

中国国家自然遗产



# 长白山

植被垂直 景观  
火山地貌

吉林省长白山保护开发区管理委员会

## NATURAL NATIONAL HERITAGE **CHANGBAI MOUNTAIN**

Vegetation, Vertical Scenic Plant Strata And  
Volcanic Landforms Landscape

The Administration Commission of Preservation and  
Development for Changbai Mountain, Jilin Province





## 前言

中国自然遗产地——长白山植被垂直景观及火山地貌景观，位于欧亚大陆东缘，太平洋西岸，地处中国吉林省东南部，北纬 $42^{\circ}39'11'' \sim 41^{\circ}53'20''$  东经 $127^{\circ}42'36'' \sim 128^{\circ}10'34''$ 。该地区属于温带湿润区，大陆季风气候。区内因独特、雄伟壮丽的火山地貌和全球生物多样性保护地而闻名世界；区内火山锥体最高峰白云峰海拔2691米，为中国东北第一高峰。区域总面积14.9475万公顷，核心区7.5758万公顷，它在诸多方面具有突出的普遍价值：

**突出的地质价值：**极为独特、罕见的火山地质、地貌，是构成地球演化史第四纪阶段的突出例证；

**原始的森林生态系统：**发育良好、保存完整的从温带至极地的垂直分布森林植被景观，科学价值巨大；

**显著的生物多样性：**丰富多样且极少受到破坏的生物和濒危生物种类的汇聚地，构成了欧亚大陆北半部生物分布的缩影；

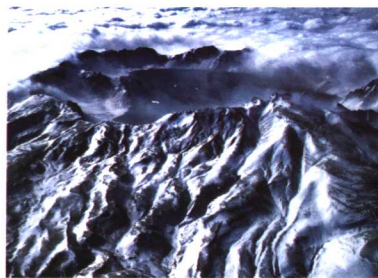
**悠久的历史和文化：**源远流长的历史，独具特色的民族文化，构成了长白山自然大背景中的人文景观。

以“神山、圣水、奇林、仙果”而著称的长白山国家自然遗产地，曾先后被确定为国家级自然保护区、国际生物圈保留地、国际A级自然保护区。

这本画册力图从地质、生态、生物和历史文化等不同侧面反映长白山国家自然遗产地卓越的自然品质和文化内涵。然而镜头和语言在这里又显得如此局限，她的原始、自然、朴素、神秘、她的美，她的博大，她的震撼力……所有这一切只有身临其境才能感受。







神山 Holy Mountain



圣水 Sacred Water



奇林 Wonderful Forest



仙果 Immortal Fruits

## Preface

Changbai Mountain, China's Natural National Heritage Treasure, with its Unique Vegetation, Vertical Scenic Plant Strata and its Landscape of Volcanic Land-formations... is located in the eastern edge of Eurasia, west of the Pacific Ocean and in the southeastern area of Jilin Province in China. Situated, between 42°39' 11"N latitude ~ 41°53' 20"N latitude and 127° 42' 36"E longitude ~ 128° 10' 34"E longitude, this area is a temperate zone region, kept moist by the continental monsoon climate.

It's famous for its special and magnificent volcanic landforms as well as for its global biodiversity in one of the world's protected areas. In all it covers an area of 149,475 hectares, with 75,758 hectares of core reserve, that together represent significant importance. It also holds Baiyun Peak, the highest peak in northeast of China and the highest volcanic cone in the district at an elevation of 2,691 meters.

**Outstanding geological value:** the special and rare volcanic geology with its associated landformations is an outstanding example of the forth stage of earth's evolutionary history.

**Primitive forest ecosystem:** the mature and fully reserved landscape of mountain forest vegetation that ranges from temperate zone to polar region has great scientific value.

**Remarkable biodiversity:** it's a gathering place for a diverse range of living creatures in their multitude, as well as for those living things on the brink of extinction, and also the home of miniature biological species distributed in northern of Eurasia.

