

Springer Geography

Yifeng Yao

Nanjing: Historical Landscape and Its Planning from Geographical Perspective

 Springer

Springer Geography

The Springer Geography series seeks to publish a broad portfolio of scientific books, aiming at researchers, students, and everyone interested in geographical research. The series includes peer-reviewed monographs, edited volumes, textbooks, and conference proceedings. It covers the entire research area of geography including, but not limited to, Economic Geography, Physical Geography, Quantitative Geography, and Regional/Urban Planning.

More information about this series at <http://www.springer.com/series/10180>

Yifeng Yao

Nanjing: Historical Landscape and Its Planning from Geographical Perspective

 Springer

Yifeng Yao
The College of Geography
Nanjing Normal University
Nanjing
People's Republic of China

This book is supported by the Major Project of National Natural Science Foundation of China “study on evolution mechanism and model system establishment of regional spatial structure” (application No. 41430635)

ISSN 2194-315X ISSN 2194-3168 (electronic)
Springer Geography
ISBN 978-981-10-1635-6 ISBN 978-981-10-1637-0 (eBook)
DOI 10.1007/978-981-10-1637-0

Library of Congress Control Number: 2016942020

© Springer Science+Business Media Singapore 2016

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer Science+Business Media Singapore Pte Ltd.

Foreword

Nanjing is one of the most important ancient capitals in China. The city features over 350,000 years of human history, 6,000 years of civilization, 2,500 years of urban construction, and 460 years of history as the capital (ten dynasties made Nanjing the capital), which makes Nanjing a necessary focus of attention in the study of Chinese history and geography. As a result, the contemporary restructuring of Nanjing has also drawn public attention. However, in a sense, the urban construction of contemporary Nanjing has witnessed a variety of conflicts. For example, on one hand, as the capital of Jiangsu Province, it seems to have the responsibility to set an example for other cities in China to take the lead in accomplishing basic modernization. In 2003, Jiangsu Province officially made “taking the lead in building a moderately prosperous society and accomplishing basic modernization,” also known as “two priorities,” as its political objectives. Driven by rapid economic growth, the city’s land for construction increased from 97.5 square kilometers to 280.9 square kilometers. This rapid expansion of range, extension of height, and renovation of buildings have made huge differences. On the other hand, in 1982, Nanjing became one of the first state-certified Historical and Cultural Cities, and the preservation of its features as an ancient capital has been the main priority of construction. It is because of this conflict that the urban construction of Nanjing became the focus of national attention for several occasions. Mass demolition and mass construction of the old city has led to the discontent of experts and of the public. For example, the extensive damage to sycamore trees (planted in the Republican period) due to new subway projects has caused civil protests. Objectively speaking, this kind of conflict is not easy to coordinate, since the great damage to geography and historical context has become a reality. At present, it is no exaggeration to say that Nanjing has “ancient elements but no ancient charm.” One may even argue that in the economic, political, and cultural competition, the recognition and positioning of Nanjing’s city image has begun to blur.

How to respond to the conflicts that occurred in ancient capitals such as Nanjing during contemporary China's production in compressed space is not a small task. It carries meanings beyond mere regional significance. To examine the book in question under this background proves to be quite beneficial. It can be said that a geographic perspective has been adopted to provide feasible solutions to overcome the many ills of common fallacies in ancient capital protection and construction. Popular ideas of planning and construction are often based on a systematic perspective of construction without consideration of the human-land relationship. Key elements are highlighted, but an overall analysis of changes in environmental history is lacking. Their plans may seem good, but the results may turn out as unsatisfactory. As far as the author of this book is concerned, the normal evolution of the city requires a core element to maintain its stability. This core component is the source of a town's characteristics. How is this key element understood? The author's answer is a basic geographical setup as well as the evidence of neighborhoods of great significance that were formed in a historical way. Therefore, to seek and define "a critical geographical core" is the premise of urban planning. In this sense, the geographical and historical changes of a city should not be just one element of the planning process, but be the core element of planning from beginning to end.

