The background of the cover is a high-resolution photograph of a mountainous region. In the foreground, a wide river flows through a valley. On the right side, there are terraced agricultural fields. The middle ground shows steep, forested slopes. In the background, several large, rugged mountains with patches of snow or light-colored rock rise against a blue sky with scattered white clouds. The overall scene is bright and clear, suggesting a healthy natural environment.

# PROTECTING CHINA'S BIODIVERSITY

A GUIDE TO LAND USE,  
LAND TENURE & LAND PROTECTION TOOLS

## **The Nature Conservancy**

The Nature Conservancy is the leading conservation organization working around the world to protect ecologically important lands and waters for nature and people. The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. The Conservancy works in all 50 states and more than 30 countries.

### **Worldwide Office**

The Nature Conservancy  
4245 North Fairfax Drive, Suite 100  
Arlington, VA 22203-1606

### **Beijing Representative Office**

The Nature Conservancy  
B4-2 Qijiyuan Diplomatic Compound  
No. 9 Jianwai Dajie, Chaoyang District  
Beijing 100600  
People's Republic of China

Kram, M., Bedford, C., Durnin, M., Luo, Y., Rokpelnis, K., Roth, B., Smith, N., Wang, Y., Yu, G., Yu, Q., and Zhao, X. (2012).  
*Protecting China's Biodiversity: A Guide to Land Use, Land Tenure, and Land Protection Tools*. (N. Smith, Ed.) Beijing: The Nature Conservancy.

© 2012 by The Nature Conservancy

Design by Propeller; Chicago, IL

Cover photos by Scott Warren. Upper Yangtze River, northwestern Yunnan Province.

ISBN 978-0-9849792-0-2

# Executive Summary

Two years ago, The Nature Conservancy (TNC) began significantly expanding our land protection efforts in partnership with the Chinese government. Accordingly, it became necessary to enhance our understanding of Chinese land tenure. The answers to most of our questions were surprisingly hard to come by. Thus, we embarked on a journey to compile the disparate information on Chinese land issues into a condensed format. As a result, we have created this book for anyone with an interest in Chinese land issues, and especially for those undertaking land protection initiatives. Contributions from the Bank of America Charitable Foundation made this effort possible.

This book is the first of its kind, providing a comprehensive yet digestible overview of land use, land tenure, and land protection opportunities in China. It is a reference guide that covers the following topics:

- **The “lay of the land”**—an orientation to Chinese biodiversity values and land use practices.
- **Land tenure system**—a description of China’s land tenure system, including government agencies involved in land use decisions; the primary factors affecting land use; and how land use decisions are made and implemented.
- **Land protection in practice**—a description and analysis of land conservation tools and case studies.

We are pleased to share our research with you and hope that it sparks more land protection action in China and beyond.

—*The Nature Conservancy in China*  
*January, 2012*



# PART 1. LAY OF THE LAND

## I. Biodiversity

Terrestrial biodiversity in China is among the highest in the world, and inventories of the distribution and status of the country's biodiversity are fairly comprehensive. Because the existing literature thoroughly documents China's biodiversity, this book provides only a brief overview of species diversity, and then describes the locations, types, and conservation issues associated with each major ecosystem. China is home to 15% of the world's vertebrate species and 12% of all plant species, making it third in the world for plant diversity with 30,000 species (Chinese Academy of Sciences, 1992) (Li et al., 2003).

Major land cover types include, in descending order of percentage cover of China's land mass: grasslands (33%); forests (21%); desert and salt flats (20%); barren lands (7%); shrublands (4%); wetlands, rivers, and streams (2%); and glaciers <1%) (Figures ES-1 and ES-2). The primary threats and conservation issues vary from livestock grazing in grasslands, to historic deforestation in forests, to overhunting and habitat destruction in deserts and salt flats (Table ES-1).

**Figure ES-1. Grasslands, such as those on the Tibetan Plateau (below) are the predominant land cover type in China. Photo by Li Baoming**



