

主编 季延寿 丁辉

# 丰富多彩的北京生物多样性

Colorful Biodiversity in Beijing



中国生物多样性保护基金会  
China Biodiversity Conservation Foundation

北京市科学技术研究院  
Beijing Academy of Science and Technology

北京科学技术出版社

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## 图书在版编目(CIP)数据

丰富多彩的北京生物多样性/季延寿, 丁辉主编. —北京: 北京科学技术出版社, 2008.12

ISBN 978-7-5304-3978-4

I. 丰… II. ①季…②丁… III. 生物多样性—北京市 IV. Q16

中国版本图书馆CIP数据核字(2008)第158095号

## 丰富多彩的北京生物多样性

主 编: 季延寿 丁 辉

责任编辑: 朱 琳

责任印制: 张 良

封面设计: 胡京仁 郭冬生 刘全儒

图文制作: 北京鑫联必升文化有限公司

出 版 人: 张敬德

出版发行: 北京科学技术出版社

社 址: 北京西直门南大街16号

邮政编码: 100035

电话传真: 0086-10-66161951(总编室)

0086-10-66113227(发行部) 0086-10-66161952(发行部传真)

电子邮箱: bjkjpress@163.com

网 址: www.bkjpress.com

经 销: 新华书店

印 刷: 北京捷迅佳彩印刷有限公司

开 本: 889mm×1194mm 1/16

字 数: 1200千

印 张: 37.75

版 次: 2008年12月第1版

印 次: 2008年12月第1次印刷

印 数: 1~1000

ISBN 978-7-5304-3978-4 /Q·019

定 价: 380.00元



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# 前言

生物多样性是人类赖以生存和发展的基础，对人类至关重要。北京的生物多样性是北京发展成有三千多年历史的世界名城的基础，也是今后建设可持续发展的现代化国际化大都市，建设生态城市、宜居城市的基础。认识和保护好北京的生物多样性，对北京市有特别重要的意义，越来越为北京市和全国人民关注。

为了让全社会认识到北京市生物多样性对北京市可持续发展的重要性，中国生物多样性保护基金会在北京市科学技术委员会、北京市科学技术协会、北京市科学技术研究院的大力支持下，组织北京师范大学生命科学学院、北京林业大学林学院、中国科学院植物研究所、北京园林科学研究所等有关单位的科研力量共同编写了《丰富多彩的北京生物多样性》。本书采用图文并茂的形式，精选一千六百余幅图片奉献给社会各界和世界友人，让更多的人了解北京不仅有丰富的文化遗产，还有丰富多彩的自然遗产——北京的生物多样性，从而更好地保护和利用生物多样性，为北京的可持续发展做出应有的贡献。

北京受暖温带大陆性季风气候的影响，形成暖温带落叶阔叶林的地带性植被。境内地形复杂，生态系统多样，物种比较丰富，景观优美。北京市国土面积16807.8平方千米，62%是山区，最高峰东灵山海拔2303米。北京有大小河流200多条，各型水库84座。北京有六大类型生态系统：森林生态系统、灌丛生态系统、湿地生态系统、草甸生态系统、农田生态系统、城市生态系统。如此多姿的生态系统，为北京市可持续发展提供了重要的物质基础和宝贵财富。

北京已知有各类植物物种3292种以上，覆盖北京国土面积的54%，它为北京涵养水源、补充氧气、净化空气、优化美化人居环境、保证生态安全起到了基础性作用，为首都市民和国内外市场提供了粮食、蔬菜、水果、花卉和药材。北京有国家级保护植物25种，北京市国土面积只占全国的0.17%，而这里的野生维管束植物种数占全国的6.7%。北京的古树名木，百年以上的有40816株，为全国各大城市之冠，世界各国首都之最，树龄在300年以上的古树3804株，特别珍贵稀有、有重要历史价值和纪念意义的有2400株，具有丰富的文化内涵，举世闻名。目前，全市森林覆盖率由20世纪50年代初的1.43%增加到目前的35.47%，使北京的绿肺功能大大增强。