Revolving the core ideas mentioned above, the first important theoretical contribution of this book, explanations of Nanjing's geo-historical setup and its changes, comes into play. Although it is just an outline, the description is sufficient enough to show that the interaction and interplay between cultural environment and geographical conditions gives birth to the integrity, logicity, and continuity of the landscape of an ancient capital. Therefore, to understand at the macroscopic level, the cultural ecology of the ancient capital is the focus of its sustainable development. Regarding this, it is worth noting that geological history includes not only geographical changes in a general sense, but also changes in human-land relationships. Here, setup means something more than structure, pattern, style, and situation, because it is not an abstract framework, but features of the whole environment that are enriched with emotions and significances. Arguably, it contains all of the meanings above with an additional meaning of the subjective meaning implied by specific conditions. Described as the *Genius Loci*, a Roman term, such a meaning has received special attention in today's architectural phenomena. Of course, in Chinese tradition, people usually use the term "Spirit of Earth and Vegetation", namely the atmosphere composed of land and plantation and the metaphorical mental state therein. This concept highlights the overall significance of what we call "landscape". It is inside the landscape system that the sustainable development of culture takes place. If the basic geographical setup where ancient capitals originate and develop has been destroyed, the discussion about the protection of historic buildings and neighborhoods within the capital would be of little significance. It is from such a profound point of departure that the book explains Nanjing's unique setup of physical geography "like a tiger crouching, and a dragon curling", how the city became the cradle of ancient capitals, how it changed in the long history of culture, as well as what kind of historical and cultural heritage is left for us.

Another important theoretical contribution of this book is that, in the analysis of the formation and development of Nanjing's geo-historical setup, an integrated use of perspectives such as "setup, process, and scale" has been underlined with a deep understanding of planning from a geographical perspective. In the author's opinion, the formation of an ancient capital has its genes of physical geography as well as the accumulation of human-land relationships. Natural landscape and the system of rivers and mountains provide support for the integrity and stability of a specific cultural pattern while embodying its basic spirit. Therefore, one needs to fully explain the natural and cultural course of a region from the perspective of landscape changes in order to grasp the characteristics of the place. Here, the author fully took his advantage as a geography scholar. From an analysis and illustration of the relationship between construction and natural topography in different periods, a definition of what constitutes the legacy of urban construction in Nanjing today was derived. Based on that, the author proposed his own planning ideas about geographic landscape and stressed that geographic setups still exert a profound influence on Nanjing's landscape. It is also emphasized that history patterns, spatial-temporal evolvement, and changing patterns of existing mountains and rivers should be explored to maintain the history of a balanced human-land relationship in ancient capitals, thereby inheriting the culture of those places. In the preface, I shall not repeat specific conclusions involved. Readers can have further debates about those conclusions. In my sneak peek, what I felt most strongly about was that the author fully recognized the long-term effects, accumulation, and evolution of various factors regarding changes of historical and cultural cities and applied those observations into the case of Nanjing. This provides us with important revelations in terms of systematic thinking. Active responses to many basic problems that occurred in the protection and construction of today's historical and cultural cities is also offered. In this sense, the book is not just about Nanjing, but most Chinese cities.

In the process of modernization that has been highly compressed, most cities in China are experiencing rapid expansion, or creative destruction. Therefore, works such as this book have been written relatively late. However, as the saying goes, "better late than never," and it is never too late to change the way of thinking and positively deal with past deficiencies. At present, new-type urbanization is no longer an urgent call but a national policy. This book can make positive contributions to our understanding of the connotation of new-type towns as well as our solutions to problems found in practice.

Nanjing
April 2016

Daping Hu
Professor of Philosophy and Changjiang Scholar
Nanjing University

Preface

This book includes two innovative aspects:

1. Exploration of urban planning and city changes from a geographical perspective;

Geographic factors have persistently influenced landscape changes, from pre-historic villages and settlements, the origin of towns, and capital founding by the emperors, to the development, prosperity, and even decline (in some historical periods) of the city. In the past, studies have focused on cultural, economic, or political factors. Geographical studies are rarely seen and sometimes placed in a very secondary position.

As for planning considerations, existing norms and regulations regarding urban planning and the planning of preserving historical cities have focused on architectural space. This book examines geographic research and corresponding planning. In that regard, this book is only a preliminary effort. Many aspects need to be perfected. I have another book coming out that will present a more comprehensive and in-depth study of this area.

2. Discussion of Nanjing as a famous ancient capital in Chinese history

As one of the four great ancient capitals in China, Nanjing is very different from Beijing, Xi'an, and Luoyang in terms of its historical status. Throughout its history, Nanjing witnessed no grand unification but turmoil, disruption, and massacres: Wu State-Chu State stalemate during the Spring and Autumn Period, the war of the Three Kingdoms Period, the moving of imperial clans to the Southeast in the Western Jin Dynasty, Six Dynasties, the tragedy of the Southern Tang emperor, the Jingnan Campaign of the Ming Dynasty, the besiegement of the Taiping Heavenly Kingdom, capital founding during the Republic of China, the city-wide massacre of the Japanese army, etc. However, Nanjing has a very important cultural position in China's cultural history. During the 300 years of the Five Nomadic Northern Tribes Uprising, relying on the natural barrier of the Yangtze River, Nanjing preserved the Chinese "Han" culture and became the source of the spread of culture for the later Sui and Tang Dynasties.

