CONSTRUCTION OF CAPTIVE WILDLIFE TOURISM MODELS IN MALAYSIA

EMANUEL CLADIUS UPIN

INSTITUTE FOR TROPICAL BIOLOGY AND CONSERVATION UNIVERSITI MALAYSIA SABAH 2018



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DECLARATION

I hereby declare that the material in this dissertation is my own except for the quotations, excerpts, summaries, and references, which have been duly acknowledge.

14 AUGUST 2017

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ABSTRACT

Wildlife tourism in captive settings such as Zoos is known as a place where visitors can interact with wildlife. Through those interactions, it has been proven in several literature reviews that zoos promote conservation awareness and produce positive behavioural changes in visitors. However, only a few research have been studied in demonstrating actual changes in visitors', particularly in Malaysian visitors'. In this research, two different conceptual framework sets (pre-visit and post-visit) were posited in this research. The first part, two essential components in zoo visit based on literatures was used as the variables; the Visitor Voice and the Zoo Voice. It is aimed to create a categorization of characteristics that directly affect the visitors' Conservation Consciousness. In the second part, it is aimed to measure the visitors' Conservation Awareness on how they were influenced by the conservation messages provided from their previous zoo visit in their daily life. By measuring the visitors' Conservation Awareness, the impact of zoos as a medium for conservation awareness towards Local Malaysians can then be assessed. The sampling sites chosen to represent local Malaysian zoos were Lok Kawi Wildlife Park, Zoo Negara, Taiping Zoo and Malacca Zoo. A structured, standardized questionnaire (pre-survey and post-survey), and field observation was used to achieve the expected results. Overall, there was a total of 769 and of 202 clean respondents were collected for the pre-visit and post-visit respectively. The data collected from the field was analysed using Statistical Package for Social Sciences (SPSS) and Analysis of Moment Structure (AMOS) software program by adopting Structural Equation Modelling (SEM). SEM analyses revealed that both pre-visit and post-visit surveys have significant variance towards Conservation Consciousness and Conservation Awareness respectively. The factors affecting visitors' learning was able to be categorize in the first part of the study. In the second part, the zoo visit has shown that there were actual changes occurs in the knowledge of the visitor, indicating the local zoo does have an impact towards its visitors. From this research, a baseline model elucidating each sampling site strengths were able to be constructed. This allows each sampling site to further improve its significance as a medium for conservation awareness, and likewise provide recommendation on what each zoo are lacking. The findings of this study are also important to contribute to the literature for behavioural changes in Malaysian, since limited researches were conducted specifically on long-term impact study.



ABSTRAK

PEMBINAAN MODEL PELANCONGAN HIDUPAN LIAR DALAM KURUNGAN DI MALAYSIA

Pelancongan hidupan liar dalam kurungan seperti Zoo dikenali sebagai tempat di mana pengunjung boleh berinteraksi dengan hidupan liar. Melalui interaksi tersebut, ia telah terbukti dalam beberapa kajian literatur bahawa Zoo menggalak kesedaran dalam pemuliharaan dan menghasilkan menghasilkan perubahan tingkah laku yang positif kepada pelawat. Walau bagaimanapun, hanya beberapa kajian telah dibuat dalam menunjukkan perubahan pelawat, terutamanya dalam pelawat Malaysia. Dalam kajian ini, dua set kerangka konsepsual (sebelum lawatan dan selepas lawatan) telah dikemukakan. Dalam bahagian pertama, dua komponen penting dalam lawatan zoo yang berdasarkan literatur telah digunakan sebagai pembolehubah; Suara Pelawat dan Suara Zoo. Bahagian ini bertujuan untuk membuat satu pengkategorian ciri-ciri yang memberi kesan terhadap "Conservation Consciousness" pelawat. Di bahagian kedua, ia bertujuan untuk mengukur Kesedaran dalam Pemuliharaan pelawat tentang bagaimana mereka dipengaruhi oleh mesej pemuliharaan yang disediakan dari lawatan zoo mereka sebelum ini dalam kehidupan seharian mereka. Dengan mengukur Kesedaran dalam Pemuliharaan pelawat, kesan zoo sebagai medium untuk kesedaran pemuliharaan terhadap warga tempatan boleh ditaksir. Tapak persampelan yang dipilih untuk mewakili Zoo Malaysia tempatan ialah Taman Hidupan Liar Lok Kawi, Zoo Negara, Zoo Taiping dan Zoo Melaka. Satu borang soal selidik yang tersusun dan dipiawaikan (sebelum dan selepas), dan pemerhatian lapangan telah digunakan untuk mencapai hasil yang diharapkan. Secara keseluruhannya, sebanyak 769 dan 202 responden bersih telah dikumpulkan masing-masing untuk sebelum lawatan dan selepas lawatan. Data yang diperolehi dari kawasan kajian telah dianalisis dengan menggunakan program perisian Pakej Statistik untuk Sains Sosial (SPSS) dan "Analysis of Moment Structure" (AMOS) dengan menggunakan "Structural Equation Modelling" (SEM). Analisis SEM mendedahkan bahawa kedua-dua lawatan; sebelum lawatan dan selepas lawatan, masing-masing mempunyai perbezaan variansi yang ketara terhadap "Conservation Consciousness" dan Kesedaran dalam Pemuliharaan. Faktor-faktor yang memotivasi dan mempengaruhi pembelajaran pelawat dapat dikategorikan dalam bahagian pertama kajian. Di bahagian kedua, lawatan zoo telah menunjukkan bahawa ada perubahan berlaku dalam pengetahuan pelawat, menunjukkan zoo tempatan mempunyai kesan terhadap pengunjungnya. Dari kajian ini, model asas yang membuktikan kekuatan tapak masing-masing dapat dibina. Ini membolehkan setiap tapak persampelan untuk meningkatkan lagi kepentingannya sebagai medium untuk kesedaran pemuliharaan, dan sekaligus memberi cadangan tentang kekurangan yang ada dalam setiap zoo. Penemuan kajian ini juga penting untuk menyumbang kepada lliteratur perubahan tingkah laku individu Malaysia kerana pengkhususan kajian mengenai kajian impak jangka panjang tidak banyak dijalankan.



