

中国生物多样性保护和绿色发展基金会 资助
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一滴水
生态摄影
丛书



A Single Drop of Water
Ecological Photography
Album Series

多样性的中国森林

DIVERSE FORESTS OF CHINA

陈建伟 著 / 摄

CHEN JIANWEI



中国林业出版社

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序

森林被喻为“地球之肺”，是陆地生态系统的主体，在维护地球生态平衡中发挥着决定性作用，在“三个系统一个多样性”中处于最重要的地位。“林是山之衣、水之源”，如果没有森林，湿地就会干枯。荒漠化的主要原因是森林植被遭受破坏，防沙治沙必须恢复林草植被。生物多样性主要是依赖森林生态系统而存在的，维护生物多样性必须保护森林。同时，森林还具有巨大的固碳释氧功能，在应对气候变化中具有特殊作用。据科学家测算，森林提供了人类生存60%的氧气，维护了全球陆地90%的生物物种。假如森林从地球上消失，陆地90%的生物将灭绝，全球90%的淡水将白白流入大海，生物固氮将减少90%，生物放氧将减少60%，人类将无法生存。

长期以来，森林为人类的繁衍生息和文明进步做出了重要贡献。但是，由于不合理的开发利用等多种原因，全球森林已从人类文明初期的约76亿公顷减少到目前的38亿公顷，加剧了土地荒漠化、水土流失、物种灭绝、温室效应等生态危机。科学家指出，由于大量森林被毁，地球已经出现比以往任何问题

都难以对付的生态危机，生态危机有可能取代核战争成为人类面临的最大威胁。联合国发布的报告指出，由于人类对木材和耕地的需求，全球森林减少了一半，9%的树种面临灭绝，30%的森林变为农用地，80%的原始森林遭到破坏，剩余的森林不是支离破碎，就是残次退化，而且分布极不均匀，难以支撑人类文明的大厦。为促进全球森林的可持续经营、保护和发展，联合国决定将2011年定为国际森林年，旨在通过举办一系列活动，交流森林可持续经营的经验，增强人们保护森林的意识，扭转全球森林面积不断减少的局面。

中国政府历来高度重视森林资源保护发展工作，相继实施了“三北”防护林、天然林保护、退耕还林等林业重点工程，持续开展了全民义务植树活动，森林资源实现了显著增长。最新森林资源清查结果表明：全国森林面积1.95亿公顷，森林覆盖率20.36%，森林蓄积量137.21亿立方米，人工林保存面积6200万公顷，继续保持世界首位。据联合国全球森林资源最新评估报告，全球年均减少森林面积660多万公顷，而中国年

均增加森林面积400多万公顷，人工林面积年均增长量占全球年均增量的53.2%，成为森林资源增长最快的国家，在很大程度上抵消了其他地区的森林高采伐率。同时，全国累计建立林业自然保护区2011处，总面积1.23亿公顷，占国土面积的12.8%，有效保护了90%的陆地生态系统类型、85%的野生动植物种群、65%的高等植物群落。据中国林业科学研究院监测评估，全国森林植被总碳储量78.11亿吨，年涵养水源量4947.66亿吨，年固土量70.35亿吨，年吸收大气污染量0.32亿吨，仅固碳释氧、涵养水源、保育土壤、净化大气环境、积累营养物种及生物多样性保护等6项生态服务功能的年价值就达10万亿元，相当于全国GDP总量的近1/3，为社会提供了较为丰富的林产品和生态产品。

我国森林资源的快速增长，不仅为本国经济社会发展提供了坚实基础，也为人类社会的文明进步做出了重要贡献。我们应该利用2011国际森林年的这个平台，广泛宣传我国在保护发展森林资源方面取得的伟大成就和积累的成功经验，让全

世界都了解和关注中国林业。在2011国际森林年即将到来之际，陈建伟同志将多年来自己拍摄的作品编辑成《多样性的中国森林》生态摄影集正式出版，从生态系统多样性的角度，介绍了我国的森林资源，视角新颖，层次清晰，图文并茂，引人思考。该摄影集通过大量精美的图片，既为大家展现了丰富多彩的森林和珍贵多样的野生动植物，也警示人们正视森林面临的威胁和挑战，提醒大家更好地关注森林、爱护森林、发展森林。这就是中国的一名林业工作者为2011国际森林年付出的实际行动，但愿能够激励更多的人行动起来，共同为了保护森林资源和地球家园做出自己应有的贡献。

国家林业局局长

贾治邦

2010年12月

Foreword

Forests are compared to the Lungs of the Earth. As a major part of the terrestrial ecosystem, forests are crucial in maintaining the global ecological balance and are the most important one among the “three ecosystems”, namely forest ecosystem, wetland ecosystem, and desert ecosystem. Just like what clothes are to we human beings, forests provide protective layers to the mountains. Without the water-conserving forests, wetlands would dry out. The main cause for desertification is the destruction of forest vegetation, so rehabilitation of the latter is a must for desertification control. Given the critical role that forest ecosystem plays in biodiversity conservation, it is of absolute necessity to put forests under effective protection if sufficient biodiversity is to be preserved. In the mean time, forests have essential function of carbon fixation and oxygen emission, playing special role in addressing climate change. According the measurement of scientists, forests provide 60% of oxygen needed for human survival and 90% of global terrestrial species rely heavily on forests. In other words, if there were no forests available on earth, 90% of terrestrial creatures would extinct, 90% of fresh water would be rushed directly into the oceans, the biological carbon fixation capacity would decrease by 90%, and biological oxygen emission would decrease by 60%. Consequently, the human beings would not be able to survive on this planet.

