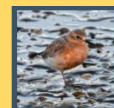




Human Interactions with Bears

An Annotated Bibliography

Michael Lück



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Black bear (*Ursus americanus*)

1. INTRODUCTION

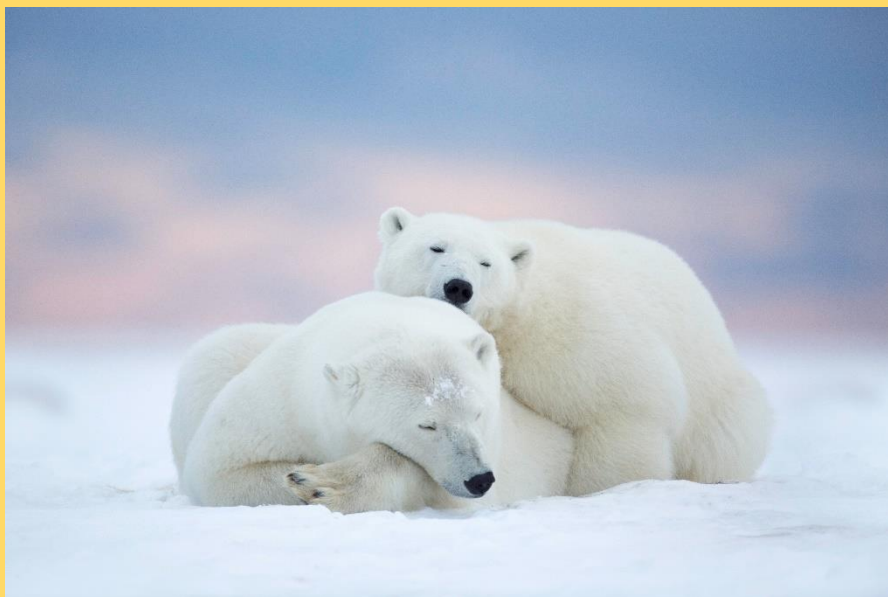
This is the sixth of a series of annotated bibliographies, published by Dotterel Publishing. The aim of this series is to provide a comprehensive overview of the literature pertaining to specific touristic and leisure activities, in particular, but not limited to, wildlife viewing activities. These annotated bibliographies will aid researchers and other interested persons and organisations locate relevant literature.

The main part of this document is divided into two sections: The first section is a *reference bibliography*, listing works in alphabetical order. The second section is an *annotated bibliography*, adding short abstracts/summaries to most of the works listed in the first section, again in alphabetical order.

We have included references from a variety of sources, mostly from academic journals, books, theses and dissertations, conference proceedings and technical reports. While the majority of sources relate directly to bear watching, we have also included some works on general tourism and recreational activities and the effects these may have on bears, as well as some bear and wildlife management literature. We have also included some literature pertaining of resident-bear interactions/conflict. We acknowledge that there are also numerous non-academic books and websites on bears and bear watching; however, these would be virtually impossible to include in a systematic manner due to the sheer volume of these.

We would like to acknowledge Professor Mark Needham (Oregon State University, and former Co-Editor-in-Chief of [Human Dimensions of Wildlife](#)), who provided us with numerous sources that were added in this bibliography. Thank you, Mark, your help was invaluable!

While this is an extensive bibliography, we do not claim it to be complete. In fact, we aim to regularly update this bibliography, and gratefully accept any suggestions for inclusion. Please email suggestions with publication details to dotterelpublishing@gmail.com



Polar bears (*Ursus maritimus*)

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Young Black bear (*Ursus americanus*)

3. ANNOTATED BIBLIOGRAPHY

A

Authors: An, L., He, G., Liang, Z., and Liu, J.

Year: 2006

Title: Impacts of demographic and socioeconomic factors on spatio-temporal dynamics of panda habitat

Journal: Biodiversity & Conservation

Volume: 15

Issue: -

Pages: 2343-2363

Abstract: Demographic and socioeconomic factors of individual people and households may have significant impacts on their environment, which in turn may affect the spatio-temporal dynamics of wildlife habitat and local biodiversity. In the Wolong Nature Reserve (China) for giant panda conservation, local households live a rural lifestyle that has caused forest degradation by activities such as cutting fuelwood. Based on field data and a spatial agent-based model that integrates cross-scale data and cross-discipline models, An and colleagues examine how panda habitat would respond to changes in a set of socioeconomic and demographic factors individually, and under a conservation scenario and a development scenario (setting factors to values that would benefit or degrade habitat, respectively). The model simulates each family member's life history (including needs, attitudes, and activities) and the household agents' interactions with each other and with the environment through their activities over 30 years. The simulations show that among all the factors under consideration, providing cheaper electricity and changing the age structure through increasing marriage age or prolonging the interval between consecutive births could change habitat quantity significantly (at $\alpha = 0.05$ level); and the differences in panda habitat between the two scenarios escalate over time. In addition to benefiting local policy-making, this study provides a new approach to studying human–environment interactions from the perspectives of individual needs and decisions.

Authors: Andersen, M., and Aars, J.

Year: 2016

Title: Barents sea polar bears (*Ursus maritimus*): Population biology and anthropogenic threats

Journal: Polar Research

Volume: 35

Issue: -

Article: 26029

Abstract: This paper examines how anthropogenic threats, such as disturbance, pollution and climate change, are linked to polar bear (*Ursus maritimus*) population biology in the Svalbard and Barents Sea area, with the aim to increase our understanding of how human activity may impact the population. Overharvesting drastically reduced the population of polar bears in the Barents Sea region from about 1870 to 1970. After harvesting was stopped—in 1956 in Russia and 1973 in Norway—the population grew to an estimated 2650 individuals (95% confidence interval 1900–3600) in 2004, and maternity denning in the Svalbard Archipelago became more widely distributed. During recent decades, the population has faced challenges from a variety of new anthropogenic impacts: a range of pollutants, an increasing level of human presence and activity as well as changes in ice conditions. Contaminants bioaccumulate up through the marine food web, culminating in this top predator that consumes ringed, bearded and harp seals. Females with small cubs use land-fast sea ice for hunting and are therefore vulnerable to

disturbance by snowmobile drivers. Sea-ice diminution, associated with climate change, reduces polar bears' access to denning areas and could negatively affect the survival of cubs. There are clear linkages between population biology and current anthropogenic threats, and the authors suggest that future research and management should focus on and take into consideration the combined effects of several stressors on polar bears.

Authors: Anderson, L. E., Manning, R. E., Valliere, W. A., and Hallo, J. C.

Year: 2010

Title: Normative standards for wildlife viewing in parks and protected areas

Journal: Human Dimensions of Wildlife

Volume: 15

Issue: 1

Article: 1-15

Abstract: With increasing public interest in wildlife watching, there is a need to develop methods to better inform management of quality viewing opportunities. In this study, normative methods using indicators and standards of quality are applied at two diverse parks/protected areas: A popular national park in Alaska and a lesser known wildlife refuge in New Hampshire. Three potential indicators of quality are identified that can be used to help define and manage wildlife viewing opportunities, and a range of potential standards of quality are developed for these indicator variables. In general, normative standards of visitors to the two study areas were salient and moderately to highly crystallised. Furthermore, study findings indicate that visitors are currently experiencing high-quality wildlife viewing at both sites. Wildlife viewing indicators and standards developed at these diverse study locations may be applicable at a wide range of parks and protected areas.

Authors: Ashaari, A. A., and Johari, S.

Year: 2016

Title: Visitors' attitudes towards giant panda conservation programme in Zoo Negara, Malaysia

Journal: Asia-Pacific Journal in Hospitality and Tourism

Volume: 5

Issue: 3

Pages: 107-122

Abstract: This paper describes the attitudes of visitors who visit the Giant Panda Conservation Centre (GPCC) in Zoo Negara, Hulu Kelang, Selangor. Based on statistics from Zoo Negara, the increasing number of visitors who have visited the GPCC reflects a positive attitude towards this programme. On the other hand, some Malaysians have expressed their dissatisfaction at the high cost of the GPCC. This situation has created a negative attitude towards the programme. The attitudes of visitors may vary according to socio-demographic factors like educational background and income. The focal point is to determine visitors' attitudes towards the giant panda conservation programme and also the relationship between the socio-demographic factors of visitors and their attitudes. The conservation programme for the giant pandas is one of the biggest that have been carried out in Malaysia so far. For the first time, a conservation programme for a wildlife species from China is being done in Malaysia. Hence, it is necessary to determine if the attitudes of visitors will be positive or negative. The outcome revealed that most of the visitors show a positive attitude through concern that this species is threatened by extinction. Also, most visitors support the conservation initiative for this endangered species. The outcome also revealed that some socio-demographic factors of the visitors such as age, income, ethnicity, gender and education level have a relationship with their attitudes.

Authors: Aumiller, L., and Matt, C.A.

Year: 1994

Title: Management of McNeil River State Game Sanctuary for viewing of brown bears

Journal: JSTOR

Volume: 9

Issue: 1

Pages: 51-61

Abstract: Since a management plan was developed in 1973, the McNeil River State Game Sanctuary has become internationally famous as a spectacular wildlife viewing opportunity. A restricted number of human visitors interact in proximity with wild brown bears (*Ursus arctos*) that congregate at the McNeil River Falls to fish for chum salmon (*Oncorhynchus keta*). Brown bear habituation is defined and described. In the 21 years since the management plan has been in effect bear use has doubled, no bear has had to be destroyed or removed from the sanctuary, and no human has been injured. This programme illustrates that humans and brown bears can co-exist peacefully, particularly when humans behave in appropriate ways.

B

Authors: Booth, A., and Ryan, D.

Year: 2016

Title: Goldilocks revisited: Public perceptions of urban bears in Northern British Columbia

Journal: Human Dimensions of Wildlife

Volume: 21

Issue: 5

Pages: 460-470

Abstract: Management of black bears (*Ursus americanus*) in urban settings is of growing concern because they often recolonise areas from which they had been extirpated. Urban landscapes offer much needed bear habitat, buffer habitat losses in other areas, and offer protection for bear populations, but only if conflicts between bears and humans are managed. In collaboration with the Northern Bear Awareness Society in Prince George, British Columbia, Canada, a survey of a sample of Prince George residents was conducted to determine their attitudes toward black bears and bear management, including euthanasia ($N = 71$). These residents tended to feel positively toward black bears, but were split on the issue of euthanasia, with half being firmly opposed and half recognising the need under certain conditions. There was a significant preference for non-lethal management tools, suggesting an opportunity for governments to explore options for managing human activities that created bear attractants.

Authors: Campbell, M., and Lancaster, B.-L.

Year: 2010

Title: Public attitudes toward black bears (*Ursus americanus*) and cougars (*Puma concolor*) on Vancouver Island

Journal: Society & Animals

Volume: 18

Issue: 1

Pages: 40-57

Abstract: The sharp increase in the human population of Vancouver Island; the urban development policy favouring forest fragmentation and smaller, scattered settlements; and the relatively sizable population of large predatory mammals have contributed to one of the highest human-large predator contact zones in North America. Although some studies have evaluated public attitudes toward larger carnivores from urban/rural, gender, and generational perspectives, few have focused on black bears and cougars on the British Columbia coast. In this study, four hundred people in the densely populated southeast corner of Vancouver Island were interviewed about their attitudes toward black bear and cougar presence and behaviour. The majority of interviewees had positive attitudes toward both bears and cougars, and were opposed to the shooting of carnivores, preferring trapping and removal. Contrary to expectation, few respondents saw carnivores as threats to livestock, companion animals, or children. Both black bears and cougars were perceived as serving useful functions as part of the island's heritage and cultural development (through hunting, tourism, and recreation).

Author: Center for Responsible Travel

Year: 2014

Title: Economic impact of bear viewing and bear hunting in the Great Bear Rainforest of British Columbia

City/State: Washington, DC, USA

Institution: Center for Responsible Travel

Date: January 2014

Abstract: This study is the first to compare the economic value of bear viewing and trophy hunting for both grizzly and black bears in the Central and North Coast of British Columbia, Canada, an area also known as the Great Bear Rainforest (GBF). The study assesses trends in these two sectors of wildlife recreation over several decades and analyses the economic impact of each based on 2012 data. It examines both non-resident bear hunting with guide outfitters and independent resident hunters, as well as bear viewing offered by tourism companies in the designated GBF study area.

The study comes in the wake of controversy over trophy bear hunting in the Great Bear Rainforest, a 6.4 million hectare ecosystem on BC's north and central coast which is the world's largest intact temperate rainforest. Some 20,000 First Nations people live in the area, which is also home to grizzly and black bears, and is the only place on earth where the iconic all-white species of black bear – the Kermode or Spirit Bear – is found. The BC government permits hunting of grizzly and black bears, but not the Spirit Bear.

In 2012, the Coastal First Nations announced a ban on bear hunting in this region, arguing that they are the stewards of the GBF. In announcing an end to bear hunting, the First Nations cited, among other reasons, that trophy hunting for grizzly bears is threatening the growing ecotourism economy centred on bear viewing and that black bears should be included because it is impossible to tell which of them carry the Kermode gene. The BC government, contending

that the province has the sole authority to regulate hunting, has continued to authorise hunting of black and grizzly bears in the Great Bear Rainforest, as well as in the rest of the province. In defining the study area, CREST wanted to specifically examine the region where the Coastal First Nations proposed the ban. Since the BC government does not produce maps or data based on the geographical boundaries of the Great Bear Rainforest, CREST asked the Coastal First Nations' Bear Working Committee to provide a map of the territory they are including within their ban. CREST then entered a research agreement with the Fish, Wildlife and Habitat Management Branch of the BC Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO) to provide hunting data related to this study area.

This study used the same National Accounting criteria that Statistics Canada uses to determine the economic importance (GDP) of other industry sectors. The research team conducted a site visit and interviews with 12 government officials, businesses, Coastal First Nation leaders, and associations and organisations involved in bear viewing or hunting. They conducted surveys (online and telephone) with bear-viewing companies and a sampling of tourists who participated in bear viewing in the GBF in 2012, as well as with several guide outfitters operating in the area. The authors also reviewed a wide range of publications, including all of the previous studies related to the economic value of hunting and wildlife viewing in BC. Most important among these were Rosie Child's comparative analysis of guide outfitters and grizzly bear viewing in the GBF and the MFLNRO-commissioned study by Responsive Management of the economic impact of resident hunting in BC, both of which were done in spring 2013.

Author: Chamberlain, E. C.

Year: 2006

Title: Perspectives on grizzly bear management in Banff National Park and the Bow River watershed, Alberta: A Q methodology study.

Academic Department: School of Resource and Environmental Management

University: Simon Fraser University

Thesis Type: Master of Resource and Environmental Management

Abstract: Conserving populations of large carnivores such as grizzly bears (*Ursus arctos*) requires not only biophysical research, but also an understanding of the values and beliefs of the people involved with and affected by carnivore management. Chamberlain used Q methodology to examine views of stakeholders concerning grizzly bear management in the Banff-Bow Valley region of Alberta, Canada. In recent years, decision-making about bears in this region has been characterised by acrimonious disputes over scientific research and appropriate management responses. The study identifies four distinct factors, or views, about the problems with grizzly bear management and three views about possible solutions. Chamberlain explores the differences between these problems and solutions factors, and also discusses areas of common ground which could guide future management efforts in the region.

Authors: Chamberlain, E. C., Rutherford, M. B., and Gibeau, M. L.

Year: 2012

Title: Human perspectives and conservation of grizzly bears in Banff National Park, Canada

Journal: Conservation Biology

Volume: 26

Issue: 3

Pages: 420-431

Abstract: Some conservation initiatives provoke intense conflict among stakeholders. The need for action, the nature of the conservation measures, and the effects of these measures on human interests may be disputed. Tools are needed to depolarise such situations, foster understanding of the perspectives of people involved, and find common ground. Chamberlain

and colleagues used Q methodology to explore stakeholders' perspectives on conservation and management of grizzly bears (*Ursus arctos horribilis*) in Banff National Park and the Bow River watershed of Alberta, Canada. Twenty-nine stakeholders participated in the study, including local residents, scientists, agency employees, and representatives of nongovernmental conservation organisations and other interest groups. Participants rank ordered a set of statements to express their opinions on the problems of grizzly bear management (I–IV) and a second set of statements on possible solutions to the problems (A–C). Factor analysis revealed that participants held four distinct views of the problems: Individuals associated with factor I emphasised deficiencies in goals and plans; those associated with factor II believed that problems had been exaggerated; those associated with factor III blamed institutional flaws such as disjointed management and inadequate resources; and individuals associated with factor IV blamed politicised decision making. There were three distinct views about the best solutions to the problems: Individuals associated with factor A called for increased conservation efforts; those associated with factor B wanted reforms in decision-making processes; and individuals associated with factor C supported active landscape management. The authors connected people's definitions of the problem with their preferred solutions to form five overall problem narratives espoused by groups in the study: The problem is deficient goals and plans, the solution is to prioritise conservation efforts (planning-oriented conservation advocates); the problem is flawed institutions, the solution is to prioritise conservation efforts (institutionally-oriented conservation advocates); the problems have been exaggerated, but there is a need to improve decision-making processes (optimistic decision-process reformers); the problems have been exaggerated, but managers should more actively manage the landscape (optimistic landscape managers); and the problem is politicised decision making, solutions vary (democratisers). Although these five groups differed on many issues, they agreed that the population of grizzly bears is vulnerable to extirpation, human use of the area should be designed around ecological constraints, and more inclusive decision-making processes are needed. Chamberlain and colleagues used the results to inform a series of workshops in which stakeholders developed and agreed on new management strategies that were implemented by Parks Canada. The research demonstrates the usefulness of Q method to illuminate people's perspectives and identify common ground in settings where conservation is contested.

Authors: Chan, I. I., and Kunasekaran, P.

Year: 2016

Title: Types of memorable tourism experiences at GPCC in Zoo Negara, Malaysia

Journal: Asia-Pacific Journal of Innovation in Hospitality and Tourism

Volume: 5

Issue: 3

Pages: 171-181

Abstract: This study examines memorable tourism experiences (MTEs) of visitors viewing giant pandas in a unique site which is the Giant Panda Conservation Centre (GPCC) in Zoo Negara, Malaysia. People derive satisfaction from their GPCC visits but MTE goes beyond this. The GPCC management would benefit from finding the highest memorable dimensions that will make people remember their visits in order to strengthen the GPCC's marketing strategy. The objective of this study is to assess the types of MTEs gained by visitors from viewing the giant pandas at Zoo Negara. This study investigates the seven basic dimensions of MTE which include hedonism, novelty, local culture, refreshment, meaningfulness, involvement, and knowledge, with adverse feelings as an additional scale. The 250 sampled visitors have been conveniently selected in this study to complete questionnaires after visiting the GPCC. In general, the study shows that visitors gain affirmative values for all dimensions

of MTEs. On the other hand, the visitors feel that the giant pandas produce the least meaningful experience for them.

Author: Chen, M.

Year: 2014

Title: On regional cooperation in panda tourism resources

Journal: Journal of Sichuan Tourism University

Volume: 3

Issue: -

Pages: -

Abstract: The giant panda is a world-renowned rare animal in Sichuan. However, problems such as its uneven distribution, unsystematic tourism brand development, and lack of cultural implication exploration have been hindering the further development of panda tourism. This paper argues that the rational and effective employment of panda tourism resources lies in the cooperation between governments and businesses in areas where pandas are found, which will in turn propel the development of local communities. Based on the features of panda tourism resources and their distribution, this paper analyses the necessity and importance of regional cooperation and suggests cooperation mechanism and measures so as to achieve comprehensive cross-regional development and utilisation of the giant panda tourism resources.

Author: Chen, M.

Year: 2014

Title: Development of regional cooperation in giant panda tourist resources

Journal: Journal of Zhejiang Tourism University

Volume: 3

Issue: -

Pages: -

Abstract: The giant panda is a big brand in the world, but its wide distribution, unsystematic branding and shallow connotation development pose some problems in the rational and effective usage of its tourist resources, which requires mutually beneficial cooperation among the local governments and enterprises in the region. This paper focuses on the giant panda tourism resources and its distribution and analyses its necessity and importance of regional tourism development, propose relevant regional cooperation mechanisms and measures.

Author: Chester, J. M.

Year: 1980

Title: Factors influencing human–grizzly bear interactions in a backcountry setting

Journal: JSTOR

Volume: 4

Issue: -

Pages: 351-357

Abstract: Interactions between humans and seven species of wildlife, including grizzly bears (*Ursus arctos horribilis*), were investigated in backcountry areas of the Gallatin Range, Yellowstone National Park, during the summers of 1973 and 1974. Grizzly bear distribution, movements, and behaviour and human behaviour were examined. Because grizzlies utilised areas with elevations much in excess of the study area's average trail elevation, the likelihood of the off-trail party observing a grizzly bear was 3-4 times greater than that of a trail-travelling party. During the hiking season, grizzlies exhibited an elevational migration. The frequencies of on-trail and combined on- and off-trail observations and sign discoveries per party tended

to peak during those periods that grizzlies were found at low elevations. Activity patterns of grizzlies at the point of first observation or after the bears had become aware of the human presence did not indicate behavioural traits likely to accentuate the possibilities of human-bear confrontations. Some backcountry travellers engaged in activities that could increase detrimental encounters with grizzly bears.

Authors: Chi, D. K., and Gilbert, B. K.

Year: 1999

Title: Habitat security for Alaskan black bears at key foraging sites: Are there thresholds for human disturbance?

Journal: *Ursus*

Volume: 11

Issue: -

Pages: 225-237

Abstract: Chi and Gilbert examined the distribution, individual diversity, and fishing activity of black bears (*Ursus americanus*) in relation to human activity on an Alaskan salmon (*Oncorhynchus spp.*) stream to determine the impacts of wildlife viewing on bear foraging behaviour. They logged 622 observation hours in 1994 and 1995 at two falls on Anan Creek, southeast Alaska. The lower falls were open to the public, whereas the upper falls were closed. The authors identified 14 adult males and 10 adult females at Anan Creek common to both years of the study. They observed 17 recognised bears 75-100% of the time at the upper falls; only two females fished solely at the lower falls. Five of eight bears that fished exclusively at the upper falls (all large males) appeared wary of researchers upon their arrival. Based on quantile regression analyses, the authors found that visitor numbers acted as a ceiling on fishing duration of black bears at the lower falls of Anan Creek in 1994 and 1995. Furthermore, two habituated bears seen frequently at the lower falls spent less time in view (maximum values) as visitor group size increased. Chi and Gilbert found little relationship between visitor numbers and other indices of black bear activity and diversity at this site. Whereas the upper falls received more use by bears due to superior fishing opportunities and increased security, the authors suspect that some bears restricted their fishing to this site to avoid high human activity at the lower falls. Bears fishing at the lower falls were more tolerant of people; however, they exhibited sensitivity to larger group sizes as evidenced by shorter fishing bouts. These results are a conservative estimate of human impacts on bears as they reflect threshold levels of the most tolerant bears in a population.

Author: Clark, D.

Year: 2003

Title: Polar bear-human interactions in Canadian national parks, 1986-2000

Journal: *Ursus*

Volume: 14

Issue: 1

Pages: 65-71

Abstract: Interactions between polar bears (*Ursus maritimus*) and humans in six national parks in the Canadian Arctic from 1986 to 2000 were examined (n = 53). No human fatalities and only one injury occurred. Bears were killed in only 4% of interactions, a much lower rate than in other studies, possibly because of the availability of deterrents. Interactions occurred mainly in summer in parks where bears are forced ashore by melting sea ice. Unlike interactions between humans and grizzly bears (*U. arctos*), the frequency of interactions appeared unrelated to park visitation and may have been influenced by sea ice availability. Rates of interactions without human injury varied widely among parks: Two parks had no interactions and two were

comparable to the rates for other species of bears in some other parks in North America; Wapusk National Park was much higher than any other. Data were insufficient to test predictions that nutritional stress on bears due to early sea ice breakup would increase the rate of bear-human interactions.

Authors: Clark, D., van Beest, F. M., and Brook, R. K.

Year: 2013

Title: Polar bear-human conflicts: State of knowledge and research needs

Journal: Canadian Wildlife Biology & Management

Volume: 1

Issue: 1

Pages: 21-29

Abstract: Knowledge of the biophysical and social factors influencing conflicts between people and polar bears (*Ursus maritimus*) across the circumpolar north is incomplete and insufficient to guide management. Clark and colleagues reviewed the peer-reviewed literature and government reports on polar bear-human interactions to assess what is known about their environmental context, relevant bear behaviour and life history attributes, and the human dimensions of these events. Polar bear-human conflicts appear largely driven by the absence of sea ice, which is a normal seasonal occurrence but is increasing in duration due to a warming Arctic climate. Integrated multidisciplinary research is needed to inform polar bear conservation efforts and improve human safety. Research priorities should include monitoring spatial and temporal trends of conflicts, understanding variability in incident recording, evaluating mechanisms of climate change effects on polar bear-human conflicts, determining risk perception and stakeholder acceptance capacity, and assessing deterrent effectiveness.

Authors: Clayton, C., and Mendelsohn, R.

Year: 1993

Title: The value of watchable wildlife: A case study of McNeil River

Journal: Journal of Environmental Management

Volume: 39

Issue: 2

Pages: 101-106

Abstract: This study measures the user value of McNeil River, a bear-watching game sanctuary. The results of contingent valuation questions using both open-ended and discrete choice formats are compared. Adjusting for outliers in all models reveals users are willing to pay an average of between \$228 and \$277 per person to visit this unique site.

Author: Cohen, E.

Year: 2010

Title: Panda and elephant – contesting animal icons in Thai tourism

Journal: Journal of Tourism and Cultural Change

Volume: 8

Issue: 3

Pages: 154-171

Abstract: In May 2009, during a period of rising political polarisation in Thailand, a cub was unexpectedly born in Chiang Mai's Zoo to a pair of Chinese pandas. The authorities used the occasion to boost the crisis-ridden tourism to the northern Thai city, instigating an unprecedented national craze around the tiny cub, and promoting a massive pilgrimage of domestic visitors to the zoo. In a conspicuous act of protest against the prioritisation of the foreign pandas, some elephant keepers in the Ayutthya kraal, painted their animals in panda

colours, leading to an implicit contest between the two animal icons. In this case study, the wider theoretical and comparative implications of that contest are analysed. Whereas previous studies of tourists engagement with captive wild animals paid scant attention to its wider social context, this article examines the cultural and economic background of the contest, and the manner in which it became implicated in the process of political polarisation between the societal centre and the periphery.

Authors: Coleman, T. H., Schwartz, C. C., Gunther, K. A., and Creel, S.

Year: 2013

Title: Grizzly bear and human interaction in Yellowstone National Park: An evaluation of bear management areas

Journal: Journal of Wildlife Management

Volume: 77

Issue: 7

Pages: 1311-1320

Abstract: Wildlife managers often rely on permanent or temporary area closures to reduce the impact of human presence on sensitive species. In 1982, Yellowstone National Park created a programme to protect threatened grizzly bears (*Ursus arctos*) from human disturbance. The bear management area (BMA) programme created areas of the park where human access was restricted. The programme was designed to allow unhindered foraging opportunities for bears, decrease the risk of habituation, and provide safety for backcountry users. The objective of this study was to evaluate human-bear interaction in BMAs and determine if they were effective. Coleman and colleagues used human and grizzly bear global positioning system location data to study six of 16 BMAs from 2007 to 2009. They contrasted data when BMAs were unrestricted (open human access) and restricted (limited human access). The authors used location data collected when BMAs were unrestricted to delineate a human recreation area (HRA) and determined a daily human active and inactive period. They applied the HRA and daily activity times to bear location data and evaluated how bear movement behaviour changed when people were present and absent. Coleman and colleagues found that grizzly bears were twice as likely to be within the HRA when BMAs were restricted. They also found that grizzly bears were more than twice as likely to be within the HRA when BMAs were unrestricted, but people were inactive. The results suggest that human presence can displace grizzly bears if people are allowed unrestricted access to the six BMAs in this study. The study provides evidence for the utility of management closures designed to protect a threatened species in a well-visited park. This approach can be reapplied by managers interested in balancing wildlife conservation and human recreation.

Authors: Coleman, T. H., Schwartz, C. C., Gunther, K. A., and Creel, S.

Year: 2013

Title: Influence of overnight recreation on grizzly bear movement and behavior in Yellowstone National Park

Journal: Ursus

Volume: 24

Issue: 2

Pages: 101-110

Abstract: Interactions among recreational users and grizzly bears (*Ursus arctos*) are a continuous challenge for bear managers. Yellowstone National Park, Wyoming, USA uses a system of designated backcountry campsites to manage overnight use and provides bear-resistant food-storage devices for recreational users. Few studies have evaluated how this type of management and recreation influences grizzly bear behaviour. Coleman and colleagues used

global positioning system (GPS) data for humans and bears to determine how overnight use influenced grizzly bear movement behaviour. They determined times of day campsites were occupied and contrasted grizzly bear locations to random locations near occupied campsites. The authors conducted a similar analysis ignoring campsite occupancy to assess the utility of including a temporal variable. Grizzly bears were 0.35 times as likely as random locations to be ≤ 200 m from occupied campsites (95% CI = 0.19–0.62, $P \leq 0.001$). Conversely, when human occupancy was ignored, bears were 2.11 times more likely than random locations to be ≤ 200 m from campsites (95% CI = 1.85–2.41, $P \leq 0.001$). Coleman and colleagues conclude that overnight backcountry camping can displace grizzly bears within 200 m of campgrounds. To avoid confounding results, they suggest considering use of a temporal variable in studies of human–bear interactions.

Authors: Cong, D. X., and Wall, G.

Year: 2019

Title: Tourists' spatio-temporal behaviour and concerns in park tourism: Giant Panda National Park, Sichuan, China

Journal: Asia Pacific Journal of Tourism Research

Volume: 24

Issue: 9

Pages: 924-943

Abstract: To understand the recreational uses of national parks, a field investigation was employed at Giant Panda National Park, Sichuan. Through a mixed-methods approach and visual portrayal of the spatio-temporal behaviours of four types of visitors is undertaken and associated demographic and other features are described. Tourists' concerns regarding wilderness tours are found to be comprised of three dimensions "physical safety," "travel comfort" and "quality of experience." A focus upon weather-related matters reveals that visitors intend to adjust differently in response to different degrees of bad weather. Implications for Chinese national park management are provided.

Authors: Cong, L., Newsome, D., Wu, B., and Morrison, A. M.

Year: 2017

Title: Wildlife tourism in China: A review of the Chinese research literature

Journal: Current Issues in Tourism

Volume: 20

Issue: 11

Pages: 1116-1139

Abstract: China is rich in wildlife resources but no comprehensive review of the research literature in relation to the nexus between wildlife and tourism interests in China has been completed. This review considers research undertaken on both consumptive and non-consumptive wildlife tourism, and shows that wildlife tourism has gained much attention in China recently. A data set was created recording attributes including authors, article titles, publication years and sources, keywords and abstracts. A more detailed analysis of the research topics, methodologies and research regions was conducted and this was accompanied by recourse to the full texts to more fully identify key findings. The research has a predominant focus on captive, semi-captive and tourism experiences in the wild, with the giant panda and bird-watching as key subjects. Research articles have been published in a range of journals but only about 32% of these are considered as key journals in China. The analysis demonstrates a rising interest in wildlife tourism. Although topics include the development of wildlife tourism, studies of visitor attitudes, analysis of visitor impacts on destinations and aspects of

environmental education for tourists, this research is in its infancy and there is scope for a comprehensive and extended wildlife tourism research agenda.

Authors: Cong, L., Wu, B., and Ling, R. S. L.

Year of Conference: 2012

Title: Analysis of wildlife tourism experiences with endangered species: An exploratory study of encounters with giant pandas in Chengdu, China

Conference Name: 4th International Tourism Studies Association Biennial Conference: Challenges and contemporary solutions for tourism destination planning, development and marketing: Building better places; attracting newer faces

Conference Location: Bali, Indonesia

Pages: 102-114

Abstract: This presentation reports on research on the wildlife tourist experience. As the development of modern science and technology, the web has been used more frequently, tourists increasingly share their experience on websites, which is considered to be the material source that reveals their true motivation, preference and behaviour performance. This paper uses tourism reviews published on trip advisor about trips to Chengdu Research Base for giant panda tourism. With the software Nivio 8, this research has conducted a content analysis and qualitative coding. This paper used thematic qualitative method to analyse the reviews. The survey results identified three themes of the wildlife tourist experience; a) the features of wildlife, b) the features of tourists, and c) the features of the setting. The results showed that different giant panda wildlife tourists' experience is varied. However, their satisfaction always increased with a close extended interaction with the giant panda.

Authors: Cong, L., Wu, B., Morrison, A. M., Shu, H., and Wang, M.

Year: 2014

Title: Analysis of wildlife tourism experiences with endangered species: An exploratory study of encounters with giant pandas in Chengdu, China

Journal: Tourism Management

Volume: 40

Issue: -

Pages: 300-310

Abstract: This research examined wildlife tourism experiences in a unique site and species combination: giant pandas at the Chengdu Research Base of Giant Panda Breeding (CRBGPB) in Sichuan, China. Content analysis was undertaken on tourist reviews of CRBGPB on TripAdvisor.com in early 2012. The thematic analysis qualitative method was adopted in examining respondents' written reviews of experiences interacting with giant pandas. ROST CM6 and NVivo 8 were used for the content analysis and qualitative coding.

A variety of tourist experiences, motivations, and preferences were revealed. Although respondents' experiences were varied, satisfaction increased with closer encounters and interactions with the giant pandas. The thematic analysis identified three features of the wildlife tourism experiences at CRBGPB: tourists, giant pandas, and settings. Implications and management recommendations were identified for sites offering wildlife tourism experiences.

Authors: Craighead, J. J., Sumner, J. S., and Mitchell, J. A.

Year: 1995

Book Title: The grizzly bears of Yellowstone: Their Ecology in the Yellowstone Ecosystem, 1959–1992

City: Washington, DC, USA

Publisher: Island Press

Abstract: In 1959, John and Frank Craighead, along with a dedicated team of students and professional colleagues, began their pioneering and controversial study of the grizzly bear in the Yellowstone ecosystem. *The Grizzly Bears of Yellowstone* is the culmination of that research. It captures both the history and the science of how the Yellowstone study evolved into a lifelong battle to protect and perpetuate the grizzly bear. John J. Craighead and his longtime research colleagues, Jay S. Sumner and John A. Mitchell, have brought together years of data detailing the natural history, reproductive biology, social behaviour, population dynamics, and habitat use patterns of the grizzly bear population in the Yellowstone ecosystem from 1959 through 1992, as well as the results of complementary studies conducted by John Craighead in wilderness areas of Montana and Alaska. Their interpretations of the data have far-reaching management implications, not only for the grizzly but for the holistic management of large regional ecosystems. This study is an example of long-term ecological research that is unparalleled in its combination of foresight, continuity of effort, innovation of field techniques, and monumental scholarship.

Author: Crupi Jr, A. P.

Year: 2003

Title: Foraging behavior and habitat use patterns of brown bears (*Ursus arctos*) in relation to human activity and salmon abundance on a coastal Alaskan salmon stream

Academic Department: Wildlife Resources/Fisheries and Wildlife

University: Utah State University

Thesis Type: Master of Science

Pages: 57-66

Abstract: Over the past decade, demand for recreation has increased as part of Alaska's doubling growth in tourism. Along the Chilkoot River, near Haines, fishing and bear viewing have become increasingly popular. Crupi Jr investigated the ecological and behavioural interactions there between two brown bears, salmon, and humans between 2000 and 2002. His objectives were to: (1) determine if specific human activities differentially influenced bear activity and foraging behaviour, (2) identify temporal and spatial habitat use patterns, (3) evaluate brown bear response to natural and human disturbances and quantify related flight distances, (4) investigate changes in bear foraging behaviours in response to prey abundance and human activity to find if bears selectively forage to maximise energy intake, and (5) assess the role of individual tolerance for human proximity in relation to specific foraging behaviours. Evidence clearly indicated that temporal and spatial brown bear activity patterns were influenced by human activity. Bears were most active and spent the longest periods of time fishing when the numbers of anglers and vehicles were below threshold levels. Adult female bears disproportionately preferred (73%) non-roaded riparian habitat, while subadults were less selective. The author classified over 1000 disturbance responses and found human activity accounted for 46% of bear departures with a mean flight response distance of 97 meters. When humans were either absent or at distances greater than or equal to 100 meters from bear activity, bears captured fish at higher rates, captured 2.65 times as many fish, and caught greater proportions of live fish (71%). The greatest predictors of capture rate were the time of day when bears fished, the proximity of human activity, and the individual's tolerance level. Bear tolerance for human proximity helped explain variation in capture rates, foraging bout lengths,

and total salmon captured. This suggests nutritional rewards for bears adapting to human disturbance.

These analyses depict clear relationships with simple interpretation of the dynamic relationships between people, bears, and their environment. With improved understanding of the Chilkoot River's natural resources, managers can work to reduce bear-human conflicts and plan for continued growth in tourism and recreation.

Authors: Cui, X., and Lee, G.

Year: 2018

Title: Estimating the conservation value of Sichuan giant panda using a contingent valuation method

Journal: Tourism Research Journal

Volume: 32

Issue: 4

Pages: 57-66

Abstract: The giant panda, a national emblem of China and the mascot of the World Wildlife Fund, symbolises the conservation of wild animals. However, the pandas are an endangered species with a high risk of extinction. The main threats are habitat loss and fragmentation caused by human development and encroachment. Also, tourism is increasingly putting pressure on the species. The purpose of this study is to estimate the conservation value of Sichuan giant pandas using the dichotomous choice contingent valuation method. For this purpose, online (447) and field (55) surveys were conducted using a quota sampling method based on the ratio of age and gender to the population in Sichuan. The conservation value of Sichuan giant pandas is about 141 CNY per person, and among residents who are 19 years old and above in Sichuan province, annual conservation value is estimated to be approximately 8.5 billion CNY. Furthermore, the result of the logit model shows that donation bids, monthly income, and the balance of nature were statistically significant predictors of the probability of willingness to pay for the conservation funds. The results of this study provide primary data for planning policy to conserve Sichuan giant pandas and for budget planning and execution. Also, this study will contribute to strengthen recognition of the importance of conserving endangered wild animals.

