

Polar Bear Viewers as Deep Ecotourists: How Specialised Are They?

Raynald Harvey Lemelin

*School of Outdoor Recreation, Parks and Tourism, Lakehead University,
Thunder Bay, Canada*

David Fennell

*Department of Tourism and Environment, Brock University, St. Catharines,
Canada*

Bryan Smale

*Department of Recreation and Leisure Studies, University of Waterloo,
Canada*

Individuals visiting natural areas, such as national parks, or engaging in certain outdoor recreation activities like birdwatching, are often assumed to be ecotourists and also concomitantly assumed to be highly specialised by virtue of their behaviour. In this study, tourists visiting the Churchill Wildlife Management Area in Canada to view polar bears are examined using a comprehensive index of specialisation and compared to selected demographic variables and indicators of environmental concern. The results suggest that these visitors reflect a wide range of levels of specialisation, and that the majority of visitors are novices who might not share the same degree of concern for the environment or the same motives for visiting as their more specialised counterparts. Concerns for management of natural areas for wildlife viewing are raised based on these findings.

doi: 10.2167/jost702.0

Keywords: ecotourism, polar bears, specialisation, wildlife tourism

Introduction

Past research concerning ecotourists and wildlife tourists in particular has tended to identify such groups based on behavioural or locational factors. For example, many studies of ecotourists assume a priori that their samples are comprised solely of ecotourists because they were obtained largely either at the locations they chose to visit, such as protected areas (e.g. Beaumont, 2001; Saleh & Karwacki, 1996), or through the behaviours in which they take part while on site, such as birdwatching (e.g. McFarlane & Boxall, 1996), whale watching (e.g. Orams, 1999) or bear viewing (e.g. Dyck & Baydack, 2004). This presumes that such visitors necessarily share the fundamental beliefs and values that are implicit in most definitions of ecotourism as a form of environmentally sensitive and motivated tourism (Acott *et al.*, 1998; Honey, 1999). Given that most

definitions of ecotourism include notions of positive environmental ethics, biocentric rather than anthropocentric values, intrinsic rather than extrinsic motivations, a desire to engage the natural environment, as well as a higher degree of specialisation (Fennell, 1999; Hvenegaard, 2002; Orams, 2001), the question thus arises: are all visitors to natural settings engaged in wildlife viewing necessarily highly specialised?

Specialisation studies in recreation have been built predominantly on Bryan's (1977) original continuum of recreational specialisation, which includes elements or variables such as environmental knowledge, preferences for activity settings, skills and equipment ownership. While most authors agree on the multi-dimensional nature of the construct, 'consensus regarding the dimensions defining specialization is still absent' (Dyck *et al.*, 2003: 46). This lack of consensus may be due, in part, to the general nature of the specialisation continuum as it was originally presented by Bryan (1977, 1979).

In its original representation, Bryan's (1977) continuum was quite basic, with the low end of the continuum representing newcomers and individuals who did not regard the activity as important and did not show a strong preference for equipment and technique (Scott & Shafer, 2001). According to Bryan (1977), these individuals were more likely to participate infrequently in the activities and were more inclined to be resource-consumptive (i.e. intent on getting results). The high end of the continuum included highly skilled and knowledgeable individuals (e.g. well aware of management systems), extremely committed to the activity (i.e. reflecting aspects of centrality) and resource-dependent (e.g. anglers dedicated to the sustainability of the fishing quality in a particular stream). Thus, as specialisation increases, participants shift their activity focus from consumption towards conservation (Scott & Shafer, 2001).

The ambiguity surrounding the specialisation continuum has resulted in a number of interchangeable labels ranging from 'low-level specialist' to 'high-level specialist', 'amateurs' to 'professionals', 'inexperienced' to 'experienced', and 'novice' to 'advanced'. Regardless of the labels used, many of the same basic components are cited when describing specialisation and are used as indicators in the subsequent creation of indices. Building on recommendations from previous research (Dyck *et al.*, 2003; Hvenegaard, 2002; Martin, 1997), a specialisation index was created in the present study to bring about a greater understanding of polar bear viewers in Churchill, Manitoba, Canada.

The aim of the index was to reveal if travellers visiting the Churchill Wildlife Management Area (CWMA) to view polar bears were indeed highly specialised or 'deep' ecotourists (Fennell, 2004; Weaver, 2002). The differences between soft/shallow and hard/deep ecotourists are typically shown on various indicators of specialisation such as knowledge levels, commitment or dedication, expected outcomes, required services and infrastructures. In other words, compared to soft ecotourists, deep ecotourists tend to be highly knowledgeable, dedicated, focused, and require few, if any, amenities (Acott *et al.*, 1998; Fennell, 2004; Weaver, 2002). In this latter respect, some studies have shown that specialisation and deep ecotourism are highly related, which has prompted some others to incorrectly treat these concepts as interchangeable (Duffus & Dearden, 1990). The proposed index attempts to overcome the dichotomous nature of Bryan's (1977) original conceptualisation by presenting a more comprehensive

measure reflecting degrees of specialisation among the visitors to the CWMA.

The principal objective of this study was to determine if there are any differences in characteristics often associated with ecotourists among the polar bear viewers visiting the CWMA based upon their degree of specialisation. The concept of recreation specialisation has to some degree attempted to bridge the gap between wildlife tourist profiles (e.g. based on sociodemographics) and environmental context (e.g. reflected in management strategies). Consequently, in this paper, a bear-viewing specialisation index is developed within the CWMA wildlife tourism setting, based on conceptual definitions, and operationalised using selected behavioural factors and psychographic dimensions, activity commitment and centrality to lifestyle. For this purpose, three general research questions were devised to guide the ensuing analyses.

- (1) Are most wildlife viewers to a remote, dedicated destination highly specialised?
- (2) Do individuals with higher levels of specialisation conform to typical ecotourist demographic profiles as older, more highly educated men?
- (3) Are higher levels of specialisation associated with higher levels of environmental concern, such as wildlife values and pro-environmental behaviour?

A Review of Specialisation

A substantial number of studies have attempted to understand leisure preferences through an examination of involvement, commitment and specialisation. Studies examining specialisation in outdoor recreation have been quite diverse and have focused on activities such as birding (Hvenegaard, 2002; Lee & Scott, 2004; McFarlane, 1994), boating (Cottrell *et al.*, 2004; Donnelly *et al.*, 1986), camping (McFarlane, 2004; McIntyre & Pigram, 1992), canoeing (Schreyer *et al.*, 1984; Wellman *et al.*, 1982), fishing (Oh *et al.*, 2005), hunting (Kuentzel, & Heberlein, 1992), mountain climbing (Dyck *et al.*, 2003), tourism (Kerstetter *et al.*, 2001) and wildlife viewing (Martin, 1997; Vaske *et al.*, 2001).

However, regardless of the activity examined, researchers have generally regarded specialisation as an indicator of intensity of involvement and treated the construct as an explanatory factor in the assessment of differences among participants according to the use of information when making trip decisions, motivation (Hvenegaard, 2002; McFarlane, 1994), expected rewards, attitudes towards resource management (Schreyer & Beaulieu, 1986), preferences for physical and social settings (Virden & Schreyer, 1988; Scott & Schaffer, 2001). For example, Vaske *et al.* (2001) found that highly involved wildlife viewers own more equipment (e.g. camera tripods and lenses, guides, blinds), purchase more specialised equipment (e.g. clothing, spotting scopes, calls or attractants), and spend more time on outings than all other wildlife viewers.