**Long history and culture:** with its long, well-established history and characteristic national culture, Changbai Mountain. is the natural background of a humanistic landscape.

Changbai Mountain as a natural national heritage place, is famous as a holy mountain, for its sacred water, the wonderful forest and its immortal fruits... and has been confirmed as national level natural reserve, an international biosphere reservation, as well as an international A-Level natural reserve.

This photo album of Changbai Mountain, is intended to herald its unique character as well as impart its cultural importance, not only for its natural national heritage in geology, ecology and living things, but also for its history, and for its cultural aspects. However, as lens and language have its limitations... her originality, her natural simple mystery, her grand beauty and her surprising presence... can only be felt in a personal way on the scene.





# 长白山植被垂直景观及火山地貌景观区域范围图 Map of Vegetation, Vertical Scenic Plant Strata and Volcanic Landformation Landscape of Changbai Mountain



长白山区在中国的位置图

Map showing the Vegetation, Vertical Scenic Plant Strata and Volcanic Landform Landscape of Changbai Mountain in China

- 图 例
- 自然遗产提名地界
  - 国 界
  - 林 业 局 界
  - 林 班 界
  - 公 路
  - 铁 路
  - 大 车 道
  - 保 护 站 界
  - 河 流 湖 泊
  - 等 高 线
  - 林 班 号
  - 山 峰
  - 瞭 望 台
  - 电 站
  - 核 心 区
  - 缓 冲 区







植被垂直  
火山地貌 景观

CHANGBAI MOUNTAIN NATIONAL NATURAL HERITAGE OF CHINA

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悠久的历史和文化

Long History and Culture







长白山

植被垂直  
火山地貌景观

## 突出的地质研究价值

## Outstanding Geological Research Value

长白山火山是中国最大的、保存完好的碱性岩组成的第四纪巨型复式火山锥，是我国唯一一座在第四纪地质时期发生大规模普林尼式大爆发的火山，被认为是世界上最大的火山喷发之一，也是著名的休眠火山。长白山火山堆积物的地质特征具有稀有性、独特性和典型性，科学上具有国际地理意义。由16座山峰和刃形山脊环抱成完好的火山口，其地貌形态气势磅礴、宏伟壮观，火山口积水成湖，为我国海拔最高、水域面积最大的火山成因湖泊，同时也是具有极高美学观赏价值的地质遗迹。长白山火山地质遗迹在研究火山活动机制、岩浆演化、火山地貌学、火山岩石学、火山构造学和火山灾害学等方面均具有巨大的科学意义。



火山锥体  
Conical Volcanic Body



四里洞火山熔岩隧道地质遗迹

Sili Dong Volcanic Lava Tunnel Geological remains

Changbai Mountain is the biggest and best reserved "Quaternary gigantic polygenetic volcanic cone" in China which was composed of alkali rocks. It is the only volcano to have experienced a grand scale Plinian volcanic eruption in the Quaternary Geological Period in China... which is regarded as one of the biggest volcanic eruptions in the World... as well as being a famous dormant pyroclastic.

The geological feature of the Changbai volcanic deposit is that it's rare, unique, typical and has international geological importance in science. With 16 peaks and edge-shaped mountain ridges surrounding the complete caldera, its landform is of great momentum, and magnificence. Accumulated water in the caldera has become a lake, that is now the highest lake above sea level and largest in water area with a volcanic origin in China... and also takes pride as the geological relic with highest esthetical visual value.

Changbai Mountain volcanic geological remains have huge scientific importance in research of volcanic activity mechanisms, magma evolution, volcanic geomorphology, volcano petrology, volcano tectonics and volcanic disaster study.