For a long period of time, forests have made significant contribution to the living and thriving of the mankind, hence having greatly promoted human civilization. However, due to irrational exploration and utilization of the forest resources, among many other reasons, the forested area of the world has decreased from 7.6 billion ha at the beginning of human civilization to current 3.8 billion ha, aggravating

such ecological crises as land desertification, soil and water erosion, species extinction and greenhouse effect. It is pointed out by scientists that due to the massive destruction of forests, the earth is facing an ecological crisis which is much more difficult to tackle with than any other problems. Ecological crisis might replace the danger of nuclear war to become the greatest threat to human beings. The report issued by the United Nations indicated that the global forest has decreased by half due to people's demand for timber and arable land, with 9% of tree species close to extinction, 30% of forests converted to farmland, 80% of primary forests destroyed, and the remaining primary forests being either fragmented or degraded. All these, in addition to their unevenly distributed feature, has made the remaining forests inadequate to support the mansion of human civilization. The United Nations General Assembly declared 2011 as the International Year of Forests to raise awareness on sustainable management, conservation and sustainable development of all types of forests. In this regard, a number of activities will be held to exchange experiences in sustainable forest management, enhance people's awareness of forest protection and reverse the continuous decreasing trend of global forest area.

The Chinese government has always attached great importance to the protection and development of forest resources, and launched a number of key forestry programs, such as “Three-north” Shelterbelt Program, Natural Forest Protection Program and Land Conversion Program (from farmland to forestland), and continuously implemented Compulsory Tree Planting Campaign, through which the forest resources has increased remarkably. According to the latest forest resources inventory, the total forest area of China is 195 million

ha, with the forest coverage reaching 20.36%, forest stock volume amounting to 13.721 billion m³, and the plantation area falling at 62 million ha, ranking at the first place worldwide. The latest assessment report of the United Nations on global forest resources indicates that the net loss of global forests was 6.6 million hectares per year, while the forests of China were increasing by more than 4 million ha per year. The annual increase of plantation area of China accounts for 53.2% of the world's average. With its fast-paced growth of forest resources, China, to a large extent, offsets the high logging rate of other regions. At the same time, China has established 2011 forest-oriented nature reserves, whose total area reached 123 million ha, or 12.8% of the country's total land area. Thanks to this, approximately 90% of terrestrial ecosystem, 85% of wild fauna population and 65% of higher plant communities have been put under effective conservation. According to the monitoring and assessment of the Chinese Academy of Forestry, a total of 7.811 billion tons of carbon is stored in China's forest vegetation, and the forests have conserved 494.766 billion tons of water and 7.035 billion tons of soil and absorbed 32 million tons of air pollutant each year. The annual value generated by forests, in terms of its ecological functions such as fixing carbon and emitting oxygen, conserving water source, controlling soil erosion, purifying atmosphere, accumulating trophic species and conserving biodiversity, amounts to 10 trillion yuan, taking up nearly one third of China's GDP. In addition to the abundant forest products, the forests have also yielded rich supply of ecological products for the society.

The rapid growth of China's forest resources has not only laid a solid foundation for the economic and social development of China

itself, but also made significant contribution to the progress of the entire human civilization. The International Year of Forest 2011 offers a good platform for China to showcase its achievements and expertise in forest resources protection and development, in turn to derive better understanding about and interests in China's forestry from the international communities. As the International Year of Forest 2011 approaches, Mr. Chen Jianwei compiles and publishes an ecological album—Diverse Forests of China—that highlights the photos he had taken over the past decades to offer a more comprehensive picture about China's forest resources from the perspective of ecosystem diversity. This album, with its original viewpoints, distinctive layout and convincing captions, will surely prompt the readers into careful thoughts about forestry development. Through a good number of magnificent pictures, this album not only takes the readers closer to the colorful forests and precious wild faun/flora species that inhabit there, but also alerts people about the threat and challenges facing the forests. It is a helpful reminder that more attentions are needed to safeguard the survival and increment of forests and corresponding resources. As a Chinese forester, Mr. Chen hopes that, through his concrete action to embrace the upcoming International Year of Forests 2011, more people would be mobilized to make their due contribution to the conservation of forest resources and our planet.

