Annual Report 2017

Chinese National Committee for DIVERSITAS
Biodiversity Committee, Chinese Academy of Sciences

Contents

Message from the Chairman

At the beginning of 2018, on behalf of the Biodiversity Committee of the Chinese Academy of Sciences(BC-CAS) and CNC-DIVERSITAS, I would like to send my most cordial greetings and best wishes to all the committee members, government agencies, institutions and experts for their enormous support.

The year of 2017marked a milestonein China's history. The 19th National Congress of the Communist Party of China (CPC) was successfully held, in the report, the General Secretary Xi Jinping pointed out that we will carry out major projects to protect and restore key ecosystems, improve the system of shields for ecological security, and develop ecological corridors and biodiversity protection networks, so as to strengthen the quality and stability of our ecosystems. During "the two sessions", it was proposed to establish a Biodiversity Conservation Law. At the same time, a series of meetings were held successfully, such as the Belt and Road Forum for International Cooperation, BRICs, CPC in Dialogue with World Political Party High-Level Meeting. All these have laid a solid political foundation for biodiversity conservation and research.

During the past year, CNC-DIVERSITAS and BC-CAS made significant progress in promoting research and conservation of biodiversity in China, especially in the fields of biodiversity informatics and monitoring.

Biodiversity informatics has been developing rapidly in recent years.The databases of global and regional biodiversity have been established and improved. Mapping Asia Plants (MAP), led by the Committee, has maderapid development. The foci in the early period were to establish the list and distribution database of higher plants in Asia, and then to develop an online platform of data management, mining, and integrating the data of plant traits, molecular omics, paleobotany, environmental and remote sensing, and to build a big data online platform of plants in Asia. Currently, it is to focus on collecting and sorting the distribution information of plant checklists among more than 40 countries in Asia. In addition, in the background of the Belt and Road Initiative, we organized the "Workshop on Biodiversity Informatics in the Big Data Era", which shared our experiences in biodiversity conservation and information management in China to the trainees, further expanded CAS'impact in biodiversity conservation, and will promote the development of biodiversity conservation and research in the Belt and Road related countries.

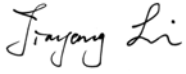
Evaulations are needed to assess the effects of biodiversity conservation andthe goals of related

protection plans. Monitoring is an effective way to assess the progress of biodiversity conservation,which we have been continuing fruitfully for many years. By the end of 2017, as an important part of China's Biodiversity Observation and Research Network (Sino BON), Chinese Forest Biodiversity Monitoring Network (CForBio) had17 large-scale forest dynamics plots and more than 50 associate plots (each with an area of ≥1 hectare). Based on this platform, 56 papers were published in 2017.Among them, the study on the mechanisms of forest community species coexistence was particularly well received by the foreign colleagues. The rapid development of CForBio has also stimulated biodiversity monitoring by relevant governmental departments and institutions.

Good progress was also made in compiling of the print version of Species Catalogue of China, whose issues increased to 35 from 29.The manuscripts of all issues have been completed with 10 of thempublished by the Science Press (Beijing). The edition of CD-ROM of Catalogue of Life, China (2017 Annual Checklist) was launched by Chinese Academy of Sciences and the Ministry of Environmental Protection. Data in the Checklist can be accessed for free by the public users in CD-ROM and online.

The Committee organized a number of international conferences, symposiaand training courses to promote the development of biodiversity conservation, including the Meeting for Asia Regional Members Committee of IUCN, the Second IUCN Tripartite Partnership Meeting, the Fourth National Conference on Biodiversity Informatics, the ABCDNet Working Group Meeting, the Green List and Protected Area Training Course, the Symposium on Biodiversity and BioONE, and a series of workshops of MAP. They represented the achievements of biodiversity conservation in China, promoted the progress of on-going projects, and provided opportunities for domestic and international communication and collaboration.

Looking forward to 2018, we begin from a new starting point. The Committee will continue to promote the work on biodiversity with the supports of CAS and relevant departments. With these efforts, we will write a new chapter in biodiversity conservation and research together with our parters.



Chairman, Chinese National Committee for DIVERSITAS
Biodiversity Committee, Chinese Academy of Sciences
Beijing, China
February 20, 2018

CNC-DIVERSITAS

DIVERSITAS is an international program of biodiversity science established in 1991 that aims to address the complex scientific questions posed by the loss of and change in global biodiversity. By networking individuals across natural and social science disciplines, it facilitates research that extends beyond national or regional boundaries to address issues of global concern, thereby adding value to research projects being undertaken around the world.

Biodiversity Committee, Chinese Academy of Sciences (CAS) 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 journal in biodiversity research;
vi. Promoting the academic exchange of biodiversity research in China, and organizing workshops and training courses.

CNC-DIVERSITAS (the Chinese National Committee for DIVERSITAS) is an academic organization that was created on October 28, 2004 to coordinate and conduct local activities of DIVERSITAS in China. CNC-DIVERSITAS is led by the Chinese Academy of Sciences, with committee members from the Ministry of Science and Technology, Ministry of Environmental Protection, Ministry of Agriculture, Ministry of Education, Ministry of Housing and Urban-Rural Development, State Forestry Administration, State Oceanic Administration and National Natural Science Foundation. The Office of Biodiversity Committee of the Chinese Academy of Sciences (BC-CAS) is in charge of the daily operation of CNC-DIVERSITAS. The 2nd Chinese National Committee for DIVERSITAS was established in March 2011 (See appendix).

CNC-DIVERSITAS is responsible for:

i. Taking part in the activities of Future Earth as the national representative to promote international cooperation and exchange;
ii. Promoting domestic biodiversity research and academic exchange;
iii. Providing advice and consultation on the plans of biodiversity studies, managing biological resources and the environment, and developing sustainable development strategies for decision makers;
iv. Assessing and reviewing key domestic and international cooperation projects, commissioned by ministries and related organizations;
v. Disseminating knowledge of biodiversity to enhance public awareness of biodiversity conservation.

PART I

I. Introduction to the Chinese National Committee for DIVERSITAS (CNC-DIVERSITAS)

The Chinese National Committee for DIVERSITAS
Biodiversity Committee, Chinese Academy of Sciences


Species
Catalogue of China
中国生物物种名录
（印刷版）编研
Southeast Asia
Plant Biodiversity
Information
Infrastructure
东南亚
植物多样性信息平台 SEADiv
Mapping
Asia
Plants
亚洲
植物数字化计划
MAP
Related Biodiversity
Information Sharing
Platforms
相关的生物多样性
信息共享平台
Species 2000
China Node
物种 2000
中国节点
Chinese
Forest Biodiversity
Monitoring Network
中国
森林生物多样性监测网络
CForBio
Asia Biodiversity
Conservation and Database
Network
亚洲生物多样性
保护与信息网络（ABCDNet）

PART II

On-going Project

i. Species 2000 China Node
ii. Compiling of printed version of Species *Catalogue of China*
iii. Asia Biodiversity Conservation and Database Network (ABCDNet)
iv. Mapping Asia Plants (MAP)
v. Chinese Forest Biodiversity Monitoring Network (CForBio)
vi. GBIF CAS Node
vii. Construction of the China-ASEAN Environmental Information Sharing Platform and Biodiversity Special Demonstration Platform
viii. Related Biodiversity Information Sharing Platforms

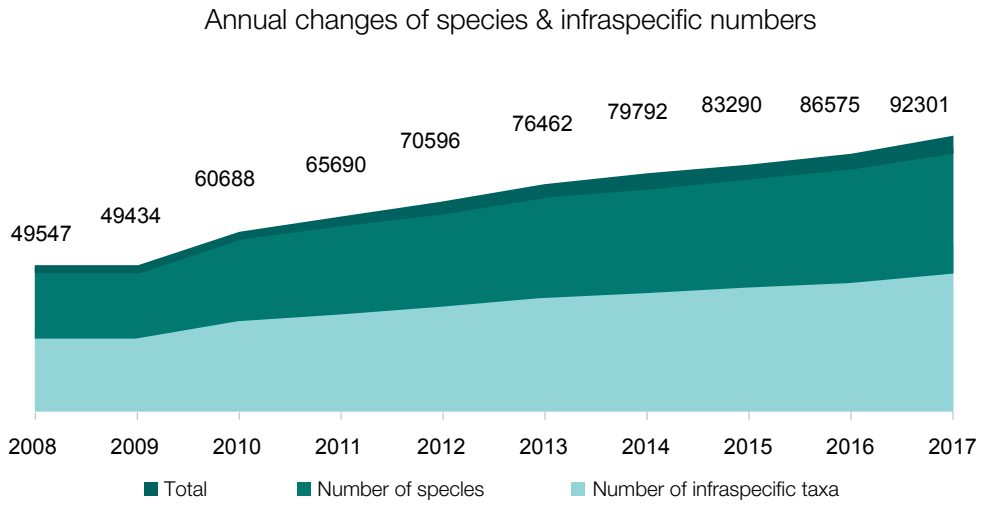
On-going Project

i. Species 2000 China Node

http://www.sp2000.org.cn

Species 2000 is an autonomous federation of taxonomic database custodian, whose goal is to create a uniform and validated index to the world's known species. Species 2000 China Node is a regional hub of the Species 2000 program launched in 2006. The goal of Species 2000 China Node project is to provide a validated checklist of all species distributed in China. Since 2008, the project compiled and published electronic version of the annual checklist of the *Catalogue of Life China*.

Organized by the Biodiversity Committee of Chinese Academy of Sciences (BC-CAS), and funded by the Chinese Academy of Sciences and the Ministry of Environmental Protection, *Catalogue of Life China 2017* Annual Checklist has been compiled by Species 2000 China Node, published by Science Press (Beijing). In line with the Species 2000 data standard, each species page includes the scientific name, synonym, common name, literature, classification system, distribution at provincial level and Chinese name with Pinyin (pronunciation in Chinese). The reviewers for each record are also listed.



There are 92301 species & infraspecific taxa in the 2017edition, including 80390 species and 11911 infraspecific taxa. In Chordata phylum, there are 3337 fish species, 416 amphibian species, 463 reptile species, 1373 bird species and 564 mammal species. There are 3018 species in Bryophyta, 2217 species in Pteridophyta and 30984 species in Anigospermae.

Compared with the 2016 version, there are many updates in animalia, plantae, fungi and protozoa, especially in plantae. In 2017 version, the checklist of higher plant is revised based on the contents of Plants Volume of Species Catalogue of China (13 books, published by Science Press in Beijing, 2013-2017), includes 465 families, 4003 genera, 36246 species and 7070 infraspecies, covering all known China native higher plants and naturalized plants, as well as economically important exotics, such as crops or plantation plants. Bryophyteis divided into 3 phyla, Anthocerotophyta, Bryophyta and Marchntiophyta, includes 151 families, 595 genera, 3045 species, 235 infraspecies. The Pteridophyta includes 40 families, 178 genera, 2217 species, 132 infraspecies; Gymnospermae includes 10 families, 45 genera, 263 species, 85 infraspecies; Angiospermae includes 264 families, 3185 genera, 30721 species and 6618 infraspecies.

Information Statistics of Catalogue of Life China 2017 Annual Checklist

	Species & infraspecific taxa	Species	Infraspecific taxa	Accepted Names	Synonyms	Common names
Animalia	38631	34700	3931	38631	29937	11346
Bacteria	469	463	6	469	24	0
Chromista	2239	1802	437	2239	500	72
Fungi	4273	4102	171	4273	4258	505
Plantae	44041	36941	7100	44041	70186	16673
Protozoa	1843	1727	116	1843	2135	0
Viruses	805	655	150	805	6	523
Total	92301	80390	11911	92301	107046	29119

ii Compiling of print version of *Species Catalogue of China*

Compiling of the Species Catalogue of China was a key project initiated and sponsored by CAS in 2013. Itsgoal is to compile about 60 000 speciesin 35issues in three volumes, i.e. plants, animals and fungi, and to update it electronically. The Catalogue will not only provide authoritative and comprehensive species information for protection, monitoring, and sustainable use of China's biodiversity resources, but also provide scientific support for the Chinese government to fulfill and implement the Convention on Biological Diversity (CBD).

By the end of 2017, nine of 13 plant volumes have been published, one of 16 animal volumes have been published and ten have been completed, 4 of 6 fungi volumes have been completed.The data are as follows:

Plant Volumes Progress Chart

No.	Title	Authors	Progress
1	A Synoptic Checklist	Lisong Wang, Yu Jia, Xianchun Zhang, Haining Qin	Publish in Early 2018
2	Bryophytes	Yu Jia, Si He	Published
3	Pteridophytes	Yuehong Yan, Xianchun Zhang, Xile Zhou, Jiuqiong Sun	Published
4	Spermatophyte I - Cycadaceae through Orchidaceae	Xiaohua Jin, Yong Yang	Published
5	Spermatophyte II - Arecaceae through Poaceae	Wenli Chen, Shuren Zhang	Publish in Early 2018
6	Spermatophyte III - Liliaceae through Dilleniaceae	Haining Qin, Bo Liu, Xingjin He, Jianfei Ye	Publish in Early 2018
7	Spermatophyte IV - Paeoniaceae through Polygalaceae	Xiangyun Zhu, Zhiduan Chen, Bo Liu	Published
8	Spermatophyte V - Rosaceae through Phyllanthaceae	Nianhe Xia, Yihua Tong	Published
9	Spermatophyte VI - Elatinaceae through Ancistrocladaceae	Zhixiang Zhang, Yuantong Hou, Shuai Liao, Yifei Xie	Published
10	Spermatophyte VII -Caryophyllaceae through Ericaceae	Shengxiang Yu, Gang Hao, Xiaofeng Jin	Published
11	Spermatophyte VIII - Lcacinaceae through Pedaliaceae	Ruijiang Wang, Yan Liu, Shilong Chen	Published
12	Spermatophyte IX - Lamiaceae through Apiaceae	Chunlei Xiang, Qixin Liu, Hua Peng	Published
13	Spermatophyte X - Campanulaceae through Caprifoliaceae	Tiangang Gao, Guojin Zhang	Publish in Early 2018

The manuscriptswere compiled by 66 authors through collecting materials, peer reviewing and editing. Communication between the contributors of the working group sensured the scientific integrity and consistency. This work will also provide useful experience and reference for future directory compiling. Therefore, the pilot project of provincial plant directory, and the construction of provincial digital herbarium will be one of the key tasks in the future.