温泉 Hot Spring



炭化木 Carbonized Wood



浮岩流 Floating Rocks Flow



熔岩钟乳石 Lava Stalactite



无根火山口 Volcanic Crater without Root



绳状熔岩 Rope Type Lava





长白山

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火山地貌  
景观

## 突出的地质研究价值

Outstanding Geological Research Value



华盖峰 Huagai Peak



冰川U型谷  
Glacial U-Canyon

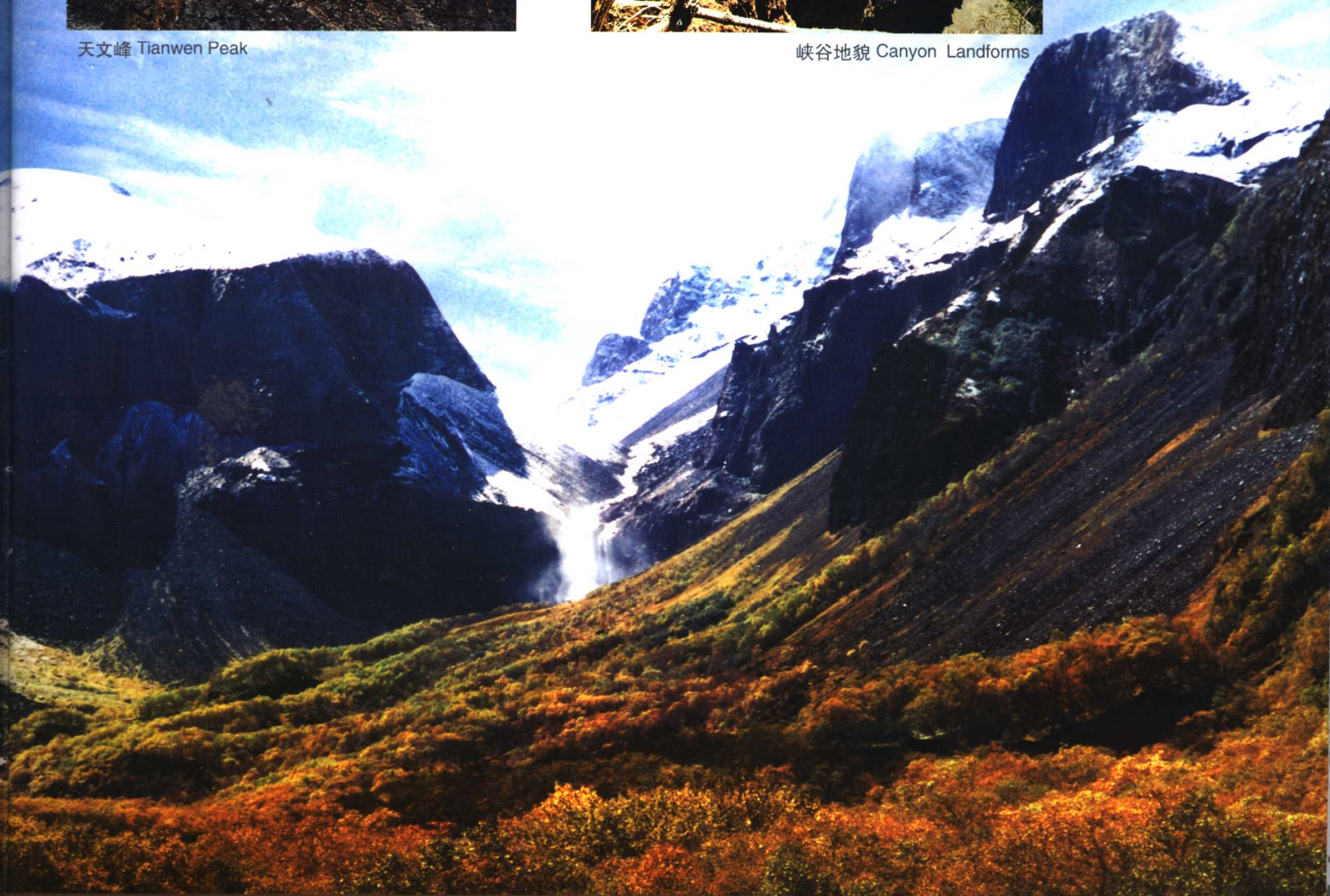




天文峰 Tianwen Peak