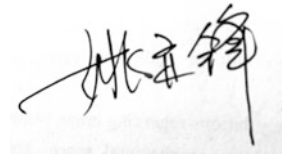
Nanjing is poetic in terms of its city history. This place once created landscape poems, landscape paintings and landscape gardens during the most troubled times of Wei Jin and Southern and Northern Dynasties. Like a crouching tiger and a curling dragon in its geographical form, Nanjing was recognized to be located in a strategic place along the Yangtze River. The city features famous scenic spots, gardens, and numerous historical sites: Plum Blossom Hill, Terrace of the Raining Flowers, Peach Blossom Ferry, Confucius Temple, etc. Verses like “Mist over icy water and moon over sands” and “The three-peak’d mountain is half lost in azure sky; The two-fork’d stream by Egret Isle is kept apart” give us a glimpse of the romantic works that many poets and painters made and by the inspiration of Nanjing’s landscape.

This book does not look into emperors or dynasties, but the urban transition in Nanjing’s geographical setup. By analyzing China’s historical changes with Nanjing as a case study, a unique perspective and a broad vision can be developed. From urban transitions one can see some other changes of culture, economics, politics, and so on.

There are many things to say about the both topics of geographical perspective and Nanjing. My research is not finished, here it just begin with a brief discussion.

Nanjing
April 2016

Yifeng Yao

A handwritten signature in black ink, appearing to be the name '姚一峰' (Yao Yifeng) written vertically.

Contents

1	Significance of Geography and Urban Planning	1
1.1	Geography and Historical Capital Preservation	1
1.2	Cultural Geography of Nanjing	4
1.3	Significance of Nanjing as the Research Site	5
1.4	Philosophy of the Historical Landscape	9
1.5	From Geography to Urban Research	11
1.6	Importance of Landscape in Historic Capitals	12
	References	13
2	The Yangtze River Impacts and Early Nanjing Geography	15
2.1	Cultural Landscape Change Along Yangtze River in Ancient Times.	15
2.2	Changes in Nanjing Section of the Yangtze River and Impacts	16
2.3	The Yangtze River Impact on the Establishment of Capitals	20
2.4	Impact of Natural Terrain and Historical Geography on Ancient Nanjing	23
2.5	Impact of Geographical Environment on the Formation of Historical Landscape in Nanjing	30
2.6	Historical Periods in Eastern China and Climate Changes in Nanjing	32
2.7	Early Nanjing Geography and Settlement Environment in Stone Age.	34
2.7.1	The Tangshan Ape-Man and Geographical Environment in Paleolithic Period	34
2.7.2	The Original Villages Along the Yangtze River Tributary in Neolithic	35
	References	38

3 Nanjing Historical Landscape and City Changes 39

3.1 Strongholds in the Spring and Autumn Periods, Warring States Period (776–221 BC), and Towns in the Qin (221–207 BC) and Han (202 BC–220 AD) Dynasties 39

