

Congress News

#1 SUNDAY 21 JULY



Sponsorship



GOBIERNO DE ESPAÑA

MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES



Edited by

CSIC

REAL JARDÍN BOTÁNICO



SOCIEDAD BOTÁNICA ESPAÑOLA

GLOBAL BOTANICAL SCIENCE TAKES NEW ENERGY IN MADRID

Thousands of botanists from around the world meet again at their international congress to address the current and future challenges in botanical research

The Big Day



Gonzalo Nieto Feliner
President of IBC 2024
Organizing Committee

On behalf of the Organizing Committee of the XX IBC, I would like to welcome participants from all over the world to this unique forum for sharing knowledge about plants, fungi and all their possible interactions! The organizing team, including the Scientific and Advisory Committees, has worked long and hard to make this moment possible. Allow me to pay tribute to our colleague Nuria García Jacas, who served on the Scientific Committee and sadly passed away in April 2023. Beyond the committees, many other people have contributed to this moment, in the technical secretariat, in the organization of the field trips, in the press room, as well as in the staff of the co-organizing institutions, the Spanish Botanical Society (SEBOT) and the Real Jardín Botánico (CSIC). I am proud of the work done by all these people and honored to have worked with them. It has been a challenge to take on the organization of the XX IBC from the beginning. But it has also been a source of excitement throughout these years, during which we have been anticipating in every corner the moment we are facing today. It may sound too simple, but this work makes sense because all of you have finally made it to be here.

This exceptional event that you are about to attend is also possible because our main sponsor, the Spanish Ministry of Science, Innovation and Universities, has understood the importance of an IBC and has translated this understanding into a generous financial support, without which the XX IBC would have been difficult, if not impossible, to organize.

Our planet and humanity are facing difficult times. Surely not the worst ever, but difficult enough to move our conscience as scientists to try to contribute to improving the situation. The question is how.

Because we dedicate our lives to understanding plants and fungi, we are in a frontline position to inform society about the worrying changes and the encouraging solutions we see. On a more philosophical side, we can enlighten citizens by advocating perspectives that are seldom taken. For example, we can reflect on how plants and fungi differ from our own species in so many ways, such as their resilience or the beneficial effects they have on the rest of the species. It is particularly paradoxical how our actions, driven by our brains, can be so much more foolish than those driven by the "knowledge" accumulated in the genomes of plants and fungi over evolutionary time to

Because we dedicate our lives to understanding plants and fungi, we are in a frontline position to inform society about the worrying changes and the encouraging solutions we see.

of this conference. This is none other than to use the share of knowledge contained in the thousands of interactions in which you will be involved, to advance our understanding of our objects of study, and to convey to our societies the critical importance that they value plants and fungi.

interact with the environment. Such sharp contrasts can help society better understand sustainable perspectives. With Shenzhen in our memories, Rio in our hearth and Cape Town on our horizon, I hope you will enjoy this XX IBC intensely while contributing to the true essence

Welcome to Spain



Diana Morant
Minister of Science, Innovation and Universities of the Government of Spain

Welcome to Spain, dear participants to this 20th edition of the International Botanical Congress in Madrid! An outstanding attendance in number and geographical distribution (more than 2800 scientists, coming from nearly ninety countries) is our first satisfaction and we are particularly pleased, as main sponsors of the XX IBC, with the number of researchers from developing countries and students. We hope to be able to count on their commitment in the service of the advancement of knowledge in this very important discipline for the development of humanity.

The participation of Spanish scientists in this congress is also significant, from research centers and university departments distributed throughout the country. A schematic image of plant and fungal research in Spain would show a very high number of research groups distributed in practically all Spanish public universities (50), in research institutes of the main public research institution —the Spanish National Research Council (CSIC)—, and in other research centers at regional level. The participation of these research groups in national program calls shows that they pursue objectives mainly focused on basic research on plants and fungi and their dynamics. However, a significant number of projects also carry out research applied to address socio-economically relevant topics, such as environmental sciences and technologies, biodiversity, prevention against climate risks and fires, agri-food sciences and technologies, bio-economy and natural resources. In general, internationalization, interdisciplinarity and a fair distribution throughout the national territory are characteristics of the Spanish research groups, and this has benefited the study of the Iberian flora, whose significant degree of originality (1,328 endemic species, 24% endemism) is well known. The diversity and endemism of Iberian species have been the subject of meticulous studies by eminent Spanish botanists.