Animal Volumes Progress Chart

No.	Title	Authors	Progress
1	Vertebrate I - Mammalia	Zhigang Jiang et al.	In Press
2	Vertebrate II - Aves	Guangmei Zheng, Fumin Lei et al.	In Press
3	Vertebrate III - Reptilia	Yuezhao Wang, Ermi Zhao et al.	In Press
4	Vertebrate IV - Amphibia	Jianping Jiang, Liang Fei et al.	In Press
5	Vertebrate V - Pisces	Chunguang Zhang, Guangzaho Shao, et al.	Pending manuscript
6	Invertebrate I - Araneae	Shuqiang Li, Yucheng Lin	Published
7	Insects I - Lecithoceridae etc.	Chunseng Wu	Publish in May 2018
8	Insects II - Neuroptera	Ding Yang, Xingyue Liu, Xingke Yang	Publish in March 2018
9	Insects III - Plecoptera	Ding Yang, Weihai Li	Publish in March 2018
10	Insects IV - Apidae	Zeqing Niu, Chaodong Zhu, etc.	Publish in March 2018
11	Insects V - Nematocera	Ding Yang, Zhu Li, Qifei Liu	In Press
12	Insects VI - Aslidae	Ding Yang, Lili Zhang, Kuiyan Zhang	Publish in March 2018
13	Insects VII - Brachycera	Ding Yang, Mengqin Wang, Wenliang Li	In Press
14	Insects VIII - Geometridae	Hongxiang Han, Nanjiang, Dayong Xue	Publish in May 2018
15	Insects IX - Staphylinidae	Hongzhang Zhouetc.	Pending manuscript
16	Name and Distribution of Animals	Liqiang Jiet al.	Pending manuscript

Fungi Volumes Progress Chart

No.	Title	Authors	Progress
1	Fungi IPezizomycetes	Wenying Zhuang, Huandi Zheng, Zhaoqing Zeng	In Press
2	Fungi IILichens	Jiangchun Wei, Wei Guo	Pending manuscript
3	Fungi IIIZygomycotina	Ruyong Zheng, Xiaoyong Liu	In Press
4	Fungi IVMycetozoa	Yu Li, Pu Liu	In Press
5	Fungi VUredinales,Ustilaginaceae	Jianyun Zhuang, Lin Guo	In Press
6	Name and Distribution of Fungi	Yijian Yao, Tiezheng Wei	Pending manuscript

iii. Asia Biodiversity Conservation and Database Network

http://www.abcdn.org

Asia Biodiversity Conservation and Database Network (ABCDNet) is the first biodiversity informatics program initiated by China. It aims to build a platform for sharing biodiversity information in Asia, and to be an important regional cooperation platform in the area of international biodiversity research and conservation.

Background

Asian countries are experiencing severe threats to the biodiversity rich areas and ecosystems. The related information platforms are vital for developing sustainable strategies of biodiversity conservation and management. However, the available biodiversity information in Asia is still limited and scattered. There is no mechanism to harness that information for mega-scale, inter-country planning of conservation strategies. In this context, BCCAS organized the Workshop on Biodiversity Data Sharing Environment in Asia in Zhaoqing, Guangdong, China, in March of 2013. It was attended by representatives from the University of Agricultural Sciences, Bangalore, India, the ASEAN Centre for Biodiversity (ACB), the IUCN China office, the Chinese National Committee for Man and Biosphere (MAB), the International Centre for Integrated Mountain Development (ICIMOD), Indonesian Institute of Sciences and Kookmin University, Korea. The participants discussed the future plans for a possible network of biodiversity information sharing among the Asian countries. All the participants agreed to develop a network of networks, namely Asia Biodiversity Conservation and Database Network (ABCDNet).

Members of Working Group of ABCDNet

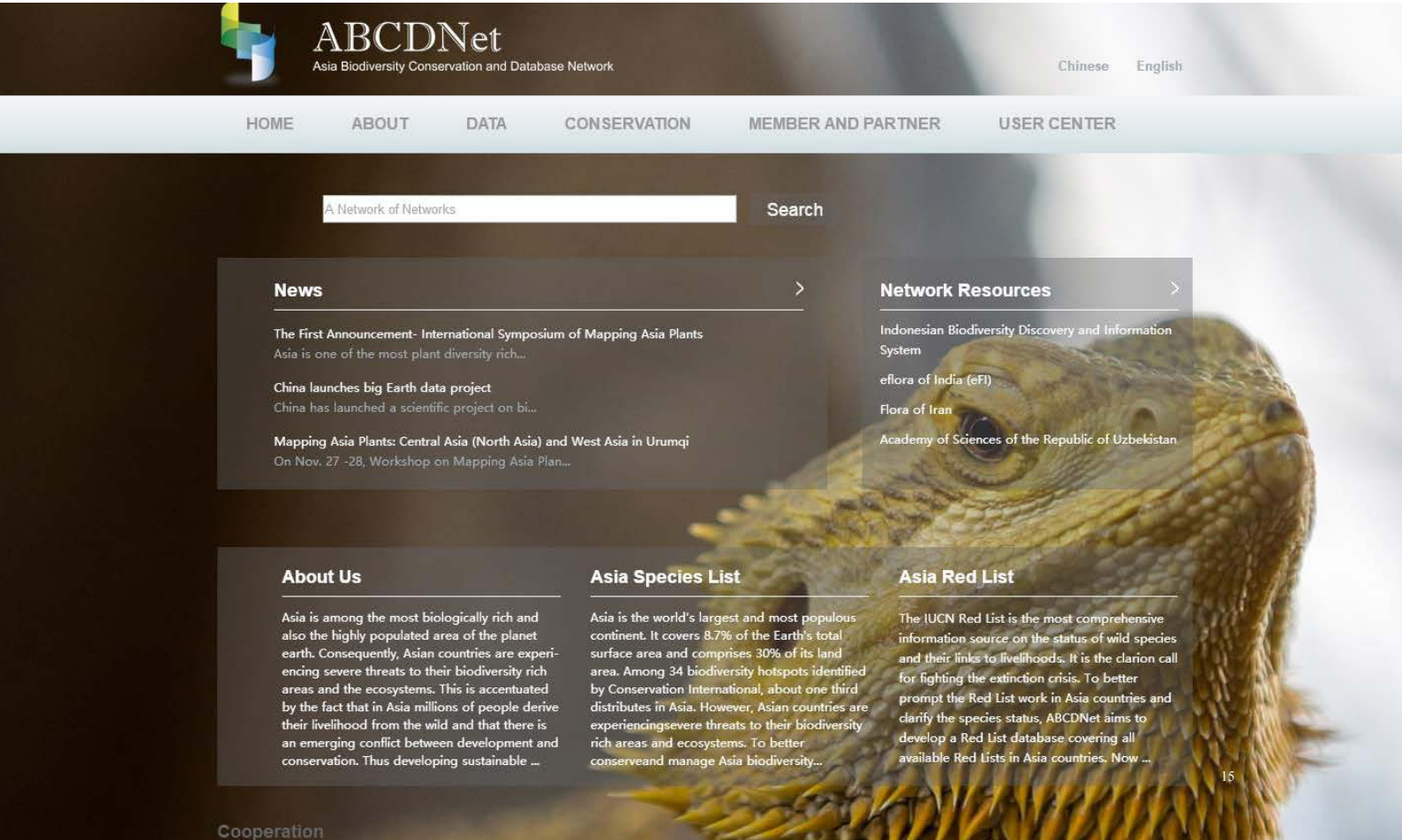
Name	Position	Organization
Keping Ma	Co-Chair	Institute of Botany, the Chinese Academy of Sciences
K N Ganeshaiah	Co-Chair	University of Agricultural Sciences, GKVK Bangalore India
Nakul Chettri	Member	International Centre for Integrated Mountain Development
Dedy Darnaedi	Member	RC Biology, Indonesian Institute of Sciences
Liliya Dimeyeva	Member	Institute of Botany& Phytointroduction, Kazakhstan
Eun-Shik Kim	Member	Kookmin University, Republic of Korea
Ding Wang	Member	Chinese National Committee for MAB
Sheila Gorosin Vergara	Member	ASEAN Centre For Biodiversity
Chunquan Zhu	Member	IUCN China Office

Governance

The working group was co-chaired by Prof. Keping Ma and Prof. K N Ganeshaiah. The other members are from Kookmin University(Korea), ACB, IUCN China Office, the Chinese National Committee for MAB, ICIMOD, Indonesian Institute of Sciences, Institute of Botany & Phytointroduction(Kazakhstan). The office of ABCDNet is affiliated with the Biodiversity Committee, CAS.

Development of Information System

Progress has been made in the establishment of the Asia Species Database, Asia Species Red List Database and biodiversity related network resources. The databases include species lists with 86575 species and subspecies and 18184 records from 33 Asian countries/regions of BirdLife, 59278 species red list records from 15 Asian countries/regions and 450 website collections. All data are available at www.abcdn.org.



Programmes

Southeast Asia Plant Biodiversity Information Infrastructure (SEADiv)

http://www.seadiv.org

This CAS international coorperation programme focuses on integrating plant biodiversity information in Southeast Asian countries. The database covers more than 60000 plant records and 2 million occurrence records.

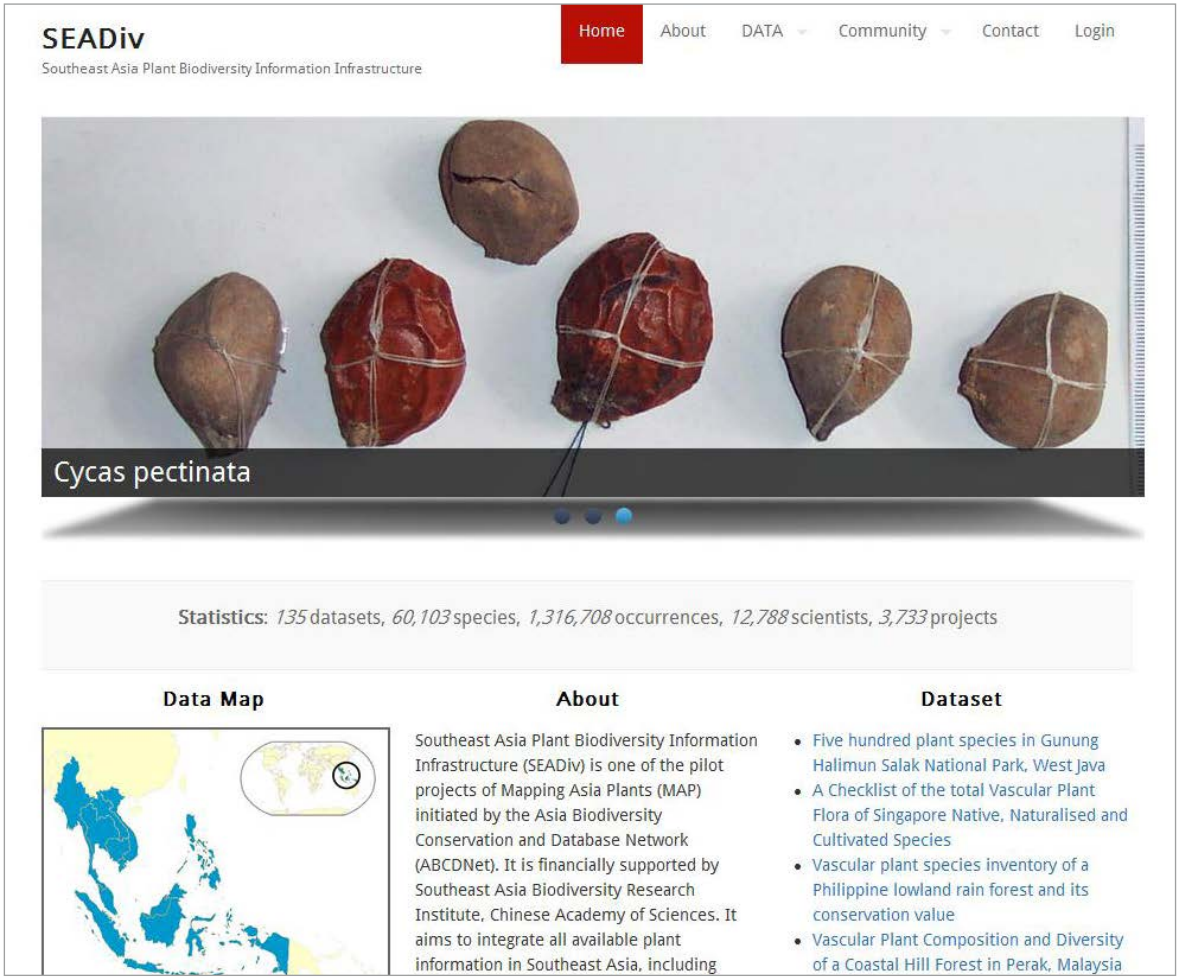
Southeast Asia is not only a hotspot of biodiversity and cultural diversity, but also an important area to implement "The Belt and Road Initiatives". However, there are big gaps in biodiversity data generation, sharing and application. It is difficult to support the biodiversity assessment and conservation at a regional or continental level, due to the lack of communications among the existing platforms. The SEADiv aims at integrating plant biodiversity distribution information based on the network and data resources, such as NSII, GBIF and ABCDNet. It covers the information of species, specimen, literature, research institutions, projects and personel, etc.

In addition to integrating online resources, SEADiv collected a book list of 859 national/regional floras and plant checklists through library inquiries, website retrieval and visits abroad. 462 books were identified as useful references and 114 books were key books after discussion with national/international experts. By the end of December 2017, 153146 records were collected through digitization, covering 331 families, 4063 genera, and 44289 species.

