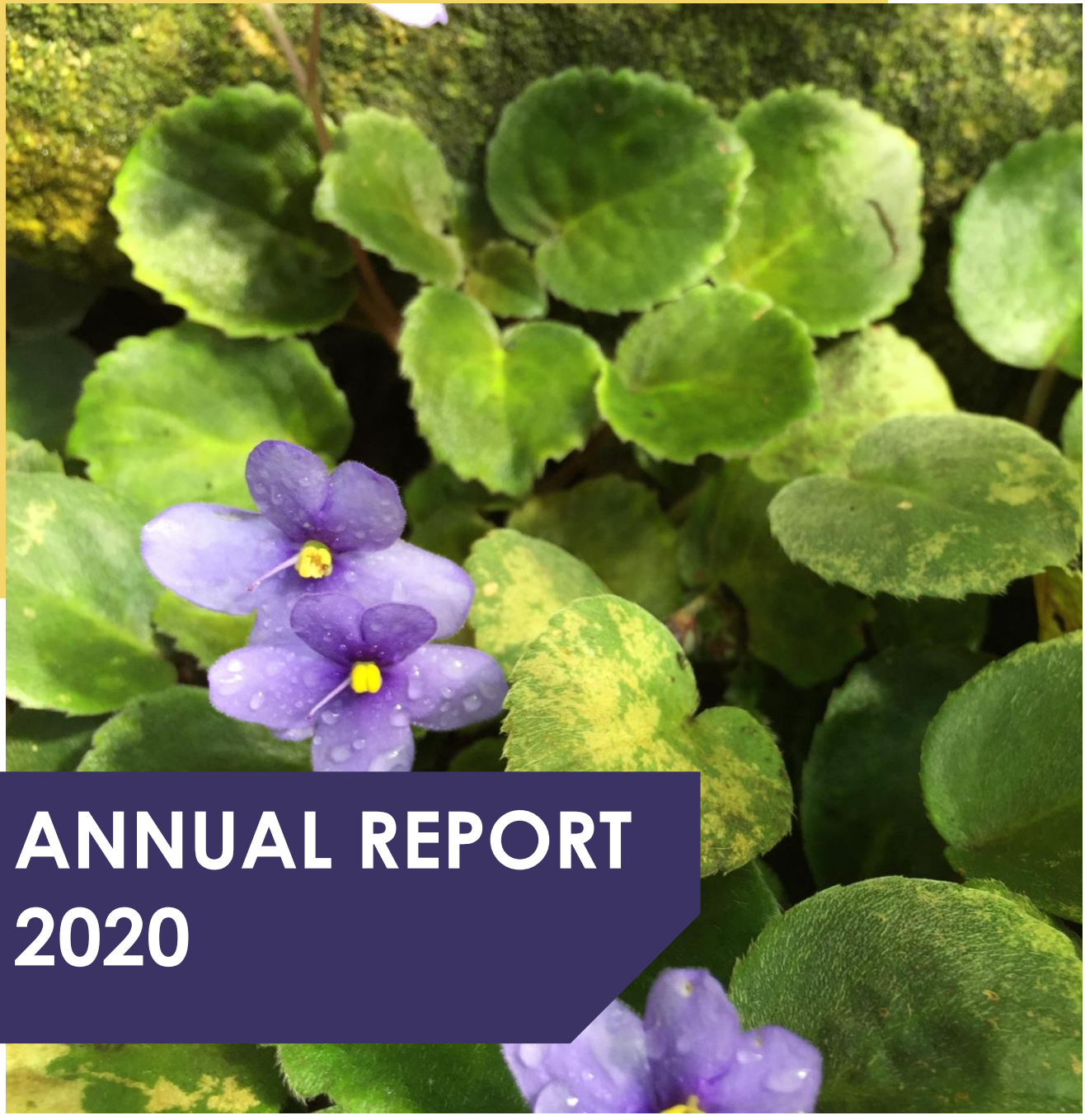


ANNUAL REPORT 2020

BIODIVERSITY COMMITTEE, CHINESE ACADEMY OF SCIENCES

Email: BC-CAS@ibcas.ac.cn
Website: http://www.cncdiversitas.cn

20 Nanxincun,
Xiangshan, Haidian,
Beijing 100093, China

To strengthen the research and practice of biodiversity conservation and sustainable utilization, coordinate the related work among institutes of Chinese Academy of Sciences (CAS), the Biodiversity Committee was established in 1992, and is committed to:

i) Promoting biodiversity research and actively exploring international and domestic collaboration;

ii) Promoting biodiversity monitoring with a focus on the development of Chinese Forest Biodiversity Monitoring Network;

iii) Establishing and developing biodiversity inventory and information sharing platform to promote biodiversity informatics in China;