D

Authors: Dalle-Molle, J. L., and Van Horn, J. C.

Year of Conference: 1987

Title: Bear-people conflict management in Denali National Park, Alaska

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 121-127

Abstract: Bear-people conflicts in Denali National Park increased dramatically during the 1970's as visitation to the park rose seven-fold. Incidents of property damage, bears obtaining human foods, charges, and injuries increased from less than one per year prior to 1972 to a high of 37 in 1982. In 1982 a comprehensive effort was begun to reduce incidents. The bear-people conflict management plan was substantially revised. Two seasonal wildlife technicians were added to the park staff to work exclusively on this problem. Portable bear-resistant food containers were distributed to backpackers. Aversive conditioning was used on bears that had obtained food from back-country camps. As a result of this emphasis on preventative actions, since 1982 no management relocations or killing of bears have been necessary. Incidents have decreased by 81% parkwide, 60% in developed areas and 92% in the back-country. The number

of incidents involving property damage decreased 88%. Monetary losses from damages declined 93%. Incidents of bears obtaining human food or garbage have decreased 95%.

Authors: Dawson, J., Johnston, M. J., Stewart, E. J., Lemieux, C. J., Lemelin, R. H., Maher, P., and Grimwood, B. S. R.

Year: 2011

Title: Ethical considerations of last chance tourism

Journal: Journal of Ecotourism

Volume: 10

Issue: 3

Pages: 250-265

Abstract: Global environmental change is altering natural and built systems in many regions of the world and such changes play a significant role in an emerging travel trend that has been labelled ‘last chance tourism’ (LCT). In LCT, tourism demand is based on the desire to see these vulnerable places and features before they disappear or are essentially and irrevocably changed. The paradox in this new form of travel lies in the fact that the tourists often travel long distances and, thus, are disproportionately responsible per capita for increased greenhouse gas emissions and various other stressors that have the potential to alter further the very attractions being visited. The emergence of LCT requires careful ethical consideration and adds a new twist to the debate about ‘loving a destination to death’. In this case, the relationship is indirect and intangible, and is complicated by spatial and temporal lags, as well as the complex system of biophysical interactions at the heart of climate change. LCT presents a situation that is considerably more difficult to manage and mitigate than those where tourism involves only direct and local impacts. Through a praxis/reflective approach, the authors discuss this complexity and the various ethical issues associated with marketing and managing LCT. In order to provide context and clarification of the LCT concept, they use one of the most evocative symbols of climate change, the polar bears of Churchill, Manitoba, Canada, as a source of empirical evidence and a foundation for exploring ethical considerations.

Authors: Dawson, J., Stewart, E., Lemelin, H., and Scott, D.

Year: 2010

Title: The carbon cost of polar bear viewing tourism in Churchill, Manitoba

Journal: Journal of Sustainable Tourism

Volume: 18

Issue: 3

Pages: 319-336

Abstract: This paper examines the paradoxical issues surrounding long-distance tourism to view polar bears, a form of tourism which is disproportionately (on a per capita basis) responsible for greenhouse gases (GHG) emissions that are negatively affecting survival chances of the species. It also notes that the phenomenon of “last chance tourism” is influencing more tourists to visit the region. The paper describes and explains the evidence that climate change is causing a substantial reduction in sea ice, vital for Arctic wildlife species survival, particularly mega fauna, such as polar bears. Churchill, Canada is one of the few places where tourists can easily view polar bears. A total of 334 on-site tourist surveys and 18 in-depth interviews were conducted to help evaluate tourist perceptions of climate change and to estimate their GHG emissions related to polar bear viewing tourism. Polar bear viewing tourists perceive climate change to be negatively impacting polar bears but do not necessarily understand how they themselves contribute to GHG emissions, or understand offsetting possibilities. The polar bear viewing industry is estimated to contribute 20,892 t/CO₂ per season. Mitigation strategies, including reduction and offsetting programmes are outlined.

Authors: Dawson, J., Stewart, E., and Scott, D.

Year: 2010

Title: Climate change and polar bear viewing: A case study of visitor demand, carbon emissions and mitigation in Churchill, Canada

Editors: Hall, C. M.; Saarinen, J.

Book Title: Tourism and change in polar regions: Climate, environment and experience

City: London

Publisher: Routledge

Pages: 89-103

Abstract: Climate change represents one of the most significant challenges to humanity in the 21st century and is anticipated to have profound consequences for the highly climate-sensitive tourism sector. Because polar regions are expected to exhibit the first signs of environmental change associated with a warming climate, tourism destinations in these regions are thought to be particularly vulnerable to climate change. Global average temperature increased by 0.74°C between 1906 and 2005, while Arctic regions are experiencing the most dramatic changes in climate, with temperatures increasing at almost twice the rate of the global average. Between 1950 and 1998 mean annual temperature trends showed warming of 1.5 to 2°C in the western Canadian Arctic, 0.5°C in the central Canadian Arctic and cooling in the extreme northeast. More recent trends show warming across the entire Canadian Arctic, which is strongest in the winter and spring seasons.

Authors: DeBruyn, T.D., and Smith, T.S.

Year: 2009

Title: Managing bear-viewing to minimize human impacts on the species in Alaska

Editors: Hill, J., and Gale, T.

Book Title: Ecotourism and environmental sustainability: Principles and practices

City: London

Publisher: Routledge

Pages: 109-124

Abstract: The United States Fish and Wildlife Service has conducted the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation at five-year intervals since 1955. This survey has been recognised as the most instructive data set regarding fish-and wildlife-related recreation in the United States (US). The 2006 survey revealed that the number of people hunting and fishing across the US has significantly declined. Since 2001, the number of people fishing and hunting in the US dropped by 12 per cent and 4 per cent respectively. During this same time period, declines in Alaska were even more pronounced, with decreases of 26 per cent in fishing and 24 per cent in hunting. But while the number of people hunting and fishing decreased, the survey showed that the number of people engaged in wildlife viewing increased. Nationwide, wildlife viewers increased 8 per cent from 2001 to 2006, whereas in Alaska, it jumped an impressive 22 per cent. Furthermore, the survey showed that, in 2006, 514,000 adults participated in Alaskan wildlife viewing and spent over \$705 million.

Authors: DeBruyn, T. D., Smith, T. S., Proffitt, K., Partridge, S., and Drummer, T. D.

Year: 2010

Title: Brown bear response to elevated viewing structures at Brooks River, Alaska

Journal: Wildlife Society Bulletin

Volume: 32

Issue: 4

Pages: 1132-1140

Abstract: The increasing popularity of brown bear (*Ursus arctos*) viewing at Brooks River in Katmai National Park, Alaska has resulted in overcrowded facilities, increasing bear-human conflicts, displacement of bears from important habitats, and degradation of cultural resources. To partially address these issues, the National Park Service (NPS) constructed a 300-m-long elevated boardwalk with interconnected viewing platforms in August 2000. To determine what effects the new structures might have on individual bears, DeBruyn and colleagues observed bear movements and behaviours before and after construction. They used direct observations and motion-detection cameras to construct temporal-spatial profiles of bear activity. Although bear numbers were similar (59 bears in 2000 and 56 bears in 2001) and bear activity within the greater Brooks River area did not differ ($P = 0.62$, $n = 29$) between the two years of this study, trail crossings in the vicinity of the new structures decreased 78% (7,436 crossings in 2000 and 1,646 crossings in 2001; $\chi^2 = 762$, $df = 14$, $P < 0.001$). Bear temporal use of the boardwalk area changed such that when human use was highest, bear use was proportionally lower in the post- versus pre-construction phase ($\chi^2 = 34$, $df = 3$, $P < 0.005$). Of 123 direct observations of bears approaching to pass beneath the structures, only 19.5% rerouted or avoided crossing under the structures. Bears' responses to the new structures were influenced by the behaviour of visitors upon the structures. Potential management tools to minimise impacts of these structures on bears include enhanced public education regarding visitor conduct on the boardwalk, as well as visitor management and monitoring.

Authors: Delie, J., Edwards, J., and Biedenweg, K.

Year: 2020

Title: Using psychometrics to characterize the cognitive antecedents of tolerance for black bears

Journal: Human Dimensions of Wildlife

Volume: Advance online publication

Issue: -

Pages: -

Abstract: Tolerance for wildlife can be informed by a person's beliefs, attitudes, norms, or other characteristics. Although theoretical papers emphasise the interrelations of these multiple antecedents of wildlife tolerance, empirical studies have not tested them using a rigorous scale development process. Delie and colleagues used psychometrics to characterise the cognitive antecedents of tolerance toward black bears (*Ursus americanus*). Proposed scale items were tested via a web-hosted questionnaire ($n = 240$) and refined into 29 items representing five antecedent dimensions of tolerance for black bears. The authors then administered these items to a different sample of recreational trail users in western Oregon ($n = 210$). Second-order confirmatory factor analysis confirmed a 19-item measure representing four distinct yet related antecedent dimensions of tolerance: antipathy, connection, lethal control (damage), and lethal control (danger to self, pets, and economics). These dimensions help better explain why people may be more or less tolerant toward black bears and, potentially, other wildlife.

Authors: Delie, J., Needham, M., and Biedenweg, K.

Year: 2020

Title: Modeling cognitive antecedents of tolerance for black bears: The roles of direct experience, knowledge, and risk perceptions

Journal: Human Dimensions of Wildlife

Volume: Advance online publication

Issue: -

Pages: -

Abstract: Understanding tolerance for wildlife requires accounting for the multiple cognitive antecedents of this concept and its contextual factors. Delie and colleagues examined whether direct experience was associated with four antecedent dimensions of tolerance for black bears (antipathy, connection, lethal control [damage], lethal control [danger to self, pets, and economics]), both directly and indirectly via risk perception, self-assessed knowledge, and factual knowledge. The authors collected data using intercept surveys at trailheads in western Oregon, United States ($n = 210$). Risk perception was most strongly related to antipathy (cost-related beliefs) and connection (benefit-related beliefs) toward black bears. Self-assessed knowledge was most strongly associated with an individual's assessment that bears are a nuisance (lethal control [damage] and a safety concern [danger to self, pets, and economics]). Direct experience was related to all four antecedents, whereas factual knowledge was not related to any dimension. Identifying drivers of tolerance can inform actionable recommendations that promote tolerance for wildlife.

Authors: Don Carlos, A. W., Bright, A. D., Teel, T. L., and Vaske, J. J.

Year: 2009

Title: Human-black bear conflict in urban areas: An integrated approach to management response

Journal: Human Dimensions of Wildlife

Volume: 14

Issue: 3

Pages: 174-184

Abstract: Human-black bear conflict is a persistent wildlife management problem in North America. Conflicts in urban areas are linked to continued growth and expansion of human populations as well as increased availability of anthropogenic attractants (e.g., garbage, birdfeed). Responding to urban bear conflicts can present difficult and highly publicised management decisions. This challenge highlights the need to understand the basis for resident behaviour and perceptions in relation to human-black bear conflict situations. Randomly selected residents ($n = 317$) of two Colorado communities with frequent human-black bear conflicts responded to Internet and mail questionnaires measuring attitudes toward urban black bears and preferences for management actions. Fifty percent of respondents held positive attitudes, 15% expressed negative attitudes, and 35% were mixed. Attitudes and situational elements influenced the acceptability of commonly used management responses to human-bear conflict. Implications of this research include anticipating support for management actions and communication of management goals with the public.

Authors: Dorji, S., Rajaratnam, R., and Vernes, K.

Year: 2012

Title: The vulnerable red panda *Ailurus fulgens* in Bhutan: Distribution, conservation status and management recommendations

Journal: Oryx

Volume: 46

Issue: 4

Pages: 536-543

Abstract: The red panda *Ailurus fulgens* is categorised as vulnerable on the IUCN Red List. Pressurised by an expanding human population, it is mainly threatened by habitat destruction, with less than 10,000 mature individuals remaining. The red panda has been studied in India, China, Nepal and, to a lesser extent, Myanmar, but no research has been published on this species in Bhutan. The authors report on the current distribution and conservation status of the red panda in Bhutan using information gathered from field surveys, interviews and unpublished reports. Red pandas are most common at 2,400–3,700 m altitude in fir (*Abies densa*) forests with an undergrowth of bamboo. They occur in most national parks and associated biological corridors within Bhutan's protected area network, overlapping with a rural human population that is undergoing increased socio-economic development. Although culturally respected, red pandas face threats from road construction, harvesting of timber, bamboo and minor forest products, livestock grazing, inefficiently managed tourism, and domestic dogs. Dorji and colleagues believe conservation of red pandas in Bhutan requires (1) inclusion of ecologically sound principles into future development, (2) implementation of programmes that improve rural socio-economy through ecotourism and cultivation of appropriate cash crops, (3) development of education programmes that raise awareness of red pandas for rural people, (4) management of rural dog populations, (5) greater capacity building for wildlife managers, and (6) more ecological research.

Author: Dowsley, M.

Year: 2009

Title: Inuit-organised polar bear sport hunting in Nunavut territory, Canada

Journal: Journal of Ecotourism

Volume: 8

Issue: 2

Pages: 161-175

Abstract: Polar bear sport hunting (which in the case of Nunavut is defined as a form of conservation hunting) is an economically important form of Aboriginal ecotourism in the Canadian Arctic territory of Nunavut. Each sport hunt provides approximately 20 times the monetary value of a polar bear taken in a subsistence hunt. Positive cultural outcomes for communities that offer these hunts include the revival of dog mushing; preservation of traditional sewing, hunting and survival skills, and accommodation within the industry for the subsistence economy and Inuit norms of sharing. Concurrently, there are frequent community discussions about the industry that provides insight into Inuit views of hunting for recreation as well as western-style wildlife management, which allow for an examination of how Inuit communities are working to accommodate the non-Inuit culture and the market economy. Sport hunting provides Inuit with a reason to support western-style conservation and learn about scientific research and management programmes. Recent international concern about climate change impacts on two polar bear populations and its extrapolation to all populations threatens the conservation programme already in place in Nunavut. Polar bear conservation is of primary concern to Inuit and non-Inuit alike, but pressure to reduce hunting that is not supported by evidence, could result in an undue reduction in the value of polar bear harvesting (by reducing

hunting and stopping conservation hunting). This may well result in a loss of local support for conservation measures, including polar bear quotas, which would erode, rather than support, protection for this species.

Authors: Dowsley, M., Lemelin, R. H., and Washaho First Nation at Fort Severn

Year: 2013

Title: Developing community capacities through scenario planning for natural resource management: A case study of polar bears

Journal: Society & Natural Resources

Volume: 26

Issue: 8

Pages: 977-986

Abstract: Polar bears (*Ursus maritimus*) were listed as a threatened species in Ontario in 2009 as a precautionary measure based on the expectation that their sea ice habitat will decline. The authors studied the Swampy Cree community at Fort Severn, which traditionally harvests this species, to assess community adaptive and governance capacities and designed and discussed four future scenarios regarding potential uses and management strategies for polar bears. The goal of the scenario planning exercise was to broaden community discussions of how to interact with the government regarding polar bear management. Community actions subsequent to the exercise were more proactive, indicating that the exercise successfully encouraged new thinking. The authors conclude that (1) scenarios create space for the discussion of options that were previously discounted, and (2) scenario planning is a useful tool for the empowerment of communities for the development of adaptive governance.

Authors: Dowsley, M., and Wenzel, G. W.

Year: 2009

Title: The time of most bears: A co-management conflict in Nunavut

Journal: Arctic

Volume: 61

Issue: 2

Pages: 177-189

Abstract: Since the 1990s, Inuit traditional knowledge (Inuit Qaujimagatuqangit) has taken on a substantial role in polar bear management in the Canadian territory of Nunavut through its direct use in quota-setting procedures. A co-management conflict has arisen from an increase of hunting quotas in January 2005 for Inuit living in the Baffin Bay and Western Hudson Bay polar bear population areas. The quotas were based on Inuit observations and their conclusion that these polar bear populations had increased. Scientific information suggests that climate change has concentrated polar bears in areas where humans are more likely to encounter them, but that the populations are in decline as a result of overhunting and climate-change effects on demographic rates. During consultations with wildlife managers and through other interviews in 2005, Inuit indicated their lack of support for quota reductions. Discussions with Inuit reveal two categories of problems that, though couched in the polar bear management issue, involve the co-management system and the integration of Inuit and scientific knowledge more generally. The first relates to direct observations of the environment by both Inuit and scientists and the synthesis of such information. The second relates to Inuit conceptualisations of human-animal relationships and the incorporation of scientific studies and management into that relationship. These problems reveal that differences between Inuit Qaujimagatuqangit and scientific knowledge are not fully understood and accounted for within the co-management system and that the system does not effectively integrate Inuit cultural views into management.

Authors: Driml, S., Ballantyne, R., and Packer, J.

Year: 2020

Title: How long does an economic impact last? Tracking the impact of a new giant panda attraction at an Australian zoo

Journal: Journal of Travel Research

Volume: 56

Issue: 5

Pages: 613-624

Abstract: A concerning issue with Economic Impact Analysis (EIA) is that many EIAs give results for one year, without being explicit about how long impacts are expected to last. New tourism attractions should not be assumed to provide continuing positive impacts into the future. For instance, the giant pandas at Adelaide Zoo generated a positive economic impact in their first year of residence (22% of a sample of tourists visited Adelaide “due to pandas,” additional tourism expenditure in the region was \$27.7 million, with \$2.3 to \$4.6 million captured by the zoo); however, increased numbers visiting to see the pandas lasted only two years. Investment decision makers expected larger, longer-term economic benefits than eventuated, and the zoo experienced financial difficulties. This study provides advice for predictive EIA of new tourism attractions and prompts a call for tourism EIA studies to be explicit about the time period for which results are relevant.

Author: D’Souza, J.

Year: 2019

Title: Examining the dynamic relationship between climate change and tourism: A case study of Churchill’s polar bear viewing industry

Academic Department: Department of Geography, Environment and Geomatics

University: University of Ottawa

Thesis Type: Master of Arts thesis (Environmental Sustainability)

Abstract: The purpose of this research was to examine the dynamic relationship between climate change and tourism, with a direct focus on Churchill, Manitoba’s polar bear viewing industry. This unique tourism industry and the polar bears it depends on, are experiencing the negative effects of climate change due to warmer temperatures and melting sea ice, which significantly impacts the health, appearance, and prevalence of polar bears on display for tourists. Not only is this tourism industry affected by climate change, it also contributes to the ongoing changes of climatic conditions. This is due to the dependence of fossil fuel energy used for transportation, accommodation, and activities which directly contributes to the release of greenhouse gas emissions and thus to global climate change. Emissions from tourism has increased by 3% over the last 10 years, largely as a result of the accessibility and affordability of air travel, the most energy intensive form of transportation. It has been suggested that in response to the increase in the demand to travel, the tourism industry should take a leadership role to reduce their total greenhouse gas emissions in an effort to decrease the impact of climate change. In this study, a visitor survey was conducted during four weeks of Churchill’s 2018 polar bear viewing season (October 16 to November 16). The aim of the survey was to: 1) estimate greenhouse gas emissions from polar bear viewing tourists and the polar bear viewing industry; 2) identify tourists’ awareness of the impacts of climate change (to and from tourism activities); 3) understand tourist’s climate-related travel motivations, and 4) identify tourists’ opinions on climate change mitigation strategies. Visitor surveys were hand- distributed at the Churchill Northern Studies Centre and at the Churchill Airport to tourists who had participated on a polar bear viewing tour. Surveys were analysed and compared with the results from similar studies to identify the changing trends in greenhouse gas emissions, travel motivations, tourists’ knowledge of climate change, and acceptance of climate change mitigation strategies.

Similar to trends observed 10 years ago, emissions from polar bear viewing tourists are 3-34 times higher than the average global tourist experience. Tourists' awareness about climate change has stayed relatively consistent, despite the topic of climate change having received increased attention globally. Tourists recognise that climate change is happening and that it is human induced however, there is still a lack of understanding of how air travel is a contributor to climatic change. Although briefly mentioned in some participant's responses, the main motivation was not to see a polar bear before it disappeared from the wild. The majority of tourists identified they were traveling to Churchill simply for the opportunity to see a polar bear. Additional motivators were photography, the Northern Lights, and for the opportunity to see other Arctic animals. The climate change mitigation strategies that tourists believed to be the most effective to reduce emissions were educational programmes and transportation alternatives (such as taking the train - which was not an option at the time of study due to a rail line shutdown). This research contributes to the existing knowledge about tourism and climate change and provides a current analysis of Churchill's polar bear viewing industry, enabling a comparison between findings from another study conducted over ten years ago. It also makes conclusions about climate change mitigation strategies that might be effective for Churchill's tourism industry to reduce their impact on the environment.

Authors: D'Souza, J., Dawson, J., and Groulx, M.

Year: 2021

Title: Last chance tourism: A decade review of a case study on Churchill, Manitoba's polar bear viewing industry

Journal: Journal of Sustainable Tourism

Volume: 31

Issue: 1

Pages: 14-31

Abstract: For over 50 years, Churchill, Manitoba has provided visitors an opportunity to see polar bears in their natural environment. Over the same time period, an increase in temperatures and related reductions in sea ice has negatively impacted the health of polar bears in the Western Hudson Bay. In 2008, the term 'last chance tourism' was coined, linking the demand to travel to the North with a desire to see these animals 'before they are gone'. This creates a paradox as tourists require energy-intensive modes of transportation to reach the Arctic, thereby contributing to greenhouse gas emissions. This paper compares the polar bear viewing industry's total greenhouse gas contribution and tourists' knowledge about climate change with results from a 2008 study and discusses any changes over the last ten years. During the 2018 polar bear viewing season, greenhouse gas emissions were estimated to be 23,017 t/CO₂, an increase from 2008. The results also indicated that although most tourists believe climate change is happening, fewer associate air travel to this — a similar finding identified ten years ago. Findings from this research show that consumption patterns have not changed despite a growing awareness of climate change and its impacts.

Author: Duong, S.

Year: 2019

Title: Breaking down barriers to coexistence: Perspectives of North Shore residents on black bears, bear management, and coexistence-related education and policy

Academic Department: School of Resource and Environmental Management

University: Simon Fraser University

Thesis Type: Master of Resource Management (Planning)

Abstract: Conflicts between humans and wildlife are expected to become more frequent as urbanisation and human development expand. In urban and suburban regions near wildlife

habitat, the presence of human food waste and other anthropogenic attractants can draw potentially dangerous wildlife such as black bears (*Ursus americanus*) into residential areas, which may result in harm to both humans and wildlife. There is a pressing need to improve management of attractants and reduce negative interactions with wildlife. In this research, conducted in partnership with the North Shore Black Bear Society, Duong interviewed residents on the North Shore of Metro Vancouver, British Columbia, to investigate their perspectives on black bears and bear management, management of bear attractants, coexistence-related education, and regulatory policy. She makes recommendations to improve education programmes, management of attractants, bear reporting, and bylaw design and enforcement, and to build social capital and trust in support of these initiatives.

Author: Dybsand, H. N. H.

Year: 2020

Title: In the absence of a main attraction – Perspectives from polar bear watching tourism participants

Journal: Tourism Management

Volume: 79

Issue: Advance online publication

Pages: -

Abstract: Wildlife watching tourism has recently received more attention in the tourism literature. However, research is still needed on participants' perceptions on the unpredictable nature of wild animals as main attractions. Information on this topic may help providers keep participants satisfied in the absence of wildlife and move away from exploitative practices sometimes used to guarantee close encounters. Using polar bear tourism as a case study, content analysis of TripAdvisor reviews from Churchill (Canada) and Svalbard (Norway) was used to examine participants' comments on unpredictable wildlife and reactions when polar bears were not found. Findings indicate that to keep participants satisfied, wildlife watching tourism providers should focus on more controllable parts of the experience, such as high-quality guiding, expectations management, and secondary, more guaranteed side activities. They should also make the most of the natural surroundings, other wildlife in the area and signs of the focal species when encountered.

Author: Dyck, M. G.

Year: 2001

Title: Effects of tundra vehicle activity on polar bears (*Ursus maritimus*) at Churchill, Manitoba

Academic Department: Natural Resources Institute

University: University of Manitoba

Thesis Type: Master of Resources Management

Abstract: Churchill, Manitoba is world-famous for its polar bear (*Ursus maritimus*) viewing activities using tundra vehicles. Churchill is unique in that bears are viewed at close distances relative to any other bear-viewing location. The close proximity of tundra vehicles (TV) and polar bears in the Gordon Point area at Churchill poses a question vital to the bear management and the nature tourism industry: do human activities at Churchill induce behavioural changes in polar bears? Based on the results, the main recommendations were (1) Manitoba Conservation should seek dialogue with stakeholders to develop a protocol for consistent and predictable tundra vehicle and helicopter activities; (2) Manitoba Conservation should encourage more research examining the polar bear viewing industry; (3) viewing distances of at least 20 m should be maintained; (4) tundra vehicle movement around bears should be minimised; (5) passengers on vehicles should avoid noisy behaviour; (6) bears should not be

pursued during viewing activities; and (7) the purpose of two designated polar bear resting areas in the Gordon Point area should be re-examined.

Authors: Dyck, M. G., and Baydack, K. R.

Year: 2004

Title: Vigilance behaviour of polar bears (*Ursus maritimus*) in the context of wildlife-viewing activities at Churchill, Manitoba, Canada

Journal: Biological Conservation

Volume: 116

Issue: 3

Pages: 343-350

Abstract: Viewing of polar bears (*Ursus maritimus*) from tundra vehicles has been offered at Churchill, Manitoba since the early 1980s. This form of wildlife viewing has provided a unique and safe way for tourists to learn about polar bears. However, these activities have largely been carried out without examining possible effects on polar bear behaviour. Dyck and Baydack studied vigilance behaviour (a scanning of the immediate vicinity and beyond) of resting polar bears to evaluate impacts from tundra vehicle activity. Focal animal sampling was used to examine whether a difference in vigilance behaviour existed when vehicles were present. The authors recorded the numbers of head-ups, vigilance bout length, and between-bout intervals for polar bears. In general, the frequency of head-ups increased, and the between-bout intervals decreased for male bears, when vehicles were present. Female bears behaved opposite to males. The vigilance bout lengths did not differ significantly between vehicle presence and absence. Vigilance behaviour of male bears was not magnified with increasing numbers of vehicles; therefore the threshold is one vehicle. The authors suggest that manipulative studies be conducted to examine how distances between vehicles and bears, tundra vehicle activity in the immediate vicinity of a bear during viewing, and noise of tourists affect increased vigilance.

E

Author: Eckhart, G.

Year: 2005

Title: The effects of ecotourism on polar bear behavior

Academic Department: Department of Biology

University: University of Central Florida

Thesis Type: Master of Science

Abstract: Polar bears spend the majority of their lives on the sea ice, where they gain access to seals and mates. In western Hudson Bay, the sea ice melts for three to four months in the summer, and polar bears there are forced onto land. These bears live on their fat reserves for the duration of the iceless period, until temperatures get colder in the fall and freeze up begins. The aggregation of polar bears near Churchill, Manitoba during the ice free period has led to a thriving tourist industry, with a large influx of tourists visiting Churchill in the fall in a six to eight week period, yet little is known about the impacts of this industry on the biology of the bears. This study investigated the effect of tourist vehicles and human presence on the behaviour of polar bears over the fall of 2003 and 2004. Overall time budgets were estimated for bears, and the behaviour of males and females was compared. Females spent significantly less time lying and more time in locomotion than males. Time budgets were also estimated for bears in the presence and absence of tourist vehicles. Bears spent less time lying and more time in a sit/stand position in the presence of vehicles. Air temperature had no significant effect on the time budgets of polar bears. Tundra vehicle approaches were manipulated to determine effects on polar bear behaviour, and to investigate any variables that significantly affected

response, including habituation. A response was defined as any sudden whole body movement or change in position or behaviour at the time of approach. A total of 25% of all bears responded to the experimental vehicle approach. For bears that responded to approach, the average distance at response was 43 m. The average speed of the vehicle was 0.66 ± 0.02 m/s (range 0.23 to 1.15 m/s). Approach variables that significantly influenced the likelihood of response of a bear to an approaching vehicle included angle of approach and vehicle speed. Direct approaches, in which the bear was in the path of the moving vehicle, had a higher probability of eliciting a response than indirect approaches, in which the vehicle stayed to one side of the bear at all times. Higher speeds of the vehicle increased the probability of a response by a bear. Behaviours of the bear that significantly predicted a response were shifting of the body and smacking of the lips. A playback study was conducted to determine the effects of human induced sound on polar bears. There was no significant effect of human sound on polar bears. Results presented here provide the first experimental evidence of variables in the tourist industry that affect polar bear behaviour, and the first evidence of behavioural cues predicting a response to vehicle approach.

Authors: ÉcoRessources Consultants

Year: 2011

Title: Evidence of the socio-economic importance of polar bears for Canada

City/State: Ottawa, Canada

Institution: Environment Canada

Date: June 2011

Abstract: The polar bear (*Ursus maritimus*) is an icon of the Arctic environment and Canada's wildlife heritage. Canada is home to approximately 15,000 polar bears representing two-thirds of the global total. The Canadian polar bear population extends to four provinces and three territories within the Arctic marine environment.

The species is of cultural, spiritual and economic significance to Canadians, and particularly to Canada's Northern Aboriginal peoples. As a symbol of the pristine Arctic environment, polar bears are seen throughout the world as a barometer of important environmental issues, especially climate change and pollution.

As a background analysis in support of the regulatory and future decision-making processes, this document explores evidence of economic values relevant to polar bears as well as economic activities affecting the polar bear and its habitat.

The first part of the study addresses the evidence of active and passive economic values. The second part focuses on the economic activities that may affect the polar bear population or its habitat. A framework has been developed with the aim of providing decision support for assessing potential trade-offs associated with future policy decisions. The framework provides necessary elements to help answer the question: "What are the steps to follow to evaluate the costs and benefits of a policy decision affecting the population or the habitat of polar bears in Canada?"

The ultimate aim of the study is to inform the public decision-making process related to the polar bear. The estimated values presented in this report will serve as basic information for future policy making concerning polar bears. However, it has to be noted that this is a first attempt in establishing economic evidence surrounding the polar bear and more data and analysis are needed. Further studies will thus be necessary for informed decision-making on questions concerning Canada's polar bear population.

Authors: Elmeligi, S., Nevin, O. T., Taylor, J., and Convery, I.

Year: 2021

Title: Visitor attitudes and expectations of grizzly bear management in the Canadian Rocky Mountain national parks

Journal: Journal of Outdoor Recreation and Tourism

Volume: 36

Issue: Advance online publication

Pages: -

Abstract: Park managers in Canada's Rocky Mountain national parks are continually challenged to balance visitor needs with those of grizzly bears. While research pertaining to grizzly bear habitat requirements is abundant, human dimensions research examining the perspectives and expectations of the trail user is not. Guided by principles of behaviour intention and its influence on management support, Elmeligi and colleagues assessed trail user support for management options regarding grizzly bears in Banff, Jasper, Kootenay, and Yoho National Parks in Canada using an intercept survey. The main findings were in line with predictions; trail users were more supportive of restrictive management options e.g., closing the trail when a female grizzly bear with cubs was in the area rather than a solitary bear; and management options pertaining to modifying bear behaviour were largely opposed. Local users who live within these protected areas or who use them daily were less supportive of restrictive management options compared with other trail users. The research supports the proposal that specificity may be an important factor in determining stakeholder beliefs for intervention design. Identification of key influencing factors in the selection of management options for diverse groups of trail users is important if the needs of trail users and grizzly bears are to be managed in a sustainable and risk-sensitive manner.

Authors: Elmeligi, S., and Shultis, J.

Year: 2015

Title: Impacts of boat-based wildlife viewing in the K'tzim-a-deen inlet on grizzly bear (*Ursus arctos*) behavior

Journal: Natural Areas Journal

Volume: 35

Issue: 3

Pages: 404-405

Abstract: All forms of recreation and tourism, including wildlife viewing, have the potential to alter wildlife habitat, behaviour, survival, and/or reproductive success. The increasing number of visitors pursuing bear-viewing activities in coastal British Columbia, Canada, and Alaska, United States, has led to a number of studies assessing the impact of wildlife viewing on bear behaviour. This study, the first to assess the impact of boat-based bear viewing in this region, used focal sampling to measure bear activity budgets in the absence and presence of non-research bear-viewing vessels. The authors found that: (1) some grizzly bears were clearly tolerant of wildlife viewing activities while others were not; (2) individual variation of bears' response to tourists was significant, introducing considerable uncertainty in attempting to assess medium- to long-term impacts of wildlife viewing; (3) males were rarely observed outside of the mating season, suggesting females (especially those with cubs) may use viewing areas as refuges from male grizzly bears; and (4) overt reaction distances varied greatly, suggesting that one appropriate management option may be to ensure boat captains can recognise potential displacement behaviour in bears to avoid affecting subject animals. Some of the uncertainty arising from the biological research could be tempered by examining the social perspective of bear viewing tours to create an appropriate management plan for the K'tzim-a-deen Inlet Conservancy.

Authors: Espinosa, S., and Jacobson, S. K.

Year: 2012

Title: Human-wildlife conflict and environmental education: Evaluating a community program to protect the Andean bear in Ecuador

Journal: The Journal of Environmental Education

Volume: 43

Issue: 1

Pages: 55-65

Abstract: Environmental education is a widespread, yet relatively unexamined strategy to reduce human-wildlife conflicts. The authors evaluated knowledge, attitudes and behavioural intentions toward bear conservation after five years of environmental education in a Quichua community. Conflicts with livestock predation created mixed attitudes and behaviours toward bear conservation. Some programme objectives were achieved, such as 88% of participants reported satisfaction with environmental knowledge gained. Behavioural intentions to decrease bear conflicts increased, and multiple regression analysis revealed support for the project was associated with programme participation. Focus group meetings with teachers, local policy makers and para-biologists provided a context for recommendations to improve programme success and revealed new issues for better bear management.

F

Authors: Fagen, M. J., and Fagen, R.

Year: 1994

Title: Interactions between wildlife viewers and habituated brown bears, 1987-1992

Journal: Natural Areas Journal

Volume: 14

Issue: 3

Pages: 159-164

Abstract: Public participation in wildlife viewing has increased in recent years in the USA and is expected to continue to increase. The article presents and analyses direct, systematic observations of 322 human interactions with known, habituated brown bears over six consecutive years from 1987 to 1992 at Pack Creek, Alaska, before, during and after conception and implementation of new bear viewing regulations. The site has been popular for bear viewing since the 1930s. The study showed that, overall, bear-human interactions declined after regulation of visitor activity began in 1988. This decline lasted until 1992, even though visitor use increased almost threefold from 1987 to 1992. Rates and types of interaction fluctuated among years and were influenced by individual bears and their age/sex class. The goals of limiting possible human effects on bears and of enhancing human safety could be served by management that: (1) minimises human-caused interactions, and (2) continues and expands visitor education.

Authors: Fatin, R., and Ramachandran, S.

Year: 2016

Title: Motivation to visit the Giant Panda Conservation Centre in Zoo Negara, Malaysia

Journal: Asia-Pacific Journal of Innovation in Hospitality and Tourism

Volume: 5

Issue: 3

Pages: 155-169

Abstract: This paper aims to identify factors that affect motivations to visit the Giant Panda Conservation Centre (GPCC). The significant motivational dimension among visitors and how

these motivational factors and socio-demographic factors influence the time spent at the GPCC in Zoo Negara, Malaysia are explored. Face-to-face interviews were conducted among visitors to the GPCC. A factor structure which consisted of 15 factors within several motivational dimensions was derived. Results demonstrated that all the factors present high loading values to explain overall motivation. Findings showed that among the motivational dimensions, altruism appeared as the strongest motive followed by intrinsic social motive while self-interest scored the lowest. Findings from multivariate analysis showed that intrinsic social motive and edu-tourism, as well as the socio-demographic variables of age, travel companion and ethnicity, were significantly related to time spent. Age emerged as the most significant independent variable influencing the time spent by visitors. This explorative study of visitors to the GPCC contributes insight into the motives of people visiting the GPCC, how motives are related to the time spent at the GPCC, and how sociodemographic factors are related to time spent. Zoo Negara's management can utilise these findings to prepare future marketing, product development and extension strategies for the GPCC as an attractive destination.

Authors: Fefer, J. P., Hallo, J. C., Dvorak, R. G., Brownlee, M. T. J., Collins, R. H., and Baldwin, E. D.

Year: 2020

Title: Pictures of polar bears: Using visitor employed photography to identify experience indicators in the Arctic National Wildlife Refuge

Journal: Journal of Environmental Management

Volume: 269

Issue: -

Pages: Advance online publication

Abstract: The purpose of this research is to apply visitor employed photography (VEP) to recreation management to develop indicators of the wildlife viewing experience. VEP and semi-structured interviews were used at a popular polar bear viewing destination in the Arctic National Wildlife Refuge (Arctic Refuge). Visitors to the Arctic Refuge who participated in an on-site semi-structured interview were asked to participate in a VEP procedure after their visit. A sample of 24 semi-structured interviews, and 17 VEP responses were collected and compared to test the utility of VEP to develop indicators of the wildlife viewing experience. Results indicate that VEP offers additional and unique types of information from semi-structured interviews for identifying indicators of the wildlife viewing experience. Potential indicators that emerged from VEP include 'time spent on the water viewing polar bears', and the 'number of vessels in view.' Indicators emerged exclusively from the VEP procedure, demonstrating the utility of VEP for recreation management and scientific inquiry.

Authors: Fischbach, A. S., and Reynolds, J. H.

