



Angling tourism: A state-of-the-art review

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Abstract

This paper represents a scoping review of angling tourism. Using the *Google Scholar* search engine and *Scopus* search, the paper reviews 98 journal articles on angling tourism in terms of year of publication, geographic locations of case studies, disciplinary foci, scientific fields and research themes. Studies on angling tourism focus on different facets of this tourism activity and comprise three major research themes: *Angling tourism management*, *General angling tourism* and *Impacts* both of and on angling tourism. This review shows that tourism studies and journals on tourism management/geography have, by and large, ignored angling tourism as a tourism activity across the globe, despite its significant contribution to the tourism economy. Future research on angling tourism development requires broadening the geographical scope of studies, understanding anglers as tourists with subsequent research from tourism studies perspectives, acquiring and mining of quality data for sustainable site-specific tourism offerings as well as focusing on the issues of global environmental change for implementing effective management and adaptation mechanisms. Significantly more studies are required to understand this tourism activity fully. The review supports the use of *Google Scholar* search as a reliable tool for accessing scientific publications

Keywords: angling tourism, angling tourism impact, angling tourism management, scoping review

Introduction

Recreational angling is a primary form of outdoor recreation activities worldwide, and participation in recreational angling is steadily growing; thus, the angling tourism industry is also expanding (Skrzypczak & Karpiński, 2020). Modern angling tourism originates in fifteenth-century England (Mordue, 2016). Today, in many countries, angling is a popular leisure activity that generates significant tourism industry income (Komppula et al., 2020). Despite the large perceived size of angling as a recreational activity, Hall (2021) notes that research on recreational angling and its multiple tourism dimensions remains limited. The reasons for the lack of research could be that angling tourism can fall under the ambit of numerous types of tourism, such as rural-, urban-, outdoor- and nature-based tourism/ecotourism, as well as special interest, heritage, coastal/beach and adventure tourism to name a few examples (see Bauer & Herr, 2004; Borch et al., 2008; Rantala et al., 2018; Øian, 2013). Therefore, it arguably does not necessarily require specific academic scrutiny. An additional reason for the lack of focus could be that few tourism studies have identified anglers as tourists (e.g., Graefe, 1981; Fedler & Ditton, 1986; Ditton et al., 2002) and angling as a tourist experience (Borch et al., 2008; Komppula et al., 2022).

Most definitions of angling tourism need to encapsulate the variables necessary for a complete definition (Hoogendoorn, 2014). Nevertheless, for this paper, aspects of angling tourism require definition, namely: *angling* is defined as fishing using a hook with either a rod and line or hand-held line; this can be both for commercial and non-commercial purposes, whereas *recreational angling* is characterised as an activity for pleasure, amusement, relaxation, social activity and for personal consumption (Pawson et al., 2008, p.341). Thus, *angling tourism* can be defined as an activity where subsistence is not the primary purpose (Hall, 2021); instead, angling tourism is an activity of tourists (Solstrand, 2013).

Arlinghaus et al. (2016a) argue that there is an urgency for interdisciplinary studies on recreational fishing and angling tourism. Therefore, this review responds to this call by analysing angling tourism studies for various variables, such as the number of articles and locations, themes, and the journals where this work is published. It sheds light on the fact that tourism research has largely ignored the importance of angling tourism. The number of interdisciplinary studies on this topic remains relatively low, representing a significant shortfall. Therefore, this paper is the first review of angling tourism. The paper's primary purpose is to provide a systematic review of angling tourism literature to identify the main research directions, trends, and possible gaps in research on this topic.

This paper is divided into three sections. The first section considers the methods employed, followed by the analysis and discussion of the results. The paper then concludes with a note on future research opportunities.

Method

Review papers in tourism research focus either on broad trends in tourism research (Baltantyne et al., 2009; Xiao & Smith, 2006) or focus on specific topics, such as, for example, second-home tourism (Hall, 2014), proximity tourism (Salmela et al., 2021) and circular economy in tourism (Renfors, 2022). These reviews have been conducted using scientific database searches and the analysis of identified tourism journals. Some examples of non-database reviews include attempts to find ongoing research themes through mailing lists (Carr & Hayes, 2017). The method used in this study both follows and contrasts with previous review methods. For example, not only tourism journals were used for analysis, but rather a range of interdisciplinary journals; this is because different academic disciplines investigate angling as a tourism activity. The database construction in this review primarily used the *Google Scholar* search engine. *Google Scholar* is a free web search engine for scholarly publications irrespective of discipline, geographical region, or language. It allows for the search of digital copies of journal articles. *Google Scholar* provides access to 87% of all educational documents written in English (Khabsa & Lee Giles, 2014). *Google Scholar* is a valid search engine for finding relevant literature on a specific topic and constructing databases within a particular theme, focus area or discipline. After constructing the database, based on the *Google Scholar* search results, a *Scopus* search was conducted to identify articles that might have fallen outside the scope of the *Google Scholar* search results (see Figure 1).

This paper represents a scoping review that identifies knowledge gaps, synthesise research evidence, set the research agenda, and develop managerial implications. A scoping review differs from a systematic one as it offers an overview of the evidence relevant to a specific topic “in terms of the volume, nature, and characteristics of the primary research” (Pham et al., 2014, p. 371; Tricco et al., 2016). A scoping review implies using an exploratory analysis that outlines, maps and explains critical issues in research. Reviews as an investigatory theme have yet to be reviewed substantively (Pham et al., 2014; Rasoolimanesh et al., 2020). The review in this paper considers specific criteria based on the keywords used: “angling tourism” and “fishing tourism”. The authors considered these two keywords to be the most encompassing of the definitions of both Hall (2021) and Solstrand (2013), respectively, as mentioned in the introduction. Up to 200 entries were searched per key phrase in *Google Scholar* and *Scopus* to achieve saturation.

