

Nature tourists' concern for the environment and response to ecolabels in Oulanka National Park

Riikka Puhakka

Oulanka Research Station/Thule Institute, University of Oulu

Abstract: National parks and other protected areas attract increasingly tourists in Finland, which highlights the importance of sustainable tourism. Various international initiatives, ecolabels and certification programs, such as PAN Parks in Europe, have been introduced to promote sustainable nature-based tourism. Often tourists are also given responsibility to prevent negative impacts of their activities. This paper examines the role of nature tourists in developing sustainable tourism in protected areas: How concerned are they for the environment? How do they consider environmental aspects when travelling? How do they respond to tourism ecolabels and certifications? The paper is based on concurrent interview and survey studies conducted in Oulanka National Park, one of the certified PAN Parks in Finland. The paper indicates that only a small proportion of tourists are highly concerned for the environment and interested in ecolabels, and aim at travelling in an environmentally responsible way. Nature tourists' lack of response to ecolabels and environmentally friendly behavior undermines their role in developing sustainable tourism. Therefore, the study results emphasize the role of regulation, incentives and guidance in implementing ecological, socio-cultural and economic sustainability in tourism companies and destinations.

Introduction

Following the growth of nature-based tourism, national parks and other natural areas attract increasingly tourists also in Finland. Nature-based tourism has become an important tool for regional development especially in northern rural areas (Saarinen 2005), and growing economic and political expectations are directed towards the industry (e.g. Ohjelma luonnon... 2002). Statistics from Metsähallitus indicate that the average number of visits to national parks doubled in the 1990s with continued growth in the 2000s (see Puhakka 2008; Yhteisen luontomme... 2010). Meanwhile, socio-economic goals related to nature-

based tourism have been integrated with ecological goals in Finnish national parks (Puhakka 2008).

The growth of visitor numbers in protected areas highlights the importance of sustainable tourism which takes into account ecological, socio-cultural and economic consequences of tourism. The sustainability of tourism is also an integral part of the scope of academic geography (see Butler 2000; Saarinen 2001). To promote sustainable nature-based tourism, various international initiatives, ecolabels and certification programs, such as PAN (Protected Area Network) Parks in Europe (Font & Clark 2007), have been introduced during the last decades (Font & Mihalič 2002; Honey 2007). The paradigm

of sustainable tourism is based on the idea that tourist attitudes, choices and behavior about the environment critically influence sustainability and should therefore be taken into consideration (see Swarbrooke 1999; Weaver & Lawton 2004). Especially in sensitive nature-based destinations, tourists are often given responsibility to prevent negative impacts of their activities. The type of tourists and tourist activities in natural areas play an important role in determining environmental impacts (e.g. Törn et al. 2009). Thus, research is needed to find out whether the growing segment of nature tourists in protected areas concerns for the environment and travels in an environmentally friendly way.

This paper examines the role of nature tourists in developing sustainable tourism in protected areas: How concerned are they for the environment? How do they consider environmental aspects when travelling? How do they respond to tourism ecolabels and certifications? The aim is to present the variety of nature tourists' environmental views and behaviors. The paper is based on the most important findings of concurrent interview (Puhakka in press) and survey studies (Puhakka & Siikamäki forthcoming; see Ylimaunu 2009) conducted in Oulanka National Park, one of the certified PAN Parks in Finland.

Study area

Oulanka National Park (NP), established in 1956, is located in Kuusamo and Salla municipalities in northeastern Finland. After two expansions, the park covers now

approximately 28 000 hectares and is managed by Metsähallitus (Forest and Park Service). Oulanka NP has been one of the most popular and well known Finnish parks for decades, attracting both long-distance hikers and short-time visitors. In 2009, there were 165 500 visits to Oulanka NP (Yhteisen luontomme... 2010), which almost tripled since 1992. A fifth of visitors are foreigners, most German and Dutch (Muikku 2005). Thirty partnership companies organize recreation services in the park, and around twenty accommodation companies are located close by.