[Continued on page 2]



IBC 2024 COMMITTEES

Organizing Committee

PRESIDENT: Gonzalo Nieto Feliner, Royal Botanic Garden of Madrid (CSIC), Madrid.

VICEPRESIDENT: Lúcia G. Lohmann, University of California, Berkeley (USA). Universidade de São Paulo (Brazil).

VICEPRESIDENT: Juan Carlos Moreno Saiz, Autonomous University of Madrid.

GENERAL SECRETARY: Marcial Escudero, University of Sevilla.

MEMBERS: Inés Álvarez Fernández, Royal Botanic Garden of Madrid, CSIC, Madrid, Spain ■ Juan Antonio Devesa Alcaraz, University of Córdoba ■ Teresa Garnatje Roca, Botanical Institute of Barcelona (CSIC-CMNCB) ■ Borja Jiménez-Alfaro, University of Oviedo ■ Rosa Pérez-Badia, University of Castilla - La Mancha ■ Beatriz Pías Couso, Complutense University of Madrid ■ Jefferson Prado, Institute of Pesquisas Ambientais (IPA), Herbarium São Paulo, Brasil ■ Virginia Valcárcel Núñez, Autonomous University of Madrid.

Scientific Committee

MEMBERS: Carmen Acedo, University of León ■ Juan Arroyo Marín, University of Sevilla ■ Marta Benito Garzón, INRAE BioGeCo ■ José Sebastián Carrión García, University of Murcia ■ Monica Carvalho, University of Michigan ■ Sílvia Castro, University of Coimbra ■ Pilar Catalán, University of Zaragoza ■ Juli Caujapé-Castells, Botanic Garden "Viera y Clavijo" - UA CSIC (Cabildo de Gran Canaria) ■ Ana Crespo de las Casas, University Complutense of Madrid ■ Nuria García Jacas (†), Botanic Institute of Barcelona ■ Santiago C. González Martínez, INRAE BioGeCo ■ Myriam Heuert, BioGeCo, INRAE, Univ. Bordeaux ■ José María Iriondo Alegría, University Rey Juan Carlos ■ Pedro Jordano, Biologic Station of Doñana, CSIC and University of Sevilla ■ Juan Lorite Moreno, University of Granada ■ Montserrat Martínez Ortega, University of Salamanca ■ Vicente Mazimpaka Nibarere, Autonomous University of Madrid ■ Fernando Ojeda, University of Cádiz ■ Sergio Pérez Ortega, Royal Botanic Garden of Madrid - CSIC ■ Xavier Picó Mercader, Biologic Station of Doñana - CSIC ■ Miguel Porto Bértolo Adão Pereira, University of Porto. CIBIO/InBIO, Instituto Superior de Agronomia. ■ Susana Redondo-Gómez, University of Sevilla ■ Ricarda Riina, Royal Botanic Garden of Madrid - CSIC ■ Rosa María Ros Espín, University of Murcia ■ Isabel Sanmartín, Royal Botanic Garden of Madrid - CSIC ■ Joan Vallés Xirau, Botanic Institute of Barcelona ■ Montserrat Vilà, Doñana Biological Station (EBD-CSIC) ■ Manuel Pardo de Santayana, Autonomous University of Madrid ■ Daniel Sánchez Mata, University Complutense of Madrid.

Advisory Committee

MEMBERS: Song Ge, Institute of Botany, Chinese Academy of Sciences ■ Patrick S. Herendeen, Senior Director, Plant Biology, Chicago Botanic Garden ■ Sandra Knapp, Research Botanist, Natural History Museum, London ■ Susana Magallón, Biology Institute, National University of México ■ Frédéric Médail, Aix-Marseille University, IMBE, Mediterranean Institute of Biodiversity and Ecology ■ Jolanta Miadlikowska, Instructor/Senior Reseracher, Department of Biology, Duke University ■ Muthama Muasya, University of Cape Town ■ Tod Stuessy, Herbarium, Museum of Biological Diversity, The Ohio State University ■ Karen L. Wilson, Honorary Research Associate, National Herbarium of New South Wales.

Honorary Committee

PRESIDENT: Felipe VI, His Majesty The King of Spain.