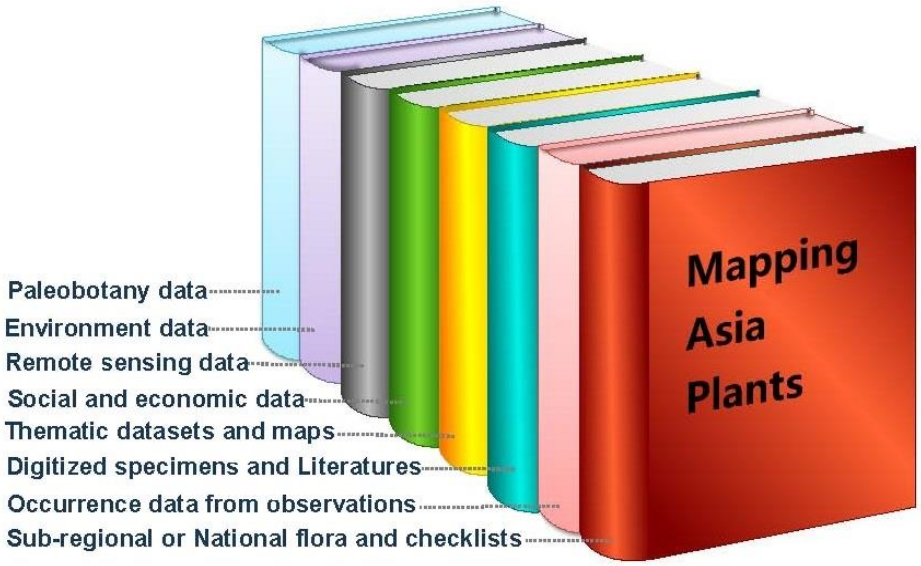
iv) Representing CAS to support related agencies to implement CBD and other biodiversity associated international agreements;

v) Editing and publishing scientific books and journals in biodiversity research;

vi) Promoting the academic exchange of biodiversity research in China and organizing workshops and training courses.

As one of the leading institutions in biodiversity conservation and research, with joint efforts from all members, considerable progress has been made in biodiversity informatics, biodiversity monitoring, decision making support and related areas.

In **BIODIVERSITY INFORMATICS**, **Mapping Asia Plants (MAP)** aims to collect, integrates Asia plant diversity data and develop a platform of Asia plant diversity. It was initiated at the meeting of ABCDNet (www.abcdn.org) working group in November 2015, and was funded by the Alliance of International Science Organizations (ANSO) and Bureau of International Cooperation and Southeast Asia Biodiversity Research Institute, Chinese Academy of Sciences. MAP operates in six sub-regions including Southeast Asia, South Asia, and Northeast Asia etc. In 2020, MAP has published several review articles on the progress of plant research in these areas in *Global Ecology and Conservation*. For each sub-region, species database has been built (see table for more details).



Sub-region progress of Mapping Asia Plants (MAP)