北京已知有各类动物物种3200种以上，国家级保护动物126种，其中有促进和保护植物生长的多种动物。有可供人们食用的动物，有可供科学研究用的达到国际标准的实验动物，有供人们观赏做宠物的动物和保卫国家安全和人身安全警用动物。北京的动物为保持北京生态平衡和生态安全起到了重要作用。北京的鸟类有396种，约占全国鸟类种数的28%。北京的生物多样性是比较丰富的。

长期以来，北京市委市政府十分重视生态保护和建设，在中央各部门及在京的有关科研

机构和高等院校的支持下，北京市相关部门在保护和利用生物多样性方面做了大量的工作。北京市保护了大量古园林，建立了一批植物园、动物园、风景名胜区、社区绿地，建立各类自然保护区20个，占北京市国土面积的8.28%。在物种保护方面也做出了重大贡献，北京动物园人工繁殖大熊猫和朱鹮获得成功；北京市科学技术研究院领导的北京麋鹿生态实验中心，为在我国已经消失百年的麋鹿重引进恢复种群获得成功；中国农科院建立了国内最大的作物种子库等。

科学地保护和利用北京的生物多样性是每个市民的责任，希望这本书的出版能够进一步促进全市人民积极行动起来，努力实践科学发展观，建设生态城市，保护好生物多样性，为建设生态安全、人民宜居的现代化国际化的首都北京而共同奋斗。

编 者

2008年12月

# PREFACE

Biodiversity is the foundation for human's subsistence and development, and is vital for human being. The biodiversity in Beijing is the base for its development into a world-famous city with a history of over 3000 years, and is also the foundation for the construction of a sustainable, ecological, international and modernized cosmopolitan and a city suitable for living. It is of extreme significance for Beijing to get a better understanding and protect its biodiversity, and has become an increasingly concerned issue of Beijing and nationwide.

In order to promote public awareness of biodiversity in Beijing and its significance to Beijing's sustainable development, China Biodiversity Conservation Foundation has organized academic and research efforts from relevant institutions, such as College of Life Science of Beijing Normal University, College of Forestry of Beijing Forestry University, Institute of Botany of The Chinese Academy of Sciences and Beijing Institute of Garden Science, to collectively compile *Colorful Biodiversity in Beijing*, under generous support of Beijing Municipal Science & Technology Commission, Beijing Association of Science and Technology and Beijing Academy of Science and Technology. The Book is illustrative and has selected over 1600 pictures to present the public and international friends that Beijing is not only full of cultural heritages, but also enriched with natural heritages. Besides, it introduces the biodiversity in Beijing for better conservation and utilization and calls for necessary contribution for Beijing's sustainable development.

Located in warm temperate zone and influenced by continental monsoon climate, Beijing has formed a zonal vegetation of warm temperate deciduous broad-leave forests. Beijing is featured with complicated terrain, diversified ecosystems, enriched species and beautiful landscape. Beijing covers an area of 16807.8 square kilometers, 62% of which is mountainous area. The peak is Dongling Mountain with an altitude of 2303 meters. There are over 200 rivers (river and stream) and 84 reservoirs of different kinds in Beijing. There are 6 major ecosystems in Beijing, which include forest ecosystem, shrub ecosystem, wetland ecosystem, grassland ecosystem, farmland ecosystem and urban ecosystem. The colorful ecosystems provide significant material foundation and valuable wealth for Beijing's sustainable development.

There are over 3292 known plant species in Beijing, covering 54% of its total area. It accumulates water source, supplements oxygen, purifies air, optimizes and beautifies human settlement environment, safeguards ecological safety, and provides food supplies, vegetables, fruits, flowers and medicinal materials for its citizens and domestic and overseas markets. There are 25 species under state-level protection in Beijing. While the total area of Beijing only takes up 0.17% of the nation's total, its species of wild vascular bundle plants take up 6.7% of the nation's total. There are 40816 ancient and famous trees over 100 years in Beijing, ranking the first among major cities in China and among all capitals in the world. Also, there are 3804 ancient trees with more than 300 years, which are extremely rare and worth cherishing. There are also 2400 trees with historical value and memorial significance, which are full of cultural connotations and world-famous. Presently, the forest coverage in Beijing has increased to 35.47% at present from 1.43% in early 1950s, which greatly strengthens its function as a green lung.