JIA ZHIBANG

Administrator, State Forestry Administration, PRC

December 2010

前言

森林是陆地生态系统的主体，各种各样我们熟悉和不熟悉的物种以及它们所包含的庞大基因都有赖于多样性的森林生态系统而存在。人类自身的生存和发展从来没离不开过森林，从生命进化史的角度看，多样性的森林提供了生命繁衍的基础；从文明发展史的角度看，多样性的森林提供了支撑和推动文明进步的材料；从文化发展史的角度看，多样性的森林滋润着人类的心灵，给人以无限的灵感和创意。不仅如此，森林一刻不停地、始终默默地为我们提供着诸如固碳释氧、调节气候、涵养水源、保持水土、保护生物多样性等生态服务，你在享受这些服务的同时是否意识到森林的存在，是否意识到森林也需要人类的呵护？

中国是世界上森林生态系统多样性最为丰富的国家，这是大自然历经亿万年的进化留给我们的宝贵财富。在全球生态环境日趋恶化的今天，我们的森林也面临着严重的危机，认识和保护我们的森林是国家社会经济发展的必须，更是每个人的责任。

我当过农民，做过工人，是改革开放的春风送我考上了大学并自此进入了林业战线，成为了一名光荣的务林人。在林业，我的出身就是一个普通的森林调查队员，做过森林、湿地、荒漠、野生动植物、自然保护区的调查规划、科研和管理的工作，足迹遍布祖国的大江南北，毕生的精力都投入到了森林和生物多样性保护的工作中。几十年的工作经历使我有机会走进祖国的森林，更

爱上了祖国的森林，并拿起相机记录祖国的森林。从用照片来收集资料、反映事实到用照片后面的故事来引起思考、推动工作、呼唤社会。工作需要摄影，摄影促进工作，思考让我把生态的理念注入了其中，生态摄影不仅给我的工作带来了帮助，也为我留下了不尽的探索和感悟。

保护森林及其多样性不是某些人的事，也不是哪个部门的事，它需要全社会的意识，每个人的决心、智慧和具体的行动。作为一个务林人，我希望用多年的积累，奉献给大家一本通俗易懂、赏心悦目的生态摄影画册，讲述中国森林的伟大、神秘和美丽。中国森林如此博大丰富，这本称之为“多样性的中国森林”的画册，只能是管中窥豹而已，其中的一些观点也有待商榷，但我一直在努力、在思考，在“2011国际森林年”到来之际，我希望将自己对中国森林的认识和生态摄影的实践拿出来与大家共同分享和讨论，以了我和一些老林业工作者的夙愿，希望有更多的人关注森林，积极参与到保护森林的行动中来。



2010年12月

Preface

Forests are a major part of the terrestrial ecosystem. They contain various species, both familiar and unfamiliar, and host an enormous gene pool upon which we all rely. The survival and development of humanity has never been separated from that of forests. Viewed from the perspective of evolution, forests provide a foundation for the multiplication of life. From the perspective of the development of civilization, forests provide materials for supporting and promoting human progress. From the perspective of cultural development, forests enrich the lives of human beings by providing them with unlimited inspiration and innovation.

Moreover, forests have been silently and continuously providing various ecological services to us, such as carbon fixation, oxygen emission, climate regulation, water source conservation, soil and water erosion prevention, and biodiversity conservation. When you are enjoying these services it is easy to take the existence of forests for granted. Are you aware that forests need care and protection from all of us?

China has one of the most diverse forest ecosystems in the world. Our forests are a precious treasure left to us by nature following billions of years of evolution. Today, whilst the global ecology and environment is deteriorating, our forests are under serious threat. It will be necessary for governments and organizations responsible for national, social and economic development, and increasingly the responsibility of individuals, to recognize the vulnerability of, and to protect, our forests.

I used to be a farmer and a laborer years ago. Thanks to the policy of reform and opening-up, I was able to receive college education and thus be recruited by the forestry sector, becoming an honorable forester. I started my career as an ordinary Forest Surveyor. I was involved in the inventory, planning and management of forests, wetlands, desert, wild fauna and flora, and nature reserves. I have traveled to almost every corner of my motherland and devoted all my life to the conservation of

forests and biodiversity. Decades of work experience provided me with the opportunity to access, fall in love with and record the forests of our motherland with my cameras. The photos were good instruments for collecting data and reflecting fact. Even more so, the stories behind the images inspire my thoughts, promote my work and call for social consciousness. My work needs photography, and the photography promotes my work. My thinking injects the concept of ecology into photographs, the ecological photography not only helps me in my work, but also leaves me with an opportunity for endless exploration and apprehension.

Conservation of forests and their biodiversity is not just the responsibility of some people, or some institutions; it requires the consciousness of the whole society, and the determination, wisdom and practical action of everybody. As a forester, I hope to use my amassed work over the years to present to the reader an easy-to-understand and visually appealing ecological photography album to illustrate the greatness, mystery and beauty of the forests of China. China's forests are so copious, that this album, so titled "Diverse Forests of China", can only provide a very limited view. Some of the points expressed in this publication could be seen as controversial, but I have endeavored to provoke thought and contemplation. On the occasion of 2011 being the International Year of Forests, I wish to share my understanding of China's forest and the practice of ecological photography with you all, so as to fulfill my and other senior foresters' long cherished hope that more people will care about forests and take an active part in the activities of forest conservation.

CHEN JIANWEI

December 2010

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