Oulanka NP was one the first European PAN Parks certified in 2002. PAN Parks Foundation was founded in 1997 by World Wildlife Fund (WWF) and the Dutch leisure company, Molecaten. It is a non-profit organization which aims to balance the needs of wilderness protection and community development by promoting sustainable tourism in European protected areas (Font & Clark 2007). At present there are eleven certified national parks in nine countries. A certified park must meet five principles each with specific criteria: natural values, habitat management, visitor management, sustainable tourism development and tourism business partners. Local partners (currently 8 in Oulanka region) are offered the right to use the PAN Parks logo in return for a commitment to sustainability and the goals of PAN Parks.¹

¹ see www.panparks.org

Materials and methods

This study is based on qualitative and quantitative data collected from Oulanka NP during the high season, July–August 2008. First, the research material included 28 interviews of Finnish tourists and two interviews of international tourists (from Sweden and Switzerland). A total of 32 persons were interviewed as in two cases a couple participated in the interview. Interviewees were selected to represent both men and women from different age groups. The interviews were conducted in two visitor centres of the park and in two campfire sites/wilderness huts. The interviews included questions related to tourism in national parks, sustainability of tourism in national parks and tourism companies, nature in national parks, and personal relationship with nature. The interviews were tape-recorded, transcribed (verbatim) and analysed with qualitative methods (Puhakka in press).

Second, the research material consisted of 273 questionnaires: 212 questionnaires were filled in by Finnish tourists and 61 English and Deutsch questionnaires by foreign tourists, representing 13 European and three other countries. Data were collected from nine locations in the park, including visitor centres, wilderness huts, campfire sites and a camping area. Focused on tourism ecolabels and certifications, the 6-page questionnaire covered themes related to awareness and perception of ecolabels and certifications (including PAN Parks), willingness to pay more for products with an ecolabel, importance of various environmental aspects in travelling, beliefs on ecolabels and travelling preferences. Various

demographic and trip characteristics were also asked. Finally, the questionnaire focused on environmental values and ecological awareness using eight statements taken from Dunlap et al. (2000), which have been shown to identify environmental values (see Fairweather et al. 2005). Statistical tests were performed to analyse data (Puhakka & Siikamäki forthcoming; see Ylimaunu 2009). In the following section, the survey results are examined in the light of the qualitative analysis.

Results

The results show that nature tourists do not form a homogenous group, but they have various views on environmental issues, which have an influence on their travelling behavior. Interviewed nature tourists were divided into four groups on the basis of their environmental concern and responsibility, and response to ecolabels and certifications (Puhakka in press). The aim was to cover the whole variety of tourist views and behaviours. Although these types of tourists are described as four separate groups, they rather represent different shades or degrees of “green”, environmentally friendly tourists (see Swarbrooke 1999; Swarbrooke & Horner 2007). Table 1 presents the main ideas of types illustrated by interview quotations (translated to English by the author). Instead of describing each type in detail (see Puhakka in press), this paper presents the extremities of the scale, including further information based on the quantitative analysis. The findings are compared to previous study results.

Table 1. Four types of tourists identified on the basis of nature tourists' environmental concern and responsibility (adapted from Puhakka in press). The typology is based on interviews conducted in Oulanka NP in summer 2008.