Year: 2005

Title: Brown bear use of the proposed Kodiak National Wildlife Refuge O'Malley Bear Viewing Site: Analysis of 1991, 1992, 1993, 1994 and 2003 study year observations

City/State: Anchorage, AK, USA

Organisations: Kodiak National Wildlife Refuge and U.S. Fish and Wildlife Service

Date: 21 September 2005

Pages: 159-164

Abstract: Brown bears (*Ursus arctos*) congregate seasonally near the O'Malley river in the Kodiak National Wildlife Refuge (hereafter Refuge) to feed on large runs of spawning salmon as well as resident dolly varden (*Salvalinus malma*). In 1995, for the purpose of managing brown bears, the Refuge established a seasonal closure of the O'Malley area to visitors from June 25 to September 30. The Kodiak Archipelago Bear Conservation and Management Plan

and Kodiak NWR Comprehensive Conservation Plan include proposals for re-opening the O'Malley area for bear viewing.

In collaboration with the U. S. Geological Survey Alaska Science Center, the U.S Fish and Wildlife Service studied bear and human use of O'Malley during the summers of 1991 through 1994. O'Malley was open to unstructured public use in 1991 and 1993 and structured bear viewing programmes in 1992 and 1994. Higher bear use of O'Malley was documented under structured bear viewing versus unregulated public use.

However, these studies lacked a baseline of bear use in the absence of public use. In 2003, brown bear use of O'Malley was studied under the seasonal closure management and on into the fall during the hunting seasons. This report summarises bear use of O'Malley during the 2003 field season and compares bear use of O'Malley under each management status: open public use (1991 and 1993), structured bear viewing (1992 and 1994) and seasonal closure (2003). This report also presents observations of bear use during the fall deer and brown bear hunting seasons through November 9. A second year of seasonal closure data was collected in 2004 but was not available for inclusion in this report.

Authors: Flygt, A., Johansson, M., Karlsson, J., Lindeberg, S., and Lipp, O. V.

Year: 2013

Title: Fear of wolves and bears: Physiological responses and negative associations in a Swedish sample.

Journal: Human Dimensions of Wildlife

Volume: 18

Issue: 6

Pages: 416-434

Abstract: Human fear is important in wildlife management, but self-reported fear provides only partial information about fear reactions. Thus, eye movements, skin conductance, and changes in heart rate were assessed during picture viewing, visual search, and implicit evaluation tasks. Pictures of bears, wolves, moose, and hares were presented to participants who self-reported as fearful of bears ($n = 8$), fearful of bears and wolves ($n = 15$), or not fearful of bears or wolves ($n = 14$). The feared animal was expected to elicit strong physiological responses, be dwelled upon, and be associated with negative words. Independent of fearfulness, bear pictures elicited the strongest physiological responses, and wolf pictures showed the strongest negative associations. The bear-fearful group showed stronger physiological responses to bears. The bear- and wolf-fearful group showed more difficulty in associating bears with good words. Presence of a feared animal in the search task, resulted in prolonged response time.

Authors: Fortin, J. K., Rode, K. D., Hilderbrand, G. V., Wilder, J., Farley, S., Jorgensen, C., Marcot, B. G., and Crocker, D. E.

Year: 2016

Title: Impacts of human recreation on brown bears (*Ursus arctos*): A review and new management tool

Journal: PLoS ONE

Volume: 11

Issue: 1

Article: e0141983

Abstract: Increased popularity of recreational activities in natural areas has led to the need to better understand their impacts on wildlife. The majority of research conducted to date has focused on behavioural effects from individual recreations, thus there is a limited understanding of the potential for population-level or cumulative effects. Brown bears (*Ursus*

arctos) are the focus of a growing wildlife viewing industry and are found in habitats frequented by recreationists. Managers face difficult decisions in balancing recreational opportunities with habitat protection for wildlife. Here, the authors integrate results from empirical studies with expert knowledge to better understand the potential population-level effects of recreational activities on brown bears. They conducted a literature review and Delphi survey of brown bear experts to better understand the frequencies and types of recreations occurring in bear habitats and their potential effects, and to identify management solutions and research needs. Fortin and colleagues then developed a Bayesian network model that allows managers to estimate the potential effects of recreational management decisions in bear habitats. A higher proportion of individual brown bears in coastal habitats were exposed to recreation, including photography and bear-viewing than bears in interior habitats where camping and hiking were more common. The results suggest that the primary mechanism by which recreation may impact brown bears is through temporal and spatial displacement with associated increases in energetic costs and declines in nutritional intake. Killings in defense of life and property were found to be minimally associated with recreation in Alaska, but are important considerations in population management. Regulating recreation to occur predictably in space and time and limiting recreation in habitats with concentrated food resources reduces impacts on food intake and may thereby, reduce impacts on reproduction and survival. The results suggest that decisions managers make about regulating recreational activities in time and space have important consequences for bear populations. The Bayesian network model developed here provides a new tool for managers to balance demands of multiple recreational activities while supporting healthy bear populations.

Author: French, H. B.

Year: 2007

Title: Effects of bear viewers and photographers on brown bears (*Ursus arctos*) at Hallo Bay, Katmai National Park and Preserve, Alaska

Academic Department: -

University: University of Alaska, Fairbanks

Thesis Type: Master of Science thesis

Abstract: French investigated the effects of bear viewing and photography on brown bears (*Ursus arctos*) that used open habitats at Hallo Bay, Katmai National Park and Preserve (KNPP), Alaska. He also investigated how bear use of the area varied with season, human presence, and time of day. The author found that the mean number of bears present varied significantly with season, time of day, and human presence. There were significantly more bears present before the salmon season than during the salmon season; bear numbers increased significantly during the day, and there were significantly more bears when humans were present. Humans at varying distances least affected activity budgets of sows with spring cubs, but foraging efficiency (bites per minute) of sows with spring cubs was significantly lower with humans <50 m away than with humans absent. Fishing success (chases per catch) of large males and single bears was lower when humans were present, but fishing success of sows with spring and older cubs was higher when humans were present. French concludes that humans are affecting brown bears that use Hallo Bay and therefore the Katmai NPP Bear Management Plan is being violated as well as the act establishing the National Park Service. The author recommends that managers at KNPP restrict visitor use at Hallo Bay and enforce existing policy.

G

Authors: Garner, N. P., and Vaughan, M. R.

Year of Conference: 1987

Title: Black bear-human interactions in Shenandoah National Park, Virginia

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 155-161

Abstract: From May 1982 to April 1985 Garner and Vaughan studied seasonal use of various areas of human disturbance by 24 adult female, 17 adult male, and three subadult male black bears (*Ursus americanus*) in central Shenandoah National Park, Virginia. A sample of 1,582 locations indicated that male bears were never located within 100 m of a front-country campground or picnic area; only one location was recorded within 100 m of a campground and picnic area for females. Male and female bears avoided more travelled primary roads ($P = < 0.01$) and light-duty roads ($P < 0.001$) year-round. However, both sexes used foot trails more often ($P < 0.05$) than expected during each season and annually. Bear incidents reported in Shenandoah National Park from 1970-1986 steadily declined, reaching their lowest level in the park's history in 1985-1986. Bear movements outside Shenandoah National Park, and resultant damage by bears to property surrounding agricultural lands and rural housing developments have become the greatest bear management problem facing park and state officials today. Education of park visitors about the proper response when encountering a bear, especially along back-country trails, is strongly recommended.

Author: Gibeau, M. L.

Year: 2000

Title: A conservation biology approach to management of grizzly bears in Banff National Park, Alberta

Academic Department: Resources and Environment Program

University: University of Calgary

Thesis Type: Doctoral thesis

Abstract: Gibeau examined movement patterns of adult female grizzly bears (*Ursus arctos*) in the Bow River Watershed, Alberta. Intensive movement data showed that habituated adult female bears did not take advantage of higher quality habitats in the same manner as wary bears. The combination of habituated bears using lower quality habitats and demonstrating higher movement rates suggests less energy available for growth and reproduction. Bears within an area of restricted human access used higher quality habitat and travelled less than bears in unregulated areas. Gibeau documents the permeability of several highways in a landscape where human presence is widespread. One highway with 24 hour, year-round high traffic volumes served as a total barrier for adult female movement and a filtered barrier for males. Traffic volume appeared to be a key variable in highway permeability. Significant potential currently exists for permanent habitat and population fragmentation to occur along the Trans Canada Highway. Gibeau documents the degree and magnitude of grizzly bear responses as a function of multiple interacting variables based on observed distances to roads, trails and development features. Bears were found closer to trails during the human inactive period when within high quality habitat and further from trails when distant from high quality habitat. Female bears remained further than males from paved roads regardless of the habitat quality or time of day. The data indicated an inverse relationship between the sexes in response to vehicles and traffic noise compared to the response to human settlement and encountering people. The author developed a predictive GIS-based model of adult female grizzly bear security areas in the Central Canadian Rocky Mountains. Forty-eight percent of the land

surface area of the Banff, Yoho, and Kootenay National Parks were unsuitable for grizzly bears, primarily because of rock and ice. This is unfortunate because it is assumed that these national parks form productive core refugia for grizzly bears. Management of access and development are key to grizzly bear persistence in the region. An adaptive management approach, bringing in new knowledge of grizzly bear response to human activity, will be crucial to support population connectivity and habitat security.

Author: Gilbert, B. K.

Year of Conference: 1987

Title: Behavioral plasticity and bear-human conflicts

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 1-8

Abstract: Increasing recreational activity in the range of bears, especially in national parks, is a threat to bear survival. The mere presence of people is capable of inducing losses of bears either through direct lethal conflict or displacement from essential habitat. This paper explores the influence of prior experience with people on the response of bears to people. Of particular significance, but poorly understood, is the sensitising effect of hunting, handling or other stressful contacts with people which may result in increased energy costs and abandonment of high energy food sites. At the other extreme, human activities which facilitate habituation and conditioned approach to people by hungry bears will increase lethal risks to people and bears. Recognition of the importance of interactive effects of prior conditioning on response plasticity is fundamental to responsible management of bears.

Authors: Glikman, J. A., Ciucci, P., Marino, A., Davies, E. O., Bath, A. J., and Boitani, L.

Year: 2019

Title: Local attitudes toward Apennine brown bears: Insights for conservation issues

Journal: Conservation Science and Practice

Volume: 1

Issue: 5

Article: e25

Abstract: Human-carnivore coexistence is a multi-faceted issue that requires an understanding of the diverse attitudes and perspectives of the communities living with large carnivores. To inform initiatives that encourage behaviours in line with conservation goals, the authors focused on assessing the two components of attitudes (i.e., feelings and beliefs), as well as norms of local communities coexisting with Apennine brown bears (*Ursus arctos marsicanus*) for a long time. This bear population is under serious extinction risks due to its persistently small population size, which is currently confined to the long-established protected area of Abruzzo, Lazio and Molise National Park (PNALM) and its surrounding region in central Italy. Glikman and colleagues interviewed 1,611 residents in the PNALM to determine attitudes and values toward bears. They found that support for the bear's legal protection was widespread throughout the area, though beliefs about the benefits of conserving bears varied across geographic administrative districts. The results showed that residents across the study areas liked bears. At the same time, areas that received more benefits from tourism were more strongly associated with positive feelings toward bears. Such findings provide useful information to improve communication efforts of conservation authorities with local communities.

Authors: Gore, M. L., Knuth, B. A., Curtis, P. D., and Shanahan, J. E.

Year: 2007

Title: Campground manager and user perceptions of risk associated with negative human-black bear interactions

Journal: Human Dimensions of Wildlife

Volume: 12

Issue: 1

Pages: 31-43

Abstract: Negative human-black bear interactions in New York's Adirondack Park campgrounds pose risk management challenges. Communication is one tool available to modify human behaviour and reduce associated risks, but knowledge of constructs influencing risk perception among key stakeholder groups is needed to design effective risk communication approaches. The authors interviewed managers ($n = 14$) and users ($n = 40$) at seven Adirondack Park campgrounds to characterise risk perceptions between groups. They identified eight constructs influencing risk perceived by users and/or managers with three constructs congruent between groups, and five constructs divergent. Gore and colleagues discuss how congruencies and shared understanding across groups, and explicit recognition by risk communicators of differences between groups, may offer opportunities to maximise successes of risk communication efforts in campgrounds.

Authors: Gore, M. L., Siemer, W. F., Shanahan, J. E., Schuefele, D., and Decker, D. J.

Year: 2005

Title: Effects on risk perception of media coverage of a black bear-related human fatality

Journal: Wildlife Society Bulletin

Volume: 33

Issue: 2

Pages: 507-516

Abstract: On 19 August 2002 an infant was fatally injured by a black bear (*Ursus americanus*) in Fallsburg, New York. Based on the social amplification of risk theory, Gore and colleagues anticipated that media coverage of the incident would affect perceived bear-related risk among residents in New York's black bear range. They compared results from a pre-incident mail survey (March 2002; $n = 3,000$) and a post-incident telephone survey (September 2002; $n = 302$) of New York residents in the same geographic regions to determine whether perception of personal risk (i.e., the perceived probability of experiencing a threatening encounter with a black bear) had changed as a result of the infant death. Additionally, the authors performed content analysis of news stories published between 19 August and 19 September 2002 ($n = 45$) referencing the incident. The proportion of respondents who believed the risk of being threatened by a bear was acceptably low increased after the incident (81% pre-incident vs. 87% post-incident), corresponding with an increase in print media coverage of black bears during the month following the incident. The majority of media coverage noted the rarity of human fatalities caused by black bears. Stability in risk perception may have been reinforced by media coverage that uniformly characterised the risk of a bear attack as extremely low. Alternatively, existing perceptions of black bear-related risk may have been reinforced by the short-term nature of media coverage after the incident. The fatality did not serve as a focus event that motivated stakeholder groups to promote change in wildlife management policy. Additional bear-related fatalities, however, could create the impetus for a change in risk perception via a social amplification of risk. Wildlife managers should be aware of potential media effects on risk perception and recognise the potential for risk communication to improve the congruence between actual and perceived risk.

Author: Graber, D. M.

Year of Conference: 1987

Title: Ecological and behavioural responses of black bears in national parks of the Sierra Nevada, California, to anthropogenic foods, and to management strategies designed to reduce conflicts

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Page: 47

Abstract: For more than 10 years, it has been recognised that human visitation and the resultant plentiful supply of nutritious, concentrated anthropogenic food have resulted in significant alterations of the behaviour and ecology of black bears (*Ursus americanus*) in the national parks of the Sierra Nevada, California. These changes contradict the National Park Service's mission of maintaining naturally functioning ecosystems and their elements, and also aggravate conflicts between bears and visitors. Black bears in the Sierra Nevada with access to anthropogenic food grow larger, reach sexual maturity earlier, and have a higher reproductive rate than control bears. Where food must be acquired directly from people and their camps, these bears evidence both diminished fear of humans, and alterations in activity schedules designed to reduce conflicts. Traditional management practices have resulted in recruitment compensation, and some indication of alterations in social structure. More recent techniques for diminishing bear-human conflicts have concentrated on directly reducing the availability of anthropogenic food.

Author: Graves, T. A.

Year: 2002

Title: Spatial and temporal response of grizzly bears to recreational use on trails

Academic Department: Biology

University: University of Montana

Thesis Type: Master of Science in Wildlife Biology

Abstract: Many human activities affect how bears use habitat. The effects of motorised recreational vehicle use on trails have not been formally assessed previously. Graves used hourly locations from four GPS-collared female bears in the Badger-Two Medicine area in the Lewis and Clark National Forest to assess spatial and temporal distributions of bears relative to trail locations and to recreational use on trails. When availability was defined by circles equal to 95 % of move distances around the previous bear location, all bears used areas near trails less than expected. The author iteratively reclassified trail habitat versus non-trail habitat as increasing buffers in 50 m increments around trails until she reached a buffer-width at which bears used areas near trails in proportion to availability. Compositional analysis results showed that bears selected against areas within 250 - 900 m from ATV trails and within 450 - 600 m from single-track trails, which had some motorbike use. The distance from trails at which bear use approximated availability varied by individual bear, by time of day, and by type of trail. Log-ratio differences were used to assess selection. Because log-ratio difference vectors were not normally distributed, Graves also used Friedman's test, a non-parametric method that is subject to the unit-sum constraint to estimate the distance at which selection of non-trail habitat became statistically insignificant. Friedman's test yielded similar results, but with lower effect sizes, which is a consequence of the more conservative nature of non-parametric tests.

Author: Greve, P. M. K.

Year: 2008

Title: Behavior of the Scandinavian brown bear (*Ursus arctos*) when approached by people on foot

Academic Department: Department of Ecology and Natural Resource Management

University: Norwegian University of Life Sciences

Thesis Type: Master of Science

Abstract: Human activities affect brown bears (*Ursus arctos*) directly through increased mortality and indirectly by reducing the availability of the brown bears' preferred habitats and nutritional resources. This may affect the bears' behaviour. Humans almost eradicated the Scandinavian brown bear population at the beginning of the 20th century. The primary cause of death for an adult Scandinavian brown bear still is human-caused mortality, which may trigger a response similar to an anti-predator response in the bears when encountering humans. The behaviour of the brown bear varies geographically. North American and Russian brown bears are more aggressive than the Scandinavian. Nevertheless, many people fear the Scandinavian brown bear even though the chance of being hurt by one during an encounter is minute. This fear may be explained by the fact that it probably was a valuable trait in our evolutionary past. Knowledge about the behaviour of the brown bear when encountering people may reduce peoples' fear and result in more positive attitudes towards the animal. A positive attitude in the public is important for the successful management of the brown bear population. To address this need for information, Greve conducted field research on the behaviour of brown bears when encountered by people. He presents the result of 102 approaches on Scandinavian brown bears conducted by people on foot. The study was conducted in Gävleborg and Dalarna counties in south-central Sweden in a portion of the southernmost reproductive core area of the Scandinavian brown bear population. A total of 22 bears (four males and 18 females) were approached during the summer and early fall of 2006 and 2007, with the approacher(s) walking past them at a distance of approximately 50 meters. The aim of the study was to determine the behaviour of the bears and to reveal possible factors influencing their behaviour. Greve found great variation in the behaviour of the bears. Both the distance between the bears and the approachers at the time of the bears' response to people, the type of response, and the distance moved after the approach varied among individuals and between approaches on the same individual. Three-fourths of the bears left their initial resting site before or as the approachers passed. Half of those that stayed left the resting site shortly after the approachers had passed. None of the approaches resulted in any kind of aggressive behaviour from the bears and only about one-tenth of the bears were seen, even though the approachers knew the location of the bears and tracked any movement they made. The variable behaviour made it difficult to define a 'normal behaviour' of the Scandinavian brown bear, but the results indicate that when approached by people on foot they prefer to avoid a confrontation. This supports the conclusion of previous studies, that the Scandinavian brown bear is normally not an aggressive bear.

Authors: Gu, Z.-L., and Li, J.-W.

Year: 2008

Title: The eco-tourism planning and design of Sichuan Wolong Panda Zoo

Journal: Landscape Architecture

Volume: 3

Issue: -

Pages: -

Abstract: With the eco-tourism planning of the Wolong Panda Zoo as an example, this paper explored the three important steps of sustainable eco-tourism planning, including the investigation for landscape resources, the orientation of products and measurements. It

proposed that the sustainable eco-tourism planning should be achieved by investigating the current conditions and natural resources, seeking the most appropriate project and sites and taking effective measures. Appropriate concept, natural theory and creative approach should be integrated in every step of the sustainable eco-tourism planning.

Authors: Gula, R., Frackowiak, W., and Perzanowski, K

Year: 1998

Title: Current status and conservation of brown bears in the Polish Carpathians

Journal: Ursus

Volume: 10

Issue: -

Pages: 81-86

Abstract: The present status and main threats to the future viability of brown bears (*Ursus arctos*) in Poland were evaluated. The remaining 80-90 individuals are found only in the Carpathian Mountains and feed on a variety of natural foods, but occasionally kill livestock and cause damage to beehives. Several factors including poaching, local development, logging patterns, and increasing tourism may contribute considerably to the reduced viability of the population. Successful bear conservation will require the collection of basic ecological data, wider public education, and especially changes in logging patterns and long-term local development plans. The coordination of bear research and joint management of the Carpathian population in the region is urgent.

Author: Gunther, K. A.

Year: 1990

Title: Visitor impact on grizzly bear activity in Pelican Valley, Yellowstone National Park

Journal: JSTOR

Volume: 8

Issue: -

Pages: 73-78

Abstract: Visual observations were used to determine if human recreational activity affected grizzly bear (*Ursus arctos horribilis*) use of open meadow areas in Pelican Valley, Yellowstone National Park. Visitor compliance with bear management regulations and safety warnings were also evaluated. From May-September 1984-88, 944 bear observations were recorded. During this period, the study area was managed for three levels of backcountry use: Open (both day use and overnight camping allowed), restricted use (day use only), and closed (no visitor use allowed). The average flight distance of grizzly bears to tree cover following disturbance by backcountry users was 422 m. When the valley was open to visitors, bear activity in areas greater than 500 m from forest cover was significantly reduced and bears avoided areas around occupied backcountry campsites. No differences in diurnal hourly activity patterns were observed among the open, restricted, and closed periods. Foot parties were more likely to be charged during an encounter with a grizzly bear than people on horseback. All incidents in which hikers were charged by bears involved groups of one or two people. Only 17% of the observed hiking parties followed the recommended group size of four or more people. Compliance with the area closure and day use only regulations was 99% and 83%, respectively.

Author: Gunther, K. A.

Year: 1994

Title: Bear management in Yellowstone National Park

Journal: JSTOR

Volume: 9

Issue: 1

Pages: 549-560

Abstract: From 1931 through 1959, an average of 48 people per year was injured by bears within Yellowstone National Park (YNP). In 1960, YNP implemented a bear management programme designed to reduce the number of bear-caused human injuries and property damages occurring within YNP and to re-establish bears in a natural state. Although the 1960 programme included some efforts to reduce the human food and garbage sources that were attracting bears into developed areas and roadside corridors, most management efforts went into the removal of potentially hazardous bears and those bears that damaged property in search of human foods. After 10 years (1960-69) of the programme, 332 nuisance black bears (*Ursus americanus*) and 39 nuisance grizzly bears (*Ursus arctos horribilis*) had been removed from the population. However, the number of bear-caused human injuries within YNP had decreased only slightly, to an average of 45 per year. In 1970, YNP initiated a new, more intensive bear management programme with the objectives of restoring the grizzly bear and black bear populations to subsistence on natural forage and reducing the number of bear-caused injuries to humans. Management involved eliminating the sources of human food and garbage that attracted bears into developed areas and along roadsides, the source of most bear-human conflicts. During the first three years of the programme, bear-caused human injuries decreased significantly to an average of 10 per year. During the same period, an average of 38 grizzly bears and 23 black bears per year were trapped and translocated from roadsides and developed areas to backcountry areas. In addition, an average of 12 grizzly bears and six black bears per year, were removed from the population. After 1972, the number of bear-human conflicts as well as the number of bear management control actions declined significantly. A modified bear management programme similar to the 1970 programme, but with greater emphasis on habitat protection in backcountry areas, was implemented in 1983. Since 1983, bear-caused human injuries have declined to an average of one per year and the number of nuisance bears translocated (grizzly bears = 4/yr, black bears = 2/yr) as well as the number of incorrigible bears removed from the population (grizzly bears = 1/yr, black bears = 0.4/yr) has also declined significantly from earlier periods. During the first years of these management programmes, most bear-human conflicts involved food-conditioned bears that aggressively sought human foods. In more recent years, management problems have involved habituated (but not food-conditioned) bears seeking natural foods within developed areas and along roadsides.

Authors: Gunther, K. A., Wilmot, K. R., Cain, S. L., Wyman, T. C., Reinertson, E. G. and Bramblett, A. M.

Year: 2018

Title: Managing human-habituated bears to enhance survival, habitat effectiveness, and public viewing

Journal: Human-Wildlife Interactions

Volume: 12

Issue: 3

Article Nr.: 7

Abstract: The negative impacts on bears (*Ursus* spp.) from human activities associated with roads and developments are well documented. These impacts include displacement of bears from high-quality foods and habitats, diminished habitat effectiveness, and reduced survival

rates. Additionally, increased public visitations to national parks accompanied with benign encounters with bears along park roads have caused more bears to habituate to the presence of people. In some contexts, habituation can predispose bears to being exposed to and rewarded by anthropogenic foods, which can also lower survival rates. The managers and staff of Yellowstone National Park located in Wyoming, Montana, and Idaho, USA, and Grand Teton National Park in north-western Wyoming, USA have implemented several proactive strategies to mitigate the negative aspects of bear habituation. These strategies include providing park visitors with educational information on bear viewing etiquette, managing roadside viewing opportunities, installing bear-resistant infrastructure, hazing bears from developments, enforcing food and garbage storage regulations, and making human activities as predictable as possible to bears. Under the current management strategies, thousands of visitors are still able to view, photograph, and appreciate bears while visiting these parks each year. The opportunity to view bears provides a positive visitor experience and contributes millions of dollars to the local economies of park gateway communities. Positive bear viewing experiences also help build an important appreciation and conservation ethic for bears in people that visit national parks. For many years, managers were concerned about decreasing and threatened bear populations. Now more jurisdictions are facing new challenges caused by increasing bear populations. This paper highlights a successful attempt to address these issues.

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Authors: Haroldson, M. A., and Gunther, K. A.

Year: 2013

Title: Roadside bear viewing opportunities in Yellowstone National Park: Characteristics, trends, and influence of whitebark pine

Journal: *Ursus*

Volume: 24

Issue: 1

Pages: 27-41

Abstract: Opportunities for viewing grizzly bears (*Ursus arctos*) and American black bears (*U. americanus*) from roadways in Yellowstone National Park (YNP) have increased in recent years. Unlike the panhandling bears common prior to the 1970s, current viewing usually involves bears feeding on natural foods. Haroldson and Gunther define roadside bear viewing opportunities that cause traffic congestion as “bear-jams.” They investigated characteristics of bear-jams and their frequency relative to whitebark pine (*Pinus albicaulis*) cone production, an important fall food for bears, during 1990–2004. The authors observed a difference in diel distribution of bear-jams between species ($\chi^2 = 70.609$, 4 df, $P < 0.001$) with the occurrence of grizzly bear-jams being more crepuscular. They found evidence for decreasing distances between bears and roadways and increasing durations of bears-jams. The annual proportion of bear-jams for both species occurring after the week of 13–19 August were 3–4 times higher during poor cone crop years than good. Haroldson and Gunther suggest that native foods found in road corridors may be especially important to some individual bears during years exhibiting poor whitebark pine crops. They discuss management implications of threats to whitebark pine and increasing habituation of bears to people.

Authors: Hastings, B. C., Gilbert, B. K., and Turner, D. L.

Year of Conference: 1987

Title: Effect of bears eating campers' food on human-bear interactions

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 15-18

Abstract: Interactions of back-country visitors and black bears (*Ursus americanus*) were studied in Yosemite National Park to determine if bear and visitor behaviour were affected by bears obtaining food from campers. Responses of bears and people were categorised into one of four classes: fear/escape, neutrality, approach, or aggression. After they had begun to eat backpackers' food, bears were more neutral toward people than would be expected by chance; they also approached visitors less often and demonstrated less fear of visitors. People were less aggressive, more neutral, and showed less fear of bears after the bear had their food; they usually watched the bear, talked to each other and photographed the bear. The authors concluded that visitors should try to discourage a nuisance bear before it obtains food, using proper food storage techniques and appropriate behaviour.

Author: He, F.-Y.

Year: 2009

Title: Generalization and scientific development of panda eco-tourism

Journal: Journal of Anhui Agricultural Sciences

Volume: 2009

Issue: 23

Pages: -

Abstract: At present, the generalisation phenomenon of panda eco-tourism is very outstanding. He points out that it is necessary to scientifically understand eco-tourism, panda tourism and panda eco-tourism. The basic strategies of developing panda eco-tourism scientifically are discussed.

Authors: Heneghan, M. D., and Morse, W. C.

Year: 2019

Title: Acceptability of management actions and the potential for conflict following human-black bear encounters

Journal: Society & Natural Resources

Volume: 32

Issue: 4

Pages: 434-451

Abstract: Despite low numbers for the past century, black bear (*Ursus americanus*) populations in Alabama appear to be growing. There are often strong emotional reactions and public disagreement toward how wildlife management agencies respond to human-bear encounters. Heneghan and Morse used data from a mail in survey ($n = 564$) distributed to residents of two distinct regions of Alabama to examine the acceptance of five common black bear management strategies in response to specific human-bear encounter scenarios. They applied the second generation Potential for Conflict Index (PCI2) to estimate the potential for social conflict which may arise due to dissenting opinions toward bear management strategies. Potential for conflict varied according to severity and frequency of the bear encounter and severity of management actions and was greater in rural areas. The authors recommend managers create standardised bear management protocols and a human-bear encounter classification system to maintain consistency and limit negative public reaction to management techniques.

Author: Herrero, S.

Year of Conference: 1987

Title: The role of learning in some fatal grizzly bear attacks on people

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 9-14

Abstract: Between 1967 and 1986, there were 12 fatal attacks by grizzly bears (*Ursus arctos*) on people in Banff, Yellowstone, and Glacier (Montana) National Parks. The circumstances contributing to these deaths are analysed, emphasising the probable importance of changing human recreational behaviour, and of food-conditioning and habituation to people by bears. To minimise the number of deaths and injuries, humans will have to manage food and garbage, the experience of grizzly bears with people, and people's activities, especially camping and grizzly bear photography.

Authors: Herrero, S., and Fleck, S.

Year: 1990

Title: Injury to people inflicted by black, grizzly, or polar bears: Recent trends and new insights

Journal: JSTOR

Volume: 8

Issue: -

Pages: 25-32

Abstract: Herrero and Fleck update or extend data presented by Herrero in 1985. Injury rates were low in the period 1980-1985. The highest rates were 317,700 and 328,645 park visitors per injury inflicted by black or grizzly bear in Kluane and Denali National Parks, respectively. Injury rates calculated against number of backcountry user nights were significantly higher for all parks where injuries occurred, but this exaggerates the danger from bears in backcountry areas since day use is not included. In certain national parks such as Glacier (Montana) there appears to have been an increase in grizzly bear-inflicted injury to persons travelling off-trail. The potential danger from grizzly bears that are habituated to people and/or have learned to feed on people's food or garbage is stressed by focussing on eight fatal, predatory attacks on people in Glacier, Yellowstone, and Banff National Parks between 1967-1986. Habituated grizzly bears may also attract photographers who may be injured or killed by such bears. Carrying dead ungulates or imitating the sounds of prey may attract grizzly bears and this may lead to human injury. Five cases of grizzly bear-inflicted injury (including two deaths) were identified in which this appeared to have been a common circumstance. Additional evidence is cited supporting the idea that grizzly bear injuries inflicted during sudden encounters are most likely to occur in habitat where grizzly bears have been attracted by natural foods during the time when the injury occurred. A thorough search for records dated between about 1965 and 1985 of polar bear-inflicted injury revealed only 20 injurious incidents. In 15 or 16 of these the bear's motivation appeared to have been predation. Six people were killed in such incidents. At least 251 polar bears were killed during aggressive encounters. Only five or six aggressive interactions (three or four leading to human injury) were attributed to females apparently defending their young. Female polar bears appear to be less aggressive toward people in defense of young than are grizzly bears, but more aggressive than black bears.

Authors: Herrero, S., McCrory, W., and Pelchat, B.

Year: 1986

Title: Using grizzly bear habitat evaluations to locate trails and campsites in Kananaskis Provincial Park

Journal: JSTOR

Volume: 6

Issue: -

Pages: 187-193

Abstract: Kananaskis Provincial Park (504 km²) is part of a large outdoor recreation area, Kananaskis Country (approximately 5,200 km²), near the city of Calgary (population 600,000). Kananaskis Country is undergoing major development for outdoor recreation. Recently, approximately \$225 million have been spent on roading, trails, and facility construction. The alpine ski events of the 1988 Winter Olympics will be held within the area. Grizzly bears (*Ursus arctos*) historically ranged throughout Kananaskis Country. Today they are found in about 75% of the area. To maintain grizzly bears and to provide for human safety, a transect method of rating grizzly bear habitat use and potential for use was developed and applied. Four examples are given where information collected in Kananaskis Provincial Park influenced locations of trails or campsites. The transect method is a rapid method of habitat evaluation but is subject to several limitations, which are discussed.

Authors: Herrero, S., Smith, T., DeBryun, T. D., Gunther, K., and Matt, C. A.

Year: 1986

Title: From the field: Brown bear habituation to people-safety, risks, and benefits

Journal: Wildlife Society Bulletin

Volume: 33

Issue: 1

Pages: 362-373

Abstract: Recently, brown bear (*Ursus arctos*) viewing has increased in coastal Alaska and British Columbia, as well as in interior areas such as Yellowstone National Park. Viewing is most often being done under conditions that offer acceptable safety to both people and bears. Herrero and colleagues analyse and comment on the underlying processes that lead brown bears to tolerate people at close range. Although habituation is an important process influencing the distance at which bears tolerate people, other variables also modify levels of bear-to-human tolerance. Because bears may react internally with energetic costs before showing an overt reaction to humans, the authors propose a new term, the Overt Reaction Distance, to emphasise that what people observe is the external reaction of a bear. In this paper the authors conceptually analyse bear viewing in terms of benefits and risks to people and bears. They conclude that managers and policy-makers must develop site-specific plans that identify the extent to which bear-to-human habituation and tolerance will be permitted. The proposed management needs scientific underpinning. Herrero and colleagues believe that bear viewing, where appropriate, may promote conservation of bear populations, habitats, and ecosystems as it instills respect and concern in those who participate.

Author: Holmberg, E.

Year: 2020

Title: It is mostly about money – discussions related to the political decision-making resulting in giant panda moving to Ähtäri Zoo

Editors: M. Lück and C. Liu

Book Title: A kaleidoscope of tourism research. Insights from the International Competence Network for Tourism Research and Education (ICNT).

Publisher: Peter Lang Verlag

Pages: 133-156

Abstract: Holmberg introduces the Finnish Ähtäri Zoo, which has hosted giant pandas as a loan from China since 2018. Analysing published newspaper and Internet articles, Holmberg explores how the controversial political decisions related to accepting the pandas to Finland and Ähtäri Zoo were discussed in Finnish media.

Authors: Honey, M., Johnson, J., Menke, C., Cruz, A. R., Karwacki, J., and Durham, W. H.

Year: 2016

Title: The comparative economic value of bear viewing and bear hunting in the Great Bear Rainforest Provincial Park

Journal: Journal of Ecotourism

Volume: 15

Issue: 3

Pages: 199-240

Abstract: This study is the first to compare the economic value of bear viewing and trophy hunting of both grizzly (*Ursus arctos*) and black bears (*Ursus americanus*) in the Great Bear Rainforest (GBR) in British Columbia (BC), Canada. Honey and colleagues assess trends in these two sectors of wildlife recreation over several decades and analyse their economic impacts based on 2012 data. They examine both non-resident bear hunting with guide outfitters and independent local (resident) hunters, as well as bear viewing offered by tourism companies in the GBR. The authors provide strong evidence that bear viewing in the GBR is generating far more economic value: bear-viewing companies generated over 12 times more in visitor spending than guided non-resident and independent resident hunters combined (\$15.1 million versus \$1.2 million) and 11 times more in government revenues (\$7.3 million versus \$660,500). Such findings should be useful to policy-makers in determining allocations of public resources and priorities for conservation efforts. In the authors' assessment, if bear viewing expands at its current rate, the economy of the GBR will experience few negative impacts from a ban on bear hunting.

Authors: Hopkins, J. B., Herrero, S., Schideler, R. T., Gunther, K. A., Schwartz, C. C., and Kalinowski, S. T.

Year: 2010

Title: A proposed lexicon of terms and concepts for human-bear management in North America

Journal: Ursus

Volume: 21

Issue: 2

Pages: 154-168

Abstract: Hopkins and colleagues believe that communication within and among agency personnel in the United States and Canada about the successes and failures of their human–bear (*Ursidae*) management programmes will increase the effectiveness of these programmes and of bear research. To communicate more effectively, the authors suggest agencies clearly

define terms and concepts used in human–bear management and use them in a consistent manner. They constructed a human–bear management lexicon of terms and concepts using a modified Delphi method to provide a resource that facilitates more effective communication among human–bear management agencies. Specifically, the authors defined 40 terms and concepts in human–bear management and suggest definitions based on discussions with 13 other professionals from the United States and Canada. Although new terms and concepts will emerge in the future and definitions will evolve as we learn more about bear behaviour and ecology, the purpose of this study is to suggest working definitions for terms and concepts to help guide human–bear management and research activities in North America. Applications or revisions of these definitions may be useful outside of North America.

Author: Hossein, T.

Year: 2017

Title: Polar bear wildlife viewing in Eeyou Istchee: An assessment of different perspectives and considerations

Academic Department: Geography, Planning and Environment

University: Simon Fraser University

Thesis Type: Master of Science

Abstract: Wildlife tourism has been proposed as an alternative economic development opportunity for Indigenous communities in the Canadian north. Potential benefits include the employment of community members in land-based activities that enhance cultural identity, contribute to social well-being, support inter-generational knowledge transmission, and promote cross-cultural exchange. The extent to which wildlife tourism delivers on its promise is not well documented and tends to privilege the perspective of external experts over those of community members. Furthermore, a fuller appreciation of community expectations, concerns, and (mis)understandings is often lacking at the outset of a project with implications for its long-term success and acceptance. This thesis examines a polar bear viewing project proposed for the James Bay Cree community of Wemindji. It responds to an invitation from the Wemindji leadership to contribute information on the proposal by addressing two different aspects of the project. Firstly, it avails of geospatial technology to provide a preliminary population survey of the polar bears that can inform an assessment of the economic viability and likely wildlife impact of the project. Secondly, it uses semi-structured interviews with community members to document local perspectives on the project, including local assessments of potential benefits but also local concerns. The results of the population survey show that while geospatial technologies can provide a useful snapshot of polar bear population numbers and location, there are limitations to the accuracy and viability of these methods. The results of the community consultation affirm the value of local insights and the need to take full account of local perspectives before proceeding with a final decision on whether this project should proceed.