<table>
<tr><th>Sub-regions</th><th>Database development (By December 2020)</th></tr>
<tr><td>Southeast Asia</td><td>The species checklist database has been set up. The database includes 472 families, 6098 genera.
<table>
<tr><th>Country</th><th>Num. of Family</th><th>Num. of Genus</th></tr>
<tr><td>Brunei</td><td>226</td><td>1167</td></tr>
<tr><td>Cambodia</td><td>265</td><td>1611</td></tr>
<tr><td>Indonesia & East Timor</td><td>356</td><td>3081</td></tr>
<tr><td>Laos</td><td>250</td><td>1721</td></tr>
<tr><td>Malaysia</td><td>364</td><td>2975</td></tr>
<tr><td>Myanmar</td><td>345</td><td>2661</td></tr>
<tr><td>Philippines</td><td>388</td><td>3733</td></tr>
<tr><td>Singapore</td><td>243</td><td>1580</td></tr>
<tr><td>Thailand</td><td>359</td><td>2799</td></tr>
<tr><td>Vietnam</td><td>368</td><td>2875</td></tr>
</table></td></tr>
<tr><td>South Asia</td><td>The species checklist database has been set up in all 8 countries in South Asia. The species distribution database has been set up in Afghanistan (at provincial level).
<table>
<tr><th>Country</th><th>Num. of Family</th><th>Num. of Genus</th></tr>
<tr><td>Afghanistan</td><td>152</td><td>1096</td></tr>
<tr><td>Bangladesh</td><td>229</td><td>1427</td></tr>
<tr><td>Bhutan</td><td>245</td><td>1758</td></tr>
<tr><td>India</td><td>318</td><td>3126</td></tr>
<tr><td>Sri Lanka</td><td>245</td><td>1597</td></tr>
<tr><td>Maldives</td><td>123</td><td>436</td></tr>
<tr><td>Nepal</td><td>247</td><td>1751</td></tr>
<tr><td>Pakistan</td><td>203</td><td>1581</td></tr>
</table></td></tr>
<tr><td>Northeast Asia</td><td>The preliminary species checklist database has been set up. Among which, there are 196 families 1203 genera in Korean peninsula, 228 families 1394 genera in Japan, 318 families 3410 genera in China, 114 families 662 genera in Mongolia. The species distribution database has been set up in China, Japan and Mongolia (at provincial level). The database of plant synonyms is developed with about 100,000 records.</td></tr>
<tr><td>Central Asia</td><td>Species checklist database has been set up in Central Asia. After removing cultivated species, there are 139 families, 1181 genera. For each country, there are 127 families 973 genera in Kazakhstan; 115 families 850 genera in Tajikistan; 120 families 849 genera in Uzbekistan; 109 families 763 genera in Turkmenistan; 119 families 770 genera in Kyrgyzstan.</td></tr>
<tr><td>North Asia</td><td>1. Species checklist database has been set up in North Asia (The Asian part of Russia), including 162 families, 1151 genera, 6459 species.
2. Literatures and other references are collected for the vascular plant database of Europe part of Russia.</td></tr>
<tr><td>Southwest Asia</td><td>Species checklist database has been set up including over 70000 records. The information for each country is listed in the table:
<table>
<tr><th>Country</th><th>Num. of Family</th><th>Num. of Genus</th></tr>
<tr><td>Turkey</td><td>170</td><td>1305</td></tr>
</table></td></tr>
</table>

