Sino-BON and ABCDNet

--Progress Report in 2016

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Institute of Botany, Chinese Academy of Sciences **2017-01-11**

GEO BON

geobon.org

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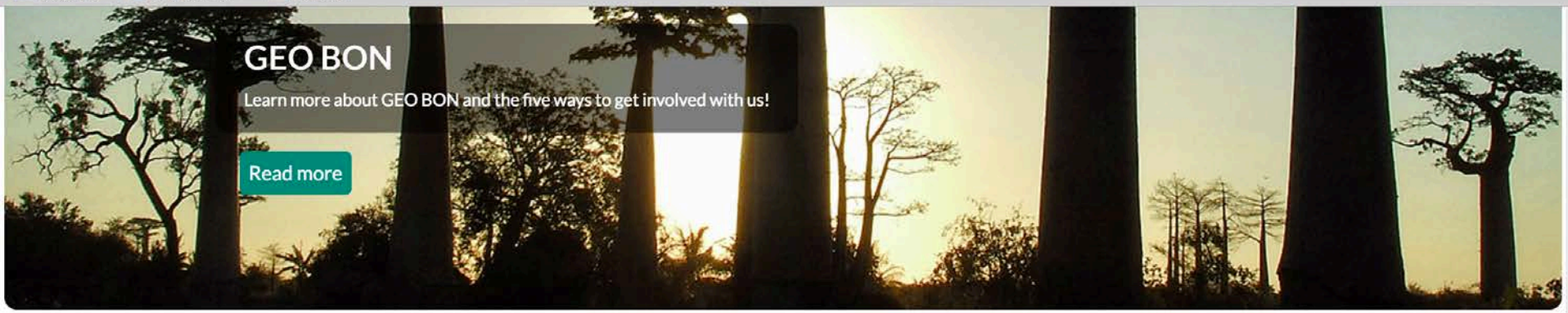


Networks

criteria for BON endorsement

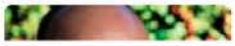
Latest news

From data sources to Essential Biodiversity Variables

October 10, 2016

Essential Biodiversity Variables (EBVs) consolidate information from varied biodiversity observation sources. Here we demonstrate the links between data sources, EBVs and indicators and discuss how different sources of biodiversity observations ...

Warning to forest destroyers: this scientist will catch you



October 5, 2016

All news >>

Upcoming events

Sino-BON

1201 Keping Ma

Biodiversity monitoring relies on the integration of human observation and automatic collection of data with advanced equipment and facilities

2016 Vol. 24 (11): 1201-1202 [Abstract] (223) RICH HTML NEW [PDF 3199KB] (377)

Special Feature: Chinese Biodiversity Monitoring and Research Network (Sino BON)

1203 Xiangcheng Mi, Jing Guo, Zhanqing Hao, Zongqiang Xie, Ke Guo, Keping Ma

Chinese forest biodiversity monitoring: scientific foundations and strategic planning

2016 Vol. 24 (11): 1203-1219 [Abstract] (187) RICH HTML NEW [PDF 1127KB] (306)

1220 Ke Guo, Changcheng Liu, Qingmin Pan

Methods of observing typical plant communities in the Steppe and Desert Biodiversity Observation Network, Sino BON

2016 Vol. 24 (11): 1220-1226 [Abstract] (104) RICH HTML NEW [PDF 353KB] (210)

1227 Huanzhang Liu, Junxing Yang, Shuwei Liu, Xin Gao, Yushun Chen, Chunguang Zhang, Kai Zhao, Xinhui Li, Wei Liu

Theory and methods on fish diversity monitoring with an introduction to the inland water fish diversity observation in China

2016 Vol. 24 (11): 1227-1233 [Abstract] (140) RICH HTML NEW [PDF 270KB] (249)

1234 Kaiwen Pan, Lin Zhang, Yuanhu Shao, Shenglei Fu

Thematic monitoring network of soil fauna diversity in China: exploring the mystery of soils

2016 Vol. 24 (11): 1234-1239 [Abstract] (286) RICH HTML NEW [PDF 690KB] (403)

1240 Xiangzhen Li, Liangdong Guo, Jiabao Li, Minjie Yao

Soil microbial diversity observation in China: current situation and future consideration

2016 Vol. 24 (11): 1240-1248 [Abstract] (373) RICH HTML NEW [PDF 4323KB] (362)

1249 Qinghua Guo, Jin Liu, Yumei Li, Qiuping Zhai, Yongcai Wang, Fangfang Wu, Tianyu Hu, Huawei Wan, Huiming Liu, Wenming Shen

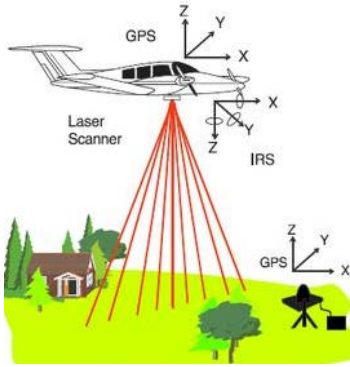
A near-surface remote sensing platform for biodiversity monitoring: perspectives and prospects

2016 Vol. 24 (11): 1249-1266 [Abstract] (124) RICH HTML NEW [PDF 1050KB] (269)

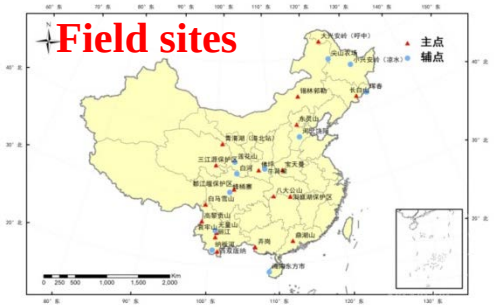
1267 Qinghua Guo, Fangfang Wu, Tianyu Hu, Linhai Chen, Jin Liu, Xiaoqian Zhao, Shang Gao, Shuxin Pang

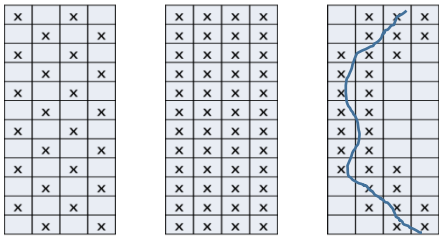
Perspectives and prospects of unmanned aerial vehicle in remote sensing monitoring of biodiversity

- Standard & Criteria
- Data Management & Sharing
- Remote Sensing



Camera-Trapping Network of Mammal Diversity (2011—)

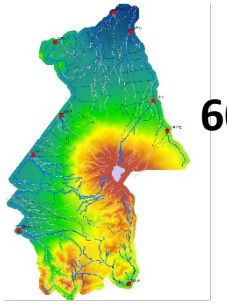




>2000

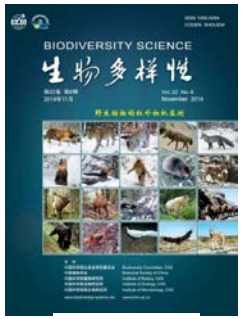
CameraData Base (2013—）

http://cameradata.ioz.ac.cn/



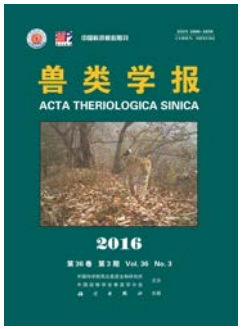
60-150台

1.25 M photos
Mammals: 80 sp.
Birds: 160 sp.



2014

2015



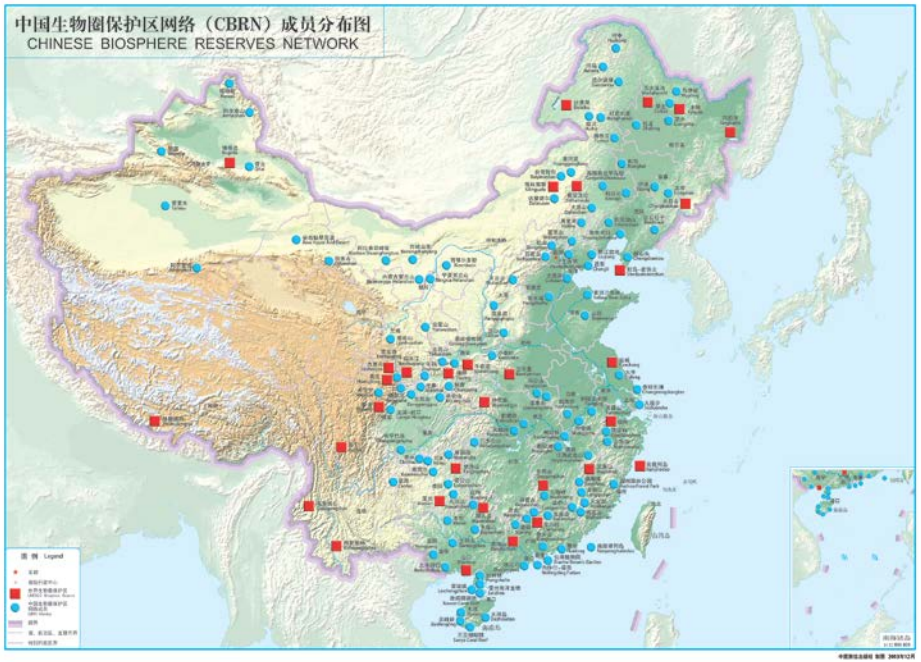
2016

Collaboration with ISZS and CBRN

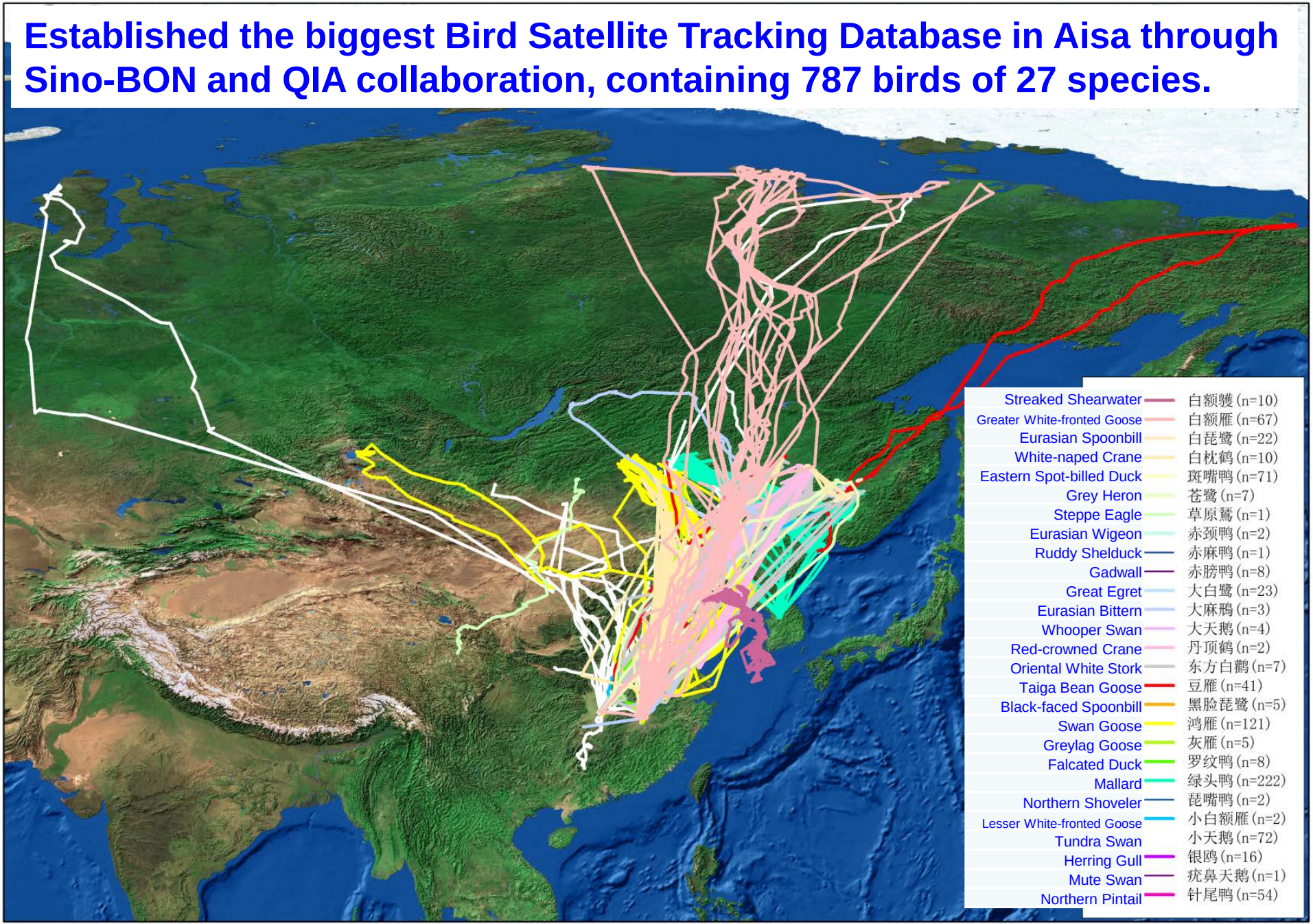
MaB .CN

ISZS International Society of Zoological Sciences

CBRN: 169 members of Nature Reserve



Established the biggest Bird Satellite Tracking Database in Aisa through Sino-BON and QIA collaboration, containing 787 birds of 27 species.