Overview of SEADiv progress and achievements

Contents	Achievements	Sources
Species Checklist	1,000,001 records	Herbaria and literature records
Specimen (including occurrences)	2,000,005 million records	GBIF & BRAHMS online resources, herbaria exchange
Multimedia	110,000 records	Online resources
Literatures	52,000 records	Books, articles, online resources
Plant resources	4,050 records	Literatures and online resources
Datasets	209 records	Online resources
Researchers	13,000 records	Literatures and libraries databases
Institutions	120 institutions	Literatures and online resources
Related projects	109 projects	Literatures
Reports	43 reports	Online resources

All resources are displayed in the online map. Users can choose different resources to manage and display. This projectwas supported by the Southeast Asia Biodiversity Research Center, CAS (1 million RMB, Nov. 2015-Nov. 2017).

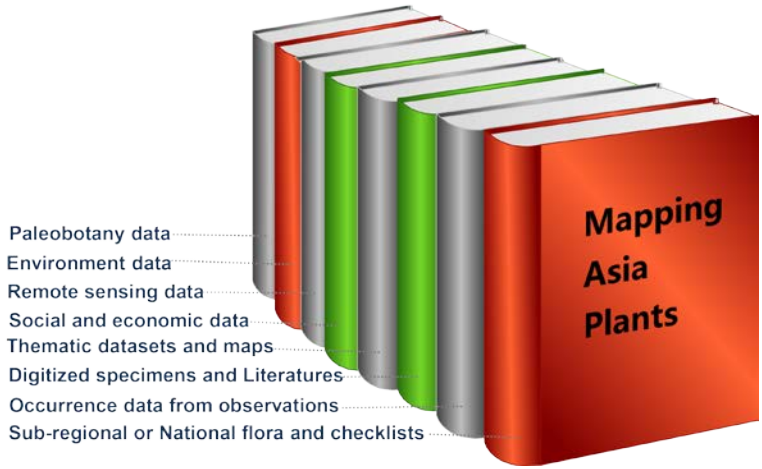


iv. Mapping Asia Plants (MAP)

MAP (Mapping Asia Plants) provides a database and standardized workflow for mapping Asia plant species. It is available to comprehensive basic information and interdisciplinary data mining for plant diversity conservation and research. MAP aims to collect, integrate Asia plant diversity resources and to develop a platform of Asia plant diversity.

From the distribution of online data resources of global biodiversity, the plant information available in Asia is still limited and scattered. The plant distribution data in Asia accounts for only 4% in GBIF. Till now, there is no biodiversity database infrastructure at a continental scale in Asia. Although there are certain independent efforts of biodiversity database developmentin China Mainland and China Taiwan, India, Japan and Korea, there is no complete biodiversity database in most Asian countries, which has serious impacts on biodiversity research and protection at a regional scale in Asia. Thus, Mapping Asia Plants (MAP) was initiated at the meeting of ABCDNet (www.abcdn.org) working group in Nov. 2015, and was funded by Bureau of International Cooperation and Southeast Asia Biodiversity Research Institute, Chinese Academy of Sciences.

On the basis of academic connections, the collaboration network of Asia plant scientists has been established through many years of international exchange, especially ABCDNet's establishment in 2013, which paves the way for the development of MAP. Significant support for MAP is provided by the successively established overseas research centers by Chinese Academy of Sciences. A new round of open strategy, marked by "going out" by the Chinese government, provides political basis for regional projects such as MAP. Thus, we believe that it will be a healthy and steady development for Mapping Asia Plants (MAP) with collaborations and supports in all aspects.



Sub-region Progress of Mapping Asia Plants (MAP) in 2017

Sub-regions	Database development
Southeast Asia	There are totally 108494 species information collected in Southeast Asia, among which, there are 1256 species in Timor-Leste, 13585 species in the Philippines, 3131 species in Cambodia, 4266 species in Laos, 17621 species in Malaysia, 8217 species in Myanmar, 12643 species in Thailand, 3505 species in Brunei, 3227 species in Singapore, 29563 species in Indonesia and 11480 species in Vietnam.
South Asia	With an exception of India, the species checklist database has been basically set up in other 7 countries in South Asia. Among which, there are 4425 species in Afghanistan, 3700 species in Bangladesh, 5603 species in Bhutan, 4138 species in Sri Lanka, 957 species in Maldives, 5755 species in Nepal, and 4579 species in Pakistan. The species distribution database has been set up in Afghanistan (provincial level).
Northeast Asia	The species checklist database has been basically set up in Northeast Asia. Among which, there are 3547 species, 1203 genera, 196 families in Korean peninsula, 5370 species, 1394 genera, 228 families in Japan, 36246 species, 4003 genera, 465 families in China, 2780 species, 662 genera, 114 families in Mongolia. The species distribution database has been set up in China (provincial level).
MiddleAsia	Species checklist database has basically been set up in MiddleAsia. There are 5660 species, 981 genera, 129 families in Kazakhstan, 4468 species, 905 genera, 126 families in Tajikistan, 4173 species, 973 genera, 146 families in Uzbekistan, 2800 species, 750 genera, 111 families in Turkmenistan, and 3927 species, 780 genera, 114 families in Kyrgyzstan.
North Asia	Species checklist database has been set up in North Asia. There are 7000 species, 1279 genera and 195 families. The species distribution database developemtis on its way.
West Asia	Major flora books from 8 countries of West Asia have been collected. Species checklist database of Israel has been basically set up, totally 2904 species, and species checklist database of Turkey is on its way, including 6786 species now.

v. Chinese Forest Biodiversity Monitoring Network (CForBio)

http://www.cfbiodiv.cn

The 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 2017, 17 permanent forest dynamics plots and more than 50 associated plots with the size 1 ha or larger have been set up for CForBio. The total plot area is 513.6 ha. 2,209,400 individuals belonging to 1614 species (DBH≥1 cm) were recorded. The 17 permanent plots are:

No.	Plot	Forest Type	Hectare
1	Dahurian larch forest plot in Daxing'anling	Dahurian larch forest	25
2	Broadleaved-Korean pine mixed forest plot at Fenglin in Xiaoxing'an Mountains	Broadleaved-Korean pine mixed forest	30
3	Broadleaved-Korean pine mixed forest plot & fir valley forest plot at Liangshui in Xiaoxing'an Mountains	Broadleaved-Korean pine mixed forest, Spruce-fir valley forest	9+9
4	Taxus cuspidata forest at Muling	Taxus cuspidata forest	25
5	Deciduous broadleaved Korean pine mixed forest plot at Changbai Mountain	Broadleaved Korean pine mixed forest	25
6	Poplar-birch forest plot at Changbai Mountain	Poplar-birch forest	24
7	Warm temperate deciduous broadleaved forest plot at Dongling Mountain	Warm temperate deciduous broadleaved forest	20
8	Warm temperate deciduous broadleaved forest plot at Baotianman	Warm temperate deciduous broadleaved forest	25
9	Deciduous broadleaved forest plot in a temperate-subtropical ecological transition zone at Qinling in Shannxi province	Deciduous broadleaved forest	25
10	Mid-subtropical mountain evergreen and deciduous broadleaved mixed forest plot at Badagong Mountain	Subtropical evergreen and deciduous broadleaved mixed forest	25
11	Subtropical evergreen broad-leaved forest plot at Tiantong Mountain	Subtropical evergreen broad-leaved forest	20
12	Subtropical evergreen broadleaved forest plot at Gutian Mountain	Subtropical evergreen broad-leaved forest	24
13	Cool-temperate spruce-fir forest at Yulong Snow Mountain	Cool-temperate spruce-fir forest	25
14	Karst evergreen and deciduous broadleaved mixed forest plot at Mulun	Karst evergreen and deciduous broadleaved mixed forest	25
15	Lower subtropical evergreen broadleaved forest plot at Dinghu Mountain	Lower subtropical evergreen broadleaved forest	20
16	Karst seasonal rain forest plot at Nonggang	Karst seasonal rain forest	15
17	Tropical rain forest plot at Xishuangbanna	Tropical rain forest	20

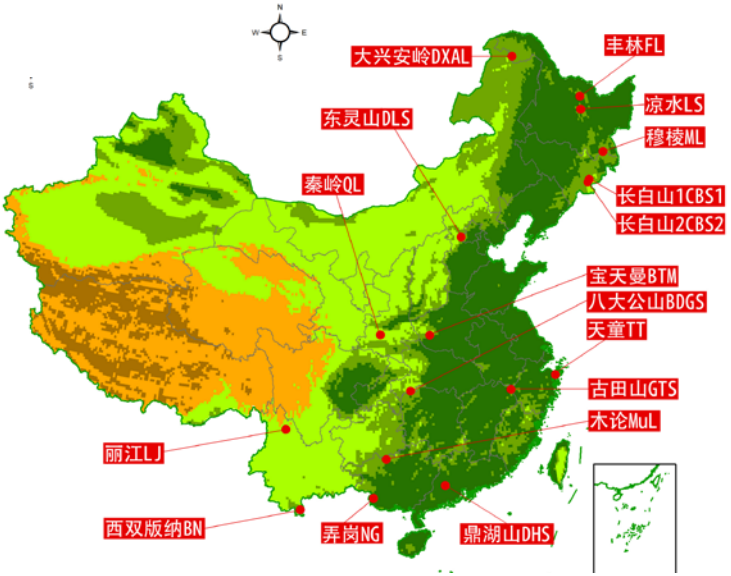
CForBio attaches great importance to long-term monitoring. Besides the census of trees at every 5-years, monitoring on seed rains, seedlings, litter-falls, functional traits, radial growth, herbs, soil, logs and wildlife are also carried out.

Since the establishmentof CForBio in 2004, the monitoring of the population structure and dynamics of plants, animals and microbes, their interactions, and the exploration of their internal mechanism allowed CForBio to become one of the most influential and the fastest-growing regional research platforms. Based on climate data across climate zones in CForBio, scientific articles were published in the mainstream journals, such as Ecology Letters, Ecology and so on. The research results on the mechanism of species coexistence were received positively by foreign colleagues. 56 scientific articles werepublished in 2017, including 35papers in SCI-jounals.

North latitude	East longitude	Establishment	Principle Investigator	Responsible unit	Species number	Family number	Genera number
51.82°	122.99°	2011	Hongwei Ni	Institute of Natural Resources and Ecology,Heilongjiang Academy of Sciences	18	6	12
48.08°	129.12°	2009	Guangze Jin	Northeast Forestry University	46	21	39
47.18 /47.2°	128.88 /128.85°	2006 2005	Guangze Jin	Northeast Forestry University	44/48	15/20	30/34
43.95°	130.07°	2014	Songyan Tian	Heilongjiang Forest Engineering and Environment Institute	57	22	38
42.38°	128.08°	2004	Zhanqing Hao	Institute of Applied Ecology, CAS	52	18	32
42.37°	128.00°	2016	Zhanqing Hao	Institute of Applied Ecology, CAS	63	21	37
39.96°	115.43°	2010	Weiguo Sang, Li Zhu	Institute of Botany, CAS	58	18	33
33.49°	111.94°	2009	Xiaojun Du	Institute of Botany, CAS	126	39	77
33.69°	107.82°	2014	Quanfa Zhang	Wuhan Botanical Garden, CAS	119	35	66
29.77°	110.09°	2011	Mingxi Jiang	Wuhan Botanical Garden,CAS	232	53	114
29.8°	121.8°	2009	Xihua Wang	East China Normal University	152	51	94
29.25°	118.12°	2005	Xiangcheng Mi, Mingjian Yu	Institute of Botany, CAS； Zhejiang University	159	49	104
27.14°	100.23°	2014	Kun Xu	Kunming Institute of Botany, CAS	62	26	41
25.13°	108.00°	2014	Fuping Zeng	Institute of Subtropical Agriculture, CAS	254	64	161
23.10°	112.32°	2005	Wanhui Ye	South China Botanical Garden, CAS	210	56	119
22.43°	106.95°	2011	Xiankun Li	Guangxi Institute of Botany	223	54	153
21.61°	101.57°	2007	Min Cao	Xishuangbanna Tropical Botanical Garden, CAS	468	70	213

The research teams received one National Natural Science Foundation of China (NSFC) Key Program and one NSFC excellent young scholar's project, which were the first time for CForBio. Meanwhile, the research teams also obtained five NSFC General Programs, three NSFC Young Investigator Programs,two projects from NSFCRegional Programs,one project and one sub-project of the National Key R&D Program, one project and two sub-projects of the strategic priority Research Program B of Chinese Academy of Sciences, one Fundamental Research Funds for the Central Universities, tworesearch projects of CAS key laboratory of forest ecology and management, Institute of Applied Ecology, two Sub-projects of"One-Three-Five" major project of Thirteenth Five-year Plan of XTBG, CAS.

CForBio is now the most influential and fastest developed platform to support China's ecological research. It srapid development has also stimulated the agencies from forestry, environmental protection and education to carry out monitoring of forest biodiversity.



Internet communication platform

The China Forest Biodiversity Monitoring Network website (http://www.cfbiodiv.cn) reports on relevant activities and publications in a timely manner.

Important Activities of CForbio in 2017

Date	
Jun. 14-16	Workshop on advances in species distribution and species trait modelling
Jul. 6-7	Visiting ForestPlots Office in University of Leeds, UK
Jul. 17-30	CTFS and CForBio analytical workshop VII
Aug. 25-26	Workshop on dead-wood research
Sept. 3	Workshop on plot future cooperation
Oct. 27-31	Workshop on analysis of national biodiversity and ecosystem monitoring data
Nov. 9-12	Workshop on spatial statistics

vi. GBIF CAS Node

http://www.gbifchina.org

The Global Biodiversity Information Facility (GBIF) is an international open data infrastructure, funded by governments since 2001. It is the biggest and the most influential network for biodiversity information service, which is joined by 54 countries and 35 organizations. By the end of 2017, 1145 data publishers mobilized more than 965 million occurrence records to GBIF.org, mainly observation records and specimen records, providing massive biodiversity information services.

