

# Sino-BON and ABCDNet

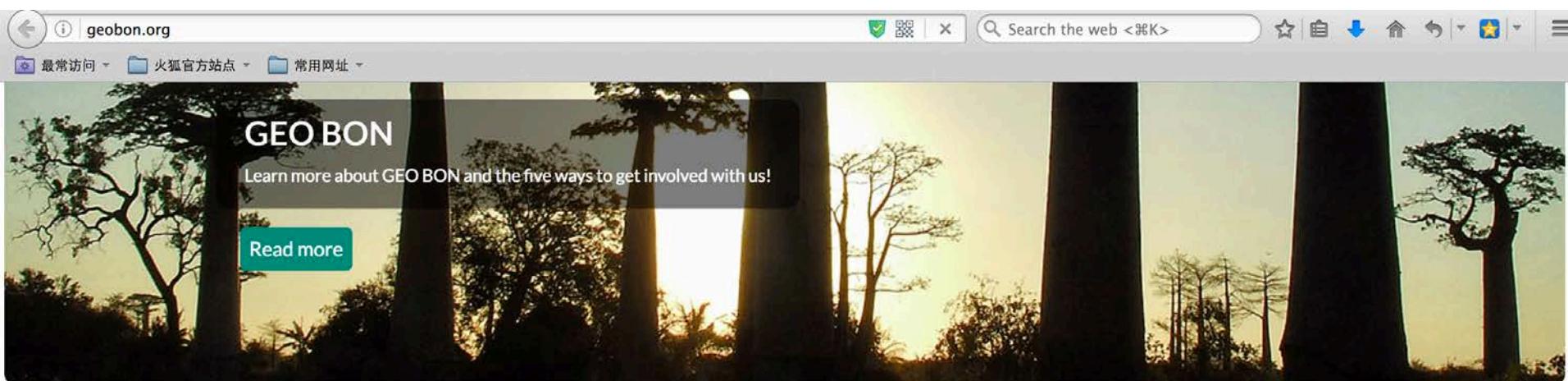
## --Progress Report in 2016

Keping MA

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# GEO BON



## 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



- 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 )
  
- 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**

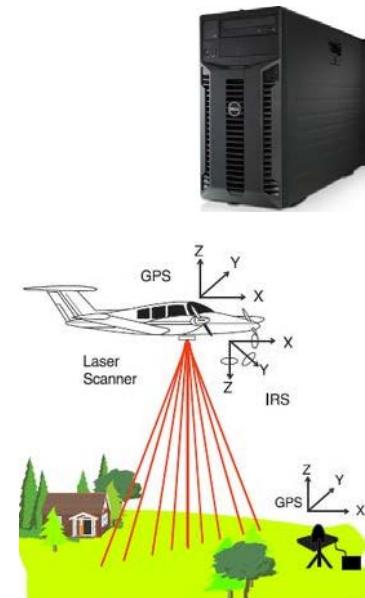
2016 Vol. 24 (11): 1220-1226 [Abstract] ( 104 ) RICH HTML [NEW](#) [PDF 353KB] ( 210 )
  
- 1227 Huanzhang Liu, Junxing Yang, Shuwei Liu, Xin Gao, Yushun Chen, Chunguang Zhang, Kai Zhao, Xinhui Li, Wei Liu
  - Theory and methods on fish diversity monitoring with an introduction to the inland water fish 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**

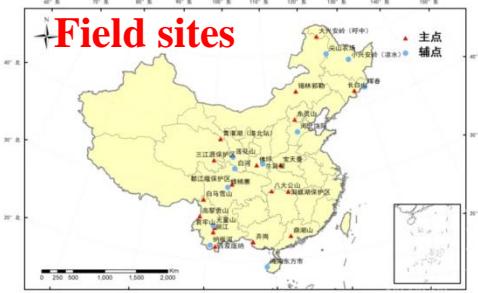
2016 Vol. 24 (11): 1234-1239 [Abstract] ( 286 ) RICH HTML [NEW](#) [PDF 690KB] ( 403 )
  
- 1240 Xiangzhen Li, Liangdong Guo, Jiabao Li, Minjie Yao
  - Soil microbial diversity observation in China: current situation and future consideration**

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**



# Camera-Trapping Network of Mammal Diversity (2011—)



CameraData Base (2013—)

野生动物多样性监测图像数据管理系统  
CameraData Network for Wildlife Diversity Monitoring

系统首页 成果展示 统计分析 数据管理 新闻动态 关于我们 系统管理

川金丝猴 拍摄于2012-08-07

系统介绍

对野生动物多样性进行监测是野生动物研究、保护、管理和资源可持续利用的核心环节。目前，红外相机技术正发展成为监测脊椎动物（兽类和鸟类）多样性监测与研究的重要常规技术，通过红外相机可以获取大量的珍贵野生动物图像数据。

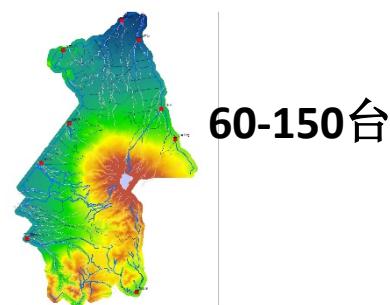
为开放的网络交互式平台，中国科学院动物研究所组织研发的野生动物多样性监测图像数据管理系统是一套野生动物图像数据的存储、分析和信息交流的服务系统，用于整理红外相机所拍摄的大量野生动物图像数据。该系统的主要目标在于促进野生动物监测数据得到共享分析和充分利用，为野生动物研究、保护和管理等提供多种信息服务。——中国兽类多样性网（Sino Bon-Mammal）

用户登录

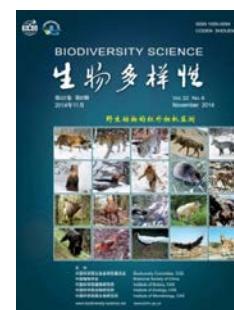
admin 欢迎登录！

管理 注销

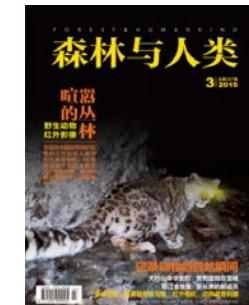
<http://cameradat.ioz.ac.cn/>



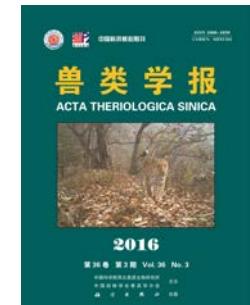
1.25 M photos  
Mammals: 80 sp.  
Birds: 160 sp.



2014



2015



2016

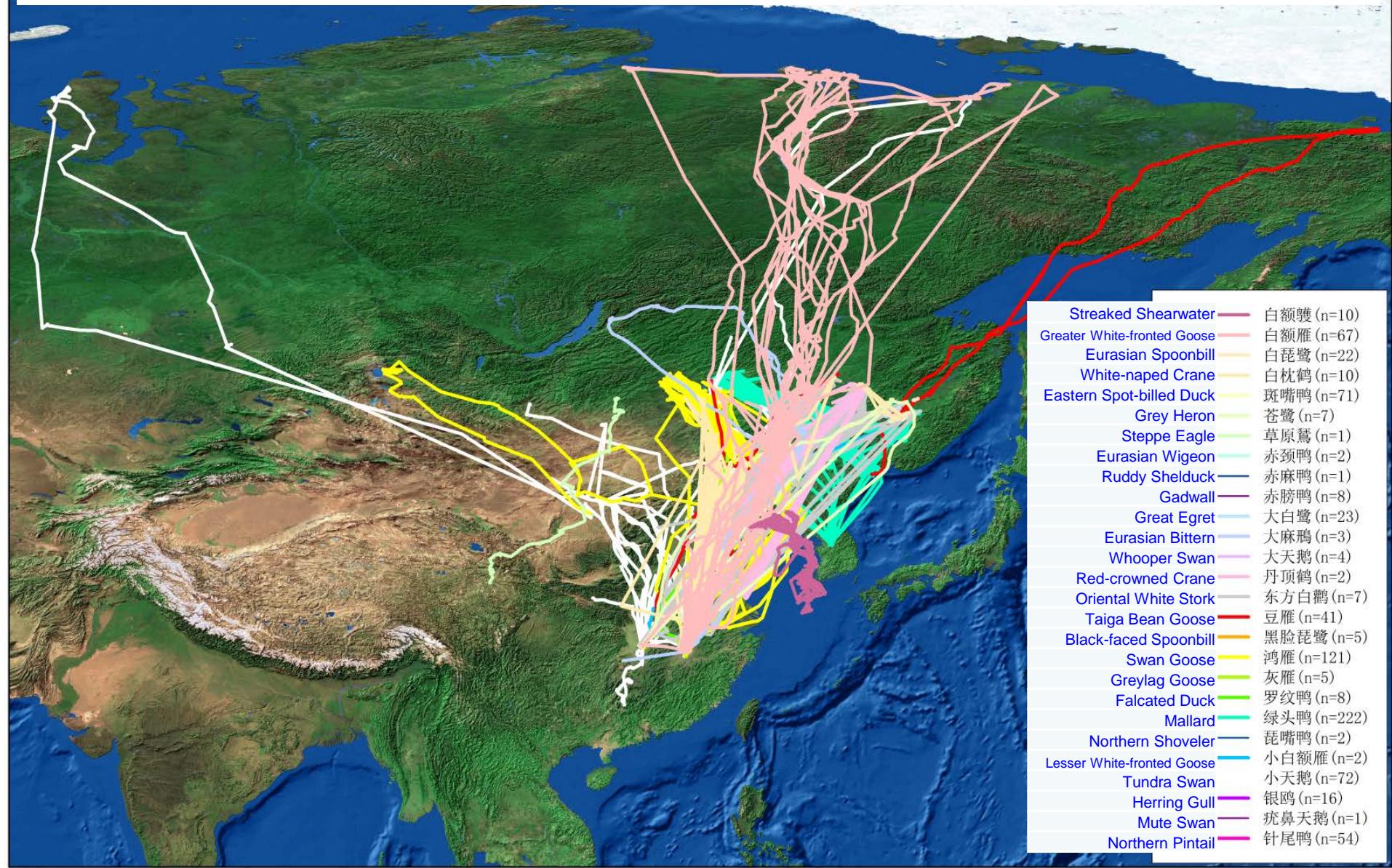
## Collaboration with ISZS and CBRN



CBRN: 169 members of Nature Reserve



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



# International Cooperation and Exchanges

## Sino-BON Bird Monitoring 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



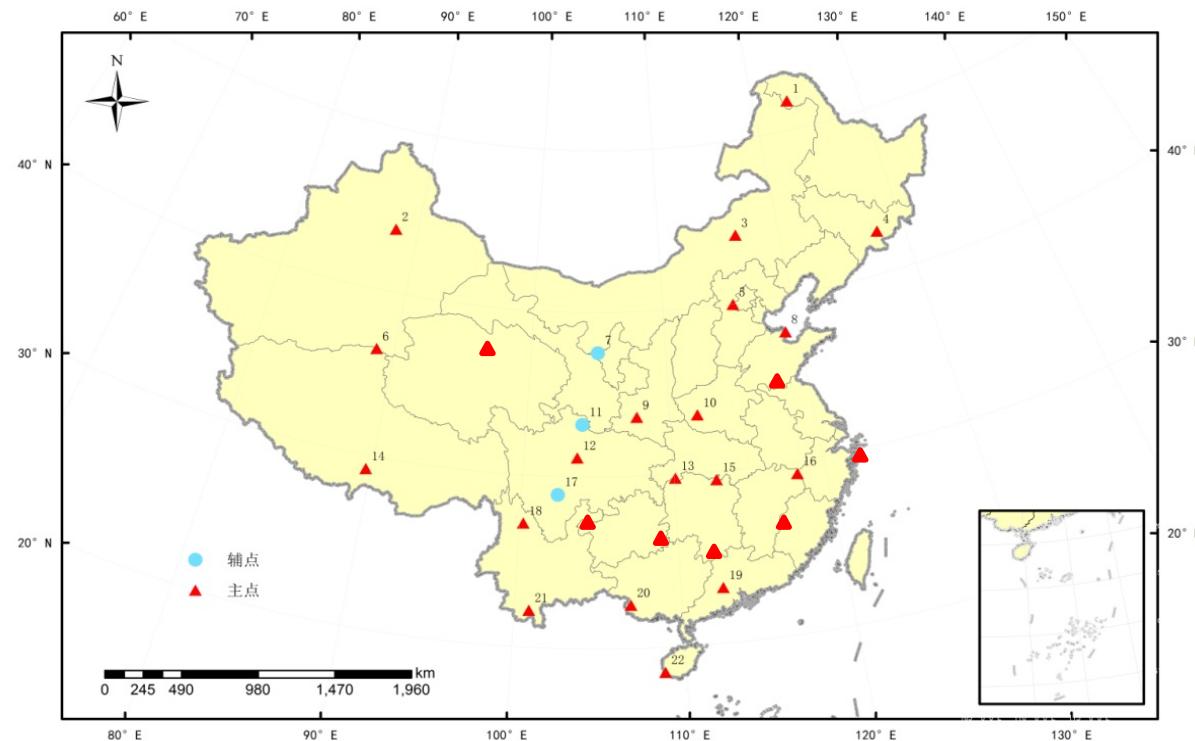
# Camera-Trapping Network of Bird Diversity

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).



