The motivations and environmental attitudes of nature-based visitors to protected areas in Hong Kong

Abstract

Understanding nature-based visitors' motivations and environmental attitudes is important the development of appropriate visitor management strategies for protected areas. This study categorised Hong Kong nature-based visitors of protected areas into different subgroups according to their visiting motivations and environmental attitudes. The association between their motivations and environmental attitude was also assessed. A total of 585 completed responses were collected from on-site questionnaire surveys, and the results indicated that three subgroups of protected-area visitors, categorised by their visiting motivations i.e., travel for novelty, travel for recreation, and travel to escape. Similarly, three subgroups, namely conservation and development, conservation priority, and leisure rights, were identified based on visitors' environmental attitudes. Results showed that visitors' environmental attitudes and their motivations were found to be closely related, indicating that visitors with higher environmental concerns tended to travel for novelty and those exhibited a lower environmental concerns travel to escape.

Keywords: Nature-based visitors; motivations; environmental attitudes; protected areas, Hong Kong

Introduction

Nature-based tourism is becoming popular in Hong Kong, and it has recently been promoted by NGOs and the government. The proximity between cities and protected areas encourages local citizens to participate in leisure activities and ecotouring in the Hong Kong's protected areas (Chen and Jim 2012). Over 40% of the territory is covered by 24 country parks and 22 special areas under the country park ordinance which was enacted in 1976. The country park system aimed to serve three main purposes, specifically, environmental conservation, outdoor education and recreation (Nielsen 2012). Country park has been regarded as an important natural asset for Hong Kong, providing outdoor recreational and nature-based activities for both local residents and foreign visitors (Cengiz 2009). The number of visitors to the country parks increased from approximately 590,000 in 1973 to 13.5 million in 2011, indicating a growth in the demand for visiting such sites (Jim 2010; Cheung and Jim 2013). The rapid increase of visitor numbers may impose a serious threat to the natural resources and may cause irreversible negative impact on the natural environment (Cheung 2013). In Hong Kong, legislation has played an effective role in safeguarding the country parks from being invaded by urban development (Cheung 2013). Therefore, visitor behaviours is regarded as the major threat to the protected areas. Inappropriate visitor behaviour has been identified by previous studies (Jim 1987b; 1987a; Cheung and Jim 2006) as the cause of the irreversible negative impacts to the natural habitats and organisms.

This study investigates the motivations and environmental attitudes of visitors to Hong Kong's protected areas and categorises the visitors based on their motivations and environmental attitudes. The association between visitors' environmental attitudes and their motivations is also explored. People in Hong Kong are somewhat rooted in traditional Chinese culture, and they are also heavily influenced by Western culture. It is important to determine the

environmental attitudes and the motivations of the nature-based tourists who may be influenced by both traditional Chinese and Western cultures, which generally held philosophies toward nature and environmental conservation (Tuan 1968; Callicot and Ames 1989; Harris 2004b; 2004a; 2006). In additional, understanding the association between visitors' environmental attitudes and motivations is essential for tourism development because such understanding helps relevant governmental departments and tourism operators to promote nature-based tourism using appropriate marketing strategies and to develop tourism products that satisfy the demand of existing nature-based visitors. The examination of visitors' environmental attitudes can also provide important information for natural destinations managers to tailor their visitor management strategies to visitors with different environmental attitudes.

Literature review

Nature-based tourism

Research on nature-based tourism has been popular in the tourism industry for the past three decades. This tourism niche has claimed to bring the industry toward more sustainable development because the natural environment could be preserved for direct tourism development, rather than be destroyed to fuel other types of development (Nyaupane and Thapa 2006). Nature-based tourism goes beyond the term "nature" itself but implies an emotional affinity with nature and environmental conservation. Tourists who participate in nature-based tourism are also referred to as environmentally friendly tourists (Dolnicar and others 2008). These tourists hold pro-environmental attitudes and act to minimize negative impacts on the environment. The classification of tourists as environmentally friendly is generally not based on a single criterion

of visitation of nature-based destinations. Other criteria by which to judge whether a traveller should be classified as a nature-based tourists or an ecotourist include motivations, behaviours and environmental attitudes (Kretchaman and Eagles 1990; Eagles 1992; Eagles and Cascagnette 1995; Saleh and Karwacki 1996; Meric and Hunt 1998; Kerstetter and others 2004; Tao and others 2004).