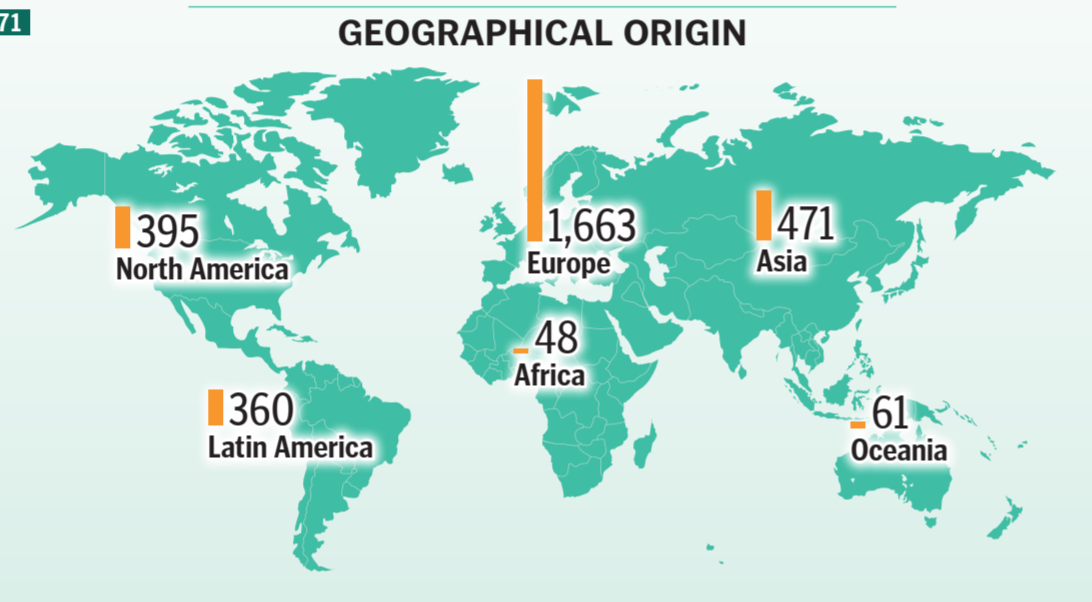
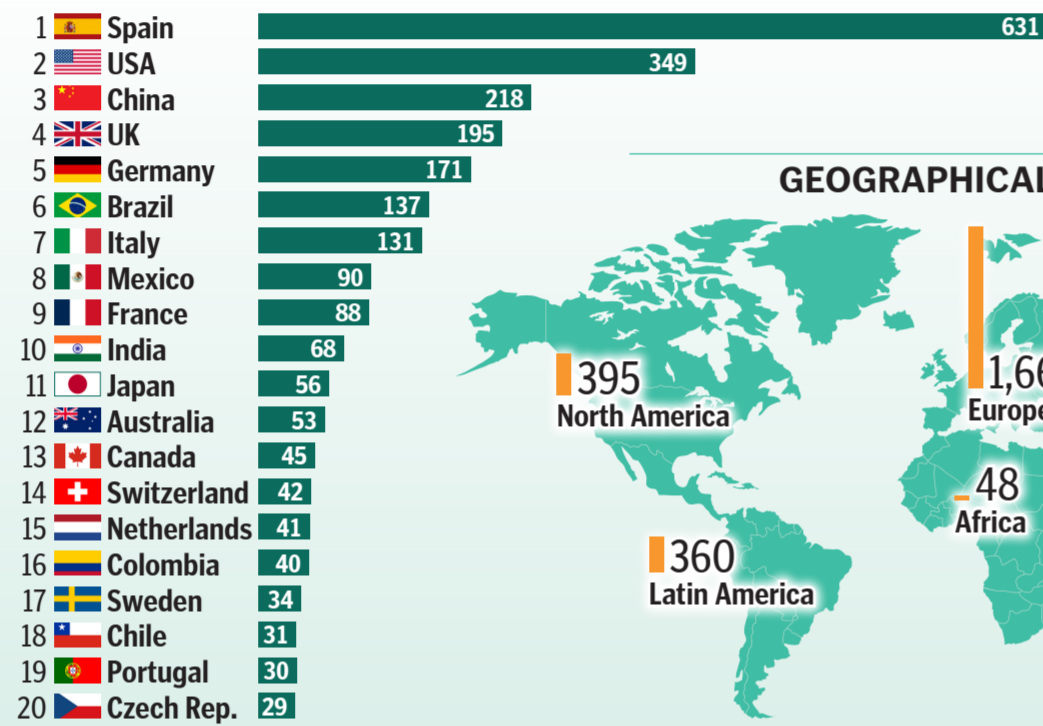
MEMBERS: Pedro Sánchez Pérez-Castejón, President of Spain Government ■ Diana Morant Ripoll, Minister of Science, Innovation and Universities, Government of Spain ■ Isabel Díaz Ayuso, President of the Community of Madrid ■ José Luis Martínez-Almeida, Mayor of Madrid ■ Juan Cruz Cigudosa, Secretary of State for Science, Innovation and Universities, Ministry of Science, Innovation and Universities ■ Eva Ortega Páino, General Secretary for Research, Ministry of Science, Innovation and Universities ■ Eloísa del Pino Matute, President of the Spanish Council for Scientific Research (CSIC) ■ Eva Alcón Soler, President of the Conference of Rectors of Spanish Universities (CRUE) ■ M^a Paz Martín Esteban, Director of the Royal Botanical Garden, Madrid (CSIC) ■ Juan Carlos Moreno Saiz, President of the Spanish Botanical Society (SEBOT).