International Cooperation and Exchanges

Sino-BON Bird Monitorting Training Course

May 2016 in China

Sino-BON bird tracking project with Institute of Biological Problems of the North

Jul-Aug 2016 in Russia

Sino-BON and QIA Collaboration Agreement

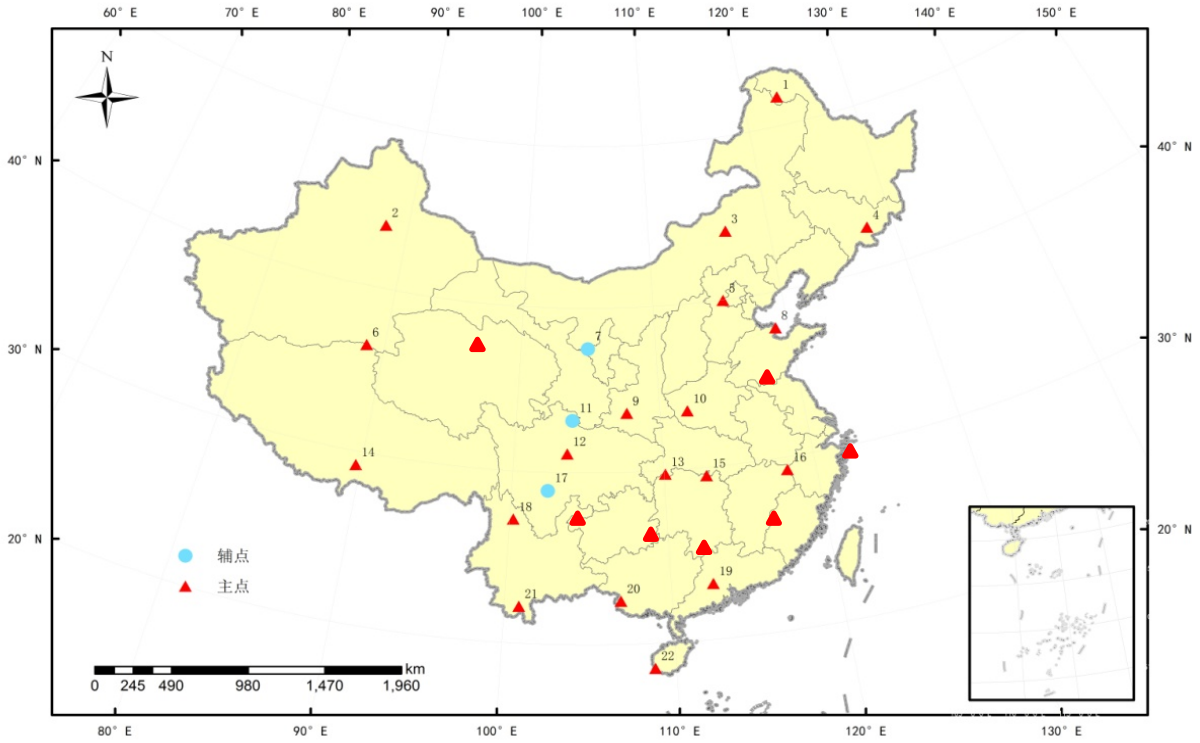
Sep 2016 **in Korea**

Camera-Trapping Network of Bird Diversity

Over 100 GB of photos and videos were collected by camera trapping in the Ailao Mountains.

Site Map

22 key regions with rich biodiversity and high habitat heterogeneity across China.



Diversity and Status

- Amphibians: 408 species, belonging to 82 genera, 13 families, and 3 orders. 272 species (66.7%) are endemic to China. 176 species (43.1%) are threatened (Jiang et al., 2016).



- Reptiles: 461 species, belonging to 133 genera, 32 families, and 3 orders. 143 species (31.0%) are endemic to China. 137 species (29.7%) are threatened (Cai et al., 2016).




Sino BON-AmphRept

Methods

Artificial refugia

Quadrat sampling

Drift fences and pitfall traps

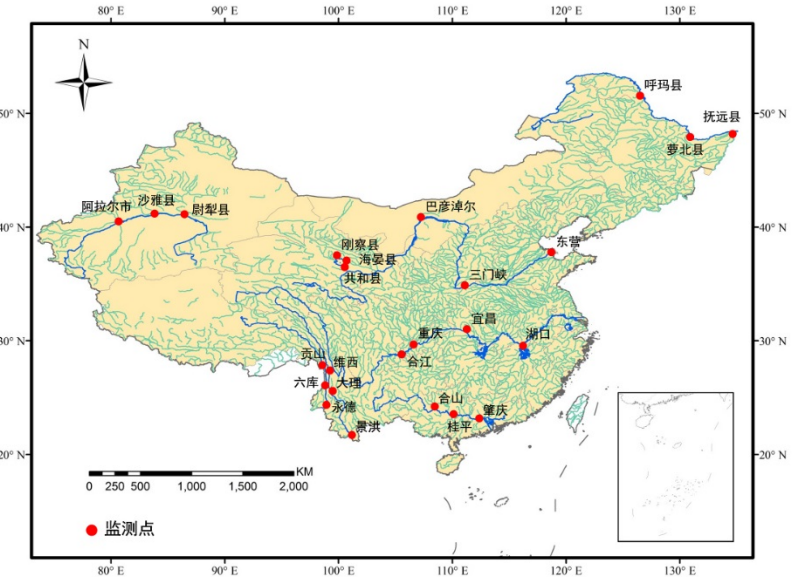
Artificial cover

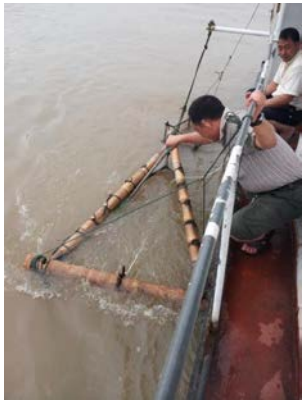
Index

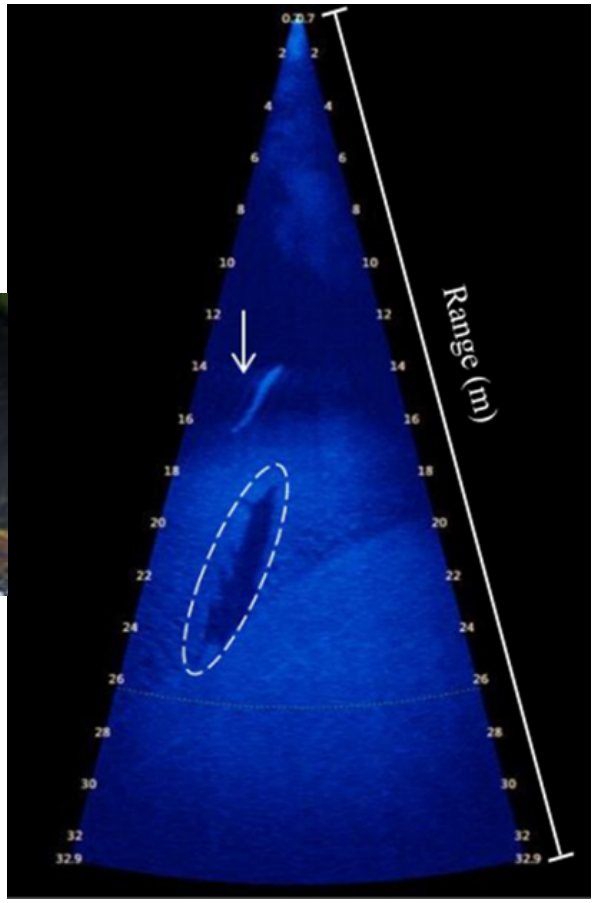
- Fauna and population;
- Body condition index;
- Niche;
- Population genetic structure;
- Threats

Sino BON – Inland Water Fish

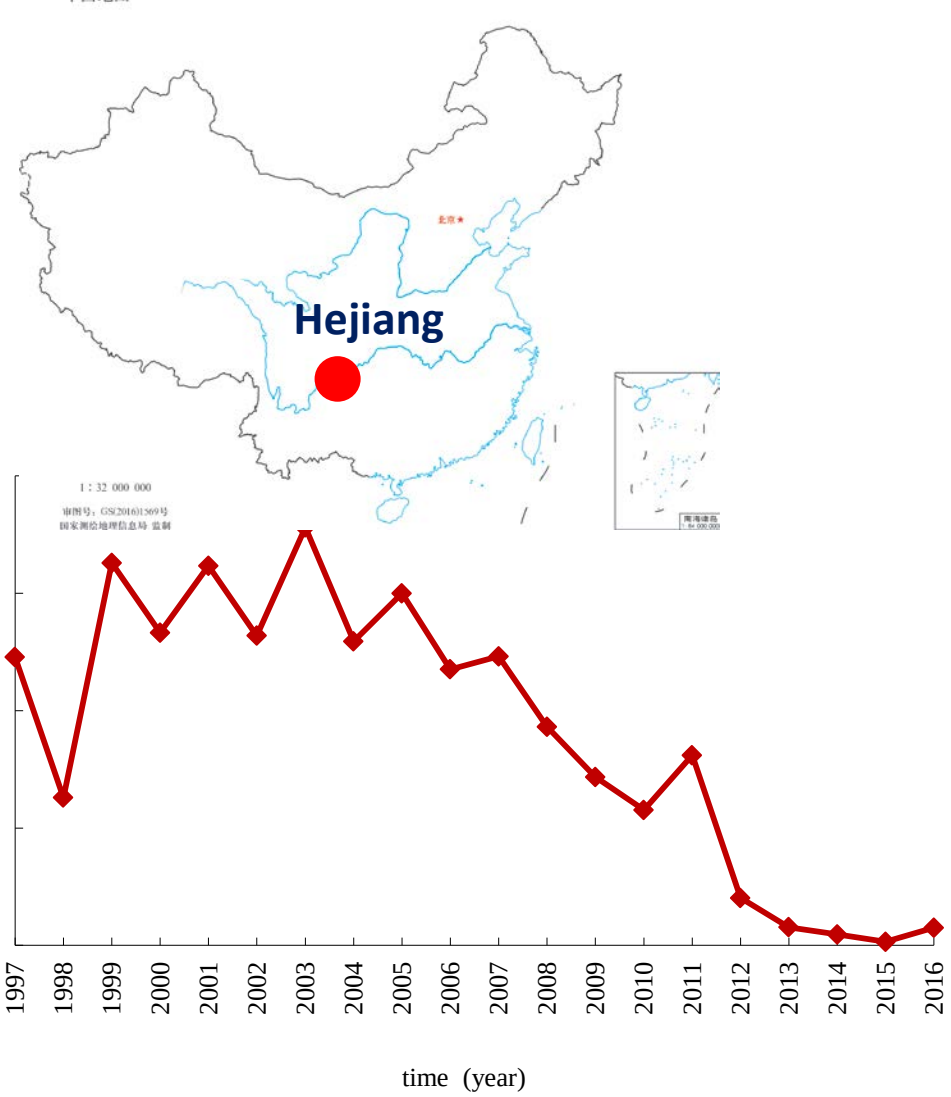
- Monitoring work was conducted in 8 major drainage basins
- Species composition, indicator species biological traits, fish reproduction were investigated

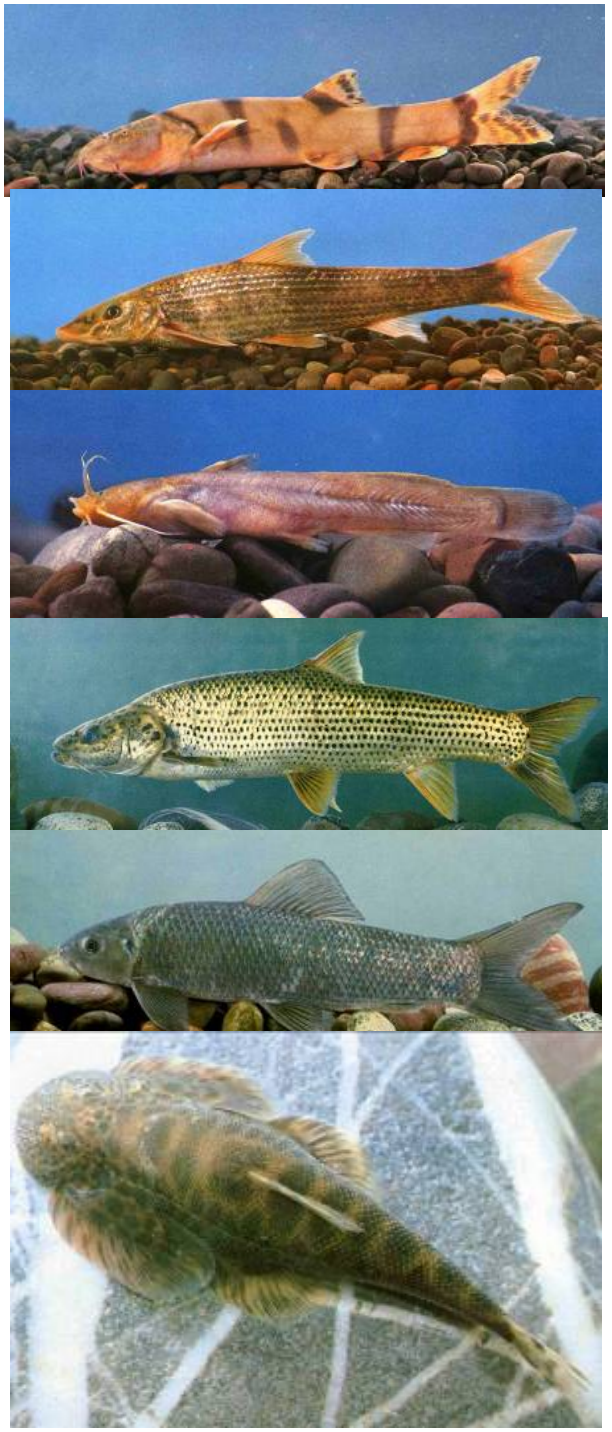






The Chinese sturgeon was found successfully reproducing again in 2016 after the failure in 2015.