3.1.1 Military Fortresses in the Spring and Autumn Periods and the Warring States Period 40

3.1.2 Moling and Other Towns and Cities in the Qin and Han Dynasties 45

3.1.3 Han Dynasty (202 BC–220 AD) 47

3.2 Six Dynasties (220–589 AD): History and City Landscape 49

3.2.1 Wu State (221–280 AD) Established the Capital 49

3.2.2 Urban Landscape: Eastern Jin (317–420 AD) and Southern Dynasties (420–589 AD) 61

3.2.3 Landscape Architecture of Nanjing During the Six Dynasties 68

3.2.4 Nanjing City After the Six Dynasties 87

3.3 Landscape of Nanjing During the Southern Tang Dynasty (937–975 AD) 88

3.3.1 Sui Dynasty Qelled JianKang (Nanjing) 88

3.3.2 Jinling During the Southern Tang Dynasty 90

3.3.3 Influences of City Composition After the Southern Tang Dynasty 92

3.3.4 Agricultural Development in the Yangtze River Basin and Relocation of China’s Economic Center to the South 94

3.4 The Early Ming Dynasty (1368–1402 AD) and Its City Landscape 96

3.4.1 A Great City Wall System 97

3.4.2 Star Patterns and Their Implications for the Capital 100

3.4.3 City Composition 100

3.4.4 Qing Dynasty (1616–1912 AD) and Taiping Heavenly Kingdom Periods (1851–1864 AD) 102

3.5 Capital and Landscape During the Republic of China (1912–1949) 107

3.5.1 Nanjing’s Urban Planning During the Republic of China 108

3.5.2 City Green Space Planning During the Republic of China 113

References 114

4 City Status and Contemporary Geographical Landscape 115

4.1 The Recent (1927–Present) Evolution of Nanjing City 115

4.2 Urban Area Expansion Status in Modern Nanjing 118

- 4.3 Natural Mountains in Nanjing’s Current Landscape 119
 - 4.3.1 Current Landscape in the Eastern Mountains 121
 - 4.3.2 Mountains in the Center that Extend into the City 127
 - 4.3.3 Status Quo of Western Ranges of Mountains
and the Qinhuai River 131
 - 4.3.4 Status Quo of Hills and Mountains in the South 135
 - 4.3.5 Status Quo in Northern Natural Mountains
and Along the Yangtze River 141
- 4.4 Anonymous Landscapes and Historical Sites 149
- 4.5 Current Development and Destruction 161
- References 162
- 5 Rivers, Greenspaces, and Ancient Capital Composition 163**
 - 5.1 The Influences of Rivers on a City 163
 - 5.1.1 History and Landscape of Xuanwu Lake 167
 - 5.1.2 The Qinhuai River and Its Landscape Status 171
 - 5.1.3 Several Other Urban Rivers 177
 - 5.1.4 Other Lakes 178
 - 5.2 Current Greening Spaces of Urban Gardens and Parks 182
 - 5.2.1 Each Park Has Related Nanjing History 182
 - 5.2.2 Current Green Spaces and Current Problems 183
 - 5.2.3 Road Landscape 184
 - 5.2.4 Research on Greenspace in Urban Nanjing 186
 - 5.3 Spaces of Historical Capital and Relic Sites Preservation 186
 - 5.3.1 Axis Pattern Preservation 188
 - 5.3.2 The City Wall of the Ming Dynasty 190
 - 5.3.3 Preservation of Ming Dynasty City Wall
and Its Landscape Planning 192
 - References 194
- 6 Geographic Landscape Planning and Design 195**
 - 6.1 Research on the Characteristics of Geographical Planning 195
 - 6.2 Research Breakthrough Points of Geography 196
 - 6.2.1 Research on Regional Land Composition 196
 - 6.2.2 Research on Landscape Patterns 197
 - 6.2.3 Research on the Ecological Environment 197
 - 6.2.4 Research on Geographic Information Systems 198
 - 6.3 Master City Plan of Modern Nanjing 198
 - 6.4 Research into the Planning of the Geographical Landscape
in Nanjing 200
 - 6.4.1 Composition of the Historical City and Nature 200
 - 6.4.2 Harmonious Development 201
 - 6.4.3 The Heritage of the Core Geographic Space 201

- 6.5 Research into the Cultural Ecology of the Ancient Capital 202
 - 6.5.1 The Concept Extension of Landscape Ecology
in the Ancient City 202
 - 6.5.2 Research into Planning the Cultural Ecology 203
 - 6.5.3 Corridors of Landscapes Heritage 204
 - 6.5.4 A Patch of Landscaped Green Spaces 205
- 6.6 Historical Landscape Planning. 205
 - 6.6.1 Multidimensional and Multiscale Landscape 205
 - 6.6.2 Principles of the in-Depth Appreciation of Images. 206
 - 6.6.3 Principle of the Space–Time Continuum 206
 - 6.6.4 Amalgamation Principle. 206
 - 6.6.5 The Composition of the Street Block Landscape 207
 - 6.6.6 Research into the Landscape of the City Wall
from the Ming Dynasty 208
- References 208
- 7 Conclusion 209**

About the Author



Yifeng Yao Professor Education experiences: Ph.D. in Quaternary geology at Nanjing University. Master Degree in Landscape Architecture at Beijing Forestry University. Bachelor Degree in Landscape Architecture at Nanjing Forestry University. Twice obtained Germany DAAD (the Germany International Academic Exchange Service) Scholarship, as a Visiting Scholar at Urban History Institute of RWTH Aachen University and Geography Institute of Giessen University, Germany. Main research direction and fields: historical city preservation, landscape planning, human geography.