Monographs and book chapters were excluded from this review, as peer-reviewed journal articles are easier to access for the researcher and the reader. All available papers were downloaded until no more papers were found. Initially, 160 papers were downloaded through *Google Scholar* and 102 papers through *Scopus*. After scrutinising each paper in terms of relevance, a final tally was counted at 92 papers from *Google Scholar* and 43 from *Scopus*. Thirty-six papers from the *Scopus* search appeared duplicated (see Figure 1). Thus, six papers from the *Scopus* database were included in the review, and one paper could not be accessed at all. The total count of the papers in this review comprised 98 papers.

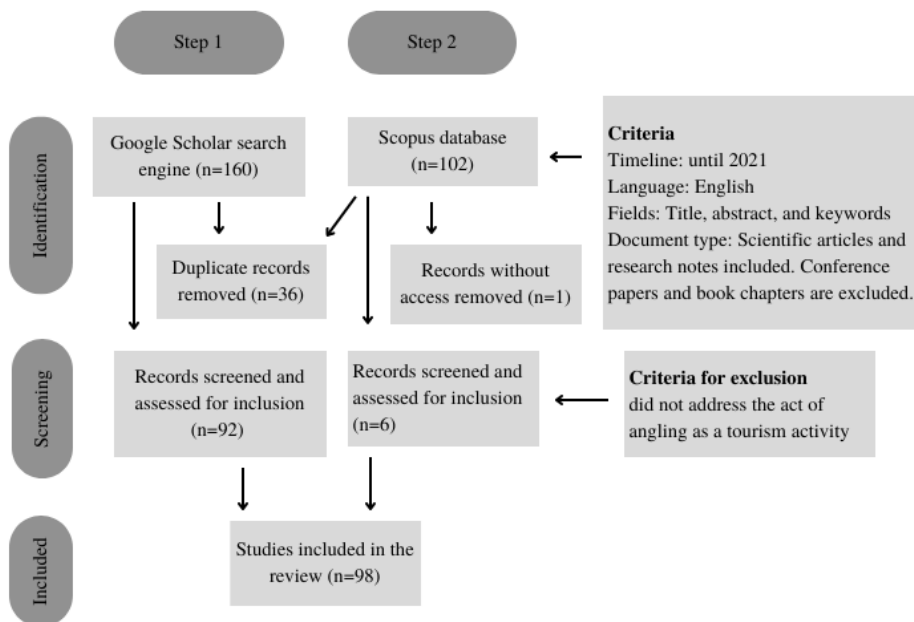


Figure 1. The review process (adapted from Pham et al. 2014 and Renfors 2021).

The scope of publications spanned the years 1993 to 2021. All downloaded papers spoke directly to the relationship between fishing/angling as a tourist activity. Papers that included fishing and tourism or recreational angling but not the act of angling as a tourism activity were discarded. Angling tourism as any nature-based tourism activity, includes demand and supply sides, the natural environment in which the activity takes place as well as services and infrastructure, the local community, and a multitude of external factors that affect a specific activity (e.g., regulations, rights of access, environmental protection) (Fredman & Tyrväinen, 2010). Thus, studies on angling tourism in this review focus on different facets of this tourism activity that range from management and conservation aspects to types of angling tourism and actors and a range of impacts both on and of angling tourism (see Table 2).

The database was constructed using eight criteria, namely, the year of publication, journal name, the title of the article, names of the authors, region or country of the study in question and up to three main themes from each paper. After constructing the database, papers with similar research themes were further scrutinised and grouped according to their specific focus (see Table 2). Other data points, such as the year of publication, region of the research case and the journal, were grouped and summarised in Figures 2 and 3 and Table 1.

Results

Frequency and origin of publications

Most publications in this study appeared in the last ten years (2011-2021), totalling 73 out of 98 (Figure 2). From 1993 until 2010, there were only 25 publications; thus, in the last decade, the number of angling tourism research publications has increased substantially. Due to a low number of publications per year before 2010, they are merged into two intervals in

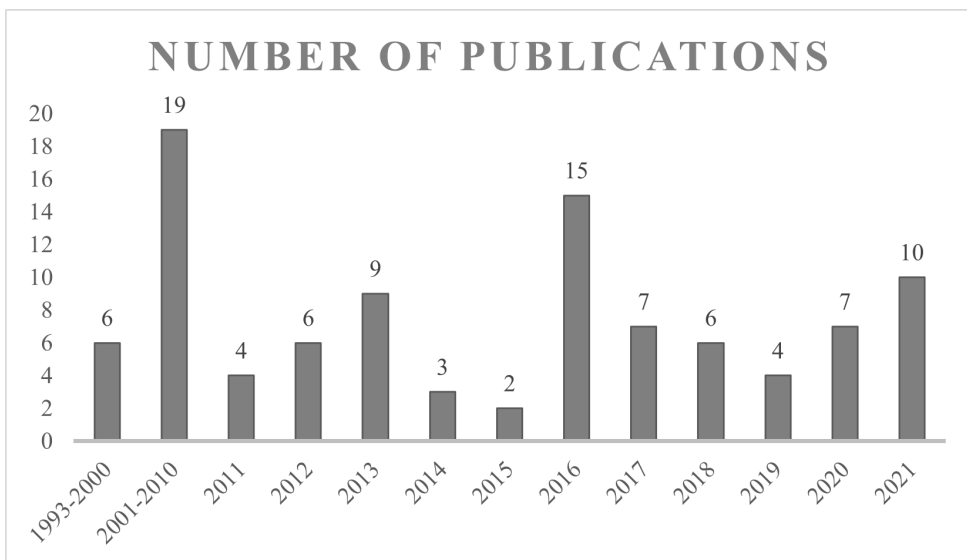


Figure 2: 1993-2000 and 2001-2010. Notwithstanding the popularity of angling tourism and the recent increase in publications, the comparatively low number of publications shows it is a marginal topic in tourism research that has received only modest scientific attention.