Populations of endemic fishes in the upper Yangtze River continuously decreased due to the construction of dams and overfishing.

A workshop on monitoring of inland water fish biodiversity, Oct. 2016

鱼类多样性监测的理论方法及中国内陆水体鱼类多样性监测

Theory and methods on fish diversity monitoring with an introduction to the inland water fish diversity observation in China

Impact of the Three Gorges Dam on the spawning stock and natural reproduction of Chinese sturgeon in the Changjiang River, China*

Impact of the Three Gorges Dam on reproduction of four major Chinese carps species in the middle reaches of the Changjiang River*

长江流域渔业生态公报

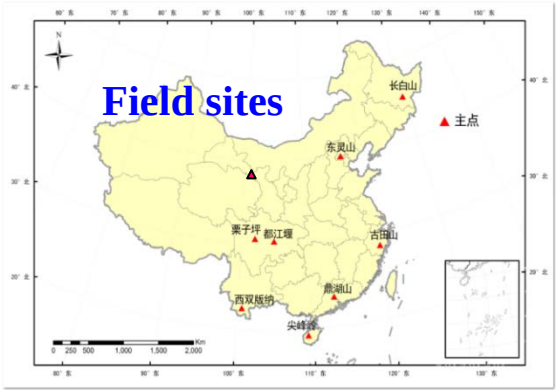
2015年

农业部长江流域渔政监督管理办公室

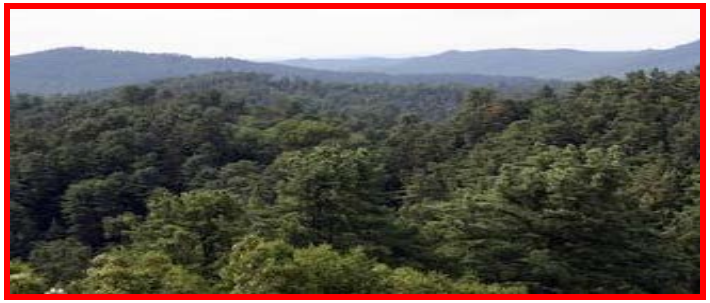
二〇一六年

Some papers and reports were published

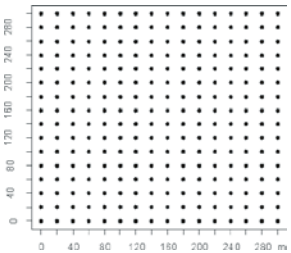
Monitoring Network of Soil Animal Diversity (2015—)



Ecosystems

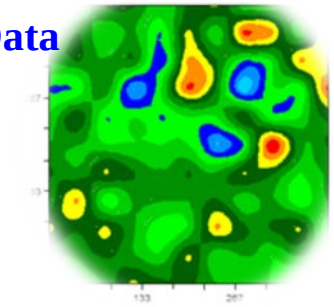


Sampling designs

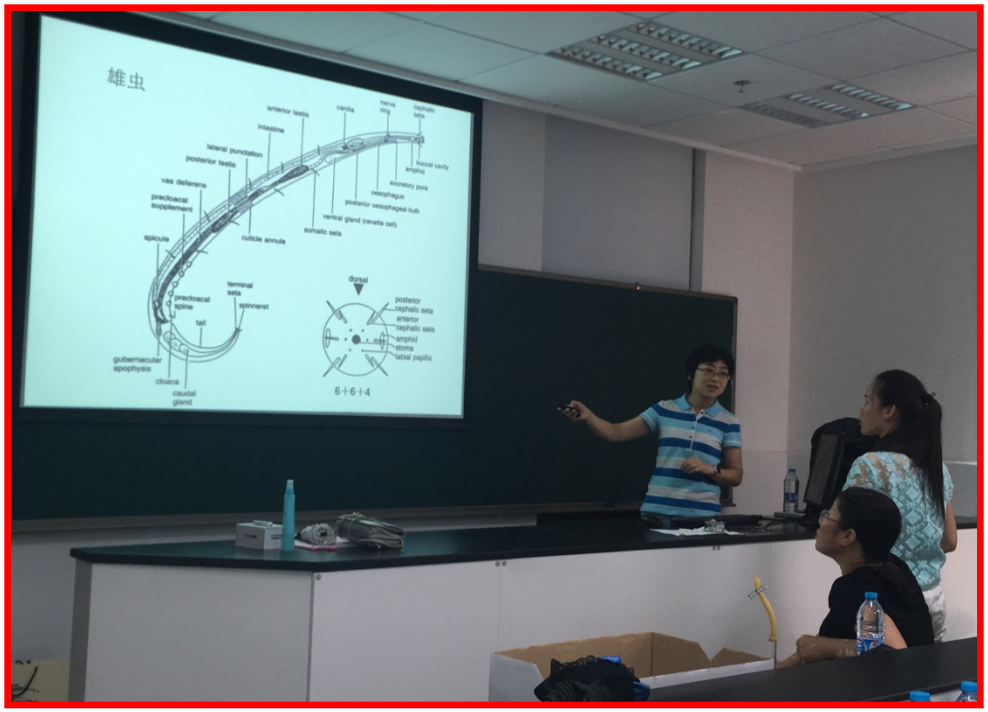


Multi-scales

Data

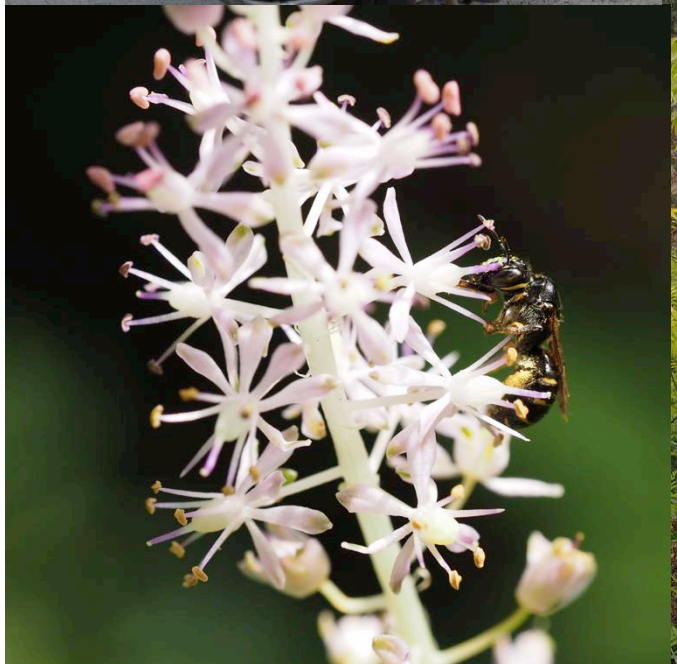


Seminars and Training courses



Sino BON-Insect

Xingangshan, Jiangxi



North East China

Apr., 2016

July, 2016

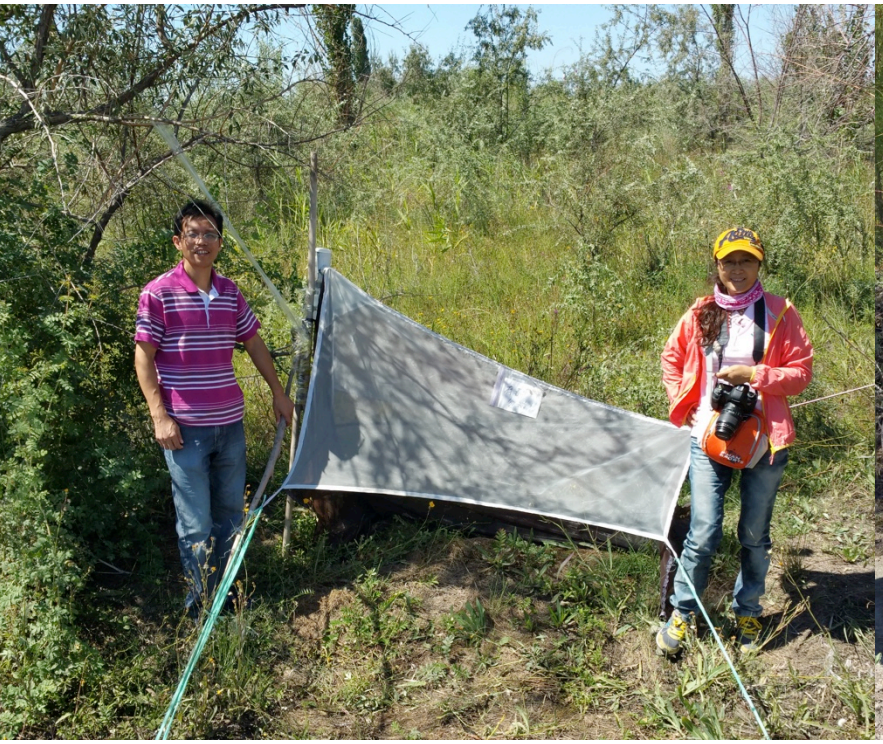
Songshan, Beijing

May., 2015

Taishan, Shandong

June., 2016

Manas, Xinjiang

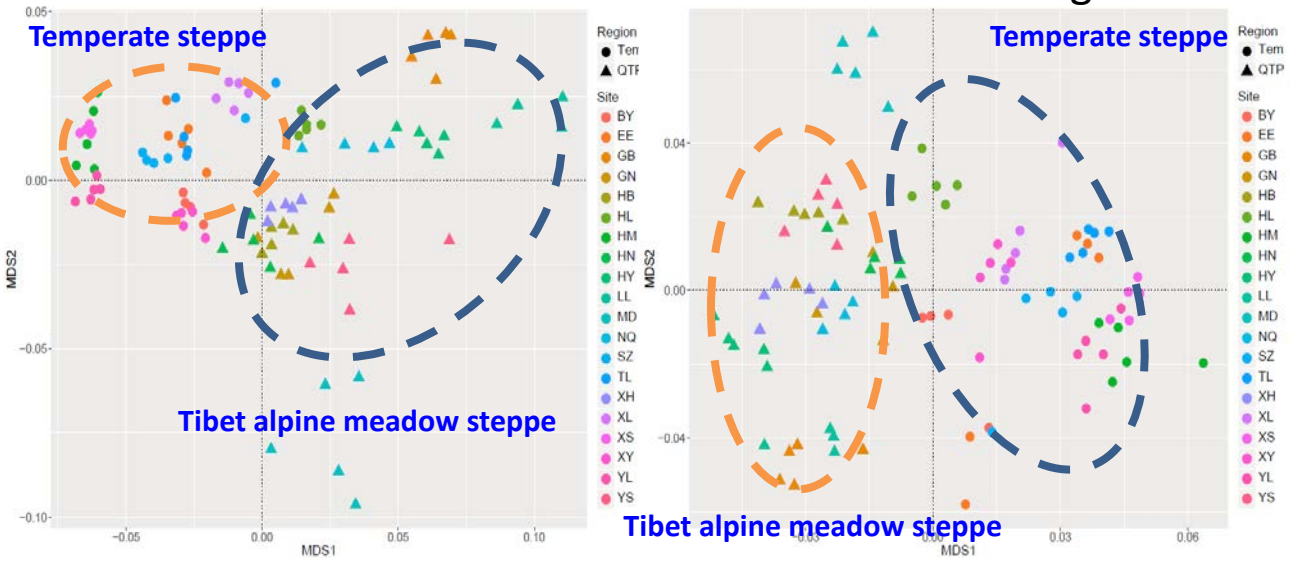


Aug., 2016

The diversity and community structure in Chinese grassland

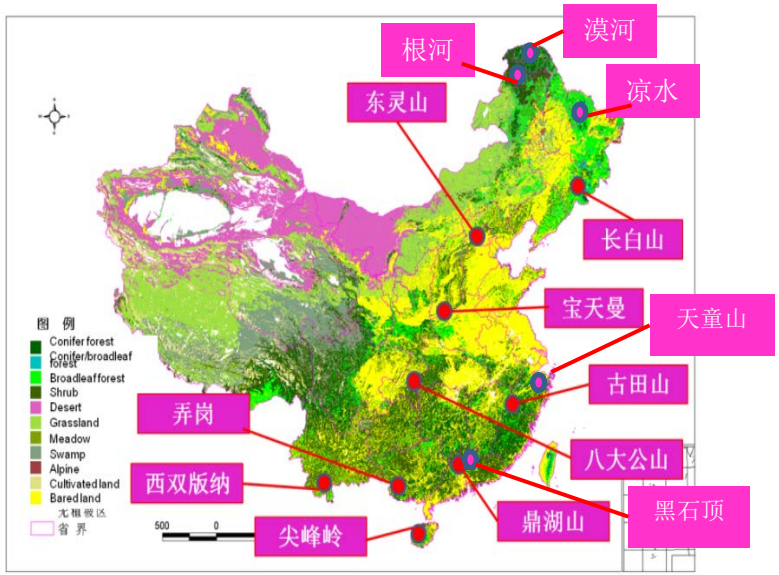
1. **Microbial community diversity and structure were investigated across Chinese grassland in Inner Mongolia, Xinjiang and Qinghai-Tibet Plateau.**
2. **Microbial community structure in temperate steppe (Inner Mongolia and Xinjiang) were distinctly different from those in Qinghai-Tibet plateau.**