In general, tourist activities that are classified as nature-based tourism occur in a natural setting (both terrestrial and marine), focus on specific elements of the natural environment and are developed to protect natural areas (Hall and Boyd 2005). However, different scholars have defined nature-based tourism in different ways. Nature-based tourism has been regarded as a type of special-interest tourism in which the tourists are primarily concerned with the direct enjoyment of a relatively undisturbed natural phenomenon (Valentine 1992). Goodwin (1996) suggested that nature-based tourism features natural resources in a wild or undeveloped environment that includes species, habitat, landscape, scenery and marine and freshwater features. Nature tourism is defined as travel for the purpose of enjoying undeveloped natural areas or wildlife. Priskin (2001) defined nature-based tourism as travel to places that are located far from settlement and in relatively natural environments. Honey (2002) identified nature-based tourism as the segment in the tourism market in which people travel with the primary purpose of visiting a natural destination. Others authors refer to nature tourism as travel to unspoiled locations to experience and enjoy nature (Honey 1999). Overall, definitions of nature-based tourism have one thing in common: all of the definitions identify this type of tourism as being natural related. This commonality indicated that nature-based tourism is highly connected to environmental conservation and preservation.

Nature-based tourism has become a forerunner in the development of sustainable tourism and it is highly recommended by the World Tourism Organization (WTO). However, conflicts between nature conservation and tourism development have emerged due to the excessive growth of this sector.

The environmental attitudes of visitors

Rapid tourism development, particularly nature-based tourism, has a serious negative impacts on the environment. Previous studies have clearly indicated the potential adverse impacts of increased visitation (Jim 1987b; 1987a; Cole and Spildie 1998; Buckley 2004; Cole 2004; Milazzo and others 2005; Cheung and Jim 2006). Trampling is a type of adverse impacts that is caused by visitors, as identified in studies by Jim (1987b) and Cole and Spildie (1998). Other types of impact such as littering and disturbance of wildlife are also the commonly caused by an increase number of visitors (Buckley 2004). The need to understand tourists' environmental attitudes and behaviours has thus begun to draw the attention of scholars. The effective management of tourists' behaviours in natural destinations is an essential task for tourism managers to eliminate the negative impacts on the natural environment that is caused by visitors' inappropriate behaviours. Previous studies have adopted various approaches to understand the environmental attitudes of tourists (Liu and Var 1986; Liu and Shelodon 1987; Uysal and others 1994; Grybovych and others 2005; Hughes and Saunders 2005; Lee and Moscardo 2005). A well-known framework that has been adopted in many previous studies is the "new environmental paradigm (NEP)", which was proposed by Dunlap and Van Liere in 1979 and was revised in 2000. This paradigm has become a popular method by which to measure the

level of pro-environmental orientation (Dunlap and others 2000) and it has often been applied in tourism studies (Grybovych and others 2005; Kim and others 2006; Luo and Deng 2008).

Stakeholder involvement is often cited as critical to sustainable tourism development (Kent and others 2012; Moswete and others 2012). Tourists' pro-environmental attitudes, in particular, are essential for moving development towards sustainability. Tourists' environmental attitudes may affect their preferences and motives for tourism services and destinations (Jones and others 2012). The relationship between environmental attitude and behaviour has been addressed in several studies, and positive correlation between attitude and behaviour was reported (Van Liere and Dunlap 1981; Scott and Willits 1994; Kaiser and others 1999; Manaktola and Jauhari 2007). Kaiser and others (1999) reported that environmental attitude is a powerful predictor of ecological behaviour. Van Liere and Dunlap (1981) and Scott and Willits (1994) suggested that modest correlations were reported, meaning that people with greater environmental awareness were more likely to adopt pro-environmental behaviour than those with less environmental awareness counterparts.

Examining tourists' environmental attitudes could provide estimates of the market needs for environmental tourism products and services and it could yield suggestions about how to facilitate the development of green consumerism and reduce tourism's negative environmental impacts.

The extensive of protected areas attracts over 12 million visitors. It was these green areas and associated natural assets that have brought Hong Kong to the top of the list in the recent liveability ranking by the Economist Intelligence Unit (EIU) (Economist Intelligence Unit 2012). Jim (2010) reported that the patronage index (visitor ÷ population) increased from 0.14 in 1972

to 1.81 in 2008, indicating that each Hong Kong citizen visits the protected areas nearly two times a year. Despite the popularity of nature-based activities, no research has ever been conducted to investigate the environmental attitude of nature-based visitors in the protected areas of Hong Kong.