# Methods



Artificial refugia

Quadrat sampling

Drift fences and pitfall traps

Artificial cover

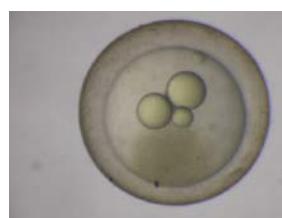
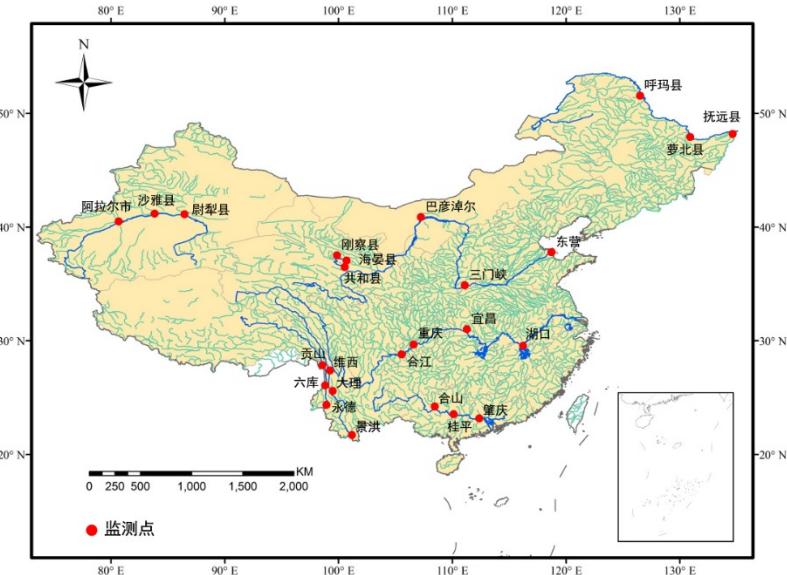
# Index

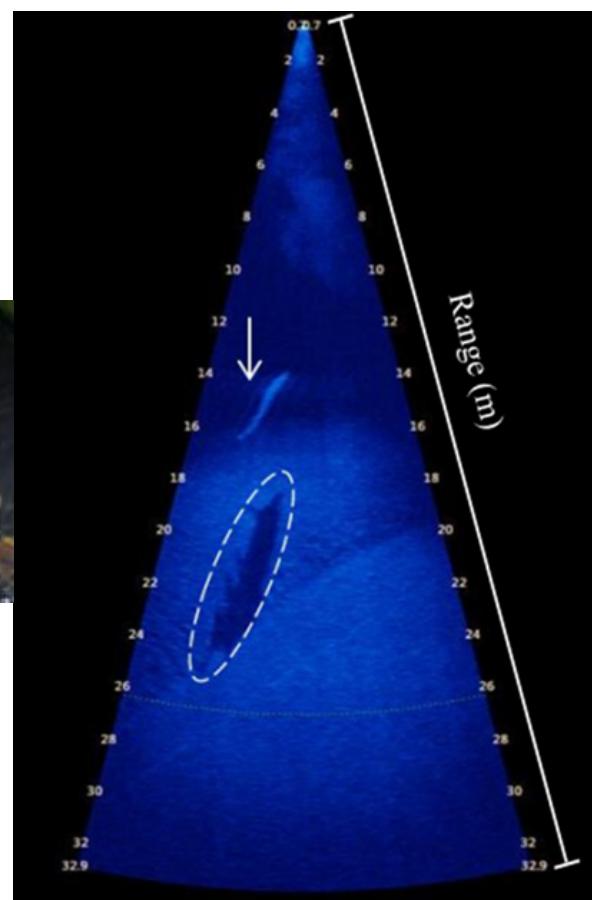
- Fauna and population;
- Body condition index;
- Niche;
- Population genetic structure;
- Threats



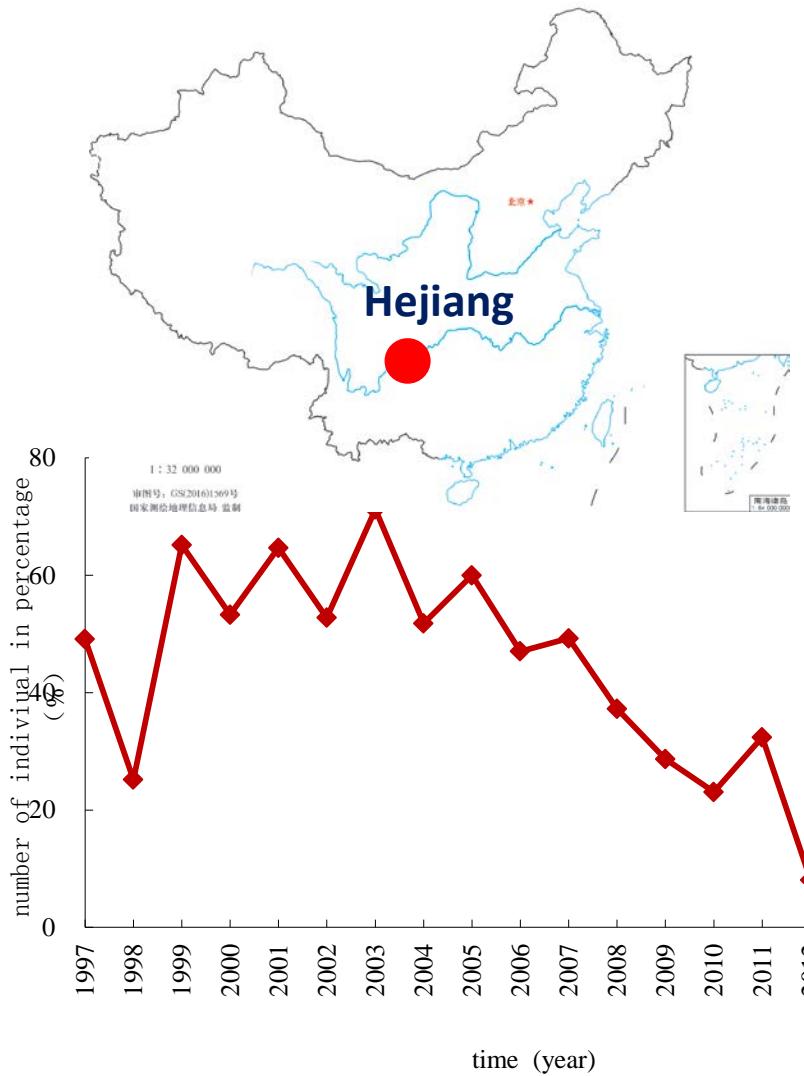
# Sino BON – Inland Water Fish

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

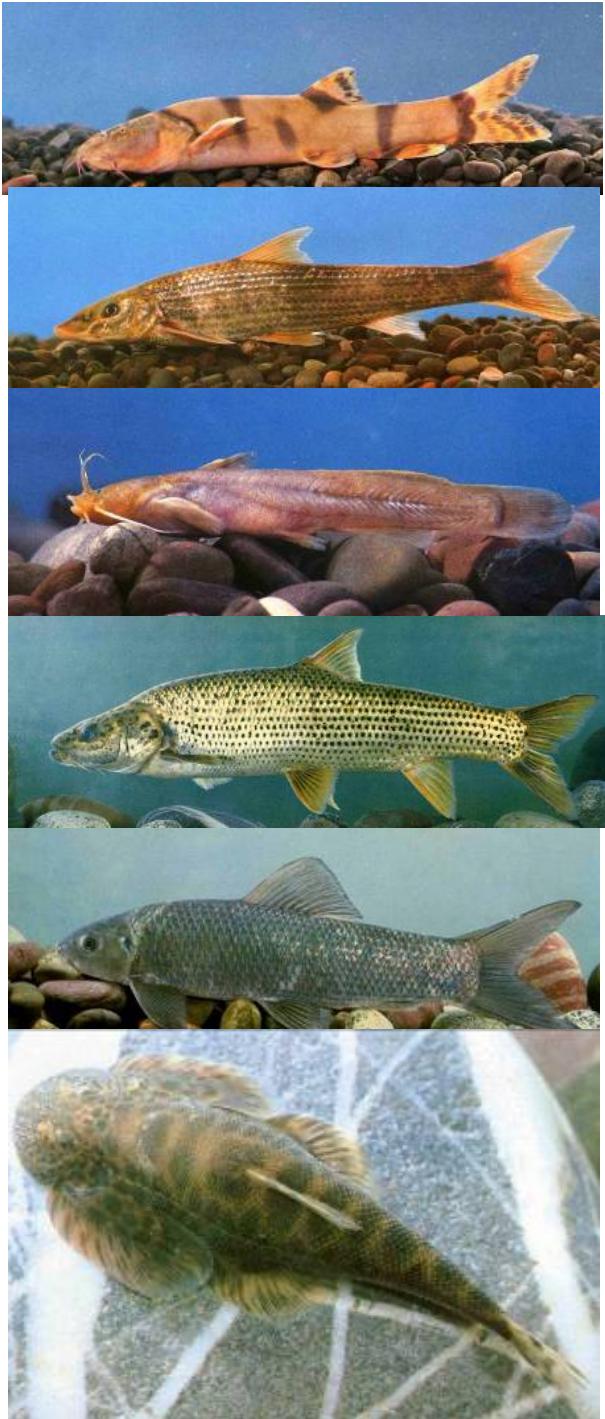




**The Chinese sturgeon was found successfully  
reproducing again in 2016 after the failure in 2015.**



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

生物多样性

Biodiversity

生物多样性监测

Biodiversity

## 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

胡晓东<sup>1</sup> 杨孝洪<sup>2</sup> 钟海生<sup>2</sup> 孙晓东<sup>3</sup> 周志刚<sup>4</sup> 张春生<sup>5</sup>  
魏国平<sup>6</sup> 李新海<sup>7</sup> 沈华<sup>8</sup>  
<sup>1</sup>生物多样性监测与评估中心  
<sup>2</sup>中国科学院水生生物研究所  
<sup>3</sup>中国科学院动物研究所  
<sup>4</sup>中国科学院植物研究所  
<sup>5</sup>中国科学院地理科学与资源研究所  
<sup>6</sup>中国科学院遗传与发育研究所  
<sup>7</sup>中国科学院南京地理研究所  
<sup>8</sup>中国科学院成都生物研究所

摘要：鱼类多样性监测是生物多样性监测的重要组成部分，也是生物多样性评价和保护工作的重要基础。本文首先介绍了鱼类多样性监测的理论方法，然后结合中国内陆水体鱼类多样性监测的实践，提出了中国内陆水体鱼类多样性监测的方案。关键词：鱼类多样性；监测；理论方法；中国内陆水体；多样性监测

