

🌐 Brazil 📅 July 21, 2025

CONFERENCE WEBSITE: <https://csbc.sbc.org.br/2025/wcama/>

| About the Conference

WCAMA 2025 - 16th Workshop of Applied Computing for the Management of the **environment** and Natural Resources
<http://wcama.wordpress.com>

Co-located with 45th Brazilian Computer Society Congress
<https://csbc.sbc.org.br/2025/wcama/>

*** CALL FOR PAPERS ***

-] Introduction

The Workshop on Computing Applied to Environmental and Natural Resource Management (WCAMA) aims to promote integration between the areas of Computing (methodologies, techniques, and tools) and Ecology (policy definition and management for the environment). Natural resource management is a complex and extremely dynamic activity that requires integration between multiple actors from social, political, and technological areas to be carried out effectively. Considering the leading role of Computing in several areas of knowledge and in the

Important Dates

 CONFERENCE DATE
July 21, 2025

development of solutions to contemporary challenges, Computational Ecology can directly collaborate in this sense, as it allows (i) to simulate complex ecosystems, collaborating in the analysis of different scenarios and the prediction of future changes; (ii) to analyze large volumes of ecological data, such as satellite images, sensor data and information on species distribution; (iii) to create models that allow predicting the occurrence of ecological events, such as the spread of diseases, the invasion of exotic species and changes in species distribution in response to climate change; and (iv) use computer models to assist in decision-making on the management of natural resources, such as the creation of protected areas and the definition of conservation policies. In short, WCAMA provides a space for presenting ideas, solutions, and innovation that directly address the current environmental challenges.

Brazil is a country of continental dimensions, rich in natural resources and biodiversity. A large part of the country's exports are based on agricultural or natural commodities. Internationally, Brazil has stood out in recent years for its goal of becoming an environmental powerhouse, reconciling economic development and environmental sustainability. At the federal level, public policies have been developed to ensure the reduction of deforestation and degradation of the Amazon and Cerrado. However, there are numerous challenges that need to be overcome in order to reach the desired position, such as dealing with the impacts of climate change, the growing demand for food production, the need to develop solutions for

optimized and sustainable agriculture, the destruction of biomes by human action, the need to renew the **energy** matrix, among others. The challenges mentioned are complex and interconnected, requiring multidisciplinary solutions and the participation of various social actors, including the Computing community.

The Sustainable Development Goals (SDGs), which are defined by the United Nations (UN) and which Brazil is a signatory of, include environmental and climate protection. In order to fulfill the commitments assumed by the country, it is necessary to integrate efforts and digital technologies. The Brazilian Computer Society (SBC) understands that Computing goes far beyond its scientific and technological frontiers; its impacts are visible and, in fact, often influence and shape various aspects of society. Inspired by global initiatives based on UN principles, the SBC aims to actively contribute to this important global debate, as reported in the 2022 Manifesto “Digital Technologies for the Environment” (<https://doi.org/10.5753/sbc.rt.2022.07.01>). In this sense, one of the actions focused on digital technologies explicitly mentions holding workshops and meeting various groups. WCAMA is a proposal aligned with these values, promoting the integration of national efforts, the exchange of knowledge, and the encouragement of the development, implementation, and use of digital technologies to preserve and protect the environment. Furthermore, the choice of the city of Belém to host COP30 (30th UN Conference on Climate Change) in 2025, which is expected to bring together more than 40 thousand

participants, gives WCAMA a strategic role since the topics addressed by the workshop proposed here are directly aligned with the COP30 agenda and can contribute significantly to the success of the negotiations and to the consolidation of Brazil as a central actor in the discussions about the future of the planet.

From a computing perspective, the development of methodologies and tools for environmental and natural resource management involves three significant challenges: (i) management and communication between large volumes of data; (ii) techniques and tools for analyzing and visualizing these data, as well as for modeling and simulating the underlying processes, enabling investigation and directing possible environmental policies; (iii) optimization and **control** of existing data and interaction with new data generated, in various formats. In its 16th edition in 2025, we hope to hold a WCAMA that promotes discussions on Brazilian challenges in the environmental field, fostering innovative ideas as has been the case in its previous editions, which received submissions of articles from all regions of the country. However, we note that the Brazilian scientific community lacks intergroup partnerships and is still poorly connected, which justifies WCAMA as an important national event both to provide opportunities for collaborative networks of researchers on the subject and to publicize the challenges of Computing applied to the environment and natural resources.

-] Scope

The workshop will cover the whole range of

research and applications in methodologies, techniques and computational tools applied to environmental management and natural resources, including (but not limited to):

Agroecology and circular economy

Applied **Robotics** [robotics and precision](#)

automation

Biodiversity

Carbon credits

Computer modeling of ecological and forest

systems

Computer solutions for Environmental Governance

Digital Agriculture

Ecosystem **services**

Environmental **education**

Environmental fragility

Environmental monitoring

Environmental policies

Environmental sanitation

Environmental sustainability

Fires and/or deforestation

Flooded areas and floodplains

Geoprocessing

Global environmental changes

Green Computing

Health and environment

Land use and occupation

Management of natural and renewable resources

Monitoring and control of water and/or air and/or soil and/or noise pollution

Natural disasters

Net zero

Ocean economy

Precision beekeeping

Priority areas for conservation

Red lists of threatened species of fauna and/or
flora

remote sensing

Seed technology

Society and environment environment

Solid waste management

Species distribution modeling

Sustainable energy sources

Transportation and environment

Urban ecology

-] Papers Format

WCAMA 2025 will accept two types of submission:

. Full Papers between 8 (eight) and 10 (ten) pages.

. Abstract Papers/Software Demonstrations

between 4 (four) pages. This kind of paper must
present a specification or proposal of software
within the scope of the workshop.

Papers must be written in Portuguese or English,
following the Brazilian Computer Society template
(<https://goo.gl/nfe5ps>).

Manuscripts must be submitted without the
authors' names and affiliations (double-blind
review). Papers that do not follow these
procedures will be rejected.

-] Paper Submission

Submission must be electronic using the JEMS
system at <https://jems3.sbc.org.br/events/250>

-] Proceedings

WCAMA proceedings will be published in digital

format at SBC Open Lib (SOL).

<https://sol.sbc.org.br/index.php/wcama>

-] Important Dates

Paper submission deadline: March 10, 2025.

Notification of accepted papers: May 2, 2025.

Author registration: May 16, 2025.

Camera-ready version: May 16, 2025.

WCAMA 2021: July 21-22, 2025.

CSBC 2021: July 20-24, 2025.

-] Presentation of Papers

The organizers reserve the right not to include in the proceedings those works that, during the event, are not presented by one of its authors or by a designated representative.

-] Chairs

Geral Chairs:

Danielli Araújo Lima (IFTM) – danielli@iftm.edu.br

Elloá Barreto Guedes da Costa (UEA) –
ebgcosta@uea.edu.br

Program Chairs:

Pedro Moura (UNIRIO) – pedro.moura@uniriotec.br

Thiago Ventura (UFMT) – thiago@ic.ufmt.br

TOPICS OF INTEREST

3 topics

Research papers are invited in, but not limited to, the following areas:

Computer Science
& Software

Uncategorized

Engineering

Artificial
Intelligence &
Machine Learning

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