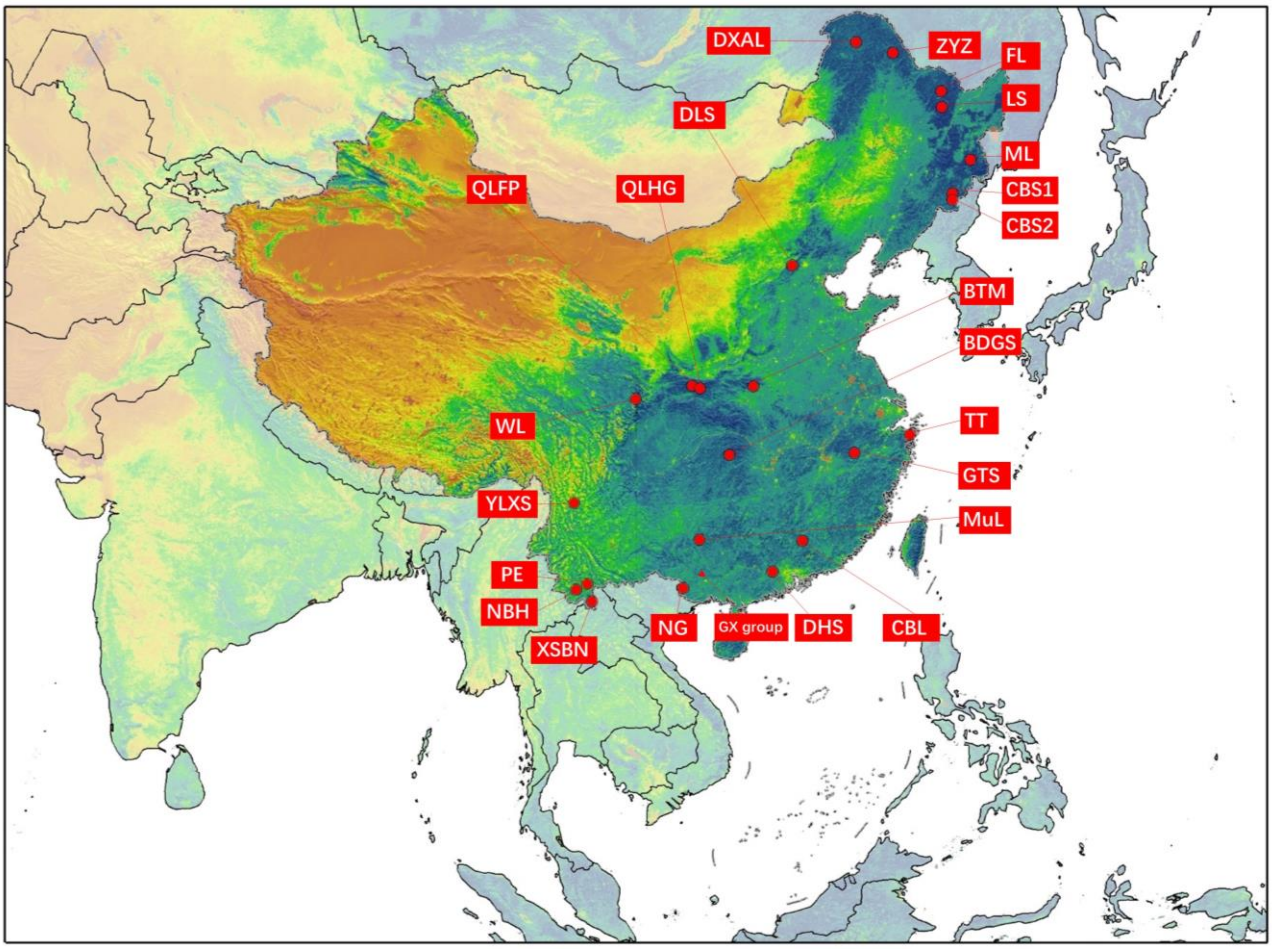
		Iran	155	1216
		Azerbaijan	165	1112
		Georgia	149	985
		Iraq	141	970
		Armenia	132	860
		Syria	133	919
		Israel	134	909
		Yemen	152	906
		Jordan	117	801
		Palestine	124	829
		Lebanon	123	799
		Saudi Arabia	132	844
		Cyprus	120	605
		Oman	104	587
		United Arab Emirates	79	372
		Kuwait	58	253
		Bahrain	53	193
		Qatar	49	177

Progress was also made in **Compiling of the Species Catalogue of China**. Two issues of animal volume were published in 2020, which makes a total number of 26 volumes have been published including 13 issues of plant volume, 9 of 13 issues of animal volume and 4 of 6 issues of fungi.

"2020 Annual Checklist of Catalogue of Life China" was launched on May 22, the International Day for Biological Diversity. There were 122,280 species & infraspecific taxa in 2020 Annual Checklist of Catalogue of Life China, including 110,231 species and 12,049 infraspecific taxa. The China Central Television (CCTV) reported the news and briefly introduced the checklist.

By the end of 2020, 1630 data publishers mobilized 1.64 billion occurrence records to GBIF.org, mainly observation records and specimen records, providing massive biodiversity information services. GBIF-CAS node used GBIF integrated publishing Toolkit (IPT) and published 14 datasets, including more than 1.6 million records. The data is integrated with existing data of China on GBIF effectively, allowing more people to know and better understand biodiversity in China. According to the GBIF website, there are 258 peer-reviewed SCI papers used the data published by GBIF-CAS node at the end of 2020.