Specialisation also involves a social component associated with the activity that contributes to a strong sense of group identification with other members (Scott & Schaffer, 2001). In fact, specialisation can become so central to individuals' life activity that 'decisions about vacations, friendships and even career directions are based on their participation in a particular activity' (Scott & Schaffer, 2001: 323). This last indicator, often referred to as commitment or

centrality, was considered by Bryan (1977) to be particularly crucial, especially at the higher levels of his proposed continuum.

McIntyre (1989) regarded commitment and involvement to one activity as being essentially the same, and that centrality was but one dimension of involvement (Scott & Schaffer, 2001). On the other hand, some researchers have treated the two concepts as distinct dimensions of specialisation. As observed by Scott and Schaffer (2001: 329):

... commitment has most often been measured in terms of expenditures and the amount of equipment owned, while centrality has been measured in terms of importance of the activity compared with other leisure pursuits, number of magazine subscriptions and books owned, club memberships, the percent of one's leisure time devoted to the activity and desire to develop one's skills and abilities.

Although specialisation can yield valuable insights into the behavioural characteristics of recreationists, various interpretations of the concept and its key components such as centrality and commitment, as well as the emphasis on observable indicators, can lead to partial or even erroneous conclusions regarding the level of affective attachment that an individual may have for an activity.

Previous conceptualisations of recreation specialisation were limited by a fairly simplistic approach where groups were created using common socio-demographic characteristics (e.g. income, education and/or occupation) or involvement patterns (e.g. club membership, equipment ownership). However, these characteristics do 'not define a social group or dictate a given leisure lifestyle' (Ditton *et al.*, 1992: 35). Indeed, what they do represent 'is an inability to include an appropriate measure of the affective attachment component of specialization and a failure to recognize the multidimensional nature of the construct' (McIntyre & Pigram, 1992: 7).

Furthermore, theorists appear to be divided on the link between specialisation and technology (e.g. equipment). Equipment ownership for such activities may simply be a reflection of 'conspicuous consumption, aspirational overbuying, competition (tournaments), listing or social status, socio-economic background, or lifestyle rather than commitment to or involvement in an activity' (McIntyre & Pigram, 1992: 4). While resource dependency has been supported by research on anglers (Chipman & Helfrich, 1988; Ditton *et al.*, 1992) and backcountry hikers (Virden & Schreyer, 1988), the shift from consumption to conservation has only been moderately supported in the literature (Hvenegaard, 2002; McFarlane, 1994; Wellman *et al.*, 1982).

The centrepiece of specialisation research, however, might very well be the concept of progression. As Kuentzel (2001) suggests, instead of progressing through stages of participation in well-established activities, leisure participants may instead be sampling from a growing variety of opportunities. Some participants may favour a diversity of experiences across different activities rather than a qualitatively better experience with each repeated engagement in a single activity. In this regard, 'Other participants may create their own distinct variation of a more traditional leisure activity forged in the specific engagement context and environment' (Kuentzel, 2001: 353–354). In this context, leisure participation

may be less a question of achievement and skill perfection, and more about the growing diversity of leisure opportunities and the commercialisation of leisure experiences. As such:

For some, the proliferation of consumer opportunities in the leisure market may encourage leisure variety and discourage a more focused leisure style. For those who do specialize, attachment to a specific leisure activity may be less about self-actualization, and more about anchoring one's identity in an increasingly complex and challenging world of obligation, opportunity, and ambiguity. (Scott & Schaffer, 2001: 338)

These limitations, combined with the growth and diversification of tourism encouraged some researchers to examine tourism from a serious leisure perspective. This concept proved attractive to tourism research, because it is constructed around leisure activity, and how these leisure opportunities provide the ability for participants (i.e. amateurs, hobbyists, volunteers) to create distinct identity and social stratification within their serious leisure social worlds (Kane & Zink, 2004).

Hall and Weiler (1992) first forged the link between special interest tourism and the serious leisure perspective. Stebbins (1996, 1997) further refined this type of tourism by noting that tourists do not become hobbyists simply by taking one or two cultural tours, such tourists are in effect casual *cultural dabblers*, amateurs. Only the hobbyist and the volunteer are indicative of serious leisure. Since then, other researchers have applied serious leisure to other tourism forms including Kennett's (2002) examination of cultural tourism and language learners; Kane and Zink's (2004) exploration of kayakers; and Wearing's (2001) overview of the phenomenon of volunteer tourism. While many attributes of wildlife tourism in the Churchill context could be attributed to serious leisure and its three categories, the following analysis and discussion will focus on specialisation.

Specialisation research has successfully highlighted behavioural tendencies by both recreationists and tourists in their pursuit of leisure activities. At the same time, specialisation studies have largely ignored affective and value dimensions of their recreational and leisure activities (McFarlane, 2004). The basic components of specialisation according to Bryan (1977) include equipment ownership (e.g. camera, fishing rod), membership in groups appropriate to the recreational activity, and general awareness of issues related to specific forms of recreational activity. All three components are interrelated in the growth and development of a specialist throughout his/her pursuit of the activity in question (Ditton *et al.*, 1992; Martin, 1997). While never specifically addressed by Bryan (1977), the central element or importance of specific activities to a participant, also known as centrality, became the focus of numerous specialisation studies, and has been regarded by some (e.g. McIntyre & Pigram, 1992) as integral to the concept. Customised to the specific context of polar bear viewing, the specialisation index developed for this study was composed of four basic components: (1) equipment ownership, (2) environmental group affiliation, (3) centrality measures, and (4) general experiences, and are intended to address some of the aforementioned shortcomings.

Ecotourists and wildlife viewers in general might not be as universally environmentally aware, wildlife sensitive and motivated purely by nature as the literature suggests (Lemelin, 2006). Hence, it would seem prudent to examine this broad group more closely in terms of their 'commitment' to what might be regarded as the fundamental characteristics of shallow and deep ecotourism and specialisation.

Methods

Study site

The study site is located near Churchill, Canada, adjacent to Wapusk National Park in northern Manitoba (see Figure 1). Created in 1978 and totalling almost 850,000 hectares, the CWMA was established to protect polar bear staging and denning areas, nesting grounds for geese and habitat for caribou (Teillet, 1988). Extensive scientific studies (Dyck & Baydack, 2004; Ramsay & Stirling, 1982, 1990) and media coverage (Comeau, 1997; Eliot, 1998) have made the CWMA a popular destination for both researchers and wildlife tourists. Polar bears concentrate each year along the shores of western Hudson Bay in the late autumn (October and November) as they await the formation of sea ice. With the



Figure 1 Churchill Wildlife Management Area (© Ryan, 2001)

development of 'tundra vehicles' (i.e. large-wheeled, bus-like vehicles that have the ability to traverse the sub-Arctic environment in relative safety and comfort) and seasonal camps set up in the coastal area, wildlife tourists now have access to remote areas that prior to 1980 were relatively inaccessible. Today, conservative estimates place the number of polar bears viewers at between 2500 and 3500 visitors annually, with those visitors making approximately 7500 to 10,500 excursions into the CWMA (Lemelin & Smale, 2006).

Data collection procedures

Data for this study were collected using self-administered questionnaires (Dillman, 2000) which focused on the human dimensions of wildlife viewing. During the peak season of October and November, a total of 65 outings on tundra vehicles scheduled to take visitors to the polar bear viewing areas were initially identified from which to draw the sample. A sample of 48 outings was selected using a stratified, random sampling technique to ensure that all days, types of trips, and operators were proportionately represented. A short briefing session was held each morning introducing visitors to the study and asking for their participation. The questionnaires were then distributed to all adults who agreed to participate in the study, 16 years of age or older, with instructions to complete it near the end of the outing. With an average of 20 to 25 individuals on each of the 48 outings, a total of 1042 questionnaires were distributed. The questionnaires gathered information on the participants' demographic profiles, wildlife attitudes, trip motivations, environmental values, perceptions (especially as they related to conservation and management issues) and on-site behaviours.