Chapter 1

Significance of Geography and Urban Planning

1.1 Geography and Historical Capital Preservation

The landscape of China's ancient capital of Nanjing, as a visual and tangible reserve of history, came into being as a result of long-term action, accumulation, and evolution of factors such as geographical environment, politics, economy, culture, and technology. Among these, the geographical environment provided a base for the establishment and development of the landscape of the ancient capital. The geographical landscape, as a basic factor, was the most stable, successive, durable, and vital force during the formation of Nanjing's landscape.

The natural geographic composition became a cradle for the origin of the ancient capital, a basic skeleton on which Nanjing relied for development, as well as a base for the landscape features of the modern city to come into being. The sustainable development of culture is still going on inside the structural system of the natural landscape. It would be meaningless to discuss the preservation of historic buildings and blocks in the ancient capital since the basic natural composition that nurtured its origination and development has been destroyed.

Li SiGuang (1889–1971 AD), a famous geology professor, once pointed out in his thesis [1] that “As long as we carefully study the existence of even a tiny village or a road, we will always find reasons underground. For example, a small fold, or a small crevasse in a stratum, or a special layer of outcrop, can be the reason for collecting residents. All those who often make geological surveys on the spot know this strange fact...Various types of underground circumstances have a force of governing the life forms of residents living above the ground. Furthermore, the action of that force is often continuous. Although its influence cannot be seen overnight, it becomes great and irresistible if accumulated for a long time. Since human beings are part of nature, how can they evade this force of edification and education?”

I majored in landscape architecture for both my bachelor's and master's degrees. At that time, the emphasis was on engineering drawing and artistic skills, as well as

space composition, the focus of which is function and aesthetics. The natural or cultural characteristics of a site should be studied before any planning takes place. The standards and value system should be clarified, as they are often either lacking or vague. In my doctoral studies, my major is quaternary environmental change, which is about the evolution of the geographical environment, incorporating rigorous scientific rules, which gives me profound insight into the importance of geography in planning and design.

As I discovered while participating in preservation planning for the cityscape of Nanjing as an ancient capital, the present preservation plan for the landscape is always researched from an architectural perspective, on the basis of the preservation of architectural sites connected to historic individuals or groups; single buildings or historic streets seen as important relics; and the historic city as a whole. However, no analysis has been made of the changes to the natural environment that birthed this historic city, nor has corresponding research been conducted from the perspective of geographical composition. No analysis or research has focused on the landscape composition of the natural environment as a whole system—only on the preservation of specific rivers or physiognomies (Figs. 1.1, and 1.2).

Therefore, we must investigate the status quo of historic relics and ruins based on the system-oriented veins of natural landscape; study and analyze the major sections where the preservation of the landscape and modern construction works come into conflict; and determine how best to carry out the preservation of the natural environment around the existing buildings of cultural importance. We must also analyze the key rivers and mountains that embody the landscape features of Nanjing. In addition, we should explore research into the “evolution” of Nanjing’s cityscape at different historical stages on the basis of geographical composition; research the geographical cause of and power behind the formation of the landscape; and create an overview of the historical landscape of this ancient capital on the basis of the geographical factors “composition, process, and scale.” Furthermore, we should explore the establishment of a new framework of thought for researching this landscape from the perspective of geographical landscape.

Geography’s relevance to science and society arises from the distinctive and integrating set of perspectives through which geographers view the world. Geography looks at the world through the lenses of place, space, and scale [2].

Environmental design should be carried out from an ecological point of view, and the essence of reasonable planning is the research of how to effectively utilize resources [3]. While planning the regional landscape of a city, we should not only get to know the location of the city, but also try to understand its natural forms and features, as well as research its ecological system and the natural condition of the land in relevant regions with the help of ecological theory. The nature of a region can be thoroughly understood only from the perspective of the mutual relationship between people and land [4]; the structure and function of a local landscape are marked by their respective processes of development, change, and perfection; changes in human culture give rise to those in the landscape sequence. Historical events, such as the origins and development of towns, are explored in the context of the geographical environment, which also involves researching the relationship