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

Luxiao Dong<sup>1</sup>, Yangxiao Hong<sup>2</sup>, Zhonghaisheng<sup>2</sup>, Sun Xiaodong<sup>3</sup>, Zhou Zhigang<sup>4</sup>, Zhang Chensheng<sup>5</sup>,  
Wei Guoping<sup>6</sup>, Li Xinhai<sup>7</sup>, Shen Hua<sup>8</sup>  
<sup>1</sup>Institute of Biodiversity Monitoring and Assessment Center, Chinese Academy of Sciences, Beijing, China  
<sup>2</sup>Chinese Academy of Tropical Climate Resources, Sanya, Hainan, China  
<sup>3</sup>Chinese Academy of Sciences, Beijing, China  
<sup>4</sup>Chinese Academy of Forest Products Research & Design Institute, Beijing, China  
<sup>5</sup>Chinese Academy of Agricultural Sciences, Beijing, China  
<sup>6</sup>Chinese Academy of Agricultural Sciences, Beijing, China  
<sup>7</sup>National Geographic Environmental Monitoring Center, Chinese Academy of Sciences, Nanjing, China  
<sup>8</sup>Chinese Academy of Geological Sciences, Beijing, China

Abstract: Fish diversity monitoring is an important part of biodiversity monitoring, and also an important basis for biodiversity evaluation and protection work. This paper first introduces the theory and method of fish diversity monitoring, and then based on the practice of fish diversity monitoring in inland water bodies in China, proposes the scheme of fish diversity monitoring in inland water bodies in China. Key words: fish diversity; monitoring; theory and method; inland water body; diversity monitoring

## 中国三峡水库对长江江豚繁殖的影响及繁殖对策

胡晓东<sup>1</sup> 杨孝洪<sup>2</sup> 刘学勤<sup>3</sup> 周志刚<sup>4</sup> 张春生<sup>5</sup>  
魏国平<sup>6</sup> 李新海<sup>7</sup> 沈华<sup>8</sup>  
<sup>1</sup>生物多样性监测与评估中心  
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<sup>5</sup>中国科学院地理科学与资源研究所  
<sup>6</sup>中国科学院遗传与发育研究所  
<sup>7</sup>中国科学院南京地理研究所  
<sup>8</sup>中国科学院成都生物研究所

摘要：长江江豚是国家一级重点保护野生动物，也是世界自然保护联盟（IUCN）物种红色名录中濒危物种。由于三峡工程的建设，长江江豚的生存环境发生了改变，其种群数量呈下降趋势。本文首先分析了三峡工程对长江江豚繁殖的影响，然后提出三峡工程对长江江豚繁殖影响的应对策略。关键词：长江江豚；繁殖；三峡工程；影响；对策

## 三峡工程对长江江豚繁殖的影响及繁殖对策

Huxiaodong<sup>1</sup>, Yangxiao Hong<sup>2</sup>, Liu Xianqin<sup>3</sup>, Zhou Zhigang<sup>4</sup>, Zhang Chensheng<sup>5</sup>,  
Wei Guoping<sup>6</sup>, Li Xinhai<sup>7</sup>, Shen Hua<sup>8</sup>  
<sup>1</sup>Institute of Biodiversity Monitoring and Assessment Center, Chinese Academy of Sciences, Beijing, China  
<sup>2</sup>Chinese Academy of Tropical Climate Resources, Sanya, Hainan, China  
<sup>3</sup>Chinese Academy of Sciences, Beijing, China  
<sup>4</sup>Chinese Academy of Forest Products Research & Design Institute, Beijing, China  
<sup>5</sup>Chinese Academy of Agricultural Sciences, Beijing, China  
<sup>6</sup>Chinese Academy of Agricultural Sciences, Beijing, China  
<sup>7</sup>National Geographic Environmental Monitoring Center, Chinese Academy of Sciences, Nanjing, China  
<sup>8</sup>Chinese Academy of Geological Sciences, Beijing, China

Abstract: Yangtze finless porpoise is a first-class protected animal in China and also a species listed in the IUCN Red List. Due to the construction of the Three Gorges Dam, the living environment of Yangtze finless porpoise has changed, and its population has been decreasing. This paper first analyzes the impact of the Three Gorges Dam on the reproduction of Yangtze finless porpoise, and then proposes countermeasures to the impact of the Three Gorges Dam on the reproduction of Yangtze finless porpoise. Key words: Yangtze finless porpoise; reproduction; Three Gorges Dam; impact; countermeasure

## 三峡工程对长江江豚繁殖的影响及繁殖对策

胡晓东<sup>1</sup> 杨孝洪<sup>2</sup> 刘学勤<sup>3</sup> 周志刚<sup>4</sup> 张春生<sup>5</sup>  
魏国平<sup>6</sup> 李新海<sup>7</sup> 沈华<sup>8</sup>  
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<sup>4</sup>中国科学院植物研究所  
<sup>5</sup>中国科学院地理科学与资源研究所  
<sup>6</sup>中国科学院遗传与发育研究所  
<sup>7</sup>中国科学院南京地理研究所  
<sup>8</sup>中国科学院成都生物研究所

摘要：长江江豚是国家一级重点保护野生动物，也是世界自然保护联盟（IUCN）物种红色名录中濒危物种。由于三峡工程的建设，长江江豚的生存环境发生了改变，其种群数量呈下降趋势。本文首先分析了三峡工程对长江江豚繁殖的影响，然后提出三峡工程对长江江豚繁殖影响的应对策略。关键词：长江江豚；繁殖；三峡工程；影响；对策

# 长江流域渔业生态公报

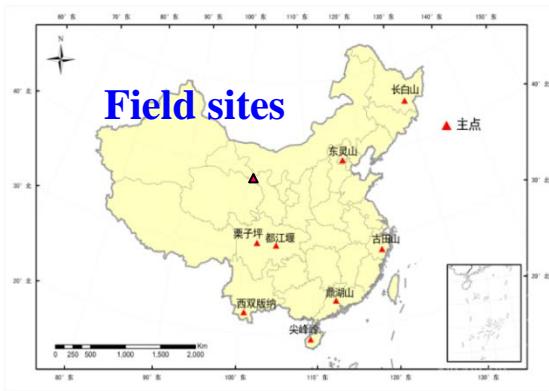
2015年

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—)

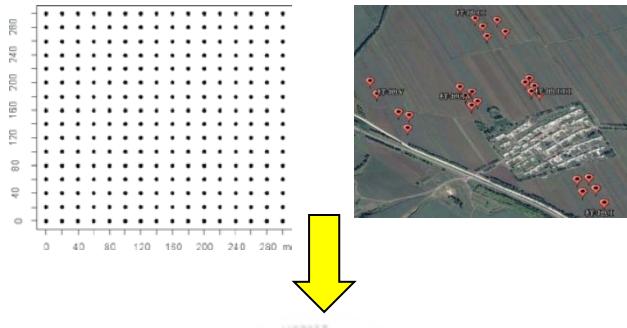


Field sites

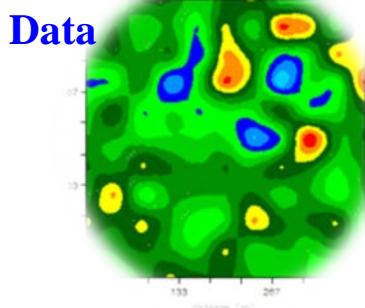
Ecosystems



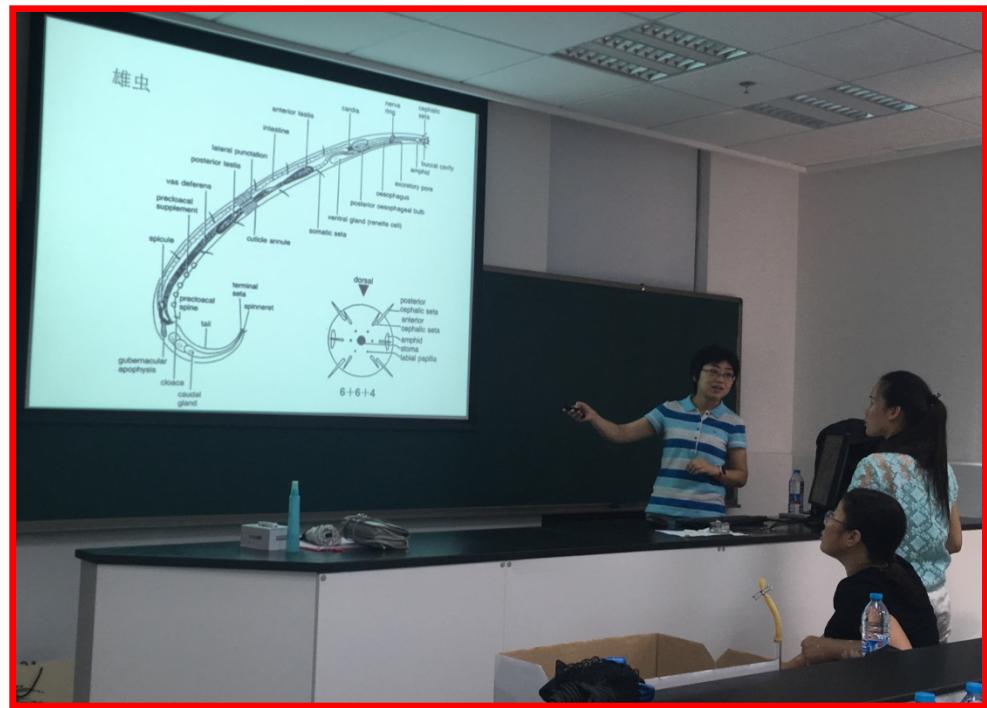
Sampling designs



Multi-scales



# Seminars and Training courses



# Sino BON-Insect

Xingangshan, Jiangxi



# North East China



Apr., 2016

July, 2016

# Songshan, Beijing



May., 2015

# Taishan, Shandong



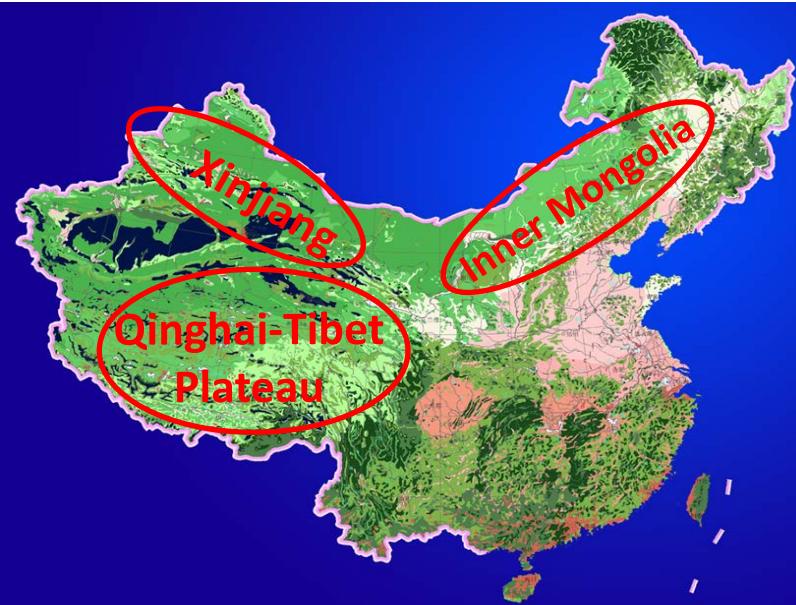
June., 2016

# Manas, Xinjiang

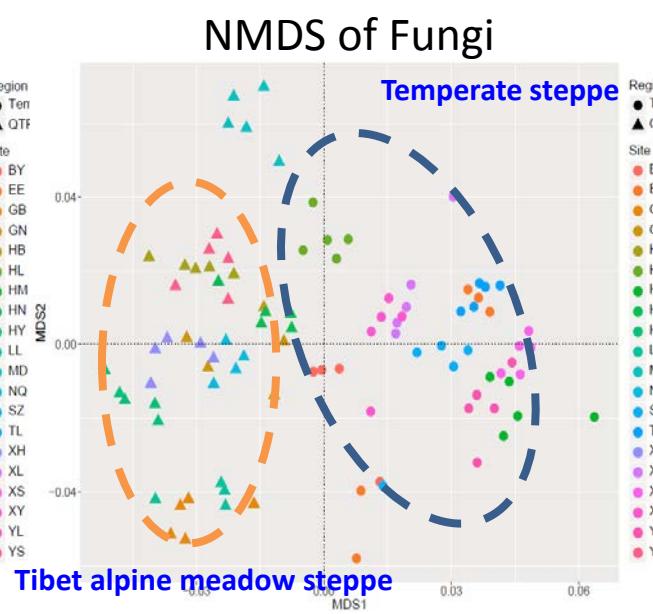
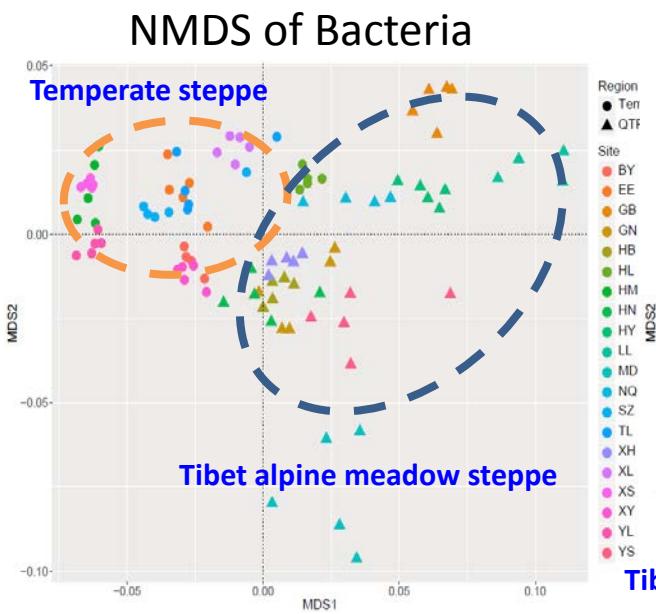