NMDS of Bacteria

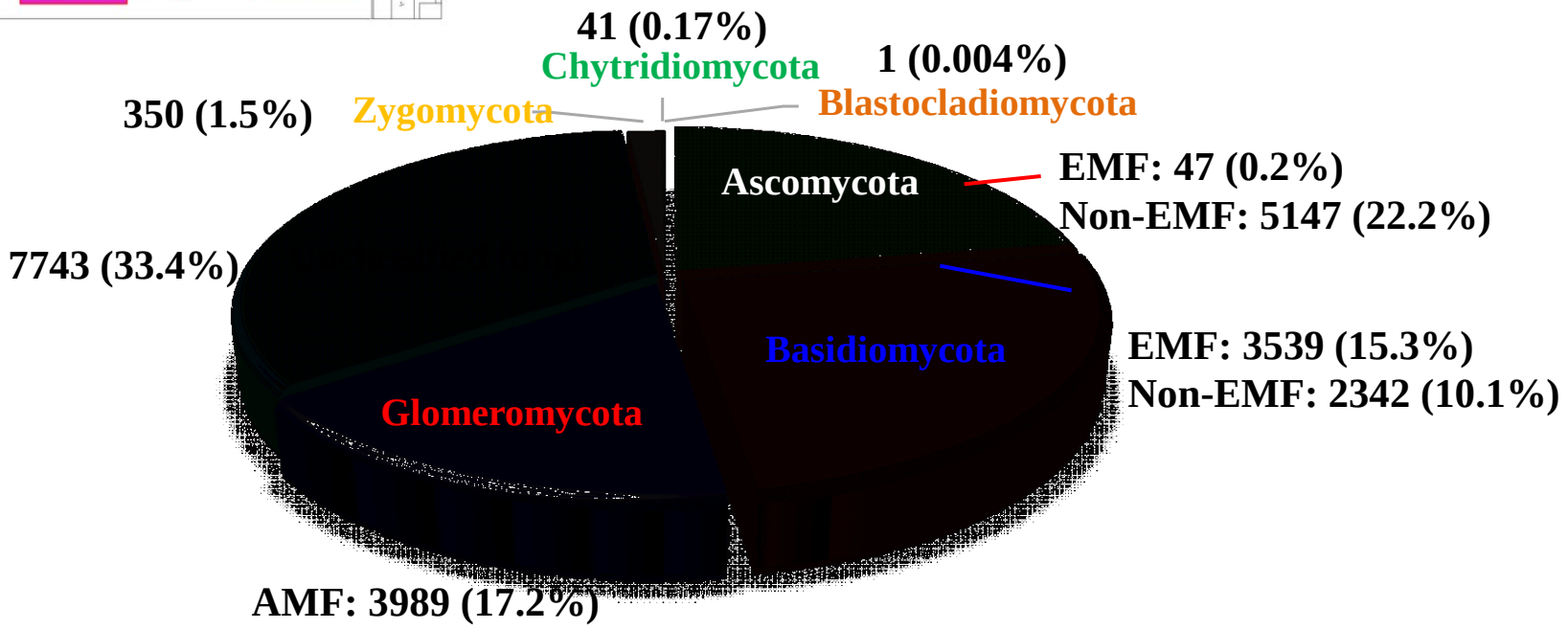


NMDS of Fungi

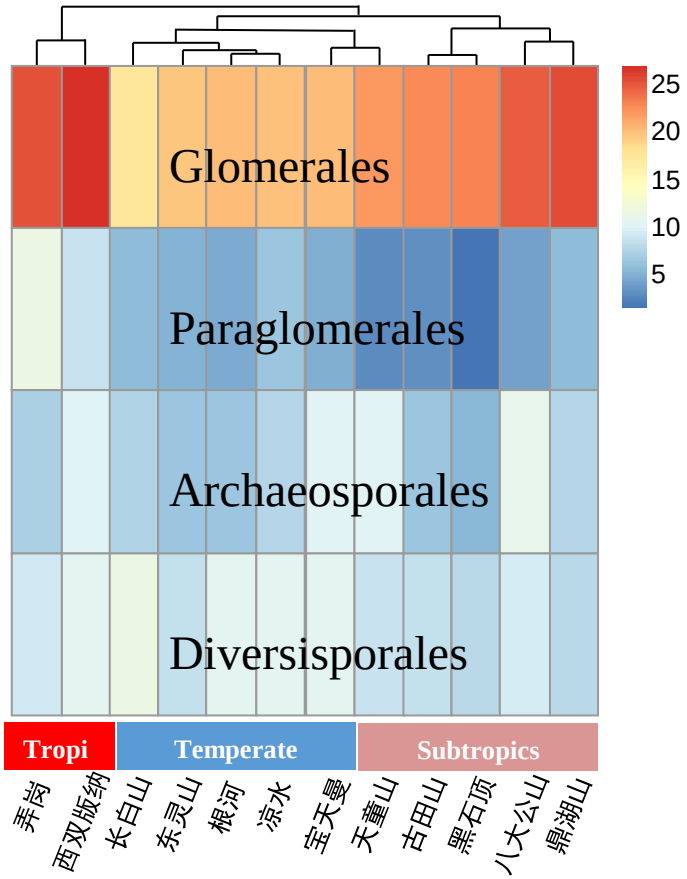
Soil AM fungi community and diversity along forest transect from northern to southern China



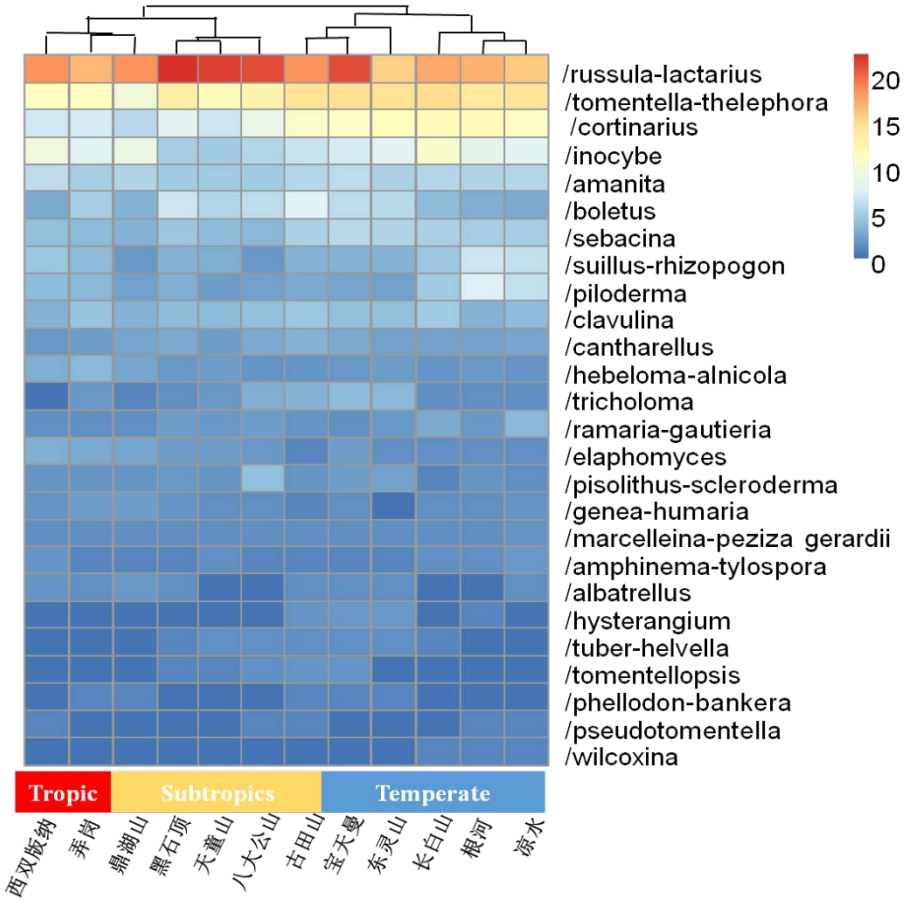
1. We collected 255 samples along the along forest transect from northern to southern China.
2. We identified 2.3 x 10^4 fungi OTUs (species), 3521 EMF fungi and 3989 AMF fungi.



The biogeographic patterns of various AMF and EMF populations are different along the latitude gradient



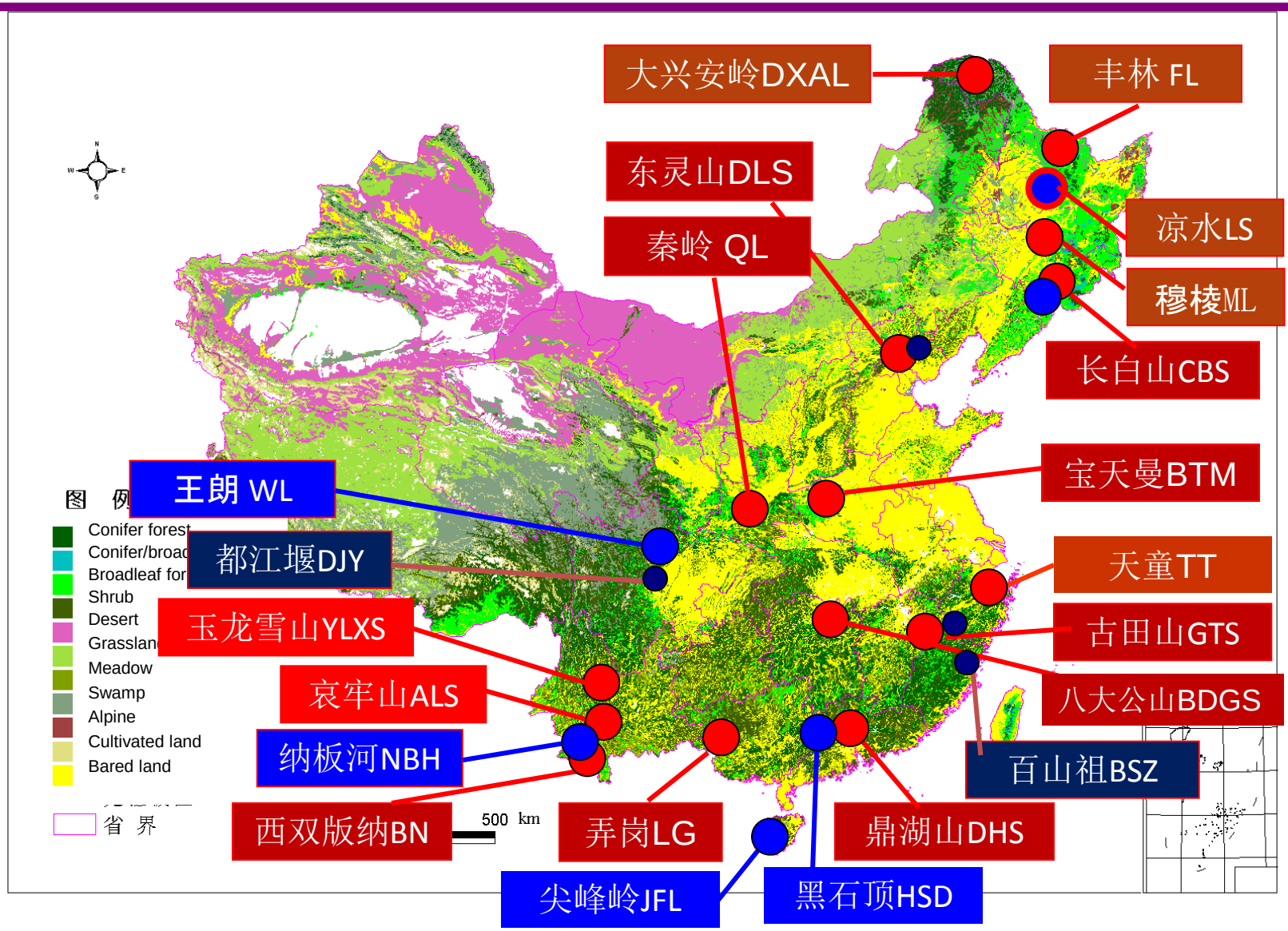
AMF orders



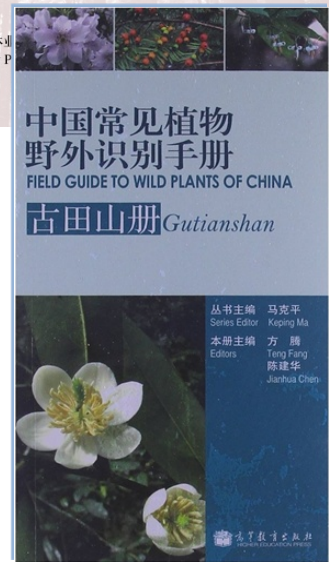
EMF lineages

Forest Global Earth Observatory is a global network of forest research plots and scientists dedicated to the study of tropical and temperate forest function and diversity. Forest GEO conducts long-term, large-scale research on forests around the world.