Figure 2: Number of publications

The global regions where angling tourism research studies have been undertaken are unevenly dispersed (see Figure 3). Most studies have been undertaken in the Nordic region covering Norway (N = 18), Sweden (N = 4), Finland (N = 4) and Denmark (N = 3); the Nordic region accounts for more than a quarter of all research papers in this review. An explanation for this is that Norway is recognised to have one of the highest rates of recreational sea angling participation globally (Hyder et al., 2018). While all countries and regions that appear as case studies in publications on angling tourism have extensive ocean shorelines and/or inland water bodies, the number of studies is relatively low, given the extent of angling tourism practices and opportunities in each country. For example, in Finland, it is estimated that about 30% of the adult population takes part in recreational angling annually (Pellikka & Eskelinen, 2019).

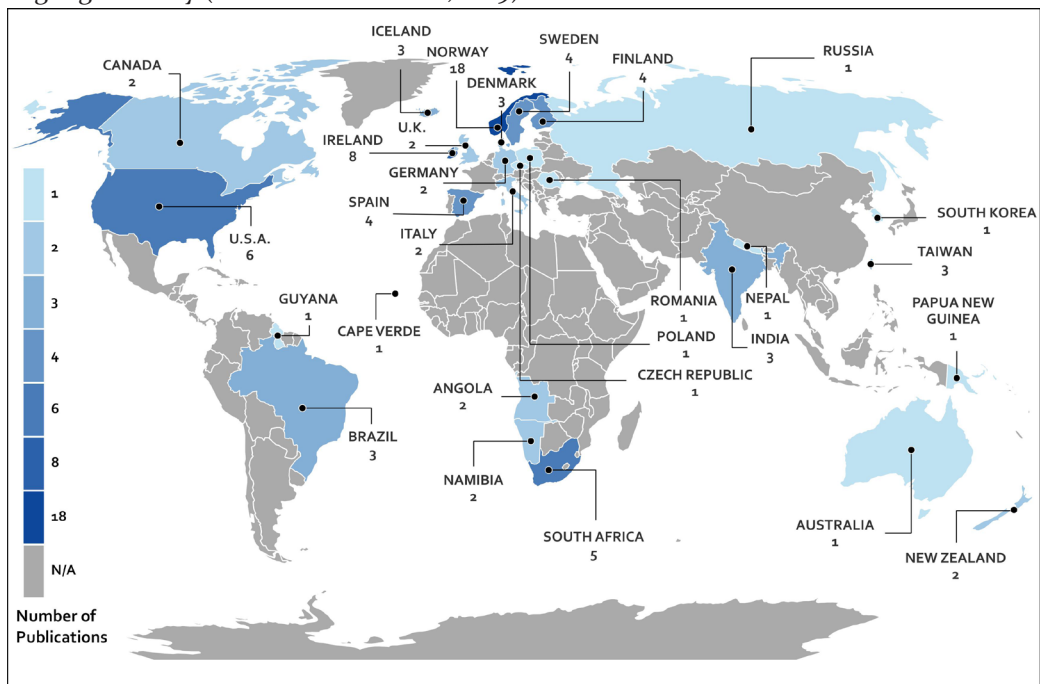


Figure 3: A map of countries with publications on angling tourism

Western and Southern Europe account for the second-highest number of studies, among which Ireland (n = 8) has the most publications. The region is represented by the following countries: Spain (n = 4), Iceland (n = 3), Italy (n = 2), Germany (n = 2), United Kingdom (U.K.) (n = 2), Poland (n = 1), Czech Republic (n = 1), Romania (n = 1). Other countries that are famous for angling tourism, like the United States of America (USA) (n = 6), Canada (n = 2), New Zealand (n = 2) and Russia (n = 1), account for only 11 studies in

total. From the African continent, studies on angling tourism come only from four countries: South Africa (n = 5), Namibia (n = 2), Angola (n = 2) and Cape Verde (n = 1). Other countries and regions that have very modest contributions include Brazil (n = 3), Taiwan (n = 3), and India (n = 3).

Fields of science and scientific journals

The diversity of research topics and case studies from different countries and regions worldwide is reflected in the great variety of journals – with 98 studies appearing in 60 journals. National and regional journals were often chosen by researchers within a particular field of science. For example, the Irish Journal of Sociology, Canadian Journal of Forest Research, Hydro Nepal, Archives of Polish Fisheries and Arctic Anthropology (Table 1) were used as outlets. Considering the search terms that were applied (“angling tourism” and “fishing tourism”), the results show that tourism journals included less than one-third of all the publications (N = 31). While tourism journals represented the majority of publications on angling tourism, the combined numbers of other disciplines outnumbered journals with a specific tourism focus. Other fields of study included fisheries research (N = 21), aquatic and marine research (N = 16), geography (N = 6), environment research (N = 4), other interdisciplinary journals (N = 6) and journals of different fields of study, such as forestry, ecology, and biology (N = 14) (Table 1).

In most cases, journals had only one publication on the topic. However, four journals stood out, with more than four publications on angling tourism. These included the *Fisheries Management and Ecology* with 12 publications, and the *Scandinavian Journal of Hospitality and Tourism* with nine publications (including a recent [2021] Special issue on angling tourism). Five papers were published in *Ocean and Coastal Management* and four in the *Journal of Sustainable Tourism*.

