



Review article

Cooperation, hotspots and prospects for tourism environmental impact assessments

Yunlai Zhang^a, Lixin Wang^a, Yaomin Zheng^{a,b,c,*}, Fang Tian^d

^a School of International Economics and Management, Beijing Technology and Business University, No. 33, Fucheng Road, Haidian District, Beijing, 100048, China

^b Institute for Culture and Tourism Development, Beijing Technology and Business University, No. 33, Fucheng Road, Haidian District, Beijing, 100048, China

^c World Heritage and Tourism Monitoring Centre, Beijing Technology and Business University, No. 33, Fucheng Road, Haidian District, Beijing, 100048, China

^d School of Foreign Studies, Beijing Technology and Business University, No. 33, Fucheng Road, Haidian District, Beijing, 100048, China

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ABSTRACT

This study aims to identify hot spots, research limitations and future research directions in tourism environmental impact assessment (TEIA). We analyzed studies from the core database of Web of Science (WoS) based on their coauthorship, keyword co-occurrence and timeline with VOSviewer and CiteSpace. It was found that China, the United States, the United Kingdom, Australia and Spain are the major contributors to TEIA, and relatively stable cooperative groups have been formed among the authors. Research hotspots in the past 20 years mainly include: the impact of tourism activities in different tourist destinations on the environment, the approaches to assess the impact of tourism on the environment, and strategies on reducing the negative impact of tourism on the environment. We also found TEIA deficiency in the following five aspects: 1) insufficient studies on macro decision-making; 2) insufficient dynamic interaction analysis; 3) insufficient tourism heat footprint research; 4) insufficient studies on the positive effects of tourism on the environment; and 5) insufficient interdisciplinary innovation. Based on the findings, we suggest that 1) further studies be conducted on tourism activity type, time scale, macro pattern, environmental process and policy effect of tourism impact assessment with more variables and factors considered; 2) the impact of different types of tourism on each subsystem of the environment and the paths of the interaction among subsystems be explored from the perspective of system governance; 3) the study of thermal footprint generated by tourism activities be given more attention, especially large-scale tourism activities; 4) the positive impact of tourism activities on the ecological environment be studied, especially ecotourism; 5) the applicability of TEIA evaluation results be increased by means of interdisciplinary methods such as big data analysis.

1. Introduction

The global tourism industry is growing rapidly, accounting for 10.3% of the Gross Domestic Product (GDP) in 2019 and 10% of the

* Corresponding author. School of International Economics and Management, Beijing Technology and Business University, No. 33, Fucheng Road, Haidian District, Beijing, 100048, China.

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world's total employment [1]. As a low-carbon industry, tourism is a leading industry in tackling global climate change, energy conservation and emission reduction [2,3], and its impact on the environment is often lower than the negative impact of secondary industries. Many resource-based cities, therefore, are actively transforming into tourist cities [4,5]. Although most tourism activities benefit tourist destinations by increasing economic income and providing jobs, they may also affect the ecological environment through soil compaction, erosion and interfering with animal habitats [6–8]. However, the environment is not only the carrier of human activities; it is also a very important part of the tourism experience, and environmental factors are becoming key aspects of people's decision-making when choosing adventure tourism destinations [9]. Therefore, an ecologically healthy environment and the sound development of tourism are complementary, and the degradation of the ecological environment will, in turn, affect the sustainable development of tourism. Tourism development should be based on the results of environmental impact assessments, which is in line with the Sustainable Development Goals [10–12].

Tourism environmental impact assessment (TEIA) has always been a hot topic in academic circles, but a comprehensive literature review is needed because most of the existing studies are based on cases and view the variations in the types of tourism activities, measured variables, time range and research methods [13] and lack of consensus in research conclusions, systematic records and sorting. This paper reviews existing TEIA studies to provide a reference for future research. The analysis of research will help other scholars identify influential TEIA teams, and the analysis of research hotspots and current research deficiencies will help scholars identify the direction of future research.

The rest of this paper is organized as follows. The second part introduces the literature, including the source, the method of collecting and its processing. Part 3 describes the variation trend of the number of publications in different years and provides the results of co-occurrence analysis, keyword co-occurrence analysis and timeline analysis. In the fourth part, the hot topics of the research are discussed based on the econometric analysis and the in-depth review of the literature. Finally, the limitations and prospects for future research in the field of TEIA are discussed, and the research results, academic value and limitations of this paper are summarized.

2. Materials and methods

2.1. Literature sources and retrieval methods

In terms of the selection of a retrieval platform, the core database of Web of Science (WoS) includes world-class academic journals, the research results of which reflect the progress of academic research to a large extent [14]. The representativeness of WoS has been confirmed in many bibliometric studies [15,16]. A total of 559 articles without duplication were retrieved from the WoS core database under the topic of "Tourism environmental impact assessment." The articles were in English, the document type was "Article" or "Review" and the publication time was not limited (data were last updated on May 16, 2022). Since the search on the Web of Science (WoS) platform with the topic "Tourism environmental impact assessment" will get some results with the title "Tourism impact", "Tourism assessment", "Environmental assessment", "Impact assessment" which are less relevant, such as some research on the economic or social impact of tourism activities on the tourist destination, the risk assessment of tourism destination security, as well as the impact assessment of human and tourism activities on environment. Repeated screening was employed. Studies with low relevance to TEIA research, such as economic and social impact assessments of tourism, risk assessments, and environmental impact assessments of other human activities, were eliminated and 114 studies were obtained finally (Fig. 1).

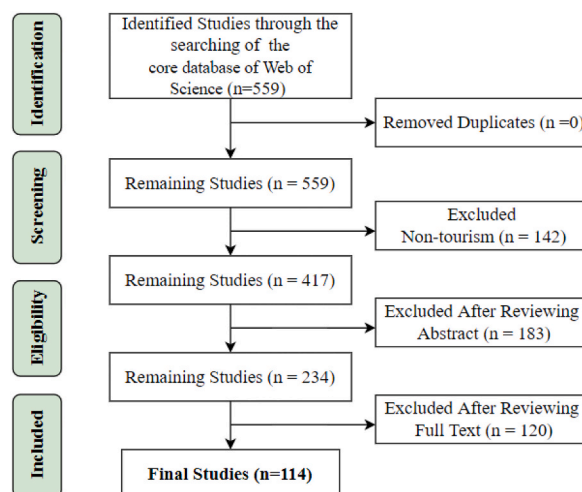


Fig. 1. Screening process of the studies for the review.

Source: It was created by the authors

2.2. Literature analysis method

This study used a combination of quantitative analysis and qualitative discussion to sort out the literature in the field of TEIA in the past 20 years, while the previous literature reviews only used qualitative methods and bibliometric studies only used quantitative methods. First, coauthorship, research hotspots and changes in TEIA research were reviewed using the bibliometric method. Second, after a qualitative discussion, the hot topics in the TEIA field were summarized and sorted, and the limitations of current research in the TEIA field and the prospect of future research were discussed (Fig. 2).

The literature metrology method used mathematics and statistics to quantitatively analyze documents in a certain field [17]. At present, the literature metrology method has been widely used to analyze coauthorship, literature cocitation, research hotspots and disciplinary progress in a certain field [18–20]. To a large extent, the bibliometric method can avoid problems such as heavy workload and strong subjectivity in traditional literature reviews and also enjoys advantages such as convenience, science and accuracy [15]. Developed by Van Eck and Waltman, VOSviewer can perform quantitative analysis of cocitation, coupling, coauthorization, and co-occurrence, among others [21]. CiteSpace is a bibliometric analysis program developed by Chen [22], which can excavate, analyze and visually display the knowledge framework, research hotspots, changes of hotspots and frontier fields of a particular field [23]. Many scholars have combined the two software programs to conduct an econometric analysis of research in particular disciplines [24].

In this study, VOSviewer 1.6.17, ScimagoGraphica, and CiteSpace 5.8 were used. R3 and other software were employed synthetically. Coanalysis, keyword co-occurrence analysis and timeline analysis were adopted to review the TEIA studies. The technical roadmap of this study is shown in Fig. 2. Among them, coanalysis is helpful in understanding the distribution of research power and cooperative relationships; keyword co-occurrence analysis and timeline analysis are useful for revealing research hotspots and their changes. It should be noted that in the analysis process, England, Scotland, Northern Ireland and Wales are classified as the United Kingdom, while Taiwan and Hong Kong are classified as China.

3. Results

3.1. Annual distribution of publication volume

This paper only analyzed the number and trend of TEIA publications since the literature is from only one source, the WoS core database. Fig. 3 shows that the annual number of published documents presents a fluctuating upward trend. It also exhibits that from 2004 to 2015, the average annual number of publications was 7 and that from 2016 to 2019, the average annual number of publications was 8. The decline in the number of studies indicates that the research enthusiasm has decreased to some extent, probably because the existing research topics have become saturated and new research breakthroughs need to be found.

3.2. Coanalysis

Coauthorship analysis is important for understanding the power distribution and coauthorship relationship of research in a particular field [25]. This paper followed the analytical approach from macro to micro and uses VOSviewer to analyze the coauthorship in the TEIA research field from three levels: country, institution and author. The nodes in Fig. s 3, 4(a), and 4(b) represent countries, institutions, and authors, respectively. The node size and the connections between nodes are positively correlated with the number of publications and the coauthorship; that is, the higher the number of publications, the larger the node, and the more connections between a node and other nodes, the more cooperation between the country or the author and other countries or authors. The closer the connection between the nodes in Fig. s 4(a) and 4(b), the closer the cooperation.

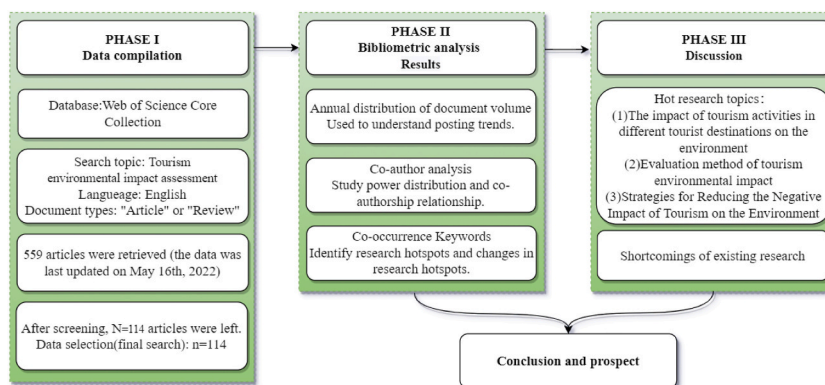


Fig. 2. Technical roadmap of this study.

Source: It was created by the authors

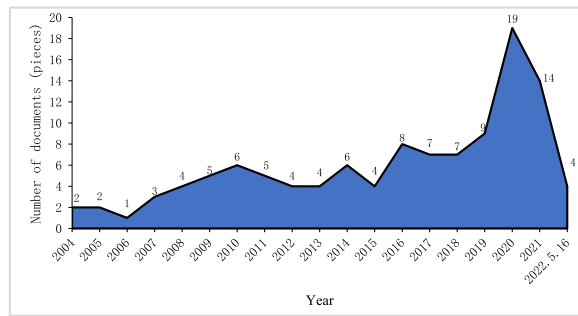


Fig. 3. Annual distribution of the volumes of articles issued.

3.2.1. Country and region

•The authors' institutions are located in 52 countries (Fig. 4); the top 5 countries are China (21 articles), the United States (17 articles), the United Kingdom (15 articles), Australia (13 articles) and Spain (12 articles), each with more than 10 articles. Since several authors may collaborated on an article whose institutions may located in different countries, the closeness of cooperation between countries can be understood according to the total connection intensity. The results show that the top five countries with the closest cooperation with other countries are the United States (21), Australia (17), China (12), Spain (11) and the United Kingdom (9), indicating that these five countries are the main hubs of TEIA cooperation. In parentheses is the value of the total linkage strength, with higher numbers indicating closer cooperation with other countries. In addition, 114 studies are from only 52 countries, indicating that many countries in the world do not pay enough attention to TEIA.

Note: The country and region refer to the location of the author's institution.

3.2.2. Institutions and authors

As shown in Fig. 5(a), 218 institutions participated. The VOSviewer software was used to visually analyze the publication density of research institutions, and the results are shown in Fig. 5. The top 5 institutions in terms of the number of publications are Bournemouth University (5), National Taiwan Normal University (4), Chinese Academy of Sciences (3), Texas A&M University (3 papers) and Griffith University (3 papers), all of which were involved in 3 papers or more. In general, the institutions were mainly universities and showed a diversified trend. The visualized results of Fig. 5(a) show that there is not much coauthorship among the research institutions.

A co-occurrence analysis was carried out on the authors. According to the analysis results in Figs. 5(b), 362 authors participated in the studies, including 3 authors with more than 3 papers—Viachaslau Filimonau (5 papers), Derek Robbins (4 papers) and Janet Dickinson (3 papers). The total wire strength represents the intensity of cooperation between authors in the field of study. There were 16 authors whose total connection strength was greater than 10. The authors formed relatively stable cooperation relations.

3.3. Keyword analysis

3.3.1. Distribution of research hotspots

Keywords can directly reflect the content of the literature. In this study, CiteSpace was used to analyze the co-occurrence of keywords, and we found that there were 325 nodes (325 keywords) and 1283 connections between nodes, with a density of 0.0244 (Numerical results are visualized by CiteSpace, Fig. 6). Table 1 demonstrates the top 11 keywords in terms of frequency and centrality. It is shown that scholars pay more attention to the impact of tourism activities on the environment, including the impact of tourism activities on protected areas and biodiversity, as well as the climate change caused by the carbon footprint of tourism activities, and that life cycle assessment is a relatively traditional method to measure carbon emissions. In terms of managing the negative impact of

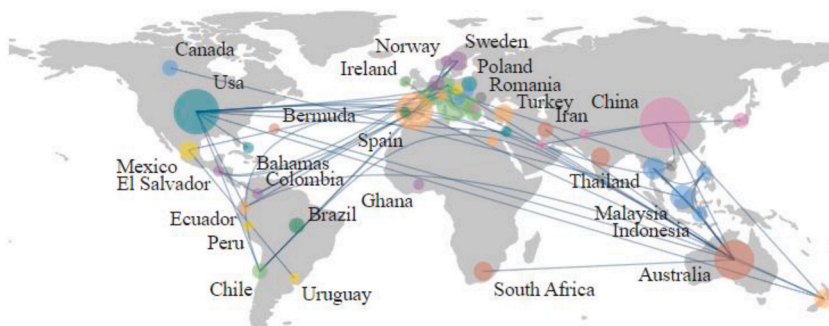


Fig. 4. Country collaboration network.

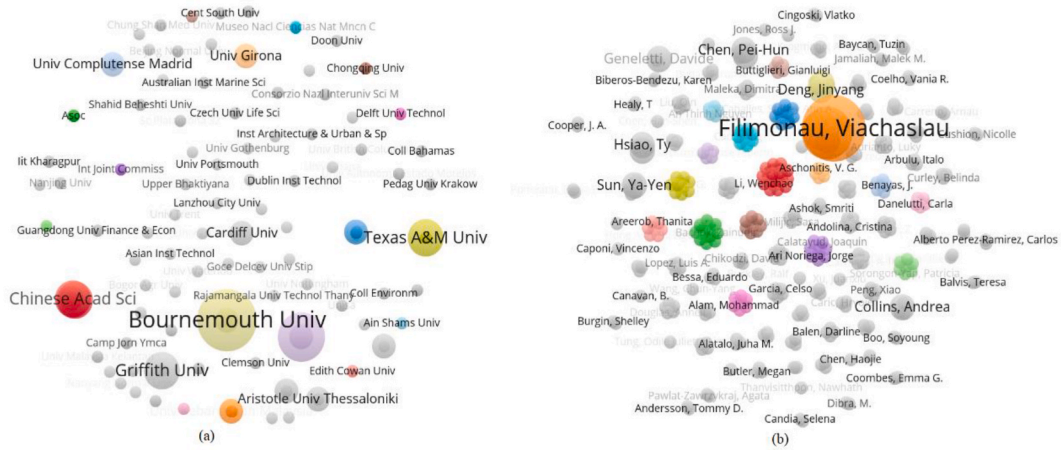


Fig. 5. Institution and Author collaboration network.

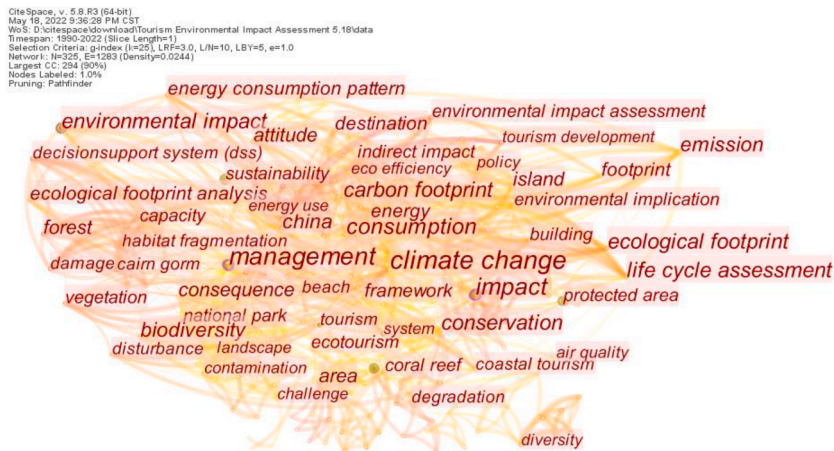


Fig. 6. Keyword co-occurrence network.

tourism activities on the environment, scholars advocate the development of sustainable tourism.

3.3.2. Changes in research hotspots

In this paper, the log-likelihood rate (LLR) algorithm was used to cluster keywords, with the value of modularity $Q = 0.6748 (>0.3)$, indicating a significant clustering structure. The weighted mean silhouette = 0.8848 (>0.7) indicates that the clustering results are reasonable. The smaller the value after the clustering module "#", the more keyword members the cluster contains. The largest cluster is "#0 life cycle assessment". Because it is of little significance to analyze the cluster with too few keywords, this paper selects 11 clusters with the most keywords as follows: "#0 life cycle assessment", "#1 gis", "#2 reservoirs", "#3 climate change", "#4 heavy metals", "#5 spatial-temporal characteristics", "#6 ecological footprint", "#7 coral reef", "#8 scenarios", "#9 integrative ecological sensitivity", and "#10 sensitivity analysis".

Note: GIS is abbreviation for "Geographic Information System".

Fig. 7 is the keyword time graph, according to which life cycle assessment can be understood [26–28], Geographic Information System [29–31] Climate change [32], Carbon footprint [4,33], Marine/Coastal Tourism [34,35] and other topics have always been hot topics in the field of TEIA. Scholars have long used remote sensing to monitor the impact of tourism activities on the environment. In recent years, the field of TEIA has paid more attention to the innovation of research methods, such as the improvement of the traditional life cycle assessment model [27] and the integration of geographic information technology and traditional TEIA methods [36–38].

4. Discussion

Based on the results of the visualization analysis of keywords, the research content represented by the keywords is explored. Taking

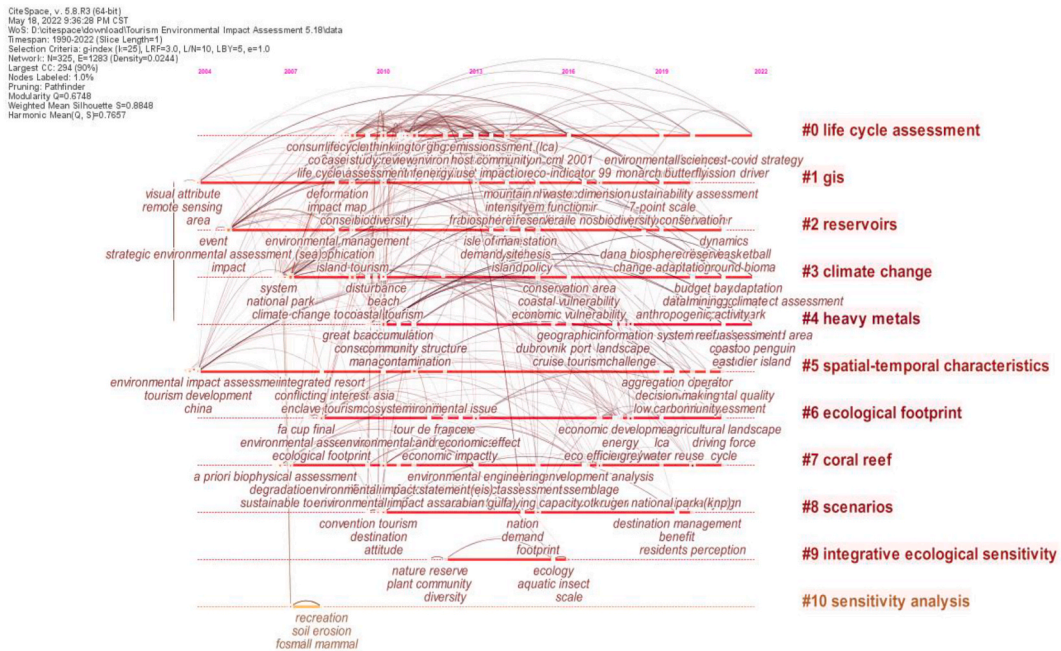


Fig. 7. Timeline of the keyword.

114 studies as the object of analysis, we found that previous research hotspots mainly focused on three aspects: the impact of tourism activities in different tourist destinations on the environment, the assessment methods of tourism environmental impact and the strategies to reduce the negative impact.