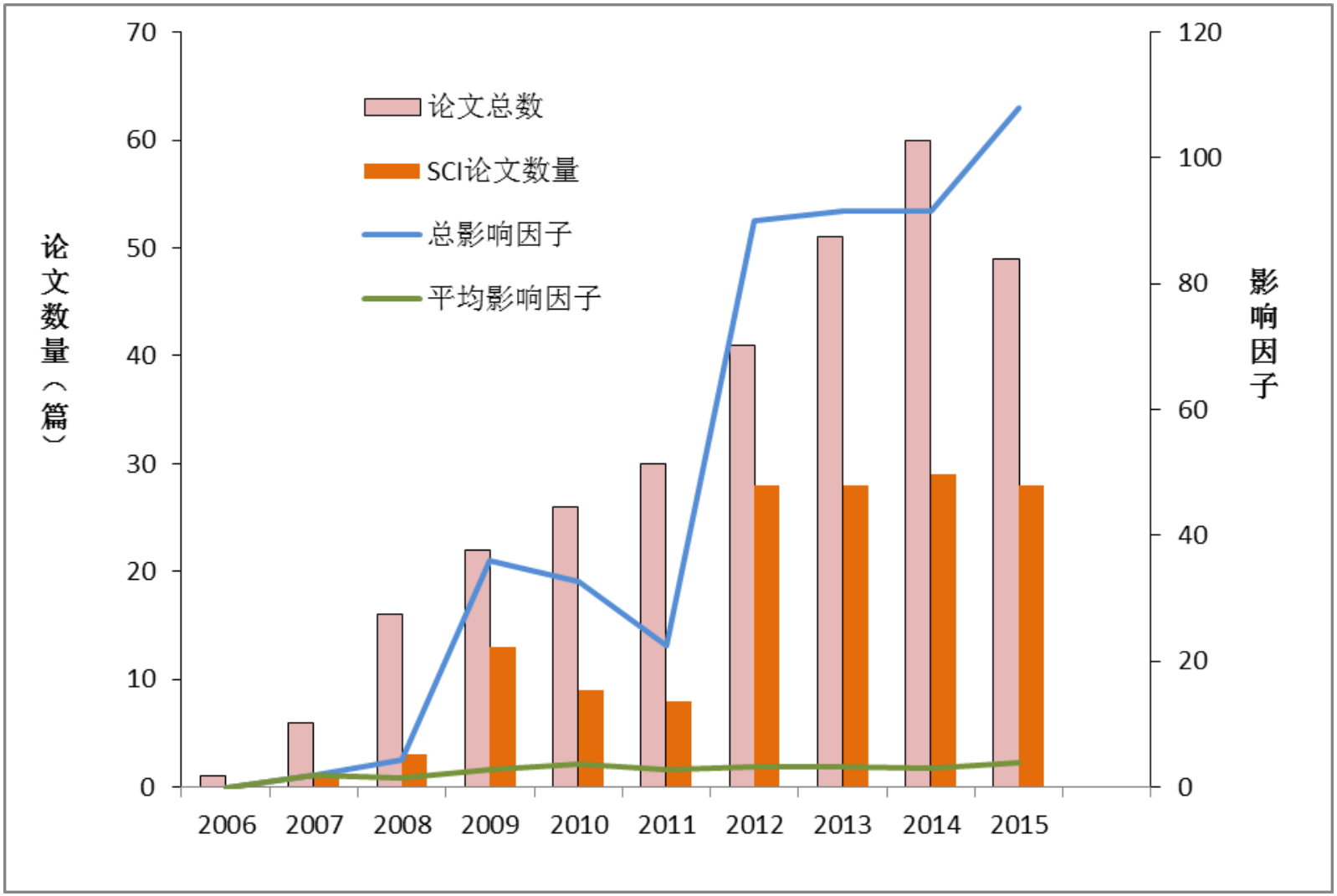
Chinese Forest Biodiversity Monitoring Network (CForBio)



CForBio stand book



Number of Papers Published

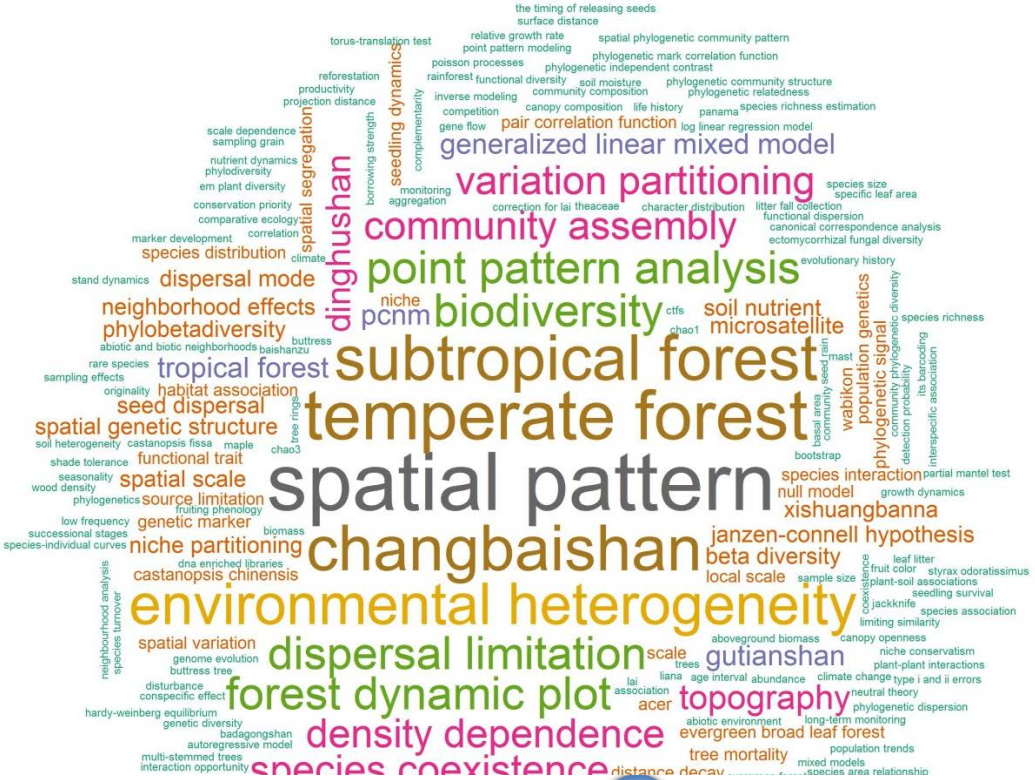


Papers Published in 2016

Academic papers: 46, SCI 32(70%)

- Megan K. Bartlett, Zhang Ya, Yang Jie, Nissa Kreidler, Sun Shanwen, Lin Luxiang, Hu Yuehua, Cao Kunfang and Lawren Sack. 2016. Drought tolerance as a driver of tropical forest assembly: resolving spatial signatures for multiple processes. ***Ecology***. 97(2):503-514.
- Wu Junjie, Nathan G. Swenson, Calum Brown, Zhang Caicai, Yang Jie, Ci Xiuqin, Li Jie, Sha Liqing, Cao Min and Lin Luxiang. 2016. How does habitat filtering affect the detection of conspecific and phylogenetic density dependence? ***Ecology***. 97(5): 1182-1193.
- Liu Xiaojuan, Nathan G. Swenson, Lin Dunmei, Mi Xiangcheng, María Natalia Umana, Bernhard Schmid and Ma Keping. 2016. Linking individual-level functional traits to tree growth in a subtropical forest. ***Ecology***. 97(9):2396-2405.

Topics of CForBio Papers



Sci. Bull.
DOI 10.1007/s11434-016-1132-9

CrossMark

www.scibull.com
www.springer.com/scp

Review

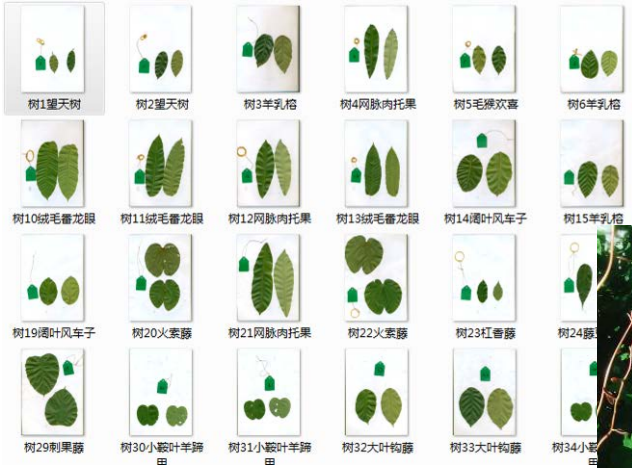
Received: 25 March 2016 / Revised: 29 April 2016 / Accepted: 13 May 2016

CForBio: a network monitoring Chinese forest biodiversity

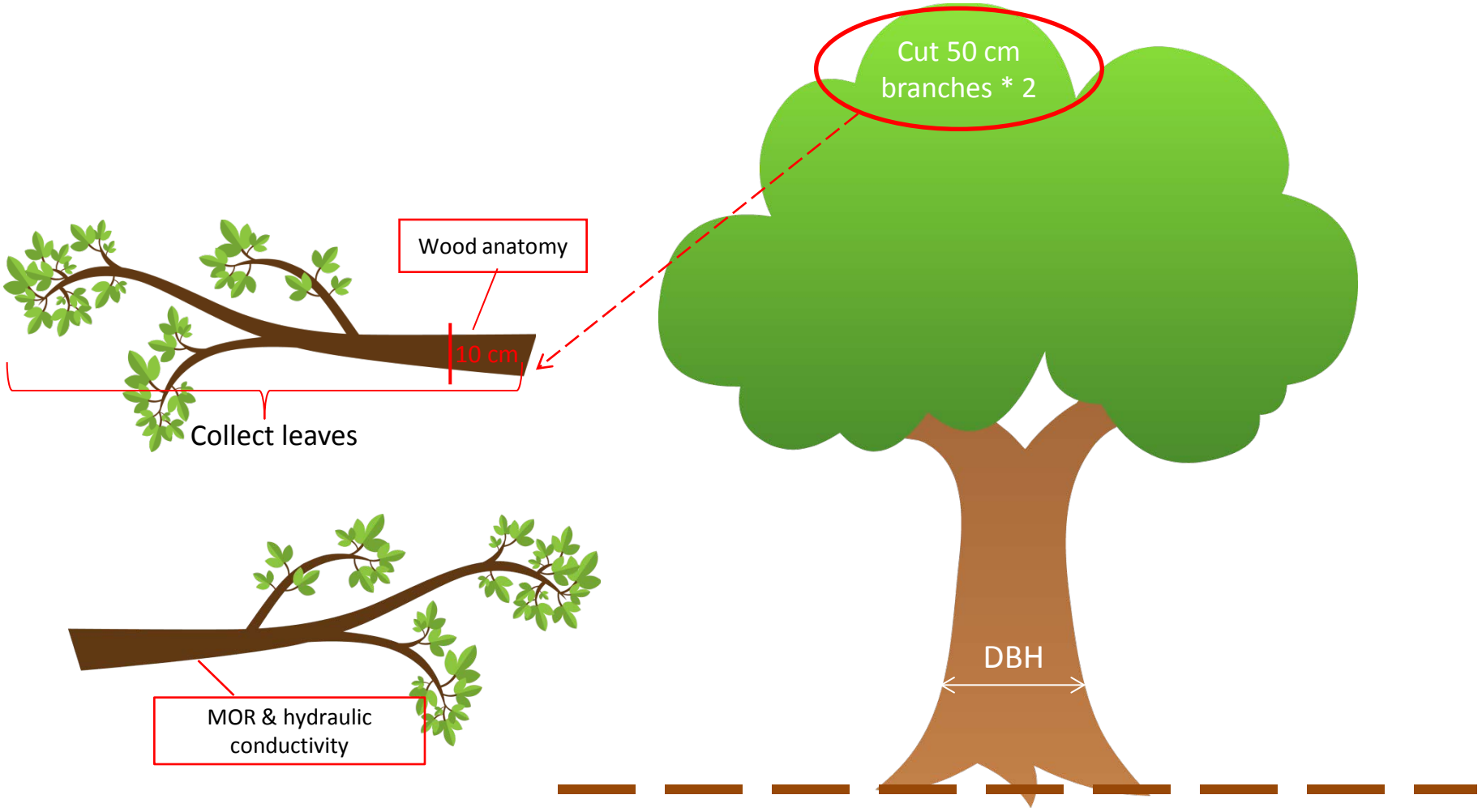
Gang Feng · Xiangcheng Mi · Hui Yan · Frank Yonghong Li · Jens-Christian Svenning · Keping Ma

0° 北

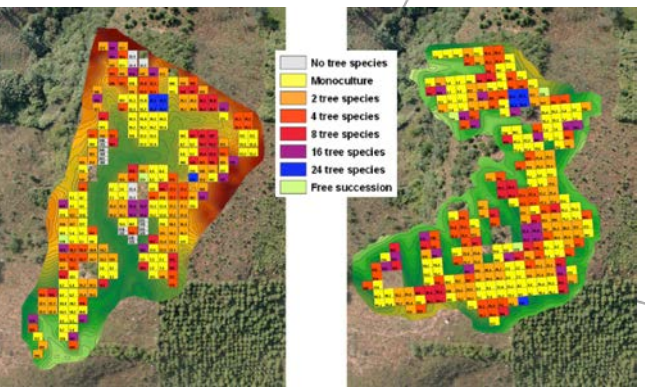
Leaf trait measurement on forest crane in XSBN