Table 1: Fields of study and journals of publications

Field of study	Journal	Number of
Tourism	Scandinavian Journal of Hospitality and Tourism	9
	Journal of Sustainable Tourism	4
	Tourism Recreation Research	2
	Journal of Ecotourism	2
	Cuadernos de Turismo	2
	Tourism Management	2
	Journal of Outdoor Recreation and Tourism	1
	Tourism in Marine Environments	1
	African Journal of Hospitality, Tourism and Leisure	1
	Current Issues in Tourism	1
	Annals of Tourism Research	1
	Asia Pacific Journal of Tourism Research	1
	Tourism Economics	1
	Journal of Travel & Tourism Marketing	1

	Journal of Sport & Tourism	1
	International Journal of Tourism Research	1
Fisheries research	Fisheries Management and Ecology	12
	Fisheries Research	3
	Fish & Fisheries	1
	Fisheries	1
	Archives of Polish Fisheries	1
	Acta Ichthyologica et Piscatoria	1
	Human Dimensions of Wildlife	2
Aquatic/Marine research	Ocean & Coastal Management	5
	Marine Policy	3
	Maritime Studies	2
	Hydro Nepal	1
	Aquatic Conservation: Marine and Freshwater Ecosystems	1
	Water resources and rural development	1
	Aquatic Ecosystem: Health & Management	1
	South African Journal of Marine Science	1
	Journal of Water Resource and Protection	1
Geography	Bulletin de la Société Géographique de Liège	1
	Area	1
	Tourism Geographies	1
	Norsk Geografisk Tidsskrift	1
	Nordia Geographical Publications	1
	Irish Geography	1
Environment Research	Journal of Environmental Management	1
	Environment, Development and Sustainability	1
	Ambio	1
	Journal of Environmental Planning and Management	1
Interdisciplinary	Development Southern Africa	2
	Present Environmental and Sustainable Development	1
	Land	1
	Sustainability	1
	Natural Resources Forum	1
Other misc	Canadian Journal of Forest Research	2
	Økonomisk fiskeriforskning	1
	Revista do Instituto de Medicina Tropical de São Paulo	1
	Journal of Medical Entomology	1
	Trends in ecology and evolution	1
	Ecological Economics	1
	Ecology & Society	1

	Agricultural Economics	1
	Journal of Rural Studies	1
	Applied Economics	1
	Irish Journal of Sociology	1
	Arctic Anthropology	1
	Biological Conservation	1

Regarding thematic clarity, fisheries/wildlife research was represented by only one journal – *Human Dimensions of Wildlife* – with two publications on the topic. This research direction was classified under “fisheries research” in Table 1.

Research themes

Research themes of the articles could be categorised into three main categories: 1. *Angling Tourism Management*, 2. *General Angling Tourism*, and 3. *Angling Tourism Impacts* (see Table 2). We uncovered the content of each category focusing on the dominant thematic discussions by reading through each paper identified in this review.

Table 2: Research themes

Themes	Region/ Country	References from review
1. Angling Tourism Management		
<i>Policy/policy adjustments</i>		
Management strategies and scenarios	Norway/Iceland	Solstrand, 2013, 2015
	Norway	Moksness et al., 2011
	Global	Arlinghaus et al., 2016a
	New Zealand	Lovelock & Hayes, 2020
	Denmark	Hjalager, 2010
Management solutions for environmentally responsible behaviour	Norway	Solstrand & Gressness. 2014
Angling under different regulatory schemes	Norway	Stensland et al., 2021b
	Korea	Cheong, 2003
	India	Everard et al., 2021
	Norway	Holmgren & Lindkvist, 2016
<i>Case-specific managerial solutions</i>		
Angling tourism management	Spain	Padin et al., 2016
Management of species	Ireland	Grilli et al., 2020
Management of catch-and-release angling	Norway	Ferter et al., 2013
Fisheries management	Sweden	Blicharska & Rönnback, 2018
	Denmark	Rasmussen & Geertz-Hansen, 2001
	USA	Carlson et al., 2019
	Finland	Salmi & Salmi, 2010
	Germany	Lewin et al., 2021

Sustainable management/measures to reach sustainability	Norway	Borch, 2004
	Ireland	Cawley, 2017
	Australia	Greiner et al., 2013
<i>Conservation</i>		
Conservation strategies	South Africa	Turpie et al., 2003
	India	Gupta et al., 2014; Everard & Kataria, 2011
2. General Angling Tourism		
<i>Angling tourism development</i>		
Transition towards tourism	Sweden	Andersson, 2021
	Taiwan	Chen & Chang, 2017
	Italy	Cillari et al., 2012
Obstacles to angling tourism development	Sweden	Waldo & Paulrud, 2012
<i>Motivations</i>		
Push and pull motivations	Czechoslovakia	Navrátil et al., 2009
<i>Types of tourism</i>		
Ecotourism	Russia	Zwirn et al., 2005
	South Africa	Hoogendoorn, 2016
	Americas	Holland et al., 1998; Holland et al., 2000
	Global	Fennell, 2000
Marine angling tourism	Norway	Borch et al., 2011; Borch, 2009
Catch-and-release	Guyana	Lennox et al., 2018
	Global	Cooke et al., 2016; Cooke et al., 2006
	Angola	Butler et al., 2020a
Pescatourism	Italy	Romanelli & Meliado, 2021
	European/ Global	Piasecki et al., 2016
Game-angling	UK	Mordue, 2013, 2016
<i>Segmentation</i>		
Anglers' segmentation	Finland	Pokki et al., 2021
	USA	Kyle et al., 2007; Oh & Schuett, 2010
	Denmark	Bonnichsen, et al., 2019
<i>Actors/stakeholders</i>		
Anglers' perspectives & experiences	Ireland	Solon & Brunt, 2006
	USA	Oh et al., 2012
	Spain/ Cape Verde	Lam-González et al., 2021
	New Zealand	Hayes & Lovelock, 2016
Consumer preferences	Norway	Øian, 2013
	USA	Roehl et al., 1993