4.1. Research hotspots

4.1.1. The impact of tourism activities in different tourist destinations on the environment

At present, the TEIA literatures are mostly based on case studies to assess the impact of tourism on the environment, such as the Mediterranean Sea [39], three protected areas in Uruguay [6], the Wulingyuan Scenic Area in China [40], the Erhai Basin [41] and Thailand’s Ayutthaya Historical Park [7]. The types of case site are mostly ocean or lake [39,42], mountain or basins [29,36,40], rural area [41,43] or urban [7], national park or reserve [44–46]etc. After excluding reviews, methodological studies (21articles), studies focusing on strategies and tactics to reduce the negative impact of tourism on the environment (15 articles), and studies on measuring carbon emissions by countries or modes of transportation (3 articles), 75 studies were remained on the main impacts of tourism activities on the environment of the tourist destination which are summarized in Table 2. 1) In ocean tourism, people tend to choose boating, yachting, sunbathing and other activities. According to the risk matrix, Carreno and Lloret [39] grouped the impacts of leisure boating on marine ecosystems into high, medium and low levels after analyzing the literatures on the impact of leisure boating on the environment from multiple databases. High impacts include damage to marine animals, plants and habitats, noise generated by electric motors, possible introduction of nonnative organisms (invasive alien species) by recreational boats, and marine pollution caused by toxins produced by antifouling materials. Moderate impacts cover sewage discharge, air pollution, and fuel or oil leakage. Low-level

Table 1 High frequency keywords and high centrality keywords.

The serial number	High frequency keywords		High centrality key words	
	Keyword	Count	Keyword	Centrality
1	Impact	19	Climate change	0.44
2	Management	17	Management	0.32
3	Climate change	15	Impact	0.28
4	Sustainability	11	Ecological footprint	0.19
5	Tourism	9	Degradation	0.19
6	Environmental impact	9	Environmental impact	0.14
7	Life cycle assessment	8	Forest	0.14
8	Carbon footprint	8	Scale	0.13
9	Protected area	7	Conservation	0.11
10	Conservation	7	Consumption	0.11
11	Sustainable tourism	7	Area	0.11

Table 2
Main impacts of tourism activities on environment in main case sites.

Type of case site	Number of documents	Major tourist activities	Major environmental impacts of major tourism activities
Water type such as ocean or lake	34	Motorized recreation (off-road vehicles), boat cruises, cruises, fishing	Water quality, biodiversity, air, climate change
Type of national park or protected area	14	Hiking and visiting, boat Tours, sport fishing, mountain biking, caving, fauna-watching, camping	Soil, plant coverage, water, biodiversity, climate change
Mountain, basin and other geological types	12	Mountaineering, rock climbing, hiking, gondola riding, skiing	Soil, plant coverage, surface runoff, air, biodiversity, climate change
Urban type	11	Sightseeing, leisure holidays, sports events, conferences and exhibitions	Soil, water, air, waste, noise, climate change
Rural type	4	Sightseeing tour	Soil, plant coverage, biodiversity, climate change

impacts include water turbidity caused by the resuspension of sediments, the discharge of marine debris, and the emission of artificial light. 2) Leisure is the major purpose for people to participate in rural tourism. Leisure promotes the change in land use in rural areas. Li et al. [41] found that with the development of tourism, farmland, grassland and forest areas in the Erhai Basin in China are decreasing in area, and construction areas have greatly increased, resulting in a decline in the soil retention rate and damage to water quality there. The major negative environmental impacts of rural tourism activities include a decrease in the proportion of ecological land use and an increase in sewage discharge [47]. The negative environmental effect of urban tourism is primarily caused by greenhouse gas emissions [4,48]. 3) Tourist activities in reserves include hiking, animal watching, water cycling, camping, horse riding and outdoor sports [6,46]. These activities have varying degrees of impact on biodiversity, vegetation coverage, soil and water, but almost every activity affects flora and fauna in protected areas [6]. Tourists engage in different activities in different types of destinations, and the impacts (content and degree) of these activities on the environment of the destination vary in time and space [6].

4.1.2. Assessment methods of tourism environmental impact

With the growing momentum of the tourism industry, researchers are paying increasing attention to methods for evaluating the impacts of tourism activities on the environment, including methods to measure tourism carbon emissions, methods to monitor environmental changes based on geographic information technology, and other quantitative and mixed research methods.

Now, the direct and indirect carbon emissions generated by tourism account for 8% of the global total [49]. Reducing carbon emissions has become an important goal in response to global climate change, economic and social transformation and economic structure transformation and upgrading. Although it is difficult to measure tourism carbon emissions, there are two major methods: “top-down” [49] and “bottom-up” [33]. The research theory corresponding to the “top-down” approach is the input-output theory, whose basic idea is to calculate the total carbon emissions of tourism based on energy terminals and satellite account statistics data. There are two limitations to this method. First, satellite accounts are not fully covered, and this method is not applicable to all countries or regions. Second, tourism activities involve food, housing, transportation, tourism, shopping and entertainment, and it is difficult to separate out the carbon emissions generated by tourism from carbon emissions generated by catering, transportation and other industries. The research theory corresponding to the “bottom-up” method is the life cycle theory. The basic idea is to classify tourist consumption based on the consumption terminal, calculate the carbon emissions, and finally summarize the total carbon emissions of the tourism industry. Although LCA is a relatively reliable tool for assessing the impacts of climate change on tourism [27,32] and has been widely adopted [28,50], it has four shortcomings. 1) It is subjective in the setting of system boundaries, the selection of data collection channels and influence types and cannot accurately measure the indirect carbon emissions of tourism. 2) The evaluation results are global and regional and may not be applicable to local areas. 3) A large amount of field research data is needed, which is difficult to collect. 4) It is expensive. Due to the unsound satellite accounts of many countries, the method based on life cycle assessment has been adopted the most in actual research. Currently, scholars are improving its methodology and information standardization [26,51].

GIS is a technology with broad application prospects. The application of geographic information technology to TEIA can help to assess the impact of tourism on the environment [52,53]. Gis can express problems and phenomena in space. For example, it assists in monitoring and recording the phenomenon and process of habitat change caused by tourism expansion, the growth of populations and overfishing through multisource data across time and space [54,55]. Barros et al. [36] combined visitor data with environmental data to determine the impact of tourism activities on the environment according to the types of tourism activities, key impact indicators of different activities, usage and altitude areas.

In addition to the above methods, scholars have constructed other models and indices. Gossling and Peeters [56] constructed a tourism traffic model to assess the resource use and carbon emissions of global tourism. Zhang et al. [57] constructed a comprehensive ecological sensitivity index to evaluate the impact of tourism activities on vegetation landscapes. Canteiro et al. [6] built a model to assess the impact of various tourism activities on protected areas, such as biodiversity, water bodies, vegetation cover and soil. Li et al. [58] used the Pressure-State-Response (PSR) framework model to measure the environmental impact of tourism by calculating sustainability scores. Ma et al. [59] evaluated the overall impact of tourism activities by constructing a coupling coordination degree model. Wang et al. [60] measured the impact of tourism activities on the ecological environment by monitoring the density of the biota. In addition, there are some mixed research methods that combine quantitative and qualitative data with questionnaires and

interviews [61–63].

4.1.3. Strategies to reduce the negative impact of tourism on the environment

The international community attaches great importance to reducing the negative impact of tourism on the environment. Compared with industries such as the manufacturing industry, tourism is a cleaner industry, but it still has certain negative impacts on the environment. For example, tourism activities may cause soil compaction [64], vegetation coverage decline [65], deteriorated habitat environments of plants and animals [46], contaminated water [66], increased carbon emissions [67], invasive alien species, noise pollution and light pollution [39]. Balancing the relationship between tourism development and environmental protection requires better education of people about the environmental impact of tourism and better monitoring of TEIA [39]. Since the stakeholders involved in tourism include tourism enterprises, tourism management departments, tourists, tourism practitioners and local residents, these interest groups must be taken into account to reduce the impact of tourism on the environment. Tourism enterprises bear a large part of the responsibility for the protection of tourist destinations. Tourism enterprises may have a negative impact on wildlife, plants and natural ecosystems by destroying and polluting habitats and over-exploiting natural resources [68]. To counter these threats, Hens et al. [69]. Advocate “clean production” (2018). Specifically, the government provides professional training for enterprises and formulates criteria to evaluate enterprises’ “green production and management” [68,70]. Enterprises can also improve their own reputations while making contributions to the environment [71]. Tourism management departments should implement targeted measures to control the number of tourists and strengthen the adaptability of tourism systems [53,72]. Social media can also encourage tourists to adopt environmentally friendly behaviors [73]. Tourists’ environmental attitudes and knowledge affect their behaviors [13]. Tourism practitioners and local residents have a great influence on whether tourists adopt ERBs. Effective interpretation can improve tourists’ awareness of and support for management policies, thus promoting the adoption of responsible environmental attitudes and behaviors [74]. Improving community residents’ enthusiasm for tourism development will encourage tourists to adopt environmentally responsible behaviors and indirectly reduce the negative impact of tourism development on the environment [75].

4.2. Shortcomings of existing research and suggestions for future research

- 1) Too much focus on micro research and a lack of contribution to macro decision-making. At present, most TEIA studies are microlevel case studies, and most of them consider the direct impact of specific tourism activities on the environment in a certain period of time, that is, the case assessment of a particular type of tourism activities in a certain period of time through the construction of environmental indicators and other methods [76]. Due to the differences in tourism destination types and research methods, different types of tourism activities have different impacts on the ecological environment, and the environmental impact is a continuous and gradual process. Therefore, it is necessary to conduct more in-depth analysis and research on these microlevel case studies, quantify the environmental impact of different tourism activities on different types of tourism destinations in different time periods, promote the achievement of academic consensus, and provide more solid evidence for policy-making.
- 2) Insufficient dynamic interaction analysis. Existing TEIA studies tend to explore the static impacts of tourism activities on soil, water, biodiversity and other subsystems but ignore the dynamic and interactive effects of such impacts. In the future, from the perspective of system governance, the influence paths of tourism activities on each subsystem of the environment and among each subsystem should be explored.
- 3) Insufficient research on the thermal footprint. The carbon footprint of tourism is currently the dominant topic. Tourism activities inevitably generate heat through metabolism and energy consumption when tourists participate in tourism activities, thus producing an impact on temperature, tourism attractions sensitive to temperature changes, and tourism destinations. In the existing 114 studies, there is no literature on the measurement and evaluation of tourism’s thermal footprint. Therefore, it is necessary to pay more attention to research on the tourism thermal footprint in the future.
- 4) Insufficient positive effects research. At present, there are few research results on the positive impacts of tourism activities on the environment and more research on the negative impacts on the environment. In the future, it is necessary to consider whether tourism activities have a positive impact on the ecological environment at a certain scale, in what aspects the positive impact is manifested, and the reasons for the positive impact. Screening and exploring positive regional cases and practices can help to promote positive demonstration effects.
- 5) Insufficient interdisciplinary innovation in research methods. In the future, methods such as big data analysis can be used to strengthen the accuracy and practicability of tourism environmental impact assessment results. GIS, machine learning and social network analysis will be combined with existing environmental models in environmental impact assessment, and the trade-offs and synergies between TEIA and the Sustainable Development Goals will be explored to enhance the rationality and applicability of the assessment.

5. Conclusion

In this study, quantitative scientometric analysis and qualitative discussion methods were adopted to comprehensively review and sort the research results in the field of TEIA from the spatiotemporal dimension and content level. In the past 20 years, research hotspots have changed from the sustainable development of tourism in the early stage and using life cycle assessment methods to evaluate the impact of tourism activities on the environment to the recent innovation of research methods, such as improving the life cycle assessment model and comprehensively applying quantitative and qualitative methods.

The integration of global culture, tourism and business is accelerating, and the importance of tourism in the low-carbon economy,

green economy, industrial transformation, service industry and harmonious coexistence between humans and nature is increasing. TEIA research tends to be more complicated, systematic and integrated. Since tourism is highly related to the environment, economy and social systems, it is necessary to employ systematic governance thinking in the future to achieve high-quality tourism development and regional sustainable development. This paper clarifies the deficiencies in current TEIA research and makes five suggestions for future research efforts: 1) quantify the environmental impact of different tourism activities on different types of tourism destinations in different time periods, 2) explore the impact of tourism on each subsystem of the environment and the impact paths between each subsystem from the perspective of system governance, 3) pay attention to the study of the thermal footprint generated by tourism activities, 4) study the positive impact of tourism activities on the environment, and 5) use big data methods to strengthen the accuracy and practicability of TEIA research results.

Limited by language, literature type and database, the number of studies collected is limited, but the research results of this paper may still help academic circles and relevant government departments to understand the whole picture of TEIA research and provide a reference for subsequent scientific research and tourism management practice. A more comprehensive follow-up study and in-depth review of these microscale case studies are needed to obtain more universal results.

Author contribution statement

All authors listed have significantly contributed to the development and the writing of this article. </p>

Data availability statement

Data included in article/supp. material/referenced in article.

Additional information

Supplementary content related to this article has been published online at [URL].

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Additional information

No additional information is available for this paper.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

114 record(s) printed from Clarivate Web of Science.

Article 1

Title:Not quite paradise:Inadequacies of environmental impact assessment in the Maldives

Author:Zubair,S (Zubair, Shahida); Bowen,D (Bowen, David); Elwin,J (Elwin, James)

Source publication:TOURISM MANAGEMENT

Volume:32**Time limit:**2**Page:**225-234**DOI:**10.1016/j.tourman.2009.12.007

Date of publication:APR2011

 Article 2

Title:Integration of Strategic Environmental Assessment and Environmental Social Impact Assessment in to Strategic Territorial Planning: Lessons Learned from Two Cases of Tourism Destinations In Protected Areas

Author:Nenkovic-Riznic,M(Nenkovic-Riznic,Marina); Ristic,V (Ristic, Vladica); Milijic,S (Milijic, Sasa); Maksin,M(Maksin, Marija)

Source publication:POLISH JOURNAL OF ENVIRONMENTAL STUDIES

Volume:25**Time limit:**3**Page:**1353-1366**DOI:**10.15244/pjoes/61851

Date of publication:2016

 Article 3

Title:Tourism impact assessment: A tool to evaluate the environmental impactsoftouristicactivitiesinNatural Protected Areas

Author:Canteiro,M(Canteiro, Marcelo); Cordova-Tapia,F(Cordova-Tapia,Fernando); Brazeiroc,A (Brazeiroc, Alejandro)

Source publication:TOURISM MANAGEMENT PERSPECTIVES

Volume:28**Page:**220-227**DOI:**10.1016/j.tmp.2018.09.007

Date of publication:OCT2018

 Article 4

Title:Assessing environmental sustainability in tourism and recreation areas: a risk-assessment-based model

Author:Roe,P (Roe,Peter); Hrymak,V(Hrymak, Victor); Dimanche,F (Dimanche, Frederic)

Source publication:JOURNAL OF SUSTAINABLE TOURISM

Volume:22**Time limit:**2**Page:**319-338**DOI:**10.1080/09669582.2013.815762

Date of publication:2014

 Article 5

Title:The potential contribution of environmental impact assessment (EIA)to responsible tourism:The case of the Kruger National Park

Author:Pope,J (Pope, Jenny); Wessels,JA (Wessels,Jan-Albert); Douglas,A (Douglas, Anneli); Hughes, M(Hughes, Michael); Morrison-Saunders,A (Morrison-Saunders,Angus)

Source publication:TOURISM MANAGEMENT PERSPECTIVES

Volume:32**LITERATURE NUMBER:**100557**DOI:**10.1016/j.tmp.2019.100557 **Date of publication:**OCT2019

 Article 6

Title:Complementing conventional environmental impact assessments of tourism with ecosystem service evaluation: A case study of the Wulingyuan Scenic Area,China

Author:Chen,HJ (Chen, Haojie)

Source publication:ECOSYSTEM SERVICES

Volume:43:101100**DOI:**10.1016/j.ecoser.2020.101100

Date of publication:JUN2020

 Article 7

Title:Evaluation of sustainable tourism potential of the principle Giant Mountains resortsin the Czech Republic

Author:Havlikova,M(Havlikova, Michaela); Stupkova,LC(Stupkova, LucieCrespo); Pliskova,L (Pliskova, Lenka)

Source publication:ENVIRONMENTAL & SOCIO-ECONOMIC STUDIES

Volume:7**Time limit:**4**Page:**26-35**DOI:**10.2478/environ-2019-0021

Date of publication:DEC2019

 Article 8

Title:Research on environmental impacts of tourism in China: Progress and prospect

Author:Zhong,LS (Zhong, Linsheng); Deng,JY (Deng, Jinyang); Song,ZW(Song, Zengwen); Ding,PY (Ding, Peiyi)

Source publication:JOURNAL OF ENVIRONMENTAL MANAGEMENT

Volume:92**Time limit:**11**Page:**2972-2983**DOI:**10.1016/j.jenvman.2011.07.011

Date of publication:NOV2011

Article 9

Title:Tourism Environmental Impacts Assessment to Guide Public Authorities towards Sustainable Choices for the Post-COVID Era
Author:Candia,S(Candia, Selena); Pirlone,F(Pirlone, Francesca)
Source publication:SUSTAINABILITY
Volume:14**Time limit:**1**LITERATURE NUMBER:**18**DOI:**10.3390/su14010018 **Date of publication:**JAN2022

Article 10

Title:Environmental impacts of tourism in the Gulf and the Red Sea
Author:Gladstone,W (Gladstone, William); Curley,B(Curley, Belinda); Shokri,MR (Shokri, MohammadReza)
Source publication:MARINE POLLUTION BULLETIN
Volume:72**Time limit:**2**Page:**375-388**DOI:**10.1016/j.marpolbul.2012.09.017
Date of publication:JUL302013

Article 11

[Community perceptions on the environmental impacts of tourism, the case of the albanian region by the shkodra lake](#)

Author:Dibra,M(Dibra,M.); Golemi,S (Golemi,S.)
Source publication:JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY
Volume:15**Time limit:**1**Page:**101–109 **Date of publication:**2014

Article 12

Title:Rural tourism, environmental impact and resilience in Piedra Herrada, Mexico
Author:Perez-Ramirez,CA (AlbertoPerez-Ramirez,Carlos); Flores-Montes,A (Flores-Montes,Alma)
Source publication:AGRICULTURA SOCIEDAD Y DESARROLLO
Volume:16**Time limit:**4 **Page:**429–450 **Date of publication:**OCT-DEC2019

Article 13

Title:A Delphi-matrix approach to SEA and its application within the tourism sector in Taiwan
Author:Kuo,NW(Kuo,NW); Hsiao,TY(Hsiao,TY); Yu,YH(Yu,YH)
Source publication:ENVIRONMENTAL IMPACT ASSESSMENT REVIEW
Volume:25**Time limit:**3**Page:**259-280**DOI:**10.1016/j.eiar.2004.09.007
Date of publication:APR2005

Article 14

Title: [Tourism environmental impact assessment based on improved AHP and picture fuzzy PROMETHEE II methods](#)
Author:Tian,C(Tian, Chao); Peng,JJ (Peng,Juan-juan); Zhang,WY(Zhang,Wen-yu); Zhang,S (Zhang, Shuai); Wang,JQ (Wang,Jian-qiang)
Source publication:TECHNOLOGICAL AND ECONOMIC DEVELOPMENT OF ECONOMY
Volume:26**Time limit:**2**Page:**355-378**DOI:**10.3846/tede.2019.11413
Date of publication:2020

Article 15

Title:Tourism LCA:state-of-the-art and perspectives
Author:DeCamillis,C (DeCamillis, Camillo); Raggi,A (Raggi, Andrea); Petti,L (Petti, Luigia)
Source publication:INTERNATIONAL JOURNAL OF LIFECYCLE ASSESSMENT
Volume:15**Time limit:**2**Page:**148-155**DOI:**10.1007/s11367-009-0139-8
Date of publication:FEB2010

Article 16

Title:The impact of quad tourism: a preventive action for the Mediterranean
Author:Enriquez-de-Salamanca,A (Enriquez-de-Salamanca,Alvaro)
Source publication:ENVIRONMENT DEVELOPMENT AND SUSTAINABILITY
Volume:23**Time limit:**6**Page:**9454-9476**DOI:**10.1007/s10668-020-01036-x
Online publication:OCT2020**Date of publication:**JUN2021

Article 17

Title:Environmental degradation, economic growth and tourism development in Chinese regions
Author:Teng,Y(Teng,Yu); Cox,A (Cox,Adam); Chatziantoniou,I(Chatziantoniou, Ioannis)
Source publication:ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH
Volume:28**Time limit:**26**Page:**33781-33793**DOI:**10.1007/s11356-021-12567-9
Online publication:FEB2021**Date of publication:**JUL2021

Article 18

Title:Managing uncertainties through scenario analysis in strategic environmental assessment
Author:Khosravi,F(Khosravi, Fatemeh); Jha-Thakur,U (Jha-Thakur,Urmila)
Source publication:JOURNAL OF ENVIRONMENTAL PLANNING AND MANAGEMENT
Volume:62**Time limit:**6 **Page:**979-1000**DOI:**10.1080/09640568.2018.1456913
Date of publication:MAY122019

Article 19

Title:Characterizing tourism destination and policies forward: The case in Bantayan Island, Philippines
Author:Yamagishi,KD (Yamagishi, KafferineD.); Tiu,AMC(Tiu,AnnMyrilC.); Tanaid,RAB(Tanaid, RecielAnnB.); Medalla,MEF (Medalla, MariaEstherF.); Jabilles,EMY(Jabilles, EulaMargarethY.); Caballes,SAA (Caballes, ShirleyAnna.); Abellana,DPM(Abellana, DharyllPrinceM.); Himang,CM (Himang, CelbertM.); Ocampo,LA (Ocampo, LanndonA.)
Source publication:TOURISM REVIEW IN INTERNATIONAL
Volume:24**Time limit:**2-3**Page:**143-165**DOI:**10.3727/154427220X15912253254428 **Date of publication:**AUG2020

Article 20

Title:Influence assessment of tourist resource exploitation on ecological environment based on Grey model
Author:Wang,CY(Wang,Chun-Yang)
Source publication:JOURNAL OF DISCRETE MATHEMATICAL SCIENCES & CRYPTOGRAPHY
Volume:20**Time limit:**1**Page:**65-77**DOI:**10.1080/09720529.2016.1178902
Date of publication:2017

Article 21

Title:The role of 'indirect' greenhouse gas emissions in tourism: Assessing the hidden carbon impacts from a holiday package tour
Author:Filimonau,V(Filimonau, Viachaslau); Dickinson,J (Dickinson, Janet); Robbins,D (Robbins, Derek); Reddy,MV(Reddy, MaharajVijay)
Source publication:TRANSPORTATION RESEARCH PARTA-POLICY AND PRACTICE
Volume:54**Page:**78-91**DOI:**10.1016/j.tra.2013.07.002
Date of publication:AUG2013

Article 22

Title:Guiding Local Tourism Entrepreneurs Interested in Ecotourism: A Tool for Extension Facilitators
Author:Butler,M(Butler, Megan); Gering,E (Gering, Elizabeth); Wilsey,D (Wilsey, David)
Source publication:JOURNAL OF EXTENSION
Volume:55**Time limit:**5 **LITERATURE NUMBER:**5TOT6
Date of publication:OCT2017

Article 23

Title:Model for environmental risk assessment of tourism project construction on the Egyptian Red Seacoast
Author:ElSherbiny,AH (ElSherbiny, AhmedH.); Sherif,AH(Sherif, AhmedH.); Hassan,AN(Hassan, AliN.)
Source publication:JOURNAL OF ENVIRONMENTAL ENGINEERING
Volume:132
Time limit:10**Page:**1272-1281**DOI:**10.1061/(ASCE)0733-9372 (2006)132:10 (1272)
Date of publication:OCT2006

Article 24

Title: Bracketing sustainability: Carbon footprinting March Madness to rethink sustainable tourism approaches and measurements
Author: Cooper, JA (Cooper, J.A.); McCullough, BP (McCullough, Brian P.)
Source publication: JOURNAL OF CLEANER PRODUCTION
Volume: 318
LITERATURE NUMBER: 128475 **DOI:** 10.1016/j.jclepro.2021.128475
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Title: A critical review of methods for tourism climate change appraisal: life cycle assessment as a new approach
Author: Filimonau, V (Filimonau, Viachaslau); Dickinson, JE (Dickinson, Janet E.); Robbins, D (Robbins, Derek); Reddy, MV (Reddy, Maharaj Vijay)
Source publication: JOURNAL OF SUSTAINABLE TOURISM
Volume: 19 **Time limit:** 3 **Page:** 301-324
LITERATURE NUMBER: PII933188577 **DOI:** 10.1080/09669582.2010.527345
Date of publication: 2011

Article 26

Title: Quantifying energy use, carbon dioxide emission, and other environmental loads from island tourism based on a lifecycle assessment approach
Author: Kuo, NW (Kuo, Nae-Wen); Chen, PH (Chen, Pei-Hun)
Source publication: JOURNAL OF CLEANER PRODUCTION
Volume: 17 **Time limit:** 15 **Page:** 1324-1330 **DOI:** 10.1016/j.jclepro.2009.04.012
Date of publication: OCT2009

Article 27

Title: Commensurability and sustainability: Triple impact assessments of a tourism event
Author: Andersson, TD (Andersson, Tommy D.); Lundberg, E (Lundberg, Erik)
Source publication: TOURISM MANAGEMENT
Volume: 37 **Page:** 99-109 **DOI:** 10.1016/j.tourman.2012.12.015
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Article 28

Title: Urban environmental assessment and social impact assessment of tourism development policy: Thailand's Ayutthaya Historical Park
Author: Thanvisitthpon, N (Thanvisitthpon, Nawhath)
Source publication: TOURISM MANAGEMENT PERSPECTIVES
Volume: 18 **Page:** 1-5 **DOI:** 10.1016/j.tmp.2016.01.006
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Article 29

Title: Integrated coastal zone management for sustainable development- With comment on ICZM applicability to muddy coasts
Author: Healy, T (Healy, T); Wang, Y (Wang, Y)
Source publication: JOURNAL OF COASTAL RESEARCH 特刊: 43 **Page:** 229-242 **Date of publication:** SUM2004

Article 30

Title: How to assess events' environmental impacts: a uniform lifecycle approach
Author: Toscani, AC (Cavallin Toscani, Antonio); Macchion, L (Macchion, Laura); Stoppato, A (Stoppato, Anna); Vinelli, A (Vinelli, Andrea)
Source publication: JOURNAL OF SUSTAINABLE TOURISM
Volume: 30 **Time limit:** 1 **Page:** 240-257 **DOI:** 10.1080/09669582.2021.1874397
Online publication: JAN2021 **Date of publication:** JAN2022

Article 31

Title: [Assessment of tourism development in Romania: Environmental issues and challenges in North of Moldova](#)
Author: Pomeanu, EE (Pomeanu, Elena Elisabeta); Teodosiu, C (Teodosiu, Carmen)
Source publication: ENVIRONMENTAL ENGINEERING AND MANAGEMENT JOURNAL
Volume: 11 **Time limit:** 2 **Page:** 439-447 **DOI:** 10.30638/eemj.2012.055
Date of publication: FEB2012

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Title:Efforts, resources and costs required for long term environmental management of a resort development:the case of Baker's Bay Golf and Ocean Club,The Bahamas
Author:Sullivan-Sealey,K(Sullivan-Sealey,Kathleen); Cushion,N(Cushion, Nicolle)
Source publication:JOURNAL OF SUSTAINABLE TOURISM
Volume:17**Time limit:**3**Page:**375-395**LITERATURE NUMBER:**PII910894094**DOI:**10.1080/09669580802275994
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Article 33

Title:Planning for sustainable tourism in southern Pulau Banggi:An assessment of biophysical conditions and their implications for future tourism development
Author:Teh,L (Teh, Lydia); Cabanban,AS(Cabanban, AnnadelS.)
Source publication:JOURNAL OF ENVIRONMENTAL MANAGEMENT **Volume:**85**Time limit:**4**Page:**999-1008**DOI:**10.1016/j.jenvman.2006.11.005
Date of publication:DEC2007

Article 34

Title:An Assessment of Tourism's Environmental Impact on the Lake Bosomtwe Basin
Author:Mohammed,AK(Mohammed, AbdulaiKuyini)
Source publication:INTERNATIONAL JOURNAL OF HOSPITALITY AND TOURISM ADMINISTRATION
Volume:19 **Time limit:**3**Page:**259-288**DOI:**10.1080/15256480.2017.1324338
Date of publication:2018

Article 35

Title:Environmental Consequences of Tourism Consumption at Major Events: An Analysis of the UK Stages of the 2007 Tour de France
Author:Collins,A (Collins, Andrea); Munday,M(Munday,Max); Roberts,A (Roberts, Annette)
Source publication:JOURNAL OF TRAVEL RESEARCH
Volume:51**Time limit:**5**Page:**577-590**DOI:**10.1177/0047287511434113
Date of publication:SEP2012

Article 36

Title:Integrative ecological sensitivity (IES)applied to assessment of eco-tourism impact on forest vegetation landscape: A case from the Baihua Mountain Reserve of Beijing, China
Author:Zhang,JT (Zhang, Jin-Tun); Xiang,CL (Xiang, Chunling); Li,M(Li,Min)
Source publication:ECOLOGICAL INDICATORS **Volume:**18**Page:**365-370**DOI:**10.1016/j.ecolind.2011.12.001
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Article 37

Title:Tourism impact on stream fish measured with an ecological and a behavioural indicator
Author:Bessa,E (Bessa, Eduardo); Geffroy,B(Geffroy, Benjamin); Goncalves-De-Freitas,E (Goncalves-De-Freitas,Eliane)
Source publication:A QUATIC CONSERVATION-MARINE AND FRESH WATER ECOSYSTEMS
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Date of publication:DEC2017

Article 38

Title:Integrating cumulative impacts into strategic environmental decision-making: Tourism development in Belek, Turkey
Author:Unalan,D (Unalan, Dilek)
Source publication:LAND USE POLICY **Volume:**34**Page:**243-249**DOI:**10.1016/j.landusepol.2013.03.014
Date of publication:SEP2013

Article 39

Title:The Mediating Effects of Community Support For Sustainable Tourism, Community Attachment, Involvement,and Environmental Attitudes
Author:Orgaz-Aguera,F(Orgaz-Aguera,Francisco); Castellanos-Verdugo,M(Castellanos-Verdugo, Mario); Guzman,JAA (AcostaGuzman, JoseAlberto); Cobena,M(Cobena,Mar); Oviedo-Garcia, MCM(Oviedo-Garcia,Mariadelosangeles)
Source publication:JOURNAL OF HOSPITALITY & TOURISM RESEARCH LITERATURE
NUMBER:1096348020980126**DOI:**10.1177/1096348020980126
Online publication:DEC2020

Article 40

Title:Qualitative assessment of stakeholders and visitors perceptions towards coastal tourism development at Teluk kemang, port dickson, Malaysia
Author:Hanafiah,MH(Hanafiah, MohdHafiz); Jamaluddin,MR (Jamaluddin, MohdRaziff); Kunjuraman,V(Kunjuraman, Velan)
Source publication:JOURNAL OF OUTDOOR RECREATION AND TOURISM-RESEARCHPLANNING AND MANAGEMENT **Volume:**35**LITERATURE NUMBER:**100389**DOI:**10.1016/j.jort.2021.100389
Date of publication:SEP2021

Article 41

Title:Assessing impacts of implementing low-carbon tourism program for sustainable tourism in a world heritage city
Author:Thongdejsri,M(Thongdejsri, Machima); Nitivattananon,V(Nitivattananon, Vilas)
Source publication:TOURISM REVIEW
Volume:74 **Time limit:**2**Page:**216-234**DOI:**10.1108/TR-04-2017-0082
Date of publication:2019

Article 42

Title:What are the real environmental impacts of Antarctic tourism?Unveiling their importance through a comprehensive meta-analysis
Author:Tejedo,P(Tejedo,P.); Benayas,J (Benayas,J.); Cajiao,D (Cajiao,D.); Leung,YF(Leung,Y.-F.); DeFilippo,D (DeFilippo,D.); Liggett,D (Liggett,D.)
Source publication:JOURNAL OF ENVIRONMENTAL MANAGEMENT **Volume:**308
LITERATURE NUMBER:114634**DOI:**10.1016/j.jenvman.2022.114634
Date of publication:APR152022
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Article 43

