



# Comparing Chinese and international studies of riparian forests: A bibliometric survey (1981–2014)



Jingyi Ding, Wenwu Zhao \*

State Key Laboratory of Earth Surface Processes and Resource Ecology, College of Resources Science and Technology, Beijing Normal University, Beijing 100875, China

## ARTICLE INFO

### Article history:

Received 11 November 2015  
Received in revised form 19 May 2016  
Accepted 25 May 2016

### Keywords:

Riparian forests  
Bibliometrics  
China  
Research priorities  
Hot topics  
Research trends

## ABSTRACT

A bibliometric analysis based on the Web of Science Core Collection (WoSCC) and the China National Knowledge Infrastructure (CNKI) databases was conducted to identify the differences between Chinese and international studies of riparian forests as well as their future research directions. The analysis included publication output, geographical and institutional patterns, research priorities and hot topics. International riparian forests research has experienced notable growth over the past three decades, while Chinese research did not expand rapidly until 2000. The United States housed 16 of the 20 most active institutions in riparian forests research, while the Chinese Academy of Sciences ranked 20th among the most active institutions. The priorities of international research included focuses on multiple scales and ecological processes in riparian forests. In comparison, Chinese research was strongly regional in scope and prioritized large-scale inland river basins and desert riparian forests. For both international and Chinese research, the hot topics were dynamic changes in riparian forests and the human impact on riparian forests ecosystems, which may become priority areas for future research. However, compared to international studies, fewer Chinese studies have tried to predict future scenarios of riparian forests. Therefore, this subject may be a direction for future Chinese riparian forests research.

© 2016 Ecological Society of China. Published by Elsevier B.V. All rights reserved.

## Contents

|  |     |
|--|-----|
| 1. Introduction . . . . .  | 377 |
| 2. Data sources and methods . . . . .  | 378 |
| 3. Results and discussion . . . . .  | 379 |
| 3.1. General publication characteristics of riparian forests research . . . . .        | 379 |
| 3.1.1. Development of international and Chinese riparian forests research . . . . .    | 379 |
| 3.1.2. Major countries and institutions publishing riparian forests research . . . . . | 379 |
| 3.2. Priority areas for riparian forests research . . . . .                            | 380 |
| 3.2.1. Priorities of international research . . . . .                                  | 380 |
| 3.2.2. Priorities of Chinese research . . . . .  | 381 |
| 3.2.3. Comparison between international and Chinese research priorities . . . . .      | 382 |
| 3.3. Hot topics in riparian forests research . . . . .                                 | 382 |
| 3.3.1. Hot topics in international research on riparian forests . . . . .              | 382 |
| 3.3.2. Hot topics in Chinese research . . . . .  | 383 |
| 3.3.3. Comparison between international and Chinese hot topics . . . . .               | 383 |
| 4. Conclusions . . . . .   | 383 |
| Acknowledgments . . . . .  | 383 |
| References . . . . .   | 383 |

## 1. Introduction

Riparian zones are an important ecotone for material, energy, and information exchange between terrestrial and aquatic ecosystems [1]. Riparian forests, the riparian zone made up of forest communities, are

\* Corresponding author.  
E-mail address: [zhaoww@bnu.edu.cn](mailto:zhaoww@bnu.edu.cn) (W. Zhao).

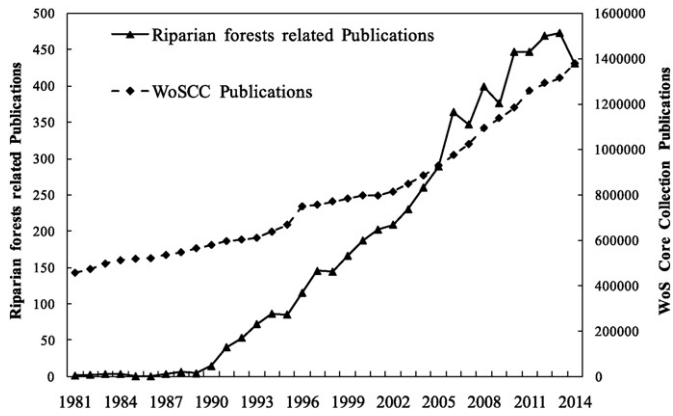


Fig. 1. Growth in the total number of WoSCC publications versus international riparian forests related publications.