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|---|--|--|--|---|---|
| <p>Environmentally responsible tourists (3 interviewees): For our next trip I have chosen a place where, for instance, the garbage is recycled, and which has somehow distinguished itself in environmental issues compared to other alternatives. --- However, it's always unethical, for instance to fly somewhere. (Woman, 41 years old, day visitor)</p> | <p>"Dark green" tourists</p> <p>▲</p> <p>↓</p> | <p>Deep interest in environmental issues</p> <p>▲</p> <p>↓</p> | <p>Focus on "green" and "gray" environmental aspects</p> <p>▲</p> <p>↓</p> | <p>Environmentally responsible behavior</p> <p>▲</p> <p>↓</p> | <p>Major sacrifices made because of views</p> <p>▲</p> <p>↓</p> |
| <p>Environmentally concerned tourists (10 interviewees): When we came here, we had to use car as there are really no other alternatives when you travel here from Naantali. Of course you could consider train or something like that, but it's not possible to go anywhere by them. However, I aim at driving in an economic way. (Woman, 62 years old, day visitor)</p> | | | | | |
| <p>Environmentally aware tourists (11 interviewees): If you have canned foods with you, it's good to burn the cans because the rust will destroy them in a couple of years; then they have to be buried. Of course littering is a problem, and if you are able to handle the garbage so that nothing will be left to see, I think it has been successfully taken care of. (Man, 42 years old, short-time visitor)</p> | | | | | |
| <p>Environmentally unconcerned tourists (8 interviewees): A few ecolabels might be familiar, such as the Swan Label. --- Now I can't remember any situation of selecting something because of an ecolabel. Unfortunately, it's the price which is decisive nowadays. (Man, 46 years old, day visitor)</p> | | | | | |
| | <p>"Light green" tourists</p> | <p>Shallow interest in environmental issues</p> | <p>Focus on "green" environmental aspects</p> | <p>No environmentally responsible behavior</p> | <p>No sacrifice made because of views</p> |

Interviews demonstrate that some nature tourists (environmentally responsible) are deeply interested in environmental issues and concerned about the negative impact of tourism. They pay attention not only to “green” environmental aspects which they can see or feel directly in nature (e.g. quality of air, water and surroundings), but also to “gray” environmental characteristics which are less visible to them (e.g. energy or water consumption, greenhouse effect) (see Lübbert 2001; Font & Mihalič 2002; Bohdanowicz 2005). These tourists acknowledge their role as individuals in protecting the environment and feel responsibility for preventing negative impacts of their travelling. Thus, they make personal sacrifices to reduce the impacts, for instance use more time and money, forgo comfort and make some effort to travel in an environmentally friendly way. Nevertheless, even these interviewed tourists were not overly familiar with tourism ecolabels and certifications, such as PAN Parks. Meanwhile, they were critical towards greenwashing, i.e. ecolabels with loose criteria. In addition, these tourists’ perception was mainly focused on ecological impacts of tourism instead of paying holistic attention to socio-cultural and economic impacts as well (Puhakka *in press*).

Although the survey was focused only on tourism ecolabels and certifications, the results support the assumption that a small proportion of nature tourists belong to the environmentally friendliest group highly concerned about environmental impacts and interested in ecolabels. Only 11% of respondents knew some tourism ecolabel or certification (e.g. PAN Parks, the Nordic Ecolabel known as the Swan Label). When asked directly, 28% of

respondents were familiar with PAN Parks certification, yet only 2% (4 respondents) were familiar with it “quite well” or “to a great extent”. Moreover, only one person responded that the PAN Parks certification of Oulanka NP had affected her/his decision to come to the park. In the survey, few differences were found with respect to environmental attitudes, travelling behavior or demographic characteristics. However, as tested with logistic regression, domestic respondents were more likely to know some tourism ecolabel or certification, and higher educated respondents were more likely to be familiar with PAN Parks (Puhakka & Siikamäki *forthcoming*).

Nevertheless, the survey results show that most tourists response positively to ecolabels and certifications. 70% of respondents indicated that they would like to know more about tourism ecolabels and certifications, and 75% found them necessary or strongly necessary in Finland. Half of respondents thought that the current ecolabels have limited visibility in Finland (“not at all” or “very little”), and 93 % felt that the visibility should be improved. In addition, 78% of respondents were willing to pay more for tourism services and products with an ecolabel; respondents that were members of some nature conservation or environmental organization/group were more likely to be ready to pay more (Puhakka & Siikamäki *forthcoming*).