GBIF-CAS node uses GBIF integrated publishing Toolkit (IPT). There are more than 1.1 million records published on the GBIF website. 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 8 peer-reviewed SCI papers used the data published by GBIF-CAS node in 2017.

GBIF-CAS node continues to cooperate with GBIF Secretariat and other nodes. The node attended the 2017 Asia Regional Meeting. During the meeting, GBIF-CAS node shared the progress of node development, introduced the BIFA funded project "Compiling a multi-language Gazetteer of Occurrence Distribution in Asia". The project started in April 2017. By the end of 2017, more than 1.44 million records of location names were published online (http://geonames.pavoinfo.com). GBIF-CAS node also attended the GBIF global nodes meeting, joined the discussions of nodes management, current status and suggestions for data sharing in Asia.

GBIF-CAS node will continue to cooperate with other related platforms, introduce GBIF's technology and datasets to the Chinese community, and publish Chinese datasets to the GBIF global network. This will greatly improve the current data gaps in China in GBIF network and also make research based on GBIF data in China more reliable.

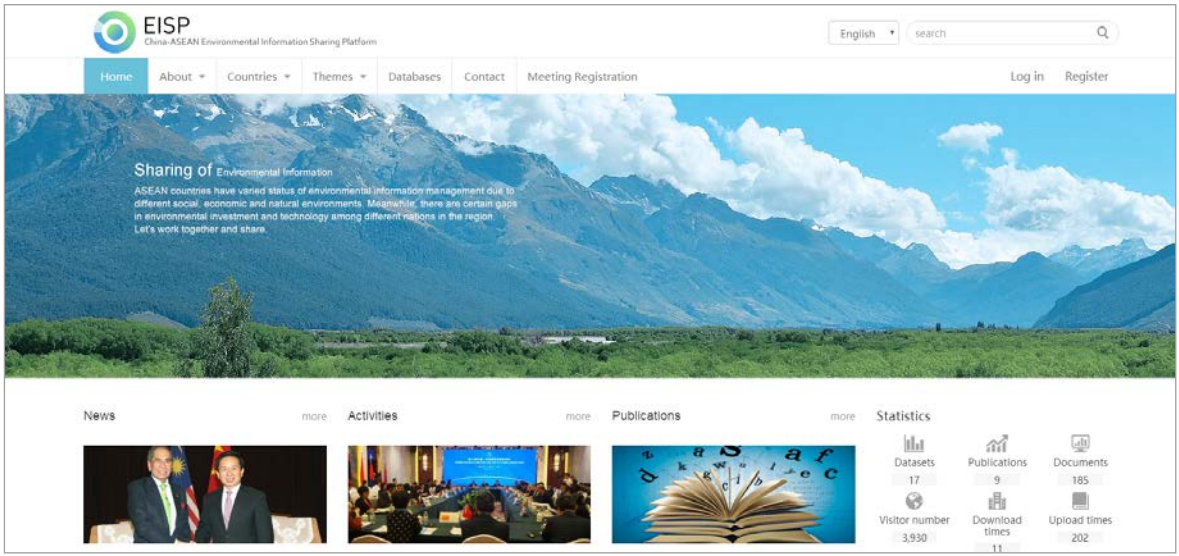
vii. Construction of the China-ASEAN Environmental Information Sharing Platform and Biodiversity Special Demonstration Platform

http://www.caeisp.org

In recent years, with the rise of Open Data trend globally, the ASEAN countries also began to gradually integrate and open part of the government data, andestablish national data platforms.Many dataset in the field of environment canbe usedthrough the application program interface (API). In order to promote the ability for China and ASEAN in the environmental information and data collection, management and utilization, China-ASEAN environmental Cooperation Center (CAEC) decided to build the "Platform for China-ASEAN environmental information sharing ", and formulatedaplan for five years.

The construction of the platform is a systematic project. The biodiversity thematic demonstration platform was designed as a flagship to provide demonstration and exemplary role for data and information sharing cooperation forother topics. For many years,the Biodiversity Committee, CAS has been promoting related projects: Asia Pacific strategy for biodiversity conservation research, Species 2000 China node, Compiling of print version of *Species Catalogue of China*, ABCDNet, GBIF-CAS Node, Sino BON and CForBio. These projects have accumulated rich experience in the development and management of biodiversity data platform in the process of implementation and promotion. At the same time, it has a well-known national research team of biodiversity, providing solid technical support for this project.

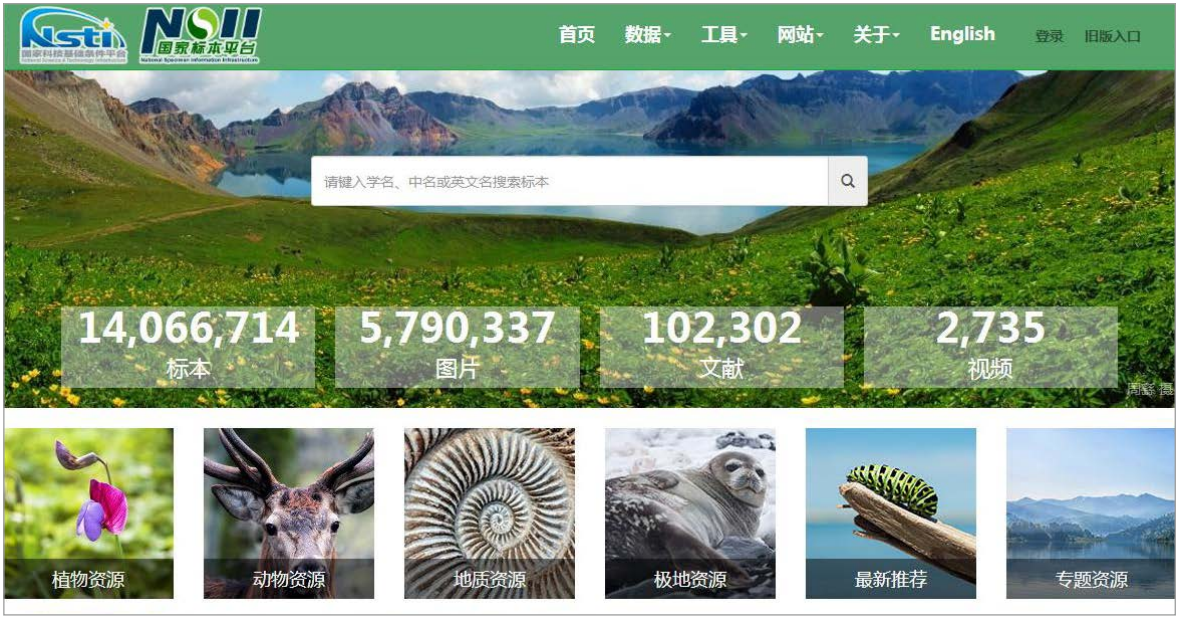
In October, the Biodiversity Committee successfully completed the two tasks.The website http://www.caeisp.org/ was brought online to start running.



viii. Related Biodiversity Information Sharing Platforms

1. National Specimen Information Infrastructure (NSII)

http://www.nsii.org.cn



NSII is the biggest biodiversity information sharing platform in China, funded by the Ministry of Science and Technology of China. It brings information together including catalogues, documents, pictures and other digital information of plant specimens, animal specimens, fossil, rock specimens, and polar resources etc.It was built in 2003 and officially launched in 2013.Led by the Institute of Botany, Chinese Academy of Sciences, it consists of 6 sub-platforms:plant specimens, animal specimens, teaching specimens, nature reserve specimens, rock specimens and polar specimens. NSIIhas 188 data providers, including insitutions from CAS, Ministry of Education, Ministry of Land and Resources, State Oceanic Administration,State Forestry Administration and so on.

In 2017, 775,000 digitalized specimens and 670,000 new digitalized images were added to NSII. It now has atotal of 13.819 million specimens, including 10.007 million plant specimens, 3.658 million animal specimens, 150,000 rock specimens, 3722 specimens of polar resources, 5.536 million images and 78000 copies of books and 2682 video.

2. Chinese Virtual Herbarium (CVH)

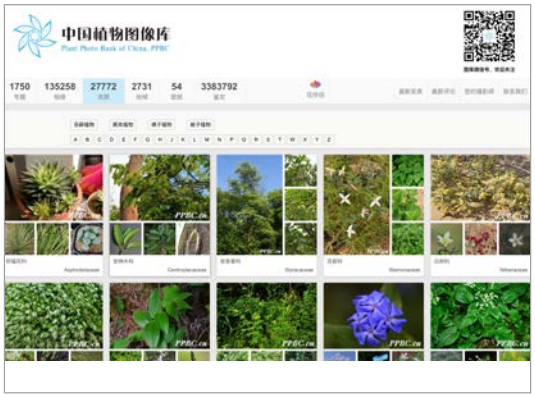
www.cvh.org.cn

Convenient and quick access to Chinese plant specimens,CVH is one ofthe important sub-platforms of NSII. CVH has 6.3 million plant specimens, of which 4 million with images. These specimen data were shared from more than 40 important domestic herbaria.

3. China Plant Photo Bank（PPBC）

http://www.plantphoto.cn

Founded in 2008, it is a professional plant photobank set up by the Institute of Botany, CAS.Using the latest classification system, it systematically collects, sorts and shares plant photos.It has already collected 3.6 million pictures of 465 families, 4315 genera and 27000 plant species, covering two-thirds of wild vascular plants in China.It provides more than 1,000 photos for "Chinese Aquatic Plants", "Tibet Wild Flowers" and other books. Based on the photo classification, the “AiPlant”APP and other plant identification software were developed and are widely used.



4. Chinese Field Herbarium (CFH)

http://www.cfh.ac.cn

FH provides a whole set resolution for field investigation of biodiversity, data management and long-term monitoring. Multimedia data are collected by digital equipment with location data by GPS in the field, then stored and managed on the platform. Up to now, the system has 9.27 million photos, belong to 52,000 species or intraspecies, 322 sub-stations, 15,300 user IDs. The Xingse mobile app, launched jointly by Chinese Field Herbarium and Hangzhou Dana Technology Inc., now has 9.3 million users.It provides 120 million plant identification services every year. Now Xingse has become the largest and most powerful artificial intelligence plant identification APP in the world.

PART III

Conference and Training

i. The Fifth National Conference on Biodiversity Informatic
ii. 2017 meeting of the IUCN Asia Regional Members Committee
iii. Workshop on Mapping Asia Plants
iv. Symposium on Biodiversity and BioONE
v. Workshopon Sustainable Urbanization
vi. Workshop on Biodiversity Informatics in Big Data Era
vii. CForBio Training course
viii. The ThirdApplication of LiDAR to Forest Ecology Workshop

Conference and Training

i. The Fifth National Conference on Biodiversity Informatic

The Fifth National Conferenceon Biodiversity Informatics was held in the Institute of Botany, CAS on November 4-5. It was organized by the Bureau of Sciences & Technology for Development, CAS and Biodiversity Committee, CAS.

Over 170 registered participants from 67 organizations attended the symposium, including research institutes, universities, botanical gardens and international organizations. There were 13 plenary talks, 4 sessions and 30 session talks. Several experts and scholars from various fields reported their latest research progress in the field of biodiversity informatics from different perspectives.

A List of Plenary Talks

Genetic Resources informatization(Chair: Juncai Ma)

Speaker	Institute	Title
Zhang Zhang	Beijing Institute of Genomics, CAS	Biodiversity omics data platform and database construction
Juncai Ma	Institute of Microbiology, CAS	Informationization of genetic biological resources and its internationalization
Shiliang Zhou	Institute of Botany, CAS	How far is the full application of plant DNA Barcoding?

The catalog of species (Chair: Liqiang Ji)

Speaker	Institute	Title
Liqiang Ji	Institute of Zoology, CAS	Introduction on Biodiversity and Ecological Security Pattern Information Platform (BioONE)
Jiangchun Wei	Institute of Microbiology, CAS	The Lichen Biodiversity, Systematics, and its New Field of Biological Resources
Yijian Yao	Institute of Microbiology, CAS	Evaluation of fungus catalogue of China and large fungus red list
Juanxuan Fan	Nanjing Institute of Geology and Palaeontology, CAS	Chinese paleontology in the age of big data-from the fossil to the leading technology of world

Data mining andanalysis (Chair: Keping Ma)

Speaker	Institute	Title
Xiangtao Fan	Institute of Remote Sensing and Digital Earth, CAS	Digital Earth system in the age of big data
Hua Zheng	Research Center for Eco-Environmental Sciences, CAS	Big data-based evaluation of the national ecology system change
Zhiheng Wang	College of Urban and Environmental Sciences	Macroecologyof plant diversity in eastern Asia
Yufei Wang	Institute of Botany, CAS	Searching the root of China plant diversity pattern formation
Wenjiang Huang	Institute of Remote Sensing and Digital Earth, CAS	Analysis of global spatial information product production and vegetation change
Qun Zhang	China Electronics Standardization Institute	Data standardization interpretation of China

The success of the meeting fully shows that biodiversity informatics is developing rapidlyin the areas ofthe digitization of the basic data of biodiversity, model and development of various tools software, data integration, global and regional and national scale biodiversity information networks etc.

ii. 2017 meeting of the IUCN Asia Regional Members Committee

2017 meeting of the IUCN Asia Regional Members Committee (ARMC) was held in Kaihua, Zhejiang Province, China from 18-20 September 2017 under the chairmanship of Prof. Ma Keping. This was the second meeting hosted by Prof. Ma since his instatement as Chair of the ARMC in August 2015. The meeting was sponsored by the Biodiversity Committee of the Chinese Academy of Sciences; the Government of Kaihua County in Zhejiang Province, China; and Qianjiangyuan National Park in Zhejiang Province, China. More than 50 representatives from 17 Asian countries, including Bangladesh, China, Japan, Sri Lanka and so on, the IUCN Asia office, China office, Commissions and member institutions, and Kaihua County Government, attended the meeting. The main objective of the meeting was to review the joint progress of IUCN Members, commissions and secretariat on strengthening the programmatic presence of IUCN in Asia. Other objectives included finding ways to promote the implementation of IUCN's Programme for 2017-2020, looking into the existing guiding documents such as resolutions and programmatic themes with a focus on Nature-based Solutions and identifying key actions for collective efforts with active participation of Members in Asia.