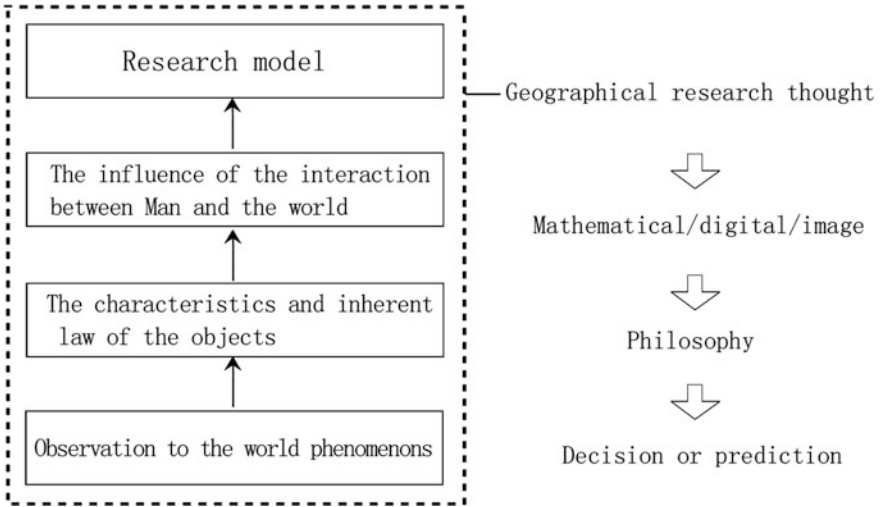


Fig. 1.1 The matrix of geography research

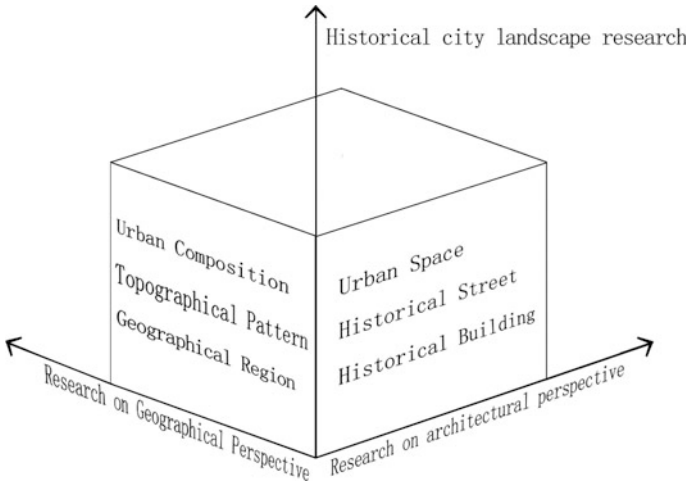


Fig. 1.2 The matrix of comparative research between geographical and architectural perspectives

between human beings and nature, and the effects of the cultural processes of time. It is the study of how to maintain sustainable development [5]. The overall planning for a geographical landscape system is extremely important for realizing the sustainable development of human society in a region of geographical ecology [6]. We should optimize and combine original landscape factors as well as build a new composition, thus forming an environmental landscape featuring harmonious unification between human construction and nature [7].

1.2 Cultural Geography of Nanjing

As a kind of cultural landscape, city spaces are affected by human activities according to different geographic landscapes. However, cities are built upon geographic landscapes, and this abstract relationship is relatively constant. It is within the geographic space that cities preserve history and form culture. The functional structure of the cultural ecology is as follows: the geographic environment in a certain region is the place and space for city forming and development, and also the basic condition for people in the region to form the mode of production and economic foundation. Nanjing has a strong political significance, and its geographical landscape in ancient times also had such a color of human culture. People produced corresponding ideological concepts based on the city context and formed the cultural pattern of this region after long-term integration. This “pattern” became the cultural genome of its historical development. It has relatively strong integrity and stability and established the geographic-environment-based city construction in the unique rural landscape.

Preserving the spatial relationship when constructing cities within geographic landscapes is particularly essential for the cultural inheritance of a city with historical traditions. It is also the most critical factor in planning cities within all kinds of geographical forms.

Any given population has a unique culture and, in its long-habited region, creates a landscape that can adapt to the environment. The natural landscape, after being transformed by human activities, becomes a so-called “cultural landscape” where human beings play the most effective role. During the evolution process, culture is the motive, natural conditions serve as the intermediary, and the cultural landscape is the result. The interpretation of the connotations of cultural landscapes is central to the study of human geography. The theory of cultural landscape insists that a regional environment inhabited by human beings is created in the process of self-expression and cultural shaping. The environment should not only have functional efficiency, but also reflect aesthetics and cultural value. The natural environment will change through the intervention of different cultural landscapes.

Cultural geography holds that the rise and development of historical cities is the result of the long-term interaction between the natural and social ecological environments. This kind of interaction takes place in a given region, the result of which demonstrates the relationship between humans and land in a certain area, namely cultural ecology, which is about people’s understanding and conceptualization of the relationship between human beings and land. It has a profound impact on the way people understand, select, adapt to, and transform natural environments. All these impacts will in turn be reflected in the cultural landscape of historical cities. The formation and development of any historical city, without doubt, is molded by its geographical environment. Even today with our highly developed technology, city planning still reflects the understanding of and the attitudes toward the geographical environment. The natural environment, the foundation for the formation and development of historical cities, not only has a large impact on the pattern,

structure, and landscape of historical cities, but also makes the systems, notions, and behavior of each city unique. The social environment is a driving force in the formation and development of historical cities.