Authors: Hughes, K., Ballantyne, R., and Packer, J.

Year: 2014

Title: Comparing Chinese and Western visitors' responses to interpretive signs at Chengdu Research Base of Giant Panda Breeding, China

Journal: Visitor Studies

Volume: 17

Issue: 2

Pages: 137-158

Abstract: Visitor experiences and interpretation at wildlife tourism sites are often designed to encourage visitors to adopt conservation actions. Typically, conservation messages are delivered via one-size-fits-all interpretive signage, with little consideration given to whether

the same information attracts and engages different cultural groups. This study explores Chinese and international visitors' perceptions of signage at the Chengdu Research Base of Giant Panda Breeding in China. Four sign prototypes were designed and a combination of visitor observations, interviews, and exit surveys were used to test their attracting and holding power. Comparisons of Chinese and Western visitors revealed no significant difference in the proportion who stopped to read signs. Preferences for signage elements were also similar across the two cultural groups; however, there were differences in terms of what visitors thought should be included in wildlife interpretation. Implications for the design and delivery of interpretation in Chinese wildlife tourism settings are discussed.

Authors: Humane Society of the United States

Year: 2013

Title: On thin ice: The dangerous impact of allowing polar bear trophy imports: The potential consequences of S. 3525 & H.R. 4089

City/State: Washington, D.C.

Institution: Humane Society of the United States

Date: 2013

Abstract: In January 2007, the U.S. Fish and Wildlife Service (FWS) issued a proposed rule to list the polar bear as a threatened species under the Endangered Species Act (ESA). On May 15, 2008 this rule took effect. Despite having more than a year's notice of the impending ban on polar bear trophy imports, a number of trophy hunters rushed to Canada to hunt polar bears and predictably failed to get their imports approved before the ESA listing was finalised. Now 41 trophy hunters are seeking an undeserved legislative bailout from Congress, which if allowed, will further imperil the threatened polar bear.

Polar bears are found exclusively in the Arctic. Of the 19 populations left in the world, 13 are in Canada. Polar bears are a threatened species that face extraordinary pressures, including melting ice, overharvesting, and pollution. The International Union for Conservation of Nature (IUCN) listed the polar bear as "Vulnerable" based on a projected population reduction of more than 30 percent within three generations (45 years) due to a decrease in distribution and habitat quality.

Allowing the importation of currently stored trophies, even if it is declared to be a one-time amnesty, will dramatically increase the incentive for U.S. hunters to collect and store more polar bear trophies and start lobbying their allies in Congress for the next "one-time" amnesty. It will also encourage hunters to accelerate the pace of killing any other species proposed for ESA-listing in the future, up to the day such listing becomes effective, because hunters would have every reason to believe that Congress will simply exempt them from the law at some future date and eventually allow them to import their trophies.

Trophy hunting of polar bears offers no substantial economic or conservation benefits. Sport hunting does not contribute to economic development, but merely brings in a small amount of cash, most of it for commercial guides and outfitters, not for conservation efforts. Much of the revenue for many Inuit communities comes from Canada's government assistance, and the total amount spent on polar bear hunting tourism is only about 1% of the cash received through these assistance payments. Therefore, the magnitude of revenue from polar bear hunting is extremely small, and largely inflated by the rhetoric of polar bear trophy hunting advocates.

Commercial hunting of polar bears does not create an economic incentive for local communities to better protect the species or ensure its long-term viability. If anything, it encourages Canadian wildlife agencies to increase quotas and allow more killing of these imperilled animals. The extra income for a local guide operation creates incentive to generate immediate personal income without regard to future income that is shared across the region. Only regional or national policies, not individual profits, are likely to provide protection for

the polar bear. Furthermore, much of the income may not reach the impoverished communities. The Nunavut newspaper, Nunatsiaq News, concluded in 2005 that “most of the [financial benefits from sport hunts] never reach Inuit hands.”

These trophy hunters are not representative of the average American hunter. They are wealthy individuals who have \$30,000-\$50,000 to spend on a single hunt. Many of the 41 trophy hunters are collectors of exotic animals that they have shot around the world. Their motivation is often pure bragging rights, the ability to boast having the most or the largest trophies and enter them into record books, without regard for genuine conservation. The potentially harmful consequences facing polar bears if a bailout is granted greatly outweigh the selfish desire for a head or hide in a private showcase. The millions of rank-and-file sportsmen and sportswomen in the U.S. would never dream of killing a polar bear, and do not benefit from a bailout for 41 wealthy polar bear hunters.

The polar bear is inherently unsuitable as a target for sport hunting. It is a naturally rare species that relies on high adult survival, has a low birth rate and high cub mortality, inhabits a marginal environment, and is extremely vulnerable to the effects of habitat degradation triggered by climate change and pollution. Trophy hunters preferentially select the largest adults, which genetically may be the individuals that are most needed to sustain population numbers.

J

Authors: Johansson, M., Flykt, A., Frank, J., and Støen, O.-G.

Year: 2019

Title: Controlled exposure reduces fear of brown bears

Journal: Human Dimensions of Wildlife

Volume: 24

Issue: 4

Pages: 363-379

Abstract: Fear of large carnivores such as brown bears may restrict people’s outdoor activities regardless of experts’ estimated risk of attack. This study empirically examined three exposure interventions in the form of guided walks intended to give people living in brown bear areas tools for coping with their fear. All interventions significantly reduced fear, decreased people’s perceived vulnerability, and increased their social trust in wildlife management authorities. The walk including an encounter with a radio-collared bear in a wild bear habitat resulted in the largest reduction in fear, followed by the walk in the wild bear habitat only and then the walk in a park with captive bears. The wild bear habitat walk was the intervention best suited for further development as it may be used in any area where bears occur and without affecting animal welfare.

Authors: Johansson, M., Karlsson, J., Pedersen, E., and Flykt, A.

Year: 2012

Title: Factors governing fear of brown bear and wolf

Journal: Human Dimensions of Wildlife

Volume: 17

Issue: 1

Pages: 58-74

Abstract: This article analyses people's subjectively experienced fear in areas with presence of brown bear or wolf. Departing from the Human-Environment Interaction Model, a hypothetical model of environmental and individual antecedents of fear was tested using structural equation modelling of survey data ($n = 391$). In the model of fear of brown bear, the main predictor was the appraisal of the species as dangerous/uncontrollable and unpredictable.

In the model of fear of wolf, the greater experience with the species and a stronger appraisal of wolf as dangerous, uncontrollable, and unpredictable led to low social trust and this, together with the appraisal of wolf as dangerous/uncontrollable and unpredictable, increased the likelihood of fear. Efforts to reduce human fear of wolves should focus on building trust between the public and authorities, whereas efforts to reduce fear of brown bear should focus on the individual's appraisal of the species.

Authors: Johansson, M., Støen, O.-G., and Flykt, A.

Year: 2016

Title: Exposure as an intervention to address human fear of bears

Journal: Human Dimensions of Wildlife

Volume: 21

Issue: 4

Pages: 311-327

Abstract: People who live in brown bear areas often fear encounters with these animals. This article evaluated the potential effect of exposure to bears and their habitats on human fear of brown bears using the modelling of appropriate behaviour when close to bears. In a within-subject design, 25 persons who reported to be fearful of brown bears participated in a guided walk approaching approximately 50 m of a brown bear in its daybed and in a guided forest walk in bear habitat. The presentation order was reversed for half of the group. The participants reported significantly reduced feelings of fear after the bear walk, but not after the forest walk. There were no corresponding significant effects for the experimental measures of fear-related responses. The results partially support the notion that exposure to the object of fear, such as a bear habitat with presence of a bear, might be a feasible intervention to reduce peoples' feeling of fear, but the design of the intervention must be developed further before it can be used in practice.

Author: Johnston, M. E.

Year: 1997

Title: Polar tourism regulation strategies: Controlling visitors through codes of conduct and legislation

Journal: Polar Record

Volume: 33

Issue: 184

Pages: 13-20

Abstract: Controlling visitor impacts in polar regions continues to be important in both the Antarctic and Arctic. Concerns relate to impacts on the physical environment, cultural heritage, and host communities or scientific bases, as well as a recognition that safety and liability are major issues for governments, commercial operators, and local populations. Strategies for controlling tourists include visitor and operator codes and formal legislation. This paper summarises several approaches to visitor regulation in polar regions in order to illustrate the ways in which concerns about tourist impacts are being addressed. Similar issues arise throughout the polar regions, although in some places a particular emphasis might indicate a specific area of concern for a community, region, nation, or segment of the tourism industry. While a comprehensive strategy might be appropriate in many respects in the Arctic, it is also important to acknowledge the significance of more specific concerns. This paper first describes regulation of tourist behaviour and considers general issues of strategy effectiveness. Then it examines the approaches to visitor regulation used in the Antarctic and on Svalbard as examples that may be of use in the further development of strategies in the Arctic. The paper then discusses an evolving strategy for control in the Northwest Territories, Canada. This

strategy differs from these other approaches in that it targets a specific segment of the visitor population: those undertaking adventure expeditions.

Author: Johnston, M. E.

Year: 2006

Title: Impacts of global environmental change on tourism in the polar regions

Editors: S. Gössling and C. M. Hall

Book Title: Tourism and global environmental change

Publisher: Routledge

Pages: 37-53

Abstract: Local effects of global environmental change have been evidenced in both the Arctic and the Antarctic, causing changes, for example, in snow and ice conditions, in vegetation patterns and in animal behaviour. These effects are coincident with changes in opportunities for human activity by local people and visitors. Given that tourism in the polar regions has been largely dependent on scenic landscape attractions, such as snow and ice and access to wildlife populations, there is the potential for major change in this industry. This chapter describes predicted impacts of climate change in these regions and those that are already occurring. It outlines current patterns in polar tourism and identifies several challenges to the tourism industry related to infrastructure, access and attractions. The chapter describes opportunities and challenges created by the local effects of global environmental change and it concludes with the significance of such changes for tourism in the polar regions.

Authors: Jones, M. D., Berl, J. L., Tri, A. N., Edwards, J. W., and Spiker, H. A.

Year: 2017

Title: Fine-scale movements and spatial behaviors of bear hunters: Combining GPS with survey methods

Journal: Human Dimensions of Wildlife

Volume: 22

Issue: 4

Pages: 362-373

Abstract: Traditionally, information on hunter behaviour has been obtained from questionnaires, which are useful, but provide limited information on spatial movements and behaviours. Jones and colleagues used a global positioning system (GPS) to track movements of black bear hunters and determine if harvest success was influenced by effort (e.g., time spent afield) and spatial behaviours (e.g., distance travelled from roads). Furthermore, the authors used mail questionnaires to determine whether hunter perceptions of space use and effort differed from reality (GPS data). Most spatial variables did not differ between hunters and study area averages, indicating that hunters did not select for landscape characteristics differently than expected based on availability. The questionnaires were generally unreliable in describing space use, as hunters overestimated distance travelled from roads and underestimated distances travelled while afield. Studies should consider GPS to obtain more accurate assessments of behaviours while afield. When combined with questionnaire information, GPS data can reveal correction factors to improve spatial behaviour estimates.

Authors: Kasworm, W.F., and Manley, T.L.

Year: 1990

Title: Road and trail influences on grizzly bears and black bears in northwest Montana

Journal: JSTOR

Volume: 8

Issue: -

Pages: 79-84

Abstract: Radio locations from three grizzly bears (*Ursus arctos*) and 26 black bears (*U. americanus*) in the Cabinet Mountains of northwest Montana were analysed to determine the effects of roads and trails on seasonal habitat use patterns from 1983 to 1988. Two seasons, spring and fall, were identified based on food habits and habitat use. Distances from radio locations to the nearest open road and trail were compared to distances from random points to the nearest road and trail. Grizzly bears used habitat 0-914 m from open roads less than expected based on availability during spring and fall ($P < 0.05$). Black bears used habitat 0-274 m from open roads less than expected during spring and used habitat 0-914 m from roads less than expected during fall. Grizzly bears used habitat 0-122 m from trails less than expected during spring and fall. Black bears used habitat 0-122 m from trails less than expected during spring and used habitat 0-305 m from trails less than expected during fall. Habitat availability appeared related to grizzly bear avoidance of trails, and black bear avoidance of roads and trails. Mean distance from grizzly bear radio locations to a seasonally closed road increased when the road was opened ($P < 0.001$), though black bear locations did not ($P = 0.324$). The benefits of road closures in bear management were discussed.

Author: Keating, J. M.

Year: 2017

Title: The inevitable fusion: A mixed-methods sociological approach to comprehensive Kodiak bear viewing management

Academic Department: Sociology, Social Work, and Anthropology

University: Utah State University

Thesis Type: Master of Science (MSc)

Abstract: The Kodiak National Wildlife Refuge is home to one of the highest concentrations of brown bears in Alaska. As the public demand for bear viewing opportunities continues to increase, managers are faced with the challenge of accommodating this new kind of visitor use on a refuge that was traditionally managed for the sustainable hunting of bears. To inform the public use management planning process, the Kodiak Refuge allocated funding to support social science research that objectively assessed the current nature of bear viewing opportunities and the factors that influence the quality of those opportunities. Ecologist Aldo Leopold claimed that the outstanding advance of modern ecology would be the “inevitable fusion” of the social and natural sciences. Therefore, a conjoint constitution framework enabled this study to examine the active interplay of social and environmental factors in a bear viewing experience.

Two seasons of research were conducted in partnership with Utah State University. The first season employed qualitative research methods to conduct detailed interviews with a wide variety of bear viewing stakeholders in Kodiak. This process informed the creation of a survey measurement tool that was administered to bear viewers the following summer. Survey results suggest that seeing a larger number of bears and seeing big bears are trip characteristics associated with higher satisfaction among visitors, while closer proximity to bears is associated with learning more about bear behaviour.

The environmental sociology principle of “conjoint constitution” guided both phases of research by helping to examine how social and physical factors interact with one another to create trip outcomes. Just as there are ongoing biological inventory and monitoring processes that inform refuge management, there should be inventory and monitoring of human activity and the fluent sociological factors influencing the nature of that activity. As the Kodiak Refuge continues its public use planning process, the ongoing integration of both biological and social science data will be critical.

Authors: Keating, J. M., and Krannich, R. S.

Year: 2020

Title: An assessment of factors influencing bear viewing experiences on the Kodiak National Wildlife Refuge: Implications for management

Journal: Human Dimensions of Wildlife

Volume: 25

Issue: 3

Pages: 268-280

Abstract: The Kodiak National Wildlife Refuge in Alaska called for an assessment of visitor experiences at the Frazer bear viewing area. A two-phase visitor survey in 2016 reached $\geq 74\%$ of total Frazer bear viewers, achieving a 91% response rate ($n = 506$) for the intercept portion and a 43% response rate ($n = 219$) for the online portion. Analysis revealed that the number of bears and fish ladder structures were associated with high overall trip satisfaction. Negative perceptions of artificial structures were associated with specific prior bear viewing experiences, but were not associated with the motivation of seeking a wilderness experience. Since 93% of respondents were satisfied or highly satisfied, understanding individual factors associated with satisfaction has greater utility than assessing overall satisfaction. Managers often intend for viewing to produce broader benefits for bears through visitor education efforts. Efforts could benefit from understanding the role of specific visitor motivations and expectations.

Authors: Keay, J. A., and Webb, M. G.

Year of Conference: 1987

Title: Effectiveness of human-bear management at protecting visitors and property in Yosemite National Park

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 145-154

Abstract: Yosemite National Park initiated an intensive human/bear management programme in 1975 to restore the natural abundance, behaviour and ecological integrity of the black bear (*Ursus americanus*) population, and provide for the safety of visitors and their property. The programme included (1) public information and education, (2) removal of artificial food sources, (3) law enforcement, (4) control of problem bears, and (5) research and monitoring. There was a significant reduction in property damage incidents during the 12-year reporting period in four of five front-country management subdistricts. There was no significant decrease in property damage incidents in the back-country or Wawona front-country subdistricts. The number of personal injuries declined significantly throughout the park. The programme was most successful where all five programme elements were fully implemented. Public information messages must be strongly worded and motivating to be effective. Strict law enforcement may be an alternative motivational method. Food and refuse storage facilities must be easy to use, readily available, and effective. Bears presented with gradually reduced availability of food developed more sophisticated behaviours that permitted access to human foods during the study. Removal of such animals may be necessary.

Authors: Kojola, I., and Heikkinen, S.

Year: 2012

Title: Problem brown bears *Ursus arctos* in Finland in relation to bear feeding for tourism purposes and the density of bears and humans

Journal: Wildlife Biology

Volume: 18

Issue: 3

Pages: 258-152

Abstract: The practice of feeding brown bears (*Ursus arctos*) for recreational purposes is common in the easternmost areas of Finland, but this may result in human-habituated bears. From 1995 to 2008, 3% of all bears killed by humans (N = 1,108 bears) in Finland represented incidents where bears were either killed for reasons of human safety under a license issued by the police or as a result of actual emergency situations where bears were shot in self-defence. Kojola and Heikkinen constructed binary logistic regression models for comparing bears shot under police license and in self-defence with bears killed in regular sport hunting by using the sex of the bear, human density, bear observation density and the distance from the nearest feeding site as independent variables. High human density was the most important factor differentiating bears shot under a license issued by police from bears killed in sport hunting. The difference in human density was largest for places located far from feeding sites. Increasing distance from feeding sites differentiated bears shot under police license and in self-defence from sport hunted bears. The sex of the bears and the density of bear observation were more weakly associated with the category of shooting. The study did not provide evidence that bear feeding for recreational purposes is associated with the nuisance-bear problem in Finland. Nevertheless, some risks for human safety might be associated with artificial bear feeding for tourism purposes. If the practice of feeding bears continues to be accepted by Finnish legislation, game management should include an action plan for occasions when bears visiting feeding sites will lose their wariness of humans.

Author: Kølhi, J. K.

Year: 2010

Title: Stakeholder views on grizzly bear management in the Banff-Bow valley: A before-after Q methodology study.

Academic Department: School of Resource and Environmental Management

University: Simon Fraser University

Thesis Type: Understanding stakeholder views is essential for successful wildlife management. This study used Q methodology with a before–after approach to explore stakeholder views about the problems and solutions related to grizzly bear management in the Banff-Bow valley of Alberta, Canada. This research, conducted in 2008, followed up on a previous Q study conducted in 2004. A meta-analysis of the before and after factors revealed that some changes in views had occurred between the summers of 2004 and 2008. Interviews also supported the finding that the views of the participants had changed and revealed that the factors most frequently identified by participants as having influenced their views between the before and after Q studies were: Research about grizzly bears; the occurrence of grizzly bear mortalities; and a series of “interdisciplinary problem solving” stakeholder workshops and meetings about grizzly bear management.

Authors: Kretser, H. E., Curtis, P. D., and Knuth, B. A.

Year: 2009

Title: Landscape, social, and spatial influence on perceptions of human-black bear interactions in the Adirondack Park, NY

Journal: Human Dimensions of Wildlife

Volume: 14

Issue: 6

Pages: 393-406

Abstract: Effective methods to identify areas and people prone to human–wildlife conflicts help wildlife and land managers develop strategies that minimise unwanted human–wildlife interactions. Kretser and colleagues combined landscape variables (i.e., housing density, habitat quality) with data on local land use practices and socio-demographics from a mail survey of 730 landowners to anticipate perceptions of human–black bear (*Ursus americanus*) interactions in the Adirondack Park in Northern New York, USA. Generalised linear models indicated that specific experiences (e.g., bears approaching people), general concerns about wildlife, and actual property damage were most closely related to perceiving a negative interaction with bears. Similar perceptions of human–bear interactions were spatially clustered. Negative and indifferent perceptions of bear interactions were associated with less support for wildlife protection programmes. Strategies fostering information exchange between wildlife managers and land use planners may be effective in limiting human–bear interactions before landowners have conflicts.

Authors: Kubo, T., and Shoji, Y.

Year: 2016

Title: Demand for bear viewing hikes: Implications for balancing visitor satisfaction with safety in protected areas

Journal: Journal of Outdoor Recreation and Tourism

Volume: 16

Issue: December 2016

Pages: 44-49

Abstract: Wildlife viewing is a popular activity in wilderness recreation areas. However, a desire to avoid human–wildlife conflicts often results in trail restrictions. Though meant to safeguard visitor safety, these restrictions can curtail park visitors' opportunities to see wildlife against their wishes and limit a park's economic benefits for the local community. Visitor demand for wildlife viewing must be balanced against the need for public safety. Little research has been conducted on the balance between wildlife-viewing opportunities and human safety. This study uses a discrete choice experiment to quantify park visitors' willingness to pay to view brown bears (*Ursus arctos*) on hiking trails in Japan's Daisetsuzan National Park. A latent class model is applied to capture preference heterogeneity among park visitors. The results reveal that two visitor groups—non-local and local—are involved. Non-local visitors evince significant demand for bear viewing and bear-related lectures from trained guides. They also prefer group tours and round-trip hikes that include currently restricted areas. On the other hand, local visitors are not interested in either bear viewing or group tours; they do not want extra information from the guide but prefer to hike to the closest destination from the trailhead. These results suggest that implementing a variety of zoning management practices and well-designed nature-based tours in bear habitat areas can improve visitor satisfaction and provide new economic benefits while also protecting visitors from bear attacks.

L

Authors: Lakes, R. M., and Sharp, R.

Year: 2015

Title: Visitor perceptions of black bear management options in Big South Fork National River and Recreation Area, USA.

Journal: Human Dimensions of Wildlife

Volume: 20

Issue: 2

Pages: 185-1187

Abstract: The article presents information on visitor perceptions of black bear management options in Big South Fork National River and Recreation Area (BISO) in Tennessee and Kentucky. Data were gained from an onsite intercept survey of individuals over 18 years of age who toured BISO in the summer and fall of 2013. Visitors were chosen randomly and the sample was stratified by day of week, hour of day, and areas in the park.

Author: Lemelin, R. H.

Year: 2008

Title: The gawk, the glance, and the gaze: Ocular consumption and polar bear tourism in Churchill, Manitoba Canada

Journal: Current Issues in Tourism

Volume: 9

Issue: 6

Pages: 516-534

Abstract: Photography is an integral component in the observation of fauna in protected areas. The importance of photography to wildlife tourism should come as no surprise since the relationship between photography and tourism has been well documented. Behavioural observations and interviews conducted with polar bear viewers visiting the Churchill Wildlife Management Area near Churchill, Manitoba revealed motivations closely resembling what some authors have termed as ocular consumption. This paper examines the relation between photography, the wildlife tourist gaze, and ocular consumption, and applies these concepts to one particular field setting.

Author: Lemelin, R. H.

Year: 2008

Title: Human-polar bear interactions in Churchill, Manitoba: The socio-ecological perspective

Editors: J. Higham and M. Lück

Book Title: Marine wildlife and tourism management: Insights from the natural and social sciences

Publisher: CAB International

Pages: 91-108

Abstract: For over four decades Churchill, Manitoba (Canada), has been known as ‘the polar bear capital of the world’, receiving thousands of bear-viewing tourists annually, frequent international media exposure and scientific attention from around the world. The Canadian Wildlife Service’s polar bear research programme, established in Churchill in 1966, is one of the world’s most intensive, long-term studies of any large mammal. Surprisingly, despite this profile and the abundance of scientific research conducted in this region, the human dimensions of polar bear tourism has until recently been relatively ignored. Considering the role of various stakeholders in the development of polar bear tourism in Churchill, this is a serious omission, an oversight that is addressed in this chapter.

This chapter examines polar bear–human interactions in the Churchill area, while paying close attention to the growing wildlife tourism industry (i.e. polar bear tourism) at the end of the 20th century, and the role of the community of Churchill, if any, in the management of polar bears. The chapter begins by providing a literature review of wildlife tourism, followed by an historical overview of the Churchill region of Canada. Next is a detailed examination of four eras of polar bear–human interactions in the region. An overview of legislation and regulations is then provided, followed by a discussion and conclusion.

Authors: Lemelin, H., Dawson, J., Stewart, E. J., Maher, P., and Lück, M.

Year: 2009

Title: Last-chance tourism: The boom, doom, and gloom of visiting vanishing destinations

Journal: Current Issues in Tourism

Volume: 13

Issue: 5

Pages: 477-493

Abstract: Popular press and industry stakeholders are reporting a travel trend whereby tourists increasingly seek to experience the world's most endangered sites before they vanish or are irrevocably transformed. Termed 'last-chance' or 'doom' tourism in the popular media, the desire for tourists to witness vanishing landscapes or seascapes and disappearing species may have important consequences for tourism management, yet the nature of these consequences is poorly understood by the academic community. This paper describes how last-chance tourism is promoted in various tourism marketing strategies, especially in the Arctic. The analysis is supported through a literature review of web-based information and an analysis of three different studies conducted in Churchill, Manitoba, Canada – the self-declared polar bear capital of the world. The authors also examine more closely the concepts of dark and last-chance tourism, and elaborate on the possible connections between the two. The paper concludes with a discussion of the implications of this type of tourism and identifies potential risks and opportunities.

Authors: Lemelin, R. H., and Dyck, M.

Year: 2008

Title: New frontiers in marine wildlife tourism: An international overview of polar bear tourism management strategies

Editors: J. Higham and M. Lück

Book Title: Marine wildlife and tourism management: Insights from the natural and social sciences

Publisher: CAB International

Pages: 361-379

Abstract: From cultural conflicts between ecotourists and Inuit guides, to aggressive interactions with humans in protected areas, and proposed legislative changes to the status in North America (USA and Canada), polar bears (*Ursus maritimus*) have become synonymous, at least from a media perspective, with increasing human–polar bear interactions and climate change. This growing media awareness has in some cases resulted in increasing concerns for polar bears, while for others, it has piqued interest, and consequently stimulated a demand to view polar bears in their natural environment.

Wildlife viewing, also referred to as wildlife tourism, is considered one of the fastest growing outdoor activities in the world. The demand for bear-viewing programmes as a specialised form of wildlife tourism has gained wide acceptance, and during the past decade numerous bear-viewing sites managed by various wildlife agencies (i.e. viewing brown bears at Brooks Falls in Katmai National Park, Alaska [managed by the US National Parks

Service]; Knight Inlet, [managed by the BC Ministry of Water, Land and Air Protection]) have been established. The growth of polar tourism and polar bear tourism (PBT) and the subsequent changes in the arctic will require adaptive, multidisciplinary and comprehensive management strategies. Understanding this growth, while also acknowledging the potential for impacts of tourism on local communities, both indigenous and non-indigenous have often been overlooked by researchers. That said, research examining the human dimensions of PBT is emerging.

Through a closer examination of existing management strategies and research on the human dimensions of PBT, this chapter attempts to provide an overview of five international PBT destinations, including: Barrow and Kaktovik, Alaska, USA; Polar Bear Provincial Park (PBPP), Ontario, Canada; the Svalbard Archipelago (SA), Norway; Ukkusiksalik National Park (UNP), Nunavut, Canada; and Wrangel Island, Russia. These destinations were selected because the frequency and the reliability of polar bear sightings have, to some extent, promoted PBT. Particular attention will also be paid to the types of PBT opportunities currently offered and the visitor management strategies that are implemented at these locations. Churchill, Manitoba, Canada, also known as the ‘polar bear capital of the world’, will not be addressed in this chapter because an extensive overview of this particular PBT destination is provided in Chapter 5 of the same volume (see Lemelin, 2007 in this bibliography).

Tourism impacts can be especially acute for mammals and the coastal areas that these animals frequent. The latter impacts are the focus of this chapter, especially as they relate to human dimensions and visitor management frameworks, and these will be highlighted through an examination of existing or non-existing management plans. As will be demonstrated, information pertaining to human–polar bear management is quite variable, with extensive details available for some destinations and virtually no data available for others.

Two caveats are required to explain the authors’ approach. First, the authors are relatively aware of current ongoing polar bear research, and in fact, one of the authors is a polar bear biologist. However, this chapter only examines the human dimensions of polar bear management and research dealing strictly with PBT. Second, while some work has been conducted on consumptive approaches to polar bears (e.g. community-based polar bear trophy hunts, Lemelin and Dyck define PBT in this context as viewing, photographing and otherwise interacting with polar bears in their natural environment without an intent to consume (i.e. not killing and eating the animal). This is the first attempt at providing an international overview of the PBT from a social perspective. The analysis is based on a literature review and on information collected through correspondence with resource managers. These sources have been supplemented by the personal experience and knowledge of the authors.

Authors: Lemelin, R. H., Fennell, D., and Smale, B.

Year: 2008

Title: Polar bear viewers as deep ecotourists: How specialised are they?

Journal: Journal of Sustainable Tourism

Volume: 16

Issue: 1

Pages: 42-62

Abstract: 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.

Authors: Lemelin, R. H., McCarville, R., and Smale, B. J. A.

Year: 2008

Title: The effects of context on reports of fair price for wildlife viewing opportunities

Journal: Journal of Park and Recreation Administration

Volume: 24

Issue: 3

Pages: 50-71

Abstract: Managers of a protected wilderness area were considering instituting access fees and local private operators feared such fees would discourage future visitation. Lemelin and colleagues considered various ways in which the impact of these fees might be ameliorated. They did this by returning to an approach that had first been explored decades ago, that of explaining to visitors how such fees might be used. The authors offered visitors to a wildlife management area a range of possible future price levels. They then provided them with contextual messages describing the eventual purposes for which the funds were intended. Specifically, a total of 262 polar bear observers were provided with hypothetical information (i.e., that conservation fees were being considered for the site they were currently visiting) then a range of possible fee increases was given. Treatment groups were provided with additional messages outlining benefits to visitors (access to pristine and unique natural areas) and/or wildlife (revenues would be used to monitor, protect, and study bear populations). The authors then asked them to report a fee level they considered as “fair”. Lemelin and colleagues found that the visitors were quite receptive to the price levels being considered by the public agency. Clearly, the thought of new fees did not always generate hostility. In descriptive terms, the authors offered a range of possible new fee levels and almost all of respondents’ estimates of a fair price fell within that range. This insight is particularly useful in the context of first-time fees. Analyses suggested that some personal factors (e.g., prior experience, environmental attitude) contributed to variations in price reactions reported by the visitors. However, the different messages outlining a variety of benefits to be enjoyed through fee payment were largely ineffective in altering fair price levels. Perhaps the proposed fee levels were so low, when compared to total costs incurred to visit the area that minor contextual variations were rendered irrelevant. The study findings suggest that contextual messages used to justify or explain fee increases may be ineffective or unnecessary when small price increases are being discussed.

Authors: Lemelin, H., and Maher, P.

Year: 2009

Title: Nanuk of the Torngats: Human-polar bear interactions in the Torngat Mountains National Park, Newfoundland and Labrador, Canada

Journal: Human Dimensions of Wildlife

Volume: 14

Issue: 2

Pages: 152-155

Abstract: Visitors to Canada's newest national park, Torngat Mountains National Park (TMNP), currently consist of reporters, researchers, tourists, and local Inuit from both Nunatsiavut in northern Labrador and Nunavik in northern Quebec. The national park features spectacular scenery and several types of charismatic mega-fauna, including caribou, whales, and polar bears. Isolated and difficult to access, the park's current approach to managing

human–bear interactions, the backbone of which is trained Inuit guides and bear-monitors, has been quite effective. However, as traditional activities by Inuit, and the number of visitors and types of tourists to the area increase, there may be a need by the park management to re-examine current polar bear management strategies.

Authors: Lemelin, R. H., and Smale, B.

Year: 2006

Title: Effects of environmental context on the experience of polar bear viewers in Churchill, Manitoba

Journal: Journal of Ecotourism

Volume: 5

Issue: 3

Pages: 176-191

Abstract: Despite the recent growth of wildlife viewing, research on the human dimensions of wildlife tourism in protected areas has been limited. This is surprising because if no monitoring is done, then understanding and responding appropriately to both the benefits and impacts of wildlife tourism in protected areas is almost impossible. In this study, data were gathered on the character of organised outings made by wildlife viewers visiting Churchill, Manitoba to see polar bears *in situ*. The purpose of the study was to examine the effect of selected environmental factors, such as numbers of wildlife seen, amount of wildlife activity, and overall visibility, on the social dynamics and experience of the wildlife tourists. Results indicate that the number of polar bears seen is the only factor directly related to viewer attentiveness and group dynamics, and importantly, on-site satisfaction with the experience.

Authors: Lemelin, R. H., and Smale, B.

Year: 2007

Title: Wildlife tourist archetypes: Are all polar bear viewers in Churchill, Manitoba ecotourists?

Journal: Tourism in Marine Environments

Volume: 4

Issue: 2-3

Pages: 97-111

Abstract: Ecotourists have largely been defined in the literature a priori based on their geographic location (e.g., visitors to designated natural areas) and/or exhibited behaviours (e.g., engagement in nature viewing such as bird watching or camping). However, such definitions fail to consider whether these individuals do indeed embrace the psychological makeup that would qualify them as "real" ecotourists based on ecotourist ideal types. This study derives a profile of wildlife tourists based on their psychographic characteristics as suggested by conceptual definitions of ecotourists and wildlife tourism in particular. Essentially, the question underlying the study was to determine if all wildlife tourists do, in fact, share those characteristics typically assumed in the literature to be inherent to ecotourism.

Authors: Lemelin, R. H., and Wiersma, E. C.

Year: 2007

Title: Perceptions of polar bear tourists: A qualitative analysis

Journal: Human Dimensions of Wildlife

Volume: 12

Issue: 1

Pages: 45-52

Abstract: A number of themes and concepts emerged from 18 interviews conducted with polar bear tourists visiting the Churchill Wildlife Management Area, near Churchill, Manitoba. This article focuses on themes relating to environmental dimensions of polar bear tourism. These include environmental concerns, rationalisation of wildlife tourism, and perceptions of environmental impacts. By focusing on the human dimensions of wildlife tourism in protected areas, this study provided an opportunity to acquire an understanding of perceived management roles in these protected areas, as well as perceived impacts of the polar bear viewing industry.

Authors: Li, C., Lee, D., Wu, B., and Morrison, A.

Year of Conference: 2014

Title: Tourist perception of risk: Chengdu research base for giant panda breeding (CRBGPB)

Conference Name: CAUTHE 2014: Tourism and Hospitality in the contemporary world: Trends, changes and complexity

Conference Location: Brisbane, QLD, Australia

Pages: 375-391

Abstract: The aim of this paper is to provide insight into wildlife tourists' risk perceptions relevant to the experience of interacting with giant pandas in a semi-captive setting. A survey of tourists to the Chengdu Research Base for Giant Panda Breeding (CRBGPB) resulted in 650 valid questionnaires. Descriptive statistics, independent-samples t-tests and one-way analysis of variances (ANOVAs) were used to explore the influence of demographic characteristics and tourist behaviour on risk perception. Perceptions relating to risks associated with the quality of the tourism experience were the highest, whilst physical risk perception was the lowest. The most important finding was that risk perception for the CRBGPB experience was low.

Authors: Li, H., Li, D., Li, T., Qiao, Q., Tang, J., and Zhang, H.

Year: 2010

Title: Application of least-cost path model to identify a giant panda dispersal corridor network after the Wenchuan earthquake – Case study of Wolong Nature Reserve in China

Journal: Ecological Modelling

Volume: 221

Issue: 6

Pages: 944-952

Abstract: With growing levels of human-activity and frequent natural disturbances throughout the world, it is increasingly important that both research and management efforts take into account the widespread landscape fragmentation and its consequences for biodiversity conservation. The magnitude 5.12 Wenchuan earthquake in China caused dramatic impacts on giant panda (*Ailuropoda melanoleuca*) habitat in the nature reserves within Minshan and Qionglai mountains. With the combined stresses of the natural disaster and the extensive human activities during post-quake reconstruction, giant panda habitat in this region may become more fragmented in the future. In order to preserve the giant panda population after the earthquake and protect the species against habitat fragmentation, this article explores a method of identifying giant panda migration corridors involving habitat suitability assessments and a least-cost path model. Focusing on post-quake Wolong Nature Reserve, the results

demonstrate that it contains 430.3 km² of suitable habitat (21.1% of total area), 463.8 km² of marginally suitable habitat (22.8%) and 1141.9 km² of unsuitable habitat (50.1%). The authors further show that several giant panda dispersal corridors exist in the reserve, including four corridor groups that cross the provincial highway and five corridors that do not intersect areas of human activity. This study will contribute to management and conservation efforts in Wolong Nature Reserve and beyond after the Wenchuan earthquake.

Authors: Li, W., Liu, H., and Gao, Z.

Year: 2007

Title: A preliminary design of giant panda itineraries in Sichuan

Journal: Forestry Economics

Volume: 10

Issue: -

Pages: -

Abstract: Based on an objective analysis of giant panda tourists, the itineraries for giant panda ecological tourism and mass tourism are designed under the guidance of the Master Plan of Sichuan Tourism by making a good use of the special tourism resources like Sichuan Giant Panda Natural Reserve and Giant Panda Scientific Research and Breeding Center, offering a scientific perspective for Sichuan to realise the transition from tourism resource-abundant province to tourism economy-powerful province.

Authors: Linnell, J. D. C., Swenson, J. E., Andersen, R., and Barnes, B.

Year: 2000

Title: How vulnerable are denning bears to disturbances?