Results

In total, 917 questionnaires were completed by the polar bear viewers for a response rate of 88.0%. The respondents were mostly middle-aged and older adults (Mean = 58.60 years, SD = 14.36), reasonably well educated, relatively affluent, and mostly females (58.7%). The majority of visitors (74.3%) originated from the USA, while the rest of the visitors came predominantly from Canada (10.3%) and the United Kingdom (7.1%).

Churchill is only accessible by air and rail, with air travel the more popular form of transportation among polar bear viewers (85.2%) and travel by train used by the remaining visitors (14.8%). Trips to the CWMA lasted on average 4.76 days (SD = 1.65) with individuals taking 2.43 tundra vehicle outings (SD = 1.29) during their stay. Consistent with earlier findings from Wight (1996), organised group outings (77.6%) were considerably more popular than both casual outings (16.7%) and lodge outings (5.7%). The greater popularity of organised group outings and air travel is likely due to the nature of these outings, with many airlines, hotels and lodges catering to wildlife tourists through all-inclusive packages.

An overview of trip behaviours revealed that only 18.0% of polar bear viewers had undertaken a prior bear-viewing excursion and of those who had, over two thirds (68.1%) had taken just one or two excursions. With respect to their levels of equipment ownership, photographic equipment (62.2%), binoculars

or scopes (58.6%) and field guides (48.3%) proved to be the most popular in field equipment. Over three quarters of participants indicated some affiliation with an environmental group (e.g. World Wildlife Fund, Sierra Club, Audubon Society, Nature Conservancy).

Specialisation index of wildlife tourists

In this section, a general overview of specialisation indicators is provided, focusing on four basic components: (1) equipment ownership, (2) environmental group affiliation, (3) centrality measures, and (4) general experiences. This sets the context for the development of the specialisation index reported here.

An examination of the various indicators associated with specialisation reveals how different the visitors to Churchill for polar bear viewing really are – they do not consistently reflect patterns normally associated with highly specialised ecotourists. With respect to their levels of equipment ownership, especially photographic equipment (62.2%), binoculars or scopes (58.6%), and field guides (48.3%), field equipment has been, in past wildlife-viewing research, interpreted as an indication of activity commitment (Vaske *et al.*, 2001). However, taken on their own, the higher percentages in these categories may simply reflect a broader set of interests, such as residential birding or nature photography, which involve ownership of such equipment and not dedicated purchases for wildlife tourism. Indeed, one might argue that these percentages are surprisingly low if such equipment were to be regarded as necessary for the types of outing in which these visitors were participating, and might be attributable in part to a lack of adequate information consulted by visitors preparing for their trip.

Similarly high levels of environmental group membership were found in McFarlane and Boxall's (1996) study of birders in Alberta as are exhibited in this sample of wildlife tourists (i.e. 75% are members of at least one environmental conservation organisation). This measure has been used as an indicator of pro-environmental behaviour or strong environmental beliefs. For example, while some discrepancies were noted by McFarlane and Boxall (1996), between experienced birders and least specialised birders, the former indicating more knowledge and dedication to conservation efforts, both groups demonstrated a potential to assist agencies in wildlife conservation or conservation efforts spearheaded by environmental groups (McFarlane & Boxall, 1996).

Visitor responses to the two questions concerning the importance of wildlife viewing to their decisions when making holiday plans or how they make use of their free time suggest considerable variability in the centrality of this activity (see Table 1). Clearly, while wildlife viewing does apparently play a part in

Table 1 Centrality of wildlife viewing to leisure decisionmaking

<i>Item</i>	<i>n</i>	<i>Mean^a</i>	<i>SD</i>
To what extent does the opportunity to view wildlife influence your decision when making for your holidays?	851	3.63	0.95
To what extent does the opportunity to view wildlife influence your decision whenever you have free time?	822	3.46	0.92
Overall Mean Score		3.33	0.90

^aBased on a five-point Likert-type scale where 1 = 'never' and 5 = 'always'.

the decisionmaking of these individuals when they make plans, it does not dominate their thinking. Otherwise, their mean scores would be much higher and the standard deviations would show a greater homogeneity of opinion.

With respect to levels of past experience, very few visitors had undertaken a prior bear-viewing excursion and of those who had, over two thirds had taken just one or two excursions. Even fewer visitors made an overnight stay at one of the two tundra lodges in the CWMA, in part because of availability but also because of the higher costs.

These results suggest that the broader commitment to bear-viewing activities by wildlife tourists visiting the Churchill area was relatively minor. In fact, when visitors were requested to specify the types of bear species they had seen on past bear-viewing excursions, the results indicated that the three most common species reported (i.e. black, brown and polar bears) were all species found in North America. Thus, unlike other specialised wildlife tourists such as birders (Hvenegaard, 2002; McFarlane, 1994), bear viewers appear to be principally driven by geographical proximity and species availability, rather than species diversity and species rarity, as so few had reported seeing any of the five less common bear species (e.g. giant panda bears, sun bears).

By blending these indicators, a specialisation index was created to capture in one measure the combined influence of these factors as they pertain specifically to polar bear viewers to Churchill. In addition to examining selected demographic characteristics, the resultant specialisation groups were compared according to their motivation, wildlife values and environmental behaviour.

Some researchers have successfully combined measures of multiple specialisation dimensions into a single index of specialisation (Dyck *et al.*, 2003; Wellman *et al.*, 1982). For this study, these components measuring aspects of specialisation in wildlife tourism were compiled to derive a comprehensive index: centrality to lifestyle, general experience in wildlife tourism, equipment ownership and membership in environmental groups (see Figure 2). Each component was measured using between two and nine indicators, with increasing levels of specialisation being indicated by higher scores on each measure. The scores of each component were subsequently combined to yield a single measure of specialisation. In the following section, the process for creating the specialisation index is described.

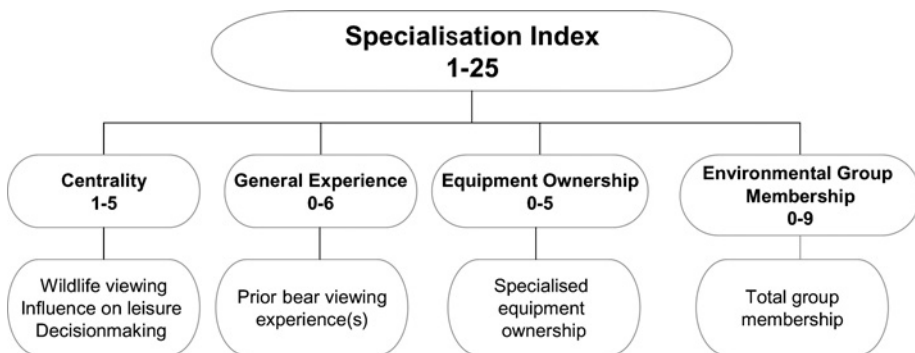


Figure 2 Specialisation index.

The first component, centrality of wildlife tourism, was based on the mean score of two items indicating the influence that opportunities for wildlife viewing had on visitors' decisionmaking (where 1 = 'never' and 5 = 'always'): 'to what extent does the opportunity to view wildlife influence your decision when making for your holidays?' and 'to what extent does the opportunity to view wildlife influence your decision whenever you have free time?' Second, prior general bear viewing experience was reflected in six questions concerning the number of prior bear-viewing excursions and the number of different bear species seen during these excursions. If the visitor had no prior experience and reported no other bear species seen, then he/she would receive a score of zero. For those who did report prior excursions and other bear species seen, they would receive higher scores to a maximum of six. Overnight stays at one of the tundra lodges was also incorporated into this category of prior experience, but extremely low levels of participation in this activity (under 10%) precluded this item from becoming a critical indicator of high specialisation.