Aug., 2016

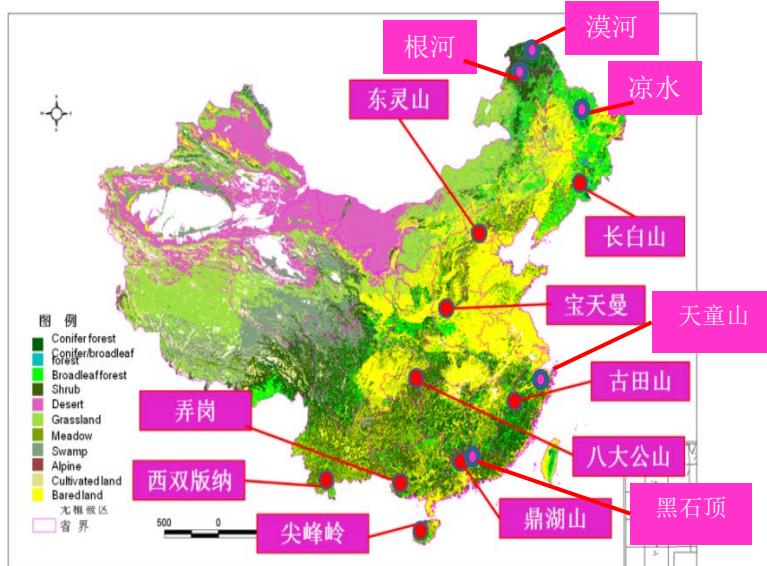
# The diversity and community structure in Chinese grassland



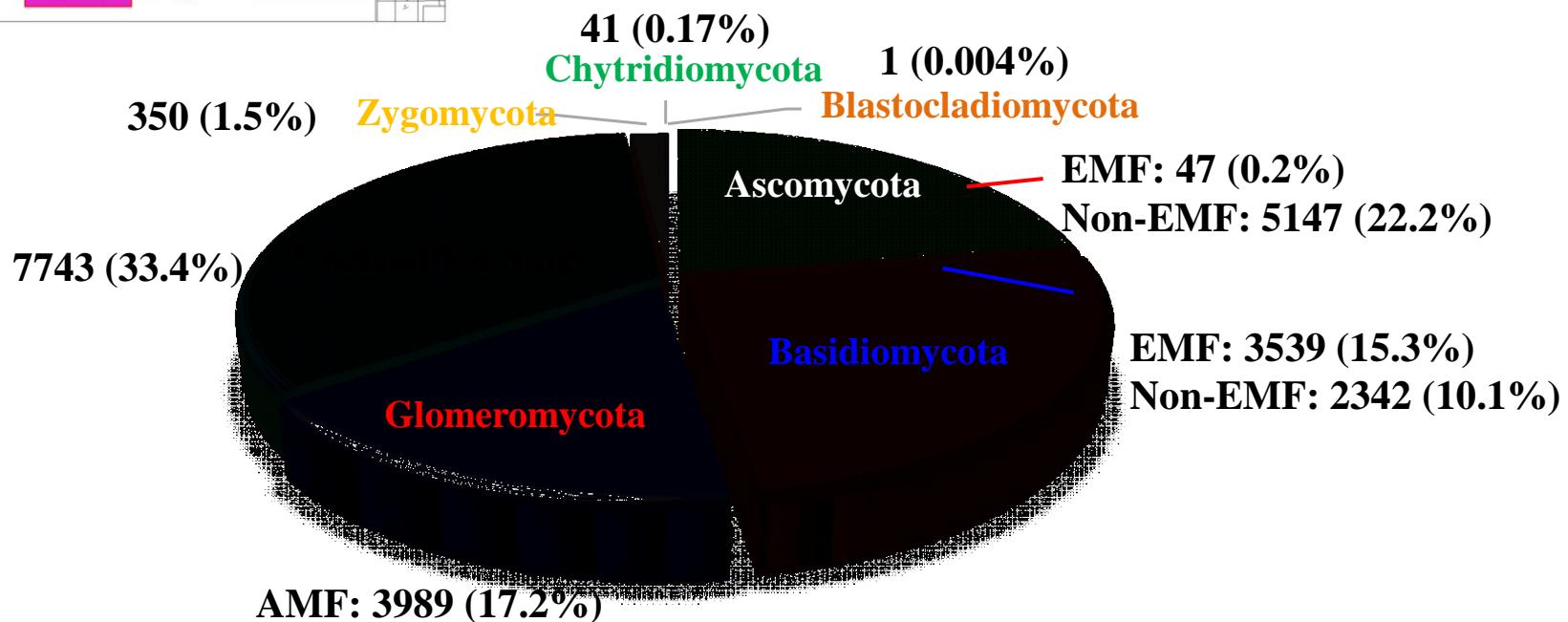
1. Microbial community diversity and structure were investigated across Chinese grassland in Inner Mongolia, Xinjiang and Qinghai-Tibet Plateau.
2. Microbial community structure in temperate steppe (Inner Mongolia and Xinjiang) were distinctly different from those in Qinghai-Tibet plateau.



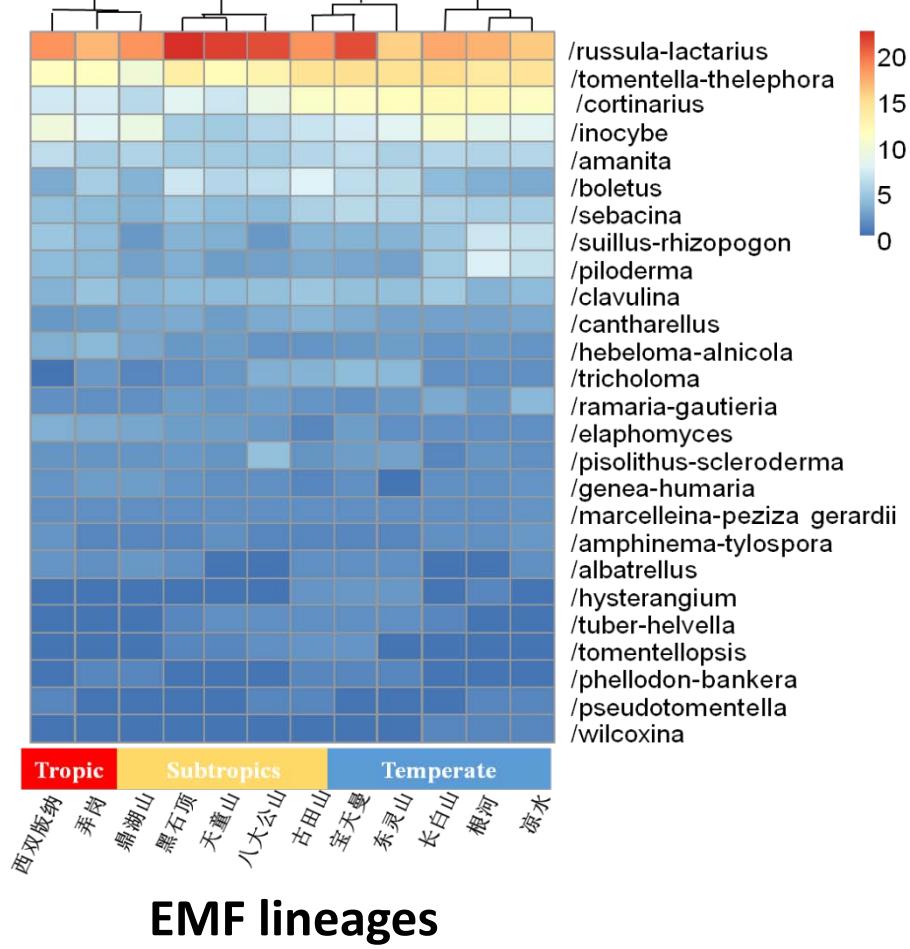
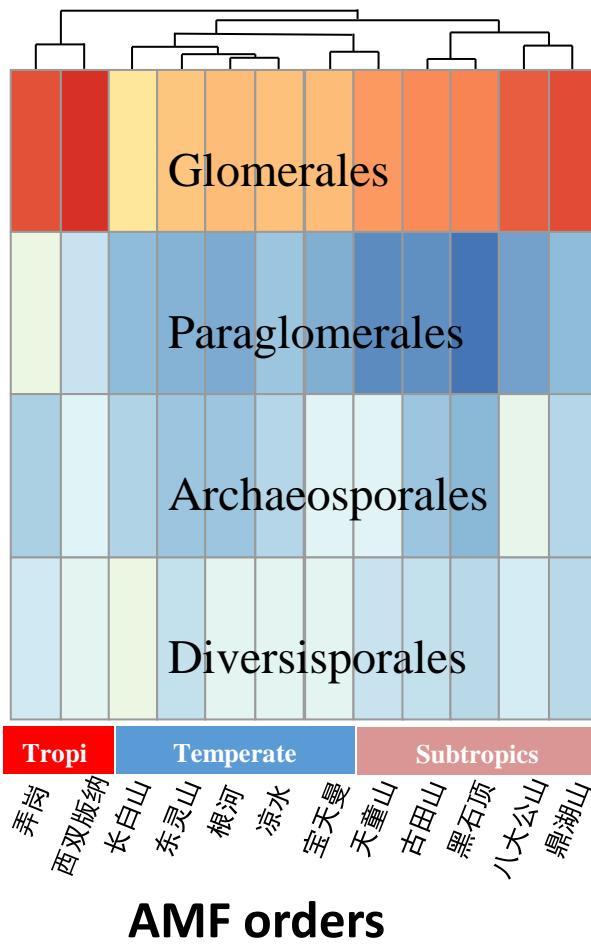
# Soil AM fungi community and diversity along forest transect from northern to southern China



1. We collected 255 samples along the along forest transect from northern to southern China.
2. We identified  $2.3 \times 10^4$  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



