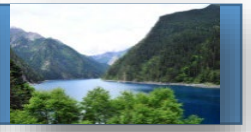
Brief Introduction on China-Croatia Joint Research Center and ‘OBOR’ Joint Lab

SUN Geng

June 16th, 2019

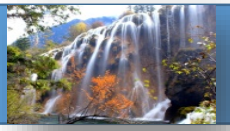
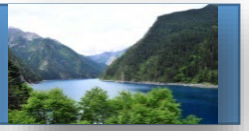


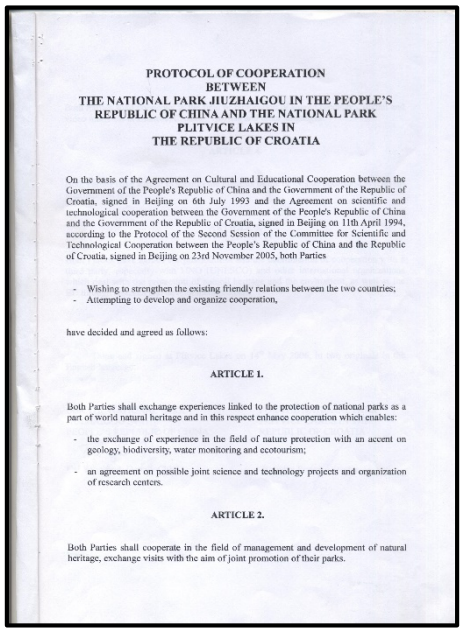


Chengdu Institute of Biology, CAS

University of Zagreb, Croatia

The cooperation between Chengdu Institute of Biology, Chinese Academy of Sciences and University originated prof. Wuning' visiting to UNIZG and Plitvice Lakes National Park in 2009.



PROTOCOL OF COOPERATION
BETWEEN
THE NATIONAL PARK JIUZHAIGOU IN THE PEOPLE'S REPUBLIC OF CHINA AND THE NATIONAL PARK PLITVICE LAKES IN
THE REPUBLIC OF CROATIA

On the basis of the Agreement on Cultural and Educational Cooperation between the Government of the People's Republic of China and the Government of the Republic of Croatia, signed in Beijing on 6th July 1993 and the Agreement on scientific and technological cooperation between the Government of the People's Republic of China and the Government of the Republic of Croatia, signed in Beijing on 11th April 1994, according to the Protocol of the Second Session of the Committee for Scientific and Technological Cooperation between the People's Republic of China and the Republic of Croatia, signed in Beijing on 23rd November 2005, both Parties

- Wishing to strengthen the existing friendly relations between the two countries;
- Attempting to develop and organize cooperation,

have decided and agreed as follows:

ARTICLE 1.

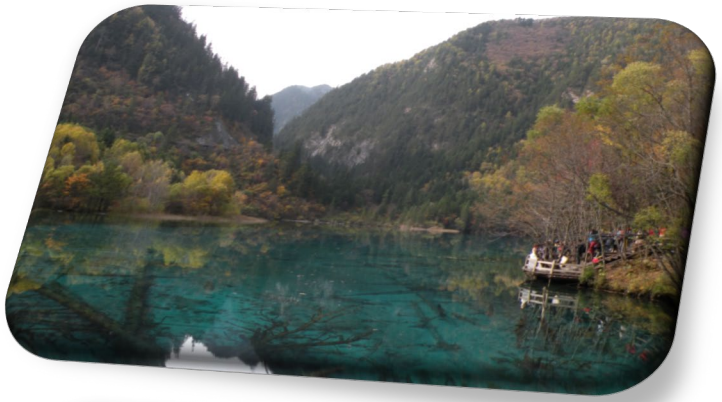
Both Parties shall exchange experiences linked to the protection of national parks as a part of world natural heritage and in this respect enhance cooperation which enables:

- the exchange of experience in the field of nature protection with an accent on geology, biodiversity, water monitoring and ecotourism;
- an agreement on possible joint science and technology projects and organization of research centers.

ARTICLE 2.

Both Parties shall cooperate in the field of management and development of natural heritage, exchange visits with the aim of joint promotion of their parks.

Both Plitvice Lakes and Jiuzhaigou are among the most unique travertine landscapes in the world. The travertine lakes, waterfalls, forests and other landscapes are very similar and Both facing similar conservation problems as well.

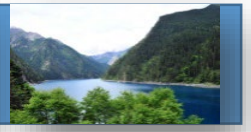
UNESCO
A World Heritage Site

Plitvice

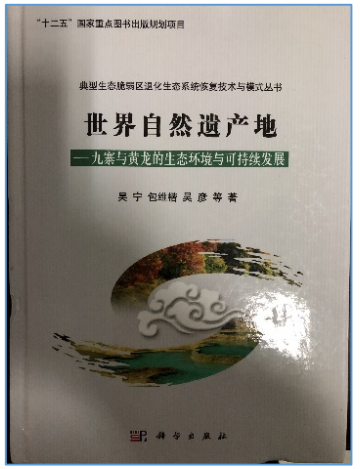
UNESCO
A World Heritage Site

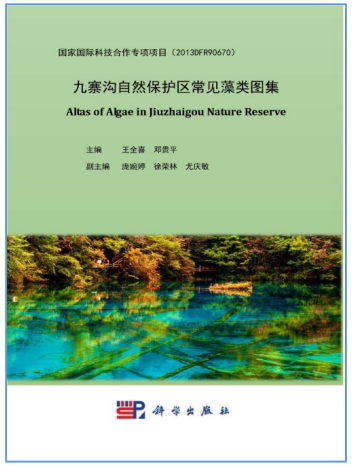
Jiuzhaigou





Chengdu Institute of Biology was the first to propose the protection of Jiuzhaigou in the 1970s, and has been working systematically on biodiversity survey and restoration of degraded vegetation in Jiuzhaigou for more than 40 years.





— 1978
植被和物种调查
建议设立保护区

1979 — 1999
保护区综合考察
申报自然遗产地

2000 — 2009
遗产地植被恢复
省部级一等奖

2010 — 2016
湖泊水环境
中克生态中心

2017 —
灾后重建先导
遗产地保护恢复
景观与生态监测
重建技术支撑

工作基础：长期性¥针对性¥先进性

完成科研项目：
科技支撑3项、国合重点1项、四川省重大 科技专项1项

Since 2011, beginning from comparative ecology and water quality monitoring, we have established a list of algae species in Jiuzhaigou and identified four new algae species by comparison with Plitvice lakes

CYANOBACTERIA - 128 species
- No. of genus =35
- ***Chroococcus*** - 20 species

RHODOPHYTA - 3 species
- No. of genus = 2
- 3 species

DINOPHYTA - 7 species
- No. of genus = 4
- 3 species

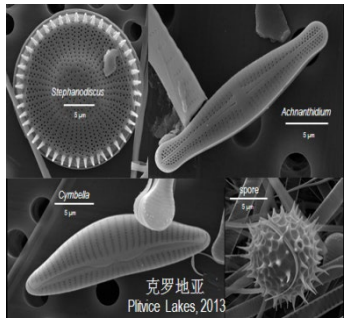
CHRYSOPHYCEAE - 5 species
- No. of genus = 2
- 5 species

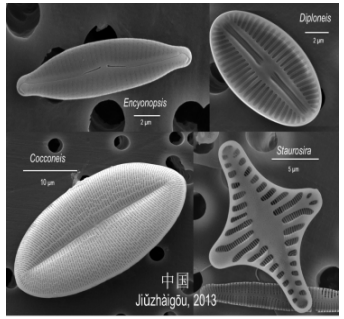
EUGLENOPHYTA - 2 species
- No. of genus = 2
- 2 species

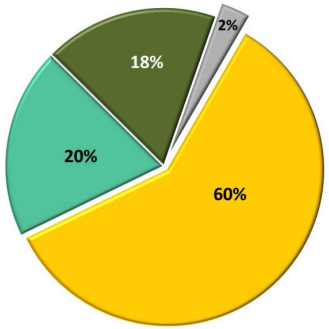
BACILARIOPHYCEAE - 387 species
- No. of genus = 76
- ***Cymbella*** - 46 species