**Table ES–1. Major land cover types: sub-categories and primary conservation issues and threats**

Land cover type	Sub-types	Primary conservation issues and threats
<b>Grasslands</b>	<ul style="list-style-type: none"> <li>• Meadow steppe</li> <li>• Typical steppe</li> <li>• Desert steppe</li> <li>• Alpine steppe</li> </ul>	<ul style="list-style-type: none"> <li>• Livestock grazing</li> <li>• Demand for energy resources (e.g., coal and oil)</li> <li>• Global climate change</li> <li>• Overhunting</li> </ul>
<b>Forests</b>	<ul style="list-style-type: none"> <li>• Cold temperate coniferous forest</li> <li>• Temperate coniferous and broadleaf mixed forests</li> <li>• Deciduous broadleaf forests</li> <li>• Warm temperate coniferous forest</li> <li>• Sub-tropical and tropical evergreen broadleaf forests</li> <li>• Sub-tropical and tropical coniferous forests</li> <li>• Tropical rainforests</li> </ul>	<ul style="list-style-type: none"> <li>• Historic deforestation</li> <li>• Timber harvesting</li> <li>• Harvesting of non-timber forest products</li> <li>• Conversion to plantations</li> </ul>
<b>Deserts &amp; salt flats</b>	<ul style="list-style-type: none"> <li>• Sandy</li> <li>• Gravel (Gobi)</li> <li>• Loam (loess deposits)</li> <li>• Clay (saline desert)</li> <li>• Rocky (inselbergs)</li> </ul>	<ul style="list-style-type: none"> <li>• Gathering fuels and digging medicinal herbs</li> <li>• Overhunting and habitat destruction</li> <li>• Mining</li> <li>• Misuse of water resources and drought</li> </ul>
<b>Wetlands, rivers, and streams</b>	<ul style="list-style-type: none"> <li>• Lakes of the Qinghai-Tibetan Plateau &amp; Xinjiang Basin</li> <li>• Freshwater marshes</li> <li>• Coastal wetlands</li> <li>• Rivers</li> </ul>	<ul style="list-style-type: none"> <li>• Land conversion</li> <li>• Unsustainable use</li> <li>• Dams</li> <li>• Pollution</li> </ul>
<b>Glaciers</b>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>	<ul style="list-style-type: none"> <li>• Global climate change</li> </ul>

Figure ES-2. Major land cover types of China (Chinese Academy of Surveying & Mapping, 2004)