63 Forest Plots

24 Countries

6 Million Trees

10,000 Species



DONATE NOW

Africa

Asia

Europe

Latin America

North America

Oceania



BCI Webcam



Wind River Webcam

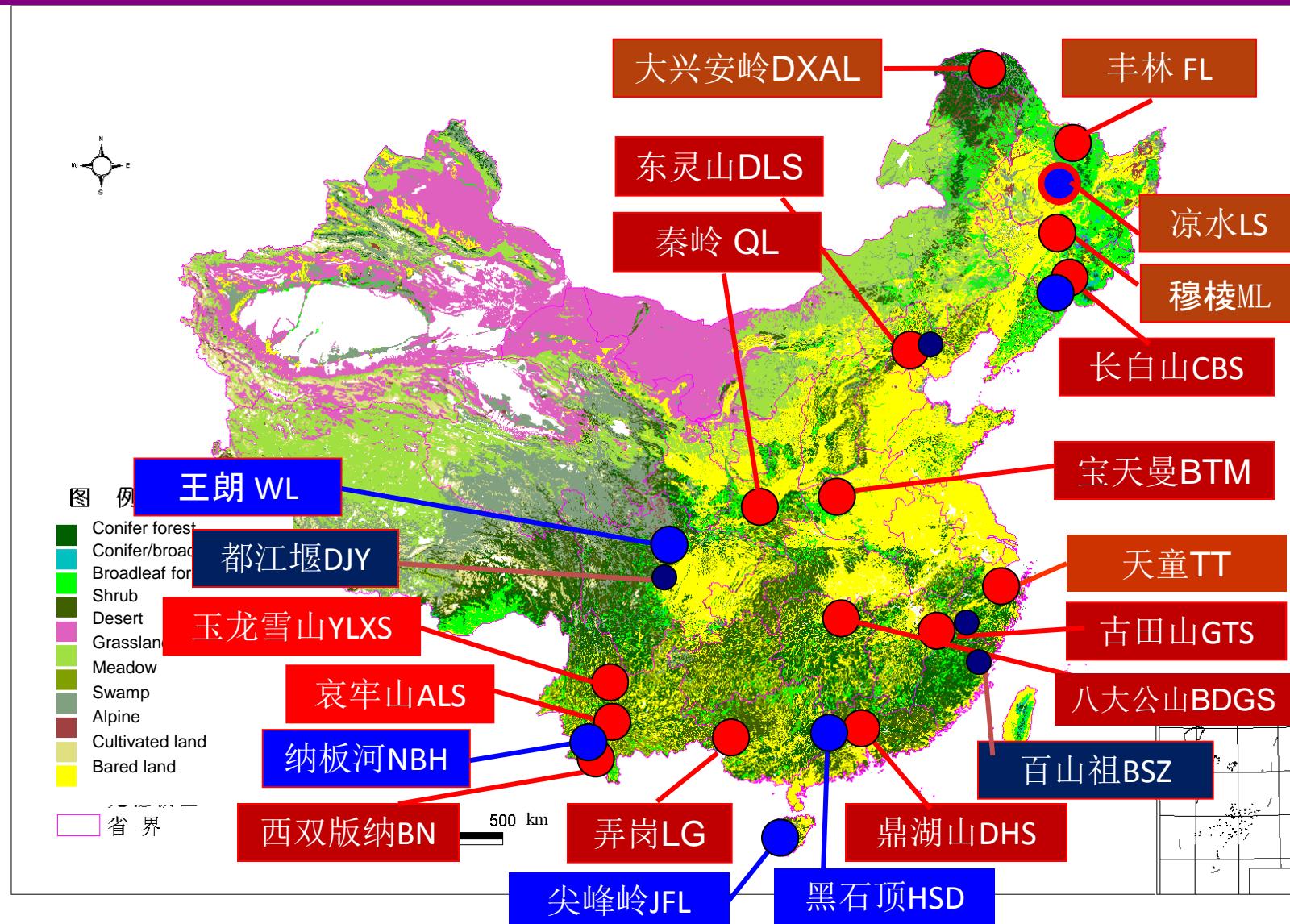


Wind River Canopy Webcam

Announcements

*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.

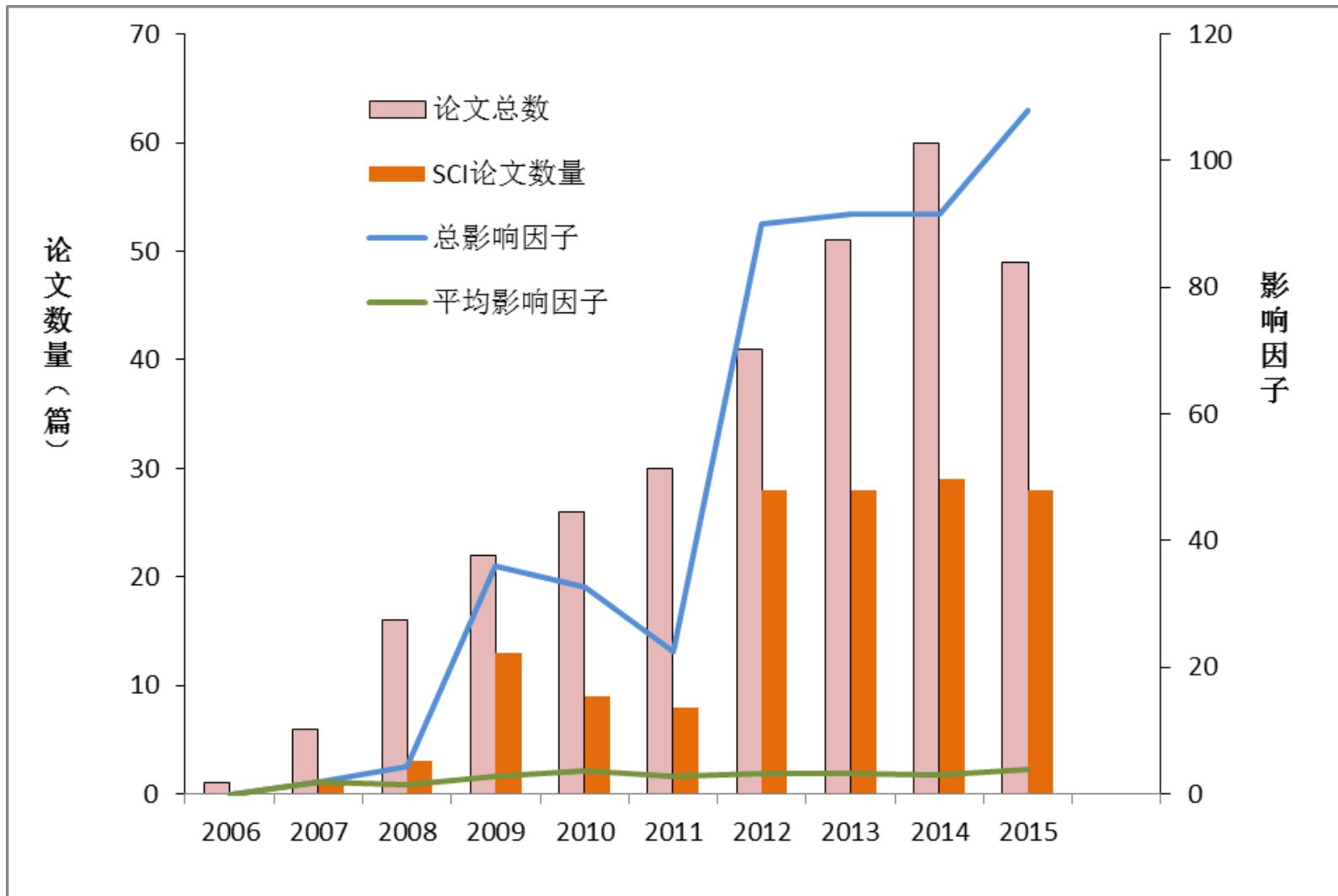
# Chinese Forest Biodiversity Monitoring Network (CForBio)



# CForBio stand book



# Number of Papers Published

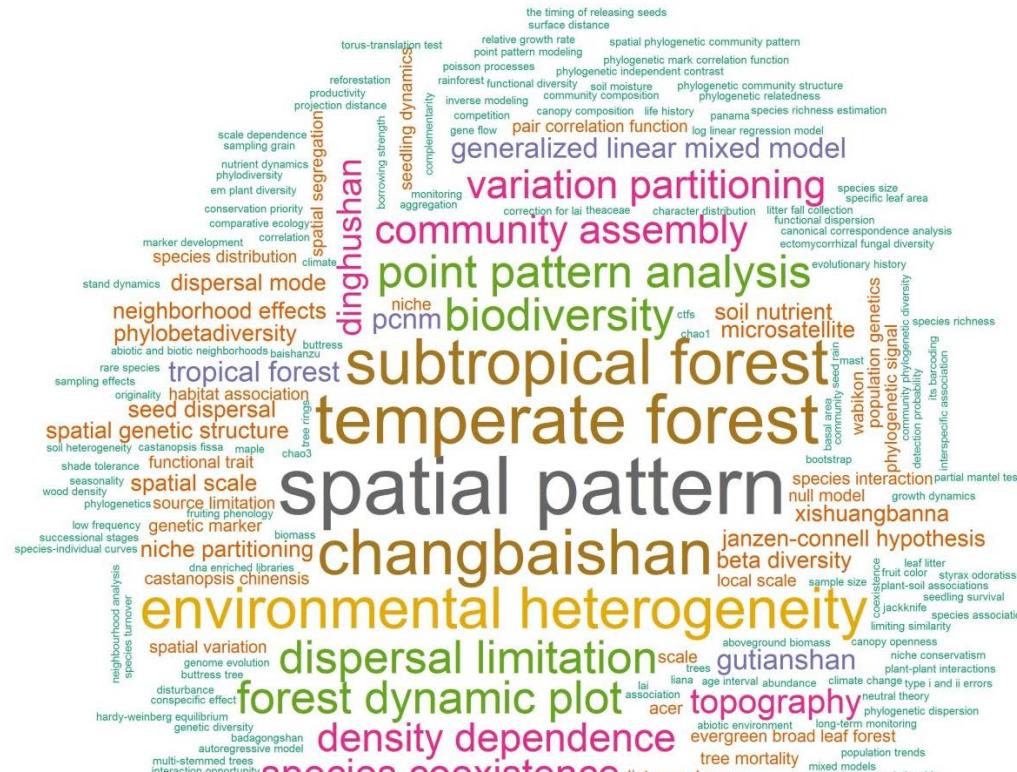


# Papers Published in 2016

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

Review



CrossMark

[www.scibull.com](http://www.scibull.com)

[www.springer.com/scp](http://www.springer.com/scp)

Received: 25 March 2016 / Revised: 29 April 2016 / Accepted: 13 May 2016  
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## CForBio: a network monitoring Chinese forest biodiversity