Third, participants were requested to indicate the range of equipment they owned from a list that included binoculars, photography equipment, video camera, field guides and other types of field equipment. Scores could range from 0 to 5, depending on how many different pieces of equipment they indicated, with higher scores reflecting more equipment types. Finally, participants were asked to indicate in which of the several different environmental groups they were members. The following organisations were listed: the World Wildlife Fund, Sierra Club, Greenpeace, Earthwatch, Friends of the Earth, Born Free, Polar Bears International, Audubon Society and 'other' environmental groups. The total number of organisations to which they belonged, which provided a surrogate measure of their commitment to environmental issues, could theoretically range from zero to nine. Even though the range of this indicator is much greater than the other three and could conceivably carry greater weight into the determination of the final index, the results showed that visitors reported on average membership in only one or two organisations with no one reporting more than five memberships.

By summing the scores from all of the items, a specialisation index theoretically ranging from 1 to 25 was created. With each of the four indicators possessing very similar ranges of scores – including organisational membership which resulted empirically in the same range – they contributed the same weight to calculation of the final index score for each visitor. Indeed, the conversion of each indicator to a standard score prior to summing produced no difference in the resultant scores; hence, the simpler index was retained.

If visitors were indeed highly specialised wildlife tourists, their scores would be concentrated at the high end of the index. The resultant distribution of specialisation scores for wildlife tourists visiting the CWMA is illustrated in Figure 3. The distribution is characterised by high concentrations at the low and mid-ranges of specialisation, and lower number of individuals at the high end of the distribution. This distribution clearly reveals that the visitors to Churchill are not as overwhelmingly specialised as one might have believed based on familiar descriptions appearing in the literature.

Based on a close examination of the distribution of scores on the specialisation index, the visitors to Churchill were assigned to three groups – *novices*, *enthusiasts*

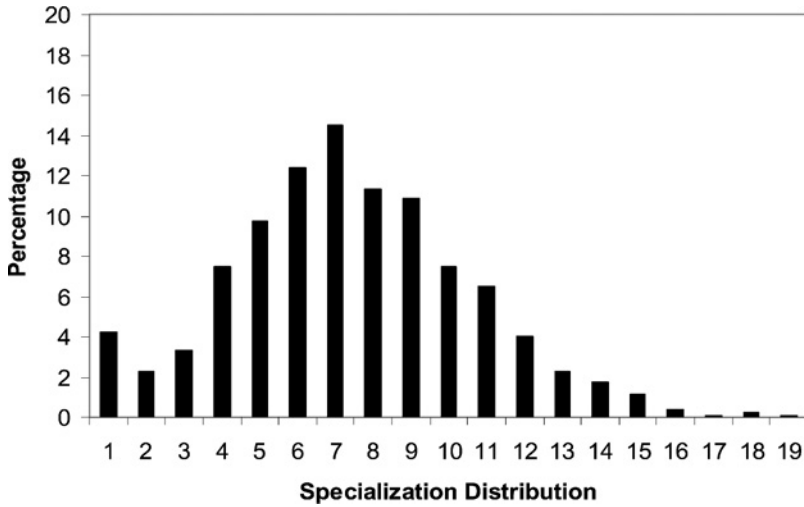


Figure 3 Specialisation distribution.

and *connoisseurs* – reflecting different levels of specialisation typically reflected in the literature. Wildlife tourists with scores ranging from 1 to 7 on the index were found to meet little, if any, of the specialisation criteria, and were classified as *novice wildlife tourists*. Those with scores ranging from 8 to 12 tended to capture some, but not many, of the criteria reflecting a greater degree of specialisation, and were labelled *enthusiast wildlife tourists*. Finally, those scoring higher on many of the criteria comprising the four components, with scores of 13 and over, were classified as *connoisseur wildlife tourists*. Based on this breakdown, the specialisation index resulted in 496 *novice* wildlife tourists (56.1%), 339 *enthusiast* wildlife tourists (38.4%) and 49 *connoisseur* wildlife tourists (5.5%).

A careful examination of the scores associated with the four components comprising the index for the three groups confirmed that this process was reasonably successful in separating between visitors with varying degrees of specialisation in wildlife tourism. As can be seen in Table 2, novice wildlife tourists to the CWMA own significantly less equipment, have less bear-viewing experience, virtually no environmental group membership and are significantly lower in their centrality of this experience than either of the other two groups. These results are quite consistent with those reported in Bryan's (1977) original research on fishers, and in Martin's (1997) and Vaske *et al.*'s (2001) studies of wildlife tourists. Further, when asked how many bears they expected to see on their outing, approximately 70% of the novice wildlife tourists reported a comparatively higher than expected number of bears (i.e. more than 10) suggesting that they may have had less knowledge than their more specialised counterparts.

In contrast to the novices at the low end of the specialisation distribution, highly specialised wildlife tourists, or connoisseurs, reported a significantly greater diversity of equipment ownership, higher numbers of environmental group affiliations, a greater degree of centrality and had taken at least two or more prior bear-viewing excursions (see Table 2). In addition, perhaps as a result of their more frequent prior experiences, connoisseur wildlife tourists appeared

Table 2 Breakdown of constituent indicators by specialisation groupings

<i>Specialisation indicators</i> <i>Specialisation groupings</i>	N	Mean	SD	F	p
<i>General experience</i>					
Novice	496	0.61 ^a	0.69	219.423	<0.001
Enthusiast	339	1.85 ^b	0.73		
Connoisseur	49	4.43 ^c	0.62		
<i>Centrality</i>					
Novice	437	3.15 ^a	0.57	135.811	<0.001
Enthusiast	339	3.93 ^b	0.58		
Connoisseur	49	4.37 ^c	0.59		
<i>Environmental group membership</i>					
Novice	452	0.34 ^a	0.89	147.479	<0.001
Enthusiast	338	1.29 ^b	0.89		
Connoisseur	49	2.22 ^c	0.87		
<i>Equipment ownership</i>					
Novice	453	1.32 ^a	0.93	179.87	<0.001
Enthusiast	338	2.48 ^b	0.93		
Connoisseur	49	3.24 ^c	0.97		

Superscripts accompanying mean scores indicate groups significantly different from one another using Tukey HSD post hoc procedure.

less likely to expect to see greater numbers of polar bears (fewer than 10 bears) on their excursion. Wildlife tourism enthusiasts fell comfortably between the two extreme groups on the specialisation continuum on all four of the indicators.

Profile of wildlife tourists based on specialisation

Similar to other wildlife tourism specialisation studies (Hvenegaard, 2002; Martin, 1997), connoisseur wildlife tourists tended to be well educated with over half having earned a graduate education and being moderately affluent (see Table 3). However, these more highly specialised wildlife tourists tended to be comparatively younger on average and included a higher percentage of females, albeit not statistically significantly so, than has been reported in past research (Hvenegaard, 2002). Novice and enthusiast wildlife tourists also tended to be comparatively older and retired when compared to connoisseurs. Surprisingly, novices and enthusiasts were significantly more affluent than connoisseurs. This lends some support to McIntyre and Pigram's (1992) notion of conspicuous consumption (i.e. inspirational overbuying) rather than activity commitment, which is a world of leisure where participants are free to select a number of opportunities rather than one specialised activity (Kuentzel, 2001).

