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Ecotourism in China, Misuse or Genuine Development? An Analysis Based on Map Browser Results

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Abstract: Ecotourism is considered to be an effective means of promoting nature conservation and sustainable development in less developed regions. However, its widespread adoption may be the result of a misunderstanding due to confusion about definitions and interpretations. Using web map browsers, we assessed the distribution pattern of ecotourism sites in both number and density in the 31 provinces of mainland China, and found that it positively correlated with gross domestic products (GDP) and population size, showing spatial dynamics similar to the general tourism model. However, negative-weak or no correlation at all was found with the presence and size of nature variables such as protected areas. These results support previous suspicions that the term ecotourism and its associated concept may be misused in China and that the regions that could benefit the most from this form of tourism have yet to properly develop it. Although this pattern could reflect a huge demand for genuine ecotourism, we recommend that China, to achieve its ambitious sustainable development goals, adapt ecotourism policies in its environmental and socio-cultural context, manage them with a trans-disciplinary expert board, and regulate its market by introducing a rigorous admittance system with continuous monitoring and evaluation.

Keywords: ecotourism; mass tourism; concept overuse; conservation; admittance system; sustainable development

1. Introduction

Peripheral and less developed regions are often characterized by lower human impacts on natural habitats and higher biodiversity rates than other places in the world. However, a lack of economic resources, infrastructure and effective policies to assure the conservation of these important natural assets affects several hotspots, especially remote mountainous regions [1]. The development of ecotourism, as opposed to general or mass tourism models, is often considered an effective solution to overcoming most of these problems, meeting important nature conservation objectives, achieving regional development in a sustainable manner and building environmentally-friendly mindsets [2–6].

According to The International Ecotourism Society (TIES) [7], the current definition of ecotourism is “responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education”. TIES and other international organizations such as the World Tourism Organization (UNWTO) [8], the United Nations Environment Program (UNEP) [9] and the Global Sustainable Tourism Council (GSTC) [10], provide similar definitions and generally agree on the fundamental principles that distinguish ecotourism from other forms of tourism. Specifically, ecotourism focuses on small-scale travel that minimizes ecological, cultural and behavioral impacts. The economic benefits generated from such travel should be channeled to local communities, organizations and authorities participating in the conservation of ecosystems to promote sustainable development, finance environmental protection measures and reduce poverty. On the visitor side, ecotourism should deliver memorable experiences in natural environments and encourage responsible travel behaviors by raising awareness of the environmental and social impact of tourism, as well as the importance of nature conservation. Additionally, by participating in ecotourism operations as hosts, locals will also be made more aware, directly or indirectly [7,8,11–13]. However, the term “ecotourism” as well as similar, more or less related terms, such as “ecotravel”, “nature-based tourism”, or “green tourism”, just to name a few, first appeared and were commonly used by tourism operators several years before specialized researchers and institutions started working on a consensus meaning, fundamental concepts, the definition of standards and the development of guidelines [12,14–20]. In the absence of clear and unified operational frameworks to guide this flourishing industry, such as those available nowadays at the international level (TIES, UNWTO, GSTC) or at the national level for some countries (e.g., Ecotourism Australia [21], Costa Rica’s Certification for Sustainable Tourism [22]), promoters and managers were basically free to interpret and implement ecotourism however they wanted, or as it best suited their needs, creating a clear gap between theoretical ecotourism concepts and their practical implementation [12,18,23,24]. This confusion was not limited to providers but also to consumers confronted with different choices of tourism products tagged with different legitimate or fraudulent “ecolabels” [25]. The new fast-growing market opportunities were not backed up by rigorous implementation standards, certification and control, often resulting in voluntary or involuntary unsustainable ecotourism practices [26,27]. Several cases reported in the literature argued that travel in natural areas represented new pressure and potential damage to delicate ecosystems [26,28–31]. Furthermore, conflicts on who should manage ecotourism projects and benefit (economically) from them [32–37], the deliberate use of the “eco” label to attract clients and cover current unsustainable activities (“greenwashing”) [23,38,39], social impacts such as the commodification of indigenous people and culture [39,40], were also observed. However, recent reviews of studies on the effectiveness of ecotourism as a forest conservation and sustainable development strategy takes a critical standpoint towards past research, calling for more effort and rigor in research design and evaluation. In particular, it is argued that statements of ecotourism failures and ineffectiveness may be overstated and misleading due to flaws in research design, lack of comparison with other forms of resource use and the absence of spatial and temporal methodology scaling. Moreover, the confusion surrounding the definition of ecotourism seems to recur in the academic environment too, with case studies analyzing different things and referring to them as ecotourism, making comparisons difficult or not possible [41–45].

In this study, we have presented an overview on the development of ecotourism in China, a country offering a multitude of natural hotspots and a flourishing tourism market fueled by an already massive and ever growing traveling population. The ecotourism concept was introduced in China in the 1990s and spread very quickly mainly thanks to the government’s programs to develop remote and poorer areas in a sustainable manner, raise awareness on environmental protection and promote an ecological civilization, as well as reduce emissions and other impacts directly related to the tourism industry [46,47]. Among the primary institutional milestones of ecotourism development in China, one worthy of note was the publication of the “Proposals about development of ecotourism in China,” which coincided with the first session of the “Chinese Ecotourism Symposium” in 1995. Later, 1999 was declared “The Year of Tourism in Ecological Environment” and 2009 “The Year of Ecotourism” by

the China National Tourism Administration (for more details, see [46,48]). More recently, the “National Ecotourism Development Plan 2016–2025” was released in 2016, guiding the present and near future developments [49]. These milestones reflect the value that the Chinese government gives to ecotourism and its intentions to increase the offer of destinations, especially within nature reserves, which expanded in number from about 600 in 1990 to more than 2700 by 2016, as well as in many other kinds of natural scenic spots and protected areas [46,47,50,51]. On the consumer side, with gross domestic products (GDP) and the Chinese “middle-class” growing quickly, the demand for nature-based recreation has increased dramatically, demonstrating the appreciation of domestic tourists for such destinations [51,52]. In one example, annual visits to Potatso National Park in Yunnan, the first national park in China to meet International Union for Conservation of Nature (IUCN) standards, reached 1.34 million in 2015, while daily overnight stays are predicted to exceed 7914 by 2020 [53]. In terms of density (per square meter), the number of visits in 2015 was 2.3 times the number of visits to the renowned Yellowstone National Park in the U.S. in the same year.

Unfortunately, as previously mentioned for other regions of the world, the apparent success of ecotourism development has not come without cost. Although extensive survey results over the majority of provinces in mainland China have reported a positive ecotourism development performance in forest parks [51] with some differences among provinces [54], several studies have found increasing pressure on natural resources and damage to ecosystems due to an excessively large numbers of visitors [55], poor behavior of tourists [56] and inadequate management at several administrative levels [46,54,57,58]. Moreover, other fundamental aims of the ecotourism model such as the fair distribution of income among stakeholders and the environmental awareness of tourists, were rarely achieved [36,59–62]. Theoretical models applied to empirical evidence have also been used to predict the behavior of tourists visiting nature-based sites. It was often found that visitors’ behavior depended not only on their personal knowledge, values and intentions prior to travel [56,63], but also on their appreciation of the ecotourism experience [56,64–68]. These studies have important implications for the management of ecotourism sites, recommending that ecotourism enterprises pay particular attention to delivering a full and genuine ecotourism experience to their customers in order to promote ecologically-responsible attitudes. As observed in other countries, the major source of problems is attributed to the widespread misinterpretation of ecotourism principles and the consequent voluntary or involuntary unsustainable implementation by tourism operators, travelers and other parties involved in the process [46–48,52,57,60,69]. Some researchers addressed the issue by looking at the specific cultural and historical context of China. In particular, they analyzed the circumstances in which the concept of ecotourism was imported from abroad, translated into Chinese as “*shengtai liuyou*” and integrated with the already existing forms of nature-based travel [48,60,61,69]. The authors highlighted how the top-down approach used to introduce the ecotourism model failed to carefully consider traditional Chinese cultural beliefs, history, political and socioeconomic factors. Thus, the meaning of ecotourism and *shengtai liuyou* are similar in some respects but slightly different in others. If the concept of ecotourism in the “Western world” (i.e., including mainly Western Europe, the U.S., Canada, Australia and New Zealand) consider humans as primarily a nuisance to nature and therefore call for minimal impact on protected landscapes, the concept of *shengtai liuyou* regards humans as an integral part of the landscape, the beauty of which is enhanced with artifacts such as rock carvings, temples and stair paths [48,60,61,69]. However, despite these underlying cultural differences, Chinese ecotourists exhibit eco-friendly behaviors highly similar to those of their Western counterparts, revealing a great potential for the creation of an ecological civilization both in China and abroad [48,61,68]. The same authors suggested that to reach sustainability, international standardization of the ecotourism concept should be inclusive of local characteristics, which is a hard task still far from being achieved.

With this paper we assessed the current conditions of *shengtai liuyou* in mainland China in a different way from previously published works, which mainly focused on available literature [48], analysis of government policies [52,54], empirical knowledge of the authors [60], or on field surveys of individual case studies [36,56,58,59,63]. Focusing on ecotourism supply, we have proposed a synoptic

view over the distribution pattern of *shengtai lüyou* locations in China, using data retrieved from browsing freely available domestic map services, and comparing the results with the distribution of natural hotspots and socio-economic variables. This approach takes advantage of the booming market of Big Data and the massive adoption of web map servers and browsers, which provide an unprecedented quantity of data for research. Big Data approaches including GPS and geo-tagging in social networks have been widely used in tourism research [70]; however, to our knowledge, web map browsers as tools for geospatial data retrieval have never been used in this context. Map browsers return geolocation results associated with the keywords used for the search, making them an ideal tool to quantitatively measure how keywords are adopted by the “masses”. Although the information retrieved by browsing a map server reflects the distribution of ecotourism supply only, the results are useful for highlighting general patterns of ecotourism adoption including the consumers sphere. There are two main points to the rationale behind our research. First, if a similar distribution pattern were found between ecotourism spots and all types of tourism (general tourism), this would reflect no significant difference between the two models and a probable misuse of the ecotourism label. Second, we expected ecotourism locations to be found in the areas offering greater and better natural features as well as lower levels of economic development. If that was not to be the case, it could have been a sign of ecotourism implementation failure, a struggle to accomplish ecotourism’s goals or current ecotourism underdevelopment. The resulting correlations with natural and socio-economic variables and similarities or differences between the two tourism models will provide insights and support to discuss the ecotourism distribution pattern and current situation in China.

After presenting the methodology and discussing the results, in the conclusion section of this paper we have provided suggestions for improving the sustainability of the current Chinese ecotourism management plan. In addition to proposing and testing an original approach to retrieve data and use it for empirical research, this study provides a spatial overview of ecotourism development in China and contributes to the understanding of this complex phenomenon with complementing case studies and government statistics. Although focused on the specific case of China, the methodology and the suggestions are meaningful and potentially scalable to other regions of the world.

2. Materials and Methods

2.1. Map Browser Selection

The earlier design of the present study was drafted in 2013. At that time, we selected Google Maps (<https://www.google.com/maps/>, accessed on 21 January 2019) as the web map browser because of its popularity and its almost-global coverage since the earliest days of web mapping, and its service provision in several languages, including Chinese. This made it the ideal data source for distribution pattern comparisons between different countries. Unfortunately, Google suspended its services in China in 2014, allowing us to compile only a preliminary dataset, thus significantly limiting the potential of the analyses. Although the results of the previous analyses did not qualify for a solid report and were not used in the present study, we have mentioned them here to help readers understand the context and how our methodology was adapted to the new data. Browsing results from Google Maps using the keywords “ecotourism” and “生态旅游” (“*shengtai lüyou*” in Chinese characters), and using different zoom levels, showed significant differences of point distribution between China (big number and high density) and English-speaking countries such as the U.S. and Australia (low number and low density). This pattern suggested a different meaning and adoption of a word and concept that should be equivalent. Following the departure of Google, we decided to focus our research on China alone using its web map browsers.

Nowadays, several Chinese companies provide online mapping services analogous to Google Maps, such as Baidu (<https://ditu.baidu.com/>, accessed on 21 January 2019), Tencent (<https://map.qq.com/>, accessed on 21 January 2019), Sogou (<http://map.sogou.com>, accessed on 21 January 2019), and Gaode (<https://gaode.com>, accessed on 21 January 2019). Although during our first initial trials the

four map browsers gave similar browsing results at the provincial level, Gaode was selected because it returned a significantly higher number of results and it allowed for a clear organization of results at several administrative levels to use as reference spatial units for analysis. According to usage data stated on the respective websites, Gaode Maps, a product of the mapping and navigation company AutoNavi Software Co., Ltd. based in Beijing, is the biggest map service provider in China in terms of application downloads and monthly active users. Moreover, it provides data to foreign corporations such as Google and Apple [71].

2.2. Map Browsing and Data Extraction

Map browser searches on Gaode Maps were performed on November 19th, 2018 using the equivalent Chinese terms for “ecotourism” and “tourism”, the latter was meant to include all sorts of tourism types. The respective terms in Chinese were “生态旅游” (“*shengtai lüyou*”—ecological tourism) and “旅游” (“*lüyou*”—tourism). The results were organized at the provincial level, including the 22 provinces, four direct-controlled municipalities and five autonomous regions of mainland China, excluding Taiwan, Hong Kong, and Macao. In order to validate the data collected from map servers, we retrieved published conventional tourism data from the most recent available Yearbook of China Tourism Statistics, published in 2018 [72], for correlation analysis.

2.3. Provincial Nature and Socio-Economic Data

Provincial-level nature and socio-economic data was collected from the 2018 Statistical Yearbook of China [73] to be used as explanatory variables for the distribution of ecotourism sites. Socio-economic data in this study comprised of population size and GDP. Nature data included the number of nature reserves, area covered by nature reserves, percentage of forested land, forest cover area, grassland area, and wetland area. Additionally, we included the Priority Areas for Biodiversity Conservation selected by the China National Biodiversity Conservation Strategy and Action Plan 2011–2030 [74]. The size of each province was also included in the dataset (Table 1).

2.4. Data Analysis

The ecotourism and general tourism numbers extracted from Gaode Maps browser as well as those from the 2018 Statistical Yearbook were normalized by province using a single unit of 10^5 km², resulting in provincial point densities. To assess the potential of the map browser data retrieval approach, we compared absolute numbers and densities with those from the Yearbook. The existence or absence of significant differences between general tourism and ecotourism provincial patterns were also tested. Correlations with the different nature and socio-economic variables were evaluated using Pearson’s test.

Table 1. Compiled dataset of provincial ecotourism and general tourism sites, nature and socio-economic information. GD = Gaode Maps, YB = Statistical Yearbook (data sources: Gaode Maps, China Statistical Yearbook 2018, Yearbook of China Tourism Statistics 2018, Ministry of Environmental Protection 2011).

Province	Ecotourism Sites (GD) (Number)	Tourism Sites (GD) (Number)	Tourism Sites (YB) (Number)	Population (10,000)	GDP (100,000,000)	Province Area (km ²)	Nature Reserves Area (km ²)	Nature Reserves (Number)	Forested Area (km ²)	Forest Cover Rate	Priority Protection Area (km ²)	Wetland Area (km ²)	Grassland Area (km ²)
Beijing	239	88,241	249	2171	28,014.94	16,370	1350	20	5881	35.84	9375	481	3948
Tianjin	112	23,851	108	1557	18,549.19	11,606	910	8	1116	9.87	627	2956	1466
Hebei	379	70,774	403	7520	34,016.32	187,045	7090	45	43,933	23.41	12296	9419	47,121
Shanxi	310	30,382	172	3702	15,528.42	156,381	11,020	46	28,241	18.03	41,150	1519	45,520
Inner Mongolia	237	16,673	374	2529	16,096.21	1,145,156	127,030	182	248,790	21.03	265,236	60,106	788,045
Liaoning	161	44,151	454	4369	23,409.24	145,260	26,730	105	55,731	38.24	0	13,948	33,888
Jilin	310	21,758	238	2717	14,944.53	190,541	25,260	51	76,387	40.38	67,061	9976	58,422
Heilongjiang	62	11,699	410	3789	15,902.68	450,076	79,160	250	196,213	43.16	147,969	51,433	75,318
Shanghai	127	64,145	99	2418	30,632.99	6306	1370	4	681	10.74	0	4646	733
Jiangsu	1149	156,928	630	8029	85,869.76	100,952	5360	31	16,210	15.8	0	28,228	4127
Zhejiang	445	160,531	700	5657	51,768.26	102,045	2120	37	60,136	59.07	39,222	11,101	31,699
Anhui	243	53,619	586	6255	27,018	140,397	5060	106	38,042	27.53	27,143	10,418	16,632
Fujian	306	78,163	280	3911	32,182.09	121,894	4450	92	80,127	65.95	44,936	8710	20,480
Jiangxi	194	38,562	357	4622	20,006.31	167,302	12,240	200	100,181	60.01	35,147	9101	44,423
Shandong	771	132,259	1173	10,006	72,634.15	153,422	11,360	88	26,460	16.73	0	17,375	16,380
Henan	198	91,387	412	9559	44,552.83	165,600	7780	33	35,907	21.5	18,369	6279	44,338
Hubei	1334	40,313	371	5902	36,478.09	186,163	10,630	80	71,386	38.4	48,274	14,450	63,522
Hunan	272	49,799	389	6860	33,902.96	212,418	12,250	128	101,194	47.77	47,536	10,197	63,727
Guangdong	1011	256,492	340	11,169	89,705.23	177,084	18,500	384	90,613	51.26	16,207	17,534	32,662
Guangxi	154	35,298	422	4885	18,523.26	236,811	13,500	78	134,270	56.51	70,184	7543	86,983
Hainan	45	9606	54	926	4,462.54	33,979	27,070	49	18,777	55.38	12,891	3200	9498
Chongqing	141	28,111	223	3075	19,424.73	82,539	8020	57	31,644	38.43	15,067	2072	21,584
Sichuan	345	79,038	492	8302	36,980.22	484,310	83,010	169	170,374	35.22	168,221	17,478	203,804
Guizhou	136	16,868	255	3580	13,540.83	176,252	8940	124	65,335	37.09	35,528	2097	42,873
Yunnan	173	27,421	231	4801	16,376.34	383,978	28,820	160	191,419	50.03	104,452	5635	153,084
Tibet	9	899	115	337	1310.92	1,204,501	413,710	47	147,156	11.98	553,604	65,290	820,519
Shaanxi	257	56,031	418	3835	21,898.81	205,900	11,310	60	85,324	41.42	84,280	3085	52,062
Gansu	106	10,037	274	2626	7459.9	404,955	88,710	60	50,745	11.28	128,323	16,939	179,042
Qinghai	22	1,666	109	598	2624.83	715,587	217,730	11	40,639	5.63	381,142	81,436	363,697
Ningxia	172	4,354	73	682	3443.56	66,400	5330	14	6180	11.89	24,794	2072	30,141
Xinjiang	68	6,361	395	2445	10,881.96	1,633,280	195,840	31	69,825	4.24	363,594	39,482	572,588
Total	9488	1,705,417	10,806	138,834	848,140.1	9,464,510	1,471,660	2750	2,288,917	21.63	2,762,628	534,206	3,928,326

3. Results

3.1. Current Distribution Pattern of Ecotourism and Overall Tourism in China: Comparison of Map Browser Results and Published Statistics

The keyword search of “旅游” (tourism) in Gaode Maps returned 1.7 million sites in mainland China (as of 19 November 2018). Of those, 9488 were ecotourism sites (“生态旅游”). Table 1 shows the provincial distribution of ecotourism spots in China. On average, the density of sites was $100.3/10^5$ km² with the highest values found in Shanghai ($2014/10^5$ km²), Beijing ($1460.0/10^5$ km²) and Jiangsu ($1138.2/10^5$ km²). The lowest densities were found in the western provinces, namely Tibet ($0.7/10^5$ km²), Qinghai ($3.1/10^5$ km²) and Xinjiang ($4.2/10^5$ km²). As we can see from the results and from Figure 1, the ecotourism sites were mainly distributed among the eastern coastal provinces (Guangdong, Fujian, Zhejiang, Jiangsu, Shanghai, Shandong, Tianjin, Beijing) or, in general, in the eastern part of China. The eight provincial-level regions richest in ecotourism sites (54.7%) represented only 7.99% of mainland China’s territory, while the ten provincial units with the lowest ecotourism count (13.8%) covered 72.40% of it.

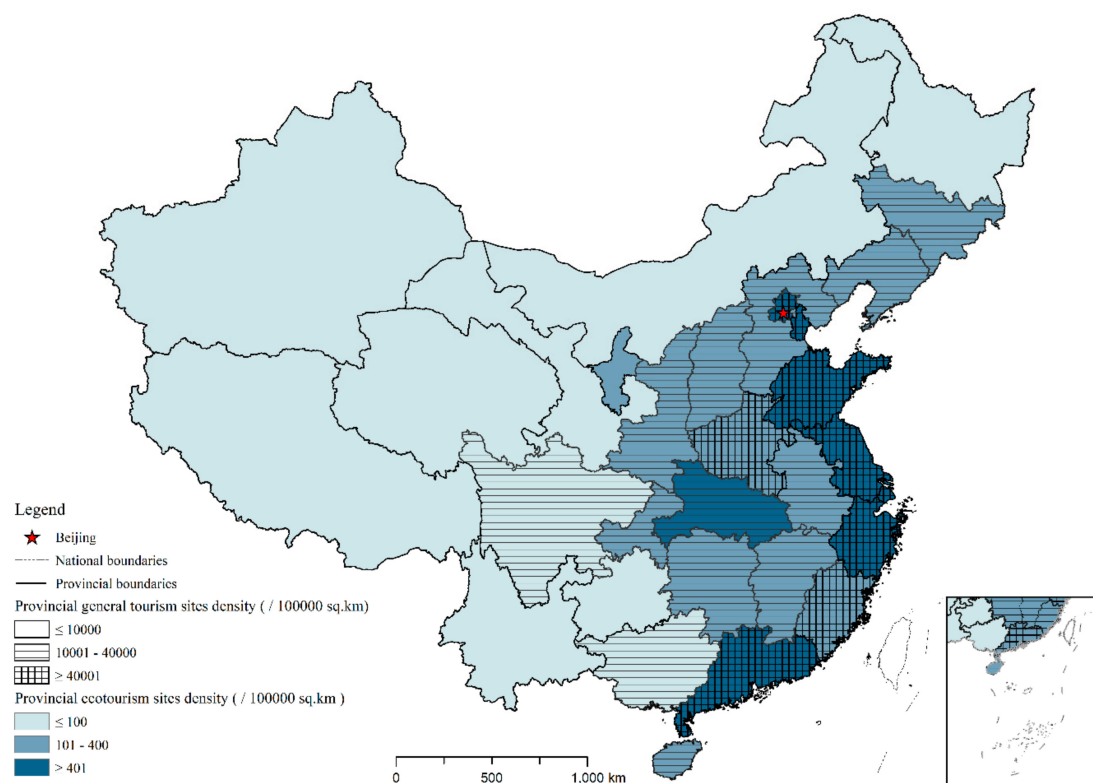


Figure 1. Density of ecotourism and general tourism sites in China, by province. Data from Gaode Maps browser search performed in November 2018.

When comparing the density of ecotourism points with the overall tourism sites (general tourism), a significant correlation was found ($r = 0.903$, $p = 0 < 0.01$, $N = 31$), indicating that ecotourism was concentrated in the same provinces as general tourism. A positive correlation was also found when using point counts instead of densities ($r = 0.668$, $p = 0 < 0.001$, $N = 31$). Numbers from the 2018 Yearbook of China Tourism Statistics indicated 10,806 general tourism spots recorded in China, mainly distributed in Southeastern coastal areas, in a pattern similar to the distribution of ecotourism sites ($r = 0.475$, $p < 0.01$, $N = 31$). Densities were also correlated ($r = 0.910$, $p = 0 < 0.01$, $N = 31$), further confirming the coherence between the official statistics and the web map approach (Table 2).

Table 2. Correlation between ecotourism sites counts and densities with the different socio-economic factors, general tourism counts and densities in China, at the provincial level.

		Population	GDP	Tourism Site Count		Tourism Density	
				(GD)	(YB)	(GD)	(YB)
Ecotourism sites count	r	0.641	0.790	0.668	0.475	-	-
	p	0.000	0.000	0.000	0.001	-	-
Ecotourism density	r	0.044	0.410	-	-	0.903	0.910
	p	0.815	0.022	-	-	0.000	0.000
	N	31	31	31	31	31	31

GD = data from Gaode Maps (November 2018); YB = data from the 2018 Yearbook of China Tourism Statistics.

3.2. Factors Determining the Distribution of Ecotourism and General Tourism

The amount of ecotourism sites per provincial-level administrative region were positively correlated with population size ($r = 0.641$, $p = 0 < 0.01$, $N = 31$) and with GDP ($r = 0.790$, $p = 0 < 0.01$, $N = 31$), while no significant correlation was found with the number of reserves in the province ($r = 0.235$, $p = 0.202$, $N = 31$). The density of ecotourism sites was negatively correlated with forested area ($r = -0.481$, $p = 0.006 < 0.01$, $N = 31$) and with the Priority Areas for Biodiversity Conservation ($r = -0.390$, $p = 0.03 < 0.05$, $N = 31$), as shown in Figure 2. No significant correlation was found between the density of ecotourism sites and the different nature factors: area covered by nature reserves ($r = -0.328$, $p = 0.071$, $N = 31$), forest coverage rate ($r = -0.185$, $p = 0.318$, $N = 31$), wetland area ($r = -0.265$, $p = 0.150$, $N = 31$), and grassland area ($r = -0.346$, $p = 0.056$, $N = 31$). All correlation results are shown in Tables 2 and 3.

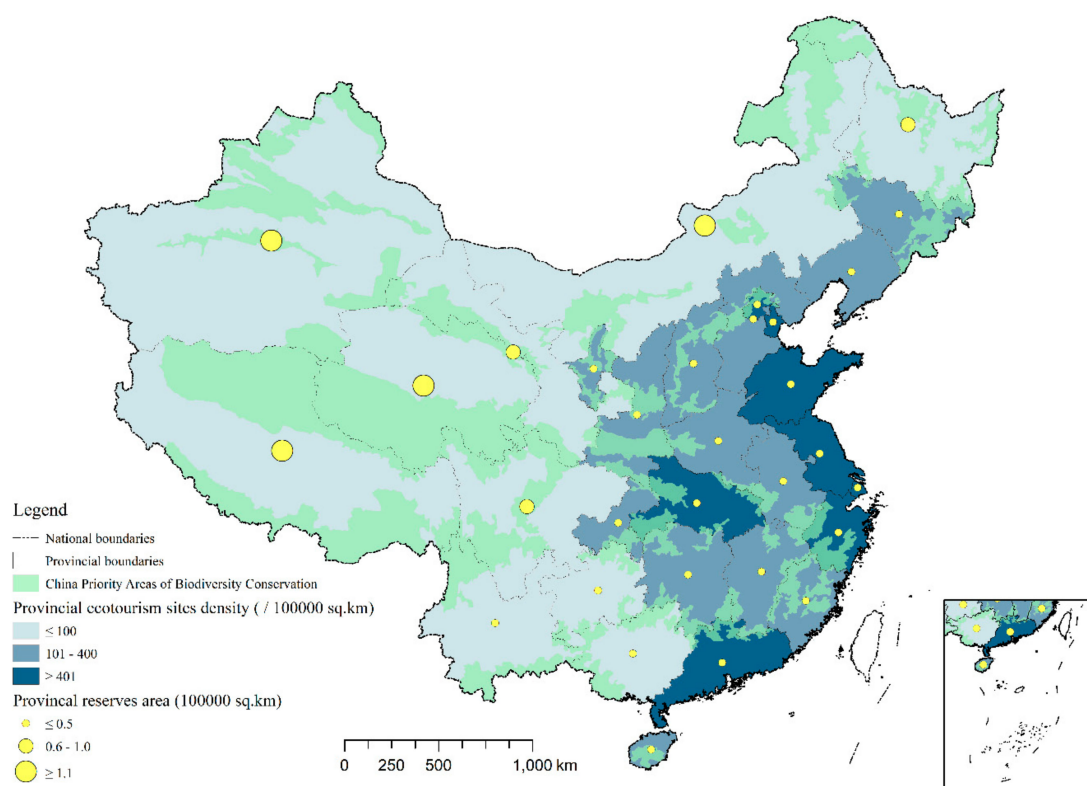
**Figure 2.** Provincial densities of ecotourism sites compared with nature reserve area and priority areas for Biodiversity Conservation in China. Data form Gaode Maps (November 2018, China Statistical Yearbook (2018), and Ministry of Environmental Protection (2011)).

Table 3. Correlation between ecotourism counts and densities with the different nature factors in China, at the provincial level.

		Area of Nature Reserves	Number of Nature Reserves	Forested Area	Forest Cover Rate	Priority Areas for Biodiversity Conservation	Wetland Area	Grassland Area
Ecotourism sites count	r	-	0.235	-	0.100	-	-	-
	p	-	0.202	-	0.593	-	-	-
Ecotourism sites density	r	−0.328	-	−0.481	−0.185	−0.390	−0.265	−0.346
	p	0.071	-	0.006	0.318	0.030	0.150	0.056
	N	31	31	31	31	31	31	

4. Discussion

4.1. Potential and Scaling of Data Retrieval from Web Map Browsers Approach

In this study, we used data from a popular Chinese web map browser (Gaode Maps) to visualize the distribution pattern of ecotourism sites in China and extract data for further analysis. The significant correlation between web map results and the numbers provided by the official Yearbook showed consistency between the two data sources, suggesting reliability of this approach and encouraging its further use. Web maps offer a synoptic view of spatial phenomena and facilitates the analysis and understanding of qualitative and quantitative data. Although web map browsers are owned by giant corporations and offer a limited choice of tools useful for research, such as extraction of geographic coordinates and data querying, the visualization of results on a map remains an extremely valuable component of analysis that can complement other survey tools. Moreover, depending on the type of data required, this approach can overcome the limitations faced by regions of the world where official statistics are not available or not adequately collected.

4.2. Ecotourism in China: Misuse or Genuine Development?

Recent research has revealed several cases of ecotourism destinations in China focusing more on increasing income from a larger number of visitors than a full embrace of ecotourism principles [75–78]. Even when some scenic areas and tour operators do not satisfy the basic requirements to be fully classified as ecotourism sites, they gain prestige and status by labeling their business as such, employing the term merely to lure paying customers [76,77,79,80]. Owing to a lack of binding laws in China and the ad hoc certification system for ecotourism sites in this country, which does not allow consumers to fully distinguish between genuine, partially genuine, and completely fake tourism enterprises, the word *shengtai liuyou* in practice means no more than tourism offering some sort of nature-based activity. By using a radically different approach from the reports mentioned above, our findings have highlighted the tendency in which ecotourism functions as an attractive mask hiding a model very similar to conventional tourism. Ecotourism and mass tourism distribution patterns were highly similar and the main factor explaining this distribution was the GDP of the provinces. If we consider two particular fundamentals of ecotourism, i.e., environmental protection and sustainable development of the poorest local communities, we should observe the opposite pattern or at least a more even spatial distribution. Surprisingly, no correlation was found between the provincial distribution pattern of Chinese ecotourism sites and the nature factors, such as number of protected areas, forested areas, or forest coverage. The western provinces of China are those containing the vast majority of natural areas and are also those with the lowest GDP figures, where capital injected by ecotourism could make a difference. For example, the Southwestern province of Yunnan, which is called the “Kingdom of Wildlife” and comprises three global biodiversity hotspots [81,82], had a density of ecotourism sites of only $45.1/10^5 \text{ km}^2$, ranking 25th among the assessed Chinese provinces. In contrast, the highest quantities and densities of ecotourism sites were found in provinces with the fewest natural landscapes and the least practical potential for ecotourism development. This pattern raises the question of

whether ecotourism as implemented nowadays in China effectively contributes to the sustainable development of the poorest regions.

However, this situation reflects not only bad practices and abuse of the concept by tourism companies but could also highlight a general recognition of the concept by the public and the tendency of consumers to choose a different mode of leisure travel, increasing demand. The fact that most ecotourism sites are found in the richer provinces makes sense to a certain extent. Higher GDP allows for increased investment and development potential, so that these provinces can develop ecotourism in their natural areas while lower GDP provinces are still struggling to expand facilities due to limited funding [54]. In general, the high number of scenic sites touting labels of “ecotourism” demonstrate that the concept of ecotourism has been widely adopted in China, reflecting the positive perception of the concept by the Chinese population, which has treated it as a huge marketing opportunity. This last fact is a sign that positive changes in the tourism model could be made by taking the necessary steps to organize and regulate ecotourism sites in a scientific and coordinated manner.

4.3. Chances and Suggestions for Future Ecotourism Development in China

In recent years, the Chinese government has made great efforts toward environmental protection and development, promoting policies which highlight the relationship between the ecological environment, public life and social development [83,84]. Several innovative solutions have been proposed and implemented [79,81]. According to the newest National Ecotourism Development Plan (2016–2020), 20 cooperation areas for ecotourism, 50 high-level ecotourism itineraries, and 200 important sites are proposed for development, in addition to 10,988 protected areas that will be listed as ecotourism destinations [49]. Furthermore, the new Ministry of Natural Resources (MNR) and Ministry of Ecology and Environment (MEE) were formed after the 19th session of the National Congress of the Communist Party of China with the aim to supervise the sustainable utilization of natural resources. At the same time, the Ministry of Culture and the National Tourism Administration were merged into a new Ministry of Culture and Tourism, with a new agenda focused on the promotion and the integration of sustainable tourism practices [85].