峡谷地貌 Canyon Landforms





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## 突出的地质研究价值

Outstanding Geological Research Value

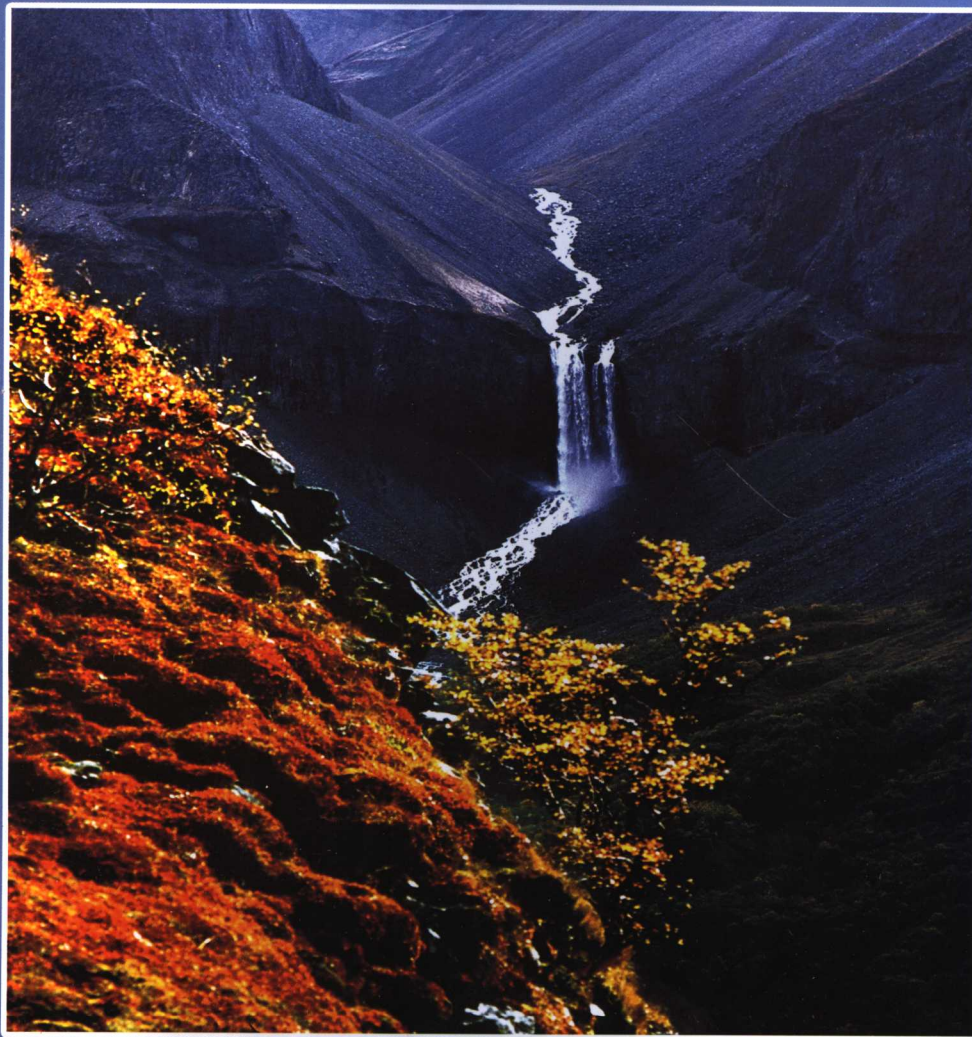


巍巍长白山  
Lofty Changbai Mountain



长白山瀑布 — 落差高达 68 米，以世界落差最大的火山湖瀑布列入吉尼斯世界记录大全。

Changbai Waterfall with a drop of 68 meters, has been listed in the Guinness Book of Records as the volcanic lake waterfall with the highest drop.



