**Arun Poornima Madhavan** - *Assessment of a signal processing approach to study tree phenological patterns and estimate biologically-relevant parameters in a south Asian tropical rainforest*

**Larissa de Oliveira Leite** - *Leaf phenology*

*patterns in Brazilian campos de altitude assessed by phenocameras*

**Mário Marcos do Espírito Santo** - *Do tree functional traits affect leaf phenology? A proximal-sensing approach in a Brazilian tropical dry forest*

**Magna Soelma Beserra de Moura** - *Characterizing Vegetation Phenology in a Seasonally Dry Tropical Forest Using Near Ground-Based Spectral Indices and Precipitation Dynamics*

**Nattália do Prado Neves** - *Leaf Strategies in Seasonally Dry Tropical Forests: The Trade-off Between Investment and Longevity*

**Felipe Alvarez Silva Nunes** - *Flames and Flowers: Fire Season Drives Reproductive Timing in the Cerrado*

**Vanessa Grazielle Staggemeier** - *Spatial and Temporal Patterns of the Phenological Research on Caatinga*

**Eliana Gressler** - *Plant community phenology over three years in the Brazilian Atlantic Rainforest*

**Amanda Eburneo Martins** - *Climate-induced shifts in long-term tropical tree reproductive phenology: insights from species dependent on and independent of biotic pollination*

**Ângelo Antônio Corrêa da Silva** - *Fruiting phenology of zoochoric species in a frugivore reintroduction area in Tijuca National Park, RJ*

**Daiane Cristina Carreira** - *Long-term fruiting patterns shape bird-plant interaction networks in the Brazilian Cerrado*



## Susanne Jochner-Oette details the International Network of Phenological Gardens

**D**r. Susanne Jochner-Oette (Catholic University of Eichstätt-Ingolstadt, Eichstätt, Germany) spoke at PHENO2025 about the International Network of Phenological Gardens - Importance, Challenges, Recent Discoveries, and Future Perspectives.



Susanne Jochner-Oette



Photos by: Dudu Coladetti





# 8th Oral Session

Thematic Axis – Urban Phenology and Global Change. Chair – Pietro Maruyama (UFMG)

Invited Speaker – Giuliano Maselli Locosselli (USP, Brazil) | *Phenology in Urban Tree Management*

Voluntary Contribution – Kaio Murilo Leite (Unesp, Brazil) | *Is Urbanization Intensity Associated With Mass Flowering Patterns In A Brazilian Native Plant Species?*



Photos by: Dudu Coladetti

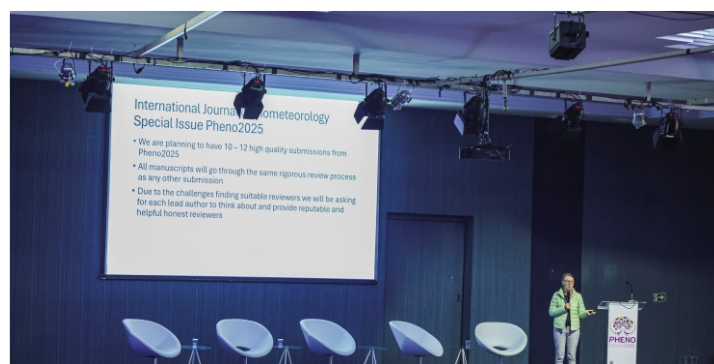




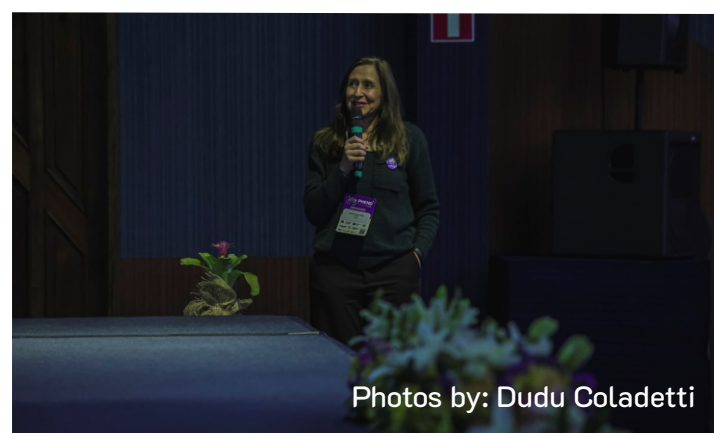
# Special Issues

## PHENO2025

In the Special Issues of Pheno2025, researcher Alisson Donelly from ISB (International Society of Biometeorology) and (University of Wisconsin) announced that papers submitted to the event will have the opportunity to be published in the International Journal of Biometeorology (IJB). The journal is the official publication of the ISB. Donelly emphasized that authors will be consulted before any publication.



Alisson Donelly



Photos by: Dudu Coladetti



# Closing Cerimony



Photos by: Dudu Coladetti

The PHENO2025 conference was closed by Chair Patricia Marollato and Co-Chair Bruna Alberton. They thanked the participants, the event's sponsoring institutions, the researchers who submitted abstracts, the speakers, and especially the organizing team and volunteers present, whose dedicated behind-the-scenes work ensured everything ran smoothly.

We hope to see everyone again in future editions!



Patricia Marollato, Bruna Alberton





# PHENO

Towards a global  
phenology science

2025  
July 28th to August 1st



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