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

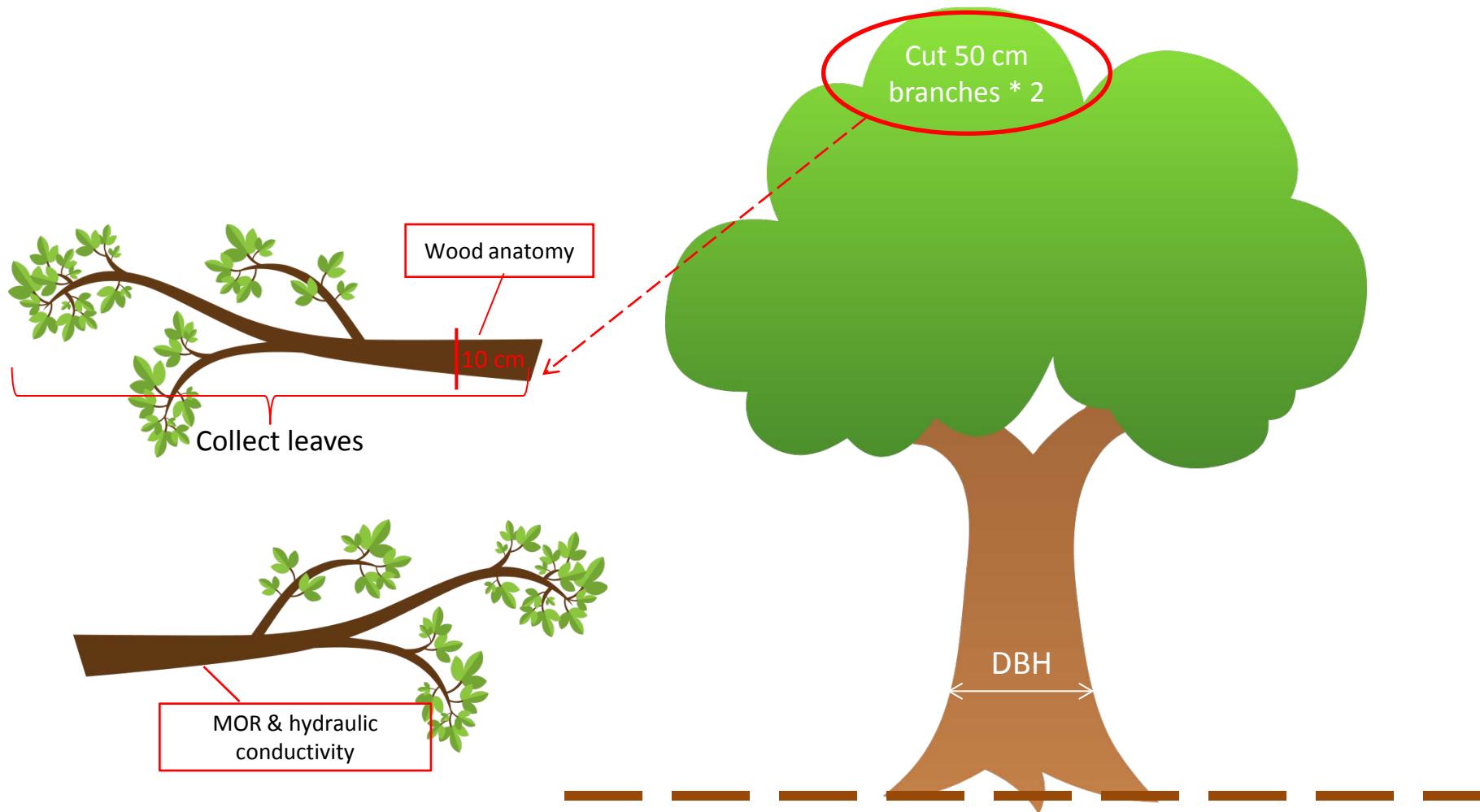


0° 北

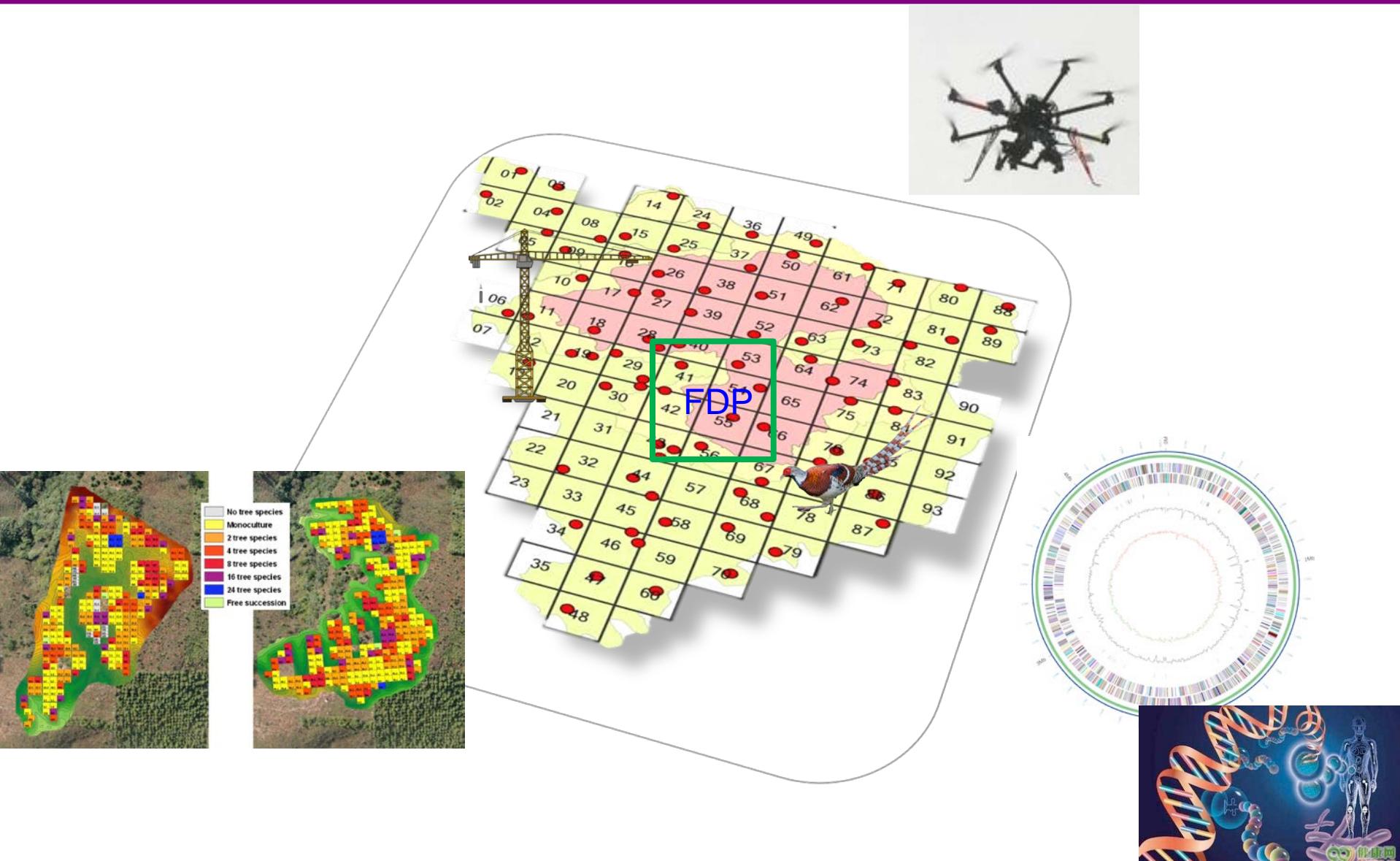
# Leaf trait measurement on forest crane in XSBN



# Sampling branches in canopy



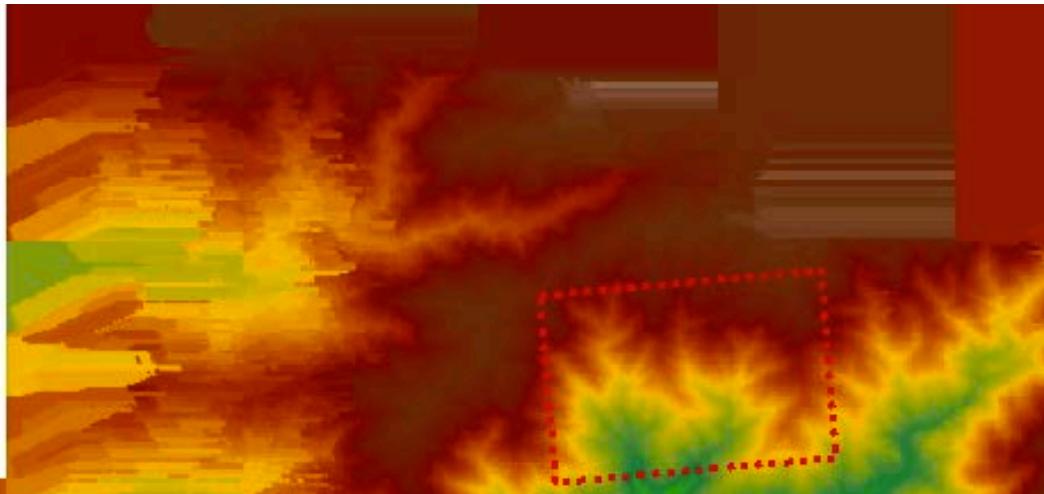
# Gutianshan Integrated Monitoring System



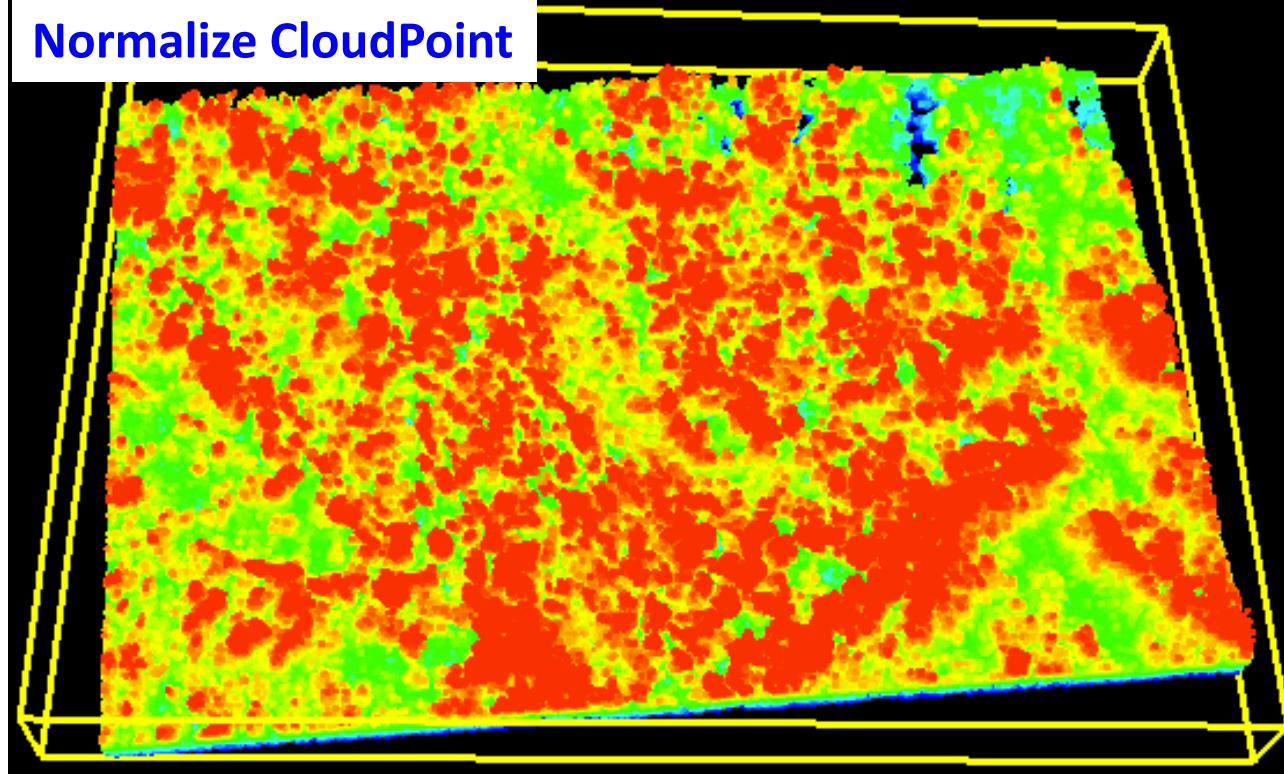
# GuTianShan Scan area > 6 km<sup>2</sup>