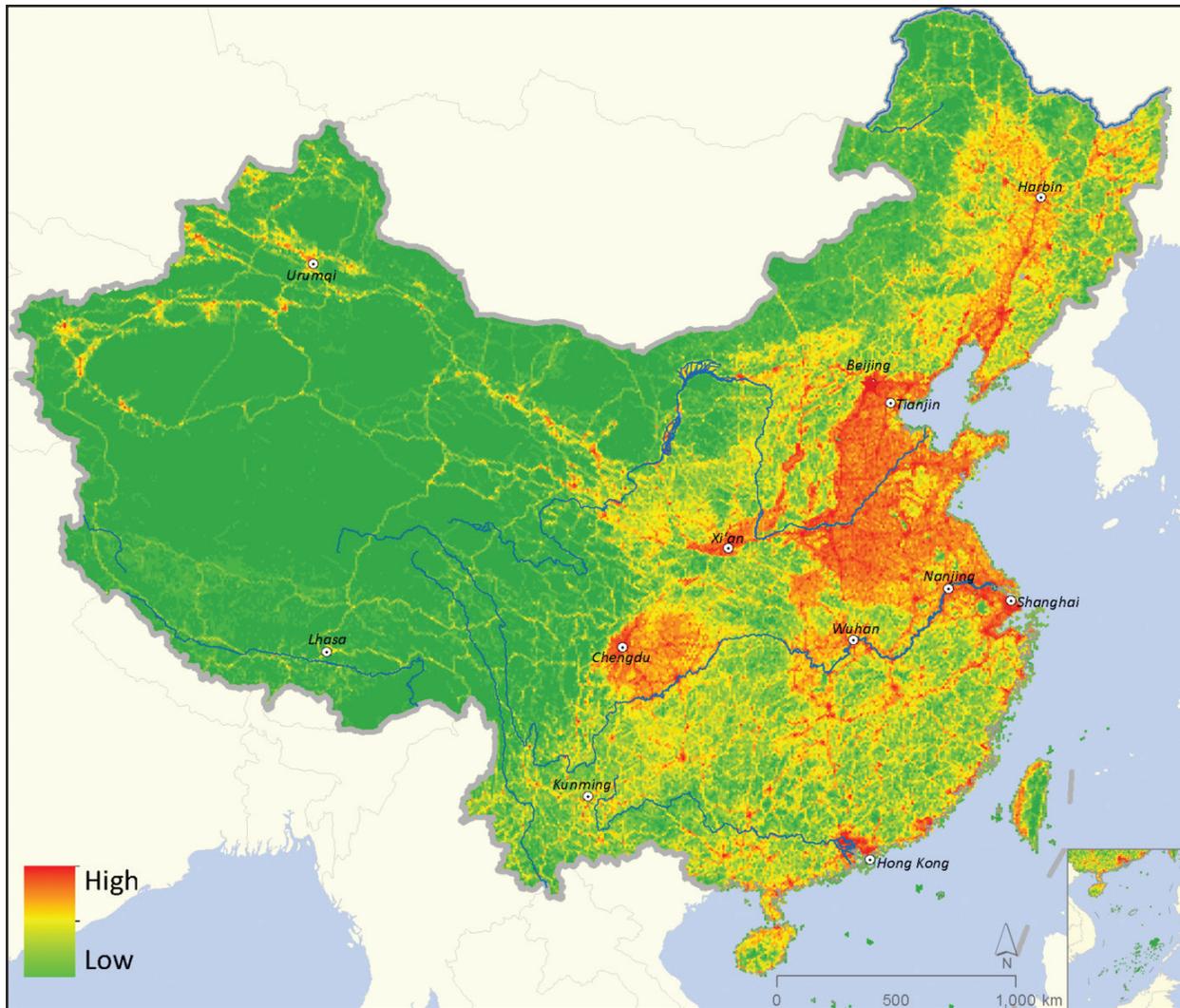


## II. Land Use

This chapter identifies locations and trends in land use, which affects multiple ecosystems and their associated biodiversity. China is experiencing massive land use changes and impacts to the environment due to an unprecedented period of economic growth, which has catapulted it from one of the world's poorest countries 30 years ago to the world's second largest economy today. In fact, the statistics in this chapter changed as quickly as we could write. Based on trends in economic development, population growth, and land use, China's natural landscape will experience significant and increasing pressures well into the future. Some natural landscapes will be converted to non-natural uses entirely. Urbanization will likely have the largest negative impact, while the construction of roads and railways, and the development of energy will cause further fragmentation (Figure ES-3). Other uses such as livestock grazing and timber and forest product harvesting may not entirely convert the natural landscape, but will also have negative impacts. Fortunately, positive changes are also occurring, including massive afforestation efforts and land management/conservation programs.

**Figure ES-3. Cumulative land uses (The Nature Conservancy, 2008)**

This map combines land uses including major roads and railways as of 1994; and cropland, urban settlements, and other developed areas as of 2004. The largest contiguous blocks of habitat exist in northern and western China.



**Urbanization**—China has four times the population of the U.S., within roughly the same area. With 1.3 billion inhabitants, 20% of the world’s population lives in China. While the rate of population growth has been declining for decades, the total number of inhabitants has been growing and is expected to do so through 2030. China’s urban population is growing rapidly; between 1950 and 2009, the percentage of the population living in urban areas quadrupled from 12% to 48% (People’s Daily Online, 2009). Meanwhile, the rural population is declining, opening the landscape in areas that are not urbanized. The forests and agriculturally-productive landscapes of eastern China support far more people and major cities than do the grasslands, deserts, and high mountain regions of the west.

**Cultivated land**—The vast majority of China’s cultivated land lies in eastern China. Nearly all of the arable land, totaling 122 million hectares or 13% of the country, is cultivated (Qiang, 2010). To ensure adequate food production, the government has identified a minimum threshold or “redline” of 120 million hectares of cultivated land (Central Government, 2006). Chinese law also requires a one-to-one replacement (in quantity and quality) of farmland that is converted to other uses. These policies, combined with development and other land use pressures, are shifting the location of farmland. Some cultivated lands are being newly created from other uses such as forestry, grasslands, and wetlands while existing cultivated lands are being converted to other uses such as built-up areas, forests, and grasslands.

**Livestock grazing**—Livestock grazing occurs throughout China and is possibly the most common use of grasslands. China is the world’s largest producer of sheep and goats, and the fourth largest producer of cattle (Food & Agriculture Organization, 2011). Livestock grazing is a major driver of grassland degradation in China. The government has instituted a variety of programs to combat desertification, which has slowed to 3,000 km<sup>2</sup> per year (Reuters.com, 2006).

**Forest uses**—Since the late 1950s, China’s forests have experienced several periods of significant deforestation, which contributed to related environmental disasters such as the Yangtze River flood in 1998. In response, the Central Government has attempted to restore forest cover by investing upwards of 1 trillion RMB into six forest conservation programs, the most significant of which include Grain to Green (1999-2016) and the Natural Forest Protection Program (NFPP) (1998-2020). These programs combine afforestation efforts (primarily in northern China) and timber harvesting bans or limits to restore forest cover. Forest cover was 20% as of 2008; the Central Government aims to achieve 23% forest cover by 2020, and 26% by 2050 (State Forestry Administration, 2007) (State Forestry Administration, 2009).