The distinctive characteristics of historical cities in different regions bear the influence of cultural ecology, affecting the formation and development of these cities. Therefore, the preservation of historical cities should focus on maintaining their classical features. The key is to protect the cultural ecology of the historical city. In terms of the preservation of the cultural ecology of historical cities, on the one hand, the geographical environment, which is fundamental to historical cities' survival, should be protected because it provides a foundation for the formation of historical cities' features. On the other hand, the historical trajectory of the harmonious relationship between the development of historical cities and the geographical environment should be maintained, for this is the basis for the continuation of the cultural lifeline of historical cities.

1.3 Significance of Nanjing as the Research Site

Nanjing, located in Southeast China, is at latitude $31^{\circ}14' \sim 32^{\circ}37'$ and longitude $118^{\circ}22' \sim 119^{\circ}14'$. Located along the lower reaches of the Yangtze River, Nanjing is 340 km east of the river's estuary, west of which is the hilly area of southern Anhui province. To the north is the great plain of the Yangtze-Huaihe region and to the south is a network of rivers and Taihu Lake. These three places were very important economic regions in ancient China. On a two-dimensional map, the topography and geomorphology of Nanjing is long from north to south, narrow from east to west, and faces north. To the east of Nanjing are hills and mountains, to the west and north is the wide Yangtze River, and to the south can be found complex topography consisting of low hills, hillocks, valleys and plains, lakeside plains and river land, and other topography units along the Yangtze. This city and its suburbs are surrounded by several natural mountains, rivers, and lakes, forming a relatively independent natural geographical system, known as a strategically valuable spot in ancient times (Figs. 1.3, 1.4, and 1.5).

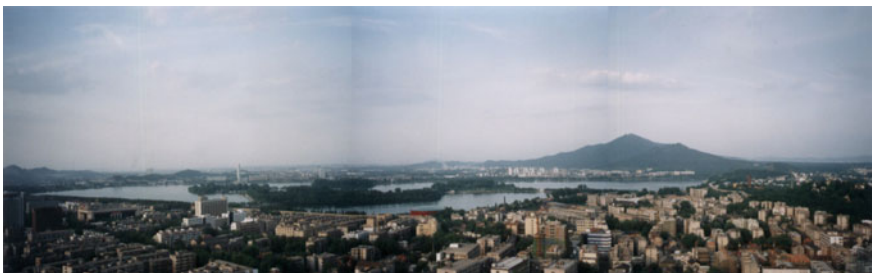


Fig. 1.3 An overview of Nanjing's landscape in 1998



Fig. 1.4 The landscape of Qinhuai River in the 1920s



Fig. 1.5 The landscape of Xuanwu Lake and Zhongshan Mountain in the 1920s

Nanjing, due to its geographical and regional location (particularly the strategic value of the Yangtze River in north and south) was considered as being of strategic importance to every dynasty since the Spring and Autumn Period and the Warring

States Period (770–221 BC). Over the centuries Nanjing gradually developed into a significant city in southern China.

Nanjing has jurisdiction over 11 districts and 2 counties, covering an area of 6597 km². The Yangtze River flows from the southwest to northeast through the urban area of Nanjing dividing the city into two parts—one south and one north of the river.

Nanjing enjoys a long history with a broad array of historical records and countless historical relics. The ape-man skull discovered during an archaeological excavation in Leigong Cave in Tangshan, which was in the eastern suburbs of Nanjing, provides evidence of a human presence going back 350,000 years. The Neolithic primitive village discovered along the banks of Qinhuai River and Jinchuan River evidences a civilization going back 6000 years. Tang coast and Yue city, constructed along the Yangtze River in the Spring and Autumn Period and Warring States Period, go back 2500 years. Nanjing served as capital during the following periods: Wu Dynasty (229–280 AD) during the Three Kingdoms; Eastern Jin Dynasty (317–420 AD); Song Dynasty (420–479 AD); Qi Dynasty (479–502 AD); Liang Dynasty (502–557 AD); Chen Dynasty (557–589 AD); Southern Tang Dynasty (937–975 AD) during the Five Dynasties and Ten Kingdoms; Ming Dynasty (1368–1402 AD); Taiping Heavenly Kingdom (1851–1864 AD); and the Republic of China (1927–1949 AD). All in all, the city enjoys a 465-year history as capital.