Motivations of tourists

Understanding tourists' motivations and behaviours is of great significance in tourism studies because visitors' motivations to travel drive the tourism market (McCain and Ray 2003). Such information may be used to inform the development and refinement of business plans, marketing strategies and product designs. Travel motivation research has been conducted in the western countries for decades (Cromption 1979; Iso-Ahola 1982; Greenblat and Gagnon 1983; Wahlers and Etzel 1985; Yuan and McDonald 1990; O'Malley and O'Leary 1991; Ross and Iso-Ahola 1991; Palacio and McCool 1997) The study of travel motivations has centred on studying the motives (needs or desires) that lead people to travel as a tourist and the role that motives played in tourist behaviours. In an attempt to develop a conceptual framework for pleasure travel motivations, Cromption (1979) identified nine motives for pleasure vacations that influenced the selection of a destination. Seven of these motives were classified as socio-psychological, specifically: escape from a perceived mundane environment, exploration and evaluation of self, and relaxation, prestige, regression, enhancement of kinship relationships, and facilitation of social interactions. The two remaining motives, novelty and education were classified as being cultural. Yuan and McDonald (1990) examined travel motivations of tourists from four countries for overseas pleasure travel and found that the importance rankings among the socio-

psychological motives were similar for travellers from each of the four countries, while the importance rankings for destination-specific motives varied. Iso-Ahola (1982) proposed a social psychological model of tourism motivations and theorised that “seeking” and “escaping” are the two basic motivational dimensions of travel behaviour. Wahlers and Etzel (1985) supported the notion that people used tourism experiences to seek stimulation or a reduction of stimuli in an effort to realise an optimal level of arousal. O'Malley and O'Leary (1991) reported that approximately 32% of the respondents were described as having a high propensity to seek novelty and escape.

Travelling motivations of nature-based tourists or ecotourists has also been investigated by various researchers (Kretchaman and Eagles 1990; Eagles 1992; Wright 1996; Palacio and McCool 1997; Chan and Baum 2007). The study results reported that two different sets of motivations that separate general tourists from ecotourists. Kretchaman and Eagles (1990) discovered that the two groups of tourists exhibited different sets of motivations. The motives rated as “high” for nature tourists indicated that they wanted to learn about nature, be physically active, meet people with similar interests, learn new outdoor skills, and see as much as possible in the time available. The motives that were rated as “high” by general tourists showed that they wanted to travel where they could be with their families, feel at home, and be entertained. The motives that were rated similarly by the two groups included visiting historical places, seeking a simpler lifestyle, being daring and adventurous, finding change from a busy job, and experiencing new lifestyles. Palacio and McCool (1997) examined the motives of tourists who visited Belize on a nature tour in an effort to find different types of nature-oriented tourists. Four groups of tourists namely “nature escapists” “ecotourists”, “comfortable naturists” and “passive players” were distinguished. The ecotourists showed the strongest interests in both nature and

local culture and were actively involved with the indigenous population, followed by nature escapists. The passive players indicated the lowest participation in nature-based activities compared to their counterparts (Palacio and McCool 1997). It is noted that the socio-psychological motives are more important for general tourists than for nature-based tourists.

Most of the studies on motivations of nature-based tourists have been conducted in the western world such as in Europe and North America. Limited research has been conducted in the Far East, particularly in Hong Kong, which a city with mixed cultures and extensive areas for nature-based activities. A study to investigate nature-based visitors' motivation is essential and worth being conducted because of its potential to yield meaningful findings so that the government to improve the management of the protected areas in the territory.

Methods

Questionnaire design

The questionnaire was divided into three parts. The first part included eleven questions to capture the motivations of visitors. These questions employed a five-point Likert scale from "strongly agree" (score of 5) to "strongly disagree" (score of 1). Respondents were asked to indicate their agreement with the questions, which were adapted from the Canadian Tourism Attitude and Motivation Study (CTAMS), which was first introduced in Canada in the mid-1980s (Eagles 1992). The statements that were used in CTAMS have been widely adopted and tested in a variety surveys in tourism studies for both domestic and international tourists since the 1980s (Ballantine and Eagles 1994; Nowaczek and Fennell 2002; Tao and others 2004). Therefore, this questionnaire is highly applicable in a cross-cultural study. Nine environmental

attitudes questions were included in the second part of the questionnaire. These questions were adapted from Tao and others (2004) study and were fine-tuned to suit for local context. The respondents' demographic information is included in the third part of the questionnaire.