圆池（天女浴躬池） Round Lake (Heavenly Maiden Bathing Place)

小天池 Small Tianchi Lake





长白山

植被垂直  
火山地貌景观

# 原始的森林生态系统

## Primitive Forest Ecosystem

长白山有世界上最好的原始温带森林生态系统，是世界上保存最完整的典型自然综合体。联合国教科文组织生态司顾问普尔教授说：“象长白山这样保存完好的森林生态系统，在世界上是少有的，她不仅是中国人民的宝贵财富，也是世界人民的宝贵财富。”植物垂直分布，从山底到山顶，在垂直高差2000多米，水平距离50多公里的范围内，浓缩了从北半球温带到北极圈植物水平分布2000公里的生态景观。同时，长白山还是松花江、图们江、鸭绿江的发源地，是滋养关东大地万千生灵生命的源泉。

### 高山苔原带 High Mountain Tundra Zone

位于海拔2000~2600米

High Mountain Tundra Zone is located at  
2000 ~ 2600 meters above sea level.

### 亚寒带岳桦林带 Subfrigid Zone Birches Forest Zone

位于海拔1700~2000米

Subfrigid Zone Birches Forest Zone is located  
at 1700 ~ 2000 meters above sea level.

### 亚寒带针叶林带 Subfrigid Zone Conifer Forest Zone

位于海拔1100~1700米

Subfrigid zone Conifer Forest Zone is located at  
1100 ~ 1700 meters above sea level.

### 寒温带针、阔叶混交林带 Frigid Temperate Zone Conifer and Broadleaf Mixed Forest Zone

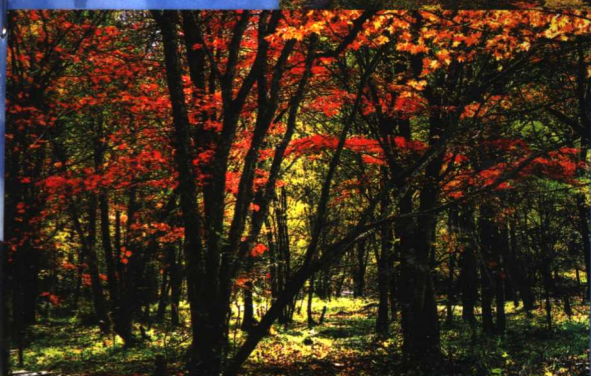
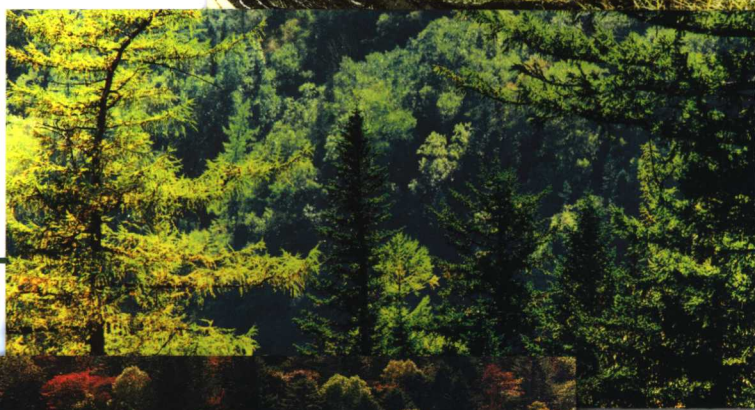
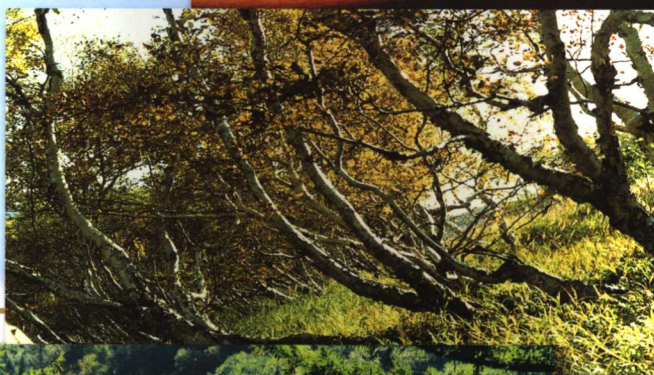
位于海拔720~1100米