Aban Marker Kabraji (Director of IUICN Asia Regional Office), Masahiko Horie (IUCN Councilor), and Ruiliang Xiang (Party Secretary of CPC Kaihua County) addressed the opening ceremony, respectively. IUCN President Zhang Xinsheng made a keynote speech on the challenges and opportunities of "Mainstreaming biodiversity conservation." He acknowledged the efforts of the local government to preserve the environment of Kaihua and remarked that "conservation and development can go hand in hand." He also highlighted some of the areas in which IUCN Asia has made significant progress in mainstreaming biodiversity. Prof. Keping Ma's speech was entitled "Nature based solutions to environmental and social challenges". Dr. Tejpal Singh (Deputy Regional Director of IUCN Asia Regional Office) and Dr. Chunquan Zhu (Country Representative of IUCN China Office) introduced the progresses of the secretariat in Asia and the project of IUCN China. The national committees and relevant institutions of the 17 countries reported their work progresses and preparation of relevant meetings, as well as deep collaborations with IBCAS in biodiversity areas.

No.	Name	Organization	Report Title
1	Hanying Li	CEC	CEC-Driving change for conservation
2	Meher Marker Noshirwani	CEESP/Trust for Conservation of Coastal Resources	Commission on Environment, Economics and Social Policy (CEESP)
3	Shikui Dong	CEM/Beijing Normal University	Commission on Ecosystem Management
4	Yan Xie	SSC/Insititute of Zoology, CAS	The role of the IUCN Species Survival Commission in saving the world's species
5	Masahiko Horie	Meiji University, Japan	Universiti Teknologi Malaysia
6	Teppei Dohke	The Nature Conservation Society of Japan/Vice Chair of Japan Committee for IUCN	2nd tripartite meeting of IUCN member in China, Korea and Japan
7	Keping Ma	Biodiversity Committee, CAS	Mapping Asia Plants(MAP) Initiative and Progress
8	Bin Peng	Division for China-ASEAN Cooperation, China-ASEAN Environmental Cooperation Center	ASEAN-China Cooperation on Biodiversity: Status and Prospect

Delegates conducted in-depth group discussions of the four topics:

1) Successful cases of Asian nature-based solutions;
2) How to promote cooperation between members and their secretariats and professional committees, so that the influence of Asian members has a greater impact globally;
3) On the occasion of the 70th anniversary of IUCN, what activities should IUCN organize to celebrate, reform and improve the existing system;
4) How to play the role of membership, so that it has more participation and ownership.

After the discussion, several consensuses were reached:

1) Asia should take advantage of its IUCN global strategy, especially in Asia, where it has a long history of implementing nature-based solutions and should best demonstrate the success of the region, such as urbanization in Asia. The fastest, Asia has outstanding success stories, of which Singapore-Tianjin eco-city is one of the typical cases;
2) At the same time as the 70th anniversary of the IUCN in 2018, it is hoped that thorough reforms will be carried out in the comprehensive management of the global IUCN, including the budget structure, personnel system and fund raising methods;
3) Asian members should actively voice on important matters, make full use of traditional media, and actively play the advantages of new modes of communication such as the media;
4) Cooperation between Asian countries needs to be strengthened, and many issues are cross-border, like the protection of bird migration routes;
5) Natural-based solutions are important, not only for the management of protected areas, but also for urban planning and construction.

During the meeting, the representatives visited Gutianshan National Nature Reserve and Gutianshan forest dynamicsplot of the Chinese Forest Biodiversity Network (CForBio), which was established by IBCAS and is located in the Qianjiangyuan National Park. They also listened to an IBCAS scientist's presentation entitled "Biodiversity Monitoring in Qianjiangyuan National Park". In "The Strategic Workshop on Qianjiangyuan National Park" held on Sept. 20th, the representatives from different countries gave advices and suggestions for the National Park based on their home countries' experience and professional expertise.

IUCN Vice-chairman Malik Amin Aslam highly appreciated the results of the meeting in his closing remarks. He noted that the most attended meeting (in terms of numbers of countries and representatives from IUCN Asia regional committee)set a great example for other IUCN regions; the outstanding environment, water quality and rapid development of eco-tourism in Kaihua deeply impressed the representatives. He also pointed out that China's development strategy to integrate the Belt and Road Initiative and ecological-civilization is worthy of learning for other countries, and if united with the IUCN network, it will benefit the entire world.

Xinhua News Agency, China News Service, China Green Times and many other news agencies reported the meeting.

iii. Workshop on Mapping Asia Plants

1. ABCDNet Work Group Meeting

From March 27-29,Asia Biodiversity Conservation and Database Network (ABCDNet) Working Group Meeting, as a parallel workshop during the ATBC Asia-Pacific Chapter Meeting 2017, was held in Xishuangbanna, Yunnan Province. Prof. Keping Ma, the Secretary General of BC-CAS, chaired the workshop.

Drs. Bo Liu, Hongfeng Wang, Wenjun Li and Qinwen Lin introduced the progress of Mapping Asia Plants in different parts of Asia including Southeast Asia (SEA), Northeast and North Asia, Middle Asia and South Asia respectively. The current statistics of herbaria, specimen records and data of flora books for each sub-part of Asia were documented. Dr. Zheping Xu introduced the progress, data sources and data statistics of SEADiv. A draft document for the By-Laws of ABCDNet and the next step of “Biodiversity Informatics in Asia: Status, Challenges and Opportunities” were discussed at the meeting. After the workshop, participants visited Xishuangbanna Tropical Botanical Garden, which helped them with the understanding of plant biodiversity in Xishuangbanna.

As an organizer of the session in ATBC Asia-Pacific Chapter Meeting 2017, which named “Mapping Asia's Biodiversity for Conservation Planning”, Prof. Keping Ma was invited to give a keynote speech. In this meeting, a total of 10 speakers gave oral presentations including species monitoring, conservation tools and case studies of species conservation and so on. Prof. Keping Ma introduced the background, mission, goals, progress and plans of Mapping Asia Plants (MAP) and associated global projects. At the same time, he shared the achievements on biodiversity informatics in China.

2. East Asia, Central Asia (North Asia) and North Asia was successfully held in Harbin

From July 13th-15th, the workshop on Mapping Asia Plants (MAP): East Asia, Middle Asia and North Asia was successfully held in Harbin. The workshop was hosted by Biodiversity Committee, Chinese Academy of Sciences (CAS), and supported by School of Forestry, Northeast Forestry University (NEFU). Prof. Keping Ma, the Secretary General of BC-CAS chaired the workshop, and the vice director of School of Forestry of NEFU delivered a welcome speech.

Prof. Keping Ma introduced MAP project and its progress, current goals. The workshop was organized by four subregions, East Asia, Middle Asia, North Asia and West Asia. Speeches on flora, checklists and its distributions, and related research progress were shared by academician Hikmat Hisoriev from Tajikstan and Prof. Motomi Ito from Japan respectively. The most reliable flora books of each country was confirmed, and publication information of flora books was provided by experts. The division of different parts of Asia, strategies of cleaning plant checklists, and the rules of species distribution scale were further discussed and standardized.The representative of the project related topics plans to visit the Komarov Botanical Institute of the Russian Academy of Sciences in October to collect further information. After the workshop, participants visited the Liangshui National Nature Reserve and the 9-ha broadleaved Korean pine mixed forest plot of Xiaoxing`an Mountains in Heilongjiang.

3. Middle Asia (North Asia) and West Asia was successfully held in Urumqi

On Nov. 27th-28th, the workshop on Mapping Asia Plants (MAP): Middle Asia (North Asia) and West Asia was successfully held in Urumqi. The workshop was hosted by the Biodiversity Committee, Chinese Academy of Sciences (CAS), and supported by the Key Laboratory of Biogeography and Bioresource in Arid Land, CAS.

Prof. Keping Ma shared the achievements in the study of Biodiversity Informaticsin China, introduced the background, objectives, priorities, organization, progress and outlook of MAP. Also, an initiative of "Virtual Herbarium of Asia" was proposed. The collaborators of North Asia, Middle Asia, and West Asia Dr. Jianhua Xue, Dr. Wenjun Li, and Ms. Xuehong Xu reported their progress, which focused on collection of major flora books, checklists and literatures, database establishment of plant checklist, and difficulties encountered. The authority of flora books was evaluated and relevant information of flora books were added by the experts. Speeches on species diversity, including new genera, species and records, species distribution, digitalizationof specimens in herbaria, and species red lists were given by six foreign taxonomists, which is very important to data distribution integration in the near future. Six experts are academician Hikmat Hisoriev, from Institute of Botany, Academy of Sciences of Tajikistan, Prof. Dmitry Geltman, the Director General of Komarov Botanical Institute, Russian Academy of Sciences, Prof. Victor Chepinoga, from Irkutsk State University, Russia, Dr. Vladimir Doronkin, from Central Siberian Botanical Garden SB RAS, Prof. Habibullo Shomurodov, from Institute of Botany, Uzbekstan Academy of Sciences, Prof. Mikhail Danilov, from Institute of Botany&Phytointroduction, Kazakhstan.

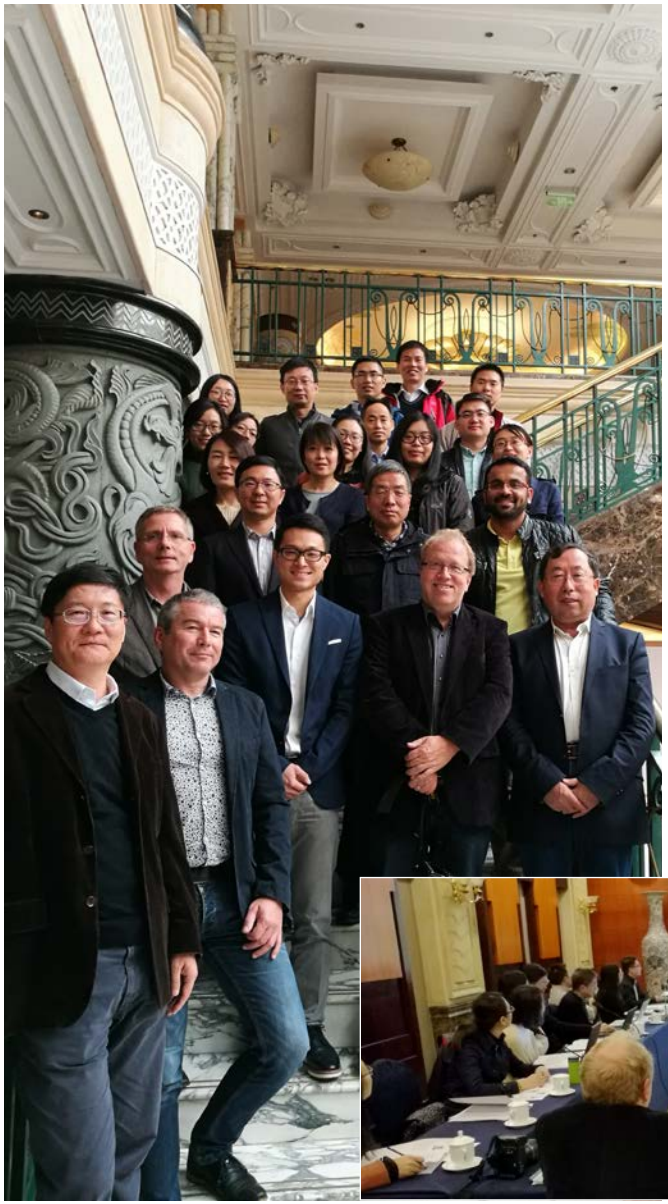
iv. Symposium on Biodiversity and BioONE

The Symposium on Biodiversity Science was held successfully on 19 June, Mr. Ziyuan Duan, Deputy Director General of Bureau of Science & Technology for Development, CAS, Mr. Bin Liu, Director of Biotechnology Divsion, Mr. Yongsheng Tian, Deputy Director of Biotechnology Division and nearly 100 participants from 26 institutions and NGOs attended this meeting.

Prof. Keping Ma, Vice Chair and Secretary General of BC-CAS mainly introduced the progress of biodiversity sciences, including ten hot issues in biodiversity research, assessment of biodiversity extinction risk, progress of biodiversity informatics and design ideas and overall framework of BioONE which belongs to the Strategic Priority Research Program of the Chinese Academy of Sciences A: CAS Earth. Prof. Min Zhu from the Institute of Vertebrate Paleontology and Paleoanthropology, CAS, introduced recent advances in fish biodiversity succession and integration of Paleontology in the geological history period, especially in the study of jaws origin, including the development models of jaw evolution, fossil evidence and evolution models. Prof. Qinghua Guo from the Institute of Botany, CAS, introduced the retrieval and application of multi-scale forest parameters based on lidar, and how to acquire high-resolution 3D terrain and vegetation structure parameters of forest ecosystem on multiple temporal and spatial scales with lidar. Dr. Juncai Ma from the Institute of Microbiology, CAS, introduced the structure and function of the global microbial resource database, the integration technology of microbial digital information system, including large-scale data full-text retrieval and quality control, the integration and association of multi-source heterogeneous data, and the big data association technology based on RDF semantic web.

Through this meeting, biodiversity related researchers have learned about the frontiers and research results in the field. This meeting wasa bigsuccess.

v. Workshopon Sustainable Urbanization



On Oct. 22, the Conference on Sustainable Urbanization was successfully held in Beijing. It was hosted by Biodiversity Committee, CAS and Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB). 23 Experts from Humboldt University of Berlin, GETIDOS, IGB, Beijing Institute of Landscape Architecture, Beijing Forestry University, Institute of Geographic Sciences & Natural Resources Research, CAS, Tianjin Normal University, Beijing University of Technology, Research Center for Eco-Environmental Sciences, CAS and Institute of Botany, CAS attended the workshop.