The different specialisation groups of wildlife tourists were then compared on aspects of their predisposition towards the environment and wildlife in particular. Their motivational orientation towards nature-based experiences was assessed using selected components of the Recreation Experience Preference (REP) scale, which focuses on motives such as the enjoyment of nature, learning and exploring about the outdoors and escaping pressures of day-to-day living (Driver & Brown, 1984; Manfredo *et al.*, 1996; McCool & Stankey, 2001).

Table 3 Demographic characteristics by specialisation level of polar bear viewers

Demographic indicator	Specialisation levels					
	Novice (n = 496)		Enthusiast (n = 339)		Connoisseur (n = 49)	
	N	%	n	%	N	%
<i>Gender (n = 843)</i>						
Female	269	58.1	198	59.8	26	53.1
Male	194	41.9	133	40.2	23	46.9
<i>Country of origin (n = 853)</i>						
USA	350	74.5	251	75.1	34	59.4
Canada	46	9.8	35	10.5	7	14.3
UK and other	74	15.7	48	14.4	8	16.3
<i>Age group (n = 830)</i>						
Adult (<50)	105	23.2	69	21.0	14	28.6
Mid-life adult (50–59)	100	22.1	76	23.2	16	32.7
Pre-retirement (60–69)	137	30.2	110	33.5	10	20.4
Older adult (>70)	111	24.5	73	22.3	9	18.4
<i>Education (n = 843)</i>						
High school	97	20.9	40	12.1	6	12.2
Post-secondary	214	46.1	150	45.5	16	32.7
Graduate education	153	33.0	140	42.4	27	55.1
<i>Marital status (n = 848)</i>						
Married/common law	306	65.5	217	65.4	34	69.4
Single	73	15.6	49	14.8	6	12.2
Divorced/separated	42	9.0	35	10.5	5	10.2
Widowed	46	9.9	31	9.3	4	8.2
<i>Employment status (n = 848)</i>						
Employed	176	37.7	138	41.6	23	46.9
Not employed	64	13.7	39	11.7	9	18.4
Retired	227	48.6	155	46.7	17	34.7
<i>Annual household income (n = 699)</i>						
Under \$60,000	138	36.7	69	24.7	18	40.9
\$60,000 to \$100,000	88	23.4	75	26.9	10	22.7
Over \$100,000	150	39.9	135	48.4	16	36.4

The wildlife tourists' attitudes towards wildlife was measured using the Wildlife Values Orientation Scale (WVOS), which includes such domains as fishing and hunting rights, wildlife education, wildlife rights and wildlife use (Daigle *et al.*, 2002; Fulton *et al.*, 1996; Zinn & Pierce, 2002). Finally, a measure of the wildlife tourists' pro-environmental behaviour was generated. In all instances, the higher the individual's score on each domain (based on five-point scales), the greater the predisposition towards that motive, wildlife value, or pro-environmental behaviour.

A clear pattern emerged when examining the motivational domains of the wildlife tourists to Churchill. Overall, the results suggest that the more specialised the wildlife tourist, the more they are motivated by three principal motives: 'enjoying nature' ($F_{2833} = 6.365$, $p < 0.001$), 'learning and exploring the outdoors' ($F_{2828} = 6.476$, $p < 0.001$), and 'escaping physical pressures' ($F_{2831} = 3.525$, $p = 0.030$). The three groups were not significantly different in the extent to which they were motivated by 'introspection' ($F_{2834} = 1.128$, $p = 0.324$) or 'achievement/stimulation' ($F_{2828} = 1.571$, $p = 0.208$). While not significantly

different on the 'achievement/stimulation' motive, the results provide tentative support for Martin's (1997) study of wildlife viewers with novice wildlife tourists rating this motive somewhat higher than both connoisseurs and enthusiast specialists.

The wildlife tourists' scores on selected domains of the WVOS were all significantly different for the three specialisation groups except in two instances. The exceptions were 'fishing rights' ($F_{2812} = 2.055$, $p = 0.129$) and 'hunting rights' ($F_{2815} = 0.526$, $p = 0.591$), two domains often associated with consumptive practices and utilitarian values (Fulton *et al.*, 1996). The 'bequest and existence' ($F_{2830} = 20.327$, $p < 0.001$) and 'wildlife rights' ($F_{2,823} = 9.572$, $p < 0.001$) domains, dimensions often associated with biocentric perspectives, received significantly greater support from the two more specialised groups, enthusiasts and connoisseurs. In the case of the 'wildlife rights' domain, enthusiast wildlife tourists actually scored higher than the connoisseurs. As expected, connoisseur and enthusiast wildlife tourists rated 'recreational wildlife experience' ($F_{2825} = 24.625$, $p < 0.001$), 'residential wildlife experience' ($F_{2823} = 41.886$, $p < 0.001$) and 'wildlife education' ($F_{2793} = 37.355$, $p < 0.001$) domains significantly higher than novices. Overall, then, the wildlife tourists generally revealed orientations of support for different aspects of wildlife values consistent with their levels of specialisation.

Finally, differences in the propensity to engage in pro-environmental behaviour were found for the wildlife tourism specialisation groups with connoisseurs (Mean = 3.59, SD = 0.61) and enthusiasts (Mean = 3.41, SD = 0.70) scoring significantly higher than novices (Mean = 3.14, SD = 0.68) ($F_{2844} = 21.061$, $p < 0.001$).

Discussion

The distribution of scores based on the index of specialisation used here clearly illustrates that all wildlife ecotourists are not necessarily highly specialised. Indeed, over half of the visitors to a wildlife viewing site that could be considered to attract principally highly committed ecotourists are, in fact, novices (56.1%). The variability of these visitors along the specialisation spectrum lends some support to the soft-and-hard continuum developed by Acott *et al.* (1998), Fennell (2004), and Weaver (2002). This outcome has significant implications for the way in which visitors to such destinations are regarded, planned for, and managed.

An examination of the scores on each component for the three specialisation groups consistently followed expected patterns with connoisseurs scoring higher than either novices or enthusiasts on all four components underlying the specialisation construct. Similar patterns were also found for almost all of the dimensions associated with the wildlife concern measures such as motives, wildlife values and pro-environmental behaviour. Like the studies by Ditton *et al.* (1992) and Kauffman and Graefe (1984), these results indicated that highly specialised wildlife tourists, in this case connoisseurs, are more involved in conservation initiatives, such as greater involvement in environmental groups, than less specialised wildlife tourists and they are motivated by wildlife concerns more so than novice wildlife tourists. While these results support the expectations for higher specialisation levels, they differ somewhat

from those of Wellman *et al.* (1982) and Dyck *et al.* (2003) where a relationship between general environmental attitudes and recreation specialisation was not found. These contradictory results may originate from differences in the samples or differences in the operationalisation of specialisation and wildlife concerns.

The results concerning demographic factors associated with specialisation levels of wildlife tourists are consistent with earlier studies. Connoisseurs tended to be well educated and moderately affluent, yet they also tended to be somewhat younger than enthusiasts and novice wildlife tourists, and were comprised of a greater number of women than had been previously reported (Hvenegaard, 2002; Martin, 1997; McFarlane, 1994). While these trends may differ from other specialisation studies (McFarlane & Boxall, 1996), the possible implications from these findings for wildlife tourism operators and site managers should not be overlooked, as these stakeholders seek to market for and manage different wildlife tourism subgroups (Hvenegaard, 2002).