Sampling method and data analysis

An on-site survey was conducted between October and March 2012 at three areas that were selected to target nature-based visitors: Sai Kung centre, Tung Ping Chau, and High Island. Sai Kung centre is a nature-based tourism hub for tourists to visit country parks, geoparks and marine parks. Tung Ping Chau and High Island are listed geo-sites of the Hong Kong Global Geopark of China. Eight post-secondary school students were employed as research assistants. The students were trained in the procedure and etiquette of face-to-face interviews. Upon request, the assistants provided explanations to the interviewees. The respondents were chosen randomly at the survey sites, mainly at piers and pavilions where respondents tended to assemble and stay for a while. All respondents who visited or planned to visit the nature-based destinations within the protected areas were defined as nature-based visitors in this study. Completing a questionnaire took an average of ten minutes.

The questionnaire data were analysed using SPSS 20. A principal components analysis (PCA) was undertaken as a data reduction method to classify the items into different groups. According to Comrey and Lee (1992) guidelines, a sample size of 585 is more than adequate for a PCA. Before conducting the PCA, all of the reverse-worded questions were recoded. Further analyses of covariance (ANCOVA) between motivations and environmental attitudes were performed to examine their association.

Results and discussion

Socio-demographic characteristics

A total of 643 questionnaires were collected (a response rate of more than 85%); 58 questionnaires were incomplete and thus were not used in the statistical analysis. Of the 585 participants who completed the survey, 322 were male (55.0%), and 263 were females (45.0%). Many of the respondents were young; the majority (54.5%) were less than 35 years old (136 were under 25 and 183 were between 26 and 35). The middle-age respondents between 36 and 45 years old composed the second largest group (25.8%, 151). A majority of the respondents had obtained a secondary school education (35.9%, 210), and 27.5% (161) had obtained an undergraduate degree. Only 4.8 (28) of the respondents had a primary education or less. Students were the largest proportion of the respondents (14.9%) followed by those in financial fields (14.7%). Respondents' with monthly salaries under HK$10,000 (US$1,282; US$1=HK$7.8) accounted for 32.9% of the respondents, many of whom were likely students with little or no income. In addition, 32.8% of respondents made HK$10,001-20,000 (US$1,282 -2,564) monthly, and 17.1 made HK$20,000-30,000 (US$2,564-3,846) monthly. These responses indicate that most respondents earned well above Hong Kong's median monthly salary of HK$13,000 (US$1,666) (The Census and Statistics Department 2013).

Motivations of nature-based tourists

The survey results indicated that the most important motivations (Table 2) of the respondents was “having fun, being entertained (M7)” (with a mean score of 4.13 out of 5) followed by “being free to act the way I feel (M4)” (4.05). The lowest mean score among the listed motivations was for “getting away from the demands at home (M1)” (2.32), which indicates that escaping demands at home was the least important motivations for nature-based tourism in Hong Kong.

A principles component analysis (PCA) was employed to categorise the nature-based visitors based on their motivations (Table 3). Three factors were identified: “travel for novelty”, “travel for recreation”, and “travel to escape”. Five items were loaded on factor 1, including M7, M4, M2, M3 and M8. The common characteristic of these items was a search for novelty when travelling. This category was similar to Luo and Deng’s (2008) motivational factor of “novelty-self-development” and this motivational factors were commonly identified by many previous studies (Kretchaman and Eagles 1990; Wright 1996; Palacio and McCool 1997; Beaumont 2011). Our result suggested that seeking novelty during a trip is one of the essential motivations for Hong Kong’s nature-based visitors. The second factor included M10, M11, and M9 was labelled as “travel for recreation”. All of the items in this factor indicate visitors were motivated by recreational interests and the enhancement of interpersonal relationships (Kretchaman and Eagles 1990). However, this factor was not discovered in the previous studies by Kim and others (2006) and Luo and Deng (2008). Several reasons may explain the difference, as the questions were designed with different scales with different foci, and the respondents, who were from different countries, may hold different motivations for travelling. The discovery of this motivational factor in the present study highlights that nature-based visitors in Hong Kong seek physical relaxation

activities. Visiting the nature-based destination may be a way to release physical tension after an intense work week.