IBC MADRID DATA BREAKDOWN

Keys to the Congress: Thousands of botanists from all continents, a wide and diverse repertoire of scientific topics in symposia and posters, high quality of invited lectures, and the continuation of a historical conference that was born in the last year of the 19th century.

(Data updated to July 17, 2024)

TOP 20 COUNTRY OF ORIGIN



2,998 REGISTERED BOTANISTS

NOMENCLATURE SECTION AT THE IBC 2024



TOP 7 COUNTRY OF ORIGIN



Welcome to Spain

[...Comes from the front page]

The *Flora iberica* project, developed over more than 40 years, is a good example of the immense collective effort that has been made. Like so many countries in the world, we consider this research effort on biodiversity as a cornerstone not only for basic knowledge and conservation, but also for a wide range of public interests and social demands.

Plant and fungal research in Spain is publicly supported by the Ministry of Science, Innovation and Universities,

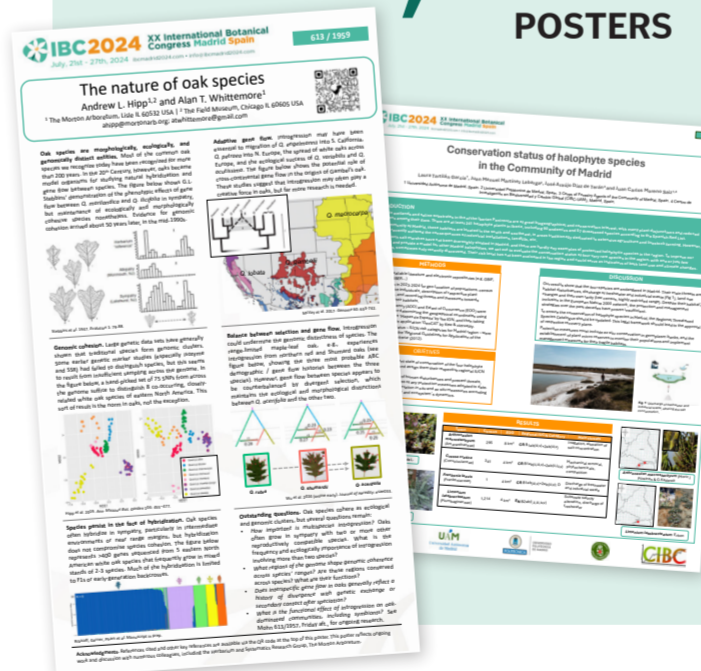
which I am proud to lead. The Spanish Strategy for Science, Technology and Innovation (EECTI 2021-2027) describes the main research objectives shared by the public administrations, both the central administration and those of the 17 Autonomous Communities that structure the government and public administration in our country. The Strategy and the National Research Plans, according to which the activities of our Ministry are developed, are also coordinated with the research policies of the European Union and seek, in particular, to address the global challenges we face, such as the biodiversity crisis, agri-food, bio-economy, natural resources and the environment as a whole.