Furthermore, with less than 20% of the entire sample having previously undertaken a bear-viewing excursion and with only 5.5% ($n = 49$) classified as connoisseur wildlife tourists, it appears that the commitment specific to polar bear viewing by these wildlife tourists is quite low. Hence, this offers little support to the idea that the individuals visiting the CWMA are highly specialised wildlife tourists dedicated to viewing bears. Given that there are relatively few other opportunities for polar bear viewers to demonstrate their higher level of specialisation, this spatial limitation combined with temporal restrictions (i.e. group tourism experiences in general, 'tend to be' transitory and short term in nature) could be influencing the specialisation spectrum in this analysis. Consequently, little, if any, time is available for connoisseurs in wildlife tourism to establish any setting preference, skill development or resource dependence, criteria that are considered essential components in development of the original specialisation construct. Last, the high number of novices and enthusiasts among these visitors, combined with relatively high levels of wildlife concerns in both categories, may reflect specialisation in other recreational or leisure activities more so than a lack of specialisation in wildlife tourism.

While much research has been conducted supporting Bryan's (1977) argument stating that equipment propriety and prior experiences are indications of specialisation growth, little research has been conducted from the perspective of the passive acceptance of such issues (McIntyre & Pigram, 1992). Therefore, equipment ownership, prior experiences in wildlife tourism, and environmental group affiliation may be more reflective of conspicuous consumption (i.e. inspirational overbuying, competition, listing, or social status) rather than 'commitment to or involvement in an activity' (McIntyre & Pigram, 1992: 4). This focus on tangible factors such as equipment ownership and setting preference overlooks the importance of experiential or affective experiences, and precludes researchers from examining the role of other factors such as collectibles in tourism. In many cases, photography is an essential component of the modern tourism experience (Ryan *et al.*, 1999), for it helps to illustrate a level of proficiency or experience. That is, it serves to both recreate one's memories of a trip and offer indisputable evidence that the trip was made and that satisfaction was achieved (Russell, 1995).

Finally, a focus of ongoing specialisation research should attend to the evolution or progression of specialisation among wildlife viewers. As Kuentzel (2001) has suggested, instead of progressing to higher levels of specialisation as a consequence of greater participation in well-established activities, participants may instead be sampling from a growing variety of tourism opportunities. Indeed, some participants may be favouring experience diversity across a number of activities rather than a qualitatively better experience with each repeated engagement in a single activity. In this regard, 'Other participants may create their own distinct variation of a more traditional leisure activity forged in the specific engagement context and environment' (Kuentzel, 2001: 353–354). In the context of this study, leisure participation or tourism involvement may be less a question of achievement and skill perfection, and more about the growing diversity of leisure opportunities and the commercialisation of leisure experiences (i.e. nature tourism and outdoor recreation).

For some, the proliferation of consumer opportunities in the leisure market may encourage leisure variety and discourage a more focused leisure style. For those who do specialize, attachment to a specific leisure activity may be less about self-actualization, and more about anchoring one's identity in an increasingly complex and challenging world of obligation, opportunity, and ambiguity. (Scott & Schaffer, 2001: 338)

Hence, the CWMA and its polar bear congregation may be selected because it is seen as a unique opportunity to be added to one's photographic collection (Russell, 1995). On the other hand, the CWMA also provides an experiential opportunity for thousands of wildlife tourists at various levels of specialisation to witness a unique natural phenomenon, even if the primary motive is simply to view a charismatic mega-fauna such as the polar bears. Clearly, further research examining the role of specialisation in the viewing/photographing of wildlife (especially charismatic mega-fauna) in various tourism destinations, and involving different visitor types is required.

Conclusion

While we had anticipated polar bear viewers to resemble deep ecotourism characteristics, higher levels of specialisation among wildlife tourists visiting the CWMA appears to be somewhat lower overall than had been expected. Indeed, wildlife tourists in this context may be more reflective of Stebbins' (1997) 'eco-dabblers' rather than hobbyists, or volunteers. Furthermore, the majority of visitors with these lower levels of specialisation generally show associated lower orientations towards supporting wildlife values, less frequently exhibiting pro-environmental behaviour, and motives more reflective of less specialised or novice wildlife tourists.

Various international treaties (e.g. Convention on International Trade in Endangered Species [CITES] 1973; the International Agreement on the Conservation of Polar Bears [IACPB] 1976), national legislation (e.g. Species at Risk Act, 2002), provincial legislation (e.g. Polar Bear Protection Act and the Resource Tourism Operators Act, both assented in 2002 in the Manitoba legislature) and regional programmes (e.g. Polar Bear Alert Program) address

polar bear management in the province of Manitoba. Yet, the management of visitors to the CWMA is largely guided by its 1988 management guidelines (see Teillet, 1988). These guidelines, enforced by the Manitoba Department of Conservation, provide some zoning strategies, prohibit certain activities, and provide restrictions on the specific numbers of helicopters, tundra vehicle lodges and tundra vehicles permitted in the CWMA. However, they do not impose restrictions on the number of tourists permitted in this protected area, suggest user fees or outline interpretation strategies. In fact, since a majority of management efforts are dedicated to the Polar Bear Alert Program, little, if any, monitoring of the polar bear tourism activities in the CWMA occurs (Lemelin, in press). Consequently, over the past two decades, some of the guidelines on bear observation have been neither respected nor enforced (Lemelin, 2006). Attempts to revise the 1988 guidelines (see Manitoba Conservation [1999] Draft Wildlife Management Plan for the CCMWA) have met with little, if any, success. Parks Canada, the agency currently responsible for the management of Wapusk National Park, the protected area bordering the CWMA, recently released a management plan addressing tourism activities in the park.

The recently renovated Parks Canada Interpretation Centre, located in the Churchill train station, provides visitors with information on Wapusk National Park (and indirectly, the CWMA), the polar bears, and the cultural and natural heritage of the area. Since no similar facility is operated by Manitoba Conservation, the opportunity for the two management agencies to network and provide visitor education and interpretation does exist. The role of these interpretive programmes should be to recognise the diversity of visitors to the area, and then to develop appropriate strategies aimed at transforming the 'behavioral intentions' of all wildlife tourists. For example, a code of conduct highlighting rules and regulations associated with polar bear management could be beneficial. This code of conduct could be made available in all the places frequented by visitors to Churchill.

The Resource Tourism Operators Act (2002) could in theory be used to facilitate the certification of both drivers and guides. However, the recent implementation of this Act and its applicability to various visitor types as described in this study, makes its potential application difficult to assess. Therefore, much of the marketing efforts (e.g. Manitoba Watchable Wildlife Program, 2003), visitor education and interpretation strategies continue to be implemented at the discretion of operators and tour companies. Some of these strategies are quite comprehensive; for example, one tour operator has developed a manual for its drivers and guides. However, efforts by other operators are sporadic at best. Given the lower levels of specialisation among many visitors, and an upcoming lawsuit pertaining to a 2004 polar bear attack involving a researcher, helicopter pilot, tundra vehicle operator and two conservation officers in Wapusk National Park (Polar bear attack lawsuit, 2006), management guidelines and interpretation strategies may have to be reviewed in both protected areas (Wapusk National Park and the CWMA).