The third factor that was identified was “travel to escape”, upon which three items were loaded including M1, M5, and M6. These items suggested that nature-based visitors would like to escape from their usual daily life to explore different lifestyles. This result corroborated Luo and Deng (2008) and Kim and others (2006) who found that escape was the least important travel motivation for visitors. This motivation could be regarded as a negative motivation to travel for visitors who would like to release psychological pressure or temporarily escape from their everyday routine (Iso-Ahola 1982; Yuan and McDonald 1990; O'Malley and O'Leary 1991; Palacio and McCool 1997).

These three factors together explain 55% of the total variance, with the first factor, travel for novelty, accounting for the largest portion of variance (30.5%), followed by travel for recreation (12.3%) and travel to escape (11.8%). The standardized Cronbach’s α value for each of the three factors is 0.79, 0.56, and 0.39, respectively. Although the alpha for the third factor is lower than 0.5, Ary and others (1985) suggested that low reliability coefficients (in the range of 0.3 to 0.5) are acceptable for making a decision about a group or for research purposes. Therefore, all these three factors are used for further analysis.

The environmental attitudes of nature-based visitors

Eight environmental attitudes (EA) questions were included in the questionnaire to investigate the environmental attitudes of nature-based tourists in Hong Kong (Table 4). The EA questions were adapted from Tao and others (2004) and slightly modifications were made to fit

local context. For these EA statements, higher score implies a lower level of environmental attitudes, except in the case of the negative statements of “When economic growth is in conflict with environmental conservation, environmental conservation should be given the priority (EA3)” and “When human beings engage in any leisure and recreational activities, they should avoid disturbing local natural environment (EA8)”.

The highest mean score among the EA statements was “the supply of natural resources is inexhaustible and will not be used up (EA1) (4.26 out of 5), followed by “When human beings engage in any leisure and recreational activities, they should avoid disturbing local natural environment (EA8)” (4.15). Surprisingly, the majority of respondents strongly agreed that nature resources are inexhaustible and will not be used up. This finding may be observed because the respondents realise that only non-renewable resources, particularly fossil fuels, are exhaustible. They may believe that vegetation, natural scenery, and clean freshwater sources could not be exhausted or that they will take a shorter time to recover than other resources. Conversely, most respondents agreed that human leisure and recreational activities should avoid disturbing the local natural environment, which indicates a concern by visitors for environmental conservation, particularly in connection with overdevelopment of facilities in natural areas. The item with the lowest mean (2.69) was “At present, the implementation of environmental conservation in Hong Kong is well done (EA5)”, implying that most tourists were not satisfied with the current environmental conservation efforts by the Hong Kong government. This result may be observed because many contemporary environmental problems, such as air pollution, have not been solved. Visitors may believe that the government has exerted a strong enough effort to confront environmental problems and that the government has not effectively protected the natural environment. Many development projects were found to have caused tremendous negative

effects on the natural environment, especially in certain ecological sensitive areas. The average mean score of the EA statements was 3.35. Such mean score was considerably higher than the Taiwan's ecotourists (self-defined ecotourists (1.75); Non-self-defined ecotourists (1.81) as reported in Tao and others (2004)), indicating that the environmental attitudes of the Hong Kong's nature-based visitors were lower than that of Taiwan's ecotourists.

The environmental attitudes among nature-based visitors in Hong Kong were categorised into three factors using a PCA and they have been named according to the nature of the visitors' EA statements (Table 5). The first factor has been designated as 'conservation and development' (CD), the second as 'conservation priority' (CP) and the third as leisure rights (LR). Both CD and CP contained three items and LR contained two.

Three items, EA5, EA4 and EA2, were grouped into the first factor, CD. Based on the items of CD, this group of nature-based visitors were characterised as being willing to protect the natural environment while simultaneously supporting development. However, when facing the problem of the shortage of land in Hong Kong, these visitors prioritise development, over environmental conservation. It seems that respondents who hold such environmental attitudes support the conservation of natural environment after their own needs have been satisfied. This group lies between the positive and negative extremes in environmental attitudes.

The second factor, CP, includes three items EA8, EA3 and EA1. Two of the three items (EA9 and EA3) emphasise avoiding development in the natural environment to maximise environmental conservation efforts. However, EA1 was also included in this category, which indicates that a majority of the visitors, even those with high environmental attitudes, did not genuinely understand that natural resources are exhaustible. Nature-based visitors with high

level environmental attitudes showed a greater respect for nature than their counterparts (Perkin and Brown 2012). Such visitors were more concerned about human impact on the environment, and were willing to sacrifice amenities to avoid negative impacts to the environment. They exhibited the highest level of pro-environmental attitudes amongst the three groups.

The third factor was labelled LR, with two items, namely EA7 and EA8. These two items were categorised as being anthropocentric and the least pro-environment with a focus on human needs, taking resources from the environment without considering environmental conservation. Compared with other two groups, this group of visitors might pose higher threat to the natural environment because their attitudes are not environmentally friendly. Although their anti-environmental attitudes may not translate directly to anti-environmental behaviours, these visitors would post a potential risk to ecologically sensitive locations in the protected areas during their visits. However, this group of visitors could be nurtured to be "made nature-based visitors" (Ryel and Grasse 1991) through a proper environmental education programme. Participating in nature-based environmental learning experiences may also improve their environmental awareness (Orams 1996; 1997) and subsequently improving their environmental attitudes.

Together, these three factors explain 57% of the total variance, with the first factor, conservation and development (CD), accounting for the largest portion of variance (25.5%), followed by conservation priority (CP) (16.6%) and leisure rights (LR) (14.5%). The standardized Cronbach's α value for each of the three factors is 0.76, 0.63, and 0.50, respectively. All these three factors are used for further analysis.

The association between environmental attitudes and motivations

Different groups of nature-based visitors with different levels of environmental attitudes may be associated with their motivations for visiting protected areas. The nature-based visitors' environmental attitudes were used as covariates to test the motivational subgroups. Table 6 displays the results of the ANCOVA for environmental attitudes and motivations and indicated that the level of environmental attitudes was significantly associated with visitors' motivations.

A statistically significant association ($p < 0.01$) was found between CP and two different subgroups of motivations (M1 and M2). LR was found to have been significantly associated with M3. The results suggested that nature-based visitors' environmental attitudes were related to their motivations for travelling. CP had a strong association with the different motivational groups, the strongest association of which were with M1 and M2 ($p < 0.01$). Hong Kong nature-based visitors with higher environmental concerns tended to travel for novelty and recreation. CP visitors in our study were more likely to seek knowledge from their travelling experience to understand the environment and to appreciate the wonders of nature. These visitors would also like to meet like-minded people with whom to visit the protected areas for recreation. Based on the motivations and environmental attitudes of these visitors, we could consider them as ecotourists as their characteristics were similar to those of ecotourists as they have been defined in previous studies (Eagles and Cascagnette 1995; Wright 1996; Formica and Uysal 2001).

The result indicated LR was significantly correlated with M3 ($p < 0.01$). These visitors were more likely to travel to escape from their routine lifestyle, and they wished to enhance their travelling experience and participated in leisure activities during the weekend. Unlike other subgroups (especially CP), nature-based visitors in this group may not be interested in acquiring

knowledge about the natural environment. For these visitors, visiting the protected areas would be viewed as an opportunity for a social gathering between friends or relatives. Such visitors may pose a serious negative threat to the natural environment because they were not concerned about environmental conservation (Cheung and Jim 2013). These visitors are more likely to adopt inappropriate behaviours while they visit the protected areas in Hong Kong.

Conclusions

The aim of this study was to investigate the environmental attitudes and motivations of nature-based visitors to the protected areas in Hong Kong. Our results clearly indicated that significant correlations exist between motivations and environmental attitudes of visitors of protected areas. Three motivational subgroups and three environmental attitude subgroups of nature-based visitors were identified, and we found that the visitors' motivations were similar to those of nature-based tourist in other parts of the world. These motivations groups were named "travel for novelty", "travel for recreation" and "travel to escape" were common motivations for ecotourists (Kretchaman and Eagles 1990; Palacio and McCool 1997). Our results also suggested that Hong Kong nature-based visitors tend to be motivated to visit protected areas by seeking novelty. Novelty seekers held a more positive attitudes toward the environmental conservation compared to those who are motivated by other factors, and pro-environmental attitudes may yield long-term benefits of conservation of wilderness areas. Inappropriate visitor behaviours have been considered as one of major threats to ecotourism destinations (Wurzinger and Johansson 2006), and improving visitors' environmental attitudes would be the most effective way to eliminate the adverse impacts that are caused by improper visitor behaviours. The present study indicated that visitors to protected areas are less environmentally concerned

than those in Taiwan. These results implied that visitors' economic situations may not be the most prominent factor that affects their environmental attitudes. In other words, other factors such as the pressing needs of the community in particular may play an important role in the development of people's environmental attitudes.

Hong Kong is a small place, and more than 40% of the territory is designated as protected areas. The proximity between the protected areas and city encourages local citizens, regardless of their attitudes toward the environment, to visit the protected areas during the weekend. Unlike other countries, wherea long travelling time is needed which may discourage unenthusiastic citizens from visiting remote rural districts, this proximity factor is a clear advantage for the development of ecotourism. Moreover, increasing the number of citizens with pro-environmental attitudes is important to safeguard our protected areas from being depleted due to inappropriate visitor behaviours. Environmentally friendly visiting behaviour in the protected areas of Hong should be heavily promoted. The relevant governmental departments, particularly Agriculture, Fisheries and Conservation Department (AFCD), should take proactive measures to encourage Hong Kong nature-based visitors to adopt environmentally friendly practice when they visit protected areas. The department should first develop a set of guidelines or codes of conduct for visitors and offer advices on the dos and don'ts during their visit.. Secondly, the department should establish information boards at popular locations to increase visitor awareness of the inappropriate behaviours. Thirdly, the department should increase the prosecution of inappropriate visitor behaviour by reinforcing rangers' patrols. Finally, environmental education should be promoted through formal and informal approaches in schools and the community. The improvement of visitors' environmental attitudes could help to achieve sustainable use of

invaluable natural resources and safeguard easily accessed natural resources in Hong Kong's protected.

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Table 1: Respondents' Socio-economic demographic characteristics

	Frequency	%		Frequency	%
Gender			**Occupation**		
Male	322	55.0	Agriculture	5	0.9
Female	263	45.0	Communication	18	3.1
			Construction	27	4.6
Age			Electricity	14	2.4
<=25	136	23.2	Finance	86	14.7
26 - 35	183	31.3	Manufacture	42	7.2
36 - 45	151	25.8	Mining	2	0.3
46 - 55	72	12.3	Others	48	8.2
>=56	43	7.4	Restaurants	44	7.5
			Retail	52	8.9
Education background			Retired	53	9.1
Primary school	28	4.8	Social work	42	7.2
Secondary school	210	35.9	Students	87	14.9
Post-secondary school	113	19.3	Teaching	47	8.0
Undergraduate	161	27.5	Transportation	18	3.1
Postgraduate and over	73	12.5			
Place of origin			**Salary/month (US$1=HK$7.8)**		
Hong Kong Island	116	19.8	0	8	1.4
Kowloon	188	32.1	<=10000	184	31.5
New territory East	146	25.0	10001-20000	192	32.8
New territory North	39	6.7	20001-30000	100	17.1
New territory West	85	14.5	30001-40000	53	9.1
Outer Island	11	1.9	>=40001	48	8.2
			Total	585	100.0

Table2: Nature-based visitors' motivations to visit protected areas in Hong Kong

Motivational items	Not important at all (%)	Not very important (%)	Neutral (%)	Important (%)	Very important (%)	Mean
M7. Having fun, being entertained	1.4	5.0	10.1	46.3	37.3	4.13
M4. Being free to act the way I feel	1.4	3.6	15.7	47.4	32.0	4.05
M8. Seeing as much as possible in the time available	1.4	4.8	16.1	52.0	25.8	3.96
M9. Getting a change from a busy job	2.2	6.3	27.7	40.3	23.4	3.76
M3. Trying new food	2.2	10.4	21.0	48.2	18.1	3.70
M2. Experiencing new and different lifestyles	2.1	10.1	26.7	44.3	16.9	3.64
M11. Talking about the trip after I return home	1.9	12.3	28.0	37.3	20.5	3.62
M6. Meeting people with similar interests	3.8	13.7	39.5	31.8	11.3	3.33
M10. Being physically active and participating in sports	8.4	17.6	29.7	33.0	11.3	3.21
M5. Finding thrills and excitement	6.8	18.1	38.1	25.8	11.1	3.16
M1. Getting away from the demands at home	27.4	32.6	24.1	12.6	3.2	2.32

Note: Five-point likert scale from 1 for "not important at all" to 5 for "very important"