Journal: Wildlife Society Bulletin

Volume: 28

Issue: 2

Pages: 400-413

Abstract: When exposed to human disturbance, most large carnivores are able to move away from the source with little energetic cost. Bears represent an exception in that during winter, most individuals spend several months in an energy-saving state of hibernation in a den. This implies that disturbance of denning bears has the potential to have a large energetic cost, although data on the subject are rather diffuse. Linnell and colleagues reviewed the literature on den-site selection, denning physiology, and responses to disturbance for the brown bear (*Ursus arctos*), black bear (*U. americanus*), and polar bear (*U. maritimus*). Generally, bears select dens one to 2 km from human activity (roads, habitation, industrial activity) and seemed to tolerate most activities that occurred more than one kilometre from the den. Activity closer than one kilometre and especially within 200 m caused variable responses. Some bears tolerate disturbance even inside the den, but bears will abandon dens in response to activity within this zone, especially early in the denning period. Den abandonment by brown and black bear females with cubs of the year can lead to increased cub mortality. Specific excavated or ground dens are rarely reused, whereas natural caves or hollow trees are reused with varying frequency. There is often some distance between an individual bear's consecutive dens. This indicates that loss of a single denning area following human disturbance will not always lead to deleterious effects, if alternative denning areas are available within the home range.

Authors: Liu, H.-L., and Sharp, R. L.

Year: 2018

Title: Influence of attitudes toward wildlife on preferences for management of American black bears

Journal: *Ursus*

Volume: 29

Issue: 1

Pages: 32-42

Abstract: Applying an integrative approach incorporating attitudes toward wildlife in general and toward a specific species (American black bear [*Ursus americanus*]) can help land managers make decisions about the complex issue of human–bear interactions. The purpose of this study was to (1) assess park visitors’ attitudes toward wildlife, black bears, and possible management actions related to black bears in a park setting; (2) identify the impact of general attitudes toward wildlife and specific attitudes toward black bear on park visitors’ support for various black bear management actions; and (3) to examine whether visitor demographics affect their support for management actions. From March through September 2013, 364 visitors to the Big South Fork National River and Recreation Area (a unit of the U.S. National Park Service located in the south-eastern United States) completed a survey, resulting in a 72% response rate. Park visitors generally expressed a positive attitude toward wildlife education and enjoyment of seeing wildlife, while they were more polarised on the importance of wildlife management and their appreciation of wildlife through hunting. Hierarchical regression analyses indicated that park visitors’ attitudes were better predictors of support for management than were their demographic characteristics. Park visitors who agreed that “people appreciate wildlife through hunting” and “bears are a threat to people” were likely to accept lethal management actions. Their attitudes toward hunting in general were the most significant predictors of acceptance of lethal management actions. Park visitors’ positive attitudes toward black bear conservation and acceptance of the current number of black bears in the park were predictors of their acceptance of non-lethal management actions. The number of human–bear interactions in the park currently is small; and this proactive study expands possible management options with the intent of preventing and minimising human–bear conflicts in a protected area where people recreate and wildlife coexists.

Authors: Liu, Y., Tang, Y., Tian, G.-Z., and Liao, J.

Year: 2009

Title: An empirical study on the evaluation of inbound tourists’ satisfaction in Chengdu Research Base of Giant Panda Breeding (CRBGPB)

Journal: *Tourism Tribune*

Volume: 3

Issue: -

Pages: -

Abstract: Due to its advantageous regional location, Chengdu Research Base of Giant Panda Breeding (CRBGPB) has become the most important showcase to show giant pandas in China. Since the number of inbound visitors has been much larger than that of domestic visitors in recent years, it is of great significance to study inbound visitors' satisfaction of visiting the CRBGPB. This paper, based on in-depth interviews and a questionnaire survey, provides a more detailed analysis of demographic characteristics about the results by adopting SPSS11.5 statistical software. Furthermore, a method based on an I-P analysis approach has been adopted to make a comparative analysis between the importance of attractive factors and satisfaction as well as expectation and satisfaction. In conclusion, some opinions and suggestions have been provided to improve the capability of sustainable development in that scenic area and

strengthen the satisfactory degree of inbound visitors and build it into a mature international scenic area as soon as possible. Meanwhile, the paper could shed some lights on the construction and development of similar tourism areas.

Authors: Loomis, J., Richardson, L. Huber, C., Skibins, J., and Sharp, R.

Year: 2018

Title: A method to value nature-related webcam viewing: The value of virtual use with application to brown bear webcam viewing

Journal: Journal of Environmental Economics and Policy

Volume: 7

Issue: 4

Pages: 452-462

Abstract: There are an estimated 16,000 nature related remote web cameras that provide users around the world with an opportunity to view wildlife. Because there is no monetary price to view the webcams, Loomis and colleagues utilise variations in the viewers' opportunity cost of time to estimate consumer surplus. They apply this model to a large sample ($n = 2649$) of the more than 10 million viewers of Alaska's Katmai National Park and Preserve brown bear webcams. The resulting consumer surplus is around \$11 per hour of viewing. When applied to the 2.42 million viewer hours, this yields a benefit of \$27 million annually. Since there are limits on the number of visitors as well as high costs of visiting this remote site, the aggregate webcam viewing value is more than twice the aggregate on-site viewing value. With minimal survey data required to apply this model, the authors believe it has broad applicability to other nature-related webcams around the world.

Authors: Luebke, J. F., Watters, J. V., Packer, J., Miller, L. J., and Powell, D. M.

Year: 2016

Title: Zoo visitors' affective responses to observing animal behaviors

Journal: Journal of Ecotourism

Volume: 19

Issue: 1

Pages: 60-76

Abstract: The opportunity to observe or interact with animals in a zoo is often vital in influencing visitors' positive feelings towards animals and ultimately their conservation behaviour. This study explores the relationship between observed animal behaviour and zoo visitors' responses. A self-administered questionnaire was completed by 717 visitors across four exhibits (giraffe, lion, cheetah, and red panda) at three zoos (Brookfield Zoo, San Diego Zoo Safari Park, and Central Park Zoo). The questionnaire measured observed animal behaviours and visitors' predispositions, affective responses, and meaning-making at animal exhibits. Multivariate path analyses indicated that up-close encounters with zoo animals, along with observable active animal behaviours, predicted visitors' reported positive affective responses which, in turn, predicted their meaning-making. These findings lend support to the role of positive affect as a mediator between observable animal behaviours and visitor meaning-making. Implications are discussed in relation to achieving both conservation education and animal welfare outcomes.

M

Authors: Mace, R. D., and Waller, J. S.

Year: 1996

Title: Grizzly bear distribution and human conflicts in Jewel Basin Hiking Area, Swan Mountains, Montana

Journal: Wildlife Society Bulletin

Volume: 24

Issue: 3

Pages: 461-467

Abstract: Telemetry data obtained from grizzly bears were used to evaluate resource selection within the Jewel Basin Hiking Area (JBHA) of western Montana, USA. Logistic regression models were constructed using Geographic Information System maps of elevation zones, dominant cover types, and distance to hiking trails and lakes. Fourteen radio-collared grizzly bears used the JBHA between 1987-1994 primarily during summer. Using univariate statistics, it was determined that grizzly bears were significantly farther than expected from trails and from lakes with campsites during spring, summer, and autumn. In multivariate models however, distance to trails and lakes were significant variables only during summer and autumn. During these two seasons the relative probability of grizzly bear use increased as distances to trails and lakes with campsites increased. For each season, grizzly bears selected relatively open habitats compared to the predominant forest habitat type in which most of the trail system occurred. No historical records of conflicts between grizzly bears and recreationists were found in the JBHA; bears did not appear to be conditioned to or habituated to food. No radio-collared bears lived solely within the JBHA; each individual's home range included multiple-use lands with roads and where many human activities occurred. It is concluded that several factors together precluded human-bear conflicts in the JBHA. These included low visitor-use levels, trail placement, an educated public, and the bears' negative conditioning towards a host of human activities occurring within and outside the area. Therefore, while in the JBHA, grizzly bears minimised their interaction with recreationists by avoiding high-use areas. This negative conditioning may reduce human-caused mortality, but also results in loss of habitat, loss of foraging opportunities, and may upset the spatial distribution of individuals. Management programmes that discourage food conditioning and habituation, encourage public education, direct placement of recreational facilities away from preferred bear habitat, and allow only low levels of human use, have prevented human-bear conflicts in the JBHA.

Authors: MacHutchon, A. G., and Wellwood, D. W.

Year: 2002

Title: Reducing bear-human conflict through river recreation management

Journal: Ursus

Volume: 13

Issue: -

Pages: 357-360

Abstract: Risk assessment of bear (*Ursus* spp.)-human interaction at river campsites is an effective tool for managing human use, but it only addresses one of many issues important for minimising bear-human conflict along rivers. The authors suggest strategies to meet the objectives: (1) minimise risk to people and bears at river campsites, (2) ensure that bears do not become conditioned to human food, (3) educate people on ways to reduce their risk of negative interactions with bears, (4) ensure that agencies respond quickly and appropriately to bear-human conflicts, and (5) make human use of rivers more predictable to bears.

Authors: Margaryan, L., and Wall-Reinius, S.

Year: 2017

Title: Commercializing the unpredictable: Perspectives from wildlife watching tourism entrepreneurs in Sweden

Journal: Human Dimensions of Wildlife

Volume: 22

Issue: 5

Pages: 406-421

Abstract: Tourism companies that offer wildlife watching experiences share a unique property—they build their business on a promise they have no guarantee of fulfilling (showing wild animals). The factor of luck becomes important, as evident in the advertisement texts of wildlife watching tours. Understanding commercialisation of uncontrollable natural phenomena (wild animals) in a similarly uncertain natural setting (wilderness) is the aim of this article. In this illustrative case study, the authors examine wildlife watching companies in Sweden, focusing on free ranging bear, moose, wolf, roe-deer, beaver, and seal. Through interviews and participant observations with eight wildlife watching entrepreneurs, Margaryan and Wall-Reinius elaborate on the following major themes that help understand specific challenges associated with these businesses: lack of control as an inherent property of wildlife watching tourism, agency and continuous negotiation of uncertainties within the operational setting, importance of guide performances and “secondary” experiences, and using uncertainty as a way of enhancing authenticity.

Authors: Marseille, M. M., Elands, B. H. M., and van den Brink, M. L.

Year: 2012

Title: Experiencing polar bears in the zoo: Feelings and cognitions in relation to a visitor’s conservation attitude

Journal: Human Dimensions of Wildlife

Volume: 17

Issue: 1

Pages: 29-43

Abstract: This article explores which feelings and cognitions are involved in visitor experiences of zoo polar bears and how this experience relates to a visitor's conservation attitude. Data were collected through qualitative interviews with 30 visitors in two Dutch zoos. Most respondents believed that a polar bear belongs in the wild but also acknowledged the conservation function of zoos. A typology of zoo visitor experiences of polar bears was derived and consists of (a) ecological (multiple feelings, connection with wild polar bear, and climate change awareness), (b) emotional (multiple feelings, connections with captive, and wild polar bear), (c) factual (limited feelings, connection with captive polar bear), (d) preservation (few feelings, connections with wild polar bear, and climate change awareness) and (e) indifferent (limited feelings, no connection). Results showed that visitors with an ecological experience had the strongest conservation attitude, and visitors with an indifferent experience had the weakest conservation attitude.

Authors: Martin, S. R., and McCurdy, K.

Year: 2009

Title: Wilderness food storage in Yosemite: Using the Theory of Planned Behavior to understand backpacker canister use

Journal: Human Dimensions of Wildlife

Volume: 14

Issue: 3

Pages: 206-218

Abstract: Bear-resistant food storage canisters have gained widespread acceptance by backpackers as the most convenient and effective means of avoiding conflict with black bears in Sierra Nevada wilderness areas. Bear incidents, however, continue in the Yosemite Wilderness. Beginning in 2004, Yosemite backpackers were required to store their food in approved bear-resistant food storage canisters when camped within seven air miles of a road and anywhere above 9,600 feet; this constitutes a large majority of the park's wilderness. In 2005 the authors evaluated backpackers' use of canisters for food storage. Trailhead and Internet-based surveys were used to identify wilderness visitors' beliefs, attitudes, subjective norms, perceived control, and intentions regarding use of food storage canisters. Martin and McCurdy used the Theory of Planned Behaviour to explain intended use of food storage canisters in the Yosemite Wilderness and found that models containing measures of attitudes and subjective norm explained 38 to 43% of backpackers' intentions to use canisters.

Authors: Matthews, S. M., Beecham, J. J., Quigley, H., Greenleaf, S. S., and Leithead, H. M.

Year: 2006

Title: Activity patterns of American black bears in Yosemite National Park

Journal: Ursus

Volume: 17

Issue: 1

Pages: 30-40

Abstract: The impacts of tourism, most notably food resource enrichment and harassment, have led to alterations in natural bear (*Ursus sp.*) behaviour in many National Parks throughout the United States. Comprehensive efforts to reduce these impacts and restore natural activity patterns have been elements of US National Park management for decades. Matthews and colleagues described black bear (*U. americanus*) activity patterns during 2001 and 2002 to assess the influence of human activity centres on bear behaviour in Yosemite National Park, California, USA. They found bear activity and movement patterns, habitat use, and the distance bears were located from developed areas continued to be influenced by human presence in the Yosemite Valley region of Yosemite National Park. The authors recommend continued use of educational campaigns, stronger law enforcement efforts, improvements to food storage containers, more effective waste management, and more aggressive aversive conditioning techniques to reduce the number of human–bear interactions and restore the natural behavioural elements of Yosemite's black bear population.

Authors: Mattson, D. J., Blanchard, B. M., and Knight, R. R.

Year: 1992

Title: Yellowstone grizzly bear mortality, human habituation, and whitebark pine seed crops

Journal: The Journal of Wildlife Management

Volume: 56

Issue: 3

Pages: 432-442

Abstract: The Yellowstone grizzly bear (*Ursus arctos horribilis*) population may be extirpated during the next 100-200 years unless mortality rates stabilise and remain at acceptable low levels. Consequently, Mattson and colleagues analysed relationships between Yellowstone grizzly bear mortality and frequency of human habituation among bears and size of the whitebark pine (*Pinus albicaulis*) seed crop. During years of large seed crops, bears used areas within 5 km of roads and 8 km of developments half as intensively as during years of small seed crops because whitebark pine's high elevation distribution is typically remote from human facilities. On average, management trappings of bears were 6.2 times higher, mortality of adult females 2.3 times higher, and mortality of subadult males 3.3 times higher during years of small seed crops. The authors hypothesise that high mortality of adult females and subadult males during small seed crop years was a consequence of their tendency to range closest (of all sex-age cohorts) to human facilities; they also had a higher frequency of human habituation compared with adult males. They also hypothesise that low mortality among subadult females during small seed crop years was a result of fewer energetic stressors compared with adult females and greater familiarity with their range compared with subadult males; mortality was low even though they ranged close to humans and exhibited a high frequency of human habituation. Human-habituated and food-conditioned bears were 2.9 times as likely to range within 4 km of developments and 3.1 times as often killed by humans compared with non-habituated bears. Mattson and colleagues argue that destruction of habituated bears that use native foods near humans results in a decline in the overall ability of bears to use available habitat; and that the number and extent of human facilities in occupied grizzly bear habitat needs to be minimised unless habituated bears are preserved and successful ways to manage the associated risks to humans are developed.

Authors: Mattson, D. J., Herrero, S., Wright, R. G., and Pease, C. M.

Year: 1996

Title: Science and management of Rocky Mountain grizzly bears

Journal: Conservation Biology

Volume: 10

Issue: 4

Pages: 1013-1025

Abstract: The science and management of grizzly bears (*Ursus arctos horribilis*) in the Rocky Mountains of North America have spawned considerable conflict and controversy. Much of this can be attributed to divergent public values, but the narrow perceptions and incomplete and fragmented problem definitions of those involved have exacerbated an inherently difficult situation. Mattson and colleagues present a conceptual model that extends the traditional description of the grizzly bear conservation system to include facets of the human domain such as the behaviour of managers, elected officials, and the public. The model focuses on human-caused mortality, the key determinant of grizzly bear population growth in this region and the interactions and feedback loops among humans that have a major potential influence on bear mortality. The authors also briefly evaluate existing information and technical methods relevant to understanding this complex human-biophysical system. They observe not only that the extant knowledge is insufficient for prediction (and in some cases for description), but also

that traditional positivistic science alone is not adequate for dealing with the problems of grizzly bear conservation. Mattson and colleagues recommend changes in science and management that could improve learning and responsiveness among the involved individuals and organisations, clarify some existing uncertainty, and thereby increase the effectiveness of grizzly bear conservation and management. Although adaptive management is a promising approach, the authors point out some key - as yet unfulfilled - contingencies for implementation of a method such as this one that relies upon social processes and structures that promote open learning and flexibility in all facets of the policy process.

Authors: Mazaruddin, N., and Anuar, F. I.

Year: 2019

Title: Panda tourism: The role of destination image on the relationship between tourists' consumption values and behavioural intention

Journal: Journal of Academia

Volume: 7

Issue: 2

Pages: 143-151

Abstract: The Malaysian government received two endangered pandas as a diplomatic gift from the government of China to mark 40 years of strong diplomatic ties between the two countries. The Giant Panda Conservation Centre (GPCC) in Zoo Negara was established to show Malaysia's commitment towards China's governmental efforts in increasing the number of the endangered giant panda worldwide and establishing a distinctly new niche tourism attraction called Panda Tourism (PT). The attraction has pulled many local and international visitors from different countries across Asia, Europe, North America, and Australia. However, research on the rationale, benefits, issues, and future of PT initiative remains under-explored. The present study attempts to understand the PT concept by measuring the consumption value dimensions of PT, namely; functional, social, emotional, epistemic and conditional and how these dimensions affect tourists' behavioural intention to visit other PTs throughout the world. In addition, the study measured the mediation effect of destination image toward the relationship of consumption values and tourists' behavioural intention. The findings of this study are among the early attempts to better understand the rationales, benefits, and potentials of PT as a niche tourism concept in Malaysia. The study employed a survey questionnaire to gather quantitative data. Data were analysed using the SmartPLS 3.0 software. The results of the analysis identified conditional, functional, and social as the significant determinants of consumption value towards tourists' behavioural intention to visit PT. Furthermore, functional value proved to have significant direct as well as indirect influence on the tourists' behavioural intention.

Authors: McCrory, W. P., Herrero, S., and Jones, G.

Year of Conference: 1987

Title: A program to minimize conflicts between grizzly bears and people in British Columbia provincial parks

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 93-98

Abstract: Many provincial parks in British Columbia contain important populations of grizzly bears (*Ursus arctos horribilis*). A review of the current bear management activities in B.C. Parks, and in other agencies and jurisdictions, has resulted in a comprehensive bear management programme. The recommended programme incorporates three Bear Policies, 17

Management Directives, and two levels of Grizzly Bear-People Management Plans. Use of the programme will safeguard preservation of grizzly bears and maximise visitor safety in parks.

Authors: McFarlane, B. L., Stumpf-Allen, R. C. G., and Watson, D. O. T.

Year: 2007

Title: Public acceptance of access restrictions to grizzly bear (*Ursus arctos*) country

Journal: Human Dimensions of Wildlife

Volume: 12

Issue: 4

Pages: 275-287

Abstract: Variation in attitudes and preferences among communities has been cited as a primary consideration for the development of grizzly bear management plans in North America. McFarlane and colleagues undertook a study in 2004 to determine if there were differences among two rural populations and an urban population on the issue of grizzly bear management in Alberta, Canada. Results from a mail survey showed that there was a greater diversity of views and potential for conflict between the two rural groups than between the rural groups and the urban group. The authors used a cognitive hierarchy of knowledge, attitudes, and normative beliefs as a theoretical foundation and analysed the effects of social influences (including residency) and demographics. A structural equation analysis showed that being an off-road vehicle user had a greater influence on acceptance of access restrictions than residency or cognitive and demographic factors.

Author: Miller, L.

Year: 2019

Title: On the edge of the world: Examining pro-environmental outcomes of last chance tourism in Kaktovik, Alaska

Academic Department: Parks, Recreation, and Tourism Management

University: Clemson University

Thesis Type: Master of Science (MS)

Abstract: Last chance tourism (LCT), a relatively new tourism trend, has begun to emerge in which tourists seek out destinations with resources that are quickly disappearing. Unfortunately, tourists visiting LCT locations may be contributing to their downfall. To help mitigate these impacts, a worthy goal of LCT would be the creation of environmental ambassadors. Polar bears (*Ursus maritimus*) are one species that inhabit a notable LCT destination. Polar bear viewing on the waters of the Arctic Refuge near the town of Kaktovik, Alaska has dramatically increased over the past decade. Small motorboats are used to view polar bears on shorelines. This creates a unique viewing opportunity characterised by eye-level experiences with polar bears in their natural environment. A formal management plan for polar bear viewing in the Kaktovik area of the Arctic Refuge is being formulated and is planned for implementation in the near future. The purpose of this study is to help better understand and promote the pro-environmental outcomes of viewing polar bears in Kaktovik.

A visitor survey was developed using questions and techniques that have been adapted from those used in numerous parks and protected areas. Surveys were administered on-site in the two Kaktovik hotels, daily, between late-August and early-October 2017. Only tourists who had been on the water viewing polar bears were asked to complete the survey. A census approach was used, where each visitor encountered was asked to complete a survey. A total of 265 completed surveys were collected with 189 being used in analyses after being screened for outliers and missingness. It was found that the majority of visitors were middle-aged, well-educated, and travelling from within the United States. Day visitors made up over 60% of the visiting population. Visitors spent on average 3.7 hours on the water and saw approximately

20 polar bears, which was more than over 80% reported expecting to see. A typology of visitors was found, with three distinct groups being created, with motivators ranging from broad interests to a wildlife focus. When asked about various pro-environmental outcomes after their experience, visitors reported, on average, a change of being ‘more likely’ to partake in both pro-environmental and ambassadorship behaviours. Regression analyses revealed, for the sample population as a whole, that total minutes educated and the occurrence of an epiphany had a positive impact on visitors’ reported pro-environmental behaviour and ambassadorship intentions. Implications for management of similar experiences are discussed.

Authors: Miller, L. B., Hallo, J. C., Dvorak, R. G., Fefer, J. P., Peterson, B. A., and Brownlee, M. T. J.

Year: 2020

Title: On the edge of the world: Examining pro-environmental outcomes of last chance tourism in Kaktovik, Alaska

Journal: Journal of Sustainable Tourism

Volume: 28

Issue: 11

Pages: 1703-1722

Abstract: Travel to impact-sensitive destinations has been on the rise in recent years. Coined “last chance tourism” (LCT), visitors are increasingly coming to these destinations to see them before they are gone. To offset their presence, which ultimately contributes to site degradation, a possible positive outcome of these LCT experiences is the creation of environmental ambassadors. Utilising data collected from 189 visitor surveys, the purpose of this study is to provide a basis for understanding the visitor experience and outcomes of boat-based polar bear viewing in the Kaktovik area of the Arctic National Wildlife Refuge. A typology of visitors was created based on importance of various trip elements, and demographic and trip characteristics were examined by resulting groups. Analyses show that the polar bear viewing experience does have the potential to increase visitors’ pro-environmental and ambassadorship behavioural intentions. Regression analyses revealed, for the sample population, that total minutes educated and the occurrence of an epiphany had a positive impact on visitors’ reported pro-environmental behaviour and ambassadorship intentions. Surprisingly, seeing more polar bears was negatively related to these same intentions. Implications for the management of similar experiences are discussed.

Authors: Miller, S. D., and Tutterrow, V. L.

Year: 1999

Title: Characteristics of nonsport mortalities to brown and black bears and human injuries from bears in Alaska

Journal: Ursus

Volume: 11

Issue: April

Pages: 239-252

Abstract: Miller and Tutterrow examined the reasons bears are reported killed in defense of life or property (DLP) in Alaska as an index to causes and frequency of conflicts between humans and bears, and compared the sex and age composition of DLP kills with that of sport-killed bears. Data came from standardised questionnaires filled out by persons shooting the bears. Numbers of sport-killed brown bears (*Ursus arctos*) and black bears (*U. americanus*) and number of DLP-killed brown bears increased during 1970-96, but number of DLP-killed black bears did not increase. Overall, bear deaths in DLP circumstances were a small proportion of total deaths for both brown bears (5.2%) and black bears (3.1%). In urban areas,

however, DLP deaths represented up to 22.3% of total brown bear mortalities and 6.1% of total black bear mortalities. Compared to sport kills of brown bears, DLP kills contained relatively more subadult males ($P < 0.001$) and more older (age 11-19) females ($P < 0.001$). More DLP brown bears were shot because the shooter considered them an immediate threat (40.8%) or a potential threat (30.1%) than to protect property (29.0%). Only 11% of DLP black bears were considered an immediate threat; 48.9% were considered a potential threat, and 35.3% were shot to protect property. Adult brown bear females accompanied by offspring were much more likely to have been shot because they were an immediate threat (84.4%) than solitary adult females (40.7%) ($P < 0.001$). The type of property most often damaged or threatened by both brown bears and black bears killed in DLP circumstances was a dwelling, but most respondents indicated no property damage occurred. For both species, most DLP bears were killed when the shooter was at home or in a dwelling, but a larger proportion of brown bear (32.1%) than black bear (4.9%) DLP deaths occurred when the shooter was hunting. Based on newspaper accounts collected during 1985-96, brown bear attacks resulted in 2.75 human injuries and 0.42 deaths per year in Alaska. Black bear attacks in Alaska resulted in 0.33 human injuries/year during this same period. Only one human death caused by a black bear in Alaska is known to the authors during a period that encompassed >25 years.

Author: Miller, Z. D.

Year: 2019

Title: A Theory of Planned Behaviour approach to developing belief-based communication: Day hikers and bear spray in Yellowstone National Park

Journal: Human Dimensions of Wildlife

Volume: 24

Issue: 6

Pages: 515-529

Abstract: Communicating with visitors to parks and other protected areas is an important strategy for reducing human-wildlife conflict. The Theory of Planned Behaviour (TPB) can be used to develop communication strategies that target specific beliefs and increase visitor compliance with desired behaviours. In this study, 647 day hikers participated in a self-administered electronic survey via an iPad with a response rate of 85%. A mixed methods approach was used in analysing the data. Using a logistic regression, attitude, subjective norm, and perceived behaviour all related to self-reported bear spray behaviour of day hikers in Yellowstone National Park, with attitude having the strongest effect. From the logistic regression results, open-ended comments were coded to develop 16 unique belief-based messages using the TPB. Managers of parks and other protected areas where bear spray is recommended when hiking can use these results to frame effective communication strategies.

Authors: Miller, Z. D., Freimund, W., Metcalf, E. C., and Nickerson, N.

Year: 2018

Title: Targeting your audience: Wildlife value orientations and the relevance of messages about bear safety

Journal: Human Dimensions of Wildlife

Volume: 23

Issue: 3

Pages: 213-226

Abstract: While there is an assumption that wildlife value orientations can be useful in strategic communication, few studies have empirically explored this topic. This article used the concept of wildlife value orientations to understand how to increase the motivation of people to process information about wildlife in the context of persuasive communication. A

confirmatory factor analysis was used to identify mutualism and domination wildlife value orientations. From the wildlife value orientations, crosstabs were used to create a typology with four discreet segments: mutualists, pluralists, traditionalists, and distanced. A series of ANOVAs examined how important different messages about bear safety were related to the typology segments. Results indicated that message relevancy differs among wildlife value orientations. Managers can use this information to help frame their communications about wildlife-related issues. Future research should continue to explore the impact of this value-framing approach to other persuasive communication concepts, like attitudes and behaviours.

Authors: Moen, G.K., Støen, O.G., Sahlén, V., and Swenson, J.E.

Year: 2012

Title: Behaviour of solitary adult Scandinavian brown bears (*Ursus arctos*) when approached by humans on foot

Journal: PLoS ONE

Volume: 7

Issue: 2

Article: e31699

Abstract: Successful management has brought the Scandinavian brown bear (*Ursus arctos* L.) back from the brink of extinction, but as the population grows and expands the probability of bear-human encounters increases. More people express concerns about spending time in the forest, because of the possibility of encountering bears, and acceptance for the bear is decreasing. In this context, reliable information about the bear's normal behaviour during bear-human encounters is important. Moen and colleagues describe the behaviour of brown bears when encountering humans on foot. During 2006–2009, the authors approached 30 adult (21 females, nine males) GPS-collared bears 169 times during midday, using 1-minute positioning before, during and after the approach. Observer movements were registered with a handheld GPS. The approaches started 869 ± 348 m from the bears, with the wind towards the bear when passing it at approximately 50 m. The bears were detected in 15% of the approaches, and none of the bears displayed any aggressive behaviour. Most bears (80%) left the initial site during the approach, going away from the observers, whereas some remained at the initial site after being approached (20%). Young bears left more often than older bears, possibly due to differences in experience, but the difference between ages decreased during the berry season compared to the pre-berry season. The flight initiation distance was longer for active bears (115 ± 94 m) than passive bears (69 ± 47 m), and was further affected by horizontal vegetation cover and the bear's age. The findings show that bears try to avoid confrontations with humans on foot, and support the conclusions of earlier studies that the Scandinavian brown bear is normally not aggressive during encounters with humans.

Authors: Morzillo, A. T., Mertig, A. G., Garner, N., and Liu, J.

Year: 2007

Title: Resident attitudes toward black bears and population recovery in East Texas

Journal: Human Dimensions of Wildlife

Volume: 12

Issue: 6

Pages: 417-428

Abstract: A successful species recovery relies on the support of local residents. The goal of this study was to assess attitudes toward black bears in a location where bears have not existed for several decades. Morzillo and colleagues randomly surveyed East Texas residents to evaluate attitudes toward black bears and a potential bear population recovery. Positive attitudes toward bears were related to sex, age, participation in wildlife-related activities,

residential tenure, land ownership, and knowledge about bears. However, substantial proportions of respondents indicated uncertainty regarding their attitudes about black bears and more than one-third of residents were unsure as to whether they supported increasing the local bear population. Lack of knowledge about black bears was the most commonly noted reason for uncertainty. These results suggest that opportunities exist for managers to address existing concerns about bears, assist residents with learning more about bears, and possibly help minimise potential for bear–human conflict.

N

Author: Nadeau, M. S.

Year: 1987

Title: Habitats, trails, and campground situations associated with grizzly–human confrontations in Glacier National Park, Montana

Academic Department:

University: University of Montana

Thesis Type: Master of Science (MS)

Abstract: Habitats, trails, human and grizzly bear (*Ursus arctos*) behaviour were analysed in three phases to identify problem situations in Glacier Park. Phase 1 involved reviewing park bear observation records from 1980 through 1984 and identifying and mapping grizzly–human confrontation sites. Analyses of plot data collected at confrontation sites revealed distinct seasonal shifts in habitat use that were correlated with bear feeding habits. Discriminant function analyses separated confrontation sites from control sites with an overall accuracy of 64%, which then increased to 86% when sites were grouped seasonally and compared to control sites. Sight distance and distance to water at confrontation sites were significantly less ($P < 0.001$) than distances measured for the random sample.

Phase 2 involved analyses of trends in observations, confrontations, and bear-caused human injuries from 1980 through 1984. Observation records reflected a pulse in female productivity correlated to good huckleberry (*Vaccinium* spp.) productivity and was followed by an increase in subadult sightings two years later. Females with young were most frequently observed off-trail and were found in decreasing numbers where visitor use increased. Observations of subadults proportionally increased in areas with greater visitor use. Hikers confronting bears off trail were more likely to be injured than hikers on low and especially high use trails, suggesting increased hiker safety near habituated and less dominant bears. Phase 3 involved nocturnal movements of grizzlies in a campground situation. Grizzlies used the trails and investigated areas near the campground more frequently at night than during the day. Bears consistently avoided the campground when people were camped there but frequently travelled through the campground when campers were absent. Females with young avoided the area during the day but investigated the area at night in proportion to their presence in the population, suggesting temporal resource partitioning in response to predictable visitor use.

Author: Nadeau, M. S.

Year of Conference: 1987

Title: Movements of grizzly bears near a campground in Glacier National Park

Conference Name: Bear–people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 27–33

Abstract: Grizzly bear (*Ursus arctos*) movements near a campground and back-country chalet in Glacier National Park, Montana were monitored from 1982 through 1984. Observations of bears were mapped, and nocturnal movements were monitored primarily by using track grids.

Grizzlies used trails and investigated areas near the campground more frequently at night and during September than at other times. Bears consistently avoided the campground when campsites were occupied, but frequently travelled through the campground when campers were absent. Females with young investigated the campground area more frequently at night than during the day, suggesting temporal resource partitioning in response to predictable visitor use. Grizzlies foraged primarily on glacier lilies (*Erythronium grandiflorum*), and spring beauties (*Claytonia lanceolata*) in the spring, horsetail (*Equisetum* spp.) and grasses (*Graminae* spp.) during the summer, and huckleberries (*Vaccinium* spp.) during the fall.

Authors: Needham, M. D., Rollins, R. B., and Wood, C. J. B.

Year: 2004

Title: Stakeholders' perceptions of bear viewing tours at an alpine ski area in the summer

Journal: Human Dimensions of Wildlife

Volume: 9

Issue: 2

Pages: 153-156

Abstract: In North America, there are several popular locations for viewing bears in their natural habitat (e.g., McNeil and Brooks Rivers, Alaska; Knight Inlet, British Columbia; Churchill, Manitoba). As bear viewing has increased in popularity, efforts to understand the experiences and perceptions of bear viewers have received more attention. There is little empirical research, however, on: (1) other stakeholders' (e.g., environmental interest groups, tour companies, government agencies) opinions of bear viewing, and (2) visitors' and other stakeholders' perceptions of bear viewing at alpine ski areas in the summer. This study addresses these knowledge gaps.

This study was conducted at the Whistler Mountain ski area, located 120km (75 miles) north of Vancouver in British Columbia, Canada. Like many major ski areas in North America, chairlifts on Whistler Mountain operate in the summer for hiking, mountain biking, and wildlife viewing. Guided activities including helicopter tours, snowmobile tours on the glacier, mountain bike tours, and vehicle-based black bear (*Ursus americanus*) viewing tours are also offered. Bear viewing participants accompany a guide who uses a four-wheel drive truck (maximum of six people per vehicle) on the mountain's access roads to get close to the bears that forage on vegetation on the ski runs. Over 50 different black bears are usually observed on the mountain throughout the summer.

On-site visitor surveys ($n=548$, response rate=84%) were conducted during the summer (July to September) of 2000 at Whistler Mountain. Over 183,700 people visited this ski area during this time. Surveys were also completed by 21 presidents/managers of 12 organisations with recreational, environmental, governmental, and economic interests in summer use at Whistler Mountain.

Respondents were asked if they felt that the presence of the guided tours detracted from, had no effect on, or enhanced the overall summer experience at this ski area. Overall, less than 11% of the visitors rated the bear viewing tours as detracting. Compared to the other tours, the presence of the bear viewing tours was rated by the most visitors (42%) as enhancing the summer experience. For example, over 51% and 44% of the visitors felt that the snowmobile and helicopter tours were detracting, respectively; less than 17% felt that these tours enhanced the overall summer experience. Over 32% of the visitors felt that the mountain bike tours were detracting (23% enhance).

A K-Means cluster analysis of 22 motivations for visiting Whistler Mountain in the summer revealed three distinct visitor groups - those who visited because of the: (1) tours and amenities offered ($n=170$), (2) alpine scenery ($n=194$), and (3) self-guided recreation activities ($n=147$). The presence of the bear viewing tours detracted very few visitors in each cluster and between

30% (cluster 3) and 47% (cluster 1) of the visitors felt that the presence of these tours enhanced the overall experience. The difference among clusters regarding the bear viewing tours was significant ($\chi^2=13.48$, $df=4$, $p=.009$), but minimal ($V=.12$).

There were very few differences among the organisations regarding the bear viewing tours and only 10% of the representatives felt that these tours were detracting. Compared to the visitors and other stakeholders, however, the companies were more likely to feel that the other tours enhanced the summer experience. Conversely, although all of the environmental interest groups believed that the bear viewing tours enhanced the summer experience, they rated the helicopter, mountain bike, and snowmobile tours as detracting.

Across all visitors, 81% supported more visitor education about bears at this ski area; only 3% were opposed (remaining 16% were neutral).

These findings suggest that compared to the other guided tours on Whistler Mountain in the summer, the bear viewing tours were considered by visitors and other stakeholder groups to enhance the summer experience the most. The presence of the vehicle-based bear viewing tours enhanced the overall experience the most, whereas the other motorised tours (e.g., helicopter and snowmobile tours) were considered to be the most detracting. There was also widespread support for providing more visitor education about bears at this ski area. The bear viewing tours offer a means of enhancing education on the mountain. Research is required, however, to examine issues such as the acceptability of potential social and resource impacts associated with the: (1) number and duration of bear viewing tours in an area, and (2) proximity of tour vehicles to the bears.

Authors: Nelitz, M., Wedeles, C., Lemelin, R. H., Beardmore, B., and Abraham, D.

Year: 2015

Title: Tourism carrying capacity review of the Churchill Wildlife Management Area: Summary, key findings, and recommendations

City/State: Vancouver, BC, Canada

Institution: ESSA for Manitoba Conservation and Water Stewardship

Date: 2014-2015

Abstract: Polar bears are an iconic species for the province of Manitoba and town of Churchill. The town has a long history of interactions with polar bears which includes a tourism industry that has been in operation since the 1970s. In recent years, between 6,000 and 10,000 visitors are drawn to view polar bears. Tourism peaks in the late fall as polar bears congregate close to the shoreline waiting for ice to form on Hudson Bay in an area known as the Churchill Wildlife Management Area (CWMA), a provincially managed landscape less than 10 km east of Churchill. Two companies are permitted by the provincial government to operate tundra vehicles along a designated off-road trail network in the CWMA for the purpose of providing polar bear viewing opportunities to tourists. For many years the number of permitted off-road tundra vehicles has remained the same.

In 2014, Manitoba Conservation and Water Stewardship requested an independent review to assess the ecological and sociological carrying capacity of commercial ecotourism operating in the designated off-road trail network. The specific goals of this review were to: (1) assess the cumulative impacts of tourism activities; (2) identify the amount of tourism use that can be supported; (3) determine the ecological and social carrying capacity of the area; and (4) understand the implications of climate change on the area's carrying capacity.