The importance of recognising the circumstances outlined in the previous paragraph as well as the findings from this study should not be underestimated. Many of the current management practices in important and unique natural areas that accommodate wildlife viewers are geared to groups assumed

to be highly specialised, deep ecotourists. For example, some tour companies offering polar bear excursions in Churchill differentiated their tour offerings on the basis of participant experience (e.g. trips targeted to beginners and to experts). The challenge is that these visitors are more often than not novices or generalists, with little to no experience in bear viewing. Therefore, to assume that all wildlife tourists are well-versed in ecotourism protocols, or are knowledgeable about polar bear and polar environments is presumptuous at best. This brings to question if these individuals are unaware of current challenges facing polar regions, how the experience itself can increase awareness and if it can provide new incentives for protecting natural habitats and wildlife (Weaver, 2002). The solution, to paraphrase one tundra vehicle driver, may be to never assume that simply because one person owns a nice camera with a big lens, or tells you about his/her travels to Antarctica, Botswana and the Galapagos Islands, that they know anything about wildlife tourism, ecotourism or how to behave respectfully in natural settings. The driver made the observation, which can be confirmed from the field research, that people need to be reminded that polar bears are unique and different, that we are visitors in their home. Tourists need to be informed about current rules and regulations, reminded that these animals are facing some big challenges in the years ahead, and encouraged to do something about it. When properly addressed and managed, wildlife tourism and ecotourism can have a positive impact on conservation, by providing funding and increasing awareness and knowledge through well-directed interpretation and educational initiatives (Fennell, 2004; Fennell & Weaver, 2005; Weaver, 2002).

A better understanding of the construct of specialisation and those factors related to it inevitably leads to more effective management of environmental impacts (Butler & Boyd, 2000), improvement in economic benefits (Hvenegaard *et al.*, 1989), optimisation of interpretation programmes, and better strategies to target potential markets (Hvenegaard & Dearden, 1998). While more specialised participants in this particular wildlife tourism activity, much like outdoor recreationists (Teisl & O'Brien, 2003; Thapa & Graefe, 2003), heritage tourists (Kerstetter *et al.*, 2001) and serious leisure tourists (Kane & Zink, 2004; Stebbins, 1996; Wearing, 2001), were more likely to engage in pro-environmental behaviour and contribute to wildlife tourism's goal of enhanced conservation (Hvenegaard & Dearden, 1998), steps must still be taken in order to ensure that such a diverse group, which includes many novices, engages in responsible travel behaviour. This could be done by providing more educational and interpretive materials and making visitors aware of local conservation issues (Hvenegaard, 2002).

Acknowledgements

Research leading to this paper was supported by Parks Canada, Manitoba Conservation, Indian and Northern Affairs Canada, Great White Bear Tours and the Churchill Northern Studies Centre. Logistic support was provided by Great White Bear Tours, Frontiers North, Natural Habitat, Travel Wild, Churchill Nature Tours, the Churchill Northern Studies Centre, and Quest Nature Tours. Particular thanks are conveyed to the reviewers, tundra vehicle drivers and tour guides.

Correspondence

Any correspondence should be directed to Raynald Harvey Lemelin, PhD, School of Outdoor, Recreation, Parks and Tourism, Lakehead University, 955 Oliver Road, Thunder Bay, Ontario, Canada P7B 5E1 (rhlemeli@lakeheadu.ca).

References

- Acott, T.G., La Trobe, H.L. and Howard, S.H. (1998) An evaluation of deep ecotourism and shallow ecotourism. *Journal of Sustainable Tourism* 6 (3), 238–253.
- Beaumont, N. (2001) Ecotourism and the conservation ethic: Recruiting the uninitiated or preaching to the converted? *Journal of Sustainable Tourism* 9 (4), 317–338.
- Bryan, H. (1977) Leisure value systems and recreational specialization: The case of trout fishermen. *Journal of Leisure Research* 9, 174–187.
- Bryan, H. (1979) *Conflict in the Great Outdoors*. Sociological Studies No. 4. Alabama: Bureau of Public Administration, University of Alabama.
- Butler, R.W. and Boyd, S.W. (eds) (2000) *Tourism and National Parks: Issues and Implications*. Toronto: Wiley.
- Chipman, B.D. and Helfrich, L.A. (1988) Recreational specialization and motivations of Virginia river anglers. *North American Journal of Fisheries Management* 8, 390–398.
- Comeau, P. (1997) Dangerous liaison. *Canadian Geographic* September/October, 57–60.
- Cottrell, S.P., Graefe, A.R. and Confer, J. (2004) Recreation specialization: Hierarchy of boating subactivities revisited. *World Leisure Journal* 46 (4), 35–47.
- Daigle, J.J., Hrubec, D. and Ajzen, I. (2002) A comparative study of beliefs, attitudes, and values among hunters, wildlife viewers, and other outdoor recreationists. *Human Dimensions of Wildlife* 7 (1), 1–19.
- Dillman, D.A. (2000) *Mail and Internet Surveys: The Tailored Design Method* (2nd edn). Toronto: Wiley.
- Ditton, B.R., Loomis, D.K. and Choi, S. (1992) Recreation specialization: Re-conceptualization from a social world's perspective. *Journal of Leisure Research* 24, 33–51.
- Donnelly, M.P., Vaske, J.J. and Graefe, A.R. (1986) Degree and range of recreation specialization: Toward a typology of boating related activities. *Journal of Leisure Research* 18, 81–95.
- Driver, B.L. and Brown, P.J. (1984) Contributions of behavioral scientists to recreation resource management. In I. Altman and J.F. Wohlwill (eds) *Behavior and the Natural Environment* (pp. 307–339). New York: Plenum.
- Duffus, D.A. and Dearden, P. (1990) Non-consumptive wildlife-oriented recreation: A conceptual framework. *Biological Conservation* 53, 213–231.
- Dyck, C., Schneider, I., Thompson, M. and Virden, R. (2003) Specialization among mountaineers and its relationship to environmental attitudes. *Journal of Park and Recreation Administration* 21 (2), 44–62.
- Dyck, M.G. and Baydack, R.K. (2004) Vigilance behavior of polar bears (*Ursus maritimus*) in the context of wildlife-viewing activities at Churchill, Manitoba, Canada. *Biological Conservation* 116, 343–350.
- Eliot, J.L. (1998) Polar bears: Stalkers of the high arctic. *National Geographic* 193 (1), 52–71.
- Fennell, D.A. (1999) *Ecotourism*. New York: Routledge.
- Fennell, D.A. (2004) Deep ecotourism: Seeking reverence in theory and practice. In T.V. Singh (ed.) *New Horizons in Tourism: Strange Experiences and Stranger Practices* (pp. 109–122). Wallingford: CABI.
- Fennell, D.A. and Weaver, D.B. (2005) The ecotourism concept and tourism-conservation symbiosis. *Journal of Sustainable Tourism* 13 (4), 373–390.
- Fulton, D.C., Manfredi, M.J. and Lipscomb, J. (1996) Wildlife value orientations: A conceptual and measurement approach. *Human Dimensions of Wildlife* 1 (2), 24–47.
- Hall, C.M. and Weiler, B. (1992) Introduction. In C.M. Hall and B. Weiler (eds) *Special Interest Tourism* (pp. 1–14). New York: Wiley.
- Honey, M. (1999) *Ecotourism and Sustainable Development: Who Owns Paradise?* Washington: Island Press.