mainly distributed on each side of the watercourse [2,3]. The eco-hydrological processes in riparian forests organically link the atmosphere, vegetation, soil, and hydrology and these areas constitute part of the Earth's Critical Zone [4–6]. Riparian forests not only serve as critical habitats for species survival but also act as biological corridors and contaminant filters [2,3]. Riparian forest ecosystems also provide a variety of ecosystem services for humans, including water conservation and purification, sand stabilization, energy supplies, and recreation. Therefore, riparian forest ecosystems have great ecological and economic value and are important for societies and human welfare [7,8]. Since the onset of the Anthropocene epoch, the impact of human activities on riparian forests has become increasingly prominent, leading to ecosystem degradation and even community succession [9,10]. These effects have seriously undermined the ecosystem services provided by riparian forests, negatively affecting human welfare and the sustainable development of these ecosystems [11,12]. To better protect riparian forest ecosystems and achieve sustainable development, extensive studies have been conducted on riparian forests, and substantial results have been obtained [13–15]. Many of these studies of riparian forests have focused on Chinese inland rivers, where a large amount of energy and resources have been invested to address water resource management and sustainable development issues in inland river basins. One of these major research programs is the Heihe River Program, which was implemented in 2010 and prompted further achievements in Chinese riparian

forests research [16]. As riparian forests research is important for the sustainable management of ecosystems in China, it is essential to address the priorities and hot topics in riparian forests research and compare international and Chinese research to provide a reference for future Chinese riparian forests research.

Bibliometrics, which is the application of mathematical and statistical methods to books and other communication media, was first introduced in 1969 [17]. In recent years, it has been widely used to assess research trends in multiple disciplines and countries by investigating publication characteristics, such as the productivity of institutions and countries, major journals, and research trends [18,19].

In this study, a bibliometric approach was used to investigate trends in riparian forests research from 1981–2014. To systematically review the current state of riparian forests research and clarify the difference between international and Chinese studies, we qualitatively analysed publications that reported international and Chinese riparian forests research. Furthermore, we summarised and discussed the priorities and hot topics in international and Chinese studies to characterize the trends in riparian forests research and identify key topics that should be emphasized in future Chinese studies of riparian forests.

## 2. Data sources and methods

Data for international riparian forests research was collected from the online version of the Web of Science Core Collection, which consists of 7 main databases. These databases include the Science Citation Index Expanded database and the Conference Proceedings Citation Index-Science database, which cover the world's leading journals of science and technology [20]. We searched for articles from 1981 to 2014 with the keywords “riparian forest\*” or “riverine forest\*” in the title, abstract, or keywords, and used the results to compile a bibliography of articles related to international riparian forests research. Articles originating from England, Scotland, Northern Ireland, and Wales were reclassified as being from the United Kingdom (UK). Articles from Hong Kong were grouped with articles from China. For each publication, the contributions of different institutes and countries were estimated based on the affiliation of at least one author. The compiled articles were assessed based on the following aspects: the characteristics of publication output, the publication distribution of each country, the institution, and author keywords for priorities and hot topics.

We included articles published in both Chinese journals and articles published in international journals by Chinese authors to analyse the Chinese riparian forests research. The international riparian forests

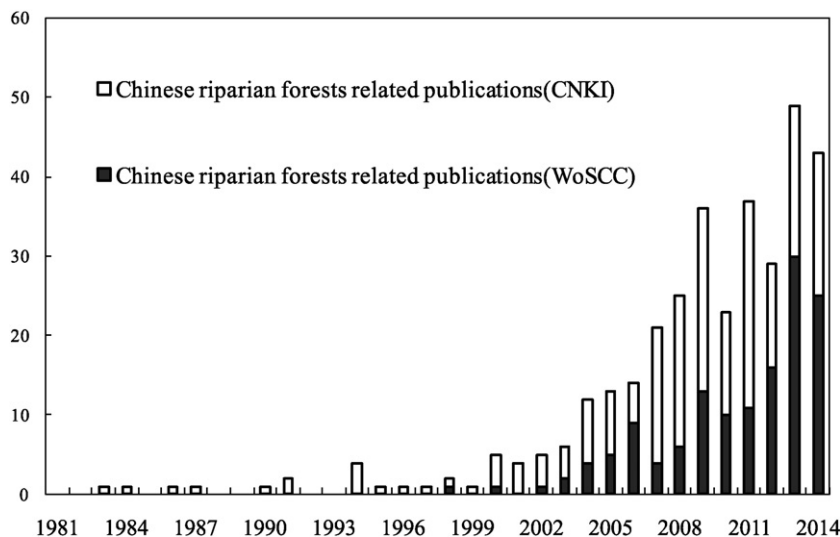


Fig. 2. The growth of Chinese riparian forests related publications based on the CNKI and WoSCC databases.

Download English Version:

<https://daneshyari.com/en/article/4379726>

Download Persian Version:

<https://daneshyari.com/article/4379726>

[Daneshyari.com](https://daneshyari.com)