While ecolabelling has become more common internationally in tourism, previous studies also indicate tourists’ unfamiliarity with ecolabels and certifications, yet positive response to them (Lübbert 2001; Fairweather *et al.* 2005; Kangas 2007a, 2007b). Across the studies, environmentally friendly tourists

have been observed to be higher-educated people with higher income levels and an interest in learning (Dolnicar et al. 2008). According to Dolnicar (2010), the two key indicators for behaving in an environmentally friendly way on vacation were high income and high level of moral obligation. Previous studies have also found evidence that environmentally friendly tourists are willing to forgo comfort (Dolnicar et al. 2008; see Swarbrooke & Horner 2007). The study of Uysal et al. (1994) demonstrated that trip behavior, including site-specific preferences, rather than demographic characteristics accounted for most of the variance in environmental concerns. Environmentally responsible tourists interviewed in this study were hikers who had come to Oulanka NP because of its nature and were most critical towards tourism development in the park, which supports the results of Uysal et al. (1994; see Zografos & Allcroft 2007) showing that national park visitors whose main destination was the park were most concerned about nature, and those who preferred less-visible man-made structures were more pro-environmentalist.

Groups with higher environmental concern have been found out to predict intent to engage in pro-environmental behavior (Cordano et al. 2003). According to Lee and Moscardo (2005), environmentally aware consumers might be more likely to have pro-environmental behavior than other consumers who were only exposed to environmentally friendly practices by tourism businesses at the destination. Nevertheless, interviewed environmentally concerned tourists' feeling of guilty for not being more active in pro-environmental

behavior confirm that concern for the environment does not automatically lead to environmentally responsible behavior (e.g. Fairweather et al. 2005; Wurzinger 2006). Despite pro-environmental attitudes and positive response to ecolabels expressed in studies, in practice tourists are influenced by a wide range of other factors related to an individual's needs and values (Sharpley 2001; Font & Epler Wood 2007; Swarbrooke & Horner 2007).

On the other side of the spectrum, there are nature tourists (environmentally unconcerned) who have only a shallow interest in environmental issues and who are not ready to pay more for certified products or services. These tourists are concerned about those "green" destination qualities, such as cleanliness and noise, which they can see or feel directly in nature while they do not really pay attention to environmental practices in tourist destinations or companies (see Font & Mihalič 2002). These tourists put the least responsibility on themselves, believing that possible environmental problems are primarily taken care of by authorities or tourism entrepreneurs. They are also unwilling to put up with discomfort on travels and thus make no sacrifice to travel in a responsible way (Puhakka in press). In previous studies, the unwillingness to put up with discomfort has been found to be associated with an aversion for general environmentally friendly behavior (Dolnicar et al. 2008; see Swarbrooke & Horner 2007). The findings of this study also support Lübbert's (2001) results showing that the individual tourist does not feel responsible for the environment in a tourist destination and thus is not interested in environmental management systems or information.

The grouping of interviewed tourists indicates that high interest in nature and non-consumptive activities does not guarantee that a nature tourist pays holistic attention to both “green” and “gray” environmental characteristics and aims at preventing negative impacts of his/her travelling. Although all interviewed environmentally responsible tourists were hikers, tourists highly interested in nature were also included in other groups. Desire to experience nature is thus different from being committed to travel in an environmentally friendly way (Puhakka in press). As Sharpley (2001) and Swarbrooke & Horner (2007) have argued, the growth of ecotourism directed at protected and other nature areas is not an evidence of the rise of the “green tourist”.

The survey results confirm nature tourists’ greatest interest in “green” environmental characteristics (see Font & Mihalič 2002). Of six environmental aspects, the most important aspects when choosing travel destination among all respondents were “Cleanliness of nature in destination” (95%) and “Good quality of air in destination” (56%). Respondents familiar with PAN Parks certification appreciated more “Biodiversity in destination” (49%) than unfamiliar respondents (27%) (Puhakka & Siikamäki forthcoming). Surveys conducted in Denmark, Germany and Italy have also demonstrated that numerous tourists do not perceive “gray” environmental characteristics of lodging (e.g. energy or water savings) as important selection criteria, while wider “green” destination qualities (e.g. natural characteristics, peace and quiet, quality of air, water and surroundings) rank relatively high on their decision-making agenda (Bohdanowicz 2005). A recent

survey in Finland (Vastuullisuus ei... 2009) indicated that the least important aspects for tourists in choosing their destination were the emissions caused by the trip, the environmental classification of the hotel and the support for local livelihoods. In Lübbert’s (2001) study, in turn, interviewed tourists evaluated the environmental quality criteria (e.g. clean air and water) more important ecolabelling criteria than the “lowering negative impacts” criteria (e.g. reduction of water and energy consumption, environmental management systems).

Nevertheless, even interviewed environmentally unconcerned tourists were not indifferent towards nature in national parks, but wanted to visit unspoiled and attractive natural environments. Obviously, most visible “green” destination qualities are important for all nature tourists although other environmental characteristics may be less important in their decision-making. A body of research indicates that tourists have vested interest in the environment as a key determinant in the quality of their holiday experience (e.g. Lübbert 2001; Weaver & Lawton 2004; Swarbrooke & Horner 2007). In addition, national park visitors unlikely have a very exploitative view of the environment and, thus, may have more pro-environmental beliefs than city tourists, for instance (Wurzinger & Johansson 2006). Positive environmental attitudes have been observed to increase the probability to engage in nature-based tourism (Luzar et al. 1998).

Conclusion

This study conducted in Oulanka NP supports the assumption that only a small proportion of tourists represent “green” tourists who are highly interested in ecolabels and environmental responsibility of tourism companies and destinations, and take environmental aspects into account when travelling. Thus, environmentally friendly tourists have not yet risen as a real force in the tourism market (Swarbrooke & Horner 2007). Swarbrooke (1999) concludes that there is even less evidence of the existence of a “sustainable tourist” who is concerned not only about environmental but also socio-cultural and economic impacts of tourism. Sharpley (2001) claims that environmental values are likely to be of little consequence in consumer decision-making if green products cost more, are inferior, involve more effort or do not satisfy consumer needs. Outward looking environmental concern has usually a low priority within tourism which is a form of self-reward. Moreover, as tourism is fundamentally about pleasure and not sacrifice, a very strong trade-off has been considered to exist between the sacrifice of comfort and environmentally sound behavior (Dolnicar et al. 2008).

Accordingly, the study results imply that the ecolabelling of tourism products, organizations or destinations will positively appeal only to some tourists, matching them to appropriate destinations or experiences. Environmentally friendly interviewees' low awareness of tourism ecolabels and certifications, such as PAN Parks, suggests that increased visibility and marketing of ecolabels and information about sustainable

practices could increase the demand among this tourist group. This finding supports ecolabel development and use in Finland. Nevertheless, according to Font and Epler Wood (2007), there is still not enough evidence to suggest that certification of sustainable tourism will have market benefits, which may undermine industry support for certification programs. The results of this study indicate that ecolabels do not have a great influence on nature tourists' current travel decisions or their travelling behavior. As tourists pay more attention to the current condition of the environment than to the process of achieving it, they are more interested in ecolabels that measure the environmental quality than those that measure ecoefficiency (Lübbert 2001). The results thus support the increasingly recognized need to combine performance and process criteria in environmental certifications (see Honey 2007).

Nature tourists' lack of response to ecolabels and environmentally friendly behavior undermines tourists' role in developing sustainable tourism. Therefore, the study results emphasize the role of regulation, incentives and guidance in implementing ecologically, socio-culturally and economically sustainable practices in tourism companies and destinations. Tourists do not necessarily set high demands as long as negative environmental impacts do not ruin their perception and experience of pristine and unspoiled nature. In particular, climate change and other environmental problems which cannot be seen immediately in nature may be difficult to prevent if tourists themselves do not feel any responsibility for reducing the negative impacts of their activities.