There are over 3200 known animal species in Beijing and 126 animal species under state-level protection, with many kinds to promote and protect plant growth. Some are edible, some are experimental animals for scientific research with international standards, some can serve as pets and some are police animals safeguarding national security and personal safety. Animals in Beijing play a very important role in conservation of ecological balance and ecological safety in Beijing. There are 396 bird species in Beijing, taking up about 28%

of the nation's total. Biodiversity in Beijing is relatively enriched.

For a long time, Beijing Municipal Party Committee and Beijing Municipal Government have been attaching great importance to ecological conservation and construction. Under the support of various departments of the central government, relevant research institutions and higher educational institutions in Beijing, relevant departments in the city has done much in protecting and utilizing biodiversity. Beijing has conserved a lot of ancient gardens and has established many botanical gardens, zoos, scenic spots and commune green lands. 22 natural conservation areas of different kinds were established, taking up 8.28% of Beijing's total area. Significant contributions have been made in species protection owing to successful artificial breeding of panda and Japanese Crested Ibis at Beijing Zoo. Beijing Milu Ecological Research Center led by Beijing Academy of Science and Technology has succeeded in population restoration for reintroducing Milu, which disappeared in China for more than one hundred years. Also, The Chinese Academy of Agricultural Sciences has established the largest crop seed bank in China.

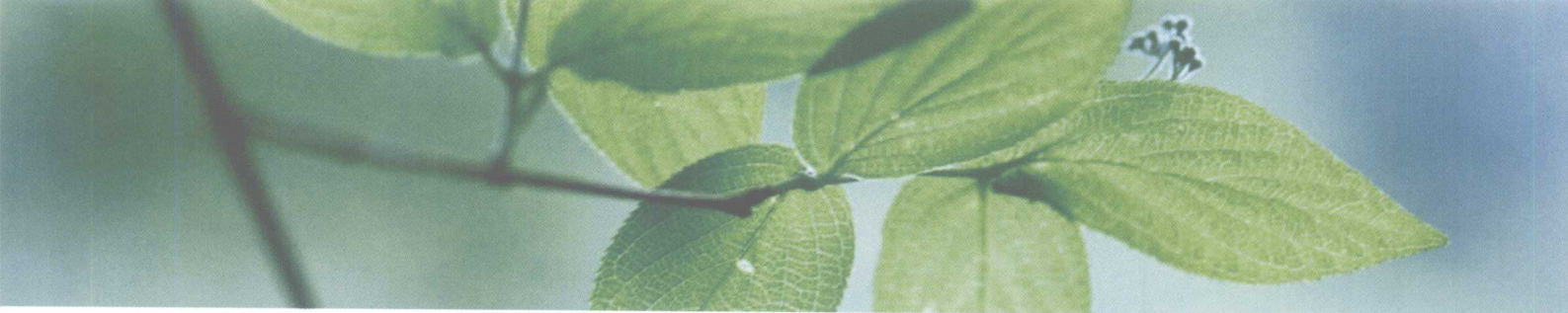
It is every citizen's duty to scientifically conserve and utilize biodiversity in Beijing. We hope the publication of the Book can further promote all citizens in Beijing to take proactive measures to implement scientific development, build an ecological city, better protect biodiversity, and join our efforts to construct a modernized and internationalized Capital that is ecologically safe and suitable for living.