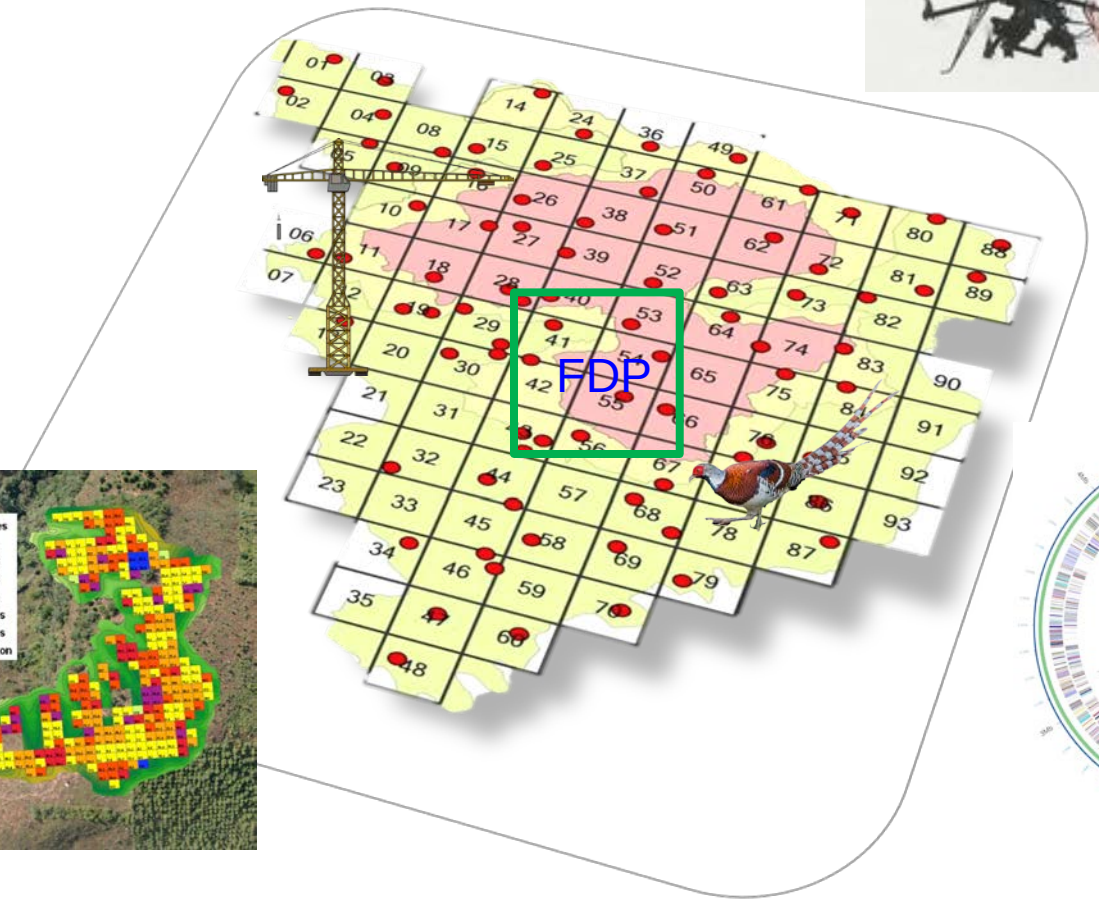


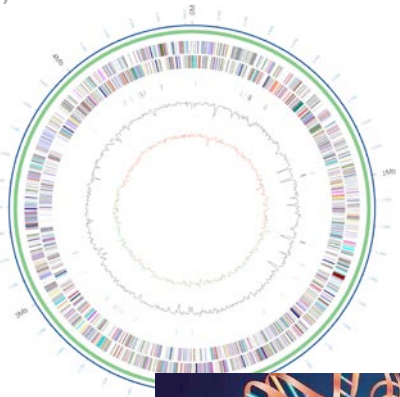
Sampling branches in canopy



Gutianshan Integrated Monitoring System



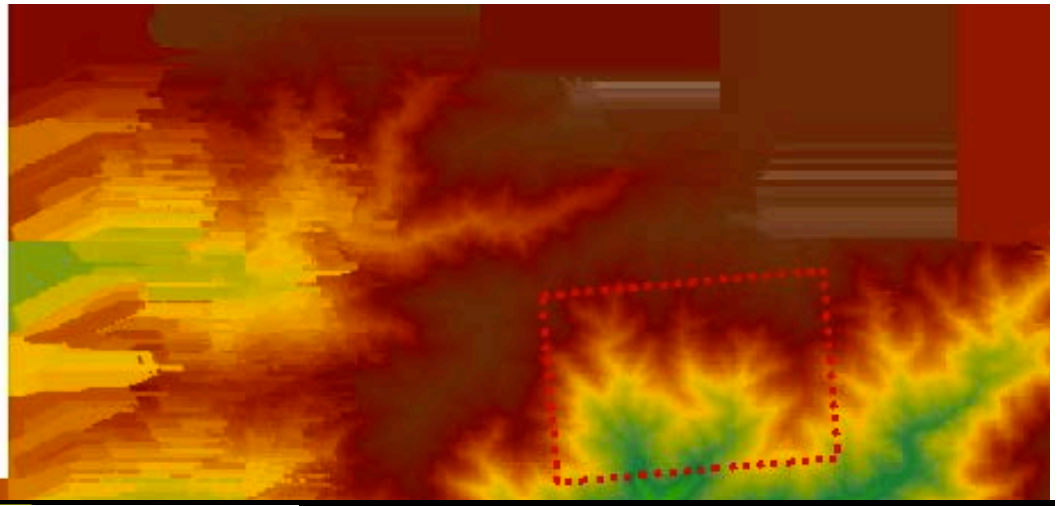




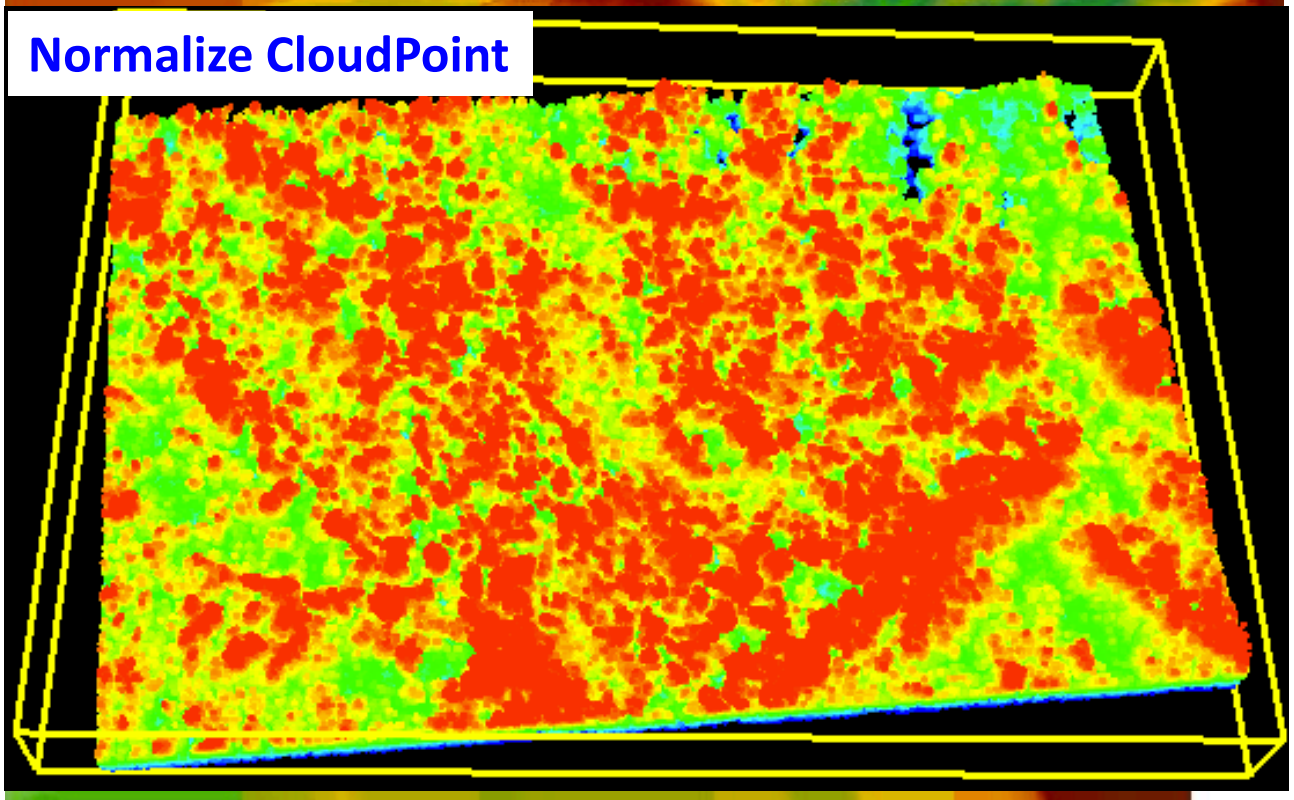
GuTianShan Scan area > 6 km^2

LIDAR & Hyperspectral

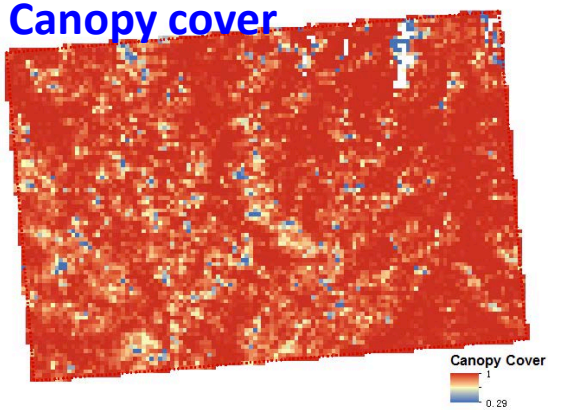
DEM Product



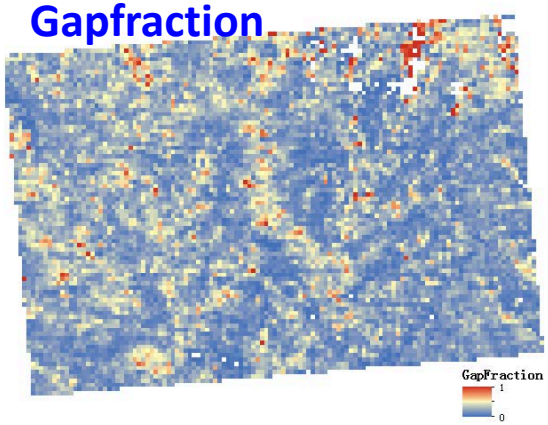
Normalize CloudPoint



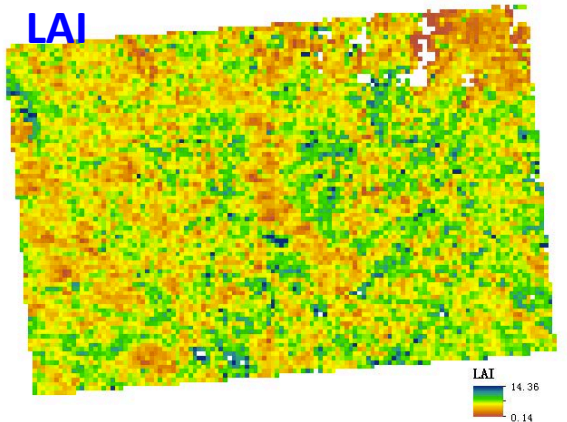
Canopy cover



Gapfraction

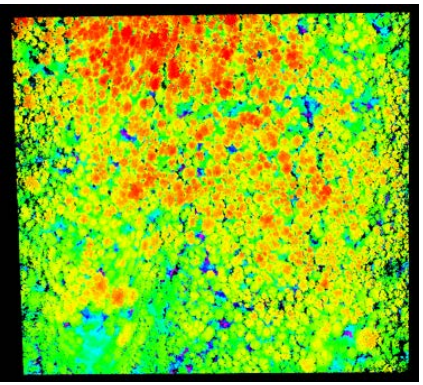


LAI

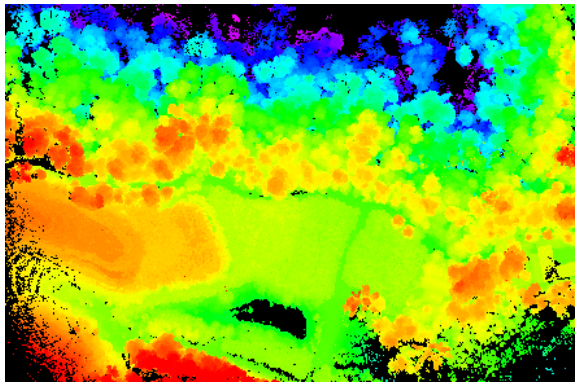


UAV-Lidar CloudPoint Scan area < 1km²

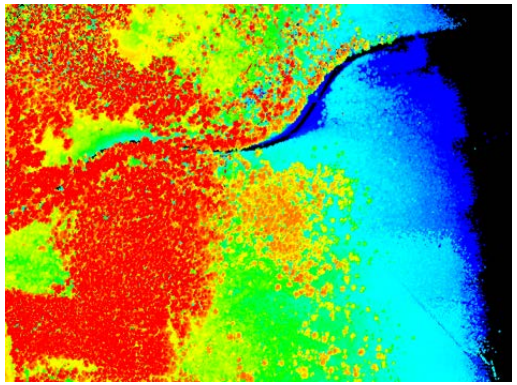
LIDAR



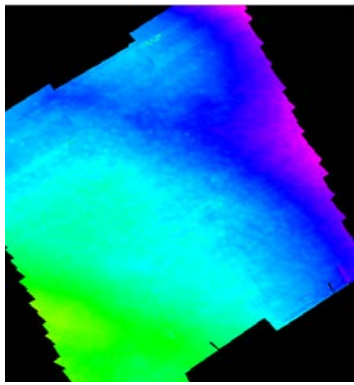
Needleleaf-broadleaf mixed forest



Rainforest

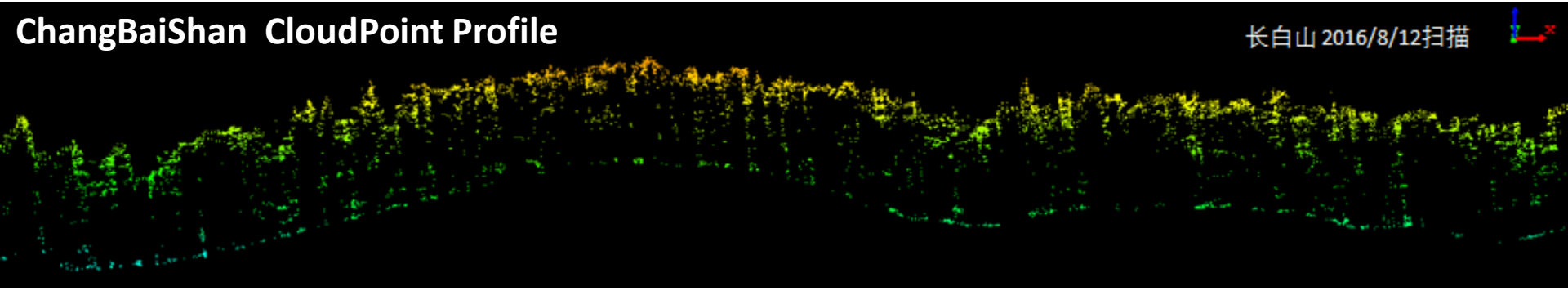


Mangrove

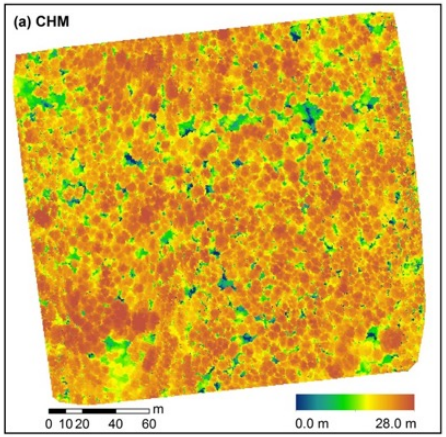


Grassland

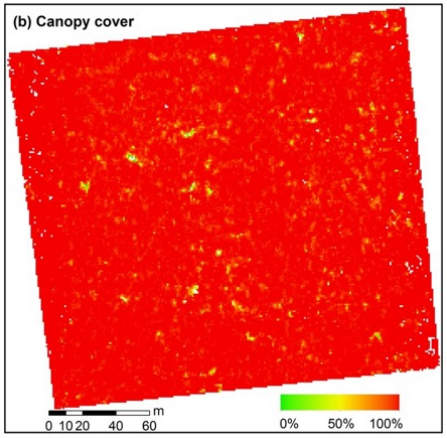
ChangBaiShan CloudPoint Profile



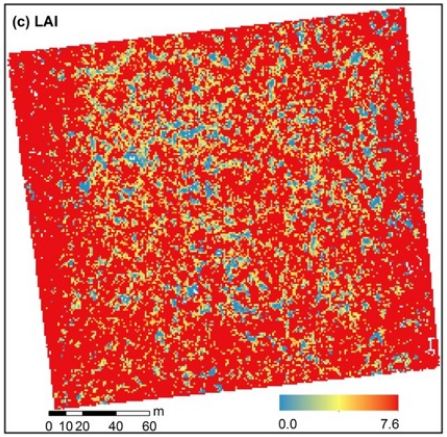
CHM



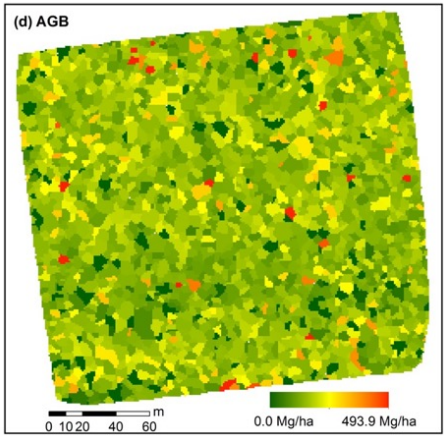
Canopy cover



LAI



AGB

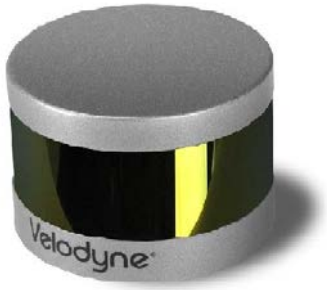


Near-surface Remote Sensing Platform

Li-Air UAV-RS platform
Independent R&D

Ecosystem to monitor

LIDAR



High-resolution DEM
3D structure information

- Canopy height model
- LAI, Gap fraction
- Aboveground biomass
- etc

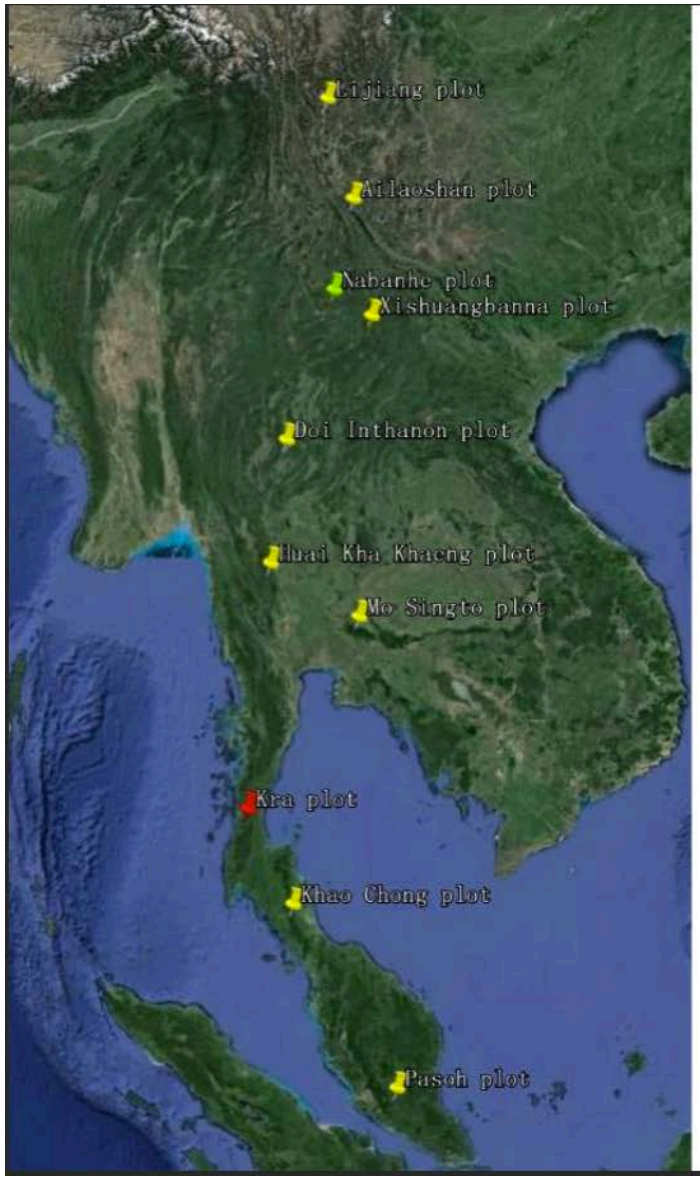