This research involved a stakeholder engagement process to gather input from a variety of perspectives and a synthesis of existing knowledge about the impacts of climate change and human stressors on polar bears. This review used a multi-criteria decision making approach to this assessment which recognises that identifying the carrying capacity of the area can not necessarily be defined as a single limit on tourism. Multiple limits may exist for which the

preference among them depends on what stakeholders want and the balance of benefits and costs that decision makers deem appropriate.

This work identified a set of key findings about the social and ecological carrying capacity of the region, which were then used to develop a set of recommendations to improve the operation and management of tourism activities in the Churchill Wildlife Management Area.

Authors: Nevin, O. T., and Gilbert, B. K.

Year: 2005

Title: Perceived risk, displacement and refuging in brown bears: Positive impacts of ecotourism?

Journal: Biological Conservation

Volume: 121

Issue: 4

Pages: 611-622

Abstract: Ecotourism is a rapidly growing industry with unknown impacts on viewed wildlife that may require novel management action. Nevin and Gilbert examined the impact of viewing activities on the behaviour of brown bears (*Ursus arctos*) in coastal British Columbia.

Domination of the best feeding sites and human avoidance by large male bears has consistently been reported. The authors, however, saw displacement in time rather than space – during the viewing day large males were less active than at other times, while females with cubs tended to be more active.

In each year, females with cubs spent similarly high proportions of their time fishing when people were present. In years with large male activity, less time was spent fishing when people were absent. When freed from the potential threat of large male bears, females with cubs showed no measurable impact of controlled human activity.

Human presence at a feeding site impacts the behaviour of brown bears, but not as expected. Temporal avoidance of human activity by large males was observed; indications that they departed upon satiation, before the arrival of morning tours, however, suggests that there was little energetic impact. By displacing large males, viewing activities created a temporal refuge, enhancing feeding opportunities for subordinate age/sex classes. With the strong positive relationships between mean female mass and litter size, this may in turn increase population productivity.

Authors: Nevin, O. T., and Gilbert, B. K.

Year: 2005

Title: Measuring the cost of risk avoidance in brown bears: Further evidence of positive impacts of ecotourism

Journal: Biological Conservation

Volume: 123

Issue: 4

Pages: 453-460

Abstract: The objective of this study was to determine the cost to female brown bears with cubs of avoiding risk, or perceived risk, from both large adult male bears and ecotourists. The authors measured salmon consumption by brown bears in British Columbia under different risk scenarios (the presence and absence of large male bears and people). Declines occurred despite superabundant food where consumption was never limited by salmon abundance.

While there were significant changes in the proportion of time spent foraging and in the consumption of captured fish between periods with and without ecotourists present, there was no change in foraging effectiveness, catch per unit effort.

Selection of sub-optimal habitats to reduce predation risk incurs energy costs. Risk avoidance reduced daily salmon consumption by females with cubs by more than one third. By associating with people, females with cubs were able to avoid encounters with large, potentially aggressive males, which avoided people in both time and space. Controlled human activity at feeding sites can provide a temporal feeding refuge for vulnerable age/sex classes. This is the first study to quantify the energetic cost of intra-specific risk-avoidance for a large carnivore.

Authors: Nevin, O., Gilbert, B. K., and Smith, J. S.

Year: 2001

Book Title: BC bear viewing: An analysis of bear-human interactions, economic and social dimensions with recommendations for best practices

City: Logan, UT, USA

Publisher: Department of Fisheries and Wildlife, Utah State University

Abstract: The Pacific mid-coast region of British Columbia has a mild, hypermaritime climate that places its biological productivity in the range of tropical rainforests. The low elevation river valleys are characterised by rich alluvial soils, further enriched annually by upstream nutrients flooding over the stream banks of the floodplains and distributing rich silt to the roots of giant Sitka spruce and Western hemlock forests. Unique to Canada's rivers flowing into the Pacific (but not north into the Mackenzie River, for example) are the massive contributions of nutrients from the bodies of five species of anadromous salmonids. This flux of organic matter has long been recognised as essential to the production of young salmon but the additional fertility increment to riparian and upland forests is currently under intense investigation.

The crucial role of migratory salmon in supporting dense populations of grizzly bears has recently been demonstrated for a large sample of coastal bears in Alaska. A strong statistical correlation between the per cent of meat, mainly salmon, in the diet and bear density confirmed earlier speculation that Alaskan's most dense bear populations also had high salmon diets and were among the most dense on a worldwide basis. Grizzly or brown bears on the coast of British Columbia and Alaska are the same species as the grizzly bears of the Rocky Mountains. However, they are much bigger and have higher population densities because of abundant salmon. Alaskan population densities vary from a maximum of 550 bears /1000 km² in Katmai National Park where salmon are seasonally available to less than five bears /1000 km² for mountain bears of the eastern Brooks Range on a marginal food base.

Coastal Alaskan bears forage widely for fish. At Brooks River in Katmai National Park & Preserve bears feed on sockeye salmon starting in late June as soon as they enter rivers to spawn. At this time, when the salmon are rich in fat, a fuel used to ascend rivers, build redds, mate and defend their nests against others, hundreds of bears have daily access to the fish. Bears feed on these salmon which have 50% of their caloric value in fat. From Katmai's Brooks falls bears migrate with the fish to their spawning beds and, later, back to the stream mouths where the dying fish are again consumed in prodigious numbers. The end result of this movement is a pattern of deposition of fish pieces and faeces over the landscape. Studies of the fate of salmon carcasses in the state of Washington showed that 22 species of mammals and birds carried salmon pieces into the forest. The nitrogen in the fish parts and bear faeces and urine is incorporated into plants and animals in the forest and in the streams thereby enriching the ecosystems there. Bears are one of the largest contributors because of the massive amount of material that they consume and the great distances that they move. Many of the Alaskan sites with the highest bear densities have become popular, and profitable, tourist destinations. More recently a bear viewing/eco-tourist industry has begun to develop in British Columbia. In March 1998 bear viewing policy and guidelines were presented in which the government expressed support for the use of bears for viewing. This study addresses the impacts of viewing

on bears and presents recommendations for further research and the sustainable development of bear viewing in the province.

Authors: Nevin, O., and Swain, P.

Year: 2005

Title: Economics of grizzly bear viewing: A tool for preservation of high density landscape in British Columbia?

Conference Name: Woodbridge, UK

Conference Location: Riva del Garda, Italy

Page: 134

Abstract: Recent legislative and policy changes to forestry and land-use decisions in British Columbia have resulted in considerable emphasis on economic values in decision making. Commercial grizzly bear viewing was examined to determine the potential for preserving high diversity old growth forest through the land-use planning process and to identify barriers to the success of these operations.

A baseline economic survey of grizzly bear viewing operators was undertaken to assess the present impact using an input/output model (or National Accounting Standards). The design allowed for cross-sectoral comparison and was compatible with land-use planning guidelines. A separate survey of participants was used to determine the importance of bear viewing to destination choice in order to apportion total vacation costs appropriately. Operators and industry experts were polled for factors affecting the success of bear viewing, and a follow-up survey ranked the compiled factors. Geographical attributes of existing bear viewing sites and the surrounding areas were compiled and compared with the BC government's GIS database to produce a map of potential viewing sites.

Results provided information on a wide scope of viewing conditions and allowed for benchmarking best and worst-case economic scenarios. The economic impacts of the present industry were found to be relatively small, but can add significant value to low-elevation old-growth forest in regional planning. Commercial potential was found to be significantly underestimated in current tourism opportunities studies. A discussion of the barriers to success and concessions in a multi-stakeholder scenario is included.

Authors: Nevin, O., Swain, P., and Convery, I.

Year: 2012

Title: Nature tourism: Do bears create a sense of place?

Editors: I. Convery, G. Corsane and P. Davis

Book Title: Making sense of place: Multidisciplinary perspectives

City: Woodbridge, UK

Publisher: Boydell & Brewer

Pages: 271-278

Abstract: Extreme sports, adventure and ecotourism are bringing increasing numbers of people into remote backcountry areas worldwide. The number of people visiting wilderness areas is set to increase further and nature tourism is the fastest growing sector in the \$3.5 trillion global annual tourism market. What impacts will this have on the social perceptions, economic and conservation values of these areas and the species which are found there? Reflecting on over a decade's research on the impacts of the bear-viewing ecotourism industry in British Columbia, Canada, this chapter considers place and 'place making' via a case study of bear tourism in British Colombia.

Authors: Nevin, O. T., Swain, P., and Convery, I.

Year: 2014

Title: Bears, place-making, and authenticity in British Columbia

Journal: Natural Areas Journal

Volume: 34

Issue: 2

Pages: 216-221

Abstract: Extreme sports, adventure, and ecotourism are bringing increasing numbers of people into remote backcountry areas worldwide. The number of people visiting wilderness areas is set to increase further, and nature tourism is the fastest growing sector in the \$3.5 trillion global annual tourism market. What impacts will this have on the social perceptions, economic, and conservation values of these areas and the species that are found there? Reflecting on over a decade's research on the impacts of the bear-viewing (*Ursus* spp.) ecotourism industry in British Columbia, Canada, this paper considers authenticity, place, and 'place making' via a case study of bear tourism in British Columbia (B.C.), Canada.

Authors: Nirlungayuk, G., and Lee, D. S.

Year: 2009

Title: A Nunavut Inuit perspective on Western Hudson Bay. Polar bear management and the consequences for conservation hunting

Editors: M. R. Freeman and L. Foote

Book Title: Inuit polar bears and sustainable use. Local, national and international perspectives

Publisher: CCI Press, University of Alberta

Pages: 135-142

Abstract: This chapter addresses some of the local concerns regarding the most recent management decisions and related scientific population estimates for the Western Hudson Bay (WH) polar bear population. First and foremost, polar bears, or *nanuit* in Inuktitut, are a highly respected and culturally valued animal to the Inuit of Nunavut. Inuit have co-existed with polar bears for millennia. Historically, Inuit hunted these animals with knives and spears with the assistance of their dog teams. These tools have since been replaced with modern equipment including rifles and snow machines. Through hunting, Inuit have observed polar bear behaviour closely, and respect how well polar bears are adapted to the arctic environment. Over millennia of hunting, Inuit knowledge of polar bear ecology and behaviour has accumulated and been communicated from generation to generation through an oral tradition.

Authors: Norden, A., and Tanskey, J.

Year: 2011

Title: Great bear markets: The interface of finance, forestry and conservation in BC's Great Bear Rainforest

City/State: Vancouver, B.C., Canada

Institution: Saunderson School of Business, University of British Columbia

Date: Fall 2011

Abstract: Human population growth and infrastructure development are putting unprecedented pressure on global ecosystems. Many government efforts to "command and control" the protection of ecosystems have met with limited success at best. The introduction of market-based mechanisms for ecosystem services is a contemporary solution to protect and preserve some of the precious and pristine wilderness areas. This paper explores some of the market-based mechanisms for ecosystem services in the Great Bear Rainforest (GBR), located on the North and Central Coast of British Columbia in western Canada. Carbon offsets, used to combat climate change, have been generated from the GBR. By preventing the

forest from being harvested, carbon is removed from the atmosphere and stored in the wood. Additional stored carbon can be monetised and sold to greenhouse gas emitters to offset their carbon footprint. A number of challenges were overcome to generate this carbon offset project, most notably the ownership related to unextinguished rights and title from indigenous land claims. The new nature of the market meant it was very much a learning experience for project developers and other stakeholders but also posed challenges for marketing efforts since potential buyers remain cautious due to regulatory uncertainty of greenhouse gas emission liabilities. More traditional market-based instruments are also existent in the Great Bear Rainforest. Ecotourism, hunting, logging and fishing licenses are all used extensively throughout the area. However, the price of these licenses appears to be far below true value. The proliferation of public land and provincial economic policies suppress market activity for such licenses, and appear to be the driving force behind such market imperfection.

Authors: Nuñez-Torres, M., Zarco-González, M. M., Monroy-Vilchis, O., and Carrera-Treviño, R.

Year: 2020

Title: Human-black bear interactions in Northern Mexico

Journal: Human Dimensions of Wildlife

Volume: 25

Issue: 5

Pages: 438-451

Abstract: In Mexico, the black bear (*Ursus americanus*) is an endangered species. Human invasion of its habitat has provoked a change in its foraging behaviour. Human-black bear interactions (HBIs) occur in a variety of locations and create conflict. Spatial information can predict the probabilities of interaction and identify environmental variables. Nuñez-Torres and colleagues implemented ecological niche models to identify areas with high probability of HBI. Results indicated that the occurrence of interactions was related to submontane scrub, forest, and urban zones. Verification was carried out in the field, which confirmed the high performance and accuracy of the probability model.

Authors: Nurul Afifah, N., and Siow, M. L.

Year: 2016

Title: Awareness of domestic visitors towards Giant Panda Conservation Programme in Zoo Negara, Malaysia

Journal: Asia-Pacific Journal of Innovation in Hospitality and Tourism

Volume: 5

Issue: 3

Pages: 89-106

Abstract: This paper attempts to determine the awareness level of domestic visitors towards giant panda conservation at Giant Panda Conservation Centre (GPCC) in Zoo Negara, Malaysia. Past studies show there exists a literature gap in the awareness of domestic visitors regarding conservation efforts of non-local wildlife species by the Malaysian government. The establishment of GPCC has triggered controversies and backlash as the Malaysian Government incurred high costs in this conservation effort for a species that does not originate from Malaysia. While the study examines the interrelationship among the awareness towards giant panda conservation in Zoo Negara, the study also explores the sociodemographic factors of domestic tourist on their intentions to visit GPCC. A structured questionnaire was designed and used as an instrument to gather information on awareness and intentions to visit GPCC. Domestic tourists were chosen from a sample size that was selected based on a non-random purposive sampling technique. Descriptive analysis and multiple linear regression analysis

were used to analyse the collected data. This study indicates that domestic visitors are aware and concerned about this endangered species. Results indicate that there is a positive significant relationship between awareness of giant panda conservation and self-employment towards intention to visit GPCC in the near future. In addition, education level and age of the visitors were statistically significant, but the coefficient was negative. This implies that awareness and sociodemographic factors influence the intention to visit GPCC in the future. This study can assist policy makers and related agencies to formulate better conservation policies to enhance conservation of giant pandas and most importantly, promote positive feedback amongst domestic visitors towards giant panda conservation efforts at GPCC in Zoo Negara, Malaysia.

O

Authors: Olsen, T. L., and Gilbert, B. K.

Year: 1994

Title: Variable impacts of people on brown bear use of an Alaskan river

Journal: JSTOR

Volume: 9

Issue: 1

Pages: 97-106

Abstract: A quantitative study of the behaviour of brown bears (*Ursus arctos*) was undertaken at Brooks River in Katmai National Park and Preserve 1988-90 to determine whether human activity affected use of the area by females with young. Over the three fall seasons 862 hours of systematic observations were recorded or not (late August through mid-October salmon spawning period). Ten different females with young were observed, four of them over a complete reproductive cycle. Each female was classified according to human tolerance as "habituated" ($n = 5$), or "non-habituated" ($n = 5$). The seasonal patterns of family group activity were examined according to habituation class. There was a direct relationship between the distribution of river use by non-habituated family groups and proximity to Brooks Camp, while no relationship was found for habituated family groups. Use of areas by non-habituated families increased near Brooks Camp late in the season, when human activity and noise in camp decreased. Availability of fish for bears was highest in areas near camp; however, non-habituated females with young used these areas significantly less than habituated families.

Authors: Olsen, T. L., Gilbert, B. K., and Squibb, R. C.

Year: 1997

Title: The effects of increasing human activity on brown bear use of an Alaska river

Journal: Biological Conservation

Volume: 82

Issue: 1

Pages: 95-99

Abstract: Olsen and colleagues assessed the effects of increasing human activity on brown bear (*Ursus arctos*) use of a salmon spawning stream by comparing observations (865h) collected 1988–1990 to those (293h) from 1992 when human activities extended a week later into the fall feeding period (26 August–12 October). They classified individual adult bears according to their tolerance of people as 'habituated', or 'non-habituated'; sub-adults were considered a third behavioural class. In 1992, non-habituated adults ($n = 14$ of 22 total adults) reduced their activity in apparent response to an extended lodge season, by delaying their use of the river by 17 days. In contrast, habituated adult bear activity remained similar among years, and sub-adult activity increased more than four-fold in 1992. The authors suggest that the

human-induced decrease in non-habituated adult activity may have allowed the increased levels of sub-adult activity.

Authors: Olsen, T. L., Squibb, R. C., and Gilbert, B. K.

Year: 1998

Title: Brown bear diurnal activity and human use: A comparison of two salmon streams

Journal: *Ursus*

Volume: 10

Issue: -

Pages: 547-555

Abstract: Brown bear (*Ursus arctos*) activity along salmon (*Oncorhynchus spp.*) streams has frequently been characterised as crepuscular. Suggested explanations include: responses to daily changes in salmon abundance, responses to daily cycles of light and temperature, natural feeding schedules, and avoidance of people. Olsen and colleagues investigated the last hypothesis by comparing bear activity at two adjacent streams in Katmai National Park, both spawning habitat for the same run of sockeye salmon (*Oncorhynchus nerka*) but differing in their levels of human use. During 1989 and 1991, bear activity at Margot Creek, where no human activity was observed, was distributed uniformly throughout the day (based on 240 observation hours; $P > 0.90$ both years). This uniform distribution contrasted with the crepuscular pattern of bear activity observed at Brooks River, where human use came from a 60-person lodge, a 60-person campground (20 sites), and substantial day-use. Significant differences ($P < 0.001$) in activity by time of day were found at Brooks River during the autumn salmon spawning period (sampled 1988-92, 905 observation hours). The midday depression in activity was greatest for bears less tolerant of people ($> 68\%$ of the adult bears seen). As human activity increased over the years of the study, these shier bears shifted their stream use among time periods: midday activity decreased while activity during the 20:00-22:00 hour time block increased significantly ($P < 0.050$). The results indicated that avoidance of people cannot be discounted as a factor contributing to observed crepuscular patterns of use in brown bears.

Author: O'Neal Campbell, M.

Year: 2013

Title: The relevance of age and gender for public attitudes to brown bears (*Ursus arctos*), black bears (*Ursus americanus*), and cougars (*Puma concolor*) in Kamloops, British Columbia

Journal: *Society & Animals*

Volume: 21

Issue: 4

Pages: 341-359

Abstract: In British Columbia, brown bears (*Ursus arctos*), black bears (*Ursus americanus*), and cougars (*Puma concolor*) must relate to growing human populations. This study examines age- and gender-related attitudes to these animals in the urbanising, agriculturally significant, intermontane city of Kamloops. Most respondents, especially women, feared cougars and bears, saw bears as more troublesome than cougars, and were concerned for child and adult safety. More middle-aged and older participants perceived brown bears as dangerous to companion animals, and black bears as troublesome, than did younger participants, and more middle-aged participants perceived brown bears as troublesome than did younger and older participants. Opinions favoured trapping and removal of animals rather than shooting or toleration, but more younger participants opted for shooting, whereas more middle-aged and older participants opted for toleration and removal. Majorities agreed that the animals serve useful functions, women more than men for cougars, middle-aged more than old or young for bears, but saw only cougars as increasing their quality of life. These findings contribute to

knowledge about human-wildlife relations, an important first step toward more efficient local and more general conservation policy.

Authors: Ordiz, A., Støen, O. G., Sæbø, S., Sahlén, V., Pedersen, B. E., Kindberg, J., and Swenson, J. E.

Year: 2013

Title: Lasting behavioural responses of brown bears to experimental encounters with humans

Journal: Journal of Applied Ecology

Volume: 50

Issue: 2

Pages: 306-314

Abstract: Some large carnivore populations are increasing in Europe and North America, and minimising interactions between people and carnivores is a major management task. Analysing the effects of human disturbance on wildlife from a predator–prey perspective is also of conservation interest, because individual behavioural responses to the perceived risk of predation may ultimately influence population distribution and demography. The Scandinavian brown bear population provides a good model to study the interactions between an expanding large carnivore population, and people who use forests extensively for professional and recreational activities. Ordiz and colleagues experimentally approached 52 GPS-collared brown bears (293 approaches on foot) from 2006 to 2011, to document the reaction of bears and quantify the effect of disturbance on bear movements. None of the bears reacted aggressively to the observers. Although the location of the animals was known, bears were usually in quite concealed spots and were physically detected in only 16% of the approaches (seen in 42 approaches; heard in six). However, the bears altered their daily movement patterns after the approaches. Bears increased movement at night-time and moved less at daytime, which was most visible in days one and two after the approaches, altering their foraging and resting routines. The authors provide experimental evidence on the effect of human disturbance on a large carnivore. The lack of aggressive reactions to approaching observers reinforces the idea that European brown bears generally avoid people, although bears can respond aggressively if they feel threatened (e.g. when wounded). However, the movement patterns of the bears changed after disturbance. Separating large carnivores and people temporally and spatially is an important goal for conservation and management. Conserving the shrub cover that provides concealment to the carnivores and keeping people away from the most densely vegetated spots in the forests is a way to avoid encounters between carnivores and people, therefore promoting human safety and carnivore conservation.

Authors: Organ, J. F., and Ellingwood, M. R.

Year: 2000

Title: Wildlife stakeholder acceptance capacity for black bears, beavers, and other beasts of the east

Journal: Human Dimensions of Wildlife

Volume: 5

Issue: 3

Pages: 63-75

Abstract: The formal concept of wildlife stakeholder acceptance capacity (WSAC) in wildlife management is less than a generation old. The genesis of wildlife management in North America occurred during a time when populations of many wildlife species were low, their habitats were altered and degraded, and the human population was rapidly urbanising. The focus of wildlife management was to restore wildlife populations and habitats. Once restored, wildlife managers strove to maintain populations at levels within biological carrying capacities

(BCC) and provide benefits to a relatively narrow range of stakeholders. In recent years, cultural changes associated with a predominantly suburban society have led to conflicts with traditional wildlife management approaches and broadened the stakeholder base. Wildlife managers have had to consider the interests of a wider stakeholder base that supports a diversity of often conflicting expectations, while relying on traditional funding sources. For certain species, management for WSAC has taken priority over management for BCC. This scenario is particularly focused in the northeast United States where human population densities are some of the highest in the nation. Organ and Ellingwood explore the current state of our knowledge of WSAC for certain species in the east, and review the tools being used for monitoring and assessment. They discuss adequacy of these approaches and offer suggestions for incorporating WSAC into wildlife management planning and operations. The authors consider the implications of WSAC to the future of wildlife management in North America.

P

Authors: Peacock, E., Derocher, A. E., Thiemann, G. W., and Stirling, I.

Year: 2011

Title: Conservation and management of Canada's polar bears (*Ursus maritimus*) in a changing Arctic

Journal: Canadian Journal of Zoology

Volume: 89

Issue: 5

Pages: 371-385

Abstract: Canada has an important responsibility for the research, conservation, and management of polar bears (*Ursus maritimus*) because the majority of polar bears in the world occur within the nation's borders. Two fundamental and recent changes for polar bears and their conservation have arisen: (1) the ongoing and projected further decline of sea-ice habitat as a result of climate change and (2) the implementation of aboriginal land claims and treaties in Canada's North. Science has documented empirical links between productivity of polar bear population and sea-ice change. Predictive modelling based on these data has forecast significant declines in polar bear abundance and distribution of polar bears. With the signing of northern land claims and treaties, polar bear management in Canada has integrated local aboriginal participation, values, and knowledge. The interaction of scientific and local perspectives on polar bears as they relate to harvest, climate change, and declining habitat has recently caused controversy. Some conservation, management, and research decisions have been contentious because of gaps in scientific knowledge and the polarisation and politicisation of the roles of the various stakeholders. With these ecological and governance transitions, there is a need to re-focus and re-direct polar bear conservation in Canada.

Author: Pearce, J.

Year of Conference: 2016

Title: Polar bears, cross sector partnerships and sustainable tourism

Conference Name: Inaugural Tourism Naturally Conference

Conference Location: Alghero, Italy

Issue: -

Pages: 169-180

Abstract: This research seeks to understand a specific cross sector partnership between a prominent commercial enterprise, operating in Churchill Canada, Frontiers North Adventures (FNA) and an NGO, Polar Bear International (BPI). It explores how this partnership co-exists

within the broader legal, political and regulatory environment from the specific lens of ‘sustainable tourism’.

Author: Peine, J. D.

Year: 2001

Title: Nuisance bears in communities: Strategies to reduce conflict

Journal: Human Dimensions of Wildlife

Volume: 6

Issue: 3

Pages: 223-237

Abstract: Human-bear conflicts are becoming of greater concern as remnant bear populations occupy habitat that is being encroached upon by human development. In some communities, specific policies dealing with human-bear interactions have been adopted. The research reported here is a review of these policies within selected communities and analysis of the dynamics leading to their adoption. A framework depicting forces influencing the formulation of policy on wildlife management devised by Kellert and Clark was used to describe the policy development in the communities studied. Categories of constituency forces described in the framework include biophysical-behavioural, social-structural, valuational and institutional-regulatory. The time and order sequence of influential forces leading to policy formulation is a central focus of the paper. The communities utilised in the analysis include Juneau, Alaska; Mammoth Lakes, California; West Yellowstone, Montana; and Gatlinburg, Tennessee. The policy formulation process among communities is compared.

Authors: Penteriana, V., del Mar Delgado, M., Pinchera, F., Naves, J., Fernández-Gil, A., Kojola, I., Härkönen, S., Norberg, H., Frank, J., Fedriani, J. M., Sahlén, V., Støn, O.-G., Swenson, J. E., Wabakken, P., Pellegrini, M., Herrero, S., and López-Bao, J. V.

Year: 2016

Title: Human behaviour can trigger large carnivore attacks in developed countries

Journal: Scientific Reports

Volume: 6

Issue: -

Article Number: 20552

Abstract: The media and scientific literature are increasingly reporting an escalation of large carnivore attacks on humans in North America and Europe. Although rare compared to human fatalities by other wildlife, the media often overplay large carnivore attacks on humans, causing increased fear and negative attitudes towards coexisting with and conserving these species. Although large carnivore populations are generally increasing in developed countries, increased numbers are not solely responsible for the observed rise in the number of attacks by large carnivores. The authors show that an increasing number of people are involved in outdoor activities and, when doing so, some people engage in risk-enhancing behaviour that can increase the probability of a risky encounter and a potential attack. About half of the well-documented reported attacks have involved risk-enhancing human behaviours, the most common of which is leaving children unattended. This study provides unique insight into the causes and as a result the prevention, of large carnivore attacks on people. Prevention and information that can encourage appropriate human behaviour when sharing the landscape with large carnivores are of paramount importance to reduce both potentially fatal human-carnivore encounters and their consequences to large carnivores.

Authors: Penteriani, V., López-Bao, J. V., Bettega, C., Dalerum, F., Delgado, M. d. M., Jerina, K., Kojola, I., Krofel, M., and Ordiz, A.

Year: 2017

Title: Consequences of brown bear viewing tourism: A review

Journal: Biological Conservation

Volume: 206

Issue: -

Pages: 169-180

Abstract: Many countries promote wildlife observation as part of ecotourism offerings. The brown bear (*Ursus arctos*) is among the most targeted species for ecotourism in North America and Europe, making it an ideal candidate to examine the consequences of wildlife viewing upon the species. As bear viewing often occurs in sensitive places where bears congregate for mating, rearing young and/or feeding, it is important to evaluate potential positive and negative effects of different viewing practices. Penteriani and colleagues reviewed available information on bear viewing practices and their effects on bears, people and ecosystems. Behavioural, physiological and ecological aspects related to bears are reviewed from three different perspectives: ecotourism consequences for bears, direct bear-human interactions and social impacts of bear ecotourism. Because bear viewing can have positive and negative impacts on both bear populations and bear-human interactions, it is important to carefully evaluate every practice associated with bear viewing at a local scale. Because bear populations around the world have diverse population statuses and different management regimes, successful procedures and rules effective in one place do not guarantee that they will be adequate elsewhere. Effective management of bear viewing practices requires a better understanding of the consequences for bears, the mechanisms behind observed bear reactions to humans, and the results of bear habituation. Because inappropriate bear viewing practices can lead to processes such as food-conditioning and habituation, which can have serious consequences for both people and bears, regulations on bear ecotourism are urgently needed to minimise unintended consequences of bear viewing practices

Authors: Piédallu, B., Quenette, P.-Y., Mounet, C., Lescureux, N., Borelli-Massines, M., Dubarry, E., Camarra, J.-J., and Gimenez, O.

Year: 2016

Title: Spatial variation in public attitudes towards brown bears in the French Pyrénées

Journal: Biological Conservation

Volume: 197

Issue: -

Pages: 90-97

Abstract: Human dimension is an important component of large carnivore management and conservation. Here, the authors focus on the human-wildlife conflict related to depredation of livestock by Pyrenean brown bears (*Ursus arctos*), despite the population being among the smallest in the world. Two reintroductions were performed in the past to ensure the survival of the population, yet its conservation status remains critical due to small size, heavy inbreeding and disagreements over its management. The authors investigated the often-neglected spatial variations in attitude towards predator presence to improve our understanding of the human dimensions surrounding this conflict. They used a questionnaire to assess the drivers explaining the attitude of the local human population (n = 577) of the Pyrénées towards bear presence. The results show that spatial variables (place of birth and county of residence of the respondent) are strong predictors of attitude. The residents of two counties in particular (Haute-Garonne and Pyrénées-Atlantiques) displayed a positive attitude, while the residents of the Hautes-Pyrénées county had the most negative attitude. People born outside of the Pyrénées also

showed a more positive inclination towards bear presence than people born and raised in France's southwestern mountain range. Both these results may imply a link between the history of local communities with predator presence and their current attitude. Accounting for small-scale spatial heterogeneity in social–ecological studies of human-wildlife conflicts will prove useful to get a more accurate mapping of attitudes and inform subsequent management decisions.

Author: Pitts, A.

Year: 2001

Title: Effects of wildlife viewing on the behaviour of grizzly bear (*Ursus arctos*) in the Khutzeymateen (K'tzim-a-deen) Grizzly Bear Sanctuary, British Columbia

Academic Department: Department of Animal Science

University: The University of British Columbia

Thesis Type: Master of Science

Abstract: Some level of human activity is often permitted in protected areas, and concerns arise over the impacts of these activities on the wildlife inhabiting them. Human impacts have traditionally been assessed under the paradigms of conservation biology and wildlife management, which tend to focus on population or community level processes. Pitts argues that public concerns over the impacts of human activity, and especially of non-consumptive recreation, also include a concern for the quality of life of individual animals, and that approaches from the field of animal welfare can address these concerns and thus complement the traditional approaches to the problem. He measured time budgets of grizzly bears at the Khutzeymateen/K'tzim-a-deen Grizzly Bear Sanctuary to assess whether human presence appeared to negatively impact the bears. Neither feeding nor travelling behaviours changed significantly in the presence of tourists. Vigilance did increase significantly, but only by modest amounts. Two bears increased their resting by over 18%, leading to an overall significant effect. These changes indicate that tourist presence does not lead to severe short-term impacts, and suggest that further restrictions are not necessary to protect the quality of life of the bears. Population parameters were not assessed in this study; a long-term monitoring plan would be necessary to rule out possible impacts at this scale.

Authors: Procko, M., Naidoo, R., LeMay, V., and Burton, A. C.

Year: 2016

Title: Human impacts on mammals in and around a protected area before, during and after COVID-19 lockdowns

Journal: Conservation Science and Practice

Volume: 4

Issue: 7

Article: e12743

Abstract: The dual mandate for many protected areas (PAs) to simultaneously promote recreation and conserve biodiversity may be hampered by negative effects of recreation on wildlife. However, reports of these effects are not consistent, presenting a knowledge gap that hinders evidence-based decision-making. Procko and colleagues used camera traps to monitor human activity and terrestrial mammals in Golden Ears Provincial Park and the adjacent University of British Columbia Malcolm Knapp Research Forest near Vancouver, Canada, with the objective of discerning relative effects of various forms of recreation on cougars (*Puma concolor*), black bears (*Ursus americanus*), black-tailed deer (*Odocoileus hemionus*), snowshoe hares (*Lepus americanus*), coyotes (*Canis latrans*), and bobcats (*Lynx rufus*). Additionally, public closures of the study area associated with the COVID-19 pandemic offered an unprecedented period of human-exclusion through which to explore these effects. Using

Bayesian generalised mixed-effects models, the authors detected negative effects of hikers (mean posterior estimate = -0.58 , 95% credible interval [CI] -1.09 to -0.12) on weekly bobcat habitat use and negative effects of motorised vehicles (estimate = -0.28 , 95% CI -0.61 to -0.05) on weekly black bear habitat use. They also found increased cougar detection rates in the PA during the COVID-19 closure (estimate = 0.007 , 95% CI 0.005 to 0.009), but decreased cougar detection rates (estimate = -0.006 , 95% CI -0.009 to -0.003) and increased black-tailed deer detection rates (estimate = 0.014 , 95% CI 0.002 to 0.026) upon reopening of the PA. The results emphasise that effects of human activity on wildlife habitat use and movement may be species- and/or activity-dependent, and that camera traps can be an invaluable tool for monitoring both wildlife and human activity, collecting data even when public access is barred. Further, Procko and colleagues encourage PA managers seeking to promote both biodiversity conservation and recreation to explicitly assess trade-offs between these two goals in their PAs.

R

Authors: Rice, M. B., Ballard, W. B., Fish, E. B., Wester, D. B., and Holdermann, D.

Year: 2007

Title: Predicting private landowner support toward recolonizing black bears in the Trans-Pecos region of Texas

Journal: Human Dimensions of Wildlife

Volume: 12

Issue: 6

Pages: 405-415

Abstract: Black bears (*Ursus americanus*) began recolonising the Trans-Pecos region of Texas from Mexico in the late 1980s after a 30-year absence. This region is predominately a ranching community and knowledge of landowner attitudes is essential to development of management plans for this population. Rice and colleagues surveyed 1,100 landowners in the region to measure their response toward the natural recolonisation of black bear in the Trans-Pecos. More positive scores toward black bear recolonisation came from younger, more educated landowners who had owned land for less than three generations. Of the landowners against recolonisation most (52%) believed that livestock losses would be excessive. Managers would benefit by focusing their efforts on increasing awareness of methods for preventing black bear damage to landowners with negative attitudes and those owning large parcels ($>4,048$ ha) of land possibly containing potential bear habitat. It is important that managers consider and incorporate landowners when managing this increasing black bear population.

Authors: Richardson, L., Huber, C., and Loomis, J.

Year: 2017

Title: Challenges and solutions for applying the travel cost demand model to geographically remote visitor destinations: A case study of bear viewing at Katmai National Park and Preserve

Journal: Human Dimensions of Wildlife

Volume: 22

Issue: 6

Pages: 550-263

Abstract: Remote and unique destinations present difficulties when attempting to construct traditional travel cost models to value recreation demand. The biggest limitation comes from the lack of variation in the dependent variable, defined as the number of trips taken over a set time frame. There are various approaches that can be used for overcoming limitations of the traditional travel cost model in the context of remote destinations. This study applies an adaptation of the standard model to estimate recreation benefits of bear viewing at Katmai

National Park and Preserve in Alaska, which represents a once-in-a-lifetime experience for many visitors. Results demonstrate that visitors to this park's Brooks Camp area are willing to pay an average of US\$287 per day of bear viewing. Implications of these findings for valuing recreation at other remote destinations are discussed.

Authors: Richardson, L., Rosen, T., Gunther, K., and Schwartz, C.

Year: 2015

Title: The economics of roadside bear viewing

Journal: Journal of Environmental Management

Volume: 140

Issue: -

Pages: 102-110

Abstract: Viewing bears along roadside habitats is a popular recreational activity in certain national parks throughout the United States. However, safely managing visitors during traffic jams that result from this activity often requires the use of limited park resources. Using unique visitor survey data, this study quantifies economic values associated with roadside bear viewing in Yellowstone National Park, monetary values that could be used to determine whether this continued use of park resources is warranted on economic grounds. Based on visitor expenditure data and results of a contingent visitation question, it is estimated that summer park visitation would decrease if bears were no longer allowed to stay along roadside habitats, resulting in a loss of 155 jobs in the local economy. Results from a nonmarket valuation survey question indicate that on average, visitors to Yellowstone National Park are willing to pay around \$41 more in Park entrance fees to ensure that bears are allowed to remain along roads within the park. Generalising this value to the relevant population of visitors indicates that the economic benefits of allowing this wildlife viewing opportunity to continue could outweigh the costs of using additional resources to effectively manage these traffic jams.

Authors: Richie, L., Oppenheimer, J. D., and Clark, S. G.

Year: 2012

Title: Social process in grizzly bear management: Lessons for collaborative governance and natural resource policy

Journal: Policy Sciences

Volume: 45

Issue: -

Pages: 265-291

Abstract: In this study, Richie and colleagues analyse a case of governance in natural resource management. Building on the limited body of literature on termination and using methods of problem orientation and social process mapping, they examine a stakeholder engagement process designed to address conflicts in grizzly bear management in Banff National Park, Alberta. Terminated in 2009 after several years of collaboration, this stakeholder engagement process explicitly used the policy sciences framework to cultivate dialogue, improve participants' decision-making skills, and make consensus-based recommendations for grizzly bear management. Richie et al.'s analysis demonstrates the utility of undertaking social process mapping and problem orientation in order to understand a natural resource policy problem. The authors include recommendations to foster a social process that allows for clarification and advancement of the common interest in stakeholder groups, insights into how social process can contribute to policy termination, and reflections on the practical, collaborative use of the policy sciences to solve problems of governance. This analysis complements other articles on this case that examine stakeholder perspectives, initial outcomes, and decision process, collectively providing a thorough policy analysis.

Author: Roberts, M.