Editor  
2008.12





■ 北京市地形图 Relief map of Beijing



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## 北京市自然概况

## Natural Conditions of Beijing

北京作为中华人民共和国首都，历史悠久的世界名城，中心位于北纬 $39^{\circ}$ ，东经 $116^{\circ}$ 。雄踞于华北大平原北端，西、北和东北群山环绕，东南是缓缓向渤海倾斜的大平原。北京平原的海拔高度在20~60米，山地一般海拔1000~1500米，与河北交界的东灵山海拔2303米，为北京市最高峰。北京全市国土面积16807.8平方千米。其中平原面积6390.3平方千米，占38%。山区面积10417.5平方千米，占62%。

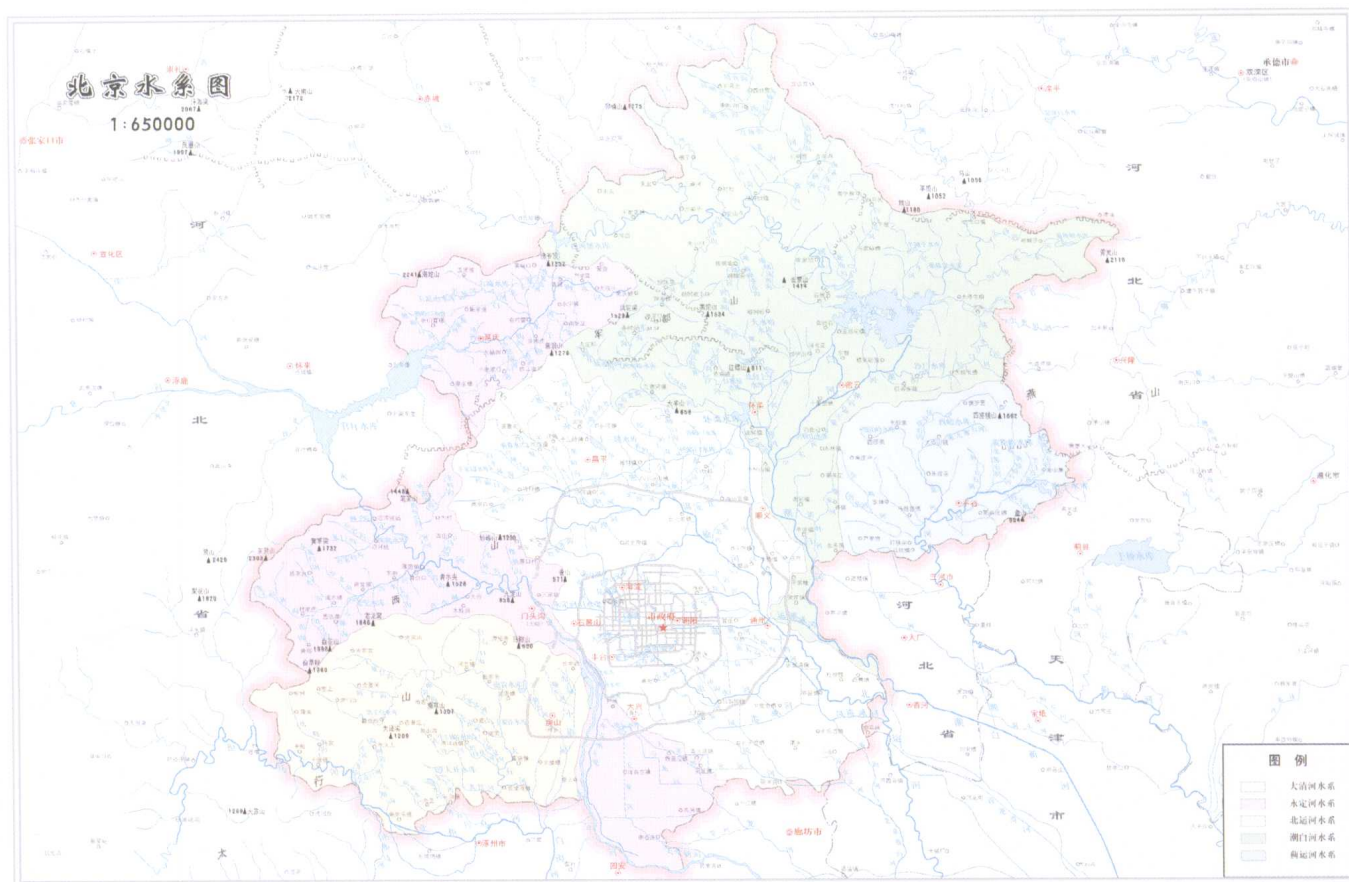
As the capital of China, Beijing is a very famous city in the world. With the location of northern latitude of  $39^{\circ}$  and eastern longitude of  $116^{\circ}$ , she lies on the north of Huabei plain, surround by the mountain which are in the south, north, and north east. It is the big plain that on the southeast which lean against Bo Sea. The plain of Beijing is usually at the altitude of 20-60m, while the mountains are 1000-1500m. Dongling Mountain, the highest point of Beijing, is at the altitude of 2303m. The total area of the whole city is  $16807.8\text{km}^2$ . The plain is  $6390.3\text{km}^2$  account for 38%. The mountain area is  $10417.5\text{km}^2$  account for 62%.