Anglers' sharing of secrets	Norway	Svensson, 2016
Destination loyalty	Norway	Stensland et al., 2021a
Landowners' perspectives	Norway	Stensland, 2010, 2012, 2013
Angling communities'/residents' perspectives	Papua New Guinea	Diedrich et al., 2019
	Taiwan	Chian & Huang, 2012
Collaboration among stakeholders	Global	Dedual et al., 2013
	Spain	Herrera-Racionero et al., 2018
Conflict among stakeholders	Ireland	Phyne, 1996
	Norway	Øian et al., 2017
Promotion by tourism agencies	Global	Lovelock, 2009
<i>Conceptual</i>		
Angling tourism	Global	Moreno Muñoz, 2018; Hall, 2021
	Anglo-American	Mordue, 2009
3. Impacts		
<i>Tourism impacts</i>		
Littering	Germany	Lewin et al., 2020
Impact on fish	Global	Arlinghaus et al., 2016b
Tourism development & potential	Spain	Lois González & Piñeiro Antelo, 2020
	USA	Ditton et al., 2002
	Poland	Trella & Mickiewicz, 2016
	Romania	Camară, 2016
	Nepal	Gurung & Thing, 2016
	Southern Africa	Hoogendoorn, 2014
	Namibia	Gronau et al., 2017
Economic opportunities/contribution	South Africa	Potts et al, 2021; Du Preez & Lee, 2010
	Ireland	Curtis et al, 2017a; Hynes et al, 2017
	Norway	Stensland & Baardsen, 2012
	Sweden	Paulrud & Laitila, 2013
Economic impact	Finland	Kaupila & Karjalainen, 2012
	Namibia	Kirchner et al., 2000
	Ireland	Grilli et al., 2018
	Angola	Butler et al., 2020b
	Ireland	Curtis et al., 2017b
	South Africa	Du Preez & Hosking, 2011
<i>Impacts on angling tourism</i>		
Sandfly impact on tourists	Brazil	Brilhante et al., 2015; 2019
Impact of forest harvesting	Canada	Hunt et al., 2005; Hunt et al., 2013
Natural bait	Brazil	Henriques et al., 2018

Second homes impact on angling	Finland	Seppänen & Toivonen, 2010
Water quality	Taiwan	Lee, 2016

1. Angling tourism management

Accurate planning and management are essential for developing resource-based tourism industries, such as angling tourism. Management strategies for governing angling tourism focus on multiple (often case-specific) issues, such as the protection of fish stocks (Solstrand, 2013), achieving sustainability (Arlinghaus et al., 2016a; Borch, 2004; Cawley, 2017; Greiner et al., 2013; Solstrand, 2013; Solstrand & Gressness, 2014), licensing, license pricing and harvest limits (Lovelock & Hayes, 2020; Stensland et al., 2021b), catch-and-release (C&R) and species-specific guidelines (Arlinghaus et al., 2016a; Ferter et al., 2013; Grilli et al., 2020; Hjalager, 2010), monitoring systems for fish and fisheries (Arlinghaus et al., 2016a), management of commercial and recreational fisheries (Arlinghaus et al., 2016a; Blicharska & Rönnback, 2018; Carlson et al., 2019; Lewin et al., 2021; Rasmussen & Geertz-Hansen, 2001; Salmi & Salmi, 2010), fishing communities and regional livelihoods (Cheong, 2003; Everard et al., 2021; Holmgren & Lindkvist, 2016) and conservation strategies (Turpie et al., 2003; Gupta et al., 2014; Everard & Kataria, 2011).

Arlinghaus et al. (2016a, p.182) argue that “recreational fisheries management requires a rapid transition from single-objective management to ecosystem management and aquatic stewardship using adaptive approaches that include monitoring and re-evaluation of practices through time”. Research should focus on institutional frameworks (strong organisation of recreational fisheries, sharing success stories and failures) to help improve governance of recreational fisheries, policy frameworks (comparative studies on successful and failed frameworks), licensing (license systems and angler registration mechanisms), and management frameworks (rigorous management and harvest control rules) (Arlinghaus et al., 2016a). Other studies also emphasise the application of holistic perspectives in fisheries management, including implementing new regulations/legislation and through management for sustainability (Greiner et al., 2013; Salmi & Salmi, 2010). Thus, in addition to using biological indicators in management, it is crucial to rely on technical, economic, social and human dimensions. Hjalager (2010) argues that regional innovation systems are essential in terms of angling tourism, especially for different (yet interconnected) stakeholders, but also regarding small firms, environmental protection and the development of opportunities for angling tourism as a whole.

Studies show contrasting approaches towards angling tourism management in different countries. For example, Solstrand (2013, 2015) has examined Iceland’s and Norway’s management strategies in marine angling tourism. She points out that despite that the two countries are rooted in the same socio-cultural values, they developed very different management strategies. Compared to Iceland, Norway’s management strategy lacks three critical components, which negatively affect marine angling tourism’s socio-cultural and environmental sustainability. These components include poor interactive governance, the absence of measures for conflict mitigation, and failure to collect data relevant to natural

resource management (Solstrand, 2013, p.124). Similar results were shown by Moksness et al. (2011) and Borch (2004). They emphasised the inadequacy of management instruments and, more specifically, the lack of data for local authorities to enable the development of policy instruments for natural resource-based tourism in Norway. Cooke et al. (2006) also noted the value of angling tourism, but they cautioned that there was a desperate need for quality data to inform such tourism.