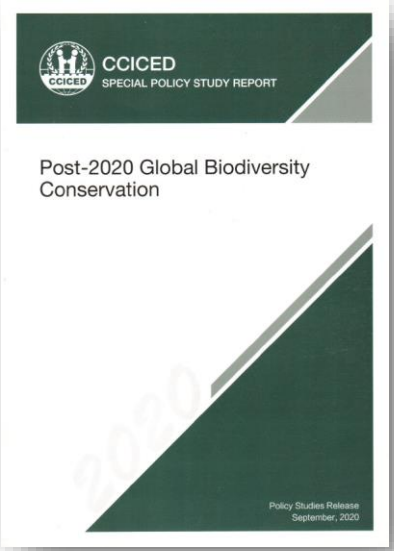
In **BIODIVERSITY MONITORING**, **Chinese Forest Biodiversity Monitoring Network (CForBio)** was established in 2004. It is a research base for the dynamics of biodiversity of forest ecosystems in China and is an important part of the global forest biodiversity monitoring network (CTFS/Forest GEO). It covers major forest vegetation types in different climatic zones in China, including boreal forest, coniferous and broadleaved mixed forest, deciduous broadleaved forest, deciduous and evergreen broadleaved forest, evergreen broadleaved forest and tropical rainforest. By the end of 2020, 24 permanent forest dynamics plots and about 60 associated plots with the size 1 ha or larger have been set up for CForBio. The total plot area is 695.6 ha. 2,823,200 individuals belonging to 1893 species (DBH≥1 cm) are recorded. There were 57 scientific articles published in 2020, including 42 papers in SCI-journals. Since June 2020, CForBio begins to organize CForBio Forum to introduce advances in biodiversity monitoring research at home and abroad.



CForBio Forum in 2020

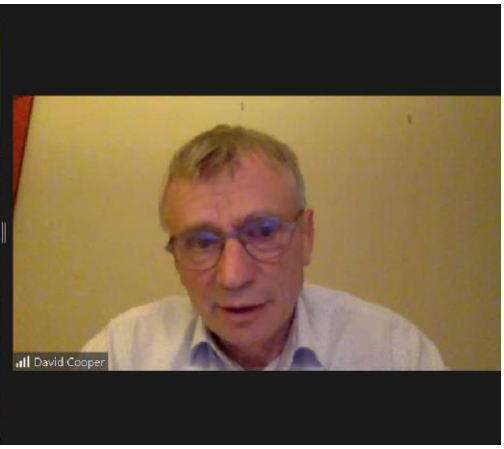
Dates	Titles	Speakers
18 June	A structural stability approach to understand species coexistence	SONG Chuliang, MIT
	Studies on molecular mechanism of species coexistence in communities	HU Xinsheng, South China Agricultural University
16 July	Why community turnover poses a critical challenge for ecological forecasting	Peter B. Adler Utah State University
	Fitting, Interpreting and Reporting Generalized Linear Mixed Effects Models in Ecology	JIA Shihong, Northwestern Polytechnical University
6 August	The structure and dynamics of tree assemblages – from traits and phylogenies to transcriptomes and functional phylogenomics	Nathan G. Swenson, Michigan State University
	Functional traits approach to the study of tree demography	YANG Jie, Xishuangbanna Tropical Botanical Garden, CAS
23 September	Biodiversity changes during the Anthropocene	Mark Vellend, l'Université de Sherbrooke
	Bayesian data analysis in ecology: A brief introduction	ZHU Kai, University of California, Santa Cruz
21 October	Multitrophic biodiversity in subtropical forests of south-east China: patterns and processes	Andreas Schuldt, Georg-August-University Göttingen
	Insect species delimitation and interactions	ZHU Chaodong, Institute of Zoology, CAS
20 November	Ecology of AM fungi in an agricultural field	John W Taylor, University of California, Berkeley
	Stochasticity and Contingency in Mycobiome Assembly	GAO Cheng, Institute of Microbiology, CAS
29 December	Forests are much more than the trees: Testing for broader effects of foundation species in large forest dynamic plots	Aaron M. Ellison, Harvard University
	Foundation species across a Latitudinal gradient in China	QIAO Xiujuan, Wuhan Botanical Garden, CAS

In **DECISION MAKING SUPPORT**, as the leading institution for technical support from China side, the Committee plays an important role in the project of "Post 2020 Global Biodiversity Conservation", a Special Policy Study (SPS) launched by China Council for International Cooperation on Environment and Development (CCICED). The major research tasks include: 1) Leadership and engagement: China's roles for CBD COP 15 success, 2) Stocktaking on parties' view regarding post 2020 global biodiversity framework (GBF) and its Implementation, 3) China's showcase efforts for ecological conservation, 4) Post-2020 biosecurity/biosafety, biodiversity and COVID-19 working paper, 5) Recommendations. The Full Report is available on CCICED website.