北京市地域边界与河北省和天津市接壤，总地形为西北高、东南低，境内有潮白河、永定河等大小河流二百余条，自然资源十分丰富。受温带大陆性季风气候的影响，北京地带性植被属暖温带落叶阔叶林，并表现出随海拔高度的变化垂直分布的特征。受地质史上地壳运动、风化侵蚀和流水溶蚀等作用的影响，北京市域内形成了大量的岩溶喀斯特地貌、侵蚀溶蚀山地、山涧盆地、谷地、阶地等地貌景观和河、湖、瀑、溪等水体景观，同时由于植物分布表现了随海拔高度变化的趋势，因而形成了各具特色的植物群落景观生态系统，这些地貌景观和植物景观与城区中众多璀璨的园林景观和人文景观共同组成了一个融合了历史和现代的世界名都，其生态系统多样性组成丰富，孕育了丰富多彩的物种多样性。

The location of Beijing is joint to Hebei Province and Tianjin City. It is lower in the south-east and higher in the northwest. There are more than 200 rivers in Beijing, such as Chaobai River and Yongding River. And the natural resources are really abundant in Beijing. Be influenced by the temperate zone continental monsoon climate, Beijing is covered by the warm temperate zone's hardwood forest. At the same time, the distribution of plants is varied by the changing of altitude. So there are many different plants. On the other hand, changed by the diastrophism, efflorescence, and current, Beijing has many different views such as rivers, lakes, and springs. Those differences combined many gardens, parks, and historical sites make the wonderful views in Beijing. The last, make an amazing city who famous for both historical and modern, full of diversity.







北京市主要水系图 Distribution of Beijing's rivers







■ 北京地貌景观（长城） Beijing's topographic view (the Great Wall)





■ 北京山地地貌景观(近景) Beijing's geographic view (close shot)



■ 北京山地地貌景观(近景) Beijing's hill view (close shot)

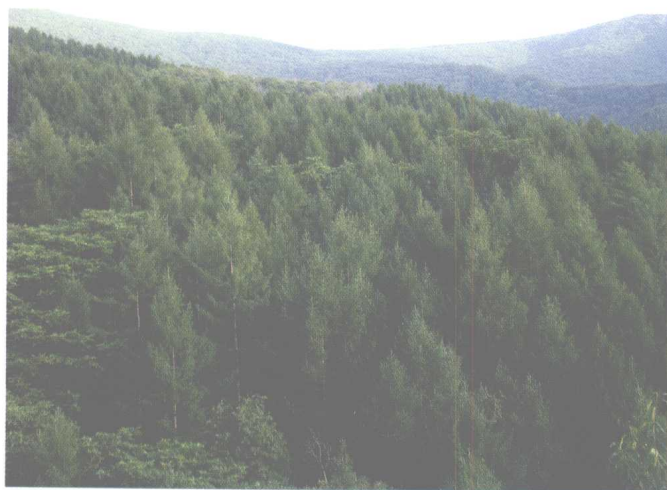


■ 北京山地地貌景观(远景) Beijing's hill view (establishing shot)





■ 北京植被景观（秋季） Beijing's vegetation (fall)



■ 北京植被景观 Beijing's vegetation



■ 北京植被景观（夏季） Beijing's vegetation (summer)