**Mining and energy development**—China has one of the largest mining sectors in the world and is the world’s largest energy producer (World Bank and International Finance Corporation, 2002) (U.S. Energy Information Administration, 2008). Energy production is on the rise, which will impact biodiversity as China constructs more mines, oil and gas wells, dams and hydropower stations, wind farms, pipelines, and other infrastructure. In particular, western and central China will experience increasing energy development because they hold many untapped and lesser-tapped oil and gas fields, coal reserves, and areas with the highest potential for wind and solar energy production.

**Transportation**—China is expanding its road and rail networks, investing 5 trillion RMB to construct 40,000 km of railroads by 2020 (china.com.cn, 2008) (Ministry of Railways, 2008). The vast majority of planned and existing transit is located in eastern China. Secondary road construction is more of an emphasis in western China. The rail network is expanding nationwide to connect most cities with populations of at least 200,000 (China Railway Construction Corporation Limited, 2008).

## PART 2. LAND TENURE

### I. Overview

*Land tenure* is the way in which people access and use land and natural resources. This part of the book teases apart the elements of the current land tenure system in China, as they relate to land protection efforts. It's critical to bear in mind that throughout China it is common for there to be differences between *de facto* and *de jure* land tenure—what the law allows versus what actually occurs on the ground. Laws and policies related to property rights have historically been applied differently across China. Furthermore, China has a history of land tenure overhauls that will likely continue into the future, thus complicating any long-term project or program. Therefore, what is true today may not be true 2 years from now, let alone 50 or 100. That being said, since 1978, the trend has been toward granting more (rather than fewer) property rights to individuals—even if their ability to exercise these rights varies.

### II. Legal Framework

The **Constitution of the People's Republic of China** (P.R.C., 1982 as amended) and legislation based on the Constitution form the legal basis for the land tenure system. Legislation and reforms are implemented through regulations and policies, and then coordinated through an elaborate planning system. The **Five-Year Guidelines of the P.R.C.** are the major planning documents, which set priorities for economic development, growth targets, and land reforms; China is currently implementing its *12th Five-Year Guideline*. The **Central Committee of the Communist Party Documents** also set priorities and guide the implementation of laws and policies. China has also passed a host of **environmentally-related laws** that govern the use and management of rural lands, natural resources, and protected areas.

### III. Administrative Divisions

The Chinese State (the State) is embodied by the Central Government and is under the leadership of the Communist Party. The Central Government technically maintains authority over all administrative divisions in the country, though the Party is in fact the leading authority. All administrative divisions underneath the Central Government are considered “local government.” There are three such levels: **provincial, county, and below-county** (including districts, townships, and villages). Some provinces are also divided into **prefectures**, which is a fourth type of division that oversees one or more county-level governments. Most land administration occurs at the county level.

### IV. Land Ownership

There are two types of land ownership in China: **state** and **collective**. Typically, one or more villages manage collectively-owned lands (Figure ES-4). Constitutionally, all land in China belongs to “the people,” so technically, land cannot be owned privately. Instead, *use rights* to state and collectively-owned lands are allocated to groups, individuals, or other entities—typically for

30-70 years (see Chapter VIII, Use Rights). As of 1996, state lands totaled 53% and collectively-owned lands totaled 46%; ownership was not determined for the remaining 1% (Ho & Lin, 2003). Collective ownership encompasses nearly all of the cultivated land (94%) and most of the forest (58%) (Qian et al., 2004) (Zhu K., 2011).

**Figure ES-4. Collectively-owned lands are managed by one or more villages, such as the Shigu Village area in Yunnan. Photo by Ami Vitale**



## V. Tenure Reform

In the last 60 years China has witnessed significant transitions in both urban and rural land policies, as the government has experimented with different tenure schemes for cultivated lands, forests, and grasslands to increase productivity and improve local livelihoods. Starting with the rise of the Communist Party and Chairman Mao Zedong, there have been three major waves of reforms:

1. **Private ownership (1930s/1940s to early/mid 1950s):** The State granted individuals full ownership of agricultural land and forest land within this time period, also known as Mao's First Land Reform. Grasslands remained a common property resource.
2. **Collectivization/No individual rights (early/mid 1950s to late 1970s):** The State rescinded ownership rights of individuals for agricultural lands, forests, and grasslands through collectivization.