CHLOROPHYTA - 48 species
- No. of genus = 24
- ***Scenedesmus*- 7** species

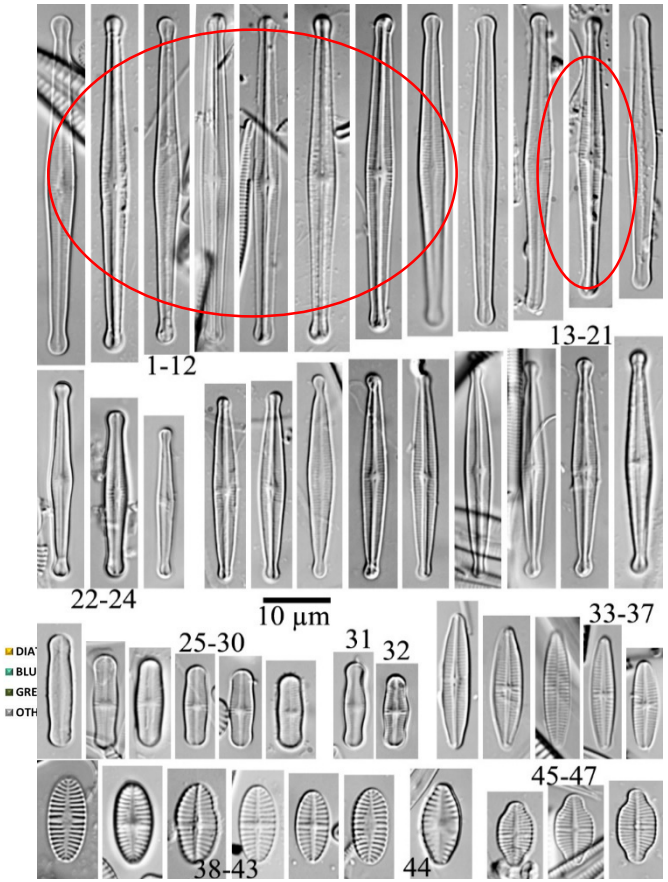
CHAROPHYTA - 69 species
- No. of genus = 16
- ***Cosmarium*- 20 species**

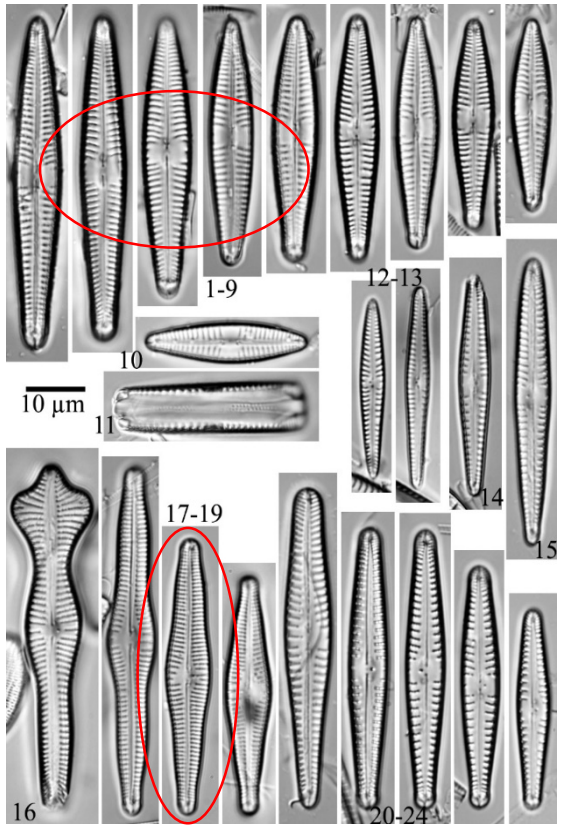






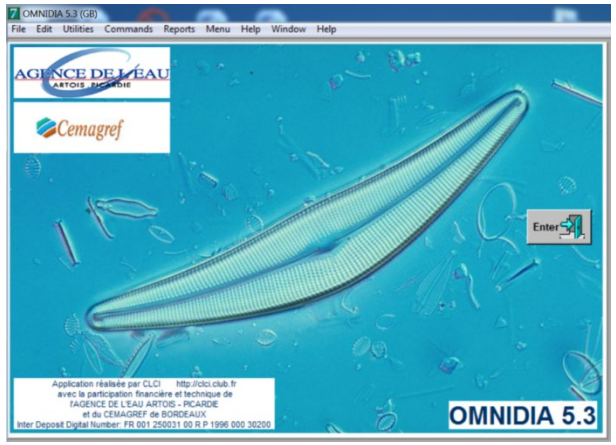
algae species list

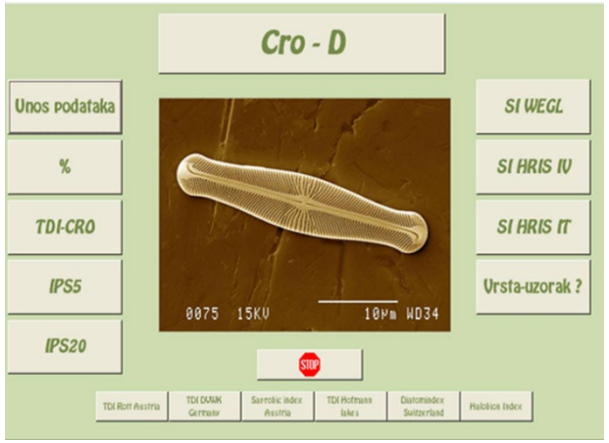


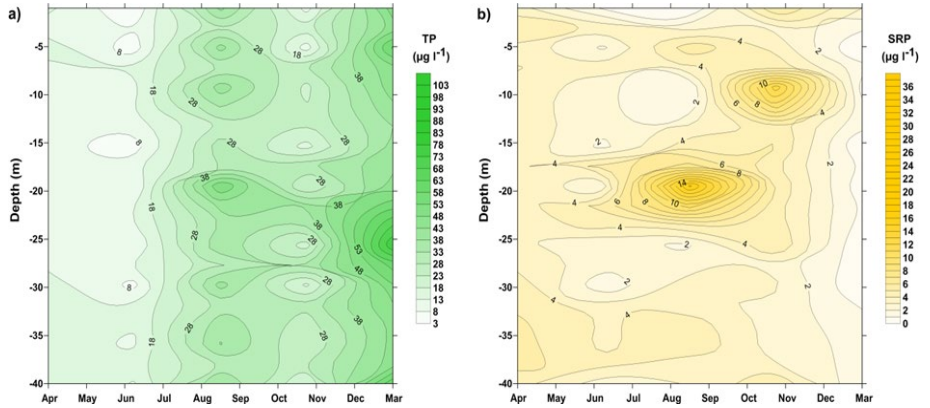


4 new algae species

developed biological monitoring technology for water quality and water quality assessment model which is suitable for karst lakes

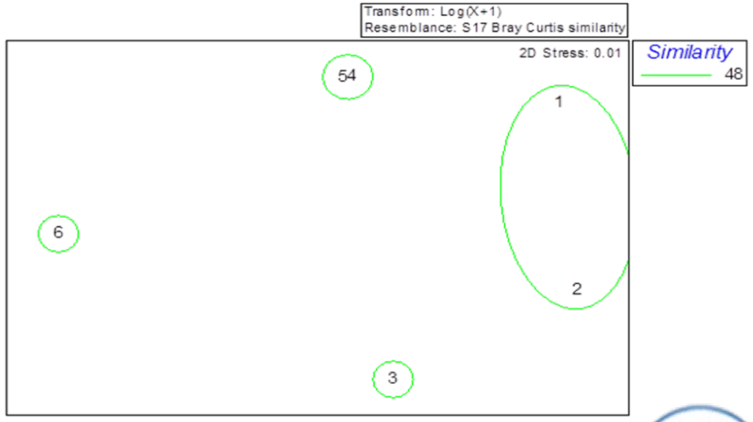




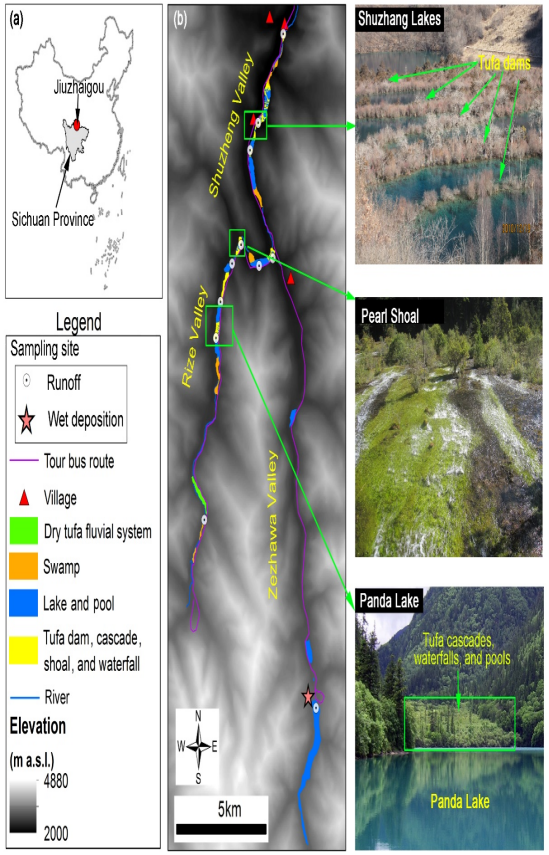


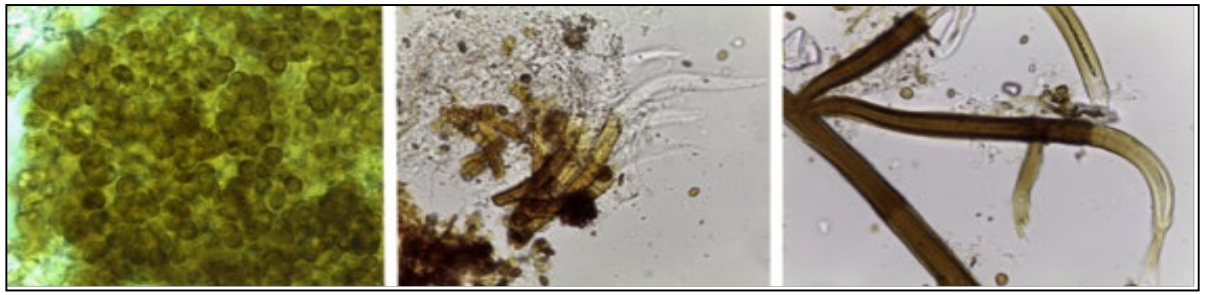
ecological status	TID_{RH}
Very good	≤2,3
Good	≤2,6
Moderate	≤3,1
Bad	≤3,3
Very bad	>3,3

ecological status	SI_{HRIS}
Very good	≤1,5
Good	≤2,0
Moderate	≤2,5
Bad	≤3,0
Very bad	≤3,5

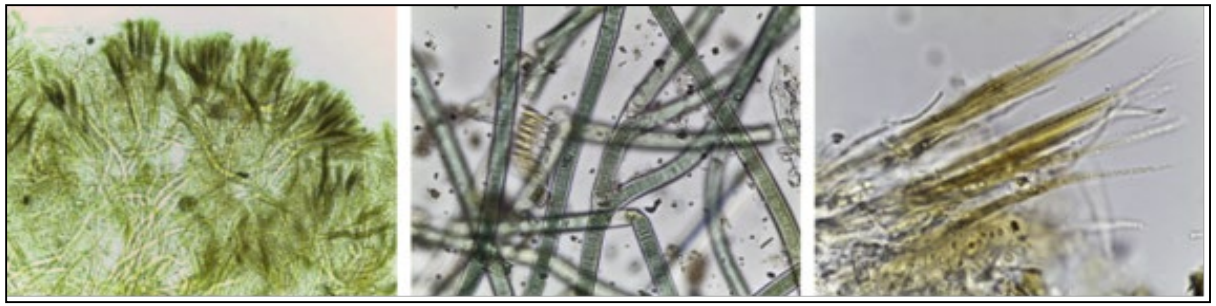


Investigated biological characteristics and impact factors of travertine

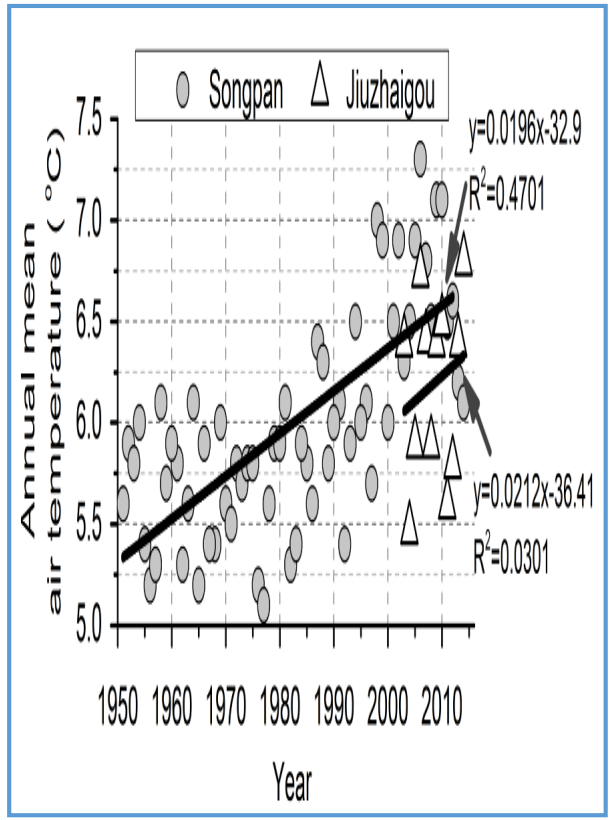




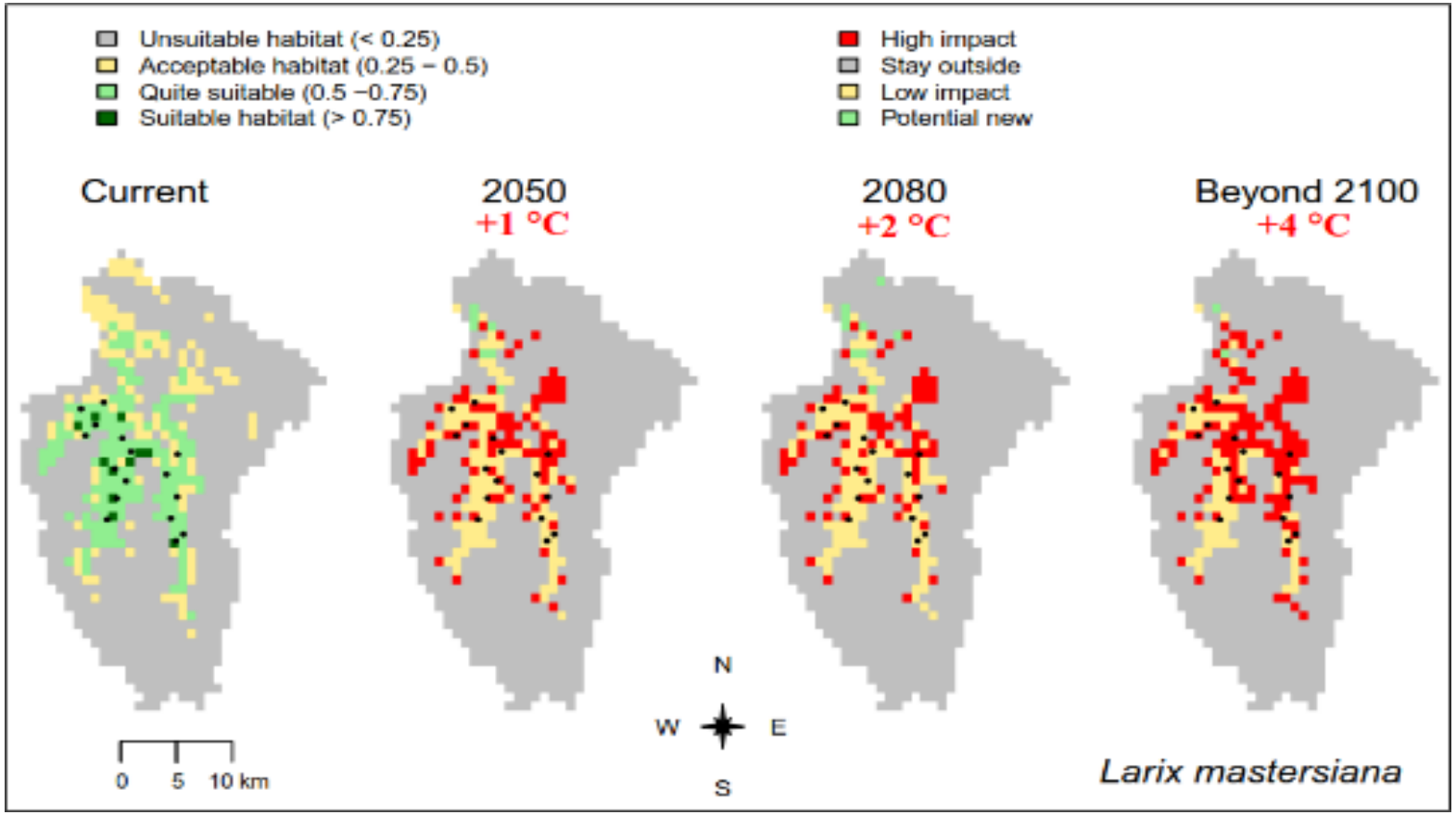
Entophysalis cf. *granulosa* *Calothrix* cf. *parietina* cf. *mirabile* *Scytonema*



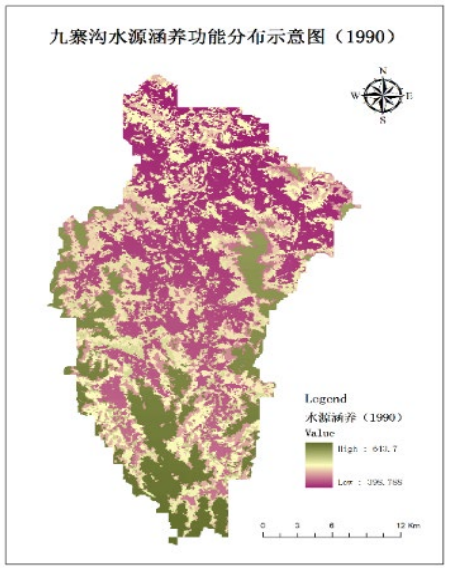
Dichothrix cf. *gypsophila* *Symploca* sp. *Schizothrix* sp.

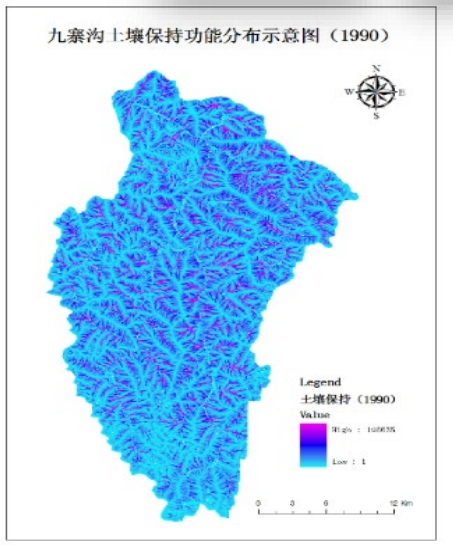


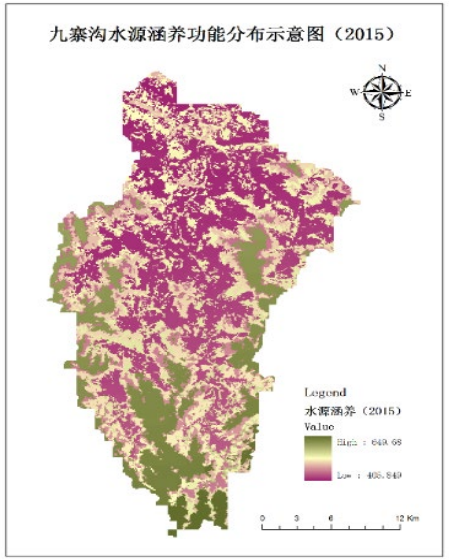
simulated the future distribution pattern of rare species

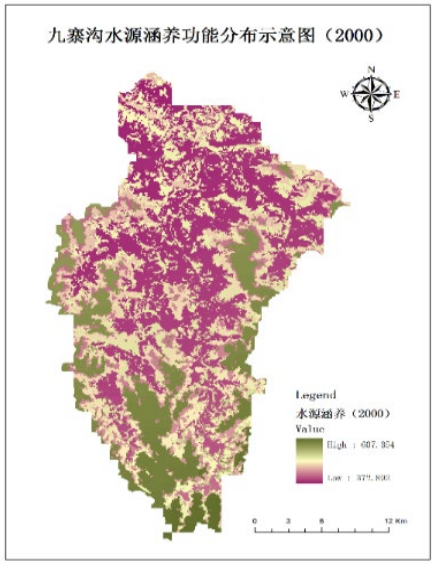


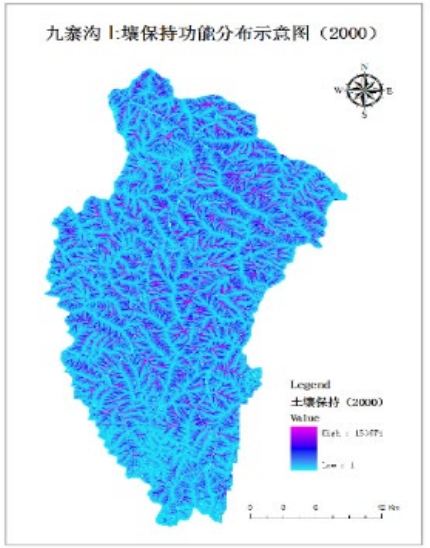
Quantified ecosystem services of Jiuzhaigou

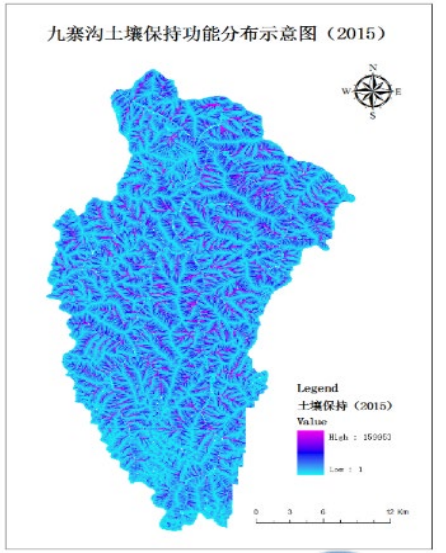




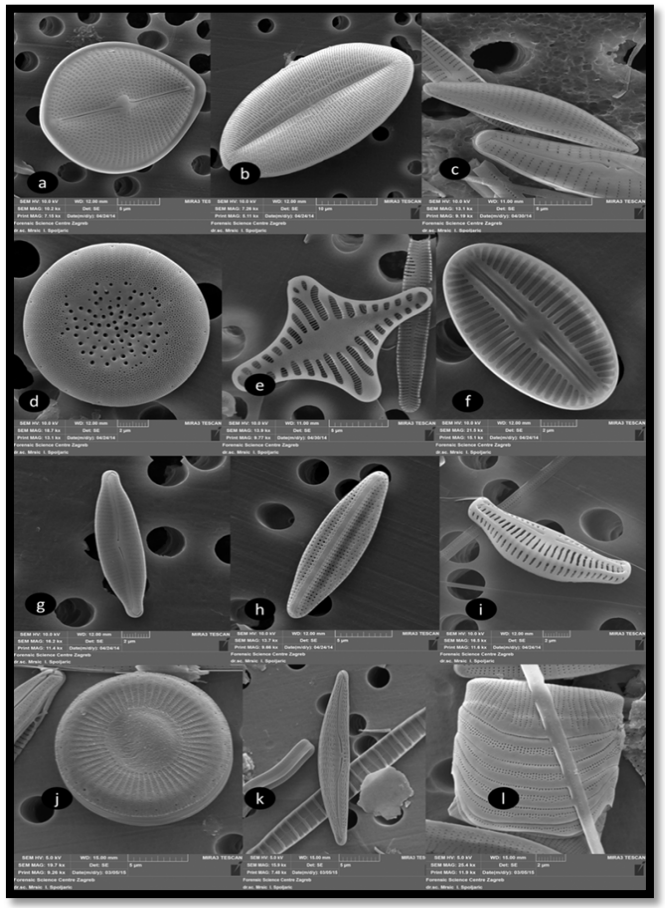


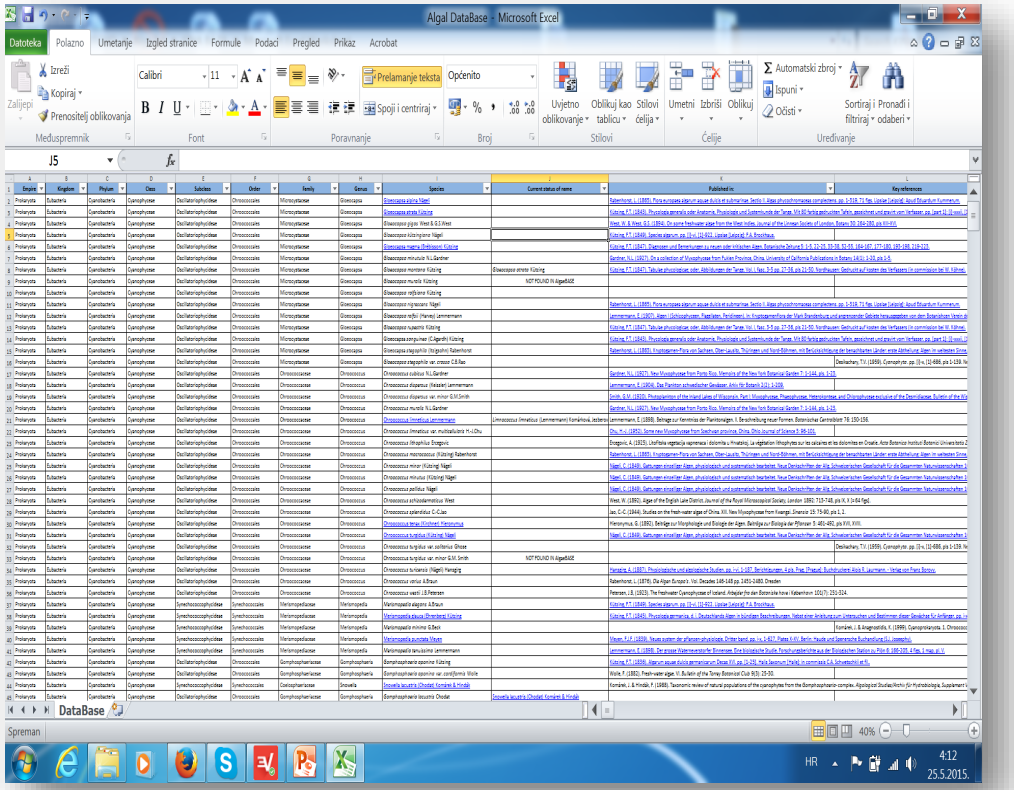




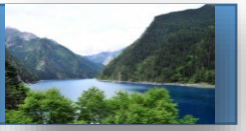


An electronic database of algae has been established, and an album and an identification manual of algae have been produced for monitoring staffs in Jiuzhaigou as well



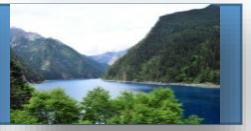






The monitoring indicator system and evaluation model have been applied to the actual monitoring and management activities, which help to solve problems of water quality monitoring in the unique karst lakes of Jiuzhaigou.



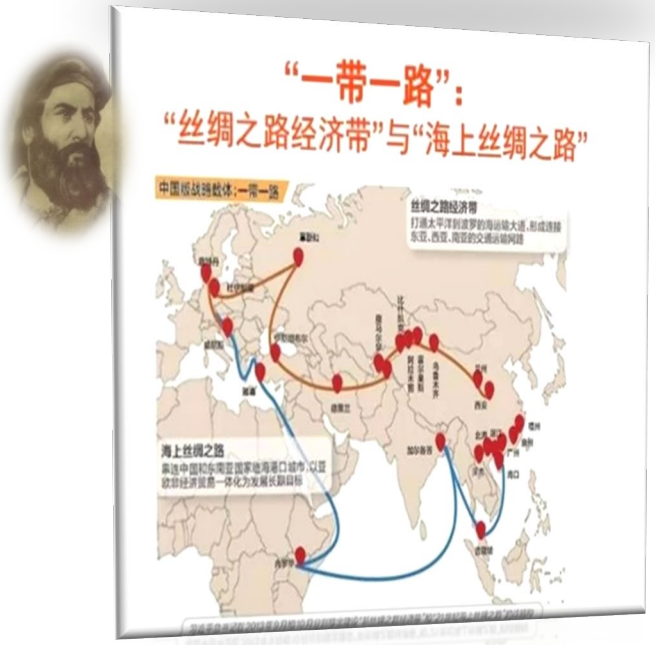


After several years of cooperation, in 2014, both sides planed to set up the China-Croatia international joint research center for ecological protection.

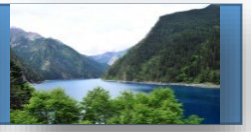
Mr. Koharovic, the formor Croatian ambassador to China, came to Chengdu to discuss the construction of “China-Croatia center“ in May, 2014

In May, 2014, CIB, University of Zagreb, Jiuzhaigou Administration Bureau and Plitvice Lake National Park Administration jointly established the "China-Croatia center".

LIU Yandong, “strengthening China-Croatia cooperation with strategic significance and broad prospects in the field of environmental protection and the cooperation is the model of science and technology cooperation between China and Croatia”







After its establishment, the cooperation between both sides has expanded from lake ecosystem to key issues related to the quality of core landscape, such as water resources and water security.

Both sides have jointly undertaken one key international cooperation project of the Chinese Ministry of Science and Technology, "key technology cooperation research on water resources and ecological security protection in jiuzhaigou", and several international cooperation projects from Sichuan province and the Chinese Academy of Sciences.

科技部国际合作重点项目

- 九寨沟水资源与生态安全保护关键技术合作研究（2014-2016）

中-克政府间项目

- 九寨沟和普利特维采国家公园浮游植物群落多样性和生态学比较（2009-2011）
- 底栖植物在中克喀斯特湖泊水质评价中的功用（2011-2013）
- 基于生态系统服务功能的遗产地景区监测技术合作研究（2015-2017）

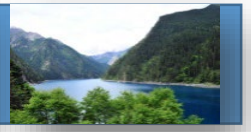
四川省国际合作项目

- 旅游对九寨沟-黄龙自然遗产地钙华景观的影响及其可持续管理
- 基于欧盟标准的九寨沟水质监测和钙华景观保护研究
- 九寨沟生态服务功能价值评估与演变趋势合作研究
- 九寨沟世界自然遗产震后植被生态恢复关键技术合作研究

中科院人才交流项目

- “中克“姐妹”世界遗产地生态保育合作研究与“一带一路”国家联合实验室创建”
- 中科院国际访问学者项目（2015-2019）
- 俄乌白经费补贴项目（2014-2017）





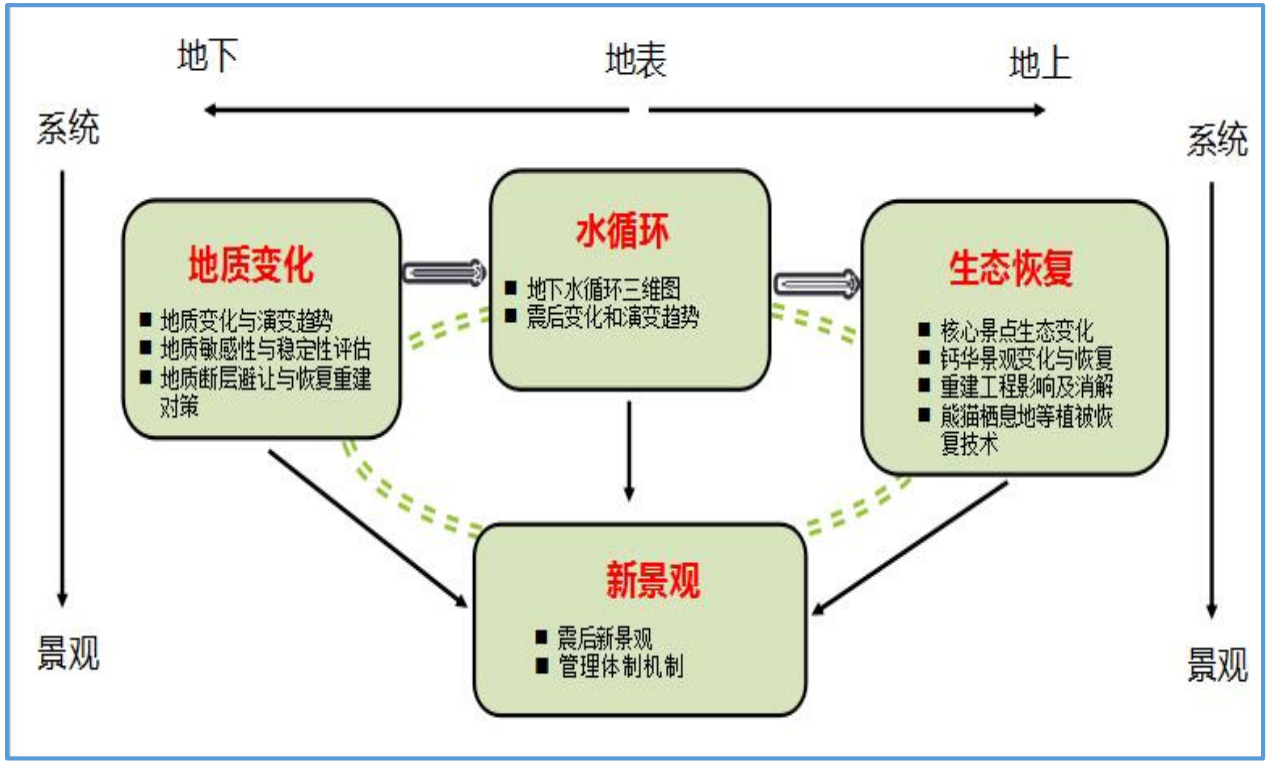
Till now, there are more than 60 exchange visits, introduced 2 senior foreign experts to work in China for more than 18 months, and trained more than 100 local technical and administration staffs

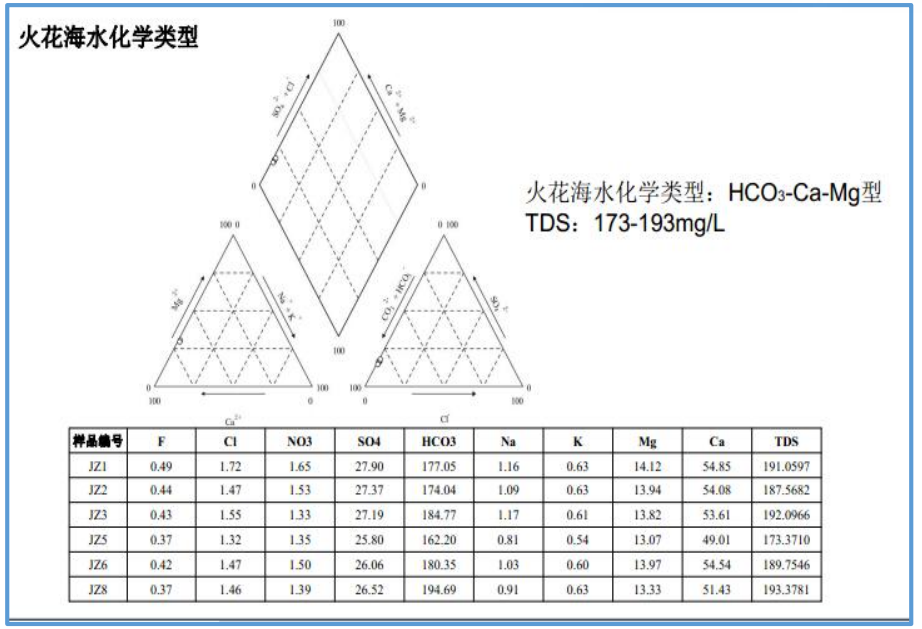




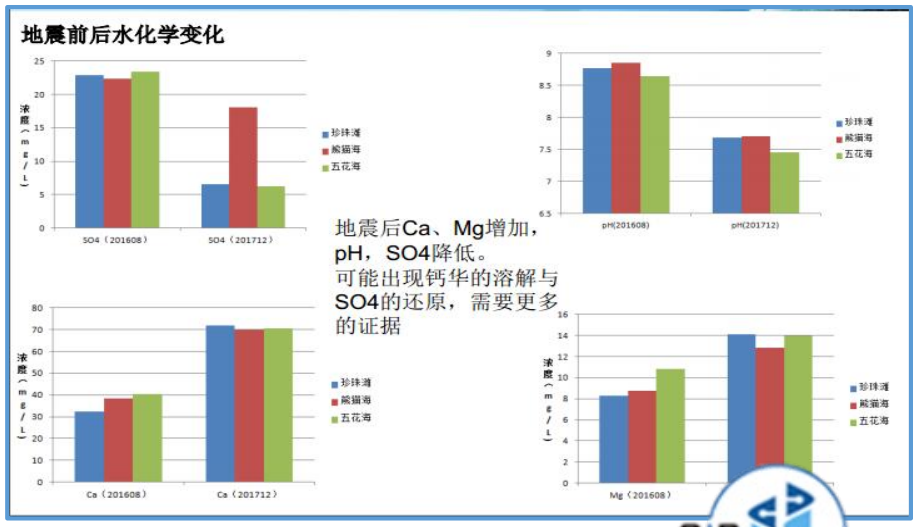



After the Jiuzhaigou earthquake, the Croatian team took an active part in scientific research on post-earthquake recovery and reconstruction, aimed to solve the common technical problems, which may contribute to similar situation in the world

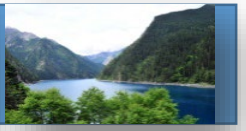




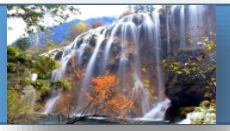
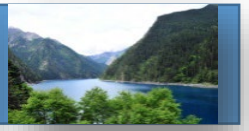
样品编号	F	Cl	NO3	SO4	HCO3	Na	K	Mg	Ca	TDS
JZ1	0.49	1.72	1.65	27.90	177.05	1.16	0.63	14.12	54.85	191.0597
JZ2	0.44	1.47	1.53	27.37	174.04	1.09	0.63	13.94	54.08	187.5682
JZ3	0.43	1.55	1.33	27.19	184.77	1.17	0.61	13.82	53.61	192.0966
JZ5	0.37	1.32	1.35	25.80	162.20	0.81	0.54	13.07	49.01	173.3710
JZ6	0.42	1.47	1.50	26.06	180.35	1.03	0.60	13.97	54.54	189.7546
JZ8	0.37	1.46	1.39	26.52	194.69	0.91	0.63	13.33	51.43	193.3781







Extended cooperation to Huanglong and Krka National Parks and signed a memorandum of understanding on ecological protection and sustainable management in June 2018, and one on marketing in June 2019

Helped Sichuan Department of Science and Technology and University of Zagreb to sign a MoU on ecological protection and exchange of agricultural varieties

In March 2017, the former Croatian ambassador to China visited CIB

In Dec.2017, State Secretary of the Croatian Ministry of Science and Education visited CIB

President BAI Chunli of the Chinese Academy of Sciences visited University of Zagreb in Dec. 2017

AGREEMENT

on Scientific Cooperation between the Chinese Academy of Sciences on the one side and the Croatian Academy of Sciences and Arts and the University of Zagreb on the other side

The Chinese Academy of Sciences on the one side and the Croatian Academy of Sciences and Arts and the University of Zagreb on the other side (hereinafter "Parties")

- recognizing the importance of international scientific cooperation
- considering the mutual benefits
- intending to make provisions for expansion and further development of scientific cooperation

concluded this Agreement on the following:

Article 1

The aim of this Agreement is to develop, stimulate and support mutually beneficial cooperation between scientific institutions, institutes and constituent units of the Parties for the purpose of advancement of scientific progress. This shall be achieved by combining efforts of scientists of the Parties and joint use of their research resources and scientific achievements.

Article 2

This Agreement shall cover scientific research in the fields of natural sciences, and technical sciences, as well as the Social Sciences and Humanities.

Article 3

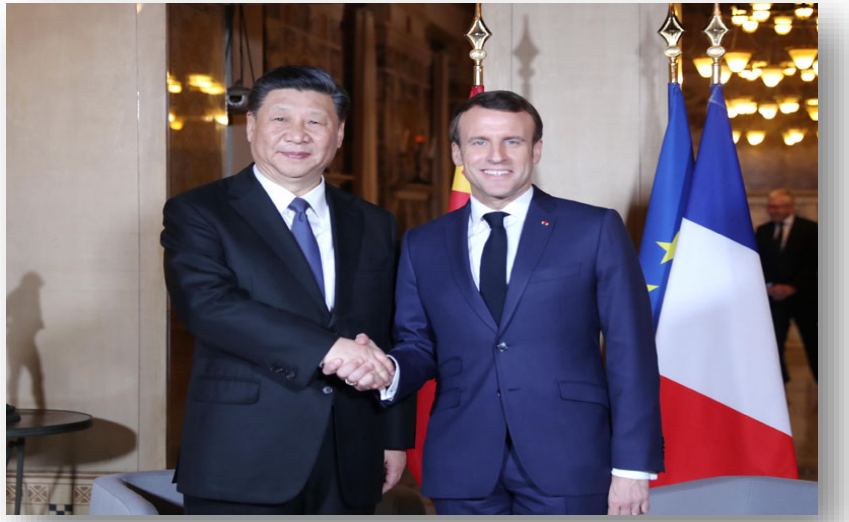
Scientific cooperation shall be carried out in the following fields:

1. joint research projects on actual scientific problems of mutual concern and interest
2. exchange of scientists for the purpose of research projects realization
3. exchange of experience and participation in the international research events
4. exchange of post-graduate students with the purpose of their preparation for the future scientific work
5. exchange of scientific information and literature.

The following research fields are intended to be covered:

a) mathematics
b) chemistry and physics of advanced materials
c) nuclear physics
d) ICT and robotics
e) biomedicine
f) environmental protection
g) Social Sciences and Humanities in the narrower sense as well as integrated in multidisciplinary proposals

In the implementation of Article 3 of this Agreement the Ministry of Science and Education of the Republic of Croatia and corresponding research institutions in Croatia may also be involved upon their consent.



In the 10th year of cooperation, we are working to introduce our cooperation into a new stage -- China-Europe cooperation on biodiversity and ecosystem services conservation

The statement: We will work together to promote global action on biodiversity loss and prepare for the 15th conference of the parties to the convention on biological diversity to be held in China in the end of 2020.