Title:The economic and environmental effects of seasonality of tourism: A look at solid waste
Author:Caponi,V(Caponi, Vincenzo)
Source publication:ECOLOGICAL ECONOMICS
Volume:192**LITERATURE NUMBER:**107262**DOI:**10.1016/j.ecolecon.2021.107262
Online publication:OCT2021 **Date of publication:**FEB2022

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Title:Tourism and solid waste generation in Europe:A panel data assessment of the Environmental Kuznets Curve
Author:Arbulu,I(Arbulu, Italo); Lozano,J (Lozano, Javier); Rey-Maqueira,J (Rey-Maqueira,Javier)
Source publication:WASTE MANAGEMENT **Volume:**46**Page:**628-636**DOI:**10.1016/j.wasman.2015.04.014
Date of publication:DEC2015

Article 45

Title:Prediction of the impact on air quality of the cities receiving cruise tourism:the case of the Port of Barcelona
Author:Ruiz-Guerra,I(Ruiz-Guerra,Ignacio); Molina-Moreno,V(Molina-Moreno,Valentin); Cortes-Garcia,FJ (Cortes-Garcia,FranciscoJ.); Nunez-Cacho,P(Nunez-Cacho,Pedro)
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Date of publication:MAR2019

Article 46

Title:Hierarchical Variance Analysis:A Quantitative Approach for Relevant Factor Exploration and Confirmation of Perceived Tourism Impacts
Author:Truong,QH (Quang Hai Truong); Nguyen, AT (AnThinhNguyen); Trinh,QA (QuocAnhTrinh); Trinh,TNL (ThiNgocLanTrinh); Hens,L (Hens,Luc)
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LITERATURE NUMBER:2786**DOI:**10.3390/ijerph17082786
Date of publication:APR2020

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Author:Lee,OA (Lee,OliviaA.)

Source publication:OCEAN & COASTAL MANAGEMENT

Volume:53**Time limit:**8**Page:**439-446**DOI:**10.1016/j.ocecoaman.2010.06.010

Date of publication:AUG2010

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Title:An assessment of convention tourism's potential contribution to environmentally sustainable growth

Author:Park,E (Park, Eerang); Boo,S(Boo,Soyoung)

Source publication:JOURNAL OF SUSTAINABLE TOURISM

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LITERATURE NUMBER:PII914178583**DOI:**10.1080/09669580903147936

Date of publication:2010

Article 49

Title:Holistic life cycle assessment of water reuse in a tourist-based community

Author:Santana,MVE (Santana, MarkV.E.); Cornejo,PK(Cornejo, PabloK.); Rodriguez-Roda,I (Rodriguez-Roda,Ignasi); Buttiglieri,G (Buttiglieri, Gianluigi); Corominas,L (Corominas, Lluís)

Source publication:JOURNAL OF CLEANER PRODUCTION **Volume:**233**Page:**743-

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Article 50

Title:Measuring the environmental sustainability of a major sporting event: a case study of the FAC up Final

Author:Collins,A (Collins, Andrea); Flynn,A (Flynn, Andrew)

Source publication:TOURISM ECONOMICS

Volume:14**Time limit:**4**Page:**751-768**DOI:**10.5367/000000008786440120

Date of publication:DEC2008

Article 51

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Author:Scott,D (Scott, Daniel); Jones,B (Jones, Brenda); Konopek,J (Konopek, Jasmina)

Source publication:TOURISM MANAGEMENT

Volume:28**Time limit:**2**Page:**570-579**DOI:**10.1016/j.tourman.2006.04.020

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Article 52

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Author:Jahani,A (Jahani,Ali); Goshtasb,H (Goshtasb, Hamid); Saffariha,M(Saffariha, Maryam)

Source publication:LAND DEGRADATION & DEVELOPMENT

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Article 53

Title:Environmental impact assessment of mountain tourism in developing regions:A study in Ladakh, Indian Himalaya

Author:Geneletti,D (Geneletti, Davide); Dawa,D (Dawa, Dorje)

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Article 54

Title:Sustainability performance assessment focusing on coral reef protection by the tourism industry in the Coral Triangle region

Author:Huang,YT (Huang, Yuti); Coelho,VR (Coelho, VaniaR.)

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Volume:59**Page:**510-527**DOI:**10.1016/j.tourman.2016.09.008

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Article 55

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Author:Michailidou,AV (Michailidou, AlexandraV.); Vlachokostas,C(Vlachokostas, Christos); Moussiopoulos,N(Moussiopoulos, Nicolas); Maleka,D (Maleka, Dimitra)
Source publication:JOURNAL OF CLEANER PRODUCTION
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Article 56

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Author:Oremusova,D (Oremusova, Dasa); Nemcikova,M(Nemcikova, Magdalena); Krogmann,A (Krogmann, Alfred)
Source publication:LAND
Volume:10**Time limit:**5
LITERATURE NUMBER:464**DOI:**10.3390/land10050464
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Article 57

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Author:Andriotis,K (Andriotis, Konstantinos)
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Date of publication:2008

Article 58

Title:Assessing the carbon footprint of tourism businesses using environmentally extended input-output analysis
Author:Demeter,C (Demeter, Csilla); Lin,PC(Lin,Pei-Chun); Sun,YY(Sun,Ya-Yen); Dolnicar,S (Dolnicar, Sara)
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Volume:30**Time limit:**1**Page:**128-144**DOI:**10.1080/09669582.2021.1924181
Online publication:APR2021**Date of publication:**2022

Article 59

Title:Environmental and socio-cultural impacts of river rafting and camping on Gangain Uttarakh and Himalaya
Author:Farooquee,NA (Farooquee, NehalA.); Budal,TK(Budal, TarunK.); Maikhuri,RK (Maikhuri,R. K.)
Source publication:CURRENT SCIENCE
Volume:94**Time limit:**5**Page:**587-594 **Date of publication:**MAR102008

Article 60

Title:Recreation ecology research in China's protected areas: progress and prospect
Author:Zhong,LS (Zhong, Linsheng); Zhang,XJ (Zhang, Xiangju); Deng,JY (Deng, Jinyang); Pierskalla, C(Pierskalla, Chad)
Source publication:ECOSYSTEM HEALTH AND SUSTAINABILITY
Volume:6**Time limit:**1**LITERATURE NUMBER:**1813635**DOI:**10.1080/20964129.2020.1813635
Date of publication:DEC162020

Article 61

Title:Rethinking the Regulation of Environment Impact Assessment and Precaution in Mauritius
Author:Tung,OJL (Tung, OdileJulietteLim)
Source publication:JOURNAL OF AFRICAN LAW
Volume:61**Time limit:**2**Page:**227-251**DOI:**10.1017/S0021855317000110
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Article 62

Title:The Establishment and Application of Environment Sustainability Evaluation Indicators for Ecotourism Environments
Author:Chen,HS(Chen,Han-Shen)
Source publication:SUSTAINABILITY
Volume:7**Time limit:**4**Page:**4727-4746**DOI:**10.3390/su7044727 **Date of publication:**APR2015

Article 63

Title:Assessing the Ecological Footprint of Ecotourism Packages:A Methodological Proposition
Author:Mancini,MS(SerenaMancini, Maria); Evans,M(Evans, Mikel); Iha,K(Iha,Katsunori); Danelutti, C (Danelutti, Carla); Galli,A (Galli, Alessandro)
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Volume:7**Time limit:**2**LITERATURE NUMBER:**38**DOI:**10.3390/resources7020038 **Date of publication:**JUN2018

Article 64

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Author:Gossling,S (Gossling, Stefan); Peeters,P(Peeters, Paul)
Source publication:JOURNAL OF SUSTAINABLE TOURISM
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Date of publication:MAY2015

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Author:Jamaliah,MM(Jamaliah, MalekM.); Powell,RB(Powell, RobertB.)
Source publication:CURRENT ISSUES IN TOURISM
Volume:22**Time limit:**14**Page:**1705-1722**DOI:**10.1080/13683500.2017.1401982
Date of publication:AUG272019

Article 66

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Author:Ogur,AA (Ogur, AysunAygun); Baycan,T (Baycan, Tuzin)
Source publication:ENVIRONMENT DEVELOPMENT AND SUSTAINABILITY
DOI:10.1007/s10668-022-02135-7 **Online publication:**FEB2022

Article 67

Title:Environmental Management: Assessment of Macedonian Hotel Industry
Author:Petrevska,B(Petrevska, Biljana); Cingoski,V(Cingoski, Vlatko)
Source publication:QUALITY-ACCESSTOSUCCESS
Volume:19**Time limit:**162**Page:**122–125 **Date of publication:**FEB2018

Article 68

Title:The carbon impact of short-haul tourism:a case study of UK travel to Southern France using lifecycle analysis
Author:Filimonau,V(Filimonau, Viachaslau); Dickinson,J (Dickinson, Janet); Robbins,D (Robbins, Derek)
Source publication:JOURNAL OF CLEANER PRODUCTION
Volume:64**Page:**628-638**DOI:**10.1016/j.jclepro.2013.07.052
Date of publication:FEB12014

Article 69

Title:An inventory of the energy use and carbon dioxide emissions from island tourism based on a lifecycle assessment approach
Author:Kuo,NW(Kuo,Nae-Wen); Lin,CY(Lin, Chia-Yun); Chen,PH(Chen,Pei-Hun); Chen,YW(Chen, Yung-wei)
Source publication:ENVIRONMENTAL PROGRESS & SUSTAINABLE ENERGY
Volume:31**Time limit:**3**Page:**459-465**DOI:**10.1002/ep.10585
Date of publication:OCT2012

Article 70

Title:Ten Factors that Affect the Severity of Environmental Impacts of Visitors in Protected Areas
Author:Pickering,CM(Pickering, CatherineMarina)
Source publication:AMBIO
Volume:39**Time limit:**1**Page:**70-77**DOI:**10.1007/s13280-009-0007-6
Date of publication:FEB2010

Article 71

Title:Ecotoxicological risk assessment of antifouling emissions in a cruise ship port
Author:Caric,H(Caric, Hrvoje); Klobucar,G (Klobucar, Goeran); Stambuk,A (Stambuk, Anamaria)
Source publication:JOURNAL OF CLEANER PRODUCTION
Volume:121**Page:**159-168**DOI:**10.1016/j.jclepro.2014.08.072
Date of publication:MAY102016

Article 72

Title:A Regional Analysis of the Life Cycle Environmental and Economic Tradeoffs of Different Economic Growth Paths
Author:Mo,WW(Mo,Weiwei); Balen,D (Balen, Darline); Moura,M(Moura, Marianna); Gardner,KH (Gardner, KevinH.)
Source publication:SUSTAINABILITY
Volume:10**Time limit:**2 **LITERATURE NUMBER:**542**DOI:**10.3390/su10020542
Date of publication:FEB2018