The experts of both sides introduced the urban water conservation and ecological water system project, respectively.They discussed freshwater ecosystems in the city conservation and reshaping,restoration of biodiversity of urban residents, monitoring and long-term data,based on the natural solution.In addition, they discussed the oppotinities of cooperation under the theme of"sustainable development of urbanization and biodiversity protection".

vi. Workshop on Biodiversity Informatics in Big Data Era

During Sept. 4-14, the Workshop on Biodiversity Informatics in Big Data Era was successfully held in Institute of Botany, Chinese Academy of Sciences (IB-CAS). 45 participants from 21 countries associated with the “Belt and Road Initiative”, includingBangladesh, Philippines, Pakistan, Sri Lanka, Thailand, Uzbekistan,Vietnam,attended the workshop.

The training workshop focused on biodiversity data collection, management, sharing and mining. It was carried out in the forms of training courses, practices and a field trip. New monitoring technologies with application of infrared camera, satellite tracker, near-surface remote sensing on forest, mammals, birds and insects were introduced on biodiversity data collection. Summaries on global and national online biodiversity resources, such as Global Biodiversity Information Facility (GBIF), Catalogue of Life (CoL), National Specimen Information Infrastructure (NSII) were presented. Biodiversity informatics related standards and tools, information systems of protected areas, virtual herbaria and museums, and red lists were shared. During the workshop, participants visited the 20-ha warm temperate deciduous broadleaved forest dynamics plot in Dongling Mountain in Beijing and herbarium of IBCAS.

This workshop was a national technology promotion project for developing countries in the Belt and Road area. The experiences and practices of biodiversity conservation research and information management of China delivered at the workshop will promote biodiversity research and conservation in the Belt and Road countries. It will also strengthen the international cooperation between these countries and CAS in the future.

vii. CForBio Training course

Data	Activities	Lecturers	Summary
Jun. 14-16	Workshop on advances in species distribution and species trait modelling	Seven experts from BCCVL, Australia; Dr. Huijie Qiao, Institute of Zoology, CAS; Dr. Li Zhu, Institute of Botany, CAS; Dr. Minggang Zhang, Shanxi University	Lecturers shared their research progress on biodiversity modeling in Australia and China, including patterns of endemism in the Australian flora, identifying refugia from climate change for threatened species, major declines of woody plant species range under climate change in Yunnan, China, and niche breadth and geographic properties rather than plant traits can explain niche shifts during invasion etc. Online research facility for biodiversity and spatial database were introduced by BCCVL team.Dr. Qiao explained ecological niche modelling, and the data preparation, analysis procedure and evaluation, and results interpretation and application.
Jul. 17-30	CTFS and CForBio analytical workshop VII	Experts from CTFS	Five groups at the workshop: dynamics of seeds and seedlings/ phenology, functional traits/diversity, population statistics, biomass and spatial distribution. For each group, there were at least two outstanding scientists offering guidance in data analysis and paper writing, coordinating cooperation among group members.
Aug. 25-26	Workshop on dead-wood research	Dr. Marc W. Cadotte, University of Toronto, Canada Dr. Sebastian Seibold, Technical University of Munich, Germany	The core content and major research methods were introduced at the workshop, including the evaluation of saproxylic insects, fungi and bacteria biodiversity, and estimation of wood decomposition rates. The possible outline and methodology on biodiversity, wood decomposition rates and local gradients with regard to microclimate, anthropogenic gradients,, and size of the sample plot ($10\times10m^2$) of the project were discussed during the workshop. The intended start of the experiment is spring 2019, and part of CForBio plots will join the project.
Sept. 3	Workshop on plot future cooperation	Prof. Alan Grainger, University Leeds, UK	Focused on the prospect of global environmental relativities after Anthropocene tipping point and using the niche whole concept to model future biodiversity impacts of climate change. Free talk on ecological processes changing at rates relative to the rate of climate change, the relativity of global environmental uncertainties, and forest area, biodiversity and carbon was carried on during the workshop.

Data	Activities	Lecturers	Summary
Oct. 27-31	Workshop on analysis of national biodiversity and ecosystem monitoring data	Youth backbones of CForBio, Prof. Chengjin Chu, Sun Yat-sen University, Prof. Jian Zhang, East China Normal University	Introduction of R statistics, spatial point pattern and modelling, the analysis on species-area relationship and diversity distribution pattern, biodiversity with spatial scale driving, the analysis on species abundance and distribution and the relativities of community and environment, analytical techniques on seed rain and effects of negative density dependence, functional community ecology and phylogenetic diversity, including theory and R software applications.
Nov. 9-12	Workshop on spatial statistics	Prof. Aaron Ellison, Harvard University, USA	The geostatistics methods were used to raster the point data from 3 plots of Panama, to study the relativities of point pattern and soil and species during the workshop. The participants from CForBio reproduced the analyses by using Chinese forest dynamics plot data, a 5-10-minute-long report was presented by participants.

viii. The Third Application of LiDAR to Forest Ecology Workshop

The third Application of LiDAR to Forest Ecology Workshop was held from June 1-5. It was hosted by the State Key Laboratory of Vegetation and Environmental Change, Institute of Botany, CAS, the Biodiversity Committee, CAS, Academy of Forestry Investigation and Planning of the State Forestry Administration and Chinese Biodiversity Observation and Research Network(Sino BON),and supported by the State Key Laboratory of Vegetation and Environmental Change.More than 200 participants from over 60 institutions attended the workshop.

Prof. Maggi Kelly from University of California, Berkeley, USA, Jun Chen, the Chief Engineer from National Geomatics Center of China, Xian Gao, the Senior Engineer from Academy of Forestry Investigation and Planning of State Forestry Administration, Profs. Zengyuan Li from Chinese Academy of Forestry, Huaguo Huang from Beijing Forestry University, Keping Ma and Qinghua Guo from Institute of Botony, and young researchers from Nanjing University, Nanjing Forestry University, etc. gave lectures on biodiversity monitoring, ecosystem structure and function survey by using LiDAR.

The workshop was combined with lectures and practical operations. Participants have mastered the principles and related research methods and applications of LiDAR.Many technical problems encountered in the practice were solved. The idea and research method were expanded for future researches.

PART IV

Activities of Members of CNC-DIVERSITAS

i. Cataloging and Evolutionary Biology Group
ii. Ecosystem Function and Sustainable Management Group
iii. Agroforestry Biodiversity Group
iv. Aquatic Biodiversity Group
v. Genetic Resources and Bio-security Group
vi. Biodiversity Monitoring and Information Sharing Group

Working Groups of Chinese National Committee for DIVERSITAS

No.	Group	Leader	Members
1	Cataloging and Evolutionary Biology	Yaping Zhang Dezhu Li Ruiliang Zhu	Wenjun Bu, Xun Cheng, Shaohua Li, Naifa Liu, Haining Qin,Guodong Ren, Fadao Tai, Wei Wang, Yuezhao Wang, Guang Yang, Daode Yang, Deyuan Hong, Jiangchun Wei, Wenying Yin, Wenying Zhuang, Song Ge, Ping He
2	Ecosystem Function and Sustainable Management	Jin Chen Xiaobo Yang Se Li	Hongwei Ni, Tieliang Shangguan, Xinquan Zhao,Youxu Jiang, Zhibiao Nan, Weilun Yin, Du Zheng, Ning Wu, Weiming Fan, Xingguo Han, Yingnan Liang, Guangqing Zhu, Lianxi Sheng, Yingzhong Xie, Jianming Jin, Zongwei Feng, Xinshi Zhang
3	Agriculture and Forest Biodiversity	Youyong Zhu Shaolin Peng Yijian Yao	Yanliang Wang, Xiwu Zhang, Yuehui Ma, Yu Li,Changxin Wu, Zhibin Zhang, Changming Gu, Xingtu Liu, Jianzhang Ma
4	Aquatic Biodiversity	Bin Wang Song Sun Ding Wang	Xiaoping Wu, Liangmin Huang
5	Biodiversity Monitoring and Information Sharing	Liqiang Ji Zhanqing Hao Ping Ding	Zhenzhen Chen, Zhigang Jiang, Xiankun Li,Yongzhong Ye, Wanhui Ye, Keping Ma, Guangmei Zheng, Ronghui Su
6	Genetic Resources and Bio-security	Hongwen Huang Manzhu Bao Fuwen Wei	Jinghua Cao, Shengming Du, Borong Pan, Xu Liu, Xianen Zhang, Zhihong Xu, Xiaoya Chen, Jindong Zhao, Zhiping Lou

Activities of members of CNC-DIVERSITAS

i. Ecosystem Function and Sustainable Management Group

Ruiliang Zhu

He completed investigation on bryophyte diversity in rainforests of Ambon and Seram of Indonesia in May and investigation on bryophyte diversity in rainforests of Amazonas and Bahia, Brazil in November and December. This is the first Chinese bryologist expedition to Brazil and Indonesia.

Guodong Ren

Under the leadership of Prof.Guo-dong Ren, a group of beetle evolution taxonomy of Hebei University has carried out the research on the diversity and adaptation of the darkling beetle species in the Pan-Himalayan Region for 17 times over 16 years. Based on the research data, they proposed the hypothesis that the central Asian region is the origin center of the tribe Blaptini, and the Qinghai-Tibet plateau is the center of the genus and species differentiation. During the study, the group published 46 papers and three monographs.

ii. Ecosystem Function and Sustainable Management Group

Zhibiao Nan

On July 6th, as the leader of the Consultative Expert Group of the Project, he attended project launch of National Research on Basic Resources of Science and Technology“Grassland Forage Resource Survey in Southern China” funded by Ministry of Science and Technology of China was held in Haikou,Hainan Province.
On October 10th, he attended “2017 China Grassland Forum” at Nanchang, Jiangxi Province, and gave a presentation titled “The Function, Current Situation and Development Strategy of Grassland Resource in China” as an invited speaker.

Ning Wu

From July 22-28, as the CLA of IPBES regional assessment, he attended the Third Author Meeting for IPBES Regional Assessment for Asia-Pacific in Tokyo, Japan.
FromOctober 3-4, he participated in the international workshop “Silk Roads in the Mountains of Central Asia-Ancient Routes and Modern Challenges in Times of Global Change” in Dushanbe, Tajikistan.

Xiaobo Yang

He published the book entitled “The rare and protected plant illustrations and their distribution characteristics in Hainan”. There are 111 species of plants in total. Besides, the main morphological characteristics, geographical distribution and habitats, conservation values, distribution maps, distribution patterns and population characteristics, the main uses and the present research status of the 111 rare and endangered species are introduced in detail.
He also published “Hainan Botanical Map”. This book contains 6,036 species of plants (vascular plants) that have historical records in Hainan, belonging to 243 families and 1,895 genera. It is divided into 14 volumes.The first volume is about the ferns, the second volume to the eleventh volume about gymnosperms and dicots, and the twelfth volume to the fourteenth volume about the monocotyledons.

Hongwei Ni

From May 6-12, he visited Swiss Federal Institute for Forest, Snow and Landscape Research WSL for the academic communication and signed the MoU between the two institutes.
From June 5-8, he attended the Society of Wetland Scientists 2017 Annual Meeting, which was held at the Puerto Rico Convention Center in San Juan, Puerto Rico. Prof. Ni was elected as the vice president of China Society of Wetland Scientists.
From Sep 24th to Oct 3rd, he visited the University of British Columbia and Alberta Innovates Technology Futures for the academic communication and signed the MoU with the Biology Department at the University of British Columbia.
From March 13-14, he attended the annual meeting of HIST council, introduced the progress of the Belt and Road Initiative in Heilongjiang Province and the work plan of the institute inthis field in the future.

Xinquan Zhao

From June 30 to July 1st, he participated the Sino-German Academic Forum on Resource Utilization and Ecological Conservation of Qinghai-Tibet Plateau in Xining, Qinghai Province and gave a lecture.
From July 11-12, he participatedin the Third Pole Science Summit-TPE-CSTP-HKT Joint Conference in Kunming, Yunnan Province and gave a lecture.
From August 27-31, he participated in the 9th International Symposium of Integrative Zoology in Kunming, Yunnan Province and gave a plenary lecture entitled “Sanjiangyuan National Park Management: Wildlife Conservation and Livestock Production”.

iii. Agroforestry Biodiversity Group

Yu Li

On June 24, the 19th Annual Conference of China Association for Science and Technology was held. As one of the four lecturers, Academician Yu Li made a special report to the conference entitled "Take the Path of Mushroom Industry with Chinese Characteristics and Realize the Powerful Dream of Edible Fungus Industry". After the report, Vice president YuanchaoLicordially talked with Yu Li specifically. He pointed out: Edible mushroom is not a small mushroom but a big industry. We need to earnestly study and formulate relevant policies to promote the development of the mushroom industry. He also said that China's mushroom industry has made great achievements and occupies an important position in the development of modern agriculture, and Yu Li had done important work for China's mushroom industry transformation and upgrading.

From September 24 to 27, the 9th International Conference on Medicinal Mushroom was held in Splendii, Palermo, the capital of Sicily, Italy. The chairman of the International Association of Medicinal Mushrooms, Yu Li, a member of the Chinese Academy of Engineering, led the core members of the team to attend the meeting and represented China on its election campaign for the hosting of the 10th International Conference on Medicinal Mushroom. Because of outstanding achievements in the field of medical mushroom research and the advantages and characteristics of China's Nantong city showed by Yu Li. China eventually will holdthe 10th International Conference of Medicinal Mushroom in 2019.

Changming Gu

On May 19, he hosted the 4th Steering Committee Working Meeting: Project on strengthening the effective management of wetland conservation in Anhui province".

He published “Birds Atlas of Anhui” in Anhui Normal University Press in July.

On September 28, Dr. Gu was invited to attend the 3rd National Member Representative Conference and the First Conference of the Third Council of China Wildlife Conservation Association and was in charge of monitoring balloting.

From December 2 to 4, he attended the Annual Meeting on National Wetland School Network Exchange, which was co-held by the Foreign Cooperation Projects Center of State Forestry Administration, China Office of Wetland International and Anhui Wildlife Conservation Association.