267 SYMPOSIA 1,608 TALKS

SYMPOSIUM TOPICS

- 40 on Systematics
- 30 on Biogeography / Phylogeography
- 26 on Phylogenetics And Phylogenomics
- 24 on Conservation Biology
- 18 on Ecology And Plant Communities
- 15 on Ecophysiology
- 12 on Reproductive Biology
- 11 on Ethnobotany
- 10 on Global Change Biology
- 9 on Comparative Genomics And Transcriptomics
- 9 on Development And Structure
- 8 on Bryology
- 8 on Hybrids And Hibridation
- 7 on Bioinformatics
- 7 on Macroevolution
- 6 on Education And Outreach
- 4 on Floristics
- 4 on Paleobotany
- 3 on Physiology
- 3 on Plant, Animal, And Microbiome Interactions
- 3 on Funtional Genetics
- 3 on Population Genetics
- 3 on Mycology And Lichenology
- 2 on Palynology
- 1 on Botanical History
- 1 on Crops And Wild Relatives
- 1 on Pteridology

c. 1,400 POSTERS



29 INVITED SPEAKERS 15 WOMEN 14 MEN



A.T. Austin, M.S. Barker, J.L. Brontstein, M.J. Donoghue, J. Flexas, R.V. Gallagher, B.J. Glover, C. Jaramillo, S.D. Johnson, P. Jordano, E.A. Kellogg, K. Kitajima, S.Knapp, T.L. Lumbsch, Keping Ma, S. Magallón, N.P. Makunga, A. Antonelli, A. Moles, L. Mommer, M. Muasya, R.S. Oliveira, J. R. Pennell, I. Sanmartín, Suhua Shi, T. Slotte, P.S. Soltis, B.B.N. Strassburg, J.D. Thompson.

1 OPENING LECTURE 6 PLENARY LECTURES
4 PUBLIC LECTURES 18 KEYNOTES LECTURES



International Botanical Congress in Vienna (June, 1905). JOHANNES HINTERBERGER



Attendees to the deliberations of the Phytogeography Section on Friday, May 21, 1910, at the third International Botany Congress in Brussels. FROM THE BOOK OF MINUTES OF THE CONGRESS



Delegates to the Eighth International Botanical Congress (July 1954, Paris, France) on steps of the Sorbonne, University of Paris. GORHAM, PAUL & NOZZOLILLO, CONSTANCE. (2006). PHOTOSYNTHESIS RESEARCH IN CANADA FROM 1945 TO THE EARLY 1970S.



Commemorative stamps of the X and XII IBC, held, respectively, in Edinburgh and St. Petersburg (in Soviet times, Leningrad).

20 HISTORICAL IBC'S

	YEAR	CITY	COUNTRY
I	1900	Paris	France
II	1905	Vienna	Austria
III	1910	Brussels	Belgium
IV	1926	Ithaca	USA
V	1930	Cambridge	UK
VI	1935	Amsterdam	Netherlands
VII	1950	Stockholm	Sweden
VIII	1954	Paris	France
IX	1959	Montreal	Canada
X	1964	Edinburgh	UK
XI	1969	Seattle	USA
XII	1975	St. Petersburg	Russia
XIII	1981	Sydney	Australia
XIV	1987	Berlin	Germany
XV	1993	Tokyo	Japan
XVI	1999	Saint Louis	USA
XVII	2005	Vienna	Austria
XVIII	2011	Melbourne	Australia
XIX	2017	Shenzhen	China
XX	2024	Madrid	Spain

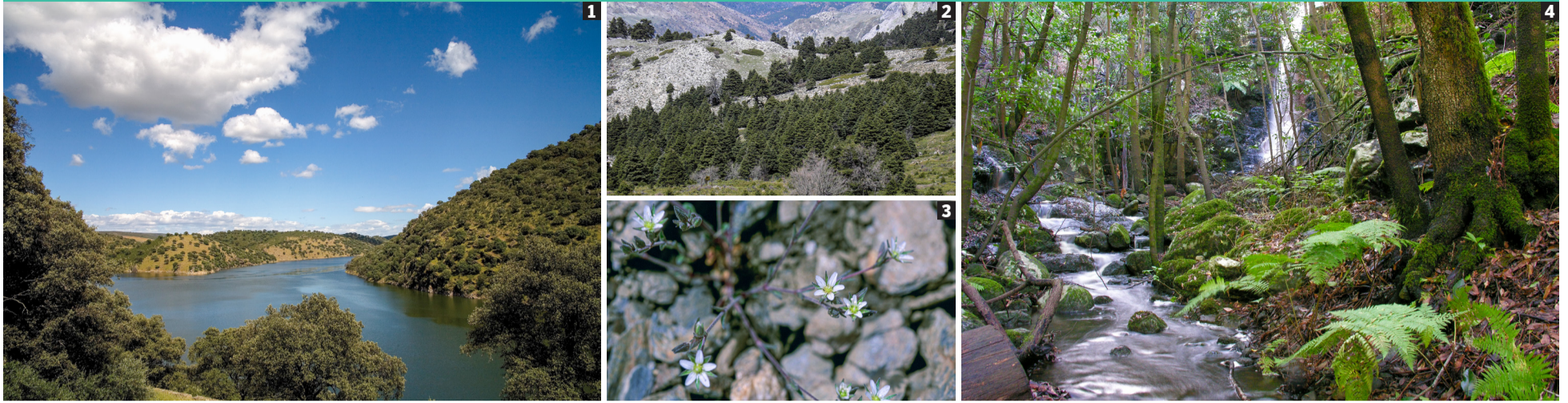
"Today, I invite you to share not only your work, but also your passion for plants during your stay in Madrid"