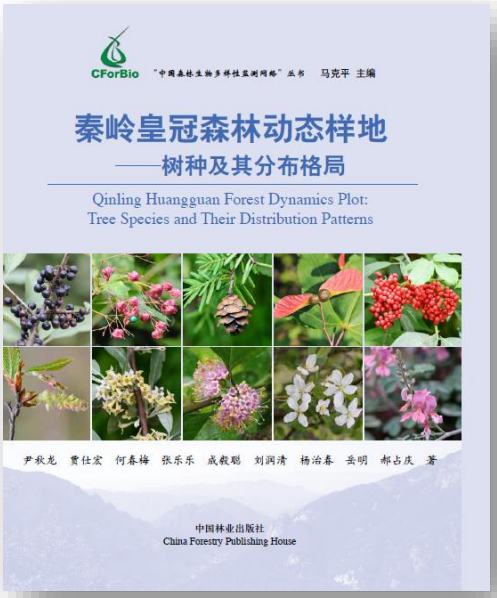


To further promote communications and exchanges in biodiversity research, conservation and policy making, BC-CAS led to establish **BEIJING BIODIVERSITY SCIENCE ASSOCIATION** in August 2020. More exciting activities are to be presented.

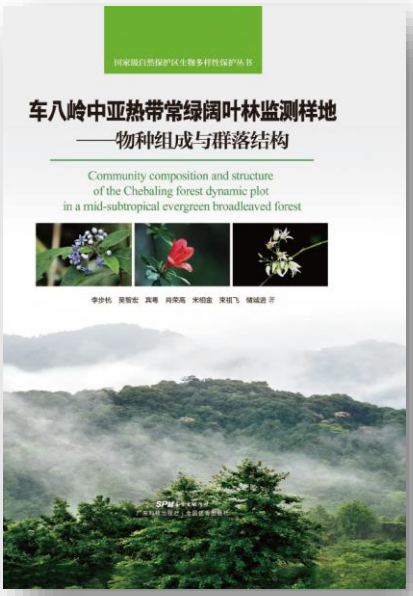
Thought the influence of COVID-19, BC-CAS kept to promote **INTERNATIONAL EXCHANGES AND COOPERATION** in biodiversity. After the launch of the fifth Global Biodiversity Outlook (GBO-5) on 15 September 2020. To improve the understanding of the report in Chinese community, BC-CAS organized a seminar on GBO-5 and invited Mr. David Cooper, the Deputy Executive Secretary, to share the contents from GBO-5. BC-CAS also helped to organize activities to promote the promotion of IUCN Green List in China, and helped to organize the 2020 Meeting of the IUCN Asia Regional Members Committee on July 29, 2020, which was for the first time to be held online. Prof. MA Keping, the Vice Chair and Secretary General of BC-CAS, participated in several important events, including the IUCN/WCS/France Knowledge Dialogue-High Level Side Event of the United Nations High Level Political Forum on Sustainable Development, GBIF Asia Virtual Summit, the Third ASEAN Conference on Biodiversity, Effective Market-based Sustainability Practices for Mainstreaming Biodiversity and gave talks in the events.



PUBLICATIONS



YIN Qiulong et al. ***Qinling Huangguan Forest Dynamics Plot: Tree Species and Their Distribution Patters***. China Forest Publishing House. Beijing. 2020.



LI Buhang et al. ***Community composition and structure of the Chebaling Forest Dynamics Plot in a mid-subtropical evergreen broadleaved forest***. Guangdong Science and Technology Press. Guangdong. 2020.

BIODIVERSITY SCIENCE

Biodiversity Science (formerly Chinese Biodiversity), launched in 1993, is a monthly peer-reviewed journal that specifically addresses the issues of biodiversity. The journal accepts papers dealing with all taxa, ranging from bacteria to plants and animals, and all types of ecosystems. It has ranked a high-impact scientific journal in the field of biology in China.

In 2020, the journal was continuously granted by the Project of Excellence Action Plan for China's Scientific Journals, and won the "100 Outstanding Academic Journals of China 2018", the "Outstanding S & T Journals of China" (2017–2020), and the "Excellent International Impact Academic Journals of China 2020".