- Hvenegaard, G.T. (2002) Birder specialization differences in conservation involvement, demographics, and motivations. *Human Dimensions of Wildlife* 7 (1), 21–36.
- Hvenegaard, G.T. and Dearden, P. (1998) Ecotourism versus tourism in a Thai National Park. *Annals of Tourism Research* 25 (3), 700–720.
- Hvenegaard, G.T., Butler, J.R. and Krystofiak, D.K. (1989) Economic values of bird watching at Point Pelee National Park. *Wildlife Society Bulletin* 17, 526–531.
- Kane, M.J. and Zink, R. (2004) Package adventure tours: Markers in serious leisure careers. *Leisure Studies* 23 (4), 329–345.
- Kauffman, R.B. and Graefe, A.R. (1984, October) Canoeing specialization, expected rewards and resource related attitudes. Paper presented at the National River Recreation Symposium, Baton Rouge, LA.
- Kennet, B. (2002) Language learners as cultural tourists. *Annals of Tourism Research* 29, 557–559.
- Kerstetter, D.L., Confer, J.J. and Graefe, A.R. (2001) An exploration of the specialization concept within the context of heritage tourism. *Journal of Travel Research* 39, 267–274.
- Kuentzel, W.F. (2001) How specialized is specialization research? *Journal of Leisure Research* 33, 351–356.
- Kuentzel, W.F. and Heberlein, T.A. (1992) Does specialization affect behavioral choices and quality judgments among hunters? *Leisure Sciences* 14, 211–226.
- Lee, J. H. and Scott, D. (2004) Measuring birding specialization: A confirmatory factor analysis. *Leisure Sciences* 26, 245–260.
- Lemelin, R. H. (2006) Wildlife Tourism in Churchill, Manitoba: The virtual consumption of polar bears in the Churchill Wildlife Management Area, Churchill, Manitoba. *Current Issues in Tourism* 9 (6), 516–534.
- Lemelin, R. H. (in press) Local dimensions of polar bear tourism in Churchill, Manitoba. In J. Higham and M. Lück (eds) *Marine Wildlife and Tourism Management*. Oxford: CABI.
- Lemelin, R.H. and Smale, B.J.A. (2006) Effects of environmental context on the experience of polar bear viewers in Churchill, Manitoba. *Journal of Ecotourism* 5 (3), 176–191.
- Manfredo, M.J., Driver, B.L. and Tarrant, M.A. (1996) Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. *Journal of Leisure Research* 28 (3), 188–213.
- Manitoba Conservation (1999) Management plan draft: Churchill Wildlife Management Area. Unpublished report.
- Manitoba Government, Legislative Electronic Publications (2002) *Province Promotes Polar Bear Protection and Sustainable Eco-tourism: Ashton*. <http://www.gov.mb.ca/chc/press/top/2002/11/2002-11-04-01.html>. Accessed 04.11.2002.
- Manitoba Government, Legislative Electronic Publications (2003) *Premier Unveils Province's First Watchable Wildlife Area*. <http://www.gov.mb.ca/chc/press/top/2003/04/2003-04-30-07.html>. Accessed 22.11.2006.
- Martin, R.S. (1997) Specialization and differences in setting preferences among wildlife viewers. *Human Dimensions of Wildlife* 2 (1), 1–18.
- McCool, S.F. and Stankey, G.H. (2001) Managing access to wildlands for recreation in the USA: Background and issues relevant to sustaining tourism. *Journal of Sustainable Tourism* 9 (5), 389–399.
- McFarlane, B.L. (1994) Specialization and motivations of birdwatchers. *Wildlife Society Bulletin* 22, 361–370.
- McFarlane, B.L. (2004) Recreation specialization and site choice among vehicle-based campers. *Leisure Sciences* 26, 309–322.
- McFarlane, B.L. and Boxall, P.C. (1996) Participation in wildlife conservation by birdwatchers. *Human Dimensions of Wildlife* 1 (3), 1–14.
- McIntyre, N. (1989) The personal meaning of participation: Enduring involvement. *Journal of Leisure Research* 21, 167–179.
- McIntyre, N. and Pigram, J.J. (1992) Recreation specialization re-examined: The case of vehicle-based campers. *Leisure Sciences* 14, 3–15.
- Oh, C.O., Ditton, R.B., Anderson, D.K., Scott, D. and Stoll, J.R. (2005) Understanding differences in nonmarket valuation by angler specialization level. *Leisure Sciences* 27, 263–277.

- Orams, M.B. (1999) *Marine Tourism*. New York: Routledge.
- Orams, M.B. (2001) Types of ecotourism. In D.B. Weaver (ed.) *Encyclopedia of Ecotourism* (pp. 23–36). Wallingford: CAB International.
- Polar-bear attack lawsuit. Student targets two Churchill firms (2006, 21 November) *The Winnipeg Sun*. <http://winnipegsun.com/News/Manitoba/2006/11/21/2431993-sun.html>. Accessed 22.11.2006.
- Ramsay, M. and Stirling, I. (1982) Reproductive biology and ecology of female polar bears in western Hudson Bay. *Le Naturaliste Canadien* 109, 941–946.
- Ramsay, M. and Stirling, I. (1990) Fidelity of female polar bears to winter-den sites. *Journal of Mammalogy* 71 (2), 233–236.
- Russell, L.C. (1995) The social construction of orangutan: An ecotourist experience. *Ontario Institute for Studies in Education* 3 (2), 151–170.
- Ryan, C., Huges, K. and Chirgwin, S. (1999) The gaze, spectacle and ecotourism [Electronic version]. *Annals of Tourism Research* 27 (1), 148–163.
- Saleh, F. and Karwacki, J. (1996) Revisiting the ecotourists: The case of Grasslands National Park. *Journal of Sustainable Tourism* 4 (2), 61–80.
- Schreyer, R. and Beaulieu, J.T. (1986) Attribute preferences for wildland recreation settings. *Journal of Leisure Research* 18, 231–247.
- Schreyer, R., Lime, D.W. and Williams, D.R. (1984) Characterizing the influence of past experience on recreation behavior. *Journal of Leisure Research* 16, 34–50.
- Scott, D. and Shafer, C.S. (2001) Recreational specialization: A critical look at the construct. *Journal of Leisure Research* 33, 319–343.
- Stebbins, R.A. (1996) Cultural tourism as serious leisure. *Annals of Tourism Research* 23, 958–960.
- Stebbins, R.A. (1997) Identity and cultural tourism. *Annals of Tourism Research* 24, 450–452.
- Teillet, D.J. (1988) The Churchill Wildlife Management Area: Management guidelines. Report produced for the Manitoba Department of Natural Resources. Unpublished document.
- Teisl, M.F. and O'Brien, K. (2003) Who cares and who acts? Outdoor recreationists exhibit different levels of environmental concern and behavior. *Environment and Behavior* 35 (4), 506–522.
- Thapa, B. and Graefe, A.R. (2003) Forest recreationists and environmentalism. *Journal of Park and Recreation Administration* 21 (1), 75–103.
- Vaske, J.J., Wittmann, K. and Williams, T.V. (2001) Wildlife viewing in Colorado: A review and synthesis of existing data. Human Dimensions in Natural Resources Unit, Colorado State University, CO.
- Viriden, R.J. and Schreyer, R. (1988) Recreation specialization as an indicator of environmental preference. *Environment and Behavior* 20 (6), 721–739.
- Wearing, S. (ed.) (2001) *Volunteer Tourism: Experiences That Make A Difference*. Oxford: Oxford University Press.
- Weaver, D.B. (2002) The evolving concept of ecotourism and its potential impacts. *International Journal of Sustainable Development* 5, 251–264.
- Wellman, J.D., Roggenbuck, J.W. and Smith, A.C. (1982) Recreation specialization and norms of depreciative behavior among canoeists. *Journal of Leisure Research* 14, 233–340.
- Wight, P.A. (1996) North American ecotourists: Market profile and trip characteristics. *Journal of Travel Research* 34 (4), 2–10.
- Zinn, C.H. and Pierce, C.L. (2002) Values, gender, and concern about potentially dangerous wildlife. *Environment and Behavior* 34 (2), 239–256.

Copyright of *Journal of Sustainable Tourism* is the property of *Multilingual Matters* and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.