Table 3: Principle component analysis (PCA) of travelling motivations

Factors and items	Mean	Std. Deviation	Rotated (Varimax) Components		
			1	2	3
Factor 1 Travel for novelty (M1)					
M7. Having fun, being entertained	4.13	0.883	0.753		
M4. Being free to act the way I feel	4.05	0.862	0.718		
M2. Experiencing new and different lifestyles	3.64	0.946	0.706		
M3. Trying new food	3.70	0.958	0.711		
M8. Seeing as much as possible in the time available	3.96	0.856	0.668		
Factor 2 Travel for recreation (M2)					
M10. Being physically active and participating in sports	3.21	1.118		0.728	
M11. Talking about the trip after I return home	3.62	1.003		0.720	
M9. Getting a change from a busy job	3.76	0.954		0.573	
Factor 3 Travel to escape (M3)					
M1. Getting away from the demands at home	2.32	1.102			0.630
M5. Finding thrills and excitement	3.16	1.064			0.636
M6. Meeting people with similar interests	3.33	0.974			0.573
Eigenvalues			3.358	1.353	1.300
% of variance			30.532	12.296	11.822
Cumulative %				42.828	54.650

Table 4: Nature-based visitors' environmental attitudes (EA) to visit protected areas in Hong Kong

EA Statements	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Mean
EA1. The supply of natural resources is inexhaustible and will not be used up	1.9	5.8	8.4	32.6	**51.3**	**4.26**
EA8. When human beings engage in any leisure and recreational activities, they should avoid disturbing local natural environment.	1.5	4.4	12.8	**39.7**	41.5	4.15
EA3. When economic growth is in conflict with environmental conservation, environmental conservation should be given the priority	2.7	6.7	32.5	**41.2**	16.9	3.63
EA7. Human beings have the right to satisfy their own needs by altering the natural environment	3.6	25.1	28.4	**31.3**	11.6	3.22
EA6. Enjoying natural resources is a basic right. It is inappropriate for the government to make laws to control people's use of natural resources	5.5	25.0	**40.7**	22.6	6.3	2.99
EA2. For the sake of improved leisure opportunities, it is good to develop more recreation areas	7.7	25.3	**37.1**	24.6	5.3	2.95
EA4. Living space is a severe problem in Hong Kong, therefore it is appropriate to convert rural land to build public housing	8.0	24.1	**42.7**	20.2	5.0	2.90
EA5. At present, the implementation of environmental conservation in Hong Kong is well done	10.6	**34.2**	33.0	20.5	1.7	**2.69**

Note: Five-point likert scale from 1 for "strongly disagree" to 5 for "strongly agree" except statement 3 and 8 are from 5 for "strongly disagree" to 1 for "strongly agree".

Table 5: Principle component analysis (PCA) of environmental attitudes of nature-based visitors

Factors and items	Mean	Std. Deviation	Rotated (Varimax) Components 1	2	3
Factor 1 Conservation and development (CD)					
EA5. At present, the implementation of environmental conservation in Hong Kong is well done	2.69	0.971	0.705		
EA4. Living space is a severe problem in Hong Kong, therefore it is appropriate to convert rural land to build public housing	2.90	0.977	0.705		
EA2. For the sake of improved leisure opportunities, it is good to develop more recreation areas	2.95	1.009	0.552		
Factor 2 Conservation priority (CP)					
EA8. When human beings engage in any leisure and recreational activities, they should avoid disturbing local natural environment.	4.15	0.915		0.838	
EA3. When economic growth is in conflict with environmental conservation, environmental conservation should be given the priority.	3.63	0.933		0.543	
EA1. The supply of natural resources is inexhaustible and will not be used up	4.26	0.967		0.676	
Factor 3 Leisure rights (LR)					
EA6. Enjoying natural resources is a basic right. It is inappropriate for the government to make laws to control people's use of natural resources.	2.99	0.974			0.793
EA7. Human beings have the right to satisfy their own needs by altering the natural environment.	3.22	1.061			0.637
Eigenvalues			2.039	1.329	1.163
% of variance			25.491	16.617	14.533
Cumulative %				42.108	56.640

Table 6: ANCOVA for environmental attitudes subscales with motivations

Motivation	Environment attitudes					
	CP		CD		LR	
	df	***F***	***df***	***F***	***df***	***F***
Travel for novelty (M1)	584	64.666**	584	0.023	584	2.063
Travel for recreation (M2)	584	12.736**	584	2.728	584	6.958
Travel to escape (M3)	584	6.373	584	3.106	584	11.061**

** $p < 0.01$