Research shows that different management strategies lead to different angling behaviours. For example, stricter harvest quotas can result in consumption-oriented anglers leaving the fishery (Stensland et al., 2021b). At the same time, “for conservation-minded, less harvest-oriented, and more C&R-prone anglers, a lowered quota could be viewed as a sign of responsible fishery management and facilitate participation” (Stensland et al., 2021b; see also Chen & Chang, 2017). Harvesting and C&R highlight the human dimension that the customers – namely, angling tourists – need to implement suitable management measures. It is noted that when introducing restrictions or regulations, it is important to consider anglers’ perspectives and satisfaction levels (Øian et al., 2017). Thus, understanding anglers, their behaviour, values, and preferences have important implications for service development and diversification of tourism offerings (Komppula et al., 2022; Padin et al., 2016; Potts et al., 2021) and should form a significant part of angling tourism research. The extent to which this has been done is explored in the next section.

2. General angling tourism

On the spectrum of general angling tourism publications, there is a great variety of perspectives of researchers, participating actors/stakeholders and types of angling tourism involving the transition from tourism to segmentation (Table 2). It should be noted that while the topic of anglers’ perceptions and experiences has appeared in six research case studies, each case focuses on a specific perception or experience. However, most of the topics are presented by just one or two studies, leaving room for various research perspectives.

Motivation is an underlying driver for any touristic activity, yet our database contains only one study on motivation (see Table 2). The lack of research on motivation can be explained by most of the research on motivations concentrated on recreational angling rather than angling tourism. Navrátil et al. (2009) show that angling tourism motivations are a complex set of push and pull motives. Out of seven push factors – “*introvert professional experience*”, “*catch fish*”, “*relaxation through enjoyment of nature*”, “*escape*”, “*social gathering within anglers’ community*”, “*loneliness*”, and “*extrovert public appreciation*”, – they found out that “relaxation through enjoyment of nature” was the most critical factor. In contrast to push factors, pull factors included several aspects, such as the number of fish and the diversity of species at the destination, environment quality, absence or the low number of other tourists, distance from home, and the price of angling tickets.

Roehl et al. (1993) argue that research should consider angling tourists’ decision-making processes and preferences and the importance of understanding the specific segments of the sport-angling industry. Decision-making is especially important to support the intention of providing unique products for angling tourists. Indeed, tourist segmentation is

widely used for catering for visitors' needs in the tourism industry and has also been increasingly applied to angling tourism. For example, Oh and Schuett (2010) state that pay-to-fish destinations showed substantial differences in behaviour and motivation. The day visitor versus overnight visitor segments showed differences in spending behaviour; however, despite the different profiles and behaviour of these angling tourist segments, they are both valuable in terms of the income they generate for rural tourism destinations. Other studies suggest segmentation of angling tourists based on angling involvement and consumptive orientation (Kyle et al., 2007), angling site attributes (Bonnichsen et al., 2019; Pokki et al., 2020), and whether they are high- or low-spend anglers (Curtis et al., 2017b).

Anglers' perspectives and experiences are essential for angling tourism development because they provide vital data on specific tourism offerings. For example, Moreno Muñoz (2018) notes that tourist demand for unique quality products has led to the development and active promotion of marine/fishing tourism in Spain. Data is also critical to area-specific information about the strengths and weaknesses of angling tourism, water quality, species decline, tourism promotion and fisheries management (Hayes & Lovelock, 2016; Lam-González et al., 2021; Oh et al., 2012; Solon & Brunt, 2006). The study by Solon and Brunt (2006) showed that anglers' perspectives helped to identify the water pollution that had led to native species decline and the simultaneous increase in non-native species. These perspectives, in turn, affected tourism marketing, necessitating a shift to "coarse angling tourist products" (Solon & Brunt 2006, p.48) and required a new managerial perspective. Lam-González et al. (2021) state that anglers' satisfaction is an essential indicator of expenditure levels and destination loyalty. At the same time, a more pristine environment directly improves satisfaction, emphasising the importance of proper environmental management (see also Lee, 2016). Stensland et al. (2021a) also confirm that satisfaction is the most significant component affecting destination loyalty, while image and place attachment contribute to loyalty. Stensland (2010, 2012, 2013) underlines the importance of grappling with and understanding landowners' heterogeneous perspectives on fishery management in terms of fish stocks and conservation (see also Gonzales et al., 2020), in which tourism development is unprioritised.

One of the most critical topics in angling tourism is C&R which is seen by many as an ethical and conservation-friendly method of angling, although this is also highly contested (Butler et al., 2020a; Holder et al., 2020; Lennox et al., 2018). For example, Cooke et al. (2006) noted the inconclusive evidence for C&R techniques, where mortality rates ranged between zero and 100%. They determined that the success of C&R depends on the natural environment, the angler, the type of equipment used, and the type of species targeted, as certain species are more hardy and able to withstand C&R techniques. Zwirn et al. (2005) studied this topic related to angling ecotourism in Russia. They argued that C&R has a relatively minimal negative impact on wild salmon stock in Kamchatka and that it should form part of sustainable development planning and management of angling tourism in the region. Stensland (2012) notes that unfamiliarity and lack of knowledge about C&R can explain negative perspectives and low support for C&R as a management tool.