LIDAR & Hyperspectral

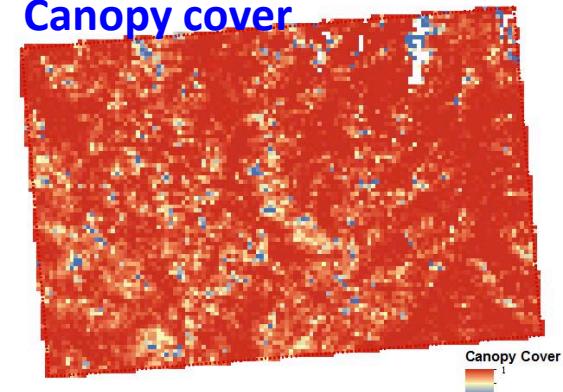
DEM  
Product



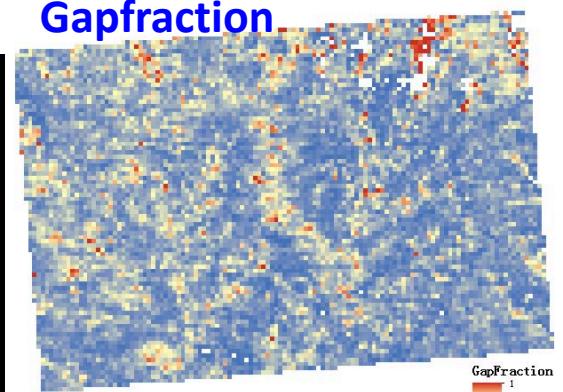
Normalize CloudPoint



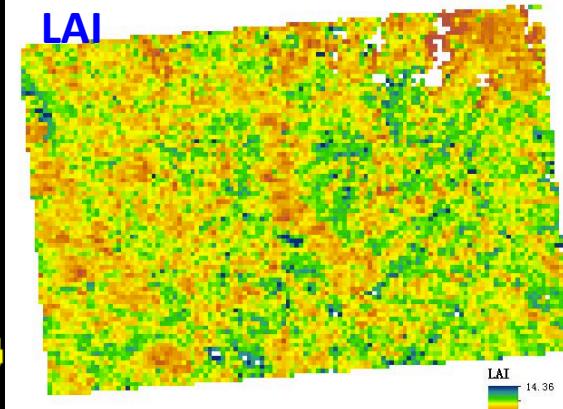
Canopy cover



Gapfraction

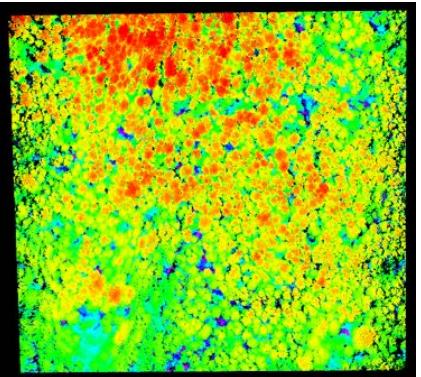


LAI

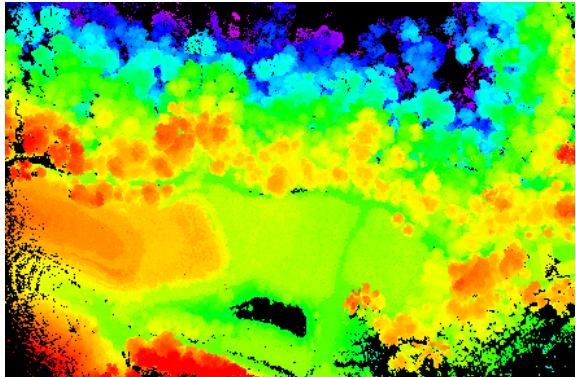


# UAV-Lidar CloudPoint Scan area < 1km<sup>2</sup>

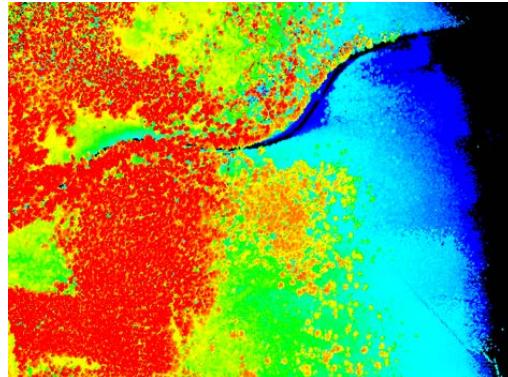
LIDAR



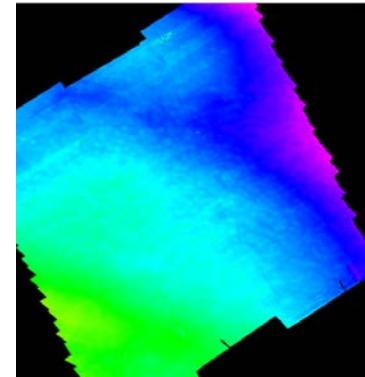
Needleleaf-broadleaf  
mixed forest



Rainforest



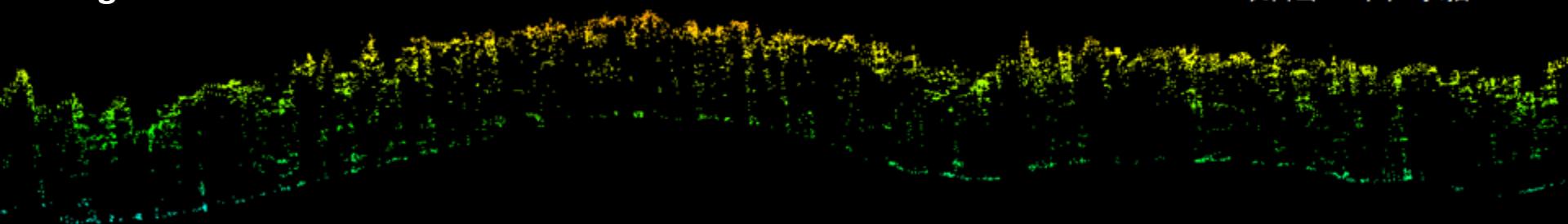
Mangrove



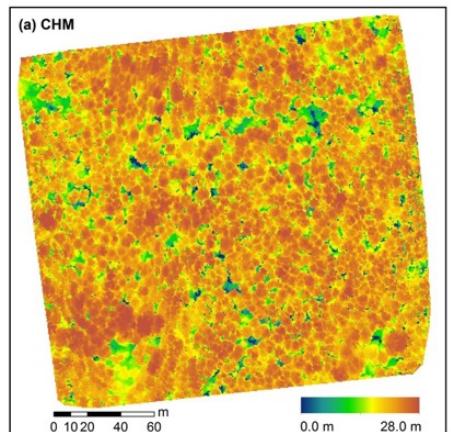
Grassland

## ChangBaiShan CloudPoint Profile

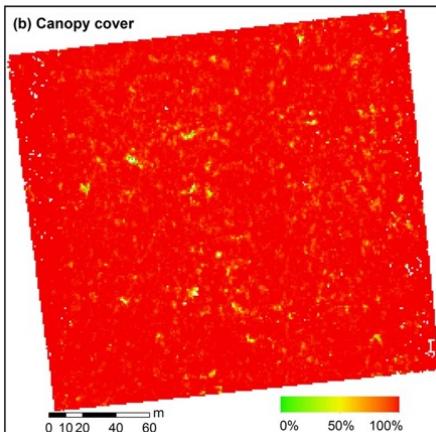
长白山 2016/8/12 扫描



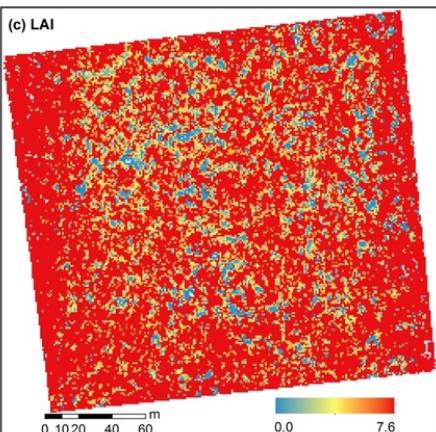
CHM



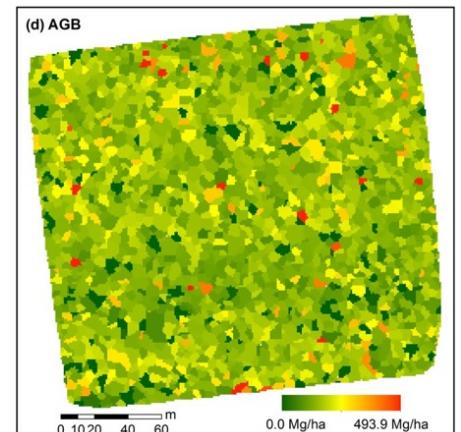
Canopy cover



LAI



AGB



# Near-surface Remote Sensing Platform



Li-Air UAV-RS platform  
Independent R&D

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



Forest



Wetland

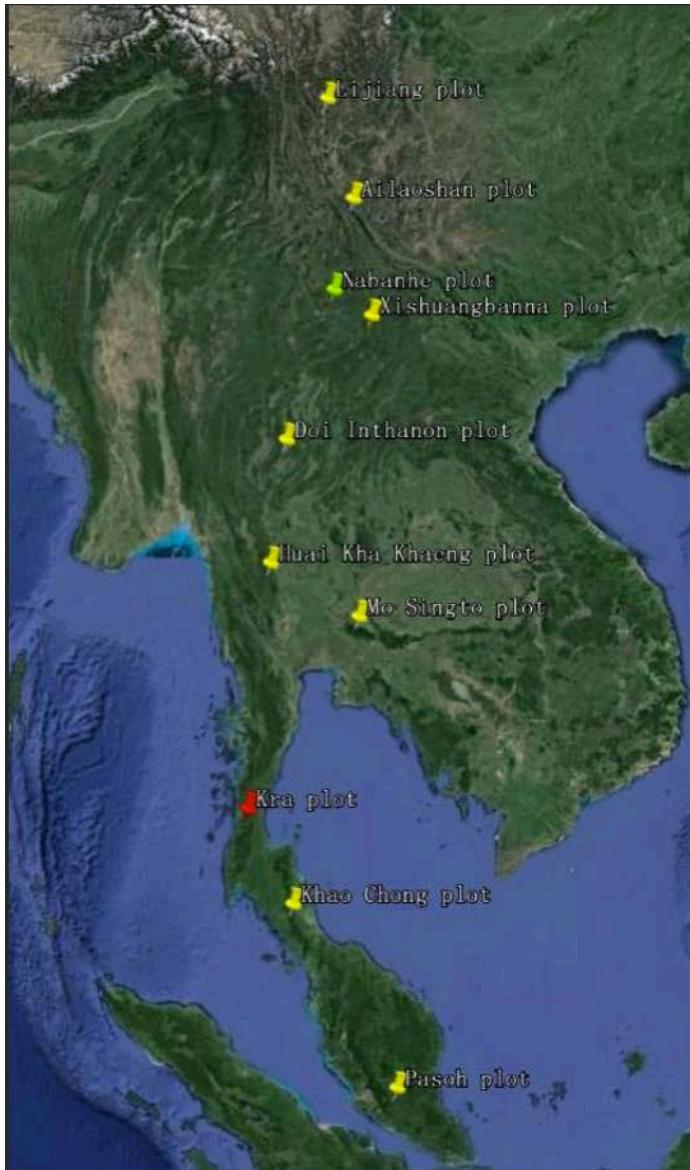


Grassland

Ecosystem to monitor

# 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 $\geq$ 1cm )

From LIN Luxiang



# 中国森林生物多样性监测网络

CHINESE FOREST BIODIVERSITY MONITORING NETWORK

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

首 页 网络概况 共享资源 红外照片 研究成果 联系我们 English



>>

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

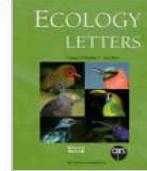
## 亚热带

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



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 1<sup>st</sup> Workshop on Wildlife Monitoring with Camera Traps (July, 2014, Beijing)



第二届野生动物多样性监测学术研讨会暨红外相机技术培训





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



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



# **2<sup>st</sup> National Symposium on Biodiversity Monitoring**

## **Oct. 2016**



# Mapping Asia Plants

Keping MA

[kpma@ibcas.ac.cn](mailto:kpma@ibcas.ac.cn)



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



A Network of Networks

Search

## News

Over 200 species found during Deep-Sea surveys of submarine canyons in Lebanon  
After a one month deep sea expedition in unex...

IUCN Red List of Threatened Species accurately assesses extinction risk using the latest technology  
A response to Ocampo-Peña et al. (2016); S...

ICIMOD contributes to institutionalizing PES schemes in Nepal  
The Government of Nepal is taking steps towar...

## About Us

Asia is among the most biologically rich and also the highly populated area of the planet earth. Consequently, Asian countries are experiencing severe threats to their biodiversity rich areas and the ecosystems. This is accentuated by the fact that in Asia millions of people derive their livelihood from the wild and that there is an emerging conflict between development and conservation. Thus developing sustainable ...

## Asia Species List

Asia is the world's largest and most populous continent. It covers 8.7% of the Earth's total surface area and comprises 30% of its land area. Among 34 biodiversity hotspots identified by Conservation International, about one third distributes in Asia. However, Asian countries are experiencing severe threats to their biodiversity rich areas and ecosystems. To better conserve and manage Asia biodiversity...