3. **Decollectivization/Private and increasing use rights (late 1970s to present):**  
The State granted individuals limited and short-term use rights, but not ownership, during a period of initial decollectivization in the late 1970s to mid-1980s. Since then, the State generally has been increasing use rights granted to individuals, except for forests during the 1980s and 1990s. The Central Government is currently concentrating reform efforts on collective- and state-owned forests in an attempt to bring the forest sector “up to date” with the agricultural sector (Xu et al., 2010). Managers of collectively-owned forestland and forests are issuing use rights to individual households, while a small number of state-owned forest farms are distributing them to former employees (Figure ES–5). Post-distribution, individuals enjoy ownership rights over forests (i.e., the trees and vegetation) and use rights of 30 to 70 years over forestland. Additionally, rules have been relaxed so that many types of private transactions involving forestland and forests are now permissible.

**Figure ES–5. The collective forest tenure reform distributes the use rights from collectively-owned forestland to individual households, such as the one shown here in Mingzhu Village, Sichuan.**  
Photo by Steve Blake



## VI. Decision-Makers

Any project affecting land use in China will inevitably involve a myriad of government agencies, collective land managers, and use right holders:

**Government**—Two entities work in tandem to govern China: the Communist Party of China (CPC) and the Central Government (see Chapter III, Administrative Divisions). Within the Central Government, the State Council develops and implements laws through the 90 or so agencies that it manages. The agencies most frequently involved in land use decisions include the Ministry of Land & Resources, Ministry of Agriculture, State Forestry Administration (SFA), Ministry of Housing and Urban-Rural Development, and Ministry of Environmental Protection. For any one plot of land, multiple agencies may be involved in land use decisions based on the natural land cover, current and potential land uses, and protected area designations. County-level agency bureaus have the vast majority of responsibility for land management and administration.

**Collective land managers**—In general practice, one or more villages or sub-villages manages collectively-owned lands through a villagers' committee. Villagers' committees are comprised of three to seven members according to law, and exercise ownership rights over collectively-owned lands by, for example, distributing use rights to villagers for farming, residence, forest use, or other purposes.

**Holders of use rights**—The State and managers of collectively-owned land can decide whether and how to transfer use rights to parties such as state- or private-owned enterprises, individuals, and NGOs. Circulation to third parties is also possible, with restrictions (see Chapter VIII, Use Rights). Anyone can hold use rights, including, but not limited to, foreign entities.

## VII. Land Use Planning

Land use planning determines which use rights are allowed in which places, thus helping or hindering land protection projects. The Central Government supports planning efforts for cultivated land, forests, energy development, transportation, and other land uses. Plans are legally binding, and proposed changes must be approved by the agency which originally approved the plan. That being said, implementation and enforcement is highly variable, and unplanned development is a common occurrence. Nationwide planning efforts most closely related to biodiversity protection include:

**General land use planning**—This refers to the Central Government's planning efforts that focus on agricultural land, construction land, and unused land. The most recent General Land Use Plan covers the years 2006-2020. Maintaining cultivated lands is the emphasis of these plans, though they also accommodate campaigns and initiatives to alter land use and development patterns, such as Grain for Green and the Natural Forest Protection Program.

**Conservation planning**—Conservation planning identifies important areas for protecting and managing high-priority ecological values. Over the last decade, the Central Government has supported at least four efforts to identify important areas for ecological values: Public benefit forests, Ecological Function Conservation Areas (EFCAs), Priority Areas for Biodiversity Conservation, and Major Function Zoning. Of note for land protection efforts, Priority Areas for Biodiversity Conservation are included in the Central Government’s *National Biodiversity Conservation Strategy and Action Plan (2011-2030)* (see Part 3, Land Protection in Practice).

## VIII. Use Rights

**Allowable and prohibited uses**—Land use plans and use rights consider the allowable and prohibited land uses identified by law. For example, the law encourages afforestation and restricts timber harvest, and is fairly ambiguous about other allowable and prohibited activities in forests. For grasslands, the law explicitly allows for livestock grazing and emphasizes the need to revegetate and protect important grasslands, while effectively allowing for just about any activity. The law encourages the use of “unused lands” such as deserts and high alpine areas, but provides limited guidance regarding this use.

**Contract duration**—Contract durations for use rights vary by land use/land cover type. From a land protection perspective, the most significant contract durations include 30-50 years for grasslands; 30-70 years for forestlands; 70 years or more for forestland “with special trees”; and up to 70 years for the rehabilitation of desertified land.