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LIST OF SYMBOLS

- % Percentage -Equal to or greater than ≥ -Greater than > -Less than < -Above + _ Negative --Equals to = -Two values either positive or negative ± β Beta estimates _ Correlation coefficient r _ Probability value р - \mathbb{R}^2 Coefficient of determination -
- N/A Not applicable



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CHAPTER 1

INTRODUCTION

1.1 Introduction

The world is well aware of the environmental predicament and consequences that we are facing in the future (Edwards and Abivardi, 1998; WHO, 2012). Most of the world population should have been alert of this crisis especially how obvious it has been, to the eyes of the world. However, most of these problems have been ignored in order to satisfy the ever-increasing need for goods and services from the ecosystem of the increased human population (Daily, et al., 1996; UNDP, 1998; Mbugua, 2012; WHO, 2012). Currently, the total human population in the world is more than seven billion people. From the increase of human population, it should also be apparent that the number of people neglecting the concern for conservation issues should also increase (Daily, et al., 1996; Tisdell, 1999; SERI, 2009; WHO, 2012). It impend threats continuously towards the environment and the world's biodiversity at an alarming rate. The rapid clearing of tropical rainforests, destruction of fragile coral reefs, pollutions, migration of small terrestrial mammals to higher altitude, the extinction of hundreds of marine and terrestrial species, increased global warming, and creation of holes in the ozone layer are all clear signs that the environment is in a crisis (Ghazally and Murtedza, 1998; Thomas, et al., 2004; McCrink-Goode, 2014). All of this is well documented in journal publications and reports from international agencies, institutions, researchers and scientist all over the world. Should all of these threats be prolonged and not prevented immediately, the quality of human life will definitely be affected. Thus, it is the role and duty of the human population itself to ensure that the Earth's gift is maintained and protected so that the future generation would also be able to experience them.



REFERENCES

- Aipanjiguly, S., Jacobson, S. & Flamm, R. 2002. Conserving manatees: knowledge, attitudes and intentions of boaters in Tampa Bay, Florida. *Conservation Biology*, **17**:1098–1105.
- Ajzen, I. & Fishbein, M. 1974. Factors influencing intentions and the intentionbehavior relation. *Human Relations*, **27**(1):1–15.
- Alcamo, J., Ash, N. J., Butler, C. D., Callicott, J. B., Capistrano, D., Carpenter, S. R., Castilla, J. C., Chambers, R., Chopra, K., Cropper, A., Daily, G. C., Dasgupta, P., de Groot, R., Dietz, T., Duraiappah, A. K., Gadgil, M., Hamilton, K., Hassan, R., Lambin, E. F., Lebel, L., Leemans, R., Jiyuan, L., Jean-Paul, M., May, R. M., McCalla, A. F., McMichael, T. A. J., Moldan, B., Mooney, H., Naeem, S., Nelson, G. C., Wen-Yuan, N., Noble, I., Zhiyun, O., Pagiola, S., Pauly, D., Percy, S., Pingali, P., Prescott-Allen, R., Reid, W. V., Ricketts, T. H., Samper, C., Scholes, R. B., Simons, H., Toth, F. L., Turpie, J. K., Watson, R. T., Wilbanks, T. J., Williams, M., Wood, S., Shidong, Z., Zurek, M. B., Bennett, E. M., Biggs, R. O., Poh-Sze, C., Foley, J., Kumar, P., Lee, M. J., Moss, R. H., Petschel-Held, G., Porter, S. & Schneider, S. H. 2003. *Ecosystem and Human Well-Being: A Framework for Assesement.* Island Press, Washington DC.
- Amiot, C. E. & Bastian, B. 2015. Toward a psychology of human–animal relations. *Psychological Bulletin*, **141**(1):1-43.
- Anderson, D., Piscitelli, B., & Everett, M. 2008. Competing agendas: Young children's museum field trips. *Curator*, **51**(3):253–273.
- Arbuckle, J. L. 2007. *Amos 16.0 User's Guide*. Amos Development Cooperation, America.
- Ardoin, N. M., Heimlich, J., Braus, J. & Merrick, C. 2013. Influencing Conservation Action: What the research says about environmental literacy, behavior, and conservation results. In *Tools of Engagement: A Toolkit for Engaging People in Conservation (Module 3).* http://web4.audