

2022-03-16

Last chance for wildlife: making tourism count for conservation

Hehir, C

<http://hdl.handle.net/10026.1/19074>

10.1080/09669582.2022.2049804

Journal of Sustainable Tourism

Informa UK Limited

All content in PEARL is protected by copyright law. Author manuscripts are made available in accordance with publisher policies. Please cite only the published version using the details provided on the item record or document. In the absence of an open licence (e.g. Creative Commons), permissions for further reuse of content should be sought from the publisher or author.



Last chance for wildlife: making tourism count for conservation

Christy Hehir, Caroline Scarles, Kayleigh J. Wyles & Joe Kantenbacher

To cite this article: Christy Hehir, Caroline Scarles, Kayleigh J. Wyles & Joe Kantenbacher (2022): Last chance for wildlife: making tourism count for conservation, Journal of Sustainable Tourism, DOI: [10.1080/09669582.2022.2049804](https://doi.org/10.1080/09669582.2022.2049804)

To link to this article: <https://doi.org/10.1080/09669582.2022.2049804>



© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 16 Mar 2022.



Submit your article to this journal [↗](#)



Article views: 1252



View related articles [↗](#)



View Crossmark data [↗](#)

Last chance for wildlife: making tourism count for conservation

Christy Hehir^a , Caroline Scarles^a , Kayleigh J. Wyles^b and Joe Kantanbacher^c

^aSchool of Hospitality and Tourism Management, University of Surrey, Guildford, UK; ^bSchool of Psychology, University of Plymouth, Plymouth, UK; ^cDepartment of Sustainability & Environment, University of South Dakota, Vermillion, SD, USA

ABSTRACT

Nature-based tourism offers the opportunity for tourists to see first-hand both wildlife and the conservation efforts of organisations and individuals to protect habitats and species. Whilst recent studies hint that tourism can prompt visitors to provide philanthropic support for conservation, studies to-date have focused on behavioural intentions within specific case studies rather than actual behaviour, thereby limiting generalisability and explanatory scope. Consequently, little is known *if* and *why* individuals donate more after nature-based tourism. An online questionnaire, which included both quantitative and qualitative measures, explored key predictors of what triggers tourists to engage in philanthropic behaviour. Through a collaboration with two leading UK adventure travel companies, 924 participants' travel patterns and donation histories were examined to assess the role tourism plays in prompting new donations. Findings confirm, first, that travel to last chance destinations prompts higher instances of new philanthropy compared to other international and domestic trips; second, that other key factors, including the importance of stronger identity with nature and/or first-time visitation, influence new philanthropic support. Alongside the scholarly contributions, this study provides actionable guidance on how to encourage philanthropic behaviour working with both tour-operators and non-profit organisations.

ARTICLE HISTORY

Received 9 August 2020
Accepted 25 February 2022

KEYWORDS

Travel philanthropy; last chance tourism (LCT); pro-environmental behaviour; donating; connection to nature; identity with nature

Introduction – Biodiversity loss and tourism

Biodiversity is increasingly threatened given the growing human population and the rising rate of plant and animal extinctions (Richardson & Loomis, 2009). The International Union for Conservation of Nature confirms over 28,000 species are listed as endangered (IUCN, 2019). Low levels of funding for biodiversity conservation and natural environments are a universal concern (UNEP-WCMC and IUCN, 2016). Although parks and protected areas are often charged with addressing such pressing conservation issues, they regularly face financial constraints (Sgalitzer et al., 2016). Increasingly, natural environments visited by tourists have insufficient funds to support optimal conservation management activities, and most governments do not fully fund protected areas (Weaver & Lawton, 2017). Thus, it is important for natural environments to be supported from a variety of sources, including tourism, to meet conservation goals. Despite reliance on tourism-related activities to increase revenue to support conservation measures, little research to date has addressed the relationship between tourism and philanthropic behaviour.

CONTACT Christy Hehir  christy.hehir@surrey.ac.uk

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The role of the tourism sector in preserving biodiversity is evidenced in the creation of national parks and reserves, as well as in helping to conserve charismatic mega-fauna (Hall, 2010), including dolphins, gorillas, orangutans, tigers and whales (Buckley, 2012; Fennell, 2007; Rodger et al., 2009), and specific ecosystems such as barrier reefs and glaciers, which are significant attractions in their own right (Dawson et al., 2011; Piggott-McKellar & McNamara, 2017). Of the 1,000 wild mammal species listed as critically endangered, at least 5% rely on tourism revenue to survive (Buckley, 2012).

However, “selling nature to save it” (McAfee, 1999, p.133) also has negative impacts. For example, wildlife has been exploited through the repackaging of endangered biodiversity as images, symbols and spectacles to facilitate marketing (Igoe & Brockington, 2007), and extinctions due to habitat loss have been exacerbated through tourism-related developments (Hall, 2010). Unfortunately, these factors are often never fully accounted for in the assessment of the costs and benefits of tourism (Hall & Lew, 2009). An audit of the impact of tourism on conservation and the welfare of individual animal species is critically important (Moorhouse et al., 2015), particularly in relation to the supposed benefits of tourism as a means of sustainable development (Gössling & Hall, 2006a; Hall, 2010; Hall et al., 2013).

Tourists’ philanthropy is one way that tourism can increase funding for conservation efforts (Sgalitzer et al., 2016). Conservationists, including Sir David Attenborough, highlight that to protect biodiversity (wildlife and/or ecosystem), people must care about it and that people only care about what they have experienced (Williams, 2013). Nature-based tourism enables visitors to see first-hand both wild animals and associated conservation efforts, and it would seem logical that nature-based tourism and contributions to conservation should go together. However, research into tourism experience as a trigger for new pro-environmental behaviours (Miller et al., 2020 and Hehir et al., 2021) and subsequent philanthropic contributions (Koot & Fletcher, 2021) is in its infancy; consequently, the relationship between tourist experience and conservation actions remains unclear.

As well as understanding the association between tourism and conservation, it is also vital to understand the role played by *international* travel. International travel has been criticised for its contributions to greenhouse gas emissions (Gössling et al., 2012) and for harming the environment the tourists wish to see (Denley et al., 2020; Hall, 2010). Research suggests that increasing numbers of tourists accelerate the degradation of damaged destinations (Dawson et al., 2010, 2011). However, it could also be conceived that by travelling further distances and experiencing foreign environments, this may affect tourists’ world view and subsequent behaviours more so than if they had taken domestic travel. *This trip really changed me* is the title of a research paper that explored Israeli backpackers’ profound self-change that occurred during their international travels to South America and Asia (Noy, 2004). Backpackers’ identified unique experiences that included authenticity and adventure as key determinants of their self-change and shift in world view (Noy, 2004). Similarly, in a study that explored a selected group from mainland China who visited the USA, the Chinese tourists demonstrated that international travel provided them with an internal voyage to define and negotiate alternative identities and discover who they and others are (Li, 2010). Whilst literature outside of the tourism context shows links between self-change and pro-environmental behaviour, little is known on the role of these international trips. Specifically, both studies didn’t conclude whether or not tourists’ self-change and world view correlated to increased positive impacts (such as philanthropy) to the places visited. One exploratory research into the positive impacts of tourism in the Galapagos National Park suggested that well-designed interpretation during the tourism experience can increase supportive attitudes towards resource management issues facing the protected area, general environmental behavioural intentions and philanthropic support of conservation from international tourists (Powell & Ham, 2008). However, no studies to date have drawn direct comparisons between domestic and international trips to identify whether the novelty of travelling further away from home correlates to tourists’ likelihood of donating.

The majority of tourism research to date focuses solely on international visitors, without comparing with domestic tourists (Jones & Nguyen, 2021). Of the few international and domestic tourists comparison and contrast studies, the most popular themes of research are; shopping preferences (Yuksel, 2004), service evaluations and intentions to return (Yuksel, 2004), destination image (Bui & Le, 2016) and motivational differences to visit (Park et al., 2008). These existing studies are also based on comparisons between international tourists and residents, thus are comparing different stakeholders. Further research is needed to compare tourists' donating habits both when they travel domestically and internationally if we are to build upon evaluating the positive impacts of tourism.

Certainly costs and benefits to the environment in this respect must be carefully balanced, and, indeed, the extent of the conservation benefit of international compared with domestic travel is currently unknown. To address this gap in knowledge, this paper goes beyond the case study approach used in previous research (i.e. Ardoin et al., 2016; Powell & Ham, 2008; and Sgalitzer et al., 2016) by adopting a more comprehensive approach to examine a broad range of tourism experiences in order to ascertain whether tourism can be associated with conservation actions, and whether such association is stronger for international trips than domestic.

Literature review

Travel philanthropy

Travel philanthropy is the umbrella term for three distinct practices: individual giving, corporate fundraising and volunteering (Goodwin et al., 2009), and refers to development assistance whereby funds, labour and/or other tourism-facilitated resources are donated towards community development and environmental initiatives (Maathai, 2011). Travel philanthropy can be a core part of the tourism experience (e.g. a volunteering/conservation holiday) or a secondary consequence of travelling (e.g. giving a financial donation or sponsoring a species) (Goodwin et al., 2009). In this study, travel philanthropy focuses on the latter and is defined as, "individuals giving a new and/or increased financial contribution to a charity - which has been triggered by a recent tourism experience. This contribution may have taken place during or after their trip." As it is important to understand whether tourism is associated with new philanthropic contributions, existing contributions or philanthropic practices arranged pre-trip are not considered within this definition.

The financial value of travel philanthropy is not fully known. While one review of travel philanthropy (Goodwin et al., 2009) counted £159.4 million worth of donations raised from 29 tour operator initiatives globally, most tour operators have no systems in place to report on how much is raised (Goodwin et al., 2009). As many post-trip donations are sent directly through charities like Oxfam and World Wildlife Fund (WWF) and motivations for donation are not apparent (Goodwin et al., 2009), measuring the relationship between tourism and philanthropy is challenging.

To date, only three studies have documented the potential of tourism to trigger new philanthropy. One study, by Powell and Ham (2008), found that 78% of groups (i.e. couples, families or solo tourists) made a donation during an expedition to the Galápagos Islands. A second study, also conducted in the Galápagos Islands, correlated future intended philanthropic support with acquiring new information about conservation, sharing that information with others and enjoying the physical surroundings (Ardoin et al., 2016), though a follow-up study confirming actual donation behaviour was not conducted. A third study, conducted at Sweetwater Chimpanzee Sanctuary in Kenya, investigated the relationships between donation likelihood and on-site messaging, trust in an organisation, feelings of caring for chimpanzees and intentions to donate in the future (Sgalitzer et al., 2016). Findings from Sgalitzer et al. (2016) suggest that while caring and trust influence tourists' intentions to donate in the future, only caring influences on-site donation behaviour, a relationship most pronounced when trust is high.

Collectively, these three tourism philanthropy studies hint that tourism can prompt visitors to provide philanthropic support for conservation both during and after a trip (Sgalitzer et al., 2016). However, they are methodologically limited to intentions or immediate donations and do not measure actual behaviour change directly resulting from tourism experiences in the longer-term. Further, the generalisability of these studies is unknown as all three studies were based on one specific site or trip. Importantly, the studies did not examine the factors behind these donation intentions, other than the implicit factor of making the trip (Sgalitzer et al., 2016). Thus, while these studies imply that tourism experiences may promote donating behaviour or intention to donate in these particular situations, a more comprehensive approach is needed to establish whether tourism experiences can translate into actual donations, and if so, what the key mechanisms are.

General predictors of philanthropy

Numerous psychological studies examining the drivers of pro-environmental behaviour including philanthropy have identified specific psychological and contextual factors that influence individual pro-environmental behaviour.

One factor that remains untested in the context of travel philanthropy is whether nature-based tourists already engage in numerous pro-environmental behaviours. A long-held view is that as nature-based tourists may already engage in several pro-environmental behaviours, they cannot do more (Beaumont, 2001). However, research suggests that not all nature-based tourists are already “converted” to the pro-environment cause or are interested in environmental matters (Sgalitzer et al., 2016). Indeed, many who participate in nature-based activities as part of their trip tend to be the least pro-environmental in their attitudes compared with individuals whose primary motivation for tourism is to spend time in nature (nature-based tourists) (Kim & Stepchenkova, 2020; Uysal & Jurowski, 1994). Further, whether tourists on nature-based holidays are more likely to have pre-existing pro-environmental behaviour remains unknown. If they do, efforts to solicit philanthropy are potentially wasted. Therefore, a measure to assess how frequently tourists participate on nature-based trips is needed in the field.

Another factor, already positively associated with pro-environmental behaviour intentions, is having trust in a charitable organisation. Mintel (2019) suggests that consumers scrutinise charities’ operations and expect transparency with respect to where their funds will be spent before making financial commitments. This too is evident within the specific context of tourism. Sgalitzer and colleagues (2016) conclude that lack of donation programme information resulted in almost half of tourists not making on-site donations. In a 2016 survey, the Charities Aid Foundation (2017) found that only half the sample regarded most UK charities as trustworthy. In another survey, 60% of individuals agreed that recent bad press about the use of the majority of donations to pay overheads and marketing had reduced their levels of trust in charities (Mintel, 2019). Therefore, research to measure the extent to which trust influences tourists’ donations in travel philanthropy is important. A measure that identifies tourists’ trust in UK-registered and internationally-registered charities would determine whether tourists view the international context as being more difficult to know in terms of how and when their money will be spent.

Lastly, demographic factors have been associated with charitable giving. Nature-based tourists tend to be older, more highly educated and have a much higher income than the average tourist (Barnes & Eagles, 2004). Each of these demographic characteristics has been independently associated with greater giving (Charities Aid Foundation, 2019). For example, individuals with a managerial or professional background are over twice as likely as manual workers to give to overseas causes (Micklewright and Schnepf, 2009). Those in the highest social grades (AB) are more likely to make monthly donations than those in the lowest social grades (DE) (Charities Aid Foundation, 2017). Women are more likely than men to donate to animal welfare (30% vs 19%) (Charities Aid Foundation, 2017). Thus, when attempting to understand the predictors of any pro-environmental behaviour, acknowledgement of such demographic effects is necessary.

Predictors of travel philanthropy

In addition to the general drivers of charitable giving, the specific context of tourism includes unique factors that may potentially influence behaviour. The relationship between trip and tourist characteristics and pro-environmental behaviour is complex, and more research is necessary to examine the multiple potential predictors of actual behaviour change (Miller et al., 2020; Powell et al., 2009; Powell et al., 2012; Skibins et al., 2013). This research focuses specifically on three potential drivers of tourism-specific philanthropy.

Last chance tourism

“Last chance tourism” (LCT; also known as *extinction tourism* [Leahy, 2008]) has emerged as a rapidly growing niche market for tourists seeking non-consumptive experiences with endangered animals and vanishing land/seascapes, and could play an important role in consequent pro-environmental behaviour (Miller et al., 2020). LCT has been defined as, “Tourism motivated by the belief that the things of interest (places, people, or objects) may either cease to exist, or may not be possible to visit, in the future, prompting a sense of loss” (Fisher & Stewart, 2017, p.514). To date, the majority of LCT literature has not moved beyond acknowledging LCT as a motivator to visit (Denley et al., 2020). For example, Lemelin and Maher (2009) concluded that most of the tourists travelling to Churchill, Canada, to view polar bears were strongly motivated by the stated vulnerability of the species. Further research is, therefore, needed to ascertain whether the higher value placed on LCT by tourists applies not just to motivations to visit, but also to tourists’ post-trip attitudes and behaviour. In other words, research should be conducted to address this question: Does visiting or seeing a disappearing landscape or an endangered species influence tourists’ willingness to make donations to this cause?

Two recent studies (Hehir et al., 2021; Miller et al., 2020) established this link between LCT and tourists’ pro-environmental behaviour within the polar context. In their exploration of visitor experience and outcomes of boat-based polar bear viewing, Miller et al. (2020) found that education and “environmental epiphany” were predictors of tourists’ pro-environmental behaviour intentions. However, the generalisability of their research was limited as it was a case study approach, focusing on one particular polar bear viewing experience within the Kaktovik area of the Arctic National Wildlife Refuge. Looking beyond intentions, Hehir et al. (2021) applied a retrospective evaluation to explore the impact of youth polar expeditions on participants’ pro-environmental behaviour, up to 18 years after their polar voyage. Their findings suggest that social identity (through the active membership of an alumni programme) is one way to explain the longer-term impact of educational expeditions in terms of desired future pro-environmental behaviours, underscoring the critical importance of an alumni programme. Additional research to transfer findings across other non-polar LCT experiences is needed to help legitimize LCT as one part of a potential solution for helping preserve endangered destinations (Miller et al., 2020). In addition, research is needed to compare LCT destinations against other international and domestic destinations to give the LCT findings greater context and validity.

First visits

One factor yet to be tested is whether or not a tourist who has previously visited an LCT environment is more likely to make a donation. Associated with unfamiliar or less familiar surroundings, tourism may have a superior potential to deliver a sense of novelty and spontaneity because of its liminal and liberating nature (Wolf et al., 2017). Jefferies and Lepp (2012) suggest that extraordinary experiences are more likely to occur in novel rather than familiar settings. Understanding whether a first visit to a place or seeing wildlife for the first time has superior potential to increase donating could influence tourism industry operations associated with soliciting charitable contributions.

Identity with nature

Many researchers have argued that a psychological connection with nature is necessary to achieve sustainability (Clayton & Opatow, 2003; Kidner, 2001; Schultz, 2001) and that an individual's view of the natural world in relation to their own personal identity is a strong predictor of behaviour (Davis et al., 2011). Identity is defined as a person's self-concept which gives meaning to personal experiences and shapes their individuality through dispositions and responses to situations (Stryker & Burke, 2000).

Individuals who perceive interconnectedness between themselves and nature are potentially more likely to engage in pro-environmental behaviours (Schultz, 2001) because they cognitively and affectively relate damaging the environment to harming themselves (Schultz et al., 2004). Olivos and Aragonés (2011) identified several factors that contribute to an individuals' identity with nature, including enjoyment and appreciation of nature and environmentalism. The quality of environmental experiences has also been shown to have an influence. In a domestic context, people who experience protected or designated environments, like nature reserves and Areas of Outstanding Natural Beauty, have been found to develop stronger connections with nature than with other natural settings, such as the countryside and parks not affiliated with a particular designation (Wyles et al., 2017). In a specific tourism context, Clark et al. (2019) positively associated a tourist's identity with nature to increased pro-environmental intentions. Thus, tourism, and in particular LCT, could offer prime opportunities for people to strengthen their connection to the natural environment (i.e. form a stronger identity with nature), especially for that specific type of habitat and landscape, which in turn, may lead to actual pro-environmental behaviour like greater donations to conservation charities.

The present study

With respect to the literature examining pro-environmental behaviour, there is potential to better align nature-based tourism experiences with conservation philanthropy goals. Consequently, the aim of this study was to explore the links between tourism and philanthropic behaviour and explicitly investigate key predictors of this relationship. The study addressed three questions: 1) Do tourists reflecting on a recent international trip donate more after a tourism experience than tourists reflecting on a domestic trip?; 2) If so, what is the profile of tourists that do commit to a new donation compared to those who do not?; and 3) What are the strongest predictors of travel philanthropy? For the latter question, we explored the relationships between three key variables and travel philanthropy whilst controlling for other known predictors of behaviour (number of nature holidays taken, trust and demographics). First, we anticipated that stronger perceptions of LCT would be related to tourists more likely to donate (H1). Second, we hypothesised that people would be more likely to give new donations after visiting an environment for the first time (H2). Finally, we hypothesised that donations would be more likely for those tourists who reported having a stronger identity with that visited environment (H3).

Methodology

Design

The study employed a retrospective online questionnaire. Using both quantitative and qualitative measures, participants reflected on their most recent tourism experience (at least one night away from home) where some time was spent in nature. The correlation between travel philanthropy (yes or no to new donations during or after their trip) and three potential drivers of behaviour (perceptions of LCT, first visit and identity with nature) were examined. Comparisons between geographies were also included to examine the importance of distinguishing between international and domestic travel. Other factors and demographics known to be associated with

these drivers and/or behaviour were collected to serve as controls in the analysis. All research was approved by the University of Surrey's Ethics Committee.

Data collection procedure

The data in this study were collected in collaboration with two leading UK adventure travel tour operators, both specialising in the UK small-groups adventure tourism sector, which feature wild-life-specific trips as part of their tourism product. To ensure confidentiality, the names of the two tour operators are withheld. Each tour operator sent out a link to the online questionnaire to its UK resident clients who had been on any trip with them within the previous three years ($N=26,169$). The questionnaire was either sent via a specific email about this research or included as part of a newsletter between October and November 2018.

In total, 1,034 individuals completed the questionnaire (response rate = 4%). Questionnaires with missing data ($n=110$) were eliminated from the study to avoid biased statistical results (Hair et al., 1998). In total, 924 useable questionnaires were retained, satisfying the minimum sample requirements for the later analysis (Hair et al., 1998).

In order to fully understand and contextualise international travel, data noting both domestic and international trips in nature had to be collected. To achieve this, 25% of participants who selected "yes" to travelling internationally and domestically to spend at least one night away from home with some time spent in nature, were asked to complete the questionnaire based on their domestic (UK-based) trip. The other 75% of participants completed the questionnaire focusing on their most recent international trip. Randomisation was used instead of building quotas into the questionnaire as the number of individuals who would complete the questionnaire was unknown. The domestic sample ($n=155$) of 25% was deemed appropriate for two reasons: first, it met the minimum sample size for the later analysis (McHugh, 2013) to compare these two contexts; and second, it did not compromise the sample size of the international trips needed to examine the role of other trip characteristics in the later analyses (e.g. trips that vary on the last chance tourism dimension).

Measures

To document *travel philanthropy*, participants were asked whether or not they made a new donation to a wildlife organisation or environmental cause at two time points: during and after their most recent trip. Based on their responses to these two (during and after) questions, a binary variable was generated categorising participants into those who had made new donations and those who had not. Additionally, an open-ended question provided the opportunity for participants to note how much (in GBP) they donated and to name the charities they donated to.

To explore the influence of tourism on donating, participants were specifically asked at the end of the questionnaire to self-report on a scale from 1 (definitely not) to 5 (definitely yes) the extent to which they felt that tourism was influential in changing their donating behaviour. Participants were asked to explain why their most recent tourism experience was or was not influential in changing their donating behaviours. To gain longevity and a wider perspective on participants' travel philanthropy, a further open-ended question asked whether participants had ever had a tourism experience, aside from their most recent trip, that was influential in changing their donating behaviour.

To examine if participants' *perception of last chance tourism* (LCT) influenced philanthropy, a Likert-scale was developed and implemented in this study. As no standardised measure existed, a 12-item scale was initially developed based on different dimensions of the *perception of LCT* construct (e.g. endangered animals and disappearing landscapes) noted repeatedly within the last chance literature (Fisher & Stewart, 2017; Groulx et al., 2019; Piggott-McKellar & McNamara, 2017).

After an initial pilot with 48 individuals, a final scale of 9 items that included statements such as “I visited before it was too late to see this species in the wild” and “I saw landscapes that were damaged beyond repair” were rated on a scale from 1 (strongly disagree) to 7 (strongly agree). The mean of participants’ scores on all 9 items was then used as a single score for perception of LCT (see [Table A1](#) in appendix for the full list of items). Cronbach’s alpha was used to evaluate the internal consistency of this derived variable (Churchill, 1979; DeVellis, 2016), which was determined to be a reliable measure ($\alpha = .89$). The second hypothesis-based variable was whether or not the participant had visited the destination previously, which was assessed by asking how many times a participant had previously visited. A binary variable that differentiated between participants on their first visit and those who had visited at least one time previously was generated.

To examine how much an individual identified with the natural world, the Inclusion of Nature in the Self scale was used (INS; Aron et al., 1992). This well-established single-item measure uses Venn-like pictorial diagrams to represent seven varying levels of *identity with nature* (Schultz & Tabanico, 2007). Participants were asked to select the diagram that best describes their relationship with nature (lower scores where the circles are separate indicate a low level of identity with nature; conversely, higher scores, where there is the greatest overlap of the circles, indicate that they view nature and themselves as being one).

In order to relate these findings specifically to participants’ identity with nature associated with their travel destination, the INS scale was adapted to measure individuals’ identity with nature at the destination (of most recent trip) rather than their generic relationship with nature.

Control variables

Age, gender, highest level of education and total household income were included in the questionnaire. Participants were also asked how many nature-specific holidays/tours of over one week and over 100 miles (161 km) from their home they had participated in within the last three years. This question was added to ascertain how avid nature tourists’ (Hall & Saarinen, 2010) philanthropy habits compared with those who travel less frequently on nature-specific holidays. The final control variables included were trust in charities, where participants were asked to rate on a scale from 1 (strongly disagree) to 7 (strongly agree) their agreement that UK and international charities (specifically in the country participants last travelled to) are trustworthy.

Data analysis strategy

First, descriptive statistics and intercorrelations among study variables were assessed to confirm that no multicollinearity existed between the variables (see [Table A2](#) in the appendix). To identify which factors were the best predictors of new philanthropy behaviour, logistic regression was performed using SPSS Version 26. The dependent variable was the binary variable of new philanthropy behaviour (did vs. did not commit to new donations). Hierarchical selection and entry was used as the regression method, which involves prioritising the entry of predictor variables based on their theoretical suitability, as determined by the existing literature. Specifically, Step 1 included the control variables (see above) only, then Step 2 additionally included the variables *perception of LCT*, *first visit* (whether or not the participant had visited the destination previously) and *identity with nature (INS)* to evaluate whether they improved the model further and provided any additional predictive value.

To understand the extent and direction of relationships, unstandardised regression coefficients (B values), odds ratios, and confidence intervals around odds ratios were reported. Odds ratios are calculated by exponentiating a predictor’s regression coefficient— $\exp(B)$ (Peng et al., 2002); in the present case, they represent the change in the odds of donating per one-unit increase in a predictor (or category change in the case of binary predictors). If an odds ratio is greater than 1, it reflects a given percentage increase in the odds of donating for a one-unit change in the predictor. If the

odds ratio is less than 1, it reflects a given percentage decrease in the odds of donating. An odds ratio of 1 signifies no change in the odds (i.e. a null predictor-outcome relationship).

To analyse participants' spontaneous explanations as to why their recent tourism experience was or was not influential in changing their donating habits, thematic analysis (Braun & Clarke, 2006) was used to capture primary and secondary themes. These open-response data were used to contextualise and further interpret the findings from the close-ended questions. Themes were then developed and refined over a number of iterations.

Analysis was completed by the first author in consultation with the other authors. To ensure anonymity of participants and rigour in management of data, all participants were allocated an ID number with identification of the destination name of where their particular encounter with wildlife was noted (e.g. Participant #514/Rwanda). As highlighted by Denzin and Lincoln (2008), Lune and Berg (2017), and Polkinghorne (1997), findings from qualitative data are shared through the incorporation of illustrative quotes reflecting the key themes and experiences shared by participants.

Results

Participant profile

Table 1 shows the demographic profile of participants. The majority of participants were female (68%), aged between 45 and 64 (58%), with a household income of at least £30,001 (58%) and an undergraduate or postgraduate degree (77%). Participants were also identified as well-travelled, with the average participant having visited five ($M = 5.07$; $SD = 1.35$) of the world's seven continents and/or the Arctic for leisure travel. Participants were also regular nature tourists, with the average participant taking a nature-specific holiday/tour approximately once a year ($M = 3.34$ trips in the last three years, $SD = 2.66$).

Do tourists report donating more after an international tourism experience than a domestic tourism experience?

Participants reflecting on domestic trips ($n = 155$) and international trips ($n = 769$) were asked whether or not they made a donation to a new environmental, conservation, or wildlife organisation or environmental charity, either during and/or after their most recent trip in which they spent some time in nature. Chi-squared analysis suggests that international tourists were

Table 1. Demographics of participants ($n = 924$).

Demographics	Categories	(n)	%
Gender	Male	292	32%
	Female*	629	68%
	Not Reported	3	0.3%
Age	18–44 years	91	10%
	45–64 years*	532	58%
	65+ years	301	33%
Household income	£0–£30,000	227	25%
	£30,001–£60,000*	327	35%
	£60,001–£90,000	109	12%
	£90,001+	99	11%
	Not Reported	162	18%
Level of education	Pre-tertiary education (includes no qualifications, GCSEs & A-Levels)	80	9%
	Diploma / NVQ / other technical qualification	105	11%
	Undergraduate degree (e.g. BSc, BA)*	383	41%
	Postgraduate degree (MA, MSc, PhD)	332	36%
	Other	24	3%

*represents the largest category that was then used as the main reference in the later analysis.

significantly more likely to donate than domestic tourists (23% versus 12%; $\chi^2(1) = 9.30, p < .001$), which implies that tourists are much more likely to contribute to conservation philanthropy after an international trip compared to a domestic trip. Consequently, the remaining analyses acknowledge this difference and report the two types of visits separately.

The donating profile of international and domestic tourists

Of those reflecting on an international trip who reported making a new donation ($n = 179$), most donated during their trip rather than afterwards. Specifically, 72% of participants donated during the trip, 22% donated after the trip and 7% donated both during and after the trip.

The charities that participants reported donating to during their international trip were specifically focused on one type of fauna species (for instance rhinos, elephants or leopards) and were local to the place the participant was visiting. The after-trip list of charities offered a greater variety of conservation charities aside from wildlife and were predominantly charities registered within the UK, including Royal Society for the Protection of Birds, WWF and Greenpeace.

For the donators reflecting on a domestic trip ($n = 19$), most donated during their trip rather than afterwards. Specifically, 63% of these participants donated during the trip, 32% donated after the trip and 5% donated both during and after the trip. The charities that participants reported donating to both during and after their domestic trip were predominantly registered within the UK and whose charitable projects were based in the UK, for example, the Woodland Trust, The National Trust and regional Wildlife Trusts.

The amount participants donated during their most recent trip varied from £5 to £115 ($M = £46$ for international tourists; $M = £14$ for domestic tourists). Whilst the majority of tourists donated during their trip, the potential for tourism to change donating habits in the longer term was noted by participants. One participant described her continued donations made since her trip to Rwanda in 1991:

“During 1991 I visited the gorilla population in Rwanda which was, without doubt, the best travel experience I have ever, or will ever, have. Since that time, I have donated to a charity dedicated to helping and saving gorilla populations (The Diane Fossey Fund, now The Gorilla Organisation)” (Participant#514/Rwanda).

Another participant remarked; “I visited the Brooke animal hospital in Luxor in 2002 and have supported them ever since.” (Participant#490/Egypt).

Participants were asked to self-report whether or not they felt travelling was influential in changing their donating behaviour. Of those who reported not making new donations, the average response was that they strongly disagreed that the tourism experience influenced their behaviour (5-point scale, $M = 1.79, SD = 0.82$). For those who did donate, although the consensus was also that the tourism experience was not influential ($M = 2.20, SD = 0.95$), it was not rated as strongly (the mean was higher) as the non-donator group. This finding suggests that tourists themselves do not make the direct link between tourism as a trigger for influencing their donating behaviour.

Predictors of travel philanthropy

To established whether the tourism experience was, indeed, associated with new (or lack of) philanthropic behaviour, logistical regressions, using two models, explored the factors influencing travel philanthropy (making a new donation during and/or after the trip).

Featuring just the control and demographic variables, Model 1 explained 5–8% of travel philanthropy. Apart from international visits being associated with a greater likelihood of making a new donation compared to domestic trips, trust in international charities was the only other significant predictor in its own right. Specifically, participants were 1.50 times more likely to donate with each one unit increase in levels of trust towards internationally-registered charities.

In Model 2, the variables *perception of LCT*, *first visit* (versus visited before) and *identity with nature* were added to model 1, to examine what additional effect they had on the model (see Table 2). By adding the hypothesis-based variables, Model 2 was a substantial improvement on Model 1, predicting 11–17% of participant behaviour. Examination of the individual variables revealed that each one predicts travel philanthropy. The five influential variables within the model were *first visits*, *international visits*, *trust*, *perception of LCT* and *identity with nature*.

The role of last chance tourism on travel philanthropy

H1 proposed that a person's perception of LCT positively affects their probability of donating. As shown in Table 2, the effect was significant, demonstrating that for each unit increase in their perception of biodiversity loss (last chance tourism scale), the likelihood of making a new donation increased by a factor of 1.42. In other words, if a tourist had a greater perception that they had viewed endangered wildlife or vanishing landscapes during their trip, they were more likely to make a financial donation. This finding was also observed in the thematic analysis and was further illustrated by participant responses.

Participants who did donate noted it was because they had experienced endangered environments and/or wildlife, whereas those who did not donate, noted it was because they had not had such an experience. Examples stated by non-donating participants include: "I didn't have direct contact/experiences with endangered environments or animal species" (Participant#689/Norway), and a second observed "because nature as such formed only a smallish part of the trip and I did not see any endangered species" (Participant#77/Ukraine). For participants who did make a donation, the destruction of habitats was a key trigger for new donations. Examples of deforested habitats included Madagascar and Borneo, for example:

"seeing the effect of deforestation in Borneo as a result of palm oil made me start donating regularly to Greenpeace (had previously donated irregularly in response to specific appeals) – I was lucky enough to see orangutans in the wild and don't want to see them become extinct." (Participant#494/Indonesia).

Another participant shared that: "seeing destruction of habitats for example destruction of forests for palm oil plantations influences my behaviour" (Participant#190/Sri Lanka), while another participant commented that: "My trip to Madagascar had the biggest impact on my donating behaviour as I had first-hand experience of the impact slash and burn had on the ecology in the island" (Participant#193/Madagascar).

The role of a first visit on travel philanthropy

H2 proposed that the probability of donating would be greater for those who visited that destination for the first time. Table 2 highlights that the effect was significant, demonstrating that the likelihood of making a new donation was larger for first-visit tourists by a factor of 2.25 and indicating that travelling to less familiar environments may trigger new donations. Thematic analysis also identified the concept of a first visit as an explanation given by participants when asked to explain why their recent tourism experience was or was not influential in changing their donating behaviour. Many participants noted some form of new experience. Those who did donate noted it was because it was a first experience, and those who did not donate noted it was because they had previously visited the destination or that they did not see any new environmental issues that would have triggered a donation.

Comments from those who did donate because it was a first experience included: "When I first visited Kenya. Upon my return I donated to 3 additional charities" (Participant#414/Kenya) - or "exposure to new charities during the trip" (Participant#236/Cambodia). A further participant noted that tourism developed their new interest in birdwatching, which had subsequently led to donations: "I have also recently developed an interest in birdwatching which has been major

Table 2. Binary Logistic regressions examining the predictive value of control variables (Model 1) and the additional value of adding perceptions of last chance tourism, identity with nature and first visit (Model 2) on likelihood to make a new donation during and/or after a travel experience.

Variables	Model 1 (control variables)						Model 2 (main effects)					
	B	S.E.	Wald Stat.	Sig.	Odds Ratio	Odds Ratio 95% C.I.	B	S.E.	Wald Stat.	Sig.	Odds Ratio	Odds Ratio 95% C.I.
Gender – Male (vs. female)	-0.18	0.19	0.93	.34	0.84	0.58 1.20	-0.09	0.19	0.24	.63	0.91	0.63 1.33
Age – 18-44 (vs. 45-64)	0.05	0.28	0.03	.86	1.05	0.61 1.82	-0.21	0.29	0.50	.48	0.81	0.46 1.45
Age – ≥ 65 (vs. 45-64)	-0.31	0.19	2.53	.11	0.73	0.50 1.07	-0.37	0.20	3.46	.06	0.69	0.46 1.02
Income – £0-£30,000 (vs. £30-60k)	-0.04	0.23	0.02	.88	0.96	0.62 1.51	-0.12	0.24	0.23	.63	0.89	0.56 1.42
Income – £60,001-£90,000 (vs. £30-60k)	-0.30	0.29	1.05	.31	0.74	0.42 1.31	-0.38	0.30	1.59	.21	0.68	0.37 1.24
Income – £90,001+ (vs. £30-60k)	0.02	0.29	0.00	.94	1.02	0.58 1.80	-0.09	0.30	0.09	.77	0.91	0.51 1.65
Income – prefer not to say (vs. £30-60k)	0.29	0.24	1.54	.21	1.34	0.84 2.13	0.18	0.25	0.51	.48	1.19	0.73 1.94
Education – Pre-tertiary (vs. Undergrad)	-0.21	0.35	0.35	.55	0.81	0.41 1.61	-0.23	0.36	0.43	.51	0.79	0.39 1.59
Education – Technical qual (vs. Undergrad)	0.41	0.27	2.30	.13	1.50	0.89 2.54	0.19	0.28	0.46	.50	1.21	0.70 2.08
Education – Postgraduate (vs. Undergrad)	0.18	0.19	0.92	.34	1.20	0.83 1.75	0.21	0.20	1.17	.28	1.24	0.84 1.83
Education – Other (vs. Undergrad)	-0.08	0.54	0.02	.88	0.92	0.32 2.64	-0.32	0.56	0.32	.57	0.73	0.24 2.19
International visits (vs. domestic visit)	1.06	0.28	14.36	<.001	2.88	1.67 4.98	0.64	0.30	4.63	.03	1.90	1.06 3.41
Number of nature holidays taken	0.02	0.03	0.38	.54	1.02	0.96 1.09	0.02	0.03	0.30	.59	1.02	0.95 1.09
Trust – UK charities	0.03	0.09	0.12	.73	1.03	0.87 1.22	0.02	0.09	0.04	.85	1.02	0.85 1.22
Trust – International charities	0.41	0.10	15.48	<.001	1.50	1.23 1.84	0.46	0.11	17.61	<.001	1.58	1.28 1.96
Perception of last chance tourism	-	-	-	-	-	-	0.35	0.08	19.10	<.001	1.42	1.22 1.67
First visit (vs. visited before)	-	-	-	-	-	-	0.81	0.20	17.00	<.001	2.25	1.53 3.31
Identity with nature (INS)	-	-	-	-	-	-	0.21	0.07	8.00	<.001	1.23	1.07 1.43
Model $\chi^2_{(df)}$				46.90 ⁽¹⁵⁾	***				102.69 ⁽¹⁸⁾	***		
-2 Log Likelihood				895.17					839.38			
Cox & Snell R ²				0.05					0.11			
Nagelkerke R ²				0.08					0.17			

Notes. $n = 908$ once missing variables removed. B = unstandardized coefficient, SE = standard error, CI = confidence interval, LL = lower limit, UL = upper limit. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
 Dependent variable is dichotomous – whether or not a new donation was made during and/or after a travel experience.

driver for donations - however my trip helped develop this interest" (Participant#923/Guyana). Comments from those who did not donate because they had previously visited: "Have been many times before so this trip was not unique and not behaviour changing" (Participant#250/Spain) or that they did not see any new environmental issues that would have triggered a donation: "No new environmental issues to drive change" (Participant#399/Italy).

The role of identity with nature on travel philanthropy

H3 proposed that a higher level of environmental identity with nature at the destination travelled to (INS) would be positively associated with the participants' probability of donating. As shown in Table 2, the effect was significant, demonstrating that for each unit increase in their identity with nature (INS Scale), the likelihood of making a new donation increased by a factor of 1.23. This analysis indicates that individuals who perceived a stronger interconnectedness between themselves and nature within the destination they visited were significantly more likely to donate to conservation charities. Participants explicitly noted that their connection both to nature and to different areas and individuals in the location they travelled to were the reasons for their new donations. For example: "I have more of a connection now to different areas/people in that part of the world" (Participant#222/Nepal) or "Feeling a connection to nature and the personal responsibility to support protecting it" (Participant#512/Madagascar).

Discussion

International travel to last chance destinations and/or nature-based holidays has been criticised for harming the very environments tourists wish to see. We assessed whether such tourism may also provide benefits to conservation funding. This study examined whether new donations were more prevalent during and following international tourism compared to domestic trips. We also examined the profiles of the tourists who donated during and/or after a trip, as well as the contextual and psychological factors that were the best predictors of this pro-environmental behaviour. We found that tourism was associated with greater donations to biodiversity conservation following international trips compared to domestic trips, and that a new donation was more likely if: 1) it was their first time to that destination, 2) they trusted international charities (if applicable), 3) they perceived their trip to be associated with last chance tourism, and 4) they had a strong identity with the nature of the environment they visited.

International tourists more likely to donate to conservation charities than domestic tourists

Overall, the quantitative and qualitative findings suggest that international tourists were more likely than domestic tourists to donate to conservation charities, with participants suggesting that their international trips were major, potentially life-changing journeys. This phenomenon was less likely to be felt during domestic trips. Findings revealed that, overall, international tourists were more likely to donate during their trip than after their trip. However, participants' open-ended responses highlighted that in some cases, they had donated consistently for over 20 years as a direct result of previous tourism experiences. Therefore, for some tourists, the net effect of their travel for wildlife could be a positive one, contributing to the supposed benefits of tourism as a means of sustainable development (Gössling & Hall, 2006b; Hall, 2010; Hall et al., 2013). This new knowledge could enhance managers' ability to use tourism and tourists' philanthropy more effectively (Dlamini & Masuku, 2012).

The role of last chance tourism on travel philanthropy

This study set out to identify which contextual and psychological factors of a tourism experience are the strongest predictors of philanthropy. Findings supported H1, suggesting tourists' perceptions of LCT are correlated to increased probability of donating to conservation. Building on previous studies, which showed that tourists are first drawn to an LCT destination in part through fear of missing out (Hehir et al., 2021; Miller et al., 2020), our study finds that having been to the destination and having strengthened their identity with the nature they experience, tourists are motivated to preserve that nature through philanthropy.

This study also builds upon the intentions-focused study by Miller et al. (2020), as we suggest that a higher perception of LCT predicts actual pro-environmental behaviour in the form of philanthropic donations. The qualitative data further emphasises this fear of loss with those who did donate, with many participants noting the destruction of habitats as a trigger for making a new donation, and those not donating noting that they did not experience loss or endangered wildlife or any causes for concern. This finding suggests that heightened perception of a destination as being in a last chance state may trigger new tourist donations. This find is encouraging as it is a first step in moving the position of LCT scholarship away from its doom tourism (Lemelin et al., 2010) and extinction tourism (Leahy, 2008) origins to one more consistent with tourism's enriching and biophilic potential.

The role of a first visit on travel philanthropy

The second hypothesis of this study was also supported, suggesting that the novelty of a first visit to a destination increases tourists' probability of donating. We find that the likelihood of making a new donation was larger for first-visit tourists compared to those who had visited before. Wang et al. (2019) emphasised that holiday making is an ability to escape, creating the freedom from the modernised mode of existence that is associated with rigid schedules, deadening routines and stressful deadlines. Individuals on holiday often go to unfamiliar environments to enter into alternative tempos and rhythms and to have the freedom to change. The qualitative responses of several participants alluded to non- or less-familiar surroundings to explain why tourism was or was not influential in triggering new donations. Other participants noted that they had not learnt anything new or had not seen any new environmental issues to drive change. We propose that travel philanthropy is more likely among first-time visitors due to tourism creating a novelty-focused cognitive mind-set, breaking the routine thinking pattern that represents the interaction between humans and nature. This new understanding could strengthen the argument for including philanthropy initiatives more widely across tour operator practice.

The role of identity with nature on travel philanthropy

As well as perception of LCT, a third factor that positively correlated to the probability of donating, was a participant's identity with nature (H3). Participants who reported having a closer identity with the nature they visited were more likely to make a new donation. This finding aligns with Schultz (2001) and many other authors (including Clayton & Opatow, 2003; Kidner, 2001) who have argued that a psychological relationship with nature is necessary to achieve sustainability. In the qualitative data, participants' relationships to wildlife and to different environments (landscapes) during their travels acted as triggers for donations. These findings suggest that the more an experience enables a tourist to build a relationship with the environment they are visiting, the greater the probability that they will donate. Therefore, when tour operators are designing itineraries, it is suggested they include activities like wildlife watching and nature photography (Teisl & O'Brien, 2003), where tourists are able to strengthen their relationships with nature.

Limitations and future research

One limitation of this study is its use of the self-reporting approach. We considered this method to be the most appropriate for a more holistic comparison of different tourism experiences, providing insight into a broader range of participants than those previously used in travel philanthropy research (Ardoin et al., 2016; Powell & Ham, 2008; Sgalitzer et al., 2016), and enabling us to examine the role of different factors on behaviour. However, the accuracy of some responses may have been sensitive to social desirability or recall bias. For example, participants might have overinflated their donating contributions to give a positive self-description. This study attempted to mitigate this risk by adopting a retrospective approach and only asking participants to note behaviours that had already occurred. Further, no social desirability bias was detected when asking participants directly if they felt tourism had influenced their donating behaviour (explained by low mean scores). This suggests the results are a true representation.

This study focused on UK residents, because, rather than being locally-based, philanthropy needs within the UK are often based on those who are far less well-off and very different from them (Wright, 2001), creating clear potential to link further with the outbound tourism industry. To achieve this sample, we partnered with two tour operators, to examine real tourists' experiences and perceptions. Whilst the findings do provide novel insight into the donating practices and drivers of such by a sample of these types of tourist, it should be noted that the respondents in our sample were on average wealthier and more educated than the UK population as a whole, which limits the generalisability of findings in the UK context. Exploring the same behaviour and drivers with a more representative sample would enable greater generalisability of the results to a broader population. To add greater international context, future research could replicate this study within other countries such as the United States, for example, as Americans tend to give to needs that they can directly see, feel and understand. Indeed, according to Wright (2001), the majority of American support is given to organisations in which they are, or have been, personally involved, such as their church, college/university or a hospital that helped a relative.

Both the quantitative and qualitative findings of this study build upon the intentions-focused study by Miller et al. (2020). The quantitative findings suggest that higher perceptions of LCT predict actual pro-environmental behaviour (donating). The qualitative data further emphasised this fear of loss with those who did donate, with many participants noting the destruction of habitats as a trigger for making a new donation. We suggest that further research is needed to identify precisely why last chance destinations trigger greater donations; for example, do tourists donate money from viewing last chance animals over more abundant charismatic wildlife (not of conservation concern)?

Implications and conclusions

Empirical research is increasingly a requisite in helping managers, tour operators and guides to promote pro-environmental outcomes and justify experiences, particularly in vulnerable destinations associated with LCT (Powell & Ham, 2008). In order for these findings to have practical applications, a set of tourism philanthropy guidelines have been developed titled *Making Tourism Count for Wildlife Conservation*, #givewhenyougo. They highlight tourists' value for, and responsibilities with respect to, nature and conservation. Further, they explain a tour operator's role in encouraging tourists to give to charity. Expected to be the UK's first travel philanthropy guidelines, they identify five ways tour operators can encourage tourists to donate. The guidelines (Figure 1) plan to be distributed to UK tour operators later this year. The lead author is working with operators to implement these findings into daily operations. One operator is planning to add donating information in their pre-travel trip notes advising tourists on where they will have the opportunity to donate during their trip. This change aims to build tourists' trust in charities/organisations prior to travelling, with the intention to prompt more on-site donations.

MAKING TOURISM COUNT FOR CONSERVATION

A tour operator's role in encouraging tourists to give to charity.

1 Make it wilder

The more wildlife people see, the more they will be inspired to care about it. This is especially true for "wildlife spectacles" involving large numbers of animals.

DO: Take every opportunity to show visitors wildlife, particularly native species, and give people opportunities to find wildlife themselves (e.g. wild camping, walking safaris). Allowing people to explore on their own enables time for reflection and often creates the most memorable experiences.



2 Rare gems

Catching a glimpse of something rare or endangered inspires tourists to want to do something about what might be lost. Don't forget landscapes can be endangered too like glaciers, coral reefs, dark starry skies and rainforests.

DO: Tell people about why the rare things are special and encourage them to use all their senses to help them catch a glimpse. Even if they miss a rare animal sighting they might be able to hear the glacial ice cracking or smell some exotic flowers!



3 Get into nature

The closer to nature people feel, the more they will want to protect it. There are lots of different ways to get into nature, whether it's hiking, climbing or cycling through an amazing landscape or using an artistic eye to engage with nature more closely.

DO: Promote activities that get people interacting with nature: canoeing, photography, painting or first-hand conservation work like a litter pick. Anything that allows people to get up close to nature and spend time in it.



4 Make giving easy

Give clear opportunities to donate both during the trip and after. Make it clear how their donations will be used and it how it will help the place they visited.

DO: Use a donation box and remind people they can't spend the currency back home. Give a specific talk that ends with a call to help. Give the information about the work being done and why funding is needed, be transparent about how donations will be spent.



5 Highlight problems & solutions

Tell people about problems facing nature but keep them upbeat by showing them the excellent work being done to help it.

DO: When giving tours, make the problems facing nature clear (climate change / deforestation / coral bleaching). Balance this with solutions that are big enough to solve the issue and let people know what actions they can take. Follow-up a trip with a "welcome back" email that mentions those potential solutions including donating and lists some charities.





Learn more about when and why tourists donate to charity by scanning the QR code, or by contacting the researcher/author Christy Hehir directly via email: christy.hehir@surrey.ac.uk or Twitter: @christyhehir

Hehir, C. Scaries, C. Wyles, K.J.Kantenbacher. (2020). Last-chance for wildlife conservation: understanding the drivers of tourists' philanthropic behaviour. Doctoral Dissertation, The University of Surrey, UK.



Share these guidelines using [@givewhenyougo](https://twitter.com/givewhenyougo) [@christyhehir](https://twitter.com/christyhehir)

Figure 1. Making tourism count for conservation. A tour operator guide to encouraging tourists to give to charity.

Another operator plans to include donating information into their *Welcome Home Survey* both to gather data on their tourists' donating habits and to encourage additional donations upon their return home. In addition, several operators are currently considering encouraging their tourists' to *get into nature* by adding activities such as painting, photography or conservation work (litter pick, citizen science) into their future trip itineraries. A follow-up assessment of the use and impact on behaviour of these guidelines could help further develop understanding of how to maximise the benefit of tourism to conservation.

To conclude, findings suggest that nature-based tourism can prompt new funding for conservation efforts. This new knowledge contributes in three ways to the call to audit the impact of

tourism on conservation (Moorhouse et al., 2015). Firstly, this study suggests that tourism to last chance destinations prompts the greatest new philanthropy to conservation when compared to other international and domestic trips in nature. Secondly, it identifies the profile of a donating tourist, enabling managers to use tourism and tourists' philanthropy more effectively. Thirdly, several contextual and more psychological factors that predict a tourist's philanthropy have been empirically correlated for the first time.

Alongside the scholarly outcome of the research, we were mindful from the outset of the critical importance of demonstrating and evidencing the impact of social science beyond the realms of academia. As this special issue confirms, the desire for increased understanding of tourists' values and responsibilities with respect to nature and wildlife tourism is paramount for conservation management. The findings of this study and subsequent guidelines are already contributing to narrowing the biodiversity conservation finance gap (UNEP-WCMC and IUCN, 2016) by encouraging greater collaboration between tour operators and non-profits, and furthering understanding of the ways in which tourism can count for conservation.

Disclosure statement

No potential conflict of interest was reported by the authors.

Acknowledgements

The research would not have been possible without the two UK tour operators support and without all of the participants who contributed to the research. This paper forms part of a wider PhD study, recognised and funded (ES/P00072X/1 2) by the ESRC (Economic Social Research Council) South East Network for Social Sciences (SeNSS). Further funding was awarded by QR Strategic Priority Funds (SPF) 2019/2020 to transform the findings into the tourism philanthropy guidelines titled, *Making Tourism Count for Wildlife Conservation*, #givewhenyougo.

Funding

1. Economic and Social Research Council (ESRC) Scholarship ES/P00072X/1 2. QR Strategic Priority Funds (SPF).

Notes on contributors

Dr Christy Hehir, is an Environmental Psychologist, Conservationist, Polar Alien Hunter and Lecturer at the University of Surrey, UK. Her interdisciplinary research brings together environmental psychology and tourism. Her research examines the role tourism plays in (re)connecting people to nature and understanding the correlations between tourists' experiences at last chance destinations and their subsequent pro-environmental behaviour.

Professor Caroline Scarles is a Professor of Technology in Society in the School of Hospitality and Tourism at the University of Surrey, UK. Her key research interests lie in the areas of critical tourism, with particular focus on the role of the visual and technology in tourism.

Dr Kayleigh Wyles is an Associate Professor in Psychology at the University of Plymouth, UK. Her research examines the key drivers of pro-environmental behaviour, specialising in the role of engaging in and connecting with nature has on these behaviours.

Dr Joe Kantanbacher is an Assistant Professor in the Department of Sustainability & Environment at the University of South Dakota. Joe's research is primarily focused on the social and psychological aspects of environmental sustainability, with particular interests in energy, climate change, and consumption.

ORCID

Christy Hehir  <http://orcid.org/0000-0002-8802-7990>

Caroline Scarles  <http://orcid.org/0000-0001-8279-3689>

References

- Ardoin, N. M., Wheaton, M., Hunt, C. A., Schuh, J. S., & Durham, W. H. (2016). Post-trip philanthropic intentions of nature-based tourists in Galapagos. *Journal of Ecotourism*, 15(1), 21–35. <https://doi.org/10.1080/14724049.2016.1142555>
- Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, 63(4), 596–612. <https://doi.org/10.1037/0022-3514.63.4.596>
- Barnes, M. L., & Eagles, P. (2004). Examining the relationship between ecotourists and philanthropic behaviour. *Tourism Recreation Research*, 29(3), 35–38. <https://doi.org/10.1080/02508281.2004.11081455>
- Beaumont, N. (2001). Ecotourism and the conservation ethic: Recruiting the uninitiated or preaching to the converted? *Journal of Sustainable Tourism*, 9(4), 317–341. <https://doi.org/10.1080/09669580108667405>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Buckley. (2012). Endangered animals caught in the tourist trap [WWW Document]. New Sci. Retrieved 2020, July 7, from <https://www.newscientist.com/article/mg21628860.200-endangered-animals-caught-in-the-tourist-trap/>.
- Bui, H. T., & Le, T. A. (2016). Tourist satisfaction and destination image of Vietnam's Ha Long Bay. *Asia Pacific Journal of Tourism Research*, 21(7), 795–810. <https://doi.org/10.1080/10941665.2015.1075564>
- Charities Aid Foundation. (2019)., caf-uk-giving-web.pdf [WWW Document]. Retrieved 2021, July 15, from <https://www.cafonline.org/docs/default-source/about-us-publications/caf-uk-giving-web.pdf?sfvrsn=8> (accessed 15.07.21).
- Charities Aid Foundation. (2017). caf-uk-giving-web.pdf [WWW Document], Retrieved 2017, September 14, from <https://www.cafonline.org/docs/default-source/about-us-publications/caf-uk-giving-web.pdf?sfvrsn=8>
- Churchill, G. A. Jr. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research XVI*, 64–73.
- Clark, E., Mulgrew, K., Kannis-Dyand, L., Schaffer, V., & Hoberg, R. (2019). Theory of planned behaviour: predicting tourists' pro-environmental intentions after a humpback whale encounter. *Journal of Sustainable Tourism*, 27(5), 649–667. <https://doi.org/10.1080/09669582.2019.1603237>
- Clayton, S. and Opatow, S. eds., 2003. *Identity and the natural environment: The psychological significance of nature*. Mit Press.
- Davis, J. L., Le, B., & Coy, A. E. (2011). Building a model of commitment to the natural environment to predict ecological behaviour and willingness to sacrifice. *Journal of Environmental Psychology*, 31(3), 257–265. <https://doi.org/10.1016/j.jenvp.2011.01.004>
- Dawson, J., Johnston, M. J., Stewart, E. J., Lemieux, C. J., Lemelin, R. H., Maher, P. T., & Grimwood, B. S. R. (2011). Ethical considerations of last chance tourism. *Journal of Ecotourism*, 10(3), 250–265. <https://doi.org/10.1080/14724049.2011.617449>
- Dawson, J., Stewart, E. J., Lemelin, H., & Scott, D. (2010). The carbon cost of polar bear viewing tourism in Churchill, Canada. *Journal of Sustainable Tourism*, 18(3), 319–336. <https://doi.org/10.1080/09669580903215147>
- Denley, T. J., Woosnam, K. M., Ribeiro, M. A., Boley, B. B., Hehir, C., & Abrams, J. (2020). Individuals' intentions to engage in last chance tourism: applying the value-belief-norm model. *Journal of Sustainable Tourism*, 28(11), 1860–1822. <https://doi.org/10.1080/09669582.2020.1762623>
- Denzin, N. K., & Lincoln, Y. S. (2008). *Introduction: The discipline and practice of qualitative research*.
- DeVellis, R. F. (2016). *Scale development: Theory and applications (Vol. 26)*. Sage publications.
- Dlamini, C. S., & Masuku, M. (2012). Towards sustainable financing of protected areas: A case study of the Swaziland National Trust Commission (SNTC). *J. Geogr. Reg. Plan*, 5, 298–313. <http://dx.doi.org/10.5897/JGRP12.004>
- Fennell, D. A. (2007). *Ecotourism* (3rd ed.). Routledge.
- Fisher, D., & Stewart, E. J. (2017). Tourism, time, and the last chance. *Tourism Analysis*, 22(4), 511–521. <https://doi.org/10.3727/108354217X15023805452068>
- Goodwin, H., McCombes, L., & Eckardt, C. (2009). *Advances in travel philanthropy: Raising money through the travel and tourism industry for charitable purposes*. WTM Responsible Tourism Day (Report 2). Retrieved from www.icr-tourism.org/documents/2_nov_wtm_tp_final_report.pdf
- Gössling, S., Scott, D., Hall, C. M., Ceron, J. P., & Dubois, G. (2012). Consumer behaviour and demand response of tourists to climate change. *Annals of Tourism Research*, 39(1), 36–58.
- Gössling, S., & Hall, C. M. (2006b). Uncertainties in predicting tourist flows under scenarios of climate change. *Climatic Change*, 79(3–4), 163–173. <https://doi.org/10.1007/s10584-006-9081-y>
- Gössling, S., & Hall, M. C. (2006a). *Tourism and global environmental change*. Taylor & Francis.
- Groulx, M., Boluk, K., Lemieux, C. J., & Dawson, J. (2019). Place stewardship among last chance tourists. *Annals of Tourism Research*, 75, 202–212. <https://doi.org/10.1016/j.annals.2019.01.008>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis*. (Vol. 5, No. 3, pp. 207–219). Prentice hall.
- Hall, C. M. (2010). Tourism and biodiversity: more significant than climate change? *Journal of Heritage Tourism*, 5(4), 253–266. <https://doi.org/10.1080/1743873X.2010.517843>

- Hall, C. M., & Lew, A. A. (2009). *Understanding and managing tourism impacts: An integrated approach*. Routledge.
- Hall, C. M., & Saarinen, J. (2010). Polar tourism: Definitions and dimensions. *Scandinavian Journal of Hospitality and Tourism*, 10(4), 448–467. <https://doi.org/10.1080/15022250.2010.521686>
- Hall, C. M., Scott, D., & Gössling, S. (2013). The primacy of climate change for sustainable international tourism. *Sustainable Development*, 21(2), 112–121. <https://doi.org/10.1002/sd.1562>
- Hehir, C., Stewart, E. J., Maher, P. T., & Ribeiro, M. A. (2021). Evaluating the impact of a youth polar expedition alumni programme on post-trip proenvironmental behaviour: a community-engaged research approach. *Journal of Sustainable Tourism*, 29(10), 1635–1654. <https://doi.org/10.1080/09669582.2020.1863973>
- Igoe, J., & Brockington, D. (2007). Neoliberal conservation: a brief introduction. *Conservation and Society*, 5(4), 432–449.
- IUCN. (2019). The red list [WWW Document]. Retrieved 2020, July 27, <https://www.iucnredlist.org/>
- Jefferies, K., & Lepp, A. (2012). An investigation of extraordinary experiences. *Journal of Park & Recreation Administration*, 30(3), 37–51.
- Jones, T. E., & Nguyen, M. H. (2021). Nature-based tourism motivations and visit profiles of domestic and international segments to a Japanese National Park. *Quaestiones Geographicae*, 40(2), 77–92. <https://doi.org/10.2478/quageo-2021-0013>
- Kidner, D. W. (2001). *Nature and psyche: Radical environmentalism and the politics of subjectivity*. SUNY Press.
- Kim, M. S., & Stepchenkova, S. (2020). Altruistic values and environmental knowledge as triggers of pro-environmental behaviour among tourists. *Current Issues in Tourism*, 23(13), 1575–1580. <https://doi.org/10.1080/13683500.2019.1628188>
- Koot, S., & Fletcher, R. (2021). Donors on tour: Philanthrotourism in Africa. *Annals of Tourism Research*, 89, 103216. <https://doi.org/10.1016/j.annals.2021.103216>
- Leahy, S. (2008). Extinction tourism: See it now before it's gone. Retrieved August 11, 2009. URL: <https://stephen-leahy.net/2008/01/18/extinction-tourism-see-it-now-before-its-gone/>
- Lemelin, H., Dawson, J., Stewart, E. J., Maher, P., & Lueck, M. (2010). Last-chance tourism: The boom, doom, and gloom of visiting vanishing destinations. *Current Issues in Tourism*, 13(5), 477–493. <https://doi.org/10.1080/13683500903406367>
- Lemelin, H., & Maher, P. (2009). Nanuk of the Torngats: Human–Polar Bear Interactions in the Torngat Mountains National Park, Newfoundland and Labrador, Canada. *Hum. Human Dimensions of Wildlife*, 14(2), 152–155. <https://doi.org/10.1080/10871200802688532>
- Li, M. Z. (2010). The voyage of the self: Experiencing the subjective zone of international travel. *Annals of Leisure Research*, 13(1-2), 191–217. <https://doi.org/10.1080/11745398.2010.9686844>
- Lune, H., & Berg, B. L. (2017). *Qualitative research methods for the social sciences*. Pearson.
- Maathai, W. (2011). Challenge for Africa. *Sustainability Science*, 6(1), 1–2. <https://doi.org/10.1007/s11625-010-0120-2>
- McAfee, K. (1999). Selling nature to save it? Biodiversity and green developmentalism. *Environment and Planning D: Society and Space*, 17(2), 133–154. <https://doi.org/10.1068/d170133>
- McHugh, M. L. (2013). The chi-square test of independence. *Biochemia Medica*, 23(2), 143–149. <https://doi.org/10.11613/bm.2013.018>
- Micklewright, J., & Schnepf, S. V. (2009). Who gives charitable donations for overseas development? *Journal of Social Policy*, 38(2), 317–341.
- Miller, L. B., Hallo, J. C., Dvorak, R. G., Fefer, J. P., Peterson, B. A., & Brownlee, M. T. (2020). On the edge of the world: examining pro-environmental outcomes of last chance tourism in Kaktovik, Alaska. *Journal of Sustainable Tourism*, 28(11), 1703–1720. <https://doi.org/10.1080/09669582.2020.1720696>
- Mintel (2019). *Charitable Giving - UK* [online]. Retrieved 2020, July 27, from <http://academic.mintel.com>
- Moorhouse, T. P., Dahlsjö, C. A., Baker, S. E., D’Cruze, N. C., & Macdonald, D. W. (2015). The customer isn’t always right-conservation and animal welfare implications of the increasing demand for wildlife tourism. *PLoS One*, 10(10), e0138939. <https://doi.org/10.1371/journal.pone.0138939>
- Noy, C. (2004). This trip really changed me: Backpackers’ narratives of self-change. *Annals of Tourism Research*, 31(1), 78–102. <https://doi.org/10.1016/j.annals.2003.08.004>
- Olivos, P., & Aragonés, J. I. (2011). Psychometric properties of the Environmental Identity scale (EID). *Psychology*, 2(1), 65–74. <https://doi.org/10.1174/217119711794394653>
- Park, K. S., Reisinger, Y., & Kang, H. J. (2008). Visitors’ motivation for attending the South Beach wine and food festival, Miami Beach, Florida. *Journal of Travel & Tourism Marketing*, 25(2), 161–181. <https://doi.org/10.1080/10548400802402883>
- Peng, C. Y. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *The Journal of Educational Research*, 96(1), 3–14.
- Piggott-McKellar, A. E., & McNamara, K. E. (2017). Last chance tourism and the Great Barrier Reef. *Journal of Sustainable Tourism*, 25(3), 397–415. <https://doi.org/10.1080/09669582.2016.1213849>
- Polkinghorne, D. E. (1997). Reporting qualitative research as practice. *Representation and the text: Re-framing the narrative voice* (pp. 3–21).
- Powell, R. B., Brownlee, M. T., Kellert, S. R., & Ham, S. H. (2012). From awe to satisfaction: Immediate affective responses to the Antarctic tourism experience. *Polar Record*, 48(2), 145–156. <https://doi.org/10.1017/S0032247410000720>
- Powell, R. B., & Ham, S. H. (2008). Can ecotourism interpretation really lead to pro-conservation knowledge, attitudes and behaviour? Evidence from the Galapagos Islands. *Journal of Sustainable Tourism*, 16(4), 467–489. <https://doi.org/10.1080/09669580802154223>