In India, C&R of the iconic Mahseer species is seen to be valuable not only to the conservation and health of river systems but can ultimately benefit poor local communities through “paying for ecosystems services” as part of the larger tourism product (Everard & Kataria 2011, p.101; Gupta et al., 2014). Hoogendoorn (2017) made similar arguments regarding C&R and the broader benefits for poor local communities living near recreational angling destinations in South Africa. Cooke et al. (2016, p.250) studied whether C&R can be considered a “conservation problem” or a “conservation action”. They argue that while C&R is not an ideal conservation strategy (as mortality of endangered species can still occur because of the C&R), recreational anglers are often the most prominent and visible stewards of the conservation of fish stocks and river ecosystems. Thus, the benefits of angling tourism should ideally be used to enhance the protection of endangered species. For example, C&R is banned in Iceland except for the seriously threatened halibut. Thus, “if a halibut is caught and remains viable, it must be released” (Solstrand, 2013, p.121). The undoubted double-edged sword of C&R and related conservation practices can be especially contentious when new groups enter a natural environment for angling tourism purposes (Borch, 2004; Mordue, 2009). Insufficient information often leads to conflict between anglers and local stakeholders based on lack of information, which contributes to difficulty in achieving sustainable management of destinations.

3. Impacts

Angling is recognised as mainly having a positive impact on tourism development and increasing environmental awareness (Camară & Munteanu, 2016; Lois González & Piñeiro Antelo, 2020; Gurung & Thing, 2016; Hoogendoorn, 2014; Trella & Mickiewicz, 2016) and for fostering development of different modes of tourism, such as ecotourism or “pescatourism”, in particular (Ditton et al., 2002; Piasecki et al., 2016). Pescatourism, which can be regarded as a form of ecotourism in several ways, aims to protect marine resources, limit coastal degradation, reduce over-fishing, and promote lesser-known species. Moreover, it enhances old fishing methods, fosters generational change, and increases female participation, among others (Piasecki et al., 2016). Similarly, game-angling is defined as “hard ecotourism”, which values wilderness and includes deeper interaction with the natural environment (Mordue, 2016, p. 275). However, the development of specific modes of angling tourism, such as pescatourism or game-angling, faces several challenges, varying from low tourists’ knowledge of its contributions to tourism and environment sustainability, legislative and taxation issues to potential conflict between different tourism forms (Piasecki et al., 2016; Mordue, 2016; Romanelli & Meliado, 2021).

Studies note the importance of ensuring a sustained angling population flow to different rural locations, including by maintaining transport infrastructure, in analysing angling tourism potential and development. Balanced tourism development also needs to contribute to fish conservation through proper licensing (Camară & Munteanu, 2016; Gronau et al., 2017; Gurung & Thing, 2016; Hoogendoorn, 2014). Diversification of activities to diversify local cash income and promote angling cultural heritage (Lois González & Piñeiro Antelo, 2020; Gurung & Thing, 2016). The accessibility of angling sites is an essential aspect

ct of tourism development, according to studies from Nepal (Gurung & Thing, 2016) and Romania (Camară & Munteanu, 2016). However, Hunt et al. (2005, p.409), in their study on the effect of forest management on sport fishing in northern Ontario, Canada, state that “Remoteness provides guests with better expectations for fisheries abundance and an opportunity to obtain psychological outcomes that are important to tourists (e.g., solitude)”. Forest management that requires the development of logging access roads would cause a significant economic decline for tourism providers that rely purely on fly-in visitors (since fly-in sites would be converted into road-accessible and boat-accessible sites) (see also Hunt et al., 2013). Indeed, the varying perspectives on transport infrastructure in angling tourism development are not only the result of country-specific contexts but also different angling methods and other tourism establishments connected to angling tourism in the area.

Angling tourism is an essential source of income in many countries and regions. In South Africa and Angola, recreational fisheries generate significant economic activities in rural and impoverished areas that would otherwise receive little input (Butler et al., 2020b; Du Preez & Lee, 2010; see Gronau et al., 2017). A significant local economic impact linked to tourism and angling tourism in South Africa, Angola and Spain is the economic leakage from utilising outside services and service providers owing to the lack of local skilled staff (Butler et al., 2020b; Lois González & Piñeiro Antelo, 2020; Potts et al., 2021).

Studies on the economic contribution of angling show contrasting perspectives from stakeholders. While a Swedish study showed that the costs of recreational fisheries outweigh the benefits (Paulrud & Laitila, 2013), in Ireland, the benefits from sea angling outweigh the costs (Hynes et al., 2017). Some studies suggest that angling specialisation would make a substantial income source for angling tourism entrepreneurs (Ditton et al., 2002; Stensland & Baardsen, 2012), while others argue that the type of angler does not play a role when targeting angling tourists (Curtis et al., 2017a). Du Preez and Hosking (2011) calculated the recreational value of alien invasive trout in South Africa and showed that consumer surplus per fishing trip is the highest among existing studies on the economic impact of angling tourism. It is important to note that foreign visitors can bring a significant economic impact via angling tourism. For example, a study regarding shore anglers in Namibia shows that foreign visitors contribute 55% of all expenditures (Kirchner et al., 2000). Indeed, Grilli et al. (2018) state that international visiting anglers are often more prized than domestic anglers. However, their study indicates no difference between domestic and overseas anglers regarding their angling demand.

Diverse natural and social factors can impact angling tourism both positively and negatively. Seppänen and Toivonen (2010) show that access to a summer cottage positively affects angling participation. They found that in Finland, the number of fishing households who fished only in the vicinity of their summer cottages was almost double those who only fished in their domestic fisheries (Seppänen & Toivonen, 2010, p.19). The availability of live bait also impacts angling; thus, its shortage or decline affects the industry and recreational practice. Henriques et al. (2018) suggest that carefully planned substitution of live bait not

only sustains recreational angling but also has a positive ecological impact. Among factors negatively affecting angling tourism, sandfly prevalence during the fishing season can cause health threats both for tourists and locals (Brilhante et al., 2015; 2019). Considering that there are only a limited number of case-specific studies on impacts associated with angling tourism, trends should not be generalised. Instead, these studies should form the basis for developing further research directions and cases.