## Network Resources

Herbarium Kebun Raya Bogor, Indonesia  
Agharkar Research Institute (ARI), India  
WWF Mongolia  
The South East Asia Rainforest Research Partnership

## Cooperation



College of  
Forest Science,  
Kookmin  
University



IUCN China



ICIMOD  
30



The Research Center  
for Biology, Indonesian  
Institute of Sciences



ASEAN CENTRE  
FOR BIODIVERSITY



University of  
Agricultural  
Sciences, GKVK  
Bangalore India



BC-CAS

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

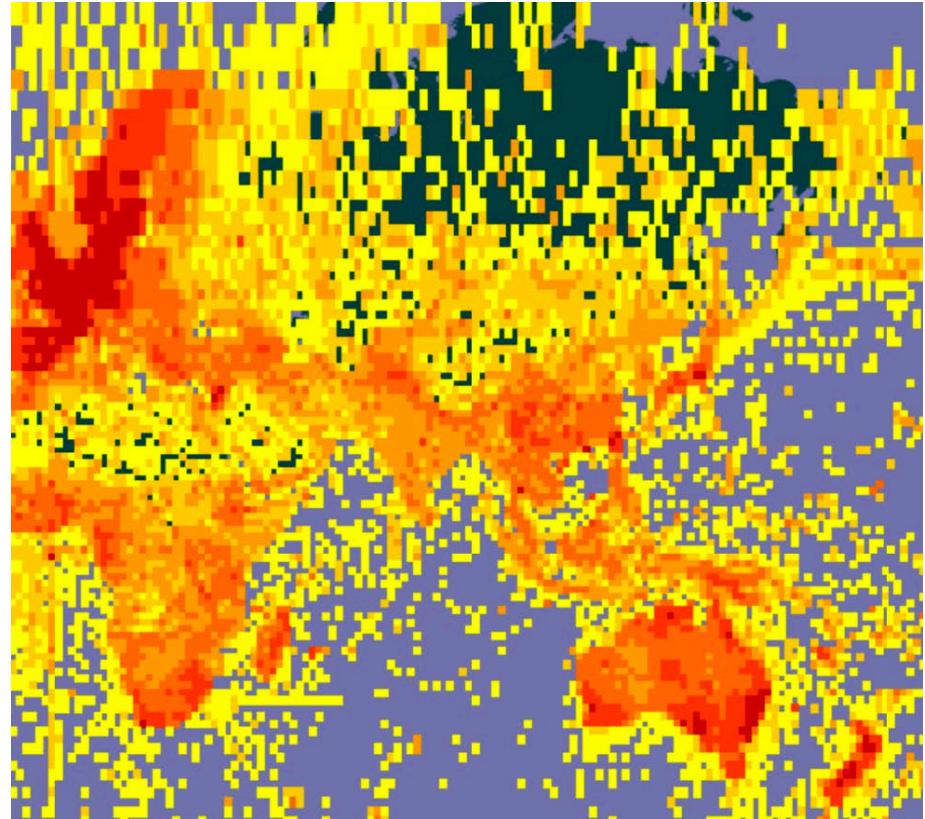
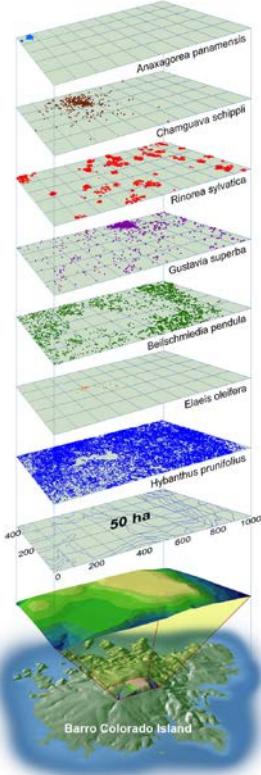
# ABCDNet 2015 Annual Meeting



Mapping Asia Plants  
(MAP)

# Mission

A better mapping infrastructure for plant diversity conservation in Asia

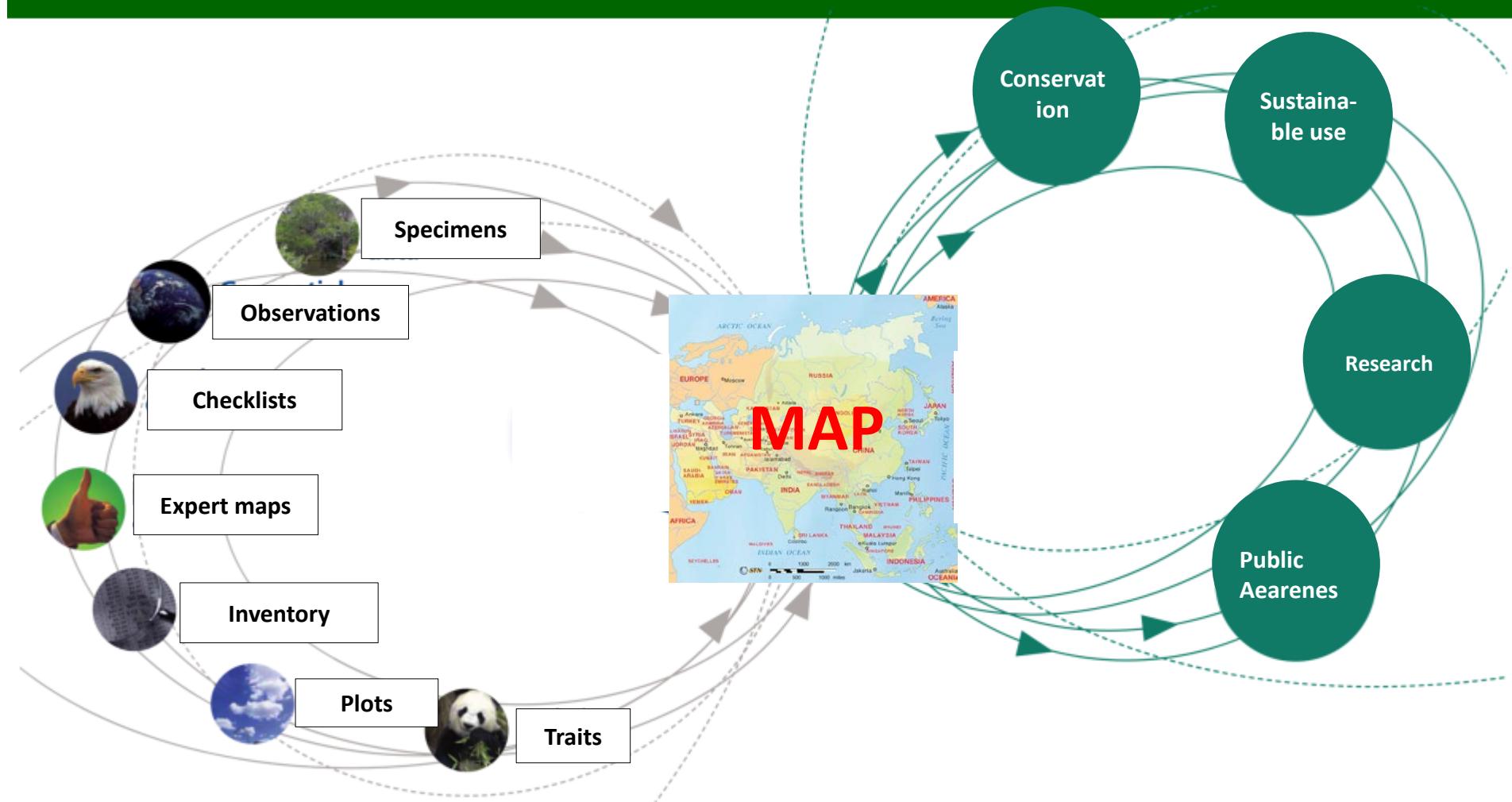


# Goals

## 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.

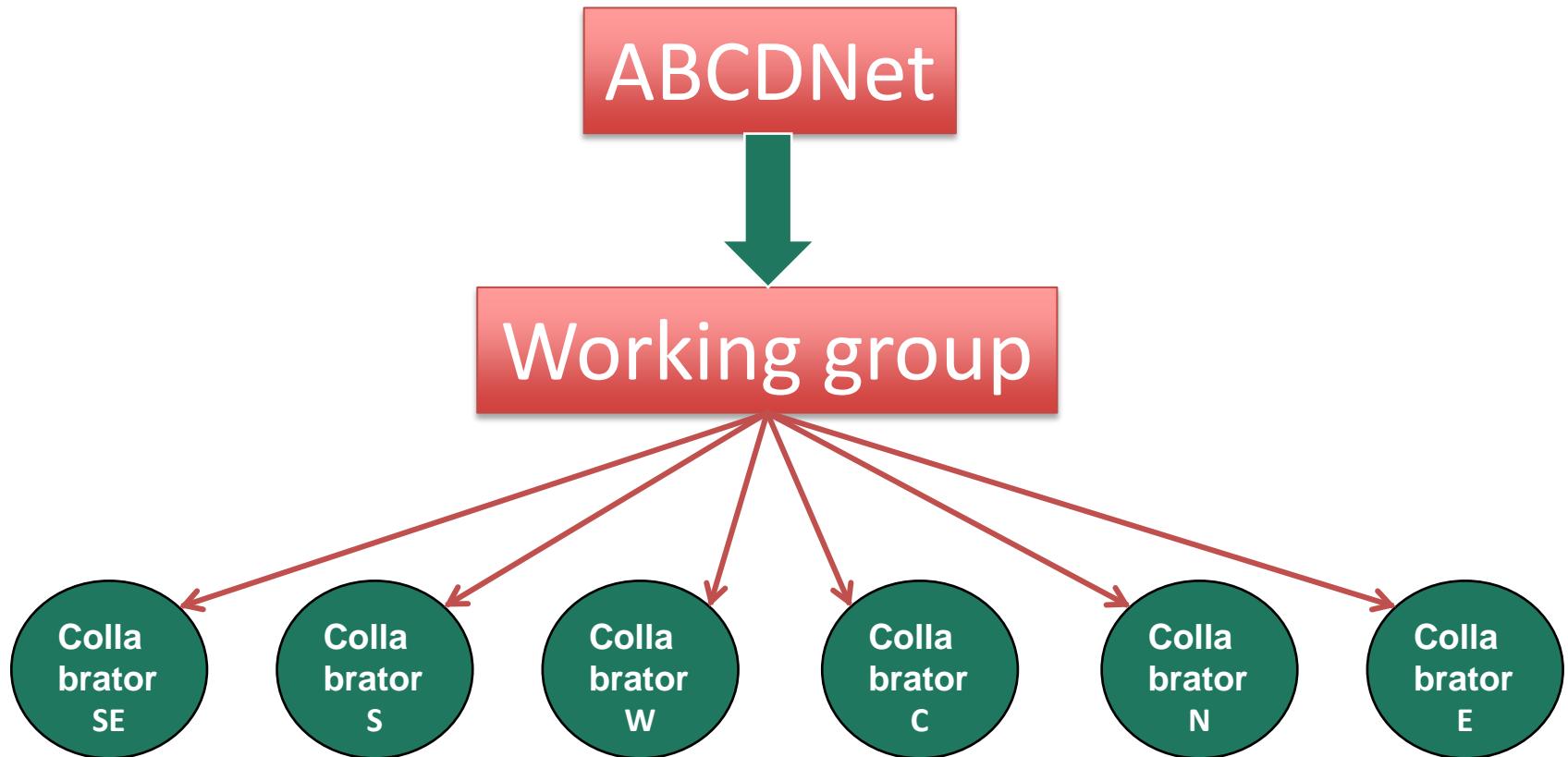
# Connecting:



- **Data sets**

- **Services**

# Organization structure for MAP



# Working group for MAP



Coordinator



SE Asia



S Asia



C Asia



NE Asia

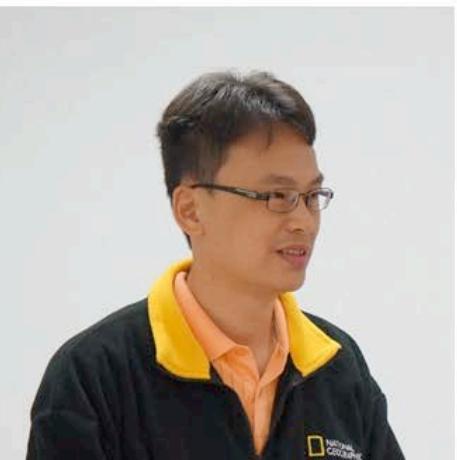


N Asia

# 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