Frigid Temperate Zone Conifer and Broadleaf Mixed  
Forest Zone is located at 720 ~ 1100 meters above  
sea level.



"The Primitive Temperate Forest Ecosystem on Changbai Mountain is the best in the world and also the most integrated reserved typical natural composite of its type." Professor Pierre, consultant of the Ecological Department of UNESCO, commented that ecological forests like Mt. Changbai, which have been reserved so completely were rare in the world... and it was not only a great treasure for the Chinese people, but also for the whole world.

Here plants are vertically dispersed from the base of the mountain right to the summit, in an area of vertical height difference of more than 2000 meters. And with a horizontal distance of more than 50 kilometers it presents plants horizontally dispersed with some 2000 kilometers of ecological scenery from the "Temperate Zone of the Northern Hemisphere" all the way to the "Arctic Circle." Importantly, Changbai Mountain is the source of the Songhua River, Tumen River and Yalu River, nourishing thousands of people and living things in northeastern China.



位于海拔 300 ~ 720 米

Temperate Zone Broadleaf Fallen Zone is located at 300 ~ 720 meters above sea level

温带落叶阔叶林带

**Temperate Zone**

**Broadleaf Fallen Zone**



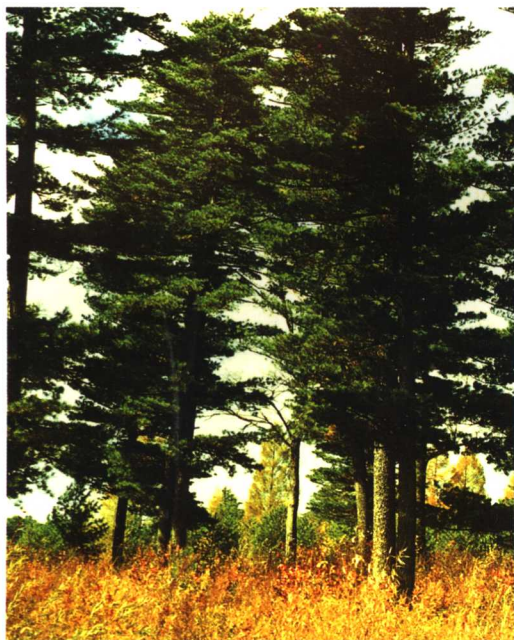


长白山

植被垂直  
火山地貌景观

## 原始的森林生态系统

### Primitive Forest Ecosystem



红松林——中国最大的红松母树林原始群落  
Pinus Koraiensis Forest - Biggest Pinus Koraiensis  
Maternal Woods Primitive Stand in China



长白松林——省级长白松自然保护区  
Changbai Pine Forest - A Provincial level, Changbai Pine Tree Natural Reserve