This may be an opportunity and a challenge to develop an efficient Chinese ecotourism model and certification process in the near future. To that end, we have raised the following recommendations:

- As a starting point, in order to discourage misinterpretations and misuse of the ecotourism concept, a clear and unified definition of ecotourism, which describes its goals and its principles should be agreed upon and promulgated. Clear and measurable standards should be specified so that tourism operators know how to maintain compliance without ambiguities. Other forms of tourism should be defined with different terms. For general guidance, the definitions and frameworks provided by TIES and UNWTO can be used as references, but to be effective and meaningful they should be adapted and developed to meet the historical, environmental and social-cultural contexts of China [48,69].
- Given that the fundamental element of the ecotourism model is nature, risks and vulnerabilities of natural ecosystems and the services they provide at the local, regional and national levels should be identified, assessed and integrated in the decision-making process of the current National Ecotourism Development Plan and the management of the Chinese protected areas network. Assessments should consider the impacts of tourism activities in a rapidly growing market, together with ongoing climatic and socio-economic changes.
- Unfortunately, eco-certification for the tourism industry, as proposed by several researchers, has had trouble in winning acceptance in China [46,47,86]. Ecotourism standards should be made concrete via the establishment of a market admission system that could take the form of compliance and quality certifications coupled with a rating system that would adequately inform consumers on their choices. Moreover, ad hoc laws and regulations should be clearly stated, and an organized monitoring, evaluation and enforcement system should be formed to discourage abuse.

- Integrate both top-down and bottom-up approaches of ecotourism design and implementation. The former could take form in the creation of a governmental organ in charge of bridging the gap between the National Parks Administration and the newly created Ministry of Culture and Tourism because it has been suggested that ecotourism is more effective when coupled with other conservation mechanisms such as well managed protected areas [41]. This organ will be responsible for developing national standards of ecotourism which consider all principles, as well as managing its implementation at the different administrative levels. Bottom-up approaches include the inclusion of all stakeholders in the creation and organization of ecotourism projects to win support from all interested parties toward common sustainable development goals. The optimum balance between nature conservation and local development can only be achieved through inclusion of and cooperation by all stakeholders in a common project [37].
- The suggested governmental ecotourism organ should solicit opinions from and be overseen by a trans-disciplinary expert panel to assist in the decision-making process. The expert panel should include representatives from natural and social sciences, not only business strategists and tourism management professionals, as well as public administrators, private sector businesspeople, local community associations and other stakeholders.
- Behavioral changes towards sustainability should be promoted by ensuring high-quality education and awareness of environmental and socio-economic issues. This is not only one of the main principles that should be integrated at tourism sites, but also at the institutional level, i.e., as a core topic in school programs.

4.4. Limitations and Future Work

Work in this study was conducted according to an original approach which took advantage of data from unconventional sources and used it for analysis in a tourism research context. Such an approach, however, was subject to some limitations. Gaode Maps allows the organization of results at a higher resolution than the provincial level, but, unfortunately, it was difficult to obtain accurate statistics for the natural and socio-economic variables at a finer resolution than the one employed in this study. A bigger scale would have given a more precise picture of ecotourism development in China and revealed important intra-province patterns. Moreover, our findings alone are not sufficient to prove a misuse of the term “ecotourism” but can merely hint at a dubious pattern. Nevertheless, these results offer a different perspective in support of other studies and raises questions that call for further investigations. More in-depth and well-designed studies are needed [42], and geospatial information could be extremely valuable in this context. For example, a keyword search strategy within map browsers could be refined to explore different terms related to tourism; search results could be retrieved at a higher resolution and then integrated in a GIS approach for high-level spatial analysis; etc.

5. Conclusions: Bringing Ecotourism Towards Sustainability Globally

Our analysis revealed that China still has a long way to go to develop genuine ecotourism as clearly distinct from conventional forms of mass tourism. Ecotourism is still undervalued in the areas that offer the most suitable natural features and that need it the most, while the richer provinces with limited natural features appear to offer an excessive number of ecotourism sites, suggesting further investigation and highlighting the need for proper regulation and quality certification. At the global scale, after a half century of development, several countries have established tourism and ecotourism management systems coupled with quality compliance certifications and have achieved considerable results. However, the subject of this study was not an isolated case concerning China alone. Improvements could be made at the international level. In fact, most tourism operator organizations are composed of consortia with little involvement from government entities; in some regions or countries there is a lack of unified management and effective supervisory bodies, while international standardization and certification is still in its infancy. In this regard, more effective conservation and

large-scale sustainable development could be achieved by expanding the efforts undertaken by TIES, UNWTO, and other organizations. However, we believe that the establishment of a dedicated committee for global ecotourism following, for example, the UNESCO World Heritage model, represents an interesting option to explore. This committee would be in charge of defining global directions for the inclusion and development of ecotourism sites in member states. Global quality standards should be implemented, and internationally recognized ecotourism hotspots should be monitored regularly under an appropriate evaluation system, which includes penalties and admittance/withdrawal policies. Such a rigorous approach could have the potential to stimulate ecotourism effectiveness in countries seeking support and recognition at the international level.

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