Year: 2019

Title: Indicators and thresholds for black bear viewing proximity preferences at Alligator River National Wildlife Refuge

Academic Department: Human Movement Sciences

University: Old Dominion University

Thesis Type: Master of Science thesis

Abstract: Human-wildlife interactions in protected areas are complex, and visitor preference for close proximity to wildlife continues to challenge managers. Two indicators and thresholds questionnaires with varying photo panel orders were distributed to a total of 302 visitors at Alligator River National Wildlife Refuge in North Carolina to examine the acceptability of various distances and management actions for black bear viewing. Results show average minimum acceptability for black bear viewing is 38 yards for a single bear and 38 - 44 yards for a black bear sow with two cubs; photo panel viewing order influenced participants' evaluations, illustrating the potential for priming to significantly affect proximity evaluations. Results indicate the importance of further exploring the factors that impact proximity preferences, such as the number and age of bears and visitors' distances to personal vehicles. Additionally, observational research of visitors' behaviours within human-wildlife interactions may aid managers in understanding visitors' norms.

Authors: Roberts, M., Zajchowski, C. A. B., Skibins, J. C., and Leach, N.

Year: 2021

Title: Self-reported and observed behaviors during black bear viewing at Alligator River National Wildlife Refuge

Journal: Journal for Nature Conservation

Volume: 60

Issue: -

Article Number: 125973

Abstract: Social norms are commonly used to investigate visitor beliefs about acceptable wildlife encounters in parks and protected areas. However, there is little information detailing if self-reported norms match actual behaviours. This study compared self-reported norms ($n = 304$) for viewing distances of adult and cub black bears with behavioural observations ($n = 355$) of actual encounters at Alligator River National Wildlife Refuge, North Carolina, USA. First, Roberts and colleagues conducted a crossover design to examine the impact of viewing different groupings of bears at varying distances on acceptability beliefs. Their design significantly affected self-reported, minimum acceptable distance thresholds for an adult bear with cubs (Sequence 1 = 40.69 m; Sequence 2 = 48.24 m). Next, the authors found self-reported thresholds strongly differed from actual behaviours: 45 % of observations documented visitors closer than 40.69 m from bears. These findings illustrate the value of mixed-methods approaches to understand wildlife viewing behaviours and inform management actions.

Authors: Rode, K. D., Farley, S. D., Fortin, J., and Robbins, C. T

Year: 2007

Title: Nutritional consequences of experimentally introduced tourism in brown bears

Journal: Journal of Wildlife Management

Volume: 71

Issue: 3

Pages: 929-939

Abstract: Although numerous studies have documented behavioural effects of nature-based tourism on wildlife populations, few studies have determined whether behavioural changes

translate to effects on individual condition and population health. This issue is currently a concern for wildlife managers in Alaska, USA, and Canada where bear viewing is a rapidly growing industry expanding into previously undisturbed bear habitats. Rather than record observations at long established tourism sites, Rode and colleagues experimentally introduced bear viewing into two relatively undisturbed brown bear (*Ursus arctos*) populations in south-central Alaska. They examined the nutritional consequences of behavioural changes induced by the presence and activity of bear viewers for bears feeding on early summer vegetation and late-summer salmon (*Oncorhynchus kisutch* and *O. nerka*). The authors used Global Positioning System collars, monitored food resource availability, and quantified individual resource use and condition for a year prior to and during the introduction of bear viewing. Though bear viewing altered spatiotemporal resource use in all treatments, total resource use declined only when the authors exposed bears to 24-hour daily human activity. Energy expenditure, indexed as daily travel distances, was significantly higher when bears responded by altering spatial rather than temporal resource use. However, body weight and composition were unaffected by all treatments as bears shifted their foraging to other locations or times. Managers can minimise nutritional impacts of bear-viewing programmes by avoiding spatial displacement and providing predictable time periods when bears can access food resources free of human activity. Bears in this study exhibited a high degree of behavioural plasticity, which may be an important factor in identifying flagship species for sustainable ecotourism programmes.

Authors: Rode, K. D., Farley, S. D., and Robbins, C. T.

Year: 2006

Title: Behavioral responses of brown bears mediate nutritional effects of experimentally introduced tourism

Journal: Biological Conservation

Volume: 133

Issue: 1

Pages: 70-80

Abstract: To develop a conceptual understanding of the interaction between tourists and bears, this study examined the responses of brown bears (*Ursus arctos*) to experimentally introduced tourism at Douglas River in south-central Alaska within the framework of current predator-prey theory. Factors eliciting displacement and the nutritional consequences of behavioural changes were measured. GPS collars were deployed to track temporal and spatial resource use and scan and focal observations were used to quantify foraging efficiency, vigilance behaviour, and bear use of various food resources. Total food intake was quantified by combining data on food resource use based on GPS locations and foraging efficiency was measured using spotting scopes from long distances. Seasonal food availability and quality were monitored and utilised as co-variates in comparisons between pre-treatment and treatment years. Though the bear population exhibited significant behavioural differences between the presence and absence of humans, changes in behaviour generally mediated effects on total food intake. Adult males at a salt marsh viewing area were the only sex/age class exhibiting reduced food intake resulting from a 15% decline in foraging time when viewers were present. Salmon intake did not differ between pre-treatment and treatment years despite a 10% decline in time spent fishing when viewers were present. The tightly controlled experimental bear-viewing introduced in this study allowed bears to evaluate predation risk associated with human activity and optimally respond to minimise costs due to changes in foraging activities.

Authors: Rode, K. D., Farley, S. D., and Robbins, C. T.

Year: 2006

Title: Sexual dimorphism, reproductive strategy, and human activities determine resource use by brown bears

Journal: Ecology

Volume: 87

Issue: 10

Pages: 2639-2646

Abstract: Despite significant sexual dimorphism and differing reproductive strategies in carnivores, sexual segregation is rarely studied and is often overlooked in the management of wild populations. Potential nutritional constraints imposed by sexual dimorphism and differing reproductive strategies between the sexes have important implications, particularly when combined with differential effects of human activities on sex and age classes. Rode and colleagues examined the effects of sexual dimorphism, reproductive strategies, and human activities (bear-viewing and hunting) on resource use by different sex and age classes of brown bears (*Ursus arctos*). Sexual segregation of habitat use and effects of experimental bear-viewing were quantified at a single site in south-central Alaska, USA, by capturing, collaring, and observing brown bears at a salt marsh and salmon stream. Effects of salmon capture rate, availability of alternative salmon runs, harvest pressure, and numbers of annual visitors on sex and age class use were examined from data collected or previously published from 13 other sites. Bear-viewing sites on salmon streams where salmon capture rates were low (<4 salmon/hour) resulted in low use by adult males (<10% of all bears), except for sites with falls. However, maximum male use of viewing areas also depended on the availability of alternative salmon streams and harvest pressure. Use of habitats by females with dependent young was significantly related to the prevalence of adult males at the site. Thus, both sexual dimorphism and differing reproductive strategies led to sexual segregation in habitat use by bears. As a result of infanticide, females with young appear to prioritise avoidance of male bears over avoidance of humans when choosing habitats, in contrast to responses documented in herbivores. Because carnivores often exhibit both sexual dimorphism and infanticide, selection for sexual segregation is likely to be high. In these cases, the nutritional demands of large adult males, balanced with responses to human activity, drive dynamic temporal and spatial distributions of individuals in the population.

Authors: Rutherford, M. B., Gibeau, M. L., Clark, S. G., and Chamberlain, E. C.

Year: 2009

Title: Interdisciplinary problem solving workshops for grizzly bear conservation in Banff National Park, Canada

Journal: Policy Sciences

Volume: 42

Issue: -

Pages: 163-187

Abstract: Rutherford and colleagues used the policy sciences as an organising framework for a series of workshops with stakeholders in Banff National Park on “Interdisciplinary problem solving for grizzly bear conservation and management.” In recent years, bear conservation efforts in this region have been hindered by acrimonious disputes about the production and use of scientific knowledge in management. The workshops introduced the policy sciences as a means of thinking more effectively about problems, and encouraged participants to use this approach to develop innovative solutions to the problems of grizzly bear conservation. Each workshop addressed different aspects of the policy sciences framework: (i) Standpoint Clarification; (ii) Problem Orientation; (iii) Social Process Mapping; and (iv) Decision-Process

Mapping. In this article, the authors discuss the design and outcomes of the workshops and assess their effectiveness in integrating knowledge to find common ground.

S

Author: Sahlén, V.

Year: 2013

Title: Encounters between brown bears and humans in Scandinavia—contributing factors, bear behavior and management perspectives

Academic Department: Department of Ecology and Natural Resource Management

University: Norwegian University of Life Sciences

Thesis Type: Doctoral thesis

Abstract: Conflicts between large carnivores and humans can negatively affect attitudes and increase fear among the public. Because encounters between brown bears and humans are becoming more common in Scandinavia, the aim of this thesis was to evaluate bear-human encounters to determine risk factors for humans and how bear-human encounters affect bears. Sahlén's results show that the Scandinavian brown bear poses a very low risk to humans, even though incidents do occur (31 persons injured and two killed during 1977-2012; all men). Both single bears and females with cubs respond to approaching humans by leaving and the majority of encounters go unnoticed by humans. However, females with cubs use more open habitat than singles, which may expose them to encounters with recreational forest users. This could explain why presence of cubs is the primary factor involved when unarmed people are injured. The bears' responses to approaching humans indicate that bears perceive humans as a serious threat, as they respond to meetings with humans by becoming more nocturnal for several days, which could have fitness consequences.

Incidents resulting in injuries have increased with the number of bears shot and the bear population size. However, this relationship was only significant for armed men. Most of the injured armed men were hunting when injuries occurred, and the presence of dogs and dens were the most common aggravating factors, often coinciding with the bear den entry period. The risk of injury thus appears to be primarily linked with which type of activity people are engaging in, especially hunting with dogs.

Bears significantly reduced activity prior to den entry whether or not they had arrived at their dens, which could affect fight-or-flight responses in encounters with hunters and hunting dogs. Sahlén documented high den abandonments during October/November, five times higher than during winter, possibly attributable to hunter activity at this time. The lower abandonment rate during winter is probably due to increased costs of leaving the den, which can be considerable. Sahlén concludes that Scandinavian brown bears avoid confrontations with humans and are generally not aggressive. This study's results can be used by managers to help prevent injuries by developing recommendations for recreational users and hunters on how to best avoid risky situations and evaluate potential impacts of human activity on the bear population. It can also be used in information campaigns to address public fear and lack of acceptance of the brown bear.

Authors: Scott, P. A., and Stirling, I.

Year: 2002

Title: Chronology of terrestrial den use by polar bears in Western Hudson Bay as indicated by tree growth anomalies

Journal: Arctic

Volume: 55

Issue: 2

Pages: 151-166

Abstract: In a large polar bear denning area inland from the coast of western Hudson Bay south of Churchill, Manitoba, previous denning activity was determined by examining tree growth anomalies in the black spruce (*Picea mariana*) around and above den sites. A concentrated sample of dens was examined at each of three lakes, and 14 additional den sites were sampled individually on nine lakes and streams, for a total of 31 den sites. Trees sampled at these den sites ranged in age from 46 to 236 years ($n = 83$, mean = 136, SE \pm 95.66). Some individual den sites dated back at least 200 years. Although some dens had been used for up to 29 years, most were used for only 12 years or less, presumably until melting permafrost caused their collapse. Half of the dens were reused two years after their initial use, but the probability of den reuse declined in subsequent years to about 0.25 after 10 years. During the 20th century, coincident with a reduction in hunting during 1920-53 and the subsequent abandonment of York Factory, there appears to have been an increase in den activity and an accompanying change in the pattern of denning activity. The rate of disturbance to the trees at dens correlated significantly to the number of polar bear hides traded at York Factory over the 1840-1935 period ($r = 0.654$; $p < 0.005$). During 1850-99, denning activity was greater at points more distant from the trading post at York Factory. In 1900-53, there was an overall increase in denning activity, which was greatest in denning areas nearer to York Factory ($r = -0.872$; $p < 0.01$). In 1954-93, the increase in denning activity continued, but varied with distance from the coast ($r = -0.724$; $p < 0.05$). Mark-recapture studies undertaken from 1970 to 2000 confirm that female polar bears in the western Hudson Bay population have a long-term fidelity to this specific area for maternity denning, and from this study it is evident that the population has used this denning area for several hundred years at least.

Authors: Siemer, W. F., Decker, D. J., and Shanahan, J.

Year: 2007

Title: Media frames for black bear management stories during issue emergence in New York

Journal: Human Dimensions of Wildlife

Volume: 12

Issue: 2

Pages: 89-100

Abstract: Siemer and colleagues completed a content analysis of newspaper, radio, and television reports ($n = 117$) available to people in New York State between January 1999 and March 2002, to characterise how news stories differed with regard to problem identification, attributions of responsibility, and proposed solutions to black bear management problems. Nearly all reports could be characterised as episodic rather than thematic (i.e., focused on specific events rather than general outcomes or conditions). Reports identified few bear-related problems, suggested few solutions to problems, and tended to attribute responsibility for solving problems to individuals, not government agencies. Siemer and colleagues suggest that wildlife managers make efforts to raise stakeholder awareness about a wider array of bear-human interactions and effects of interactions than are reported by mass media as management issues emerge. By improving media relations plans and investing in stakeholder issue

education, wildlife agencies can enable communities to create frames for productive dialogue about black bear management.

Authors: Siemer, W. F., Sol Hart, P., Decker, D. J., and Shanahan, J.

Year: 2009

Title: Factors that influence concern about human-black bear interactions in residential settings

Journal: Human Dimensions of Wildlife

Volume: 14

Issue: 3

Pages: 185-197

Abstract: Problematic human–black bear interactions have increased in North America. Research is needed to clarify influences on human concern about and reaction to bear behaviour, such that wildlife managers can better understand and maintain stakeholder acceptance capacity for bears. This article uses mail survey data (n = 1,038, response rate = 42%) and structural equation modelling (SEM) to test a conceptual model of factors affecting concern about bears and predisposition to contact authorities for assistance. Findings support hypotheses that both variables are influenced by wildlife value orientation, personal experience with bears, and television viewing. Use of print media is not a predictor of concern or behavioural predisposition, leading to rejection of those hypotheses. Strong wildlife benefits beliefs and neutral personal experience with bear presence attenuate concern, while exposure to television has the opposite effect. Findings suggest that improving measures of personal experience and basic beliefs will strengthen models of bear-related concern.

Authors: Skibins, J. C., Hallo, J. C., Sharp, J. L., and Manning, R. E.

Year: 2012

Title: Quantifying the role of viewing the Denali “Big 5” in visitor satisfaction and awareness: Conservation implications for flagship recognition and resource management

Journal: Human Dimensions of Wildlife

Volume: 17

Issue: 2

Pages: 112-128

Abstract: Wildlife viewing is a primary attraction at Denali National Park (DNP), with most visitors wishing to observe the “Big 5”: Grizzly bear (*Ursus arctos*), wolf (*Canis lupus*), caribou (*Rangifer tarandus*), Dall sheep (*Ovis dalli dalli*), and moose (*Alces alces gigas*). This study explored the role of individual “Big 5” species on (a) visitors' wildlife viewing satisfaction, (b) overall trip satisfaction, and (c) awareness of fundamental purposes for establishing DNP (i.e., enabling legislation). Data were obtained from 582 DNP visitor surveys during 2007. Grizzly observations yielded significantly higher levels of wildlife viewing satisfaction than all other species except caribou. No significant difference was found between species for overall trip satisfaction. Awareness of enabling legislation improved with higher levels of satisfaction and number of species observed. Grizzly bear and caribou are recommended as flagship species. This could increase viewing opportunities and visitor satisfaction within an experienced-based management framework.

Authors: Skibins, J.C., and Sharp, R.L.

Year: 2017

Title: Evaluation of the brown bear viewing experience at Katmai National Park and Preserve: Implications for management

Journal: Human Dimensions of Wildlife

Volume: 22

Issue: 5

Pages: 476-482

Abstract: Bear experts regularly recommend limiting visitor access to areas critical to bear survival (e.g., feeding grounds). Seeing a bear in the wild, however, is a highly prized visitor experience. This article measured how viewing bears influenced visitors' connection to bears (conservation caring), park interest, and support for restrictive management. Data were obtained from 235 visitors at Katmai National Park and Preserve. Conservation caring and support for restrictive management were consistent until visitors spent 11 hours or more watching bears. Thus, managers may not need to focus on increasing duration of time spent on viewing platforms. Conservation caring predicted levels of park interest ($\beta = .51$) and support for restrictive management ($\beta = .44$). These data suggested anytime spent watching bears is capable of producing moderate emotional connections and strong support for management. As visitors form an emotional connection to a resource, they are more supportive of stricter management actions.

Authors: Skibins, J. C., and Sharp, R. L.

Year: 2019

Title: Binge watching bears: Efficacy of real vs. virtual flagship exposure

Journal: Journal of Ecotourism

Volume: 18

Issue: 2

Pages: 152-164

Abstract: Advances in conservation psychology have demonstrated a growing public demand for connections to nature in general, and wildlife specifically. Charismatic megafauna have been used as flagship species, as they possess many characteristics to which the public can relate. Internet based webcams are emerging as an egalitarian mediator for bringing flagship exposure to the global public. This study examined if flagship exposure via a webcam was able to produce desired flagship responses, and if online responses were comparable to onsite experiences. A quantitative survey of Katmai National Park and Preserve brown bear viewers yielded 235 on-site and 5,628 online responses. Real time, online viewing of brown bears was highly effective in generating flagship responses within viewers and the ability of online viewing to generate a positive emotional connection to bears was observed. Webcams can provide a global reach, minimise impacts, overcome socio-economic barriers, and provide multiple points of engagement across cultures.

Author: Smith, J. S.

Year: 2001

Title: Bear-viewing ecotourism in British Columbia: Ecological, economic, and social perspectives using a case-study analysis of Knight Inlet Lodge, BC

Academic Department: Department of Wildlife Resources

University: Utah State University

Thesis Type: Master of Science

Abstract: Following a worldwide pattern of rapid ecotourism growth, British Columbia's wildlife-viewing industry is poised to expand in the near future. Using a case study example of

Knight Inlet Lodge, the province's first and to date only destination for viewing grizzly bears (*Ursus arctos*) in the wild, Smith examines three criteria for sustainability that may help determine the short- and long-term direction and success of this industry: Economic viability, ecological sensitivity, and cultural appropriateness.

A high demand for ecotourism and wildlife viewing, both worldwide and in British Columbia in particular, is tempered by the potential economic pitfalls of ecotourism and the difficulties of calculating the value of viewed species and habitats. Nonetheless, an economic analysis of Knight Inlet Lodge and comparable locations in Alaska reveals a high demand and income potential for bear viewing in British Columbia.

Numerous studies have demonstrated the potential for ecotourism and wildlife viewing to have an adverse effect on the species and habitats on which they depend. A literature review reveals the numerous ways in which this can occur on different types of targets, including bears, but also suggests ways to minimise this impact.

Ecotourism's challenge of satisfying the needs and desires of both visitors and local communities, and ultimately enriching both in economic and cultural ways, begins with assembling baseline socioeconomic data. A survey of Knight Inlet Lodge guests, when compared to similar data on North American ecotourists and residents, indicates that visitors tend to be well-educated, financially secure, older, and concerned with the wellbeing of their natural surroundings and the animals they travel to view - both of which local communities tend to value highly as well.

Author: Smith, T. S.

Year: 2002

Title: Effects of human activity on brown bear use of the Kulik River, Alaska

Journal: *Ursus*

Volume: 13

Issue: -

Pages: 257-267

Abstract: Smith systematically observed brown bear (*Ursus arctos*) and human activity on a sockeye salmon (*Oncorhynchus nerka*) stream in Katmai National Park during fall 1993 and 1995. More than 700 hours of observations were used to determine the temporal and spatial use patterns by people and bears as well as the frequency, nature, and outcome of bear-human interactions. Bears altered their temporal and spatial use of the river to accommodate human activity, seeking times and places where human use was lowest. Bear-human interactions were primarily the result of people venturing into areas of concentrated bear activity, rather than bears entering areas heavily used by people. Approximately one-fourth of bears involved in bear-human interactions left the river, not to return for several hours. Bears acted differently in river zones dominated by people than in zones dominated by bears in that they spent less time on the river, less time resting, and more time moving about in human-dominated zones. The data suggest that as long as there are areas where bears can avoid human activity, they will seek them to gain access to salmon. If, however, human use of the river continues to increase as it has the past decade, the day may come when there will be no more room for bears.

Authors: Smith, T. S., and Johnson, B. A.

Year: 2004

Title: Modeling the effects of human activity on Katmai brown bears (*Ursus arctos*) through the use of survival analysis

Journal: Arctic

Volume: 57

Issue: 2

Pages: 160-165

Abstract: Brown bear-human interactions were observed in 1993, 1995, and 1997 at Kulik River in Katmai National Park and Preserve, Alaska. Smith and Johnson analysed these interactions using survival analysis, creating survival curves for the time that bears remained on the river in the presence, and absence, of human activity. Bear-only survival curves did not vary significantly between years ($p = 0.067$). Ninety-seven percent of bears left the river within 70 minutes of arrival in all years. Temporal patterns of bear activity were unaffected by the presence of humans as long as the bears did not share river zones with humans ($p = 0.062$ to $p = 0.360$). When people and bears did not share river zones, 38.6% (1993), 36.0% (1995), and 37.0% (1997) of bears remained on the river for at least 10 minutes after arrival. In contrast, when people and bears shared river zones, fewer bears remained on the river after the first 10 minutes, with 28.6% (1993), 25.0% (1995), and 32.6% (1997) observed in each year. The authors conclude that human activity displaced 26.0% (1993), 30.5% (1995), and 12.0% (1997) of the bears using the river, which otherwise would likely have remained longer. Over the three years of study, habituation to human activity may account for observed changes in bears' use of the river.

Authors: Smith, T. S., Oyster, J., Partridge, S. D., Martin, I. E., and Sisson, A.

Year: 2012

Title: Assessing American black bear response to human activity at Kenai Fjords National Park, Alaska

Journal: Ursus

Volume: 23

Issue: 2

Pages: 179-191

Abstract: Smith and colleagues measured American black bear (*Ursus americanus*) responses to hikers, small power skiffs, kayakers, and overnight campsites within coastal salt marsh foraging areas. To accomplish this, they experimentally approached bears in the intertidal and supratidal zones of Aialik Bay (AB) and Nuka Bay (NB), Kenai Fjords National Park, Alaska. The authors chose these areas due to their different levels of human activity (AB = high, NB = low). In the first experiments, they determined the overt response distances (ORD: when bears first responded to the authors' approaches) and flight initiation distances (FID: the distance at which bears were pushed from their original location) for 118 black bear groups involving 136 bears. Smith and colleagues found no difference between ORD response to power skiffs and kayaks, nor between those responding to kayaks versus foot approaches. However, bears first responded to power skiffs 50m farther than first responses to foot approaches. There was no difference in FID between all modes of approach. There were no differences in response intensities (a qualitative scale depicting strength of bear response to human presence at both the ORD and FID) between any of the modes of approach. There were no differences in bear minutes/hour (minutes of bear presence in the study area/hour of observation) or numbers of bears at NB and AB before or after campsites were present. There was, however, a difference in levels of bear activity in NB and AB when campsites were in place: AB bear minutes/hour decreased by 50% and NB bear minutes/hour increased by 75%.

The authors recommend minimum approach distances of 170m for skiffs and kayaks and 116m for hikers to minimise bear displacement by visitors to the park. Additionally, they suggest people avoid camping in saltmarsh areas so as to leave bears undisturbed.

Authors: Stewart, E. J., and Draper, D.

Year: 2007

Title: A collaborative approach to understanding local stakeholder perceptions of tourism in Churchill, Manitoba (Canada)

Journal: Polar Geography

Volume: 30

Issue: 1-2

Pages: 7-35

Abstract: This paper explores the process of research that investigated perceptions of tourism held by local stakeholders, particularly residents, in Churchill, Manitoba (Canada). The research adopted a collaborative, multi-stage, multi-method approach to examine how a range of stakeholder groups perceive tourism; their fears and concerns, likes and dislikes about past and present tourism activities and their aspirations for future tourism development. Qualitative data gathered during four visits to Churchill in 2005–2006 illustrate that the perception of tourism activities varies considerably among stakeholder groups. From the responses, a five-fold classification of stakeholder perceptions was developed. As a distinct stakeholder group, the majority of local residents generally were welcoming of tourism. The implications of this research for theory and method are highlighted, and in an effort to enhance local benefits arising from the research, key recommendations for the community are presented.

Authors: Stirling, I., and Derocher, A. E.

Year: 1993

Title: Possible impacts of climatic warming on polar bears

Journal: Arctic

Volume: 46

Issue: 3

Pages: 240-245

Abstract: If climatic warming occurs, the first impacts on polar bears (*Ursus maritimus*) will be felt at the southern limits of their distribution, such as in James and Hudson bays, where the whole population is already forced to fast for approximately four months when the sea ice melts during the summer. Prolonging the ice-free period will increase nutritional stress on this population until they are no longer able to store enough fat to survive the ice-free period. Early signs of impact will include declining body condition, lowered reproductive rates, reduced survival of cubs, and an increase in polar bear-human interactions. Although most of these changes are currently detectable in the polar bears of western Hudson Bay, it cannot yet be determined if climatic change is involved. In the High Arctic, a decrease in ice cover may stimulate an initial increase in biological productivity. Eventually however, it is likely that seal populations will decline wherever the quality and availability of breeding habitat are reduced. Rain during the late winter may cause polar bear maternity dens to collapse, causing the death of occupants. Human-bear problems will increase as the open water period becomes longer and bears fasting and relying on their fat reserves become food stressed. If populations of polar bears decline, harvest quotas for native people will be reduced and eventually be eliminated. Tourism based on viewing polar bears in western Hudson Bay will likely disappear. Should the Arctic Ocean become seasonally ice free for a long enough period, it is likely polar bears would become extirpated from at least the southern part of their range. If climatic warming

occurs, the polar bear is an ideal species through which to monitor the cumulative effects in arctic marine ecosystems because of its position at the top of the arctic marine food chain.

Author: Su, L.

Year: 2019

Title: The impact of tourist behaviour intention on panda ecotourism based on system dynamics: A case of panda eco-tourism project in China

Academic Department: Faculty of Social Sciences

University: University of Bergen

Thesis Type: Master's thesis

Abstract: Since in recent years, tourism has become becoming more and more popular, the government has put forward an ecological tourism on giant pandas in Sichuan Province, aiming at promoting local tourism and promoting economic development. At the same time, ecological tourism has certain educational significance, especially for giant pandas, an endangered animal. Developing ecotourism, more people can get a deeper understanding of the living status and current environment of giant pandas, thus appealing to more people to participate in the protection of giant pandas over a long period of time. However, there are some doubts about the project of vigorously developing panda ecotourism. The expansion of tourist reception sites will cut down forests and turn more forest land into roads, reception sites and scenic spots, which seriously affects the living space of wildlife and makes the habitat of giant pandas smaller and smaller. Moreover, for domestic short-distance travel, the public prefers to choose private cars or tourist buses. The emission of automobile exhaust will also pollute the local air, thus indirectly affecting the life span of giant pandas. The factors mentioned above are all related to the tourists' behavioural intention on this project. Under this circumstance, this paper takes system dynamics as the main research method, adopts some data collection methods, establishes the basic data and makes a concrete research through the concept of behavioural intention. A series of solutions, replacing with new energy vehicles and planting more trees to return farmland to forest, are also put forward and evaluated the effect of the implementation of the scheme. After the implementation of the policy, it indicates that the number of giant pandas increases, the capacity of tourism reception increases and tourism income increases correspondingly. The urgent problem of sustainable development of ecological tourism of giant pandas has been solved. In the end of this article, some limitations and restrictions of implementation are also put forward together with some considerations of stakeholders.

Author: Swain, P.

Year: 2006

Title: The value of watchable wildlife: Measuring the impacts of bear viewing in British Columbia

Academic Department: School of Natural Sciences

University: University of Central Lancashire

Thesis Type: Master of Science

Abstract: Swain examined the economic impact of commercial grizzly bear viewing in British Columbia and the potential impact it could have on the new land-use planning process. Surveys of operators described economic rents attributed to bear viewing and identified barriers to success and positive elements within the industry. Swain incorporated a tourist motivation questionnaire to describe the importance of bear viewing on choice to visit the region and province in order to accurately allocate visitor expenditures. Responses support the presence of a wildlife-viewer tourist typology.

Responses from bear viewing operators were not sufficient to enable a full industry economic analysis but were adequate for the creation of a set of parameters for future planning of grizzly

bear viewing operations in the province, as is required by the land use planning process. A map of possible grizzly bear viewing locations on the coast was produced and compared to known biodiversity values and presence of old growth forest, with a discussion on the potential commercial bear viewing has to preserve high value landscape. Mean values of bear viewing operations indicated they were worth the equivalent of 1290 Hectares of old-growth forest when measured on a simple financial basis. Legislative, operational and other barriers to success are discussed in the context of expanding the commercial grizzly bear viewing industry.

Authors: Swainsgood, R. R., Wei, F., Wildt, D. E., Kouba, A. J., and Zhang, Z.

Year: 2009

Title: Giant panda conservation science: How far we have come

Journal: Biology Letters

Volume: 6

Issue: 2

Article: 0786

Abstract: The giant panda is a conservation icon, but science has been slow to take up its cause in earnest. In the past decade, researchers have been making up for lost time, as reflected in the flurry of activity reported at the symposium *Conservation Science for Giant Pandas and Their Habitat* at the 2009 International Congress for Conservation Biology (ICCB) in Beijing. In reports addressing topics ranging from spatial ecology to molecular censusing, from habitat recovery in newly established reserves to earthquake-induced habitat loss, from new insights into factors limiting carrying capacity to the uncertain effects of climate change, this symposium displayed the vibrant and blossoming application of science to giant panda conservation. Collectively, the authors find that we have come a long way, but they also reach an all-too-familiar conclusion: the more we know, the more challenges are revealed. While many earlier findings are supported, many of our assumptions are debatable. Here the authors discuss recent advancements in conservation science for giant pandas and suggest that the way forward is more direct application of emerging science to management and policy.

Authors: Swanson, T., Qiven, W., Kontoleon, A., Xuejun, Q., and Tao, Y.

Year: 2001

Book Title: The economics of panda reserve management

City: Biology Letters

Publisher: Bethesda, Maryland, USA

Abstract: The project develops an economic framework for the managed development of ecotourism for the effective conservation of biodiversity. This framework is then applied to the Wolong Panda Reserve, Sichuan Province, China - the reserve with the single largest population of pandas in the wild.

The principal findings of the study are as follows: First, the Wolong Panda Reserve is under threat by reason of a large number of conflicting uses taking place within the reserve. The local peoples undertake many activities (agriculture, forestry, hunting and gathering). The total economic value of these uses is very small, but for the maintenance of local livelihoods these uses are often crucial. These people see little if any benefit from the existence of pandas in the reserve, and their activities continue to place pressure upon the species. This conflict increases the costs of reserve management and decreases the prospects for the panda's continuing survival.

Second, the value of ecotourism in the Wolong Panda Reserve (if properly managed) lies between twenty-nine and forty-two million US dollars (\$29-42 million) per annum. Importantly, this value may be achieved while remaining within the constraints of the carrying

capacities of the Reserve, as provided by experts familiar with the area. The most-favoured option consists of mountain lodge-based tourism, consisting of about 30 tourists per night visiting the reserve.

Third, the average tourist in China has a willingness to contribute towards panda conservation in China, irrespective of their intent to travel to Sichuan to see the species. The average tourist would be willing to make a contribution by means of the purchase of a Giant Panda Conservation Stamp at the time of the acquisition of a tourist visa. The optimal price for such a Conservation Stamp would be about US\$12. At current levels of foreign tourist arrivals in China, the amount of revenues generated by such a programme would amount to approximately fifty-seven million dollars (US\$57 million) per annum.

In sum, the project demonstrates that the proper management of the Giant Panda Reserves in Sichuan province should be able to generate an estimated \$100 million per annum for the Wolong Reserve. This stands in contrast to the \$250 thousand currently being allocated to reserve management. If a small proportion of this value is appropriated and then channelled to the local peoples, this would dramatically alter the incomes of these local communities and their perceptions of the value of the giant panda. The opportunity cost of allowing the continuing demise of the species, by reason of the continuation of conflicting uses and activities within the Reserve, is the loss of these natural values.

The role of ecotourism development is to demonstrate the value of these Reserves, if retained in their natural state and for their natural uses. In many cases these “natural” uses will far exceed the value of other harvesting or agricultural uses. There are few cases where this is more clear-cut than in the case of the Wolong Giant Panda Reserve. In this instance the immense value of the giant panda continues to be lost by reason of human activities that generate only a handful of dollars of income for the local people. The development of the ecotourism value of the reserve for these local peoples is critically important to the retention of this species. Otherwise, the panda reserves will continue in their decline.

Authors: Swenson, J. E., Sandegren, F., Söderberg, A., Heim, M., Sørensen, O. J., Bjärvall, A., Franzen, R., Wikan, S., and Wabakken, P.

Year: 1999

Title: Interactions between brown bears and humans in Scandinavia

Journal: Biosphere Conversation

Volume: 2

Issue: 1

Pages: 1-9

Abstract: Swenson and colleagues have analysed 114 meetings between brown bears (*Ursus arctos*) and personnel in bear research projects in Sweden and Norway, reviewed the Scandinavian literature, 1750-1962, regarding people injured and killed by bears, and analysed instances of human injuries relating to bear attacks during the more recent period, 1976-1995. The last time people were killed by bears was in 1902 in Sweden and in 1906 in Norway. However, most meetings between bears and humans result in the bear leaving. The authors observed no direct attacks, but bluff charges occurred in 4% of the meetings. Blowing and growling were apparent warning behaviours associated with the presence of cubs or carcasses. Seven people have been injured in Scandinavia in the past 20 years; six were hunters, and in five cases the bear was wounded or possibly wounded. Swenson and colleagues conclude that the most dangerous situation is when a bear is wounded. In addition, they identified several situations that contributed to increased levels of aggressiveness among bears. They are, in decreasing importance: The presence of cubs, proximity to a carcass, proximity to a den, and the presence of a dog. The results showed that the Scandinavian brown bear is not particularly

dangerous. A relatively high proportion of wounded bears may have contributed to the apparently higher levels of fatalities in the last century.

Authors: Swenson, J. E., Wabakken, P., Sandegren, F., Bjärvall, A., Franzén, R., and Söderberg, A.

Year: 1995

Title: The near extinction and recovery of brown bears in Scandinavia in relation to the bear management policies of Norway and Sweden

Journal: Wildlife Biology

Volume: 1

Issue: 1

Pages: 11-25

Abstract: Records of bountied brown bears (*Ursus arctos*) in Norway and Sweden were analysed to estimate population size in the mid-1800's, and changes in population size and distribution in relation to the bear management policies of both countries. In the mid-1800's about 65% of the bears in Scandinavia were in Norway (perhaps 3,100 in Norway and 1,650 in Sweden). Both countries tried to eliminate the bear in the 1800's; Sweden was more effective. By the turn of the century, the numbers of bears were low in both countries. The lowest population level in the population remnants that have subsequently survived occurred around 1930 and was estimated at 130 bears. Sweden's policy was changed at the turn of the century to save the bear from extinction. This policy was successful, and the population is now large and expanding. Norway did not change its policy and bears were virtually eliminated by 1920–30. Since 1975, bear observations increased in Norway. This coincided temporally with an abrupt increase in the Swedish bear population, and bears reappeared sooner in areas closer to the remnant Swedish populations. Both conditions support the authors' conclusion that the bear was virtually exterminated in Norway and suggest that bears observed now are primarily immigrants from Sweden, except for far northern Norway, which was recolonised from Russia and Finland. Today, the authors estimate that the Scandinavian bear population numbers about 700, with about 2% in Norway (on average about 14 in Norway, 650–700 in Sweden). This is a drastic reduction in the estimate of bears in Norway, compared with earlier studies. The trends in bear numbers responded to the policies in effect. The most effective measures used in Scandinavia to conserve bears were those that reduced or eliminated the economic incentive for people to kill them. This analysis also suggests that population estimates based on reports from observations made by the general public can be greatly inflated.

Author: Suzanto, I.

Year: 2020

Title: Svalbards isbjörnar i en tid av ökad sjöburen turism (Arctic tourism and the protection of the polar bear: An environmental law analysis of the protection of Svalbard's polar bears in a time of increased seaborne tourism)

Academic Department: Faculty of Law

University: Stockholm University

Thesis Type: Master's thesis

Abstract: One of the main attractions for tourists visiting Svalbard, Norway, are polar bears. The polar bear is a vulnerable species, dependent on sea ice to survive as this is where they hunt, wander and raise their cubs. Ship-based tourism poses a number of threats mainly due to the disturbances caused by the presence of ships, damage of critical habitats and the increasing interactions and deadly conflicts between humans and polar bears. Appropriate and effective legislation based on scientific knowledge of the impacts of ship-based tourism on polar bears is necessary to ensure sustainable tourism and environmental protection. Species protection

and habitat conservation is not an issue isolated to Svalbard or the polar bears but rather just one part of the pressing global issue concerning loss of biodiversity, which is one of the greatest threats to humankind.

T

Authors: Thoo, P. Y., and Johari, S.

Year: 2016

Title: Visitor satisfaction towards facilities of the Giant Panda Conservation Centre, Zoo Negara Malaysia: An exploratory study

Journal: Asia-Pacific Journal of Innovation in Hospitality and Tourism

Volume: 5

Issue: 3

Pages: 71-88

Abstract: Understanding visitor satisfaction level is essential to attracting and retaining visitors. The purpose of this study is to evaluate visitor satisfaction towards the Giant Panda Conservation Centre (GPCC) facility. GPCC is the latest main attraction in Zoo Negara where two giant pandas, which come under the Malaysia-China Giant Panda International Conservation Agreement programme, are located and exhibited for visitors. To date, there has been no significant research done regarding visitor satisfaction on the facilities at GPCC. Thoo and Johari used a quantitative method and employed a purposive sampling approach. The level of visitor satisfaction was measured using a four-point Likert scale. A self-administered questionnaire was used to survey a sample of 250 visitors. The data gathered were analysed using descriptive analysis. Results indicate that the visitors were satisfied with the overall facilities provided. However, there were a few facilities which gained lower satisfaction levels from the visitors. Therefore, the GPCC management should continue to maintain the standard of facilities that they are providing and take serious consideration in improving on those that recorded lower satisfaction.

