<<中国的荒漠化及其防治>>

图书基本信息

书名：<<中国的荒漠化及其防治>>

13位ISBN编号：9787040257977

10位ISBN编号：7040257971

出版时间：2010-4

出版时间：高等教育出版社

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页数：513

字数：740000

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前言

Desertification is defined by the United Nations Convention to Combat De-sertification （UNCCD） as "land degradation in arid, semiarid and dry sub-humid areas resulting from various factors, including climatic variations and human activities". More than i00 countries on six continents and one-fifthof the world's total population are affected by desertification. Desertification throughout the world expands at an annual rate of 0.5 million km2.China is one of the countries affected seriously by desertification. It isestimated that the areas of dry land and susceptible dry land in China （ex-cluding hyperarid areas） are 357.05 and 331.70 million ha, respectively, and in 2004, 263.62 million ha had suffered or was suffering from desertification.The desertification affected area covers seven main dry land provinces and au-tonomous regions （Xinjiang, Inner Mongolia, Tibet, Qinghai, Gansu, Ningxiaand Sha'anxi） and 12 main deserts and sandy lands （the Taklimakan, GurbanTonggut and Kumtag Deserts, the Deserts in the Qaidam Basin, the BadainJaran, Tengger, Ulan But and Qubqi deserts, and the Mu US, Otindag,Horqin, and Hulun Buir Sandy lands）. The direct economic loss caused bydesertification is estimated to be upwards of 5.4 billion RMB annually, andthus desertification and desert expansion have become a bottleneck for sus-tainable development in the dry lands of China. In the past 60 years, the Chinese government has made great efforts to combat desertification, and thetendency of overall expansion of desertification has been initially contained,although desertification continues to expand in some parts.There are a large number of books available on desertification and related topics in China. This book is not intended to include all the desertification topics in China. We attempt to cover some key topics related to deserts and desertification characteristics and their distribution. We discuss the processsesand features of wind erosion, water erosion, soil salinization and vegetation degradation in rangeland, and detailed measures used in the struggle against desertification at field scale. We also consider the eco-productive paradigms for sustainable dry land management at a regional scale.

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内容概要

Desertification and Its Control in China comprehensively discusses desertification from the views of formation, distribution, development and control models. This book truly elucidates basic theory and control models of desertification, especially the numerous results from research carried out for the UN Convention to Combat Desertification. This book will provide a theoretical and practical basis for ecological and environmental planning and design as well as guidelines for prevention/restoration for desertification projects. It will also provide practical examples.

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作者简介

慈龙骏(Ci Longiun)，女，1936年出生于安徽省桐城县。
1958年毕业于北京林业大学森林改良土壤硕士研究生班。
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现任中国林业科学研究院首席科学家、研究员、博士生导师，国家防治荒漠化协调小组高级顾问、全国治沙暨沙产业学会常务理事及其他兼职。
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享受国务院政府特殊津贴。

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章节摘录

插图：desert interior, is covered by sand dunes. Eighty-five percent of the sand dunes are mobile. Fixed and semi-fixed dunes occupy only 15% of the desert area, and they are mainly vegetated with Tamarix spp. These fixed and semi-fixed dunes are only found in the periphery of the desert, on plains near the pied- mont and bordering the rivers which extend into the internal desert. （ii） The sand dunes are huge with complex forms The internal part of the Taklimaknn Desert is mainly covered by exposed huge sand dunes, which are often 100-150 m high, with maximum of 200 m to 300 m. Within the desert, dunes of more than 50 m in height account for 8070 of the total area of the mobile dunes, and some specific dune forms are unique and are not found in other deserts in China. For example, in the easternhalf of the Taklimakan Desert, huge complex dune chains generally extendfor 5-15 km, with a maximum length of 30 km, and are typically 1-2 kmwide. The leeward slopes are tall and steep while windward slopes are coveredwith secondary dune chains. The inter-dunes are flat with widths of 1-3 kmextending for a considerable distance. These inter-dunes are segmented by lowdunes which are vertical to them, forming some closed depressions with lakesscattered among them. In the center of the desert （820-85~ east longitude） andthe southwestern desert, there are complex longitudinal sand ridges, whichnormally extend for 10-20 km, with a maximum of 45 km, typically parallelto the prevailing wind direction. The secondary dunes, above these ridges,are perpendicular to the main wind direction. The pyramidal dunes developin regions with changing wind directions, distinct landform undulations, oradjacent to the mountains, the distribution of which can be isolated （suchas between Yutian and Minfeng）, or continuous irregular ridge-mounds （suchas between Qiemo and Minfeng）. In addition, there are tall dome-shapedsand dunes in the northern desert and scale-like dunes in the western andnorthwestern parts.（iii） Plains within the desert have abundant water resourcesAlthough the Taklimakan Desert mainly consists of mobile dunes, thereare plains where the desert plant resources are abundant （mainly desert ri-parian forests —— Populus euphratica, Populus pruinosa and Tamarix ramosis-sima）. These plains are distributed in the river valleys in the desert interior,along the riverbanks at the desert edges and the front edge of alluvial-fluvialplains. Some rivers, such as the Hetian, Keliya, Niya, Andi'er and Yatongguzirivers, flow into the desert interior, either flowing across the entire desert, oracross two-thirds of the desert or 100-200 km into the desert. In the plainsalong these rivers, due to intermittent flooding, there is abundant shahowunderground freshwater beneath the alluvial layer, which can be found 1-3 m below ground. In some areas, the spring outflows form small lakes inthe interdune wadis or dry river beds. Hence, Populus euphratica, Populuspruinosa, Tamarix ramosissima shrubs and meadow reeds grow well.

编辑推荐

《中国的荒漠化及其防治(英文版)》是国家科学技术著作出版基金资助。

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