Hyperspectral

High resolution in spectral

- Vegetation index
- Leaf biochemical properties
- Plant function trait
- etc

Regional network of FDPs

from Southwest China to Central South Peninsula of Southeast Asia



中国西南-中南半岛东经101度线黄金森林样带

- 全球热带雨林三大核心分布区之一
- 全球生物多样性热点地区之一
- 热带亚洲成分的分化中心
- 热带中心-热带北缘的连续完整区域（全球独一无二）
- 温度和降水自南向北连续递减区域
- 10个大型（15-50 ha）森林动态样地
- >3000 树种
- >1,000,000 个体（dbh>=1cm）

From LIN Luxiang

中国森林生物多样性监测网络

CHINESE FOREST BIODIVERSITY MONITORING NETWORK

CForBio

13 Plots, 1,357species, 1170,595 trees

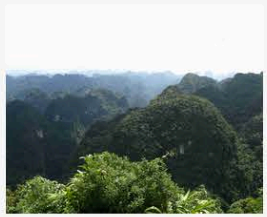
古田山猛禽（斯幸峰摄）

弄岗大样地调查

弄岗大样地调查

弄岗大样地调查

弄岗



弄岗

>>

温带

- 黑龙江大兴安岭25ha样地
- 黑龙江丰林30ha样地
- 黑龙江凉水18ha样地
- 吉林长白山25ha样地
- 吉林长白山5ha样地
- 北京东灵山20ha样地
- 北京东灵山5ha样地
- 河南宝天曼25ha样地

亚热带

- 浙江天童山20ha样地
- 湖南八大公山25ha样地
- 浙江古田山24ha样地

研究动态

更多>>

The effect of intraspecific variation and heritability on community pattern and robustness

2016-6-27

6月23日online发表

查看详细信息>>>

《生物多样性》第5期刊出

2016-6-21

查看详细信息>>>

GEB Island Biogeography专刊

2016-6-18

佐治亚理工学院黎绍鹏博士推荐；7月刊出

查看详细信息>>>

西双版纳大样地邬俊杰等关于谱系密度制约的文章在Ecology发表

The 1st Workshop on Wildlife Monitoring with Camera Traps (July,2014, Beijing）

The First Workshop on Insect Monitoring (September, 2015, Harbin）

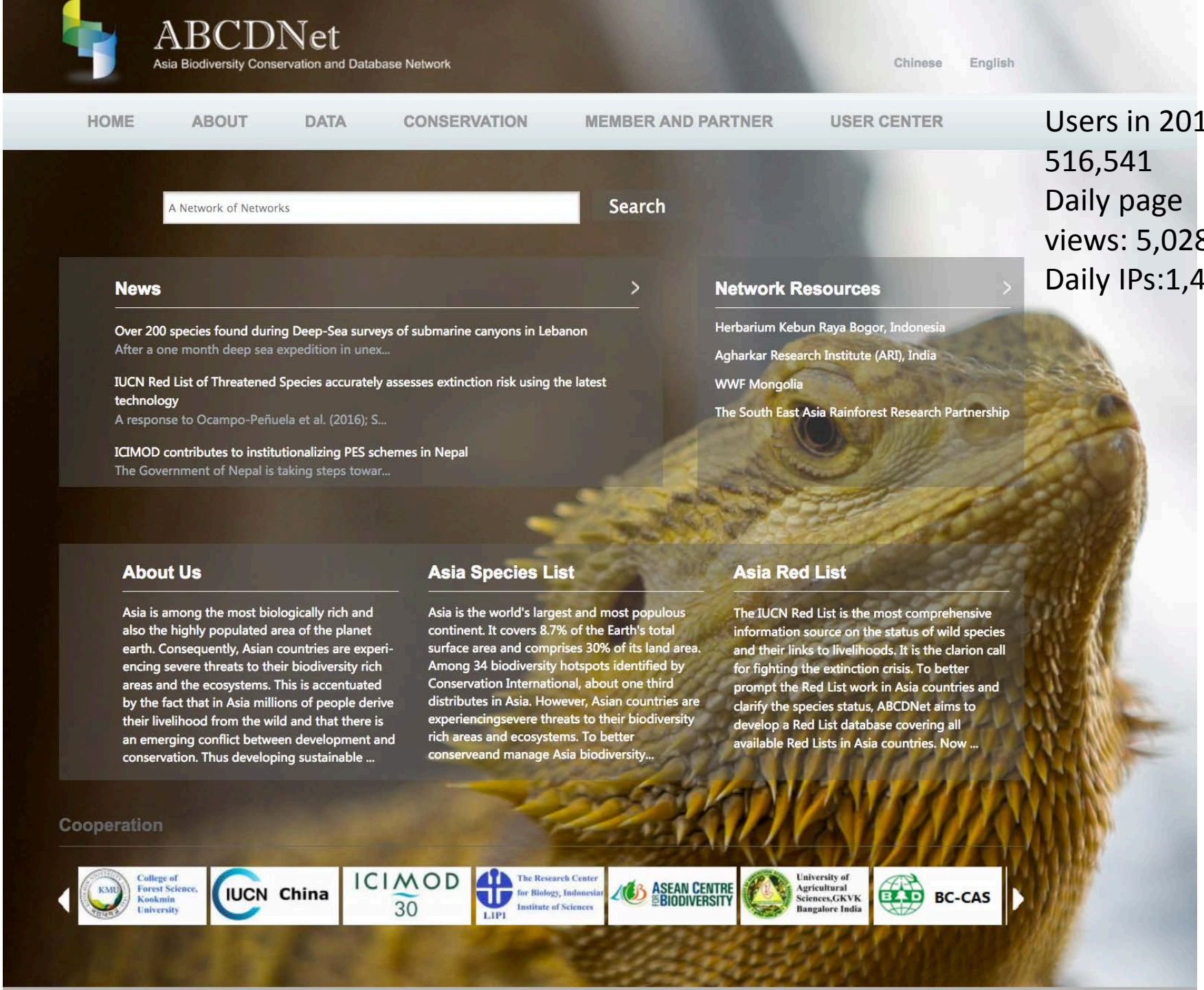
The First Workshop on Forest Canopy Ecology and Biodiversity (October, 2015, Xishuangbanna)