Future research agendas

Despite the popularity of angling as a recreational activity, angling tourism is a specific niche in the broader tourism market. It requires significant expansion in terms of research focus (see Mordue, 2013). We highlight the following themes as priority foci.

Geography

A recent special issue on *Fishing and Tourism* in the Scandinavian Journal of Hospitality and Tourism (Volume 21, Issue 4) is the only example of an angling tourism special issue hosted by a top tourism journal. Given the geographical focus of the journal, it is understandable that this special issue focused on the Nordic region; however, there is significant scope for special issues focused on other regions where angling is a significant tourism activity and source of revenue. Our database of locations of studies showed that no research has yet been conducted at some of the world's most famous angling destinations in the Global South (such as Argentina, Chile, Mexico, Belize, Botswana, Mongolia and Gabon) and in destinations in the Global North (such as Slovenia). While in certain instances, there is only one paper per country, as is the case in Russia, the U.K., and South Korea, to name a few examples. There is a need for broadening the geographical scope of research on angling tourism to build comparative perspectives and ensure the validity and applicability of results.

Angling Tourists

Angling tourism remains understudied, considering the size of the angling tourism industry globally. This is despite the research progress that has been made since the 1990s. As Stensland (2010) noted more than a decade ago, scant research has studied angling from the tourist perspective. Many academic and scientific papers state this as their respective entry and exit points; however, our review shows more needs to be done to better understand anglers as tourists. Anglers' perceptions and experiences have appeared only in six papers in this review. At the same time, tourist behaviour-related aspects, such as motivations and values, decision-making and segmentation, are barely covered. Thus, this status quo needs to be addressed to secure tourist flow and satisfaction and support and develop angling tourism that generates local economic revenues. The latter requires more research on anglers' willingness to pay, expenditures and preferences – the aspects that are also not sufficiently covered by the current research (see also Grilli et al., 2020; Hynes et al., 2017; Lam-González et al., 2021; Lovelock & Hayes, 2020). Only one study in our review is related to fishing tourism promotion (Lovelock, 2009). Thus, there is a need for research on

destination development and marketing that constitute core aspects of tourism business research.

Data Quality

We want to highlight the urgent need for the acquisition and mining of quality data, not only from the perspective of angler tourists themselves but also from other stakeholders such as the government, landowners, tackle shops and distributors, angling guides and the tourism industry at large. Arlinghaus et al. (2016a, p.178), in their paper on recommendations for the future of recreational fisheries, argue for “...effective governance arrangements and improve monitoring and assessment frameworks in data-poor situations”. Indeed, the issue of poor data commonly emerges in the literature (Borch, 2004; Cooke et al., 2006; Moksness et al., 2011; Solstrand, 2013). Even in highly developed regions like the Nordic countries, this problem emerges; for example, Kauppila and Karjalainen (2012) noted that in the peripheral regions, there is a need for good quality angling tourism data. In addition to quality data acquisition, the need for knowledge transfer and establishing multidisciplinary teams that combine multiple data dimensions, including human dimensions and the biology of species, economic impact, and value (Arlinghaus, 2016a). Quality data that unfolds economic, social, cultural, and environmental aspects of angling tourism allows the development of site-specific tourism offerings sustainably.

Global Environmental Change

The severe impacts of global environmental change will strongly influence the angling tourism industry. Mainly during extreme events like droughts and flooding, angling outfitters will not be able to host trips; angling tourists will further have holidays severely affected by climate changes and adverse weather conditions (Paudyal et al., 2015). The angling tourism industry will require a variety of adaptation mechanisms that should be put in place, including effective management, careful experimentation, and environmental education to assure business continuity in a sustainable manner (Chen & Chang, 2017; Cooke et al., 2006; Everard et al., 2021; Jeanson et al., 2021). With the growing policy demand for sustainable development, the angling tourism industry must implement new ways of practising and marketing this activity to address the debates and changes on a global scale (Andersson, 2021). These further emphasise the need for more studies on angling tourism and how the industry can effectively adapt to the severity of global environmental changes (Ahn et al., 2000; Tingley et al., 2019). In addition to the impact of global environmental change on angling, further research is also required on how angling tourism impacts local communities and the environment (Gronau et al., 2017; Lewin et al., 2020).

Conclusion

This review paper highlighted the key research themes in angling tourism across the globe regarding different variables and themes and put into place key suggested themes of investigation for future research. Although the number of published articles on angling tourism is relatively modest to the scale of angling tourism as an activity and the industry,

the increase in the number of publications during the last two decades shows a growing multidisciplinary interest in angling tourism. The review has shown the range of themes in angling tourism that have received uneven research attention and are scattered around a few countries. Thematic and disciplinary diversity of research perspectives shows that angling tourism is a complex system not limited to tourists and their activities but involves different actors and stakeholders. Their perspectives and actions, regulations and restrictions, the economic, cultural and social embeddedness of local communities, and other factors that facilitate or hinder angling tourism.

Notably, our study is predominantly based on publications accessed through the open-access Google Scholar search engine, which has provided higher search results and relevance of publications than those in Scopus. This further supports the use of Google Scholar search as a reliable tool for accessing scientific publications. The final publication database used in this paper represents equity concerning access to research publications and scientific results, as publications accessed through Google Scholar are openly available. Those from the Scopus database are also open access. One publication without access was discarded from the review. The scoping review of 98 papers has provided a comprehensive overview of topics and gaps in angling tourism research. Our results can assist angling tourism and other tourism researchers in constructing research agendas and defining a specific research scope.

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