Authors: Thoo, P. Y., Johari, S., Ismail, M. H., and Yee, L. L.

Year: 2019

Title: Understanding the role of memorable tourism experiences in loyalty at Giant Panda Conservation Centre, Zoo Negara Malaysia

Journal: Semantic Scholar

Volume: -

Issue: -

Article: 212456518

Abstract: Memorable tourism experiences (MTEs) have recently emerged to become an important study for tourism destinations to compete in this rapid growing marketplace. Unlike visitors' loyalty, it has always been a vital objective of service providers. Positive MTEs have been hypothesised for being able to develop future behavioural intentions in the visitors such as revisiting a destination. There is currently still a lack of studies regarding the relationship between these two dimensions especially at Giant Panda Conservation Centre (GPCC) in Zoo Negara Malaysia, which was established in 2014. GPCC is the enclosure of the two giant pandas loaned to Malaysia by China to mark the 40th Anniversary Diplomatic Relationship between the two countries. For GPCC, loyal visitors and also new visitors are crucial as the giant pandas will be there for 10 years. Therefore, this research examines whether MTEs can affect a visitor's loyalty at GPCC in Zoo Negara. A quantitative method was used with a sample of 217 visitors and multiple regression analysis was carried out. The results showed that MTEs have a significant relationship with visitors' loyalty. In a nutshell, it is essential for GPCC's

management to increase positive visitors' MTEs in order to increase the number of loyal visitors who will revisit GPCC and provide positive word of mouth to their family and friends so that they will help to attract more new visitors.

Author: Turner, C. N.

Year: 2016

Title: Impacts of human recreation on brown bears (*Ursus arctos*): A review and new management tool

Journal: PLoS One

Volume: 11

Issue: 1

Article: e0141983

Abstract: Increased popularity of recreational activities in natural areas has led to the need to better understand their impacts on wildlife. The majority of research conducted to date has focused on behavioural effects from individual recreations, thus there is a limited understanding of the potential for population-level or cumulative effects. Brown bears (*Ursus arctos*) are the focus of a growing wildlife viewing industry and are found in habitats frequented by recreationists. Managers face difficult decisions in balancing recreational opportunities with habitat protection for wildlife. Here, Turner integrates results from empirical studies with expert knowledge to better understand the potential population-level effects of recreational activities on brown bears. She conducted a literature review and Delphi survey of brown bear experts to better understand the frequencies and types of recreations occurring in bear habitats and their potential effects, and to identify management solutions and research needs. Turner then developed a Bayesian network model that allows managers to estimate the potential effects of recreational management decisions in bear habitats. A higher proportion of individual brown bears in coastal habitats were exposed to recreation, including photography and bear-viewing than bears in interior habitats where camping and hiking were more common. The results suggest that the primary mechanism by which recreation may impact brown bears is through temporal and spatial displacement with associated increases in energetic costs and declines in nutritional intake. Killings in defence of life and property were found to be minimally associated with recreation in Alaska, but are important considerations in population management. Regulating recreation to occur predictably in space and time and limiting recreation in habitats with concentrated food resources reduces impacts on food intake and may thereby, reduce impacts on reproduction and survival. Turner's results suggest that decisions managers make about regulating recreational activities in time and space have important consequences for bear populations. The Bayesian network model developed here provides a new tool for managers to balance demands of multiple recreational activities while supporting healthy bear populations.

V

Author: Vequist, G. W.

Year of Conference: 1987

Title: Management of beach camping to reduce human-bear conflicts in Glacier Bay, Alaska

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 129-132

Abstract: Black bears (*Ursus americanus*) concentrated in large numbers on certain beaches in Glacier Bay National Park, Alaska. Soon after the bears emerged from their dens, they were attracted to beach meadows where they foraged on grasses and sedges. Comparing levels of

seasonal visitor use with patterns of habitat use by bears made it possible to predict when and where human-bear conflicts might occur. To avoid such conflicts, beach meadows with a high density of foraging bears were closed to overnight camping. Black bear numbers in the beach meadow habitats were monitored prior to and during the closed periods. The restriction of human use in certain beach meadows during critical periods of May and June resulted in a reduction of bear incidents at those locations. The restrictions will help maintain a wild and natural black bear population.

Authors: Verbos, R. I., Brownlee, M. T. J., and Skibins, J. C.

Year: 2015

Title: Understanding visitors' commitment to grizzly bear conservation at Denali National Park and Preserve

Journal: Alaska Park Science

Volume: 17

Issue: 4

Pages: 60-69

Abstract: Locations such as Denali (DENA) rely on the link between visitors' wildlife viewing experiences and subsequent support for conservation. However, park managers and interpreters often need empirical data to identify visitors' perceptions towards conservation issues. Park management and interpretation often rely on understanding an audience's perceptions and experiences, particularly related to site-specific resources, such as grizzly bears at DENA. Similar to interpretation, many public outreach initiatives use an audience's existing perceptions and experiences as a foundation to design strategic pro-conservation messages. Environmental policy decisions also require an understanding of constituents' underlying perceptions. Without understanding visitors' grizzly bear viewing experiences and levels of caring about the grizzly bears, wildlife interpretation and management decisions may be misinformed. Therefore, during the summer of 2013, researchers investigated DENA visitors' commitment to grizzly bear conservation to inform park management, interpretation, and outreach. Specifically, researchers and managers sought insight into (a) the emotional impact of the grizzly bear viewing experience, (b) visitors' levels of conservation caring, and (c) their willingness to engage in on-site pro-conservation behaviours towards grizzly bears at the park. These constructs and their measurements are discussed in this paper.

Authors: Verbos, R. I., Zajchowski, C. A. B., Brownlee, M. T. J., and Skibins, J. C.

Year: 2017

Title: 'I'd like to be *just* a bit closer': Wildlife viewing proximity preferences at Denali National Park & Preserve

Journal: Journal of Ecotourism

Volume: 17

Issue: 4

Pages: 409-424

Abstract: Proximity, the physical distance between visitors and wildlife, has been suggested as a potential factor contributing to high-quality wildlife viewing experiences. Managing visitor proximity to wildlife through interpretation and regulation is a recognised strategy to improve the safety of visitors and the species they encounter during ecotourism experiences in parks and protected areas. To further understand the important elements that influence proximity preferences for wildlife viewing, this study used an interpretivist approach to explore the experiences of visitors (n=43) at Denali National Park & Preserve (Alaska, USA). Results indicate that five interrelated themes influence visitors' desired proximity to wildlife. Study findings also highlight the importance of park unit-specific management, and the need to

manage at a unit-specific level the expectations for wildlife viewing proximity. Practitioners can use these findings to inform wildlife viewing management, increase visitor safety, and positively influence visitor experiences.

Authors: Vernon, M. E., Bischoff-Mattson, Z., and Clark, S. G.

Year: 2015

Title: Discourses of elk hunting and grizzly bear incidents in Grand Teton National Park, Wyoming.

Journal: Human Dimensions of Wildlife

Volume: 21

Issue: 1

Pages: 65-85

Abstract: Incidents of human-wildlife conflict can solidify participant perspectives and expectations, and reveal underlying social and institutional dynamics. Vernon and colleagues describe and analyse two incidents of conflict between hunters and grizzly bears in 2011 and 2012. Both incidents were associated with the controversial elk hunt in Grand Teton National Park, Wyoming. The authors gathered quotes from opinion-editorials and interviews, categorised quotes according to type, and used cluster analysis to identify discourses and associated coalitions of participants. They examined how participants defined problems, used evidence, and advocated solutions in relation to these incidents. Participant discourses addressed technical and procedural issues of regional wildlife management that extended beyond these incidents, revealing divergent expectations about wildlife management on public lands. Existing decision-making processes dominated by government agencies do not appear to be addressing these expectations. Vernon and colleagues recommend an integrative, outside appraisal of regional elk management to address conflict and support ecologically sound decision-making that serves common interests.

W

Authors: Wan Ainnur, B. W. M., and Kunasekaran, P.

Year: 2016

Title: Wildlife value orientations towards Giant Panda Conservation Centre (GPCC) at Zoo Negara, Malaysia

Journal: Asia-Pacific Journal of Innovation in Hospitality and Tourism

Volume: 5

Issue: 3

Pages: 123-134

Abstract: This study aims to identify the wildlife value orientations of the giant panda at Giant Panda Conservation Centre (GPCC), Zoo Negara Malaysia. The giant panda is considered as one of the most endangered wildlife in the world. Wildlife value orientations (WVO) are important in the management of human-wildlife interaction conflict. Therefore, in this article past studies on WVO and the theoretical approach of the cognitive hierarchy model as well as the WVO dimension of domination and mutualism towards Giant Panda are explained. By understanding characteristics of visitors to GPCC and the value that they place on Giant Panda, this can allow useful implications for visitor management strategies in order to influence visitor behaviour and encourage minimal impacts.

Authors: Wan, W., and Wei, J.

Year: 2009

Title: Relationship between natural heritage conservation and tourism development in buffer zone – a case of Sichuan Giant Panda Sanctuary

Journal: Resource Development & Market

Volume: 10

Issue: -

Pages: -

Abstract: Balancing the relationship between property protection and community development scientifically and reasonably as to manage the world heritage well was an important way to ensure its sustainable development and an indication to abide by the convention concerning the protection of the world cultural and natural heritage. This paper assessed the states of protection, utilisation of the property and the relationship of the giant panda sanctuary by the methods of comprehensive assessment and AHP. The results indicated the middle level of protection, the low level of tourism development and a little harmony relationship with low level tourism development.

Author: Warner, S. H.

Year: 1987

Title: Visitor impact on brown bears, Admiralty Island, Alaska

Journal: JSTOR

Volume: 7

Issue: -

Pages: 377-382

Abstract: Human disturbance of brown bears (*Ursus arctos*) was studied in the Pack Creek area of Admiralty Island in Southeast Alaska during the summers of 1983 and 1984. The Pack Creek watershed has been closed to bear hunting since 1934, but use of the area by bear watchers and photographers is increasing. Instantaneous scan sampling and focal animal sampling techniques were used to observe bears and visitors at a control area with negligible human activity and at the popular Pack Creek area. Analysis of diel use of the two areas showed a crepuscular pattern for both the control and Pack Creek bears. Bears that are conditioned to human food or highly habituated to visitors tended to use the Pack Creek area during the midday periods of high visitor use more than other bears. Over 80% of the observations of Pack Creek bears were of female bears, suggesting that visitor use may differentially affect sexes. Bears that associated people with food showed levels of boldness that could lead to undesirable incidents.

Authors: Watts, P. D., and Ratson, P. S.

Year of Conference: 1987

Title: Tour operator avoidance of deterrent use and harassment of polar bears

Conference Name: Bear-people conflict – A symposium on management strategies

Conference Location: Yellowknife, NWT, Canada

Pages: 189-193

Abstract: The effects of tourist activities on polar bears (*Ursus maritimus*) at Cape Churchill, Manitoba were evaluated. Thirty-two polar bears were observed from tourist vehicles between 3rd and 26th October 1986. All bears had previous contact with humans; 23 on previous days and nine the same day. Overall, an equal number of bears either approached the vehicle, moved away, or remained bedded; however, of the nine bears that had human contact earlier the same day, 67% (6/9) moved toward the vehicle compared to 25% (6/23) for bears with previous days experience with tour vehicles. The majority of bears (19/30) under observation by tourists

terminated the interaction, which suggests harassment may be a factor. Habitat-related responses of bears to tour vehicles were observed. Eight of 10 bears that showed no directional response to the vehicles were immatures. Bears visiting a temporary tourist camp behaved differently than bears seen from tour vehicles. Previous occupants of the camp had been actively feeding bears; therefore, the two situations were not compared, although personal observations are noted. An integration of data collection with tour operation is proposed as an immediate and long-term measure to foster the development of quality wildlife experience. The establishment of a standard tour guides' protocol is outlined.

Authors: Wei, F., Costanza, R., Dai, Q., Stoeckl, N., Gu, X., Farber, S., Nie, Y., Kubiszewski, I., Hu, Y., Swaisgood, R., Yang, X., Bruford, M., Chen, Y., Voinov, A., Qu, D., Owen, M., Yan, L., Kenny, D. C., Zhang, Z., Hou, R., Jiang, S., Liu, H., Zhan, X., Zhang, L., Yang, B., Zhao, L., Zheng, X., Zhou, W., Wen, Y., Goa, H., and Zhang, W.

Year: 2018

Title: The value of ecosystem services from giant panda reserves

Journal: Current Biology

Volume: 28

Issue: 13

Pages: 2174-2180.e7

Abstract: Ecosystem services (the benefits to humans from ecosystems) are estimated globally at \$125 trillion/year. Similar assessments at national and regional scales show how these services support our lives. All valuations recognise the role of biodiversity, which continues to decrease around the world in maintaining these services. The giant panda epitomises a flagship species. Its unrivalled public appeal translates into support for conservation funding and policy, including a tax on foreign visitors to support its conservation. The Chinese government has established a panda reserve system, which today numbers 67 reserves. The biodiversity of these reserves is among the highest in the temperate world, covering many of China's endemic species. The panda is thus also an umbrella species—protecting panda habitat also protects other species. Despite the benefits derived from pandas, some journalists have suggested that it would be best to let the panda go extinct. With the recent down listing of the panda from endangered to vulnerable, it is clear that society's investment has started to pay off in terms of panda population recovery. Here, the authors estimate the value of ecosystem services of the panda and its reserves at between US\$2.6 and US\$6.9 billion/year in 2010. Protecting the panda as an umbrella species and the habitat that supports it yields roughly 10–27 times the cost of maintaining the current reserves, potentially further motivating expansion of the reserves and other investments in natural capital in China.

Authors: Wheat, R. E., and Wilmers, C. C.

Year: 2016

Title: Habituation reverses fear-based ecological effects in brown bears (*Ursus arctos*)

Journal: Ecosphere

Volume: 7

Issue: 7

Article: e01408

Abstract: Fear induced by human activity is increasingly becoming recognised to influence both behaviour and population biology of wildlife. Exposure to human activity can cause animals to avoid human-dominated areas or shift temporal activity patterns, but repeated, benign exposure can also result in habituation of individuals. Habituation is typically viewed as a negative potential consequence of human interactions with wildlife, with effects such as increased vulnerability of habituated animals to predation. Concurrently, the advancement of

the understanding of the ecology of fear has shown reduced fitness in species because of behavioural changes in responses to fear of predators—including humans. Here, Wheat and Wilmers test how habituation and fear drive the foraging ecology of brown bears (*Ursus arctos*) feeding on Pacific salmon (*Oncorhynchus* spp.) in Southeast Alaska, USA. They used motion-detecting trail cameras at salmon spawning areas across a gradient of human disturbance to record human and bear activity at fine spatial and extended temporal scales. Higher human activity was associated with increased nocturnality of non-habituated bears, likely leading to suboptimal foraging, but had no effect on habituated individuals. For the top 20% of sites for which human activity was greatest, an average of 78.7% of the activity of non-habituated bears was nocturnal, compared with an average of only 10.2% of the activity of habituated individuals. Habituation of brown bears in this system alleviated perceived risk and avoidance of human activity, allowing habituated individuals to overcome their fear of human presence and maximise foraging opportunities. While habituation may lessen some of the deleterious effects of human activity on large carnivores, the long-term effects of habituation may be negative, as habituated individuals may be at greater risk of depredation. Future research should examine whether habituated bears and their lower perceived risk of human activity ultimately experience smaller population-level effects of human disturbance than non-habituated individuals.

Author: White Jr, D.

Year: 1999

Title: Potential energetic effects of mountain climbers on foraging grizzly bears

Journal: Wildlife Society Bulletin

Volume: 27

Issue: 1

Pages: 146-151

Abstract: Most studies of the effects of human disturbance on grizzly bears (*Ursus arctos horribilis*) have not quantified the energetic effects of such interactions. In this study, White Jr characterised activity budgets of adult grizzly bears as they foraged on aggregations of adult army cutworm moths (*Euxoa auxiliaris*) in the alpine of Glacier National Park, Montana, during 1992, 1994, and 1995. The author compared the activity budgets of climber-disturbed bears to those of undisturbed bears to estimate the energetic impact of climber disturbance. When bears detected climbers, they subsequently spent 53% less time foraging on moths, 52% more time moving within the foraging area, and 23% more time behaving aggressively, compared to when they were not disturbed. White Jr estimated that grizzly bears could consume approximately 40,000 moths/day or 1,700 moths/hour. At 0.44 kcal/moth, disruption of moth feeding cost bears approximately 12 kcal/minute in addition to the energy expended in evasive manoeuvres and defensive behaviours. To reduce both climber interruption of bear foraging and the potential for aggressive bear-human encounters, the author recommends routing climbers around moth sites used by bears or limiting access to these sites during bear-use periods.

Author: Whittaker, D.

Year: 1997

Title: Capacity norms on bear viewing platforms

Journal: Human Dimensions of Wildlife

Volume: 2

Issue: 2

Pages: 37-49

Abstract: Normative theory provides a useful paradigm for collecting and understanding information about acceptable social and environmental impact levels. Initially applied to encounters and related social contact impacts in backcountry settings, normative concepts have since been applied to a greater diversity of impacts and settings. This paper applies the normative approach to capacities on two bear-viewing platforms at Brooks River in Katmai National Park, Alaska. A sample of 244 bear viewers visiting during two distinct viewing seasons were asked to specify the acceptable number of people on the platforms at one time. The platforms differed in design, and one was considerably larger than the other. Most viewers had and could specify their norms, and there was strong agreement about some capacities. Norms were lower and levels of agreement were higher for the lower-use September season, and for the smaller platform. Differences in norms for the two platforms were significant ($p < .001$), but not as large as expected, given the size and design differences between them. Results suggest there are upper limits for platform capacities irrespective of platform size and design. Implications for designing and managing platforms, or using platform capacities to develop area capacities, are discussed.

Authors: Wilder, J. M., DeBruyn, T. D., Smith, T. S., and Southwold, A.

Year: 2007

Title: Systematic collection of bear-human interaction information for Alaska's national parks

Journal: Ursus

Volume: 18

Issue: 2

Pages: 209-216

Abstract: Wilder and colleagues present a database application designed to standardise the collection and entry of brown and black bear (*Ursus arctos* and *U. americanus*)–human interaction data, formalise data storage methods, and analyse patterns of bear–human interactions in Alaska's national parks. The National Park Service Alaska Region Bear–Human Information Management System (BHIMS) facilitates the systematic collection of biologically relevant data, consolidates bear management information, helps identify management priorities, facilitates the development of science-based bear management plans, helps evaluate the effectiveness of management strategies, helps provide more effective bear safety messages, creates permanent digital copies of original data, establishes bear management institutional memory, and ultimately improves bear conservation and human safety. The BHIMS can be modified for use in other locales and has applicability to bear management across North America.

Authors: Wilker, G. A., and Barnes Jr, V. G.

Year: 1998

Title: Responses of brown bears to human activities at O'Malley River, Kodiak Island, Alaska

Journal: Ursus

Volume: 10

Issue: -

Pages: 557-261

Abstract: Wilker and Barnes classified levels of direct response of brown bears (*Ursus arctos middendorffi*) to aircraft, watercraft, and groups of people on the O'Malley River area of Kodiak Island, Alaska. General public use occurred in the area in 1991 and 1993, whereas structured bear viewing programmes used the area in 1992 and 1994. Brown bears displayed a high (running) or moderate (walking away) response on 18 (48%) occasions when fixed-wing aircraft flew over the animals <100 m above ground. Three of four helicopter flights <200 m overhead and nine interactions with watercraft at ≤ 200 m distance also elicited strong responses. Encounters between people and bears resulted in strong responses from bears more frequently (37%, n = 134) during years of general public use than in years of structured bear viewing (6%, n = 72, $P < 0.0001$). The authors suggest that higher levels of low or neutral response by bears to encounters with guided bear viewing groups was the result of consistent and predictable patterns of human activity.

Authors: Wilson, R. R., Regehr, E. V., St. Martin, M., Atwood, T. C., Peacock, E., Miller, S., and Divoky, G.

Year: 2017

Title: Relative influences of climate change and human activity on the onshore distribution of polar bears

Journal: Biological Conservation

Volume: 214

Issue: -

Pages: 288-294

Abstract: Climate change is altering habitat for many species, leading to shifts in distributions that can increase levels of human-wildlife conflict. To develop effective strategies for minimising human-wildlife conflict, we must understand the relative influences that climate change and other factors have on wildlife distributions. Polar bears (*Ursus maritimus*) are increasingly using land during summer and autumn due to sea ice loss, leading to higher incidents of conflict and concerns for human safety. Wilson and colleagues sought to understand the relative influence of sea ice conditions, onshore habitat characteristics, and human-provisioned food attractants on the distribution and abundance of polar bears while on shore. They also wanted to determine how mitigation measures might reduce human-polar bear conflict associated with an anthropogenic food source. The authors built a Bayesian hierarchical model based on 14 years of aerial survey data to estimate the weekly number and distribution of polar bears on the coast of northern Alaska in autumn. They then used the model to predict how effective two management options for handling subsistence-harvested whale remains in the community of Kaktovik, Alaska might be. The distribution of bears on shore was most strongly influenced by the presence of whale carcasses and to a lesser extent sea ice and onshore habitat conditions. The numbers of bears on shore were related to sea ice conditions. The two management strategies for handling the whale carcasses reduced the estimated number of bears near Kaktovik by > 75%. By considering multiple factors associated with the onshore distribution and abundance of polar bears Wilson and colleagues discerned what role human activities played in where bears occur and how successful efforts to manage the whale carcasses might be for reducing human-polar bear conflict.

Author: Xu, H.-G.

Year: 2004

Title: Development and problems of non-consumptive wildlife tourism in China

Journal: Geography and Geo-Information Science

Volume: 2

Issue: -

Pages: -

Abstract: This paper addresses the patterns and the problems of the non-consumptive wildlife tourism in China. Panda, Asian elephants, golden monkey, and bird watching are used as illustrations. It is pointed out that the key challenge of the sustainable development and management of wildlife tourism is to enhance the tourist experience while controlling the negative impacts, and the understanding of the human-animal interaction is the foundation for such management. A few generic methods have been summarised in this paper as a tool for wildlife tourism developers and managers. And more importantly, the technical supports and advice have to be emphasised in the wildlife tourism development.

Authors: Xu, J., Lü, Y., Chen, L., and Liu, Y.

Year: 2009

Title: Contribution of tourism development to protected area management: Local stakeholder perspectives

Journal: International Journal of Sustainable Development & World Ecology

Volume: 16

Issue: 1

Pages: 30-36

Abstract: Ecotourism in protected areas plays an important role in establishing mutually beneficial relationships among local people, the protected area, and tourism that are essential in protected area management. However, to properly manage protected areas, local people should be major stakeholders in order to maximise local economic benefits and obtain support for conservation efforts. This study assesses the current status of local people's economic participation in tourism in the Wolong Nature Reserve using a questionnaire survey. Through evaluation of geographic origin, income, and occupational distribution of operators engaged in tourism-related business, the authors identified and discussed constraints and opportunities for economic participation of local people. Economic inequity was found among local people, as well as between locals and non-locals, due to limited start-up capital and operational skills. At present, only a small percentage of local people receive revenue directly from tourism. In addition, economic leakage and local dependence on natural resources still exist in the study area. To promote ecotourism and sustainable development, the relationships among tourism, local people, and biodiversity conservation in the study area must be strengthened. According to the findings, some suggestions are offered to protected area managers to foster better relationships.

Author: Xu, X.

Year: 2012

Title: The use of the giant panda image in the design of tourism products

Journal: Value Engineering

Volume: 13

Issue: -

Pages: -

Abstract: The giant panda is a national treasure of China, and popular with Chinese and foreign people. In China, pandas are already known to everyone. The giant panda is not only an animal, but has developed into a unique cultural phenomenon. The giant panda is Chinese people's friendship and peace messenger. Its gentle image is generating hundreds of millions of viewers. But now the number of giant pandas is decreasing, the giant panda homes were also damaged; it needs more attention and love. Sichuan as the hometown of giant panda, tourism products around panda can be developed. According to the giant panda's special meaning, and the majority of consumption groups and the broad market about panda, the paper designs new, unique panda image tourism products with Chinese characteristic, so as to let more people to love and care for the giant panda.

Y

Authors: Yee, L.-L., Ramachandran, S., Shuib, A., Johari, S., and Afandi, S. H. M.

Year: 2018

Title: Factors influencing visitors' evaluation of service quality in Giant Panda Conservation Centre, Zoo Negara

Journal: International Journal of Business and Society

Volume: 19

Issue: 1

Pages: 140-158

Abstract: Giant Panda Conservation Centre (GPCC) was built at the amount of RM 25 million, with the purpose to house giant pandas, which were loaned from China, a gesture to commemorate 40 years of diplomatic ties between China and Malaysia. However, service quality of GPCC has yet to be determined, even though the centre has received many visitors since its establishment in 2014. In addition, GPCC management has no direction to enhance its service quality. Therefore, this study was conducted to determine the visitors' satisfaction towards service quality at the GPCC, as well to uncover factors which influence it. The SERVPERF model was adopted in this study by using a four-point Likert Scale as the measurement. By using the Statistical Package for the Social Sciences (SPSS), the results showed that generally, visitors were satisfied with the service quality of GPCC. This was probably because GPCC provided their best service for visitors. Besides, regression analysis revealed that visitors' re-visit intentions, recommendation intentions, religion, age, and sources of information were factors that influenced visitors' satisfaction. In short, subsequent and effective steps should be taken by the management to enhance service quality in GPCC.

Authors: Yee, T. P., and Johari, S.

Year: 2016

Title: Visitor satisfaction towards facilities of the Giant Panda Conservation Centre, Zoo Negara Malaysia: An exploratory analysis

Journal: Asia-Pacific Journal of Innovation in Hospitality and Tourism

Volume: 5

Issue: 3

Pages: 71-88

Abstract: Understanding visitor satisfaction level is essential to attracting and retaining visitors. The purpose of this study is to evaluate visitor satisfaction towards the Giant Panda Conservation Centre (GPCC) facility. GPCC is the latest main attraction in Zoo Negara where two giant pandas, which come under the Malaysia-China Giant Panda International Conservation Agreement programme, are located and exhibited for visitors. The authors used a quantitative method and employed a purposive sampling approach. The level of visitor satisfaction was measured using a four-point Likert scale. A self-administered questionnaire was used to survey a sample of 250 visitors. The data gathered were analysed using descriptive analysis. Results indicate that the visitors were satisfied with the overall facilities provided. However, there were a few facilities which gained lower satisfaction levels from the visitors. Therefore, the GPCC management should continue to maintain the standard of facilities that they are providing and take serious consideration in improving on those that recorded lower satisfaction.

Authors: Yin, W. C., and Eagles, P. F. J.

Year: 2010

Title: Development and ranking of tourism management goals for Wolong and Wanglang Giant Panda Nature Reserves, China

Journal: International Journal of Biodiversity Science & Management

Volume: 1

Issue: 3

Pages: 137-149

Abstract: The giant panda (*Ailuropoda melanoleuca*) is an endangered species with a high-profile international image. Its profile is heightened through its use by the World Wildlife Fund for Nature (WWF) as a symbol of conservation. To protect the giant panda and its habitat, the Chinese government established 33 nature reserves between 1962 and 2002, with a total area of 5,830 km². There are about 1,590 wild giant panda protected and managed in their natural habitat in China. The Wolong and Wanglang Nature Reserves in the Minshan Mountains of Sichuan Province have thriving populations of giant pandas and, recently, have seen large increases in tourism. Neither of these reserves have formal tourism management goals or plans. This research used a literature review to develop tourism management goals and a Delphi method applied to reserve managers, scientists and park visitors to develop and prioritise the goals for these reserves. The research found that the tourism management goals developed from the international literature were applicable in this specific situation involving a charismatic, endangered species in China. It also revealed that prioritisation amongst many applicable goals can also be achieved. This is the first time that tourism management goals have been developed for the giant panda reserves in China. It is also significant that these goals were developed using the opinions of three key groups involved in research, resource management and tourism at the reserves.

Author: Yu, C.

Year: 2006

Title: The effective management of reserves for the conservation of the giant panda

Editors: J. A. McNeely, T. M. McCartcy, A. Smith, L. Olsvig-Whittaker and E. D. Wikramanayake

Book Title: Conservation biology in Asia

City: Kathmandu

Publisher: Society for Conservation Biology Asia Section & Resources Himalaya.

Pages: 455-464

Abstract: The giant panda (*Ailuropoda melanoleuca*), endemic to China, is the most famous flagship species for the conservation of biodiversity in the world. For the conservation of the giant panda, the Chinese government has set up more than 50 natural reserves, within which more than 60% of giant pandas live. Panda reserves have been playing a main role in conservation efforts. The main problems facing panda reserves include their isolation and habitat degradation and fragmentation. The upsurge of tourism has become a big threat to some panda reserves, as well as loss of critical habitat in river-stream areas. Wildlife poaching is still threatening to the giant panda within and outside reserves. Poor local communities whose living relies on natural resources put a significant pressure on the effective management of panda reserves. Poor equipment and facilities for protection, such as patrolling and poor capacity for conservation, are the main constraints for the effective management of the panda reserves. Reserve networking, habitat restoration, community-based conservation, monitoring and patrolling, and capacity-building are the key actions for the effective management of the panda reserves.

Author: Yudina, O.

Year: 2014

Title: Representations of polar bears in tourism: Exploring power relations through discourse analysis

Academic Department: Geography and Environmental Management

University: University of Waterloo

Thesis Type: Master of Environmental Studies

Abstract: Historical and contemporary relationships between human beings and polar bears are dynamic and complex, and the lives of these two animal species continue to be intimately intertwined in the tourism context. The polar bear viewing industry increasingly relies on the (re)creation, dissemination, and maintenance of particular meanings and natures of polar bears and human-polar bear relationships for economic benefit, raising concerns about how power is circulated and negotiated through representations of polar bears in tourism promotional materials. This thesis explores how the polar bear viewing industry constructs or portrays polar bears, and the social effects of these portrayals, through an examination of tourism promotional materials associated with Churchill, Manitoba, the self-proclaimed “polar bear capital of the world.” Informed by ecofeminist theory, the author explores how tourism supports and/or resists the gendered exploitation of polar bears—a social issue that intersects gender and species studies. Employing Foucauldian discourse analysis, three “kinds” of qualitative and visual texts were discursively analysed, along with the socio-cultural context within which these texts are embedded: Websites of 17 tour operators offering polar bear related tours or tourism activities in Churchill; polar bear tourism related online marketing campaigns of two (crown) tourism corporations, Travel Manitoba and the Canadian Tourism Commission; and promotional materials (e.g., postcards, souvenirs, brochures, signage, etc.) collected or observed during the author’s nearly four week stay in the town of Churchill. The author’s reflexive engagement with her own Churchill researcher/tourist experience informs, and is

weaved into, this discourse analysis. The thesis shows how various representations of polar bears and the depictions of human-polar bear interactions are not impartial, but embedded contextually and within an intricate web of power relations. The author reveals how these representations express highly objectifying messages, the marginalisation of polar bears and their subjective experiences, the imposition of hegemonic gender roles onto the lives of polar bears and a gendering of their environment, and an exploitative attitude toward these animals. Analysis further reveals an interspecies relationship that engages limitedly (if at all) with the notions of care, connectedness, kindness and compassion espoused by ecofeminist philosophy. The author argues for the importance of addressing the issue of species inequality, power abuse, and domination when envisioning sustainable and ethical engagements between human and other-than-human animals in wildlife tourism contexts.

Authors: Yudina, O., and Grimwood, B. S. R.

Year: 2014

Title: Situating the wildlife spectacle: Ecofeminism, representation, and polar bear tourism

Journal: Journal of Sustainable Tourism

Volume: 24

Issue: 5

Pages: 715-734

Abstract: This paper presents a critical investigation of power relations circulating in promotional materials associated with polar bear tourism in Churchill, Manitoba, Canada. Drawing on precepts of ecofeminism, critical discourse analysis, and the content of cultural texts (websites, souvenirs) produced by tourism operators, businesses, and crown corporations, the study interprets how representations of polar bears re-inscribe regimes of truth that marginalise non-human animal others and are complicit with patriarchal ideologies. Focus in this analysis is placed first, on illustrating the portrayal of “performing spectacle bears” – a socially constructed subjectivity designed to serve the desires of wildlife tourism producers and consumers – and, second, on diagnosing the privileged discourses that work to maintain and normalise this construction, along with the interspecies dynamics they support. In effect, the paper sheds light on the complex and recurrent effects of anthropocentric and instrumentalist orientations in tourism, including their contingency upon masculine systems of value and rationality. The paper also points out the potential of ecofeminist ethics of care for enhancing interspecies relationships in sustainable tourism.

Z

Authors: Zhou, G., Liu, Y., and Chen, W.

Year: 2020

Title: Co-creation animal-based tourist experience influence to experience memorability: A case study of Chengdu Research Base of Giant Panda Breeding

Journal: Revista Científica de la Facultad de Ciencias Veterinarias

Volume: 30

Issue: 1

Pages: 80-88

Abstract: In recent years, animal themed tourism has developed vigorously, and the competition among animal themed tourism destinations is fierce. How to win in the fierce competition is the key to the success of animal themed tourism products. The experience memorability is very important to the destination and becomes an important topic in the study of tourism experience. The present study explores the influence mechanism of co-creation on

experience memorability. Taking tourists of Chengdu Research Base of Giant Panda Breeding as the research object and structural equation model as empirical analysis, the findings of empirical analysis as follows: co-creation significantly influences perceived experience value including five dimensions; perceived experience value (including emotion value, education value and social value) significantly influences memorability. However, quality value and economic value not significantly influences memorability; perceived experience value partially mediates s the relation between the co-creation and memorability.

Author: Zunino, F.

Year: 1981

Title: Dilemma of the Abruzzo bears

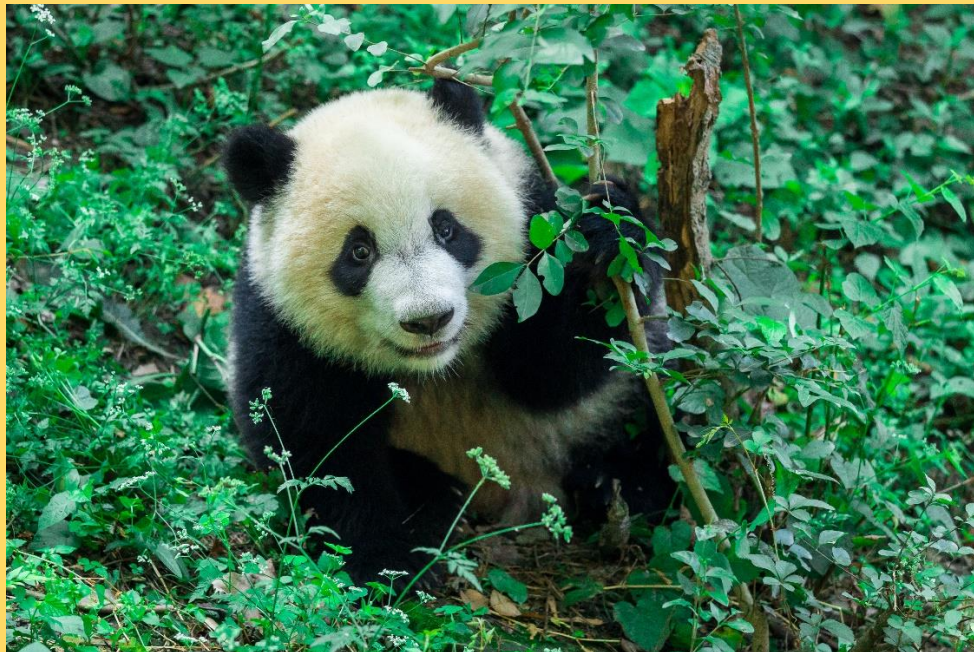
Journal: Oryx

Volume: 16

Issue: 2

Pages: 153-156

Abstract: The brown bears in and around Italy's Abruzzo National Park live quite comfortably with the fairly dense human population surrounding the park. The people like the bears, even though they eat sheep, and are not afraid of them. But these same people also favour economic development, notably tourism, and tourists have now increased to the point where the disturbance they create is a serious threat to the bears. In particular tourist pressure in high summer has driven the bears to scatter into areas where they have little protection.



Giant panda (*Ailuropoda melanoleuca*)

4. ABOUT THE EDITOR

Dr Michael Lück

Michael is a professor of tourism and an independent researcher based in Sweden. He has worked in Germany, Belize, Canada, Scotland, and New Zealand, and is founding co-chair of the International Coastal & Marine Tourism Society (ICMTS). Michael has more than 10 years' work experience in the tourism industry and his research interests include (marine) wildlife tourism, ecotourism, interpretation and education on wildlife tours, the impacts of tourism, the cruise ship industry, and aviation. He has published in a number of international journals, is founding editor of the academic journal *Tourism in Marine Environments* and Associate Editor of the *Journal of Ecotourism*. Michael has edited or co-edited over ten volumes on ecotourism, marine (wildlife) tourism, polar tourism, citizen science, sustainable events, and low cost airlines, as well as the *Encyclopedia of Tourism and Recreation in Marine Environments* (CAB International), and co-authored the introductory text *Tourism* (2nd ed., CAB International).





Polar bears (*Ursus maritimus*)

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