2st National Symposium on Biodiversity Monitoring
Oct. 2016

Mapping Asia Plants

Keping MA
kpma@ibcas.ac.cn

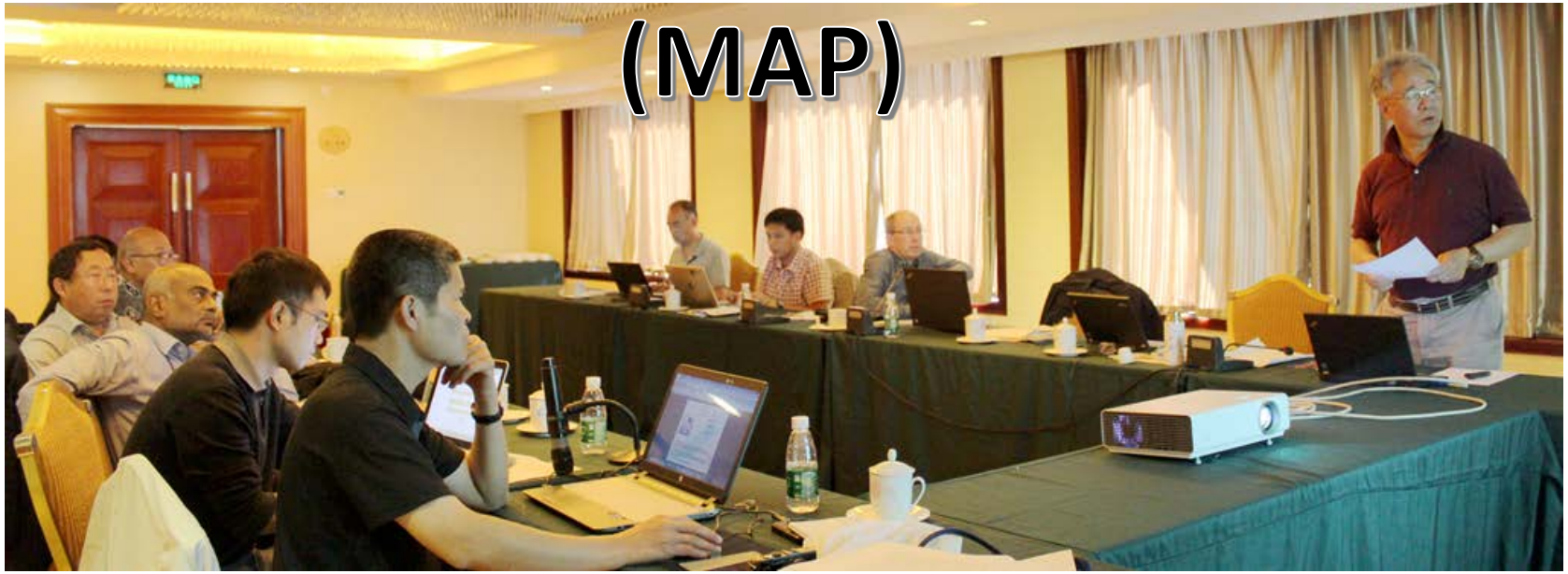
Institute of Botany, Chinese Academy of Sciences 2017-01-11



Users in 2016：516,541
Daily page views: 5,028
Daily IPs:1,411

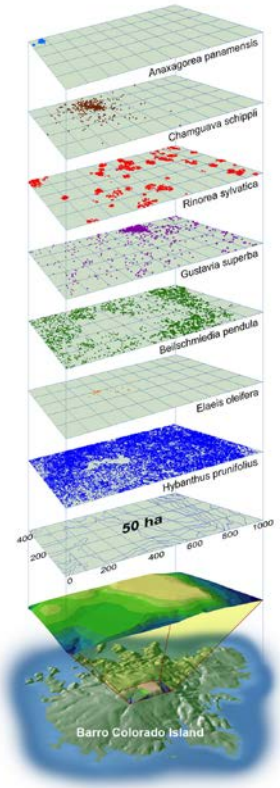
ABCDNet 2015 Annual Meeting

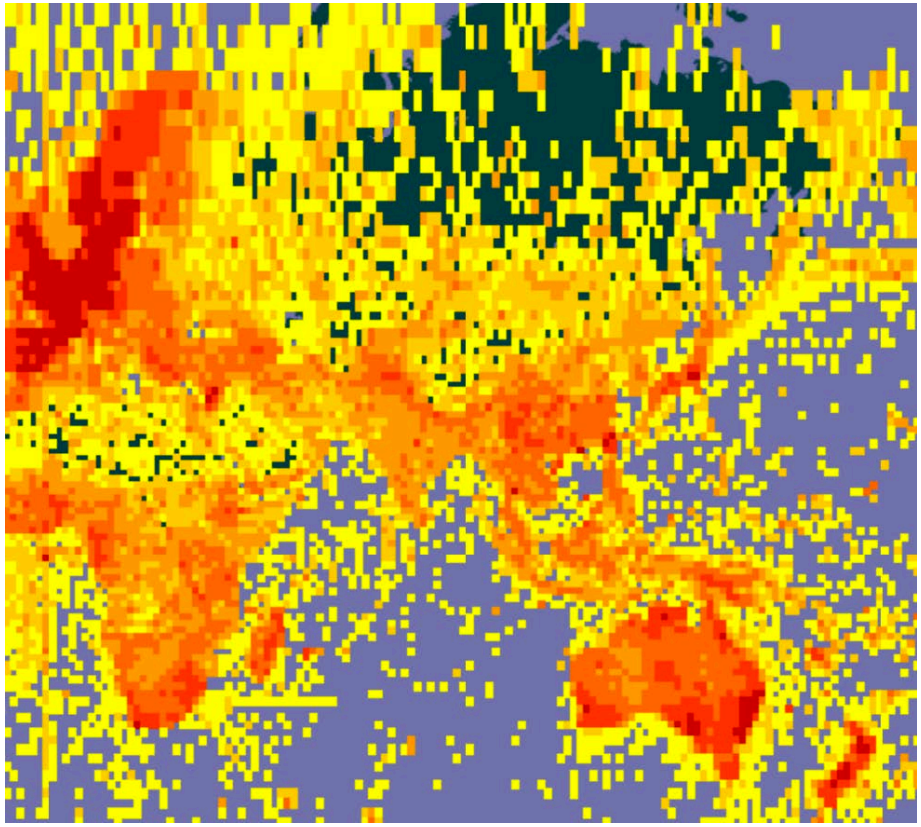
Mapping Asia Plants (MAP)



Mission

A better mapping infrastructure for plant diversity conservation in Asia



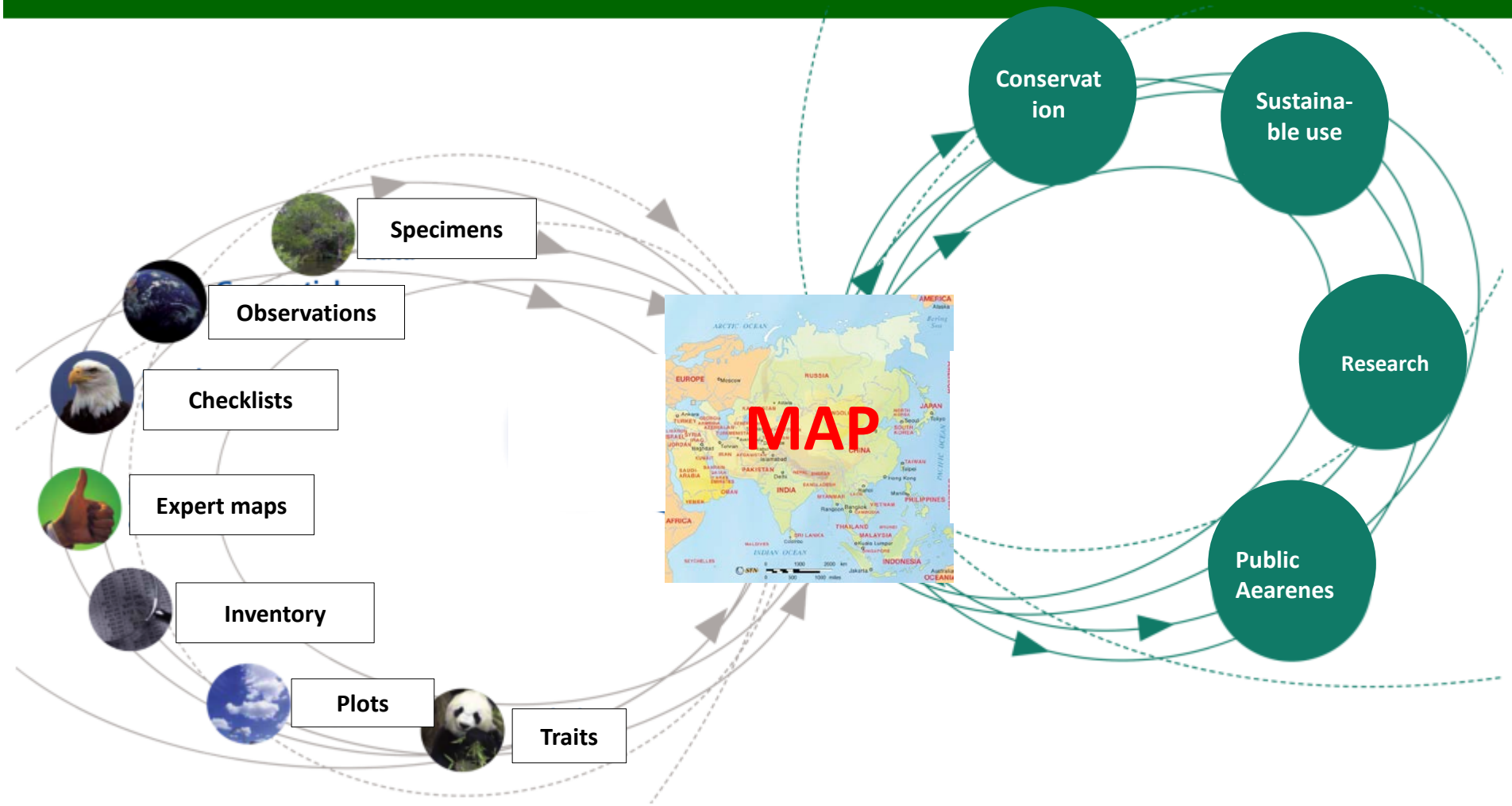


Goals

Access to

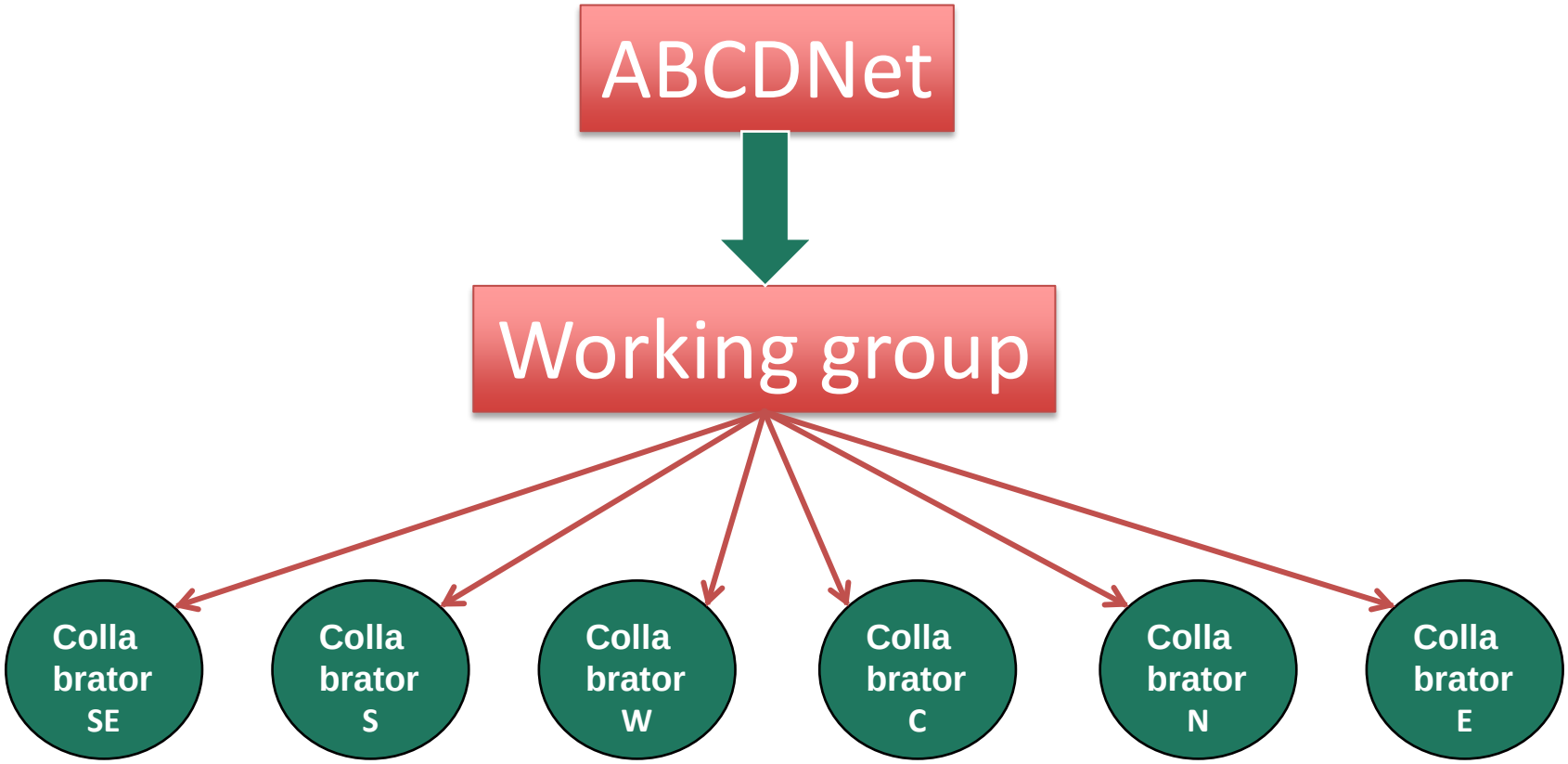
- Geographic range maps, diversity maps;
- Species checklists;
- Standardized botanical observation datasets;
- Standardized workflow and informatics engine for the integration, access, and discovery of disparate sources of botanical information in Asia.

Connecting:



- **Data sets**
- **Services**

Organization structure for MAP



Working group for MAP

Coordinator

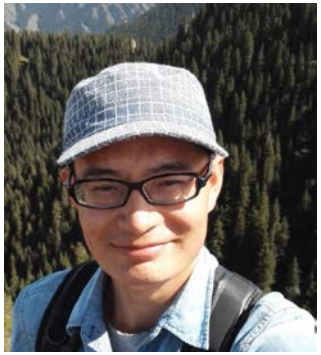
SE Asia

S Asia

W Asia

NE Asia

N Asia



C Asia

Mapping Asia Plants—Southeast Asia (November, 2016, Beijing)








Mapping Asia Plants—Southeast Asia (November, 2016, Beijing)

Fourth Sino-Thai Symposium on Biodiversity
Nov., 2016 Xishuangbanna

Thanks