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References

- Bohdanowicz, P. (2005). European hoteliers' environmental attitudes: greening the business. *Cornell Hotel and Restaurant Administration Quarterly* vol. 46, 188–204.
- Butler, R. W. (2000). Tourism and the environment: a geographical perspective. *Tourism Geographies* vol. 2, 337–358.
- Cordano, M., Welcomer, S. A. & R. F. Scherer (2003). An analysis of the predictive validity of the New Ecological Paradigm scale. *The Journal of Environmental Education* vol. 34, 22–28.
- Dolnicar, S. (2010). Identifying tourists with smaller environmental footprints. *Journal of Sustainable Tourism* vol. 18, 717–734.
- Dolnicar, S., Crouch, G. I. & P. Long (2008). Environment-friendly tourists: what do we really know about them? *Journal of Sustainable Tourism* vol. 16, 197–210.
- Dunlap, R. E., Van Liere, K. D., Mertig, A. G. & R. E. Jones (2000). Measuring endorsement of the new ecological paradigm: a revised NEP scale. *Journal of Social Issues* vol. 56, 435–442.
- Fairweather, J. R., Maslin, C. & D. G. Simmons (2005). Environmental values and response to ecolabels among international visitors to New Zealand. *Journal of Sustainable Tourism* vol. 13, 82–99.
- Font, X. & S. Clark (2007). Certification of protected areas: the case of PAN Parks in Europe. In Black, R. & A. Crabtree (eds.): *Quality assurance and certification in ecotourism*, 299–315. CABI, Wallingford.
- Font, X. & M. Epler Wood (2007). Sustainable tourism certification marketing and its contribution to SME market access. In Black, R. & A. Crabtree (eds.): *Quality assurance and certification in ecotourism*, 147–163. CABI, Wallingford.
- Font, X. & T. Mihalič (2002). Beyond hotels: nature-based certification in Europe. In Honey, M. (ed.): *Ecotourism & certification. Setting standards in practice*, 211–235. Island Press, Washington.
- Honey, M. (2007). The role of certification and accreditation in ensuring tourism contribute to conservation. In Bushell, R. & P. Eagles (eds.): *Tourism and protected areas: benefits beyond boundaries*, 168–190. CAB International, Wallingford.
- Kangas, H. (2007a). European Charter for Sustainable Tourism in Protected Areas. Ecolabel as a tool for area management and tourists' response to labels. Study visit report. 80 p. Europarc Federation, Alfred Toepfer Foundation. 22.8.2008. http://www.europarc.org/international/sources/report_henna_kangas.pdf
- Kangas, H. (2007b). Ympäristöasenteisiin perustuva matkailijoiden tyypittelymalli ja matkailijatyyppien yhteys laatutietoisuuteen – Kolin kansallispuiston ympäristömerkkitutkimuksen tuloksia. In Tyrväinen, L. & S. Tuulentie (eds.): *Luontomatkailu, metsät ja hyvinvointi. Working Papers of the Finnish Forest Research Institute* vol. 52, 45–50. 11.10.2010. <http://www.metla.fi/julkaisut/workingpapers/2007/mwp052-05.pdf>