Shaolin Peng

Prof. Peng took the invitation as the guest editor-in-chief of Allelopathy Journal to organize a special issue: Invasive Plants and Allelopathy.

On August 24, Prof. Peng was invited to take the session chair of 12th International Congress of Ecology.

On December 4,he attended the symposium on wetland ecological conservation of Guangdong, Hong Kong, Macao and gave a talk.

iv. Aquatic Biodiversity Group

Bin Wang

From May 31 to June 2, he attended the Thailand-China Cooperative Program Meeting on Marine Science and Technology in Chiang Mai, Thailand, and gavea plenary presentation on Marine Hazard Risk Governance and Mitigation Service of China, in which the adaptation, resilience and mitigation functions of marine ecosystems to marine disaster were discussed.
From June 22 to 23 , heattended the Academy Salon on National Park and the Workshop on Spatial Planningof Marine National Parks in China atChangdao, Shandong Province, gavea plenary presentation on IUCN Green List of Protected Areas and the Management of Marine Protected Areas.

v. Biodiversity Monitoring and Information Sharing Group

Zhaoqing Hao

From March 16-17, he participatedin the boundary assessment of Naoli River Nature Reserve in Heilongjiang, authorized by the Ministry of Environmental Protection of China.
He attended the 6th International Conference on Biodiversity Science and Conservation and Meeting for Members Committee between 26-28 April, and gave a keynote report named Functional and Phylogenetic temporal beta diversity in young growth and old growth forest in Northeast China--Based on Changbaishan Temperate Forest Plots.

Xiankun Li

From August 7-10, Prof. Xiankun Li attended “Seminar for Karst Plant Ecology”, which was sponsored by Huanjiang Observation and Research Station for Karst Ecosystem, Chinese Academy of Sciences; and visited Mulun 25ha karst forest dynamics plot.
From October 23-25, Prof. Xiankun Li attended “The First Forum of Karstologists in China”, sponsored by International Research Center on Karst (IRCK)/NICK under the auspices of UNESCO, and presented a topic report.
From November 17-20, Prof. Xiankun Li attended “Seminar for field observation of land surface process in Karst area of southern China” sponsored by the State Key Laboratory of Environmental Geochemistry and Puding Observation and Research Station for Karst Ecosystem, Chinese Academy of Sciences; and presented a talk entitled Studieson Biodiversity and Ecosystem Monitoring for Karst Seasonal Rainforest.

Zhigang Jiang

From August 28-30, Prof. Jiang took part in the Workshop on Captive Breeding for Saiga and the executive meeting of the SCA in Moscow and delivered a speech on historical distribution and reintroduction of Saiga in China.

On September 3, he attended the Horizon Scan of Emerging Issues for Global Conservation and Biological Diversity, and proposed the issue “Rapid Climatic Changes on the Qinghai-Tibet Plateau”, which was selected as one of the 15 issues in the 2018 Horizon Scan of Emerging Issues for Global Conservation and Biological Diversity(TREE 32:31-40.).

The 12th Mammalogy Conference was held in Perth, Australia, in October. Prof. Jiang and Academician Wei Fuwen co-chaired the "Mammals in Anthropogenic Landscape" section.

Keping Ma

He attended the workshop of IUCN Red List of Ecosystems from April 24-28 in London and gave a report on the progress of Red List of Chinese Forest Ecosystems.

He attended the 2017 GBIF Asia Regional Meeting from June 13-14 in Hanoi and introduced the progress of Chinese bioinformatics.

He attended the 5th Workshop on Science and Technology Cooperation for Biodiversity from November 6-8 in Chiangmai and gave a report on Mapping Asia Plants: Initiative and Progress to introduce the plan and progress of MAP.

Liqiang Ji

From March 26-30, he attended the Asia Biodiversity Conservation and Database Network symposium in Xishuangbanna, Yunnan Province.

In April, he attended the Catalogue of Life Global Team Meeting in the United Statesand introduced the progress of 2017 Species Catalogue of China.

From April 9-15, he attended the Catalogue of Life Global Team Meeting in theUnited States and presented a talk on the progress of Species 2000 China node.

From September 29 to October 8, he attended the 2017 TDWG Conference in Canada and presented the Catalogue of Life China and related software tools.

From November 8-11, he attended the National Platform for Science Data in Kunming, Yunnan Province and presented the progress of China Animal Database System.

From December 5-7, he attended the National Symposium on Biodiversity Informatics in Beijing.

vi. Genetic Resources and Bio-security Group

Borong Pan

From July 8 to10, he attended the Second National Conference on Ethno-Ecology in Kaili, Guizhou, and gave a report on the analysis of the connotation of traditional ethnoecological knowledge-taking the construction of the small grid farmland protection forest in Turpan, Xinjiang as an example.

From August 25 to 28, Prof. Pan attended the Ninth Western Region Symposium on Plant Science and Resources Utilization in Dali, Yunnan, and gave a report on analysis of the present situation of the cultivation of *Cistanche deserticola* inTurpan area.

From October 9 to 12, Prof. Pan attended the 2017 China Botanical Garden Annual Conference which was held in Chongqing, and gave a lecture entitled “The ancient tamarisk events in Qinghai Tongde county-Talk about: The protection and utilization of Tamarix L. plant diversity” in the training course organized by the conference organizers and the China Biodiversity Conservation and Green Development Foundation.

Zhihong Xu

He presided the Ten Years Evaluation of Six World Biosphere Reserves in China including Mt. Everest, Xilingol League, Inner Mongolia, Fenglin, Heilongjiang, Xiangkai River, Heilongjiang, Chebaling, Guangdong and Maolan, Guangxi which was organized by Man and the Biosphere Programme (MAB).

On August 4, attended the Meeting on China action plan for ten-year strategy of Man and the Biosphere Programme held by UNESCO.

On August 10, attended the signing ceremony of strategic cooperation agreement between China MAB and Xinhuanet. The two sides aimed at Chinese ecological civilization construction, promoting the development of MAB Programme, and jointly carrying out a number of public projects such as environmental conservation, animal and plant diversity conservation, scientific monitoring, training courses and so on.

On September 29, participated in the Annual Meeting of the Science Committee for Southeast Asia Biodiversity Research Institute, Chinese Academy of Sciences, and evaluated Foundation on Regional International Cooperation, Key Area Expansion Programme and Programme for Young Cultivation.

On November 2, attended the China MAB annual meeting with a key topic on biodiversity monitoring and the digitization of nature reserves.

PART V

Publications

i. Catalogue of Life China, 2017 CDROM
ii. Print version of Species Catalogue of China
iii. Biodiversity Science
iv. CForBio series of books

Publications

i. Catalogue of Life China, 2017 CDROM

There are 92301 species & infraspecific taxa in the 2017 Annual Checklist of Catalogue of Life China.The groups of species in this edition are (number of species, number of infraspecies):

Animalia (Animals) Annelida (488, 20); Arthropoda (22905, 1925); Brachiopoda (8, 0); Bryozoa (197, 0); Cnidaria (1520, 6); Echinodermata (588, 9); Echiura (11, 0); Entoprocta (8, 0); Hemichordata (7, 0); Mollusca (2302, 41); Myxozoa (39, 0); Nematoda (192, 0); Nemertea (58, 0); Phoronida (4, 0); Porifera (165, 7); Sipuncula (43, 1); Chordata (6165, 1922) [Agnatha (8, 0); Amphibian (416, 0); Bird (1373, 1791); Leptochordata (4, 0) ; Mammal (564, 115) ; Fish (3337, 16); Reptile (463, 0)].

Bacteria Actinobacteria (45, 0); Bacteroidetes (30, 0); Chloriobi (1, 0); Cyanobacteria (158, 5); Firmicutes (48, 0); Proteobacteria (181, 1).

Chromista Diatomeae (1245, 405); Oomycota (265, 24); Phaeophyta (292, 8).

Fungi Ascomycota (1792, 103); Basidiomycota (1780, 42); Chytridiomycota (24, 0); Glomeromycota (184, 0); Zygomycota (322, 26).

Plantae (Plants) Angiospermae (30721, 6618); Anthocerotophyta (27, 0); Bryophyta (1964, 147); Chlorophyta (199, 18); Gymnospermae (263, 85); Marchntiophyta (1054, 88); Pteridophyta (2217, 132); Rhodophyta (496, 12).

Protozoa Amoebozoa (432, 55); Cercozoa (4,0); Choanozoa (1, 0); Ciliophora (497, 1); Dinozoa (253, 50); Percolozoa (3, 0); Radiolaria (537, 10).

Viruses dsDNA viruses (368, 27); dsRNA viruses (35, 26); Negative stranded ssRNA viruses (51, 12); Positive stranded ssRNA viruses (131, 56); Retroviruses (5, 0); Reversetranscribing viruses (25, 9); ssDNA viruses (36, 20); Vivoid (4, 0).

ii. Print version of Species Catalogue of China

By the end of 2017, the volumes published were as follows:

iii. Biodiversity Science

Biodiversity Science (formerly Chinese Biodiversity, y, http://www.biodiversity-science.net), l), launched in 1993, is a strictly 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, and is indexed in AJ, BP, CA, CABI, CSCD, Scopus, etc. In 2017, eight special issues/features were planned and published aiming to report hot issues. The journal was continuously granted by the China Association for Science and Technology (CAST), and won the 100 Outstanding Academic Journals of China 2016, the Outstanding S & T Journals of China (2017–2020), and the Excellent International Impact Academic Journals of China 2017.

iv. CForBio series of books

1. Introduction of Yulongxueshan Cold Temperate Forest Dynamics Plot: Spruce-fir Forest Species Composition and Their Spatial Patterns

Compiled by Kun Xu, et al.-Beijing: China Forestry Publishing House, 2017.5

This book describes 60 common woody plants (not including bamboo)with DBH≥1cm in Yulongxueshan cold temperate spruce-fir forest dynamics 25 ha plot. Every species is described with both characteristics and pictures. Beautiful photos of whole plant, inflorescence, fruits and seedlings are helpful to identify the plant species.Distribution of individuals and diameter class of every woody plant in stands of the 25ha cold temperate forest are attached. Topography, soil and vegetation are also introduced. Zheng Wanjun (1975) classification system was used for gymnosperms, and APG IV taxonomy system was applied to angiosperms.

2.Hunan Badagongshan Forest Dynamics Plot: Tree Species and Their Distribution Patterns

Compiled by Zhijun Lu, et al.-Beijing: China Forestry Publishing House, 2017.10

This book describes 232 common woody plants with DBH≥1cm in Hunan Badagongshan Forest dynamics 25 ha plot. Every species is described with both characteristics and pictures. Beautiful photos of whole plant, inflorescence, fruits and seedlings are helpful to identify the plant species.Distribution of individuals and diameter class of every woody plant in stands of the 25ha evergreen and deciduous mixed forest are attached. Topography, soil and vegetation are also introduced. Zheng Wanjun (1978) classification system was used for gymnosperms, and Engler (1964) taxonomy system were applied to angiosperms.

PART VI

Participation in major international organizations (the Convention) Activities

i. International Union for Conservation of Nature (IUCN)
ii. GBIF Asia Regional Conference
iii. GEO BON Activities

Participation in major international organizations (the Convention) Activities

i. International Union for Conservation of Nature (IUCN)

1.The 3rd Tripartite Meeting of IUCN members of China, Japan and Korea

On October 14-16, the 2nd IUCN tripartite meeting was held in Ishikawa, Kanazawa, and Prefecture, Japan, which was hosted by the IUCN national committee of Japan. More than 30 representatives from China, Japan and South Korea, and IUCN Asia regional office attended the meeting.

The 11 member representatives from China, Japan and South Korea introduced their own institutions and shared their work progress, respectively. Dan Wang of the Biodiversity Committee of CAS introduced the recent progress of the committee on biological diversity, which mainly includes two aspects: ABCDNet and the biodiversity informatics projects; CForBio and China biodiversity monitoring and research network (Sino BON). As a special report, the IUCN Asia Regional Members Committee(ARMC) chairman, Prof.Keping Ma introduced the ARMC Annual Meeting in China on September 18 to 20, 2017.He also introduced the meeting topics and achievements, how to strengthen exchanges and cooperation among members in Asia, and proposal for improving IUCN management. The Forum for young scholars of biological diversity protection in East Asian countries was open to the public.Two young representatives from China demonstrated China's efforts in biological diversity.

Through this meeting, the Chinese delegation showed China's achievements in biodiversity conservation, and they were well received.

2. 2017 summer sharing meeting

On June 10-11, the 2017 summer sharing meeting of the IUCN Chinese member was held in Xiangshan, Beijing. It was hosted by the Biodiversity Committee, CAS, IUCN Beijing office and China Forestry Society. Nearly 30 representatives from 15 Chinese member institutions attended the meeting. The meeting was aimed at promoting exchanges and cooperation among members of IUCN in China.

IUCN Asia Regional Member Committee Chair, Prof. Keping Ma, Chunquan Zhu, representative of IUCN in China, and the vice President of China Forestry Society Xingliang Chen, delivered the opening speeches. Prof. Ma introduced the basic situation, historical development, membership, project implementation and how members promoted the implementation of IUCN strategy in China.

Prof. Ma summarized and concluded the meeting. He pointed out that the meeting strengthened the close ties between members, and provided a useful platform. The representatives looked forward to more such meetings in the future. On November 11, representatives of the committee organized a visit to the research station of the warm temperate forest ecosystem of the CAS in Donglingshan, Beijing.

3. Green list management training seminar

On May 3-6, the green list and management training seminar was held in Shennongjia, Hubei province. The meeting was hosted by IUCN, the Institute of Forest Ecology and Environment Protection, Chinese Academy of Forestry, and Biodiversity Committee, CAS. This is the first major event of the IUCN Nature College, and it marks the start of the IUCN Green List.

James Hardcastle, Director of Green list, from IUCN Headquarters, Matt Durnin,Head of quality control in the Asia Pacific region of Green list, and Thierry Lefebvre,Head of French Green list, introduced the origin, basic situation and process of green catalogues, respectively. The training covered several topics related to the management of nature protection. The international experts introduced the experience of nature protection and tourism, ecosystem services and financing. Prof. Keping Ma and several domestic experts also gave lectures.