**Rights and obligations**—Allowable rights and perceptions thereof vary greatly, even within villages. Nonetheless, the law delineates contractual rights and obligations associated with use rights such as: the right to independently make decisions about land within the parameters of the contract; the right to make a profit on the land and natural resources; and the right to circulate use rights to other parties within the original contract duration. With the exception of cultivated lands, which must be used productively, the law is unclear as to whether it is permissible to acquire use rights but not use them (i.e., “non-use rights”), as land protection efforts may seek to do.

**Registration**—Chinese law requires documentation of ownership and use rights through contracts and the Central Government is pursuing a uniform registration system. However, according to one estimate, it could take 30-50 years for the Chinese government to register the 1.5 billion parcels of rural land in China (Landesa, 2009). Somewhere between 40-55% of rural Chinese households presently lack certificates and/or contracts validating their land rights (China Law & Practice, 2009) (Deininger et al., 2004) (Prosterman & Zhu, 2009) (Rural Development Institute, 2010). Where certificates or contracts exist, many are incomplete or inaccurate (Deininger et al., 2004). Such variances will continue to cause tenure security issues, land disputes, and relatively slow and inefficient land transactions.

## IX. Tenure Security and Enforcement

While tenure security has improved over the last several decades, it continues to be a major challenge in China. Land reallocations and takings have caused tenure instability in rural areas. Land reallocations refer to administratively-led reallocations of land among households within villages, and were the main cause of conflicts during the 1990s. *Takings* refer to land conversions (such as to commercial development) by local leaders, which have been the main source of conflicts since the 2000s (Vendryes, 2010). Land protection projects must proactively address these vulnerabilities to ensure long-term success.

## X. Other Tenure Factors Affecting Land Protection

**Funding for land protection and management**—Funding available for environmental protection appears to be substantial and growing. For example, China is investing upwards of 1 trillion RMB (approximately US\$142 billion) to implement ecological conservation and restoration programs such as Grain for Green and the NFPP (see Part 1, Lay of the Land). Similarly, the Central Government’s expenditures on environmental protection activities increased by 19% from 2008-2009, from 104 billion to 124 billion RMB (Shik & Yim, 2009). While overall expenditures on environmental protection are trending upward, those for protected areas still may be low compared to other countries (Liu, et al., 2003).

**Protected species**—Different government agencies have developed several lists of species warranting protection. However, from a legal perspective, only the State Key Protected Species lists have any “teeth.” For example, a development project affecting a protected species on these lists may require an Environmental Impact Assessment (EIA).

**Autonomous areas and minority populations**—More than 60% of China’s territory is inhabited by minority populations, although recognized ethnic minorities comprise just 8% of China’s population (National Bureau of Statistics, 2011). All citizens are assigned one of the 56 officially-recognized ethnicities upon birth, the majority being identified as Han. Given the vast areas inhabited by ethnic minorities and the high conservation value of many minority “autonomous areas,” ethnicity is likely to play a significant role in land protection projects. The presence of ethnic minorities or the ethnic autonomy status of a project location may require accommodations to local customs, language, spiritual traditions, and potential ethnic tensions and sensitivities.

## PART 3. LAND PROTECTION IN PRACTICE

With no sign of growth slowing, land protection is becoming progressively more important to the persistence of China's, and the world's, wealth of biodiversity. Fortunately, China has a history of land protection efforts, primarily through protected areas. In 1956, the government designated the Ding Hushan Nature Reserve in southern China's Guangdong Province as the country's first official protected area. Today, protected areas (particularly nature reserves) are the most widely-recognized and most frequently applied means for protecting land in China (Figure ES-6). They are not, however, the only means of conserving land within the current land tenure regime.

China boasts a relatively extensive protected area network, but it is generally understood that it does not effectively conserve the full suite of species and ecosystems that represent the nation's biodiversity. In recognition of this challenge, the Central Government released *The National Biodiversity Conservation Strategy and Action Plan (2011-2030)*. The plan's agenda for future conservation includes three important provisions, among many others (Ministry of Environmental Protection, 2011)

- Identifies 35 Priority Areas of Biodiversity Conservation (see Part 2, Land Tenure);
- Requires that 90% of China's critical species and key ecosystems be protected by 2015; and
- Requires that China's biodiversity be "effectively protected" by 2030.

Each province in China is developing its own more detailed plan. For example, Sichuan's plan commits to adding at least five new protected areas and allocates 930 million RMB toward their management (Watts, 2010). In addition to fueling the creation of new protected areas, the Biodiversity Action Plan may spark the application of other land protection tools.