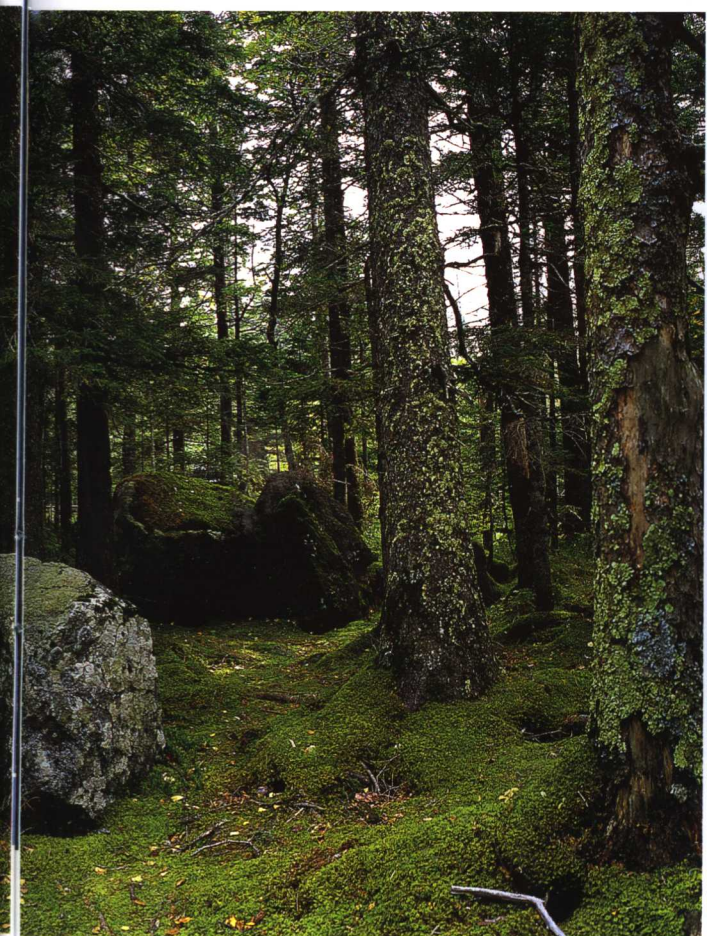


原始森林——国际“A”级自然保护区  
Primitive Forest - International "A" Level Natural Reserve





鸭绿江之源  
Source of the Yalu River



松花江之源  
Source of the Songhua River



图们江之源  
Source of the Tumen River





## 显著的生物多样性

### Remarkable Biodiversity

长白山是欧亚大陆同纬度地区原生态保存最好、生物物种最丰富的地区，是重要的生物栖息地。据《长白山动植物名录》记载，长白山有以关东三宝为代表的生物共计 127 目 385 科 1497 属 3376 种，其中，动物 42 目 176 科 756 属 1033 种，植物 85 目 209 科 738 属 2343 种。同时，长白山也是东北亚唯一有高山苔原带分布的山地，有珍稀的高山苔原植物 330 多种，是研究高山苔原植物失而不可复得的天然宝库。

Of places with the same latitude, Changbai Mountain is an area where primitive ecology has been best reserved in Eurasia and is a rich place, with many species and an important habitat for living creatures.

According to the record of 《List of Animals and Plants of Changbai Mountain》, there are 127 orders, 385 families, 1497 Genus, and 3376 species, of living things totally represented by the Northeast Three Treasures. These include animals with 42 orders, 176 families, 756 Genus, and 1033 species... plus plants with 85 orders, 209 families, 738 Genus, and 2343 species. In addition, Changbai Mountain is the only all Pine Tundra scattered mountainous region in Northeast Asia with more than 330 species of rare Alpine Tundra plants... making it a very precious natural treasure house for research on Alpine Tundra plants.



紫杉（东北红豆杉）：国家Ⅰ级保护植物  
*Taxus cuspidata* Sieb. et Zucc.  
National I level protected plant



天女木兰：国家Ⅲ级保护植物  
*Magnolia sieboldii* K. Koch  
National III level protected plant



草苣蓉：国家Ⅲ级保护植物  
*Boschniakia rossica* (Cham. et Schlecht.) Fedtsch. et Flerov  
National III level protected plant



长白红景天：国家Ⅲ级保护植物  
*Rhodiola angusta* Nakai  
National III level protected plant



温泉瓶尔小草：国家Ⅱ级保护植物  
*Ophioglossum thermale* Kom.  
National II level protected plant