gardens, parks and nature reserves. However, our planet needs a society that is better informed about the need to protect biodiversity and to adopt coherent lifestyles and consumption habits at the individual level. Communicat-

Today, I invite you to share not only your work, but also your passion for plants during your stay in Madrid and beyond: there is already a social culture rooted in the appreciation of plants and nature, as evidenced by the large number of visitors to botanical

ing with society can only be successful if we all make it a personal commitment. In the same vein, I would like to appeal to all of you to contribute to the transfer of scientific knowledge. Since you are all aware of the crucial contribution that plants and fungi make to human daily life and the key role they have played in the development of our societies, you are in a privileged position to improve the biological culture of citizens. Agriculture, nutrition, health, well-being and environmental sustainability depend to a large extent on this progressive advancement of the knowledge you hold in your hands and the understanding that citizens gain about it.

WELCOME TO SPAIN: THE NATIONAL PARKS NETWORK



1. Hillsides with holm oak. Montfragüe National Park. © V. GARCÍA CANSECO. 2. Spanish fir forests. Sierra de las Nieves National Park. © R. HARO. 3. *Arenaria nevadensis*. Sierra Nevada National Park. © J.M. REYERO. 4. Laurel forest with ferns. Garajonay National Park. © A.B. FERNÁNDEZ.

THE MOST EMBLEMATIC PROTECTED AREAS OF THE SPANISH NATURAL HERITAGE

Organismo Autónomo Parques Nacionales
MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO

Since the declaration of the first National Parks in 1918, Spain has developed a network of 16 areas that represent its most important natural systems. The network is very diverse and includes mountain systems —Euro-Siberian in the Cantabrian Mountains, Alpine in the Pyrenees, Mediterranean in the Central System and the Baetic Mountains—, wetlands of international importance, Mediterranean forests, maritime-terrestrial spaces, volcanic originated spaces with associated Macaronesian vegetation in the Canary Islands.

The National Parks Network covers 488,352 ha, 14 national parks include 389,072 ha of exclusively terrestrial systems, and 2 include both marine (96,768 ha) and terrestrial (2,512 ha) systems. Most of the terrestrial area is included in the European Natura 2000 network.

This diversity makes it possible to find the habitats of numerous plant species in the network, a significant proportion of which are endemic, rare or endangered. The singular flora is a focus of attention in these areas, and it is still surprising the recognition of new species, like *Viola guaxarensis*, recently described in the Teide National Park (NP), or the location of new populations, such as the ghost orchid (*Epipogium aphyllum*), in the Ordesa y Monte Perdido NP and the Aigüestortes y Estany de Sant Maurici NP. In the Archipiélago de Cabrera Maritime-Terrestrial National Park (MTNP), specimens of *Cistus heterophyllus* (in critical situation) have been discovered; in the Islas Atlánticas de Galicia MTNP, *Omphalodes littoralis* subsp. *gallaecica* has been described, an endangered endemism that lives in little altered grey semi-mobile dunes. New populations of very rare species such as *Arenaria nevadensis* and *Odontites viscosus* subsp. *granatensis* have been documented in the Sierra Nevada NP. The last Spanish populations of some nationally endangered aquatic species, such as *Hydrocharis morsus-ranae* and *Avellara fistulosa*, are found in the Doñana NP. In addition, new populations of endemic species found exclusively in this park, like *Onopordum hinojense* have also been discovered.