### I. Tools & Strategies

In April 2011, TNC held a land protection conference in China, during which participants characterized the conservation opportunities in China as follows:

- Strengthen the management of existing protected areas;
- Designate new protected areas, including National Parks; and
- Support new private tools outside of protected areas.

The first opportunity—strengthening the management of protected areas—is well-documented in the literature. The second strategy is currently being tested by provincial governments in Yunnan and Heilongjiang. The third strategy is the least explored and applied on the ground to date. To be successful, all of these opportunities will require public-private partnerships and careful consideration of stakeholder needs.

**Figure ES-6. China has an extensive protected area network, including the Changbaishan Nature Reserve (below). Photo by Shen Xiaohui**



**Strengthen the management of existing protected areas**—China’s protected area network covers terrestrial ecological resources, geological areas, freshwater resources, and oceans. The most common types of terrestrial protected areas include nature reserves, forest parks, and scenic areas, which total more than 5,000 units and cover approximately 19% of the country (Table ES-2). Nature reserves provide the most stringent protection, at least according to law. Forest parks emphasize protection, with public access as a secondary goal. Scenic areas also protect ecological values, but typically emphasize tourism much more than do nature reserves and forest parks.

Effective management of protected areas has been a challenge since their inception. By the late 1990s, the Central Government reported that at least one-third of protected areas suffered from “the three withouts”: recurrent funding, a management agency, and staff (State Council, 1998). These problems remain today. Other major challenges include limited community support and tenure issues, such as unmarked protected area boundaries and disputes over customary use rights.

**Table ES–2. Summary of protected areas for terrestrial ecological resources: number, area, and percent of land in China. The protected areas are listed in descending order of number by designation type.**

Type	Number	Thousands of hectares	Percent of land in China*	Source
<b>Nature Reserves</b>	2,541	147,735	15.5%	(Ministry of Environmental Protection, 2009)
<b>Forest Parks</b>	2,458	16,525	1.7%	(Zhang & Long, 2010)
<b>Scenic Areas</b>	906	18,240	1.9%	(Xinhua News Agency, 2009)
<b>National Parks</b>	2	80	0.01%	(MacLeod, 2008) (Wang, 2010)
<b>Total</b>	<b>5,907</b>	<b>182,580</b>	<b>19.11%</b>	

\* There are also two types of international designations designed to protect terrestrial ecological resources: Biosphere Reserves and World Heritage sites. These designations typically overlay the other designations in whole or in part.

\*\* Assuming a total land area of 956 million hectares

To resolve these challenges, over the last 20 years, the government has started to emphasize the quality of protected areas—not just quantity—through legislation and on-the-ground action. For example, the government has drafted (but not adopted) a comprehensive “protected area law.” Additionally, since 1991, the Central Government has issued policies to enhance nature reserve management. Furthermore, SFA and TNC created 51 model nature reserves across the country, the first of which was Songshan Nature Reserve outside of Beijing (The Nature Conservancy, 2010). To facilitate additional land protection, SFA or other agencies could consider expanding the network of model nature reserves, potentially with the continued involvement of TNC and/or other NGOs. The government might also consider private management of protected areas, recognizing that any private party would need to have a vested interest in maintaining the values for which the protected area was established.

**Designate national parks and other new protected areas**—The National Park concept is relatively new to China. National parks provide an opportunity to generate much more income than nature reserves, in part because of their fresh new name which attracts tourism and investment; they may also protect biodiversity more effectively than scenic areas. There are two national parks in China at present—Pudacuo National Park established in 2006 in Yunnan Province (Figure ES–7) and Tangwanghe National Park established in 2008 in Heilongjiang Province. These efforts are the same in name only—they were created by different agencies under different guidance. In 2008, the Central Government designated Yunnan as the pilot province for national parks. Yunnan plans to create 11 more national parks by 2020, in part due to the financial success of Pudacuo, which generated 117 million RMB in 2009 alone (up from 6 million RMB in 2005, pre-designation as a national park; see case study) (State Forestry Administration, 2008).

**Figure ES–7. Pudacuo National Park aims to protect resources while generating revenue through tourism. Photo by Zhu Li**



**Support new private tools outside of protected areas**—The increasing transfer of use rights to individuals presents new opportunities for conservation by private parties such as NGOs and developers, who can acquire use rights in order to protect natural values. While more than 3,500 environmental NGOs operate in China, few have direct involvement in land protection (People’s Daily Online, 2008) (Wu, 2002). Some of the larger organizations such as TNC, World Wildlife Fund, and Shan Shui Conservation Center have the greatest involvement, but due to limited budgets and staff, as well as political constraints, they are mainly conducting small-scale demonstration projects in cooperation with the local or central government. Thus, although the use of private tools, where applied, has been promising in conserving biodiversity, such efforts are still relatively few and far between.