- Lee, W. H. & G. Moscardo (2005). Understanding the impact of ecotourism resort experiences on tourists' environmental attitudes and behavioural intentions. *Journal of Sustainable Tourism* vol. 13, 546–565.
- Lübbert, C. (2001). Tourism ecolabels market research in Germany. In Font, X. & R. C. Buckley (eds.): *Tourism ecolabelling. Certification and promotion of sustainable management*, 71–85. CABI Publishing, Wallingford.
- Luzar, E. J., Diagne, A., Gan, C. & B. R. Henning (1998). Profiling the nature-based tourist: a multinomial logit approach. *Journal of Travel Research* vol. 37, 48–55.
- Ohjelma luonnon virkistyskäytön ja luontomatkaailun kehittämiseksi (2002). *The Finnish Environment* vol. 535.
- Muikko, M. (2005). Oulangan kansallispuisto. Kävijätutkimus 2005. Metsähallitus. 19.10.2010. <http://www.metsa.fi/sivustot/metsa/SiteAttachments/Kavijatutkimusraportti2005.pdf>
- Puhakka, R. (2008). Increasing role of tourism in Finnish national parks. *Fennia* vol. 186, 47–58.
- Puhakka, R. (in press). Environmental concern and responsibility among nature tourists in Oulanka PAN Park, Finland. *Scandinavian Journal of Hospitality and Research*.
- Puhakka, R. & P. Siikamäki (forthcoming). Nature tourists' response to ecolabels in Oulanka PAN Park, Finland. Article manuscript. Submitted to *Journal of Ecotourism*.
- Saarinen, J. (2001). The transformation of a tourist destination. Theory and case studies on the production of local geographies in tourism in Finnish Lapland. *Nordia Geographical Publications* vol. 30.
- Saarinen, J. (2005). Tourism in the northern wildernesses: wilderness discourses and the development of nature-based tourism in northern Finland. In Hall, C. M. & S. Boyd (eds.): *Nature-based tourism in peripheral areas. Development or disaster*, 36–49. Channel View Publications, Clevedon.
- Sharpley, R. (2001). The consumer behaviour context of ecolabelling. In Font, X. & R. C. Buckley (eds.): *Tourism ecolabelling: certification and promotion of sustainable management*, 41–55. CABI Publishing, Wallingford.
- Swarbrooke, J. (1999). *Sustainable tourism management*. CAB International, Wallingford.
- Swarbrooke, J. & S. Horner (2007). *Consumer behaviour in tourism*. 2. ed. Butterworth-Heinemann, London.
- Törn, A., Tolvanen, A., Norokorpi, Y., Tervo, R. & P. Siikamäki (2009). Comparing the impacts of hiking, skiing and horse riding on trail and vegetation in northern boreal and subalpine areas. *Journal of Environmental Management* vol. 90, 1427–1434.
- Uysal, M., Jurowski, C., Noe, F. P. & C. D. McDonald (1994). Environmental attitude by trip and visitor characteristics. *Tourism Management* vol. 15, 284–294.
- Vastuullisuus ei ratkaise matkustusvalinnoissa (2009). Suomen Messut & TNS Gallup. Press release 8.1.2009. 13.3.2009. http://www.finnexpo.fi/news_single.asp?id=2034&code_language=fi
- Weaver, D. B. & L. J. Lawton (2004). Visitor attitudes towards tourism development and product integration in an Australian urban-rural fringe. *Journal of Travel Research* vol. 42, 286–296.
- Wurzinger, S. (2006). Environmental concerns of Swedish ecotourists: an environmental-psychological perspective. In Gössling, S. & J. Hultman (eds.): *Ecotourism in Scandinavia. Lessons in theory and practice*, 124–133. CAB International, Wallingford.
- Wurzinger, S. & M. Johansson (2006). Environmental concern and knowledge of ecotourism among three groups of Swedish tourists. *Journal of Travel Research* vol. 45, 217–226.
- Yhteisen luontomme hoitaja. Vuosikertomus 2009 (2010). Metsähallitus, luontopalvelut. 11.10.2010. <http://julkaisut.metsa.fi/julkaisut/pdf/luo/vk2009fin.pdf>

- Ylimaunu, T. (2009). Matkailun ympäristösertifiointien tunnettuus ja merkitys luontomatkoilijoille: esimerkkinä Oulangan kansallispuisto ja PAN Parks -sertifikaatti. Unpublished master's thesis. Department of Geography, University of Oulu.
- Zografos, C. & D. Allcroft (2007). The environmental values of potential ecotourists: a segmentation study. *Journal of Sustainable Tourism* vol. 15, 44–66.