Article 73

Title:What can the news tell us about the environmental performance of tourist areas?A text mining approach to China's National 5A Tourist Areas
Author:Wang,F(Wang, Fang); Peng,X (Peng, Xiao); Qin,YL (Qin,Yuelei); Wang,CS(Wang, Changsong)
Source publication:SUSTAINABLE CITIES AND SOCIETY
Volume:52
LITERATURE NUMBER:101818**DOI:**10.1016/j.scs.2019.101818
Date of publication:JAN2020

Article 74

Title:Tourism management and industrial ecology: a case study of food service in Taiwan
Author:Kuo,NW(Kuo,NW); Hsiao,TY(Hsiao,TY); Lan,CF(Lan,CF)
Source publication:TOURISM MANAGEMENT
Volume:26**Time limit:**4**Page:**503-508**DOI:**10.1016/j.tourman.2004.02.015
Date of publication:AUG2005

Article 75

Title:Calculating tourism's carbon footprint: measuring the impact of investments
Author:Cadarso,MA (Cadarso, MariaA.); Gomez,N (Gomez, Nuria); Lopez,LA (Lopez, LuisA.); Tobarra,MA (Tobarra, MariaA.)
Source publication:JOURNAL OF CLEANER PRODUCTION
Volume:111**Page:**529-537**DOI:**10.1016/j.jclepro.2014.09.019 **Section:**B
Date of publication:JAN162016

Article 76

Title:Desktop analysis of potential impacts of visitor use:A case study for the highest park in the Southern Hemisphere
Author:Barros,A (Barros, Agustina); Pickering,C(Pickering, Catherine); Gudes,O (Gudes,Ori)
Source publication:JOURNAL OF ENVIRONMENTAL MANAGEMENT
Volume:150**Page:**179-195**DOI:**10.1016/j.jenvman.2014.11.004
Date of publication:MAR12015

Article 77

Title:Diversification of Municipalities Located in the Impact Area of National Parks in Terms of Environmental Requirements of Sustainable Tourism
Author:Pawlat-Zawrzykraj,A (Pawlat-Zawrzykraj,Agata); Podawca,K(Podawca, Konrad)
Source publication:SUSTAINABILITY
Volume:12**Time limit:**12
LITERATURE NUMBER:4896**DOI:**10.3390/su12124896
Date of publication:JUN2020

Article 78

Title:Sustainable tourism:development, decline and de-growth.Management issues from the Isle of Man

Author:Canavan,B(Canavan,B.)

Source publication:JOURNAL OF SUSTAINABLE TOURISM

Volume:22**Time limit:**1**Page:**127-147**DOI:**10.1080/09669582.2013.819876

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Article 79

Title:Impacts of rural tourism-driven land use change on ecosystems services provision in ErhaiLake Basin, China

Author:Li,JH(Li,Jinghui); Bai,Y(Bai,Yang); Alatalo,JM(Alatalo, JuhaM.)

Source publication:ECOSYSTEM SERVICES

Volume:42

LITERATURE NUMBER:101081**DOI:**10.1016/j.ecoser.2020.101081

Date of publication:APR2020

Article 80

Title:Recreational impacts on the fauna of Australian coastal marine ecosystems

Author:Hardiman,N(Hardiman, Nigel); Burgin,S(Burgin, Shelley)

Source publication:JOURNAL OF ENVIRONMENTAL MANAGEMENT

Volume:91**Time limit:**11**Page:**2096-2108**DOI:**10.1016/j.jenvman.2010.06.012

Date of publication:NOV2010

Article 81

Title:Environmental impacts of introducing cable cars in the Andean landscape:A case study for Kuelap, Peru

Author:Biberos-Bendezu,K(Biberos-Bendezu,Karen); Vazquez-Rowe,I(Vazquez-Rowe,Ian)

Source publication:SCIENCE OF THE TOTAL ENVIRONMENT

Volume:718

LITERATURE NUMBER:137323**DOI:**10.1016/j.scitotenv.2020.137323

Date of publication:MAY202020

Article 82

Title:Measuring the carbon footprint of wine tourism and cellar door sales

Author:Sun,YY(Sun,Ya-Yen); Drakeman,D (Drakeman, Donald)

Source publication:JOURNAL OF CLEANER PRODUCTION

Volume:266

LITERATURE NUMBER:121937**DOI:**10.1016/j.jclepro.2020.121937

Date of publication:SEP12020

Article 83

Title:Impacts of tourism development on the physical environment of Mussoorie,a hill station in the lower Himalayan range of India

Author:Sundriyal,S(Sundriyal, Sangeeta); Shridhar,V(Shridhar, Vijay); Madhwal,S (Madhwal, Sandeep); Pandey,K(Pandey, Kamal); Sharma,V(Sharma, Vikram)

Source publication:JOURNAL OF MOUNTAIN SCIENCE

Volume:15**Time limit:**10**Page:**2276-2291**DOI:**10.1007/s11629-017-4786-0

Date of publication:OCT2018

Article 84

Title:The Impact of rural tourism development on ecological environment carrying capacity in Gansu province

Author:Xu,J X (Xu,Juanxiu)

Source publication:FRESENIUS ENVIRONMENTAL BULLETIN

Volume:30**Time limit:**10**Page:**11350–11359 **Date of publication:**2021

Article 85

Title:Environmental Impact Assessment in Climbing Activities:A new Method to Develop a Sustainable Tourism in Geological and Nature Reserves

Author:Marrosu,GM(Marrosu, GianMarco); Balvis,T (Balvis, Teresa)

Source publication:GEOHERITAGE

Volume:12**Time limit:**1

LITERATURE NUMBER:11**DOI:**10.1007/s12371-020-00427-w

Date of publication:JAN272020

Article 86

Title:Reviewing the carbon footprint analysis of hotels:Life Cycle Energy Analysis (LCEA)as a holistic method for carbon impact appraisal of tourist accommodation
Author:Filimonau,V(Filimonau, Viachaslau); Dickinson,J (Dickinson, Janet); Robbins,D (Robbins, Derek); Huijbregts,MAJ (Huijbregts, MarkA.J.)
Source publication:JOURNAL OF CLEANER PRODUCTION
Volume:19**Time limit:**17-18**Page:**1917-1930**DOI:**10.1016/j.jclepro.2011.07.002
Date of publication:NOV-DEC2011

Article 87

Title:The carbon footprint appraisal of local visitor travel in Brazil: A case of the Riode Janeiro-Sao Paulo itinerary
Author:Pereira,RPT (ToffanoPereira, RodrigoPinheiro); Ribeiro,GM(Ribeiro, GlaydstonMattos); Filimonau,V(Filimonau, Viachaslau)
Source publication:JOURNAL OF CLEANER PRODUCTION
Volume:14**Page:**256-266**DOI:**10.1016/j.jclepro.2016.09.049
Date of publication:JAN102017

Article 88

Title:Relationship between tourism number and air quality by carbon footprint measurement:a case study of Jiuzhaigou Scenic Area
Author:Yuan,H(Yuan, Hong); Nie,KX (Nie,Kun-xi); Xu,XY (Xu,Xiao-ya)
Source publication:ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH
Volume:28**Time limit:**16**Page:**20894-20902**DOI:**10.1007/s11356-020-12068-1
Online publication:JAN2021**Date of publication:**APR2021

Article 89

Title:GIS Assessment of MassTourism Anthropization in Sensitive Coastal Environments:Application to a Case Study in the Mar Menor Area
Author:Garcia-Ayllon,S(Garcia-Ayllon,Salvador)
Source publication:SUSTAINABILITY
Volume:10**Time limit:**5**LITERATURE NUMBER:**1344**DOI:**10.3390/su10051344
Date of publication:MAY2018

Article 90

Title:Environmental effects of tourism and its seasonality on Mediterranean islands:the contribution of the Interreg MEDBLUEISLANDS project to build up an approach towards sustainable tourism
Author:Andolina,C (Andolina, Cristina); Signa,G (Signa, Geraldina); Tomasello,A (Tomasello, Agostino); Mazzola,A (Mazzola, Antonio); Vizzini,S(Vizzini, Salvatrice)
Source publication:ENVIRONMENT DEVELOPMENT AND SUSTAINABILITY
Volume:23**Time limit:**6**Page:**8601-8612**DOI:**10.1007/s10668-020-00984-8
Online publication:SEP2020 **Date of publication:**JUN2021

Article 91

Title:Comparative carbon footprint assessment of agricultural and tourist locations in Thailand
Author:Nguyen,HAT(HongAnhThiNguyen); Gheewala,SH(Gheewala, ShabbirH.); Sophea,T (Sophea, Tip); Areerob,T (Areerob, Thanita); Hashimoto,K(Hashimoto, Kiyota); Pimsonee,S(Pimsonee, Sittichai); Prueksakorn,K(Prueksakorn, Kritana)
Source publication:JOURNAL OF CLEANER PRODUCTION
Volume:26**LITERATURE NUMBER:**122407**DOI:**10.1016/j.jclepro.2020.122407
Date of publication:OCT12020

Article 92

Title:Does ecotourism impact biodiversity?An assessment using dung beetles (Coleoptera: Scarabaeinae)as bioindicators in a tropical dry forest natural park
Author:Noriega,JA (AriNoriega, Jorge); Zapata-Prisco,C (Zapata-Prisco,Charles); Garcia,H(Garcia, Hector); Hernandez,E (Hernandez, Elkin); Hernandez,J (Hernandez, Jose); Martinez,R (Martinez, Ricardo); Santos-Santos,JH(Santos-Santos,JavierH.); Pablo-Cea,JD (Pablo-Cea,JoseD.); Calatayud,J (Calatayud, Joaquin)
Source publication:ECOLOGICAL INDICATORS
Volume:117
LITERATURE NUMBER:106580**DOI:**10.1016/j.ecolind.2020.106580
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Article 93

Title:A rapid assessment of wild life tourism risk posed to cetaceans in Asia
Author:Mustika,PLK (Mustika, PutuLizaKusuma); Welters,R (Welters, Riccardo); Ryan,GE (Ryan, GerardEdward); D'Lima,C (D'Lima, Coralie); Sorongon-Yap,P(Sorongon-Yap,Patricia); Jutapruet, S (Jutapruet, Suwat); Peter,C(Peter, Cindy)
Source publication:JOURNAL OF SUSTAINABLE TOURISM
Volume:25**Time limit:**8**Page:**1138-1158**DOI:**10.1080/09669582.2016.1257012
Date of publication:2017

Article 94

Title:Vulnerability assessment of small islands to tourism:The case of the Marine Tourism Park of the Gili Matra Islands, Indonesia
Author:Kurniawan,F(Kurniawan, Fery); Adrianto,L (Adrianto, Luky); Bengen,DG (Bengen, DietrichG.); Prasetyo,LB(Prasetyo, LilikBudi)
Source publication:GLOBAL ECOLOGY AND CONSERVATION
Volume:6**Page:**308-326**DOI:**10.1016/j.gecco.2016.04.001
Date of publication:APR2016

Article 95

Title:Evaluating the net effects of ecotourism on the environment:a framework, first assessment and future research
Author:Buckley,R (Buckley, Ralf)
Source publication:JOURNAL OF SUSTAINABLE TOURISM
Volume:17**Time limit:**6**Page:**643-672
LITERATURE NUMBER:PII913104306**DOI:**10.1080/09669580902999188
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Article 96

Title:Environmental impacts of increasing leisure boating activity in Mediterranean coastal waters
Author:Carreno,A (Carreno, Arnau); Lloret,J (Lloret, Josep)
Source publication:OCEAN & COASTAL MANAGEMENT **Volume:**209**LITERATURE NUMBER:**105693**DOI:**10.1016/j.ocecoaman.2021.105693
Online publication:MAY2021**Date of publication:**AUG12021

Article 97

Title:Lake macroinvertebrate assemblages and relationship with natural environment and tourism stress in Jiuzhaigou Natural Reserve, China
Author:Cao,Y(Cao,Yong); Wang,BX (Wang, Beixin); Zhang,J (Zhang,Jie); Wang,LZ (Wang, Lizhu); Pan,YD (Pan,Yangdong); Wang,QX (Wang, Quanxi); Jian,DJ (Jian, Daijun); Deng,GP (Deng, Guiping)
Source publication:ECOLOGICAL INDICATORS
Volume:62**Page:**182-190**DOI:**10.1016/j.ecolind.2015.11.023
Date of publication:MAR2016

Article 98

Title:Assessment of tourism industry effects on environmental sustainability: case of Ayubia National Park, Pakistan
Author:Rauf,T (Rauf, Tariq); Khan,N(Khan, Naveed); Ali,D (Ali,Danish); Tuyen,TT (TranThiTuyen); Alam,M(Alam, Mohammad); Imlaq,M(Imlaq, Muhammad); Salam,M(Salam, Muhammad)
Source publication:GEOJOURNAL
DOI:10.1007/s10708-021-10561-9**Online publication:**JAN2022

Article 99

Title:Ecological Vulnerability of Tourism Scenic Spots: Based on Remote Sensing Ecological Index
Author:Shi,H(Shi,Hui); Shi,TG (Shi,Tiange); Liu,Q (Liu,Qin); Wang,Z (Wang,Zhi)
Source publication:POLISH JOURNAL OF ENVIRONMENTAL STUDIES
Volume:30**Time limit:**4**Page:**3231-3248**DOI:**10.15244/pjoes/129916
Date of publication:2021

Article 100

Title:Assessing the impact of climate change on visit or behavior and habitat use at the coast: A UK case study
Author:Coombes,EG (Coombes, EmmaG.); Jones,AP (Jones, AndyP.)
Source publication:GLOBAL ENVIRONMENTAL CHANGE-HUMAN AND POLICY DIMENSIONS
Volume:20**Time limit:**2**Page:**303-313**DOI:**10.1016/j.gloenvcha.2009.12.004
Date of publication:MAY2010

Article 101

Title:Rising sea level and its implications on coastal tourism development in Cape Town, South Africa
Author:Dube,K (Dube, Kaitano); Nhamo,G (Nhamo, Godwell); Chikodzi,D (Chikodzi, David)
Source publication:JOURNAL OF OUTDOOR RECREATION AND TOURISM-RESEARCH PLANNING AND MANAGEMENT
Volume:33
LITERATURE NUMBER:100346**DOI:**10.1016/j.jort.2020.100346
Date of publication:MAR2021

Article 102

Title:Impacts of local human activities on the Antarctic environment
Author:Tin,T (Tin,T.); Fleming,ZL (Fleming,Z.L.); Hughes,KA (Hughes,K.A.); Ainley,DG (Ainley,D.G.); Convey,P(Convey,P.); Moreno,CA (Moreno,C.A.); Pfeiffer,S(Pfeiffer,S.); Scott,J (Scott,J.); Snape,I(Snape,I.)
Source publication:ANTARCTIC SCIENCE
Volume:21**Time limit:**1**Page:**3-33**DOI:**10.1017/S0954102009001722
Date of publication:FEB2009

Article 103

Title:Treering analysis as an indicator of environmental changes caused by tourist trampling-A potential method for the assessment of the impact of tourists
Author:Ciapala,S(Ciapala, Szymon); Adamski,P (Adamski, Pawel); Zielonka,T (Zielonka, Tomasz)
Source publication:GEOCHRONOMETRIA
Volume:41**Time limit:**4**Page:**392-399**DOI:**10.2478/s13386-013-0170-1
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Article 104

Title:GIS-based integrated evaluation of environmentally sensitive areas (ESAs)for land use planning in Langkawi, Malaysia
Author:Leman,N (Leman, Nazren); Ramli,MF(Ramli, MohammadFiruz); Khirotdin,RPK(Khirotdin, RdPuteriKhairani)
Source publication:ECOLOGICAL INDICATORS
Volume:61**Page:**293-308**DOI:**10.1016/j.ecolind.2015.09.029 **Section:**2
Date of publication:FEB2016

Article 105

Title:Impact of Cruise Activity on Freshwater Use in the Port of Palma (Mallorca, Spain)
Author:Garcia,C(Garcia, Celso); Mestre-Runge,C (Mestre-Runge,Christian); Moran-Tejeda,E (Moran-Tejeda,Enrique); Lorenzo-Lacruz,J (Lorenzo-Lacruz,Jorge); Tirado,D (Tirado, Dolores)
Source publication:WATER
Volume:12**Time limit:**4**LITERATURE NUMBER:**1088**DOI:**10.3390/w12041088
Date of publication:APR2020

Article 106

Title:Impact assessment of proposed ski areas: A GIS approach integrating biological, physical and landscape indicators
Author:Geneletti,D (Geneletti, Davide)
Source publication:ENVIRONMENTAL IMPACT ASSESSMENT REVIEW
Volume:28**Time limit:**2-3**Page:**116-130**DOI:**10.1016/j.eiar.2007.05.011
Date of publication:FEB-APR2008

Article 107

Title:Impact of human activities on phosphorus flows on an early eutrophic plateau: A case study in Southwest China
Author:Li,Y(Li,Ying); Yen,H(Yen,Haw); Lei,QL (Lei,Qiuliang); Qiu,WW(Qiu,Weiwen); Luo,JF(Luo, Jiafa); Lindsey,S(Lindsey, Stuart); Qin,LH (Qin,Lihuan); Zhai,LM(Zhai, Limei); Wang,HY(Wang, Hongyuan); Wu,SX (Wu,Shuxia); Li,WC(Li,Wenchao); Hu,WL (Hu,Wanli); Li,HZ (Li,Huizhong); Liu,HB(Liu,Hongbin)
Source publication:SCIENCE OF THE TOTAL ENVIRONMENT
Volume:714
LITERATURE NUMBER:136851**DOI:**10.1016/j.scitotenv.2020.136851
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Article 108

Title:Using remote sensing and GIS for the assessment of visual attributes:A case study of the south coastal zone of Turkey
Author:Musaoglu,N (Musaoglu,N); Seker,DZ (Seker,DZ); Kabdasli,S(Kabdasli,S); Kaya,S(Kaya,S); Duran,Z (Duran,Z)
Source publication:FRESENIUS ENVIRONMENTAL BULLETIN
Volume:13**Time limit:**9**Page:**854-859
Date of publication:2004

Article 109

Title:Assessment of rural and highly seasonal tourist activity plus drought effects on reservoir operation in a semi-arid region of Greece using the WEAP model
Author:Demertzi,KA (Demertzi,K.A.); Papamichail,DM(Papamichail,D.M.); Georgiou,PE (Georgiou,P.E.); Karamouzis,DN(Karamouzis,D.N.); Aschonitis,VG (Aschonitis,V.G.)
Source publication:WATER INTERNATIONAL
Volume:39**Time limit:**1**Page:**23-34**DOI:**10.1080/02508060.2013.848315
Date of publication:JAN22014

Article 110

Title: [Environmental Effects of the Cruise Tourism Boom: Sediment Resuspension from Cruise Ships and the Possible Effects of Increased Turbidity and Sediment Deposition on Corals \(Bermuda\)](#)
Author:Jones,R J (Jones, RossJ.)
Source publication:BULLETIN OF MARINESCIENCE
Volume:87**Time limit:**3**Page:**659-679**DOI:**10.5343/bms.2011.1007
Date of publication:JUL2011

Article 111

Title:Evaluating the applicability of ESM(Ecotourism Sustainability Maximization)model to assess, monitor,and manage the ecotourism sustainability in mountain ecosystem (Mt. KangchendzongaBaseCampTrek, India)
Author:Ashok,S(Ashok, Smriti); Behera,MD (Behera,M.D.); Tewari,HR (Tewari,H.R.)
Source publication:ENVIRONMENTAL MONITORING AND ASSESSMENT
Volume:191
LITERATURE NUMBER:801**DOI:**10.1007/s10661-019-7702-y **S3**
Date of publication:DEC2019

Article 112

Title:Coral health status assessment in Malaysias lands; looking towards Marine Spatial Planning
Author:Safuan,CDM(Safuan, CheDinMohd); Ashraf,ARM(Ashraf, AbdulRahmanMuhammad); Tan,CH (Tan,ChunHong); Jaafar,SN(Jaafar, SitiNurtahirah); Yusop,PAM(Yusop, PutriAsmaMegat); Lai, RK(Lai,RaveenaKim); Ismail,MN(Ismail, MdNizam); Chan,AA (Chan, AlbertApollo); Repin,IM (Repin, IzarenahMd); Wee,HB(Wee,HinBoo); Bachok,Z (Bachok, Zainudin)
Source publication:OCEAN & COASTAL MANAGEMENT
Volume:213
LITERATURE NUMBER:105856**DOI:**10.1016/j.ocecoaman.2021.105856
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Article 113

Title:Remote Sensing of Tropical Rainforest Biomass Changes in Hainan Island, China from 2003 to 2018
Author:Lin,MZ (Lin,Meizhi); Ling,QP(Ling, Qingping); Pei,HQ (Pei,Huiqing); Song,YN(Song, Yanni); Qiu,ZX (Qiu,Zixuan); Wang,C(Wang,Cai); Liu,TD (Liu,Tiedong); Gong,WF(Gong, Wenfeng)
Source publication:REMOTESENSING
Volume:13**Time limit:**9
LITERATURE NUMBER:1696**DOI:**10.3390/rs13091696
Date of publication:MAY2021

Article 114

Title:A coastal management program for channels located in back barrier systems
Author:Pacheco,A (Pacheco,A.); Carrasco,AR (Carrasco,A.R.); Vila-Concejo,A (Vila-Concejo,A.); Ferreira,O(Ferreira,O.); Dias,JA (Dias,J.A.)
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