CBD COP15 2020 KUNMING, YUNNAN

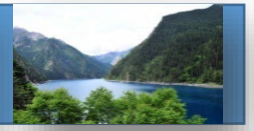
中法发布联合声明加强气候变化、生物多样性等方面的合作

王雅菲 世界林业动态 今天

新华网法语版2019年3月26日消息：应法兰西共和国总统马克龙（Emmanuel Macron）邀请，中华人民共和国主席习近平于2019年3月24日至26日对法兰西共和国进行了国事访问。

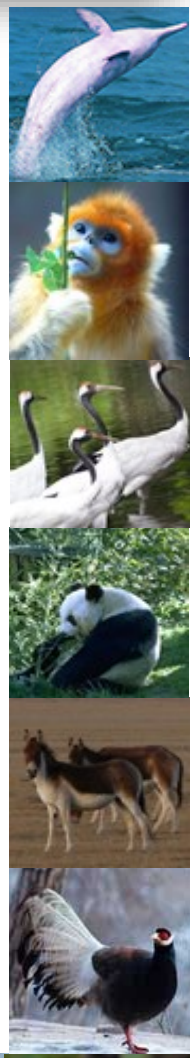
3月25日，中法全球治理论坛在法国巴黎举行。论坛由中国国务院新闻办公室和法国



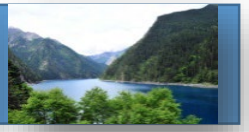


However, the situation of biodiversity in China is still not optimistic -- "the general trend of biodiversity decline has not been fundamentally stopped, and there are contradictions between biodiversity protection and economic development activities", and there is still a long way to go for the recovery of degraded ecosystems and the conservation of ecosystem services

- 高等植物3万余种，居世界第三位，仅次于巴西和哥伦比亚
- 脊椎动物6000余种，占世界总种数的13.7%；已记录的海洋生物28000多种，约占全球海洋物种数的11%
- 栽培作物1339种，果树种类居世界第一
- 家养动物品种最丰富的国家之一，有576个品种







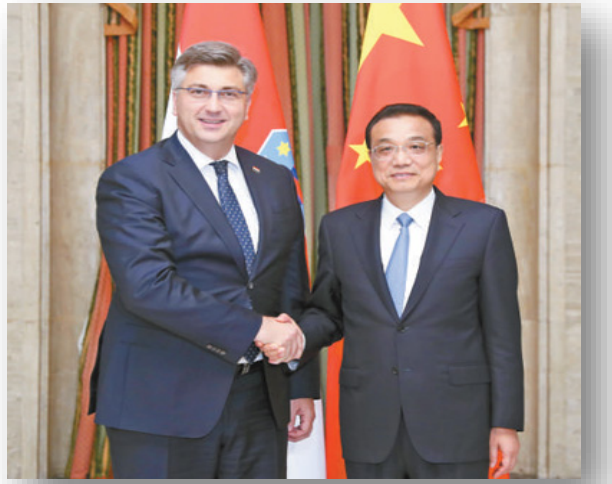
Croatia, located in the Balkans in Central and Eastern Europe, is an important gateway connecting Western Europe with Western Asia on the continental silk road, as well as a node area in the Mediterranean Sea on the maritime silk road.

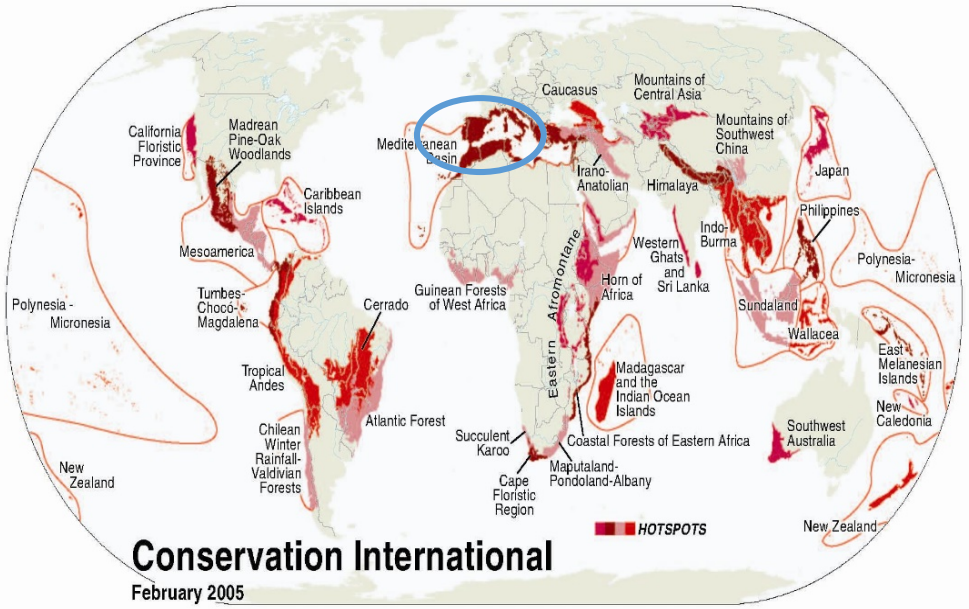
"16+1" summit in April in Croatia

李克强将赴布鲁塞尔举行第二十一次中国–欧盟领导人会晤并正式访问克罗地亚

CNR 中央人民广播电台
04-08 07:26

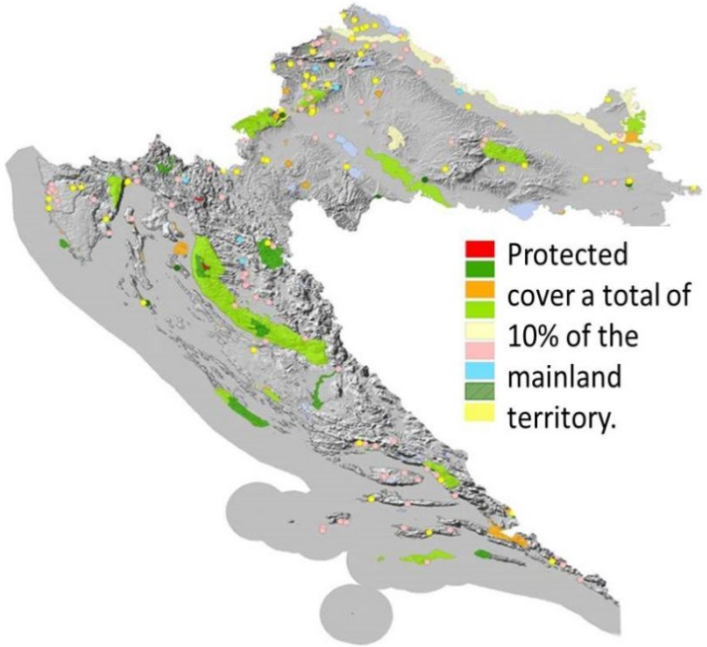
央广网北京4月8日消息（记者马喆 丁飞）据中国之声《新闻纵横》报道，经中欧双方商定，并应克罗地亚总理普连科维奇邀请，国务院总理李克强将于今天（8日）赴比利时布鲁塞尔举行第二十一次中国–欧盟领导人会晤，随后前往克罗地亚举行第八次中国–中东欧国家领导人会晤并正式访问克罗地亚。



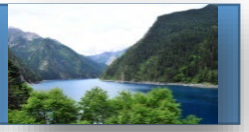


- Forests occupy 44% of land surface
- Consequently one of the richest in EU in terms of biodiversity
- There are One UNESCO - World heritage list, two MAB - Biosphere reserves, six Ramsar Wetlands, totally 450 protected areas

Croatia, located in the Mediterranean coast, is the only global biodiversity hotspot on the European continent. It is also a concentrated country of the world natural heritage sites and wetlands of international importance.
At the same time, as a member of EU, Croatia's cooperation with China is of great significance in promoting and enhancing the leading roles of China and Europe in biodiversity conservation.

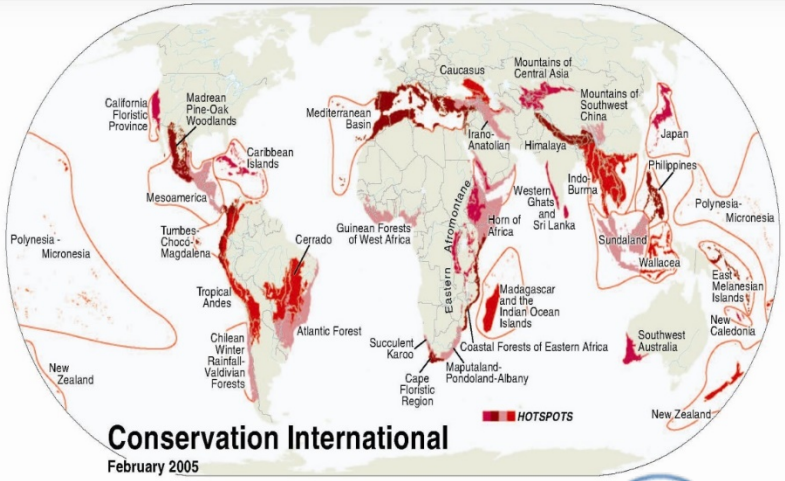




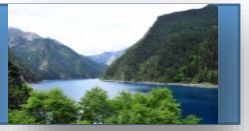


The countries and regions along the "One Belt And One Road" route in Eurasia are rich in biological resources with fragile and sensitive environments, and are concentrated in global biodiversity hotspots.

At the same time, large-scale infrastructure construction and economic development must take into account the carrying capacity of natural resources and environments, to promote "green silk road".

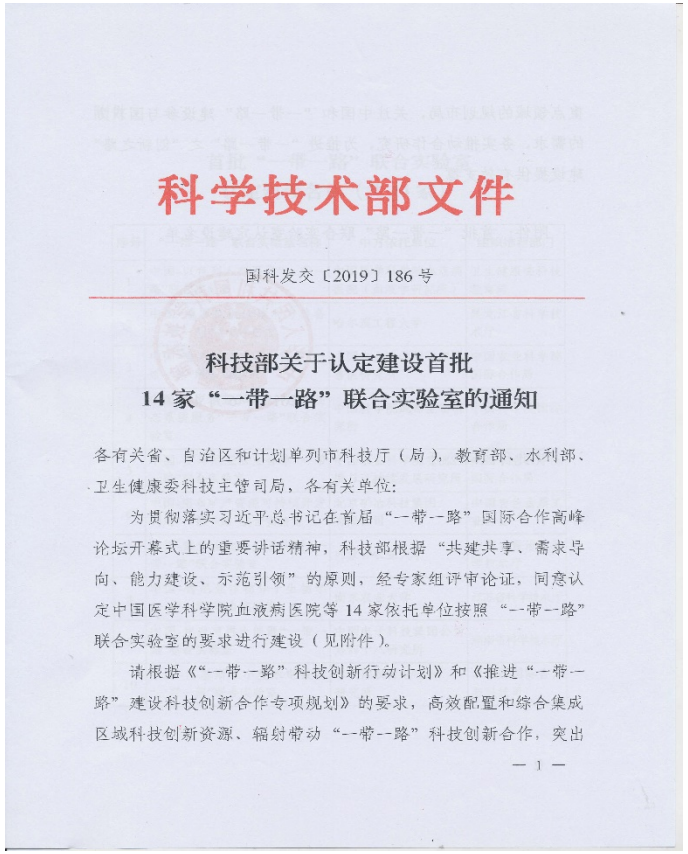






China-Croatia Biodiversity and Ecosystem Services ‘One Belt and One Road’ Joint Laboratory

Recently, we have been officially informed that the China-Croatia Biodiversity and Ecosystem Services ‘One Belt and One Road’ Joint Laboratory led by Chengdu Institute of Biology and University of Zagreb has authorized as the first batch of joint lab by Chinese Ministry of Science and Technology



科学技术部文件

国科发交〔2019〕186号

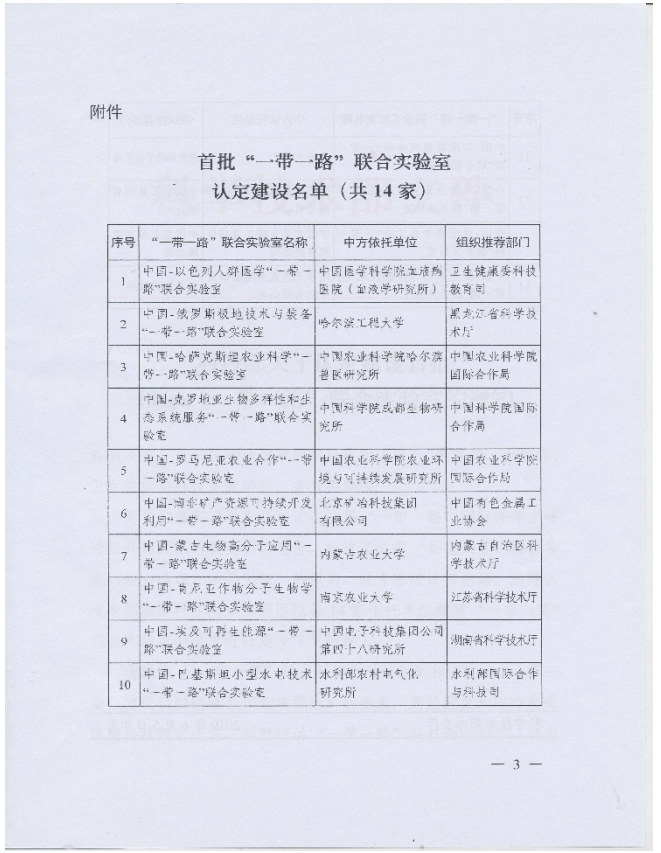
科技部关于认定建设首批
14家“一带一路”联合实验室的通知

各有关省、自治区和计划单列市科技厅（局），教育部、水利部、卫生健康委科技主管司局，各有关单位：

为贯彻落实习近平总书记在首届“一带一路”国际合作高峰论坛开幕式上的重要讲话精神，科技部根据“共建共享、需求导向、能力建设、示范引领”的原则，经专家组评审论证，同意认定中国医学科学院血液病医院等14家依托单位按照“一带一路”联合实验室的要求进行建设（见附件）。

请根据《“一带一路”科技创新行动计划》和《推进“一带一路”建设科技创新合作专项规划》的要求，高效配置和综合集成区域科技创新资源，辐射带动“一带一路”科技创新合作，突出

— 1 —



附件

首批“一带一路”联合实验室
认定建设名单（共14家）

序号	“一带一路”联合实验室名称	中方依托单位	组织推荐部门
1	中国-以色列人源医学“一带一路”联合实验室	中国医学科学院血液病医院（血液学研究所）	卫生健康委科技教育司
2	中国-俄罗斯极地技术与装备“一带一路”联合实验室	哈尔滨工程大学	黑龙江省科学技术厅
3	中国-哈萨克斯坦农业科学“一带一路”联合实验室	中国农业科学院哈尔滨兽医研究所	中国农业科学院国际合作局
4	中国-克罗地亚生物多样性和生态系统服务“一带一路”联合实验室	中国科学院成都生物研究所	中国科学院国际合作局
5	中国-罗马尼亚农业合作“一带一路”联合实验室	中国农业科学院农业环境与可持续发展研究所	中国农业科学院国际合作局
6	中国-哈萨克斯坦矿产资源可持续开发利用“一带一路”联合实验室	北京矿冶科技集团有限公司	中国有色金属工业协会
7	中国-蒙古生物高分子应用“一带一路”联合实验室	内蒙古农业大学	内蒙古自治区科学技术厅
8	中国-肯尼亚作物分子生物学“一带一路”联合实验室	南京农业大学	江苏省科学技术厅
9	中国-埃及可再生能源“一带一路”联合实验室	中国电子科技集团公司第四十八研究所	湖南省科学技术厅
10	中国-巴基斯坦小型水电技术“一带一路”联合实验室	水利部农村电气化研究所	水利部国际合作与科技司

— 3 —



Mission

Based on the natural environment characteristics and talents and technical conditions, to enhance the level of biodiversity protection and promotion of "green silk road" initiative, by carrying out cooperation research, academic exchange, sharing ideas and advanced technology, personnel and technical training, technology demonstration, policy proposal, to build an internationally influential, domestic first-class international cooperation research platform on biodiversity and ecosystem services.

Academic exchange and knowledge sharing

Cooperation research and talent cultivation

Technology demonstration and policy consultation

Research field

①Biodiversity Conservation

②Speciation and Evolution

③Key Ecosystem Processes

④Ecosystem Services and Protected Area Management

Biodiversity and Ecosystem Services Conservation

依托单位

+

区域内研究机构

+

中国权威研究机构

+

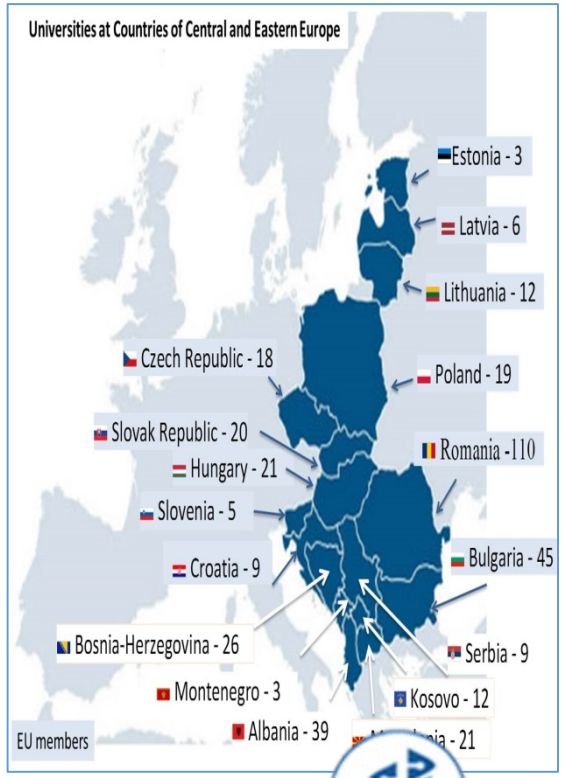
克罗地亚-中东欧

+

技术用户

国家公园
自然保护地
相关管理部门

We will gradually expand cooperation with other universities and academies in Croatia and other research institutions in Central and Eastern European countries




Thanks for your attention
When nature gave us so much wealth
It is our duty to preserve it for future generations