The National Parks with the highest number of vascular flora taxa are Sierra Nevada, with around 2,400 taxa and Sierra de Guadarrama, with at least 1,750. The network hosts 42 flora species included in the Spanish Catalogue of Endangered Species, of which 74% of them are classified as “Endangered” and 26% as “Vulnerable”. Among the National Parks with a greater number of endangered flora species, due to their insularity, Garajonay and Caldera



Group photo of the excursion on the island of Tenerife (Canary Islands). © IBC-2024

Botanists from all over the world enjoy the Spanish flora

▶The organization of the IBC has prepared a wide range of excursions to visit areas of great interest for their botanical diversity and endemism, and historical heritage. The alternatives run through archipelagos and mountains of the Iberian Peninsula, the Canary Islands and North Africa, often visiting National Parks and other protected areas. Seven excursions have been confirmed, one prior to the IBC to the island of Tenerife, and six after, to the mountains near Madrid, the Pyrenees, the Atlas and the Moroccan coast, and finally the one dedicated to fern-lovers along the northwestern Iberian coast.



Teide violet in bloom. © J.M. REYERO

de Taburiente stand out, with 15 and 9 taxa respectively.

The decline observed in some endangered flora populations can be explained mainly by the synergetic effects of climate change with other pressures like habitat loss due to the abandonment of rural areas (expansion of scrubland), the spread of invasive flora species, or the excessive browsing by herbivores, especially those introduced to the Canary Islands.

Measures to preserve the singular flora are included in all the Park’s planning documents. Among them are plans for the recovery and conservation of species, with the collection and cultivation of seeds for their reintroduction, long-term

monitoring, search and identification of populations, protection of plants during the blooming and fruiting periods...

The Plan for the Recovery and Conservation of High Summit Species in Andalucía includes 24 catalogued species of Sierra Nevada. Years of experience have shown that the best results are obtained by working with plant communities rather than with single species, being essential to repeat actions when necessary. Preliminary conclusions indicate that the permanence of the snow is the main constraint influencing the survival of the flora restored. Altitude, radiation or edaphology are also important constraints, especially for those specimens reaching their distribution limit in Sierra Nevada.

In the Doñana NP, conservation actions have been carried out for edapho-hygrophilous species, highly endangered due to the quality and quantity of water and the impact of herbivory. Within the framework of the Plan for Recovery and Conservation of Species of Dunes, Sandbanks and Coastal Cliffs Species, 9 species are being monitored and conserved.

In the Caldera de Taburiente NP, special attention has been given to the recovery of summit species whose main cause of decline has been browsing by introduced herbivores. Actions like protection with fences, elimination of clandestine graz-

POST-CONGRESS EXCURSIONS

ONE-DAY EXCURSION (July 28th)
Trip to meet the flora of a high Mediterranean mountain:
Sierra de Guadarrama (Madrid)



ONE-DAY EXCURSION (July 28th)
Field trip to enjoy about typical landscapes and flora of the Mediterranean mountains: eastern sector of the Central System (Madrid-Riaza)



ONE-DAY EXCURSION (July 28th)
Ethnobotanical landscapes of Sierra Norte de Madrid: “dehesas” and homegardens.



FIVE-DAY EXCURSION (July 28 to August 1)
Central-Eastern Pyrenees (NE Spain), forests and grasslands in a changing landscape.



SEVEN-DAY EXCURSION (JULY 28 TO AUGUST 3)
Atlas Mountains and continental Macaronesia in Morocco



FOUR-DAY EXCURSION (JULY 28-31)
Iberian pteridoflora expedition



ing, control of herbivores or the creation of experimental planting patches, have contributed to the knowledge and improvement of the populations of *Bencomia exstipulata*, *Echium gentianoides*, *Echium perezii*, *Genista benehoavensis* and *Viola palmensis*.

Garajonay NP, through its recovery programme, has improved the knowledge of 33 priority species, achieving the expansion of most of the rare and endangered flora species with new populations and control of the herbivores.

The conclusions of the last Seminar “Endangered Flora in the National Parks Network”, held in May 2024, highlighted some key ideas for optimizing the protection of endangered flora with both a strategic and a daily management approach.

It is essential to have a social recognition of the need to protect the flora in the parks and their surroundings, to have an in-depth knowledge of the species and the communities as well as the current and potential threats -which allows to streamline the updating of national and regional catalogues and Red Lists, enabling the adaptation of protection measures, resources and efforts to the conservation status of each species-, and to count on trained and long-term committed work teams.