- Powell, R. B., Kellert, S. R., & Ham, S. H. (2009). Interactional theory and the sustainable nature-based tourism experience. *Society & Natural Resources*, 22(8), 761–776. <https://doi.org/10.1080/08941920802017560>
- Richardson, L., & Loomis, J. (2009). The total economic value of threatened, endangered and rare species: an updated meta-analysis. *Ecological Economics*, 68(5), 1535–1548. <https://doi.org/10.1016/j.ecolecon.2008.10.016>
- Rodger, K., Moore, S. A., & Newsome, D. (2009). Wildlife tourism, science and actor network theory. *Annals of Tourism Research*, 36(4), 645–666. <https://doi.org/10.1016/j.annals.2009.06.001>
- Schultz, P. W. (2001). The structure of environmental concern: Concern for self, other people, and the biosphere. *Journal of Environmental Psychology*, 21(4), 327–339.
- Schultz, P. W., Shriver, C., Tabanico, J. J., & Khazian, A. M. (2004). Implicit connections with nature. *Journal of Environmental Psychology*, 24(1), 31–42. [https://doi.org/10.1016/S0272-4944\(03\)00022-7](https://doi.org/10.1016/S0272-4944(03)00022-7)
- Schultz, P. W., & Tabanico, J. (2007). Self, identity, and the natural environment: exploring implicit connections with nature. *Journal of Applied Social Psychology*, 37(6), 1219–1247. <https://doi.org/10.1111/j.1559-1816.2007.00210.x>
- Sgalitzer, H. A., Brownlee, M. T., Zajchowski, C., Bricker, K. S., & Powell, R. B. (2016). Modelling travellers' philanthropy: tourists' motivations to donate at Sweetwater Chimpanzee Sanctuary. *Journal of Ecotourism*, 15(1), 1–20. <https://doi.org/10.1080/14724049.2015.1117091>
- Skibins, J. C., Powell, R. B., & Hallo, J. C. (2013). Charisma and conservation: charismatic megafauna's influence on safari and zoo tourists' pro-conservation behaviors. *Biodiversity and Conservation*, 22(4), 959–982. <https://doi.org/10.1007/s10531-013-0462-z>
- Stryker, S., & Burke, P. J. (2000). The past, present, and future of an identity theory. *Social Psychology Quarterly*, 63(4), 284–297. <https://doi.org/10.2307/2695840>
- Teisl, M. F., & O'Brien, K. (2003). Who cares and who acts? Outdoor recreationists exhibit different levels of environmental concern and behaviour. *Environment and Behavior*, 35(4), 506–522. <https://doi.org/10.1177/0013916503035004004>
- UNEP-WCMC and IUCN. (2016). *Protected Planet Report 2016*. UNEP-WCMC and IUCN.
- Uysal, M., & Jurowski, C. (1994). Testing the push and pull factors. *Annals of Tourism Research*, 21(4), 844–846. [https://doi.org/10.1016/0160-7383\(94\)90091-4](https://doi.org/10.1016/0160-7383(94)90091-4)
- Wang, J., Geng, L., Schultz, P. W., & Zhou, K. (2019). Mindfulness increases the belief in climate change: The mediating role of connectedness with nature. *Environment and Behavior*, 51(1), 3–23. <https://doi.org/10.1177/0013916517738036>
- Weaver, D. B., & Lawton, L. J. (2017). A new visitation paradigm for protected areas. *Tourism Management*, 60, 140–146. <https://doi.org/10.1016/j.tourman.2016.11.018>
- Williams, M. (2013). *Securing nature's future*. Ecologist [online]. Retrieved 2020, July 31, from <https://theecologist.org/2013/apr/04/securing-natures-future>
- Wolf, I. D., Ainsworth, G. B., & Crowley, J. (2017). Transformative travel as a sustainable market niche for protected areas: a new development, marketing and conservation model. *Journal of Sustainable Tourism*, 25(11), 1650–1673. <https://doi.org/10.1080/09669582.2017.1302454>
- Wright, K. (2001). Generosity vs. altruism: Philanthropy and charity in the United States and United Kingdom. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 12(4), 399–416. <https://doi.org/10.1023/A:1013974700175>
- Wyles, K. J., Pahl, S., Holland, M., & Thompson, R. C. (2017). Can beach cleans do more than clean-up litter? Comparing beach cleans to other coastal activities. *Environment and Behavior*, 49(5), 509–535. <https://doi.org/10.1177/0013916516649412>
- Yuksel, A. (2004). Shopping experience evaluation: a case of domestic and international visitors. *Tourism Management*, 25(6), 751–759. <https://doi.org/10.1016/j.tourman.2003.09.012>

Appendix 1.

Table A1. Last chance tourism scale items.

-
1. I saw animals which were the last of their kind
 2. I feel I am one of the last people to see this species
 3. I feel I am one of the last people to see this landscape
 4. I saw landscapes that were damaged beyond repair
 5. The population of a species I saw is at threat from environmental change
 6. I witnessed animal habitats that were irreversibly damaged
 7. I visited before it was too late to see this species in the wild
 8. I visited before it was too late to see this landscape in pristine condition
 9. I visited because I wanted to see a species that future generations will not see
-

Appendix 2

Table A2. Table with correlations between the variables used in the regression.

	Gender - Male	Age - 18-44	Age - ≥ 65	Income - £0-£30,000	Income - £60,001-£90,000	Income - £90,001+	Income - prefer not to say	Education - Pre-tertiary	Education - Diploma etc.	Education - Post-graduate	Education - Other	International holidays	Nature holidays	Trust - UK charities	Trust - International charities	INS	LCT	Novelty
Gender - Male (vs. female)	1.00																	
Age - 18-44 (vs. 45-64)	0.04	1.00																
Age - ≥ 65 (vs. 45-64)	-0.10	0.19	1.00															
Income - £0-£30,000 (vs. £30-60k)	0.10	0.08	-0.12	1.00														
Income - £60,001-£90,000 (vs. £30-60k)	-0.01	-0.02	0.07	0.28	1.00													
Income - £90,001+ (vs. £30-60k)	-0.07	0.04	0.11	0.28	0.25	1.00												
Income - prefer not to say (vs. £30-60k)	0.00	0.07	-0.01	0.38	0.28	0.29	1.00											
Education - Pre-tertiary (vs. Undergrad)	-0.05	0.05	-0.02	-0.08	0.00	-0.04	-0.02	1.00										
Education - technical qual (vs. Undergrad)	0.00	0.07	-0.01	-0.03	0.04	0.03	-0.04	0.20	1.00									
Education - Postgraduate (vs. Undergrad)	0.01	-0.04	-0.03	0.00	-0.05	-0.09	-0.07	0.26	0.33	1.00								
Education - Other (vs. Undergrad)	0.07	0.03	-0.01	0.05	0.05	-0.01	0.02	0.09	0.13	0.17	1.00							
International (vs. domestic visits)	-0.03	0.03	0.07	0.00	-0.04	-0.01	0.00	0.05	0.03	0.07	0.00	1.00						
Number of nature holidays taken	-0.04	0.00	-0.04	-0.04	-0.05	-0.08	-0.08	0.03	0.07	0.01	-0.05	0.05	1.00					
Trust - UK charities	0.02	0.06	0.03	0.06	0.02	-0.02	0.14	0.00	0.05	0.00	0.03	-0.05	-0.03	1.00				
Trust - International charities	-0.07	-0.03	-0.03	0.02	-0.03	0.00	-0.04	0.03	0.02	-0.06	-0.05	0.19	0.07	-0.51	1.00			
Identity with Nature (INS)	0.04	-0.01	-0.05	-0.09	-0.06	-0.04	0.00	0.01	-0.08	0.02	-0.11	0.07	-0.13	0.04	-0.11	1.00		
Perception of last chance tourism (LCT)	0.02	-0.09	-0.02	0.05	0.03	0.02	-0.07	-0.02	-0.05	0.03	-0.02	-0.17	-0.01	0.00	0.09	-0.12	1.00	
Novelty of first visit (vs. visited before)	0.02	-0.08	-0.02	-0.06	-0.07	-0.06	-0.03	-0.02	-0.03	0.00	-0.02	-0.16	0.15	-0.08	0.21	-0.03	-0.06	1.00