**Private reserves**—For the purpose of this book, private reserves are defined loosely as areas that non-governmental entities establish to protect ecological values, and that rely largely on private financing. The government may or may not recognize these areas formally as protected areas. There are a few examples of private reserve projects including Mutagh Ata, through which a philanthropist acquired the use rights to millions of hectares around the Mustagh Ata mountain and worked with the local people to establish a tourist guide service; the Yu Jia Shan Nature Reserve, which a businessman established as China’s first, and perhaps only, private nature reserve; and the Motianling Land Trust Reserve, through which TNC is purchasing 50-year forest use rights to approximately 20,000 forested hectares in Sichuan Province (Figure ES–8).

**Figure ES-8. Community meeting to discuss the Motianling Land Trust Reserve project. Photo by Zhao Peng**



**Conservation developments**—Also known as limited development projects, conservation developments may be defined as “projects that combine land development, land conservation, and revenue generation while providing functional protection for conservation resources” (Milder, 2007). The main difference between conservation developments and private reserves is the source of income: Private reserves rely primarily on private financing, while conservation developments include a significant commercial revenue generation component. One example of a project “in-the-works” is the Great Wall Resort outside of Beijing, which aims to construct a luxury spa and eco-resort on less than 10% of its parcel while conserving the remainder for nature. Another project, already operational, is Monkey Island, through which a developer leased use rights and created a monkey park on 5.6 hectares of an island complex. Monkey Island’s revenues (25 million RMB in 2009) benefit the local economy and an adjacent nature reserve, and the monkey population has rebounded.

**Certification projects**—Certification projects focus on sustainable resource management across an entire project area, and may include “micro-sites” of protection. Such projects create opportunities for private involvement in biodiversity protection, even if it is not the primary intent. Forest certification for timber harvest began in China in the early 2000s, and today there are upwards of 58 such projects (Forest Stewardship Council, 2011). China’s first certified forest certificate was granted to the Changhua Forest Farm in Zhejiang Province (Hinrichs, 2009). In 2004, China initiated forest carbon sequestration pilot projects in six provinces, one of which may be the world’s first forestry carbon sequestration project (Gao). That same year, TNC and Conservation International initiated the Tengchong County Forest Carbon Offsets Project in Yunnan. Unlike most (or potentially all other) certification projects in China to date, this project includes biodiversity enhancement as a primary objective. It is certified as the world’s first “gold-level” project of the Climate, Community, and Biodiversity Alliance, a designation which requires that the project has “net positive impacts on biodiversity” as well as livelihood (Climate, Community, & Biodiversity Alliance, 2008).

**Conservation leases and easements**—Private parties involved with the projects described above have used conservation leases. For the purpose of this book, the term “conservation lease” refers to the transfer of use rights from one party to another for a specified period of time, through contracts or use rights certificates, for conservation purposes (see Part 2, Land Tenure). The lease model is well-suited to the current land tenure system in China, since leases can be written to coincide with the 30-70+ year terms of use rights contracts. Conservation easements are similar to leases, except that they are permanent and irrevocable. Thus leases provide more flexibility, while easements provide a greater guarantee of land protection over the long run. Leases are already being utilized in China, and easements may be ripe for application in the future, should the government ever adopt a true private property regime in which the land itself—not only the use rights—could be bought and sold.

## II. Protected Area Reference Guide

This chapter expands on Chapter I, Tools and Strategies, to provide more information about protected areas for nature reserves, forest parks, scenic areas, and international designations. The chapter addresses the purpose, number and extent; establishment; and allowable and prohibited uses for each of the aforementioned types of protected areas. The chapter does not address national parks, which have not yet been adopted by the Central Government. Nor does it address areas that can effectively protect biodiversity but are not commonly recognized as protected areas, such as public benefit forests and Ecological Function Conservation Areas (see Part 2, Land Tenure).

## III. Case Studies

Six case studies illustrate the practical application of each tool and strategy within the current land tenure regime, with the hope of sparking more such efforts:

- Pudacuo: China’s first national park
- Yu Jia Shan: China’s first private nature reserve
- Songshan: Evolution of a model nature reserve
- Monkey Island: Conservation development for primates, people, and profit
- Great Wall Resort: The making of a model conservation development
- Tengchong County Carbon Offsets: Protecting land through a gold-level certification project

Each case study also provides examples of public-private partnerships and stakeholder benefits, which help ensure project success.