When the State Council approved the urban master plan for Nanjing, it clearly stated that [8] “Nanjing is a famous historical capital, the provincial capital of Jiangsu province and a central city in the lower reaches of Yangtze River... Efforts should be made to promote the mingled characteristics of mountains, rivers and lakes, cities and forests and to preserve the cultural relics, historical districts and natural landscape.”

China enjoys a 5000-year history, with a culture that is old and rich. Throughout the country's history, several key periods and regions determined its direction and laid the foundation for civilization. Throughout China's history, there were two turning points: the Spring and Autumn and Warring States periods (770–221 BC) and the Period of Wei, Jin, and the Southern and Northern Dynasties (229–589 AD). The second key stage in China's cultural development happened in Nanjing. In terms of geography, seven historical capitals across the vast territory of China were the starting points for cultural development. Nanjing, one of the seven historical capitals, with the natural barrier of the Yangtze River, experienced prosperity and decline several times.

In terms of history and culture, Nanjing is characterized not by the honors of war but by its historical tragedies. Nanjing, amidst the winds of change, experienced the vicissitudes of life. This city, with a 2500-year history, witnessed many sad stories. “The place of South Yangtze River Beauty, the state of Golden Hill Emperor,” a poem written by Xietiao during the Southern Dynasty (420–589 AD), was used to praise Nanjing's unique regal environment created by its distinctive natural landscape, while the poem “The Stone City with surrounding hills still remains; the tides pound the hollow city and return disconsolately” expresses regret about change. Nanjing, a nostalgic city, harbors a deep melancholic nature. The gaiety

and splendor of aristocratic life during the Six Dynasties, the romance of the Qinhuai River, the mist and rain along Sorrow Lady Lake, and the imperial environment in Golden Mountain all shone brilliantly but faded over thousands of years. The landscape in Nanjing does not favor tall buildings, but a sense of smoky waters, boundless natural charms, inclusiveness, leisure, and profound simplicity.

In this land can be found historic sites that witnessed huge changes to the world. This is this city where an emperor indulged in a gay and debauched life, but was also a brilliant literary talent, becoming a poet, artist, calligrapher, composer, and musician. The city flourished and declined, declined and flourished. Now banners wave in the villages near the water in the mountains; tides slap the empty town and the lonely Phoenix Palace; wild weeds grow beside Red Bird bridge and the former residences of distinguished families. The only thing left is the looming mountains and flowing lakes and rivers.

In terms of geography, Nanjing, located in the hilly region downstream of the Yangtze River, is surrounded by seemingly endless mountains, enjoys advantageous natural conditions, with rivers and lakes intertwining. This natural topography led to Nanjing becoming the historical capital for 10 dynasties. The origin and development of Nanjing by no means arose from the combination of buildings. Throughout the various dynasties, landscape planning of the city was based on China's ancient aesthetic philosophy and the city was constructed to take advantage of the mountains and rivers. As Sun Yat-sen wrote [9], "Nanking is situated in a fine locality which comprises high mountains, deep water and a vast level plain—a rare site to be found in any part of the world."

In terms of urban planning, the major transformations that took place in Nanjing during its more than 2500 years of development were designed according to the natural environment and landscape. Over thousands of years, the construction of China's city spaces was guided by the philosophy of "heaven-human integration" and "natural rule" [10]; the harmony between man and nature was the most fundamental geographic aesthetic objective as well as the highest rule of city planning, which preferred aesthetics over function. In the eyes of citizens and emperors in ancient times, the preservation of geographic "feng shui" (wind and water) was prioritized over economic benefits.

Nanjing's transformation can be roughly divided into four periods: Six Dynasties (221–589 AD), Southern Tang Dynasty (937–975 AD), the beginning of the Ming Dynasty (1366–1402 AD), and the Republic of China (1927–1949 AD). These are reflected in the four axes of the city's layout. However, in terms of the changes in cities and nature throughout the historical periods, the impact of rivers and lakes and mountains and hills on city structure is fundamental. "Looking like a crouching tiger and coiling dragon" refers to Nanjing's geographical landscape. The Temple of Heaven used during the Six Dynasties period was discovered in the foothills of the Purple Mountain in 2000. It shows a unique human–nature relationship between ancient Nanjing and the surrounding natural landscape. In 2002, the imperial palaces from the Six Dynasties were excavated at the building site of Yangtze River road in the center of Nanjing. This finding improves our understanding of the relationship between ancient Nanjing and the natural environment.