IUCN China office will continue to promote IUCN NatureCollege withpartners, organize more training on a regular basis,and build communication platform to introduce the most advanced international idea and experience on protected natural areas, to promote exchanges and interactions.

ii. GBIF Asia Regional Conference

From June 13-14, the 2017 GBIF Asia Regional Meeting was held in Hanoi, Vietnam. It was organized by GBIF and Biodiversity Conservation Agency (BCA), Vietnam Environment Administration, Ministry of Natural Resources and Environment, supported by the Biodiversity Information Fund for Asia (BIFA), which was contributed by the Ministry of Environment, Government of Japan. It was the first expanded regional meeting in Asia. About 50 participantes from 14 countries referring to 9 GBIF nodes in Asia, 5 non-participant countries and 6 external networks attended the meeting. The 8th meeting of the GBIF Asia nodes was held as a side meeting.

During the meeting, GBIF Secretariat shared the progress and priorities in 2017, as well as data status, sharing, use and gap in Asia. Representatives from BIFA funded projects teams introduced their projects and progress. The discussion was focused on the development of national biodiversity information infrastructure, identifying and filling gaps, widening the GBIF network/collaborating. Asia is a weak area in both participation in GBIF network and data sharing. Considering of the complicated and unique situation in Asia, Prof. Keping Ma and Dr. Zheping Xu, representatives of GBIF CAS node, expressed their opinions on how to encourage more countries, organizations to join in GBIF network. Meanwhile, CAS node would work together with other nodes to promote the development of biodiversity informatics and China's participation in data sharing.

iii. GEO BON Activities

1. The 9th GEOSS Asia-Pacific Symposium

On Jan. 11-13, the 9th GEOSS Asia-Pacific Symposium was held in Tokoy, Japan.More than 260 participants from over 20 countries attended the symposium. Prof. Keping Ma gave a report on working group meeting of biodiversity monitoring.The annual progress of Chinese Biodiversity Observation and Research Network (Sino BON) and Asia Biodiversity Conservation and Database Network (ABCDNet) were shared with participants, which was highly appreciatedby Dr. Laetitia Navarro, the executive Director of GEO BON.

During the symposium,Chinese participants worked hard to promotea better platform for working groups, to expend topics of working groups, and creating better conditions for the participation of ecosystem monitoring network. Prof. Keping Ma actively communicated with the co-chair of working group and the chair of ecosystem monitoring AOGEOSS, respectively.He also addressed the importance of developing the topics of working groups during the discussion. His suggestion to adding the expansion of working group topics in official document was adopted when the Tokyo Statement was reviewed. Prof. Ma's suggestion to rename AP BON to Biodiversity and Ecosystem Sustainability Task Force during the AOGEOSS session was promised to be recorded as a note.

2. The 10th GEOSS Asia-Pacific Symposium

From Sept. 18-20, the 10th GEOSS Asia-Pacific Symposium was held in Hanoi, Vietnam.More than 210 participants from over 20 countries attended the symposium. Mrs. Xuehong Xu, from Biodiversity Committee, gave a report on working group meeting of biodiversity monitoring. Mapping Asia Plants and its progress was shared with participants.It was highly valued and regarded as a very challenging and meaningful project by Prof. Tetsukazu Yahara.

A plenary speech on the progress of AOGEOSS was given by Prof. Xingfa Gu, the Deputy Director General of Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences. The data sharing and AO data cube and users were discussed during the symposium. The special session of AOGEOSS led by China played a positive role in the 10th APGEOSS symposium. Discussions focused on AOGEOSS actions were chaired by Prof. Xingfa Gu. And he tried to call on more collaborators to be together to carry out the biodiversity observation both in Asia and worldwide. Substantial progress of data sharing was made based on the balancing of each party's interests.

PART VII

Publicity of CNC-DIVERSITAS

i. XIX International Botanical Congress -Exhibition on China Biodiversity Conservation

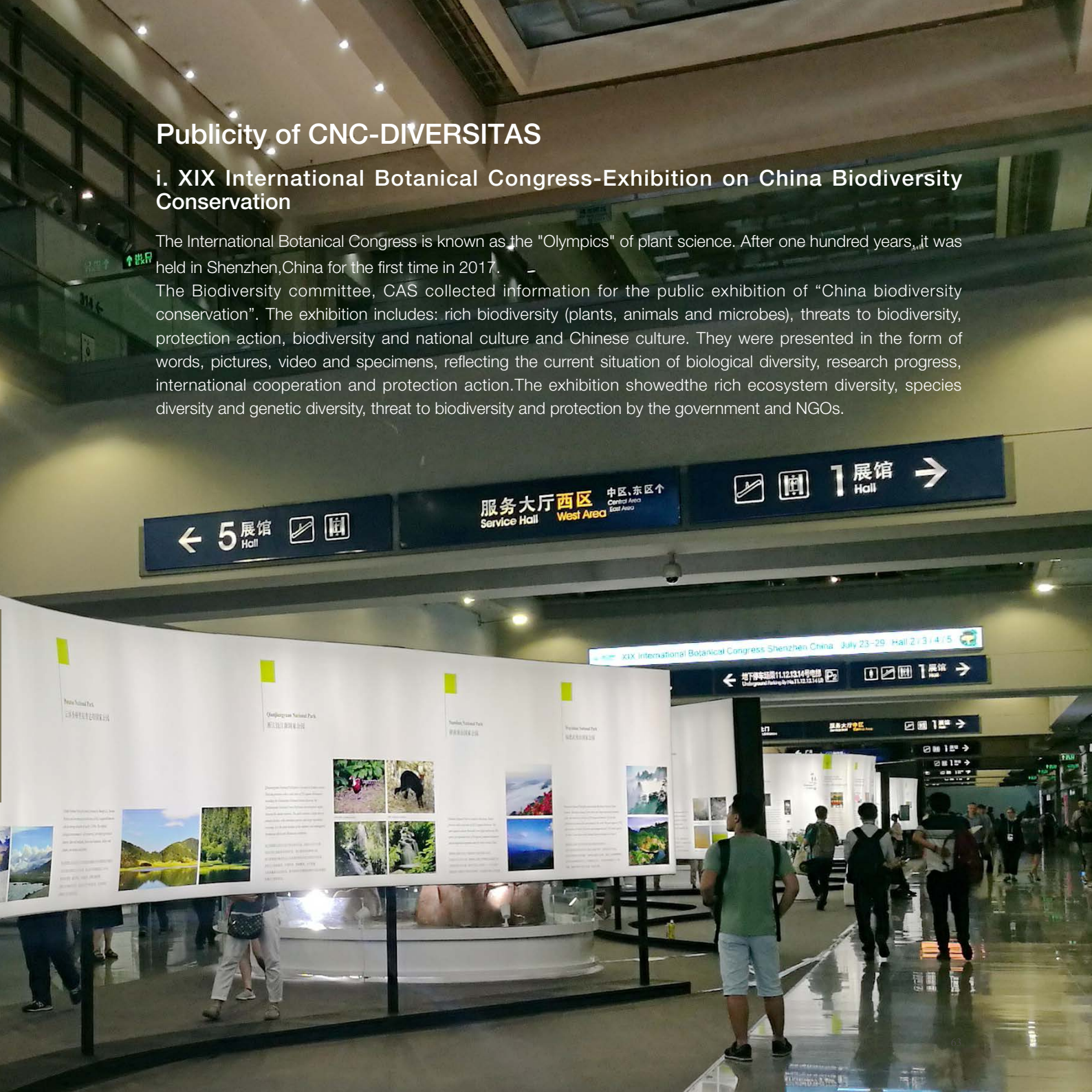
ii. Annual Report

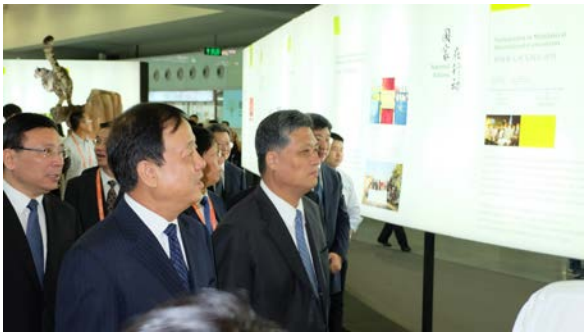
Publicity of CNC-DIVERSITAS

i. XIX International Botanical Congress-Exhibition on China Biodiversity Conservation

The International Botanical Congress is known as the "Olympics" of plant science. After one hundred years, it was held in Shenzhen,China for the first time in 2017.

The Biodiversity committee, CAS collected information for the public exhibition of “China biodiversity conservation”. The exhibition includes: rich biodiversity (plants, animals and microbes), threats to biodiversity, protection action, biodiversity and national culture and Chinese culture. They were presented in the form of words, pictures, video and specimens, reflecting the current situation of biological diversity, research progress, international cooperation and protection action.The exhibition showedthe rich ecosystem diversity, species diversity and genetic diversity, threat to biodiversity and protection by the government and NGOs.





ii. Annual Report

Appendix: Organizational Structure

The 2nd Scientific Committee of CNC-DIVERSITAS

Scientific Committee

Chair

Jiayang Li, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences

Vice Chair (In alphabetical order)

Jinghua Cao, Bureau of International Cooperation, Chinese Academy of Sciences

Zhenzhen Chen, Urban Construction Division, Ministry of Housing and Urban-Rural Development of China

Shengming Du, Department of Life Science, National Natural Science Foundation of China

Yingnan Liang, Department of International Affairs, China Association for Science and Technology

Bin Wang, National Marine Hazard Mitigation Service

Yanliang Wang, Department of Science, Technology & Education, Ministry of Agriculture of China

Changxin Wu, Science and Technology Committee, Ministry of Education of China

Xiwu Zhang, Department of Wildlife Conservation and Nature Reserve Management, State Forestry Administration, China

Xianen Zhang, Institute of Biophysics, Chinese Academy of Sciences

Zhibin Zhang, Institute of Zoology, Chinese Academy of Sciences

Guangqing Zhu, Department of Nature and Ecological Conservation, Ministry of Environmental Protection of China

Members (In alphabetical order)

Manzhu Bao, College of Horticulture & Forestry Sciences, Huazhong Agricultural University

Wenjun Bu, College of Life Sciences, Nankai University

Xun Chen, Guizhou Science and Technology Department

Jin Chen, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences

Ping Ding, College of Life Sciences, Zhejiang University

Changming Gu, Anhui Provincial Department of Forestry

Zhanqing Hao, P Institute of Applied Ecology, Chinese Academy of Sciences

Ping He, Wulong County, Chongqing City

Hongwen Huang, South China Botanical Garden, Chinese Academy of Sciences

Liqiang Ji, Institute of Zoology, Chinese Academy of Sciences

Zhigang Jiang, Institute of Zoology, Chinese Academy of Sciences

Dezhu Li, Kunming Branch, Chinese Academy of Sciences

Shaohua Li, Institute of Botany, Chinese Academy of Sciences

Xiankun Li, Guangxi Institute of Botany, Chinese Academy of Sciences

Se Li, Ministry of Housing and Urban-Rural Development of China

Naifa Liu, School of Life Sciences, Lanzhou University

Keping Ma, Institute of Botany, Chinese Academy of Sciences

Yuehui Ma, PInstitute of Animal Sciences, Chinese Academy of Agricultural Sciences

Hongwei Ni, Institute of Natural Resources, Heilongjiang Academy of Sciences

Borong Pan, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences

Shaolin Peng, College of Life Sciences, Sun Yat-Sen University

Haining Qin, Institute of Botany, Chinese Academy of Sciences

Guodong Ren, College of Life Sciences, Hebei University

Tieliang Shangguan, College of Environmenal Sciences and Resources, Shanxi University

Lianxi Sheng, Northeast Normal University

Ronghui Su, Bureau of Major R&D Programs, Chinese Academy of Sciences

Song Sun, Institute of Oceanology, Chinese Academy of Sciences

Fadao Tai, College of Life Sciences, Shaanxi Normal University

Ding Wang, Institute of Hydrobiology, Chinese Academy of Sciences

Wei Wang, College of Life Sciences, Inner Mongolia University

Yuezhao Wang, Chengdu Institute of Biology, Chinese Academy of Sciences

Fuwen Wei, Institute of Zoology, Chinese Academy of Sciences

Xiaoping Wu, Department of Biotechnology, Nanchang University

Yingzhong Xie, Ningxia University

Guang Yang, College of Life Science, Nanjing Normal University

Daode Yang, College of Life Science and Technology, Central South University of Forestry and Technology

Xiaobo Yang, Division of Tropical Agriculture and Life Science, Hainan University

Yijian Yao, Institute of Microbiology, Chinese Academy of Sciences

Yongzhong Ye, College of Life Science, Henan Agriculture University

Yaping Zhang, Chinese Academy of Sciences

Xinquan Zhao, Chengdu Institute of Biology, Chinese Academy of Sciences

Ruiliang Zhu, College of Life Science, East China Normal University

Youyong Zhu, Yunnan Agricultural University

Secretary General

Keping Ma, Institute of Botany, Chinese Academy of Sciences

Vice Secretary General (In alphabetical order)

Liqiang Ji, Institute of Zoology, Chinese Academy of Sciences

Zhiping Lou, Bureau of Frontier Sciences and Education, Chinese Academy of Sciences

Haining Qin, Institute of Botany, Chinese Academy of Sciences

Advisory Committee

Chair

Yiyu Chen, Academician of CAS, National Natural Science Foundation of China

Vice Chairs

Zhihong Xu, Academician of CAS, Peking University

Xu Liu, Academician of CAE, Chinese Academy of Agricultural Sciences

Jianming Jin, Academician of CAE, Ministry of Environmental Protection of China

Members (In alphabetical order)

Xiaoya Chen, Academician of CAS, Shanghai Institutes of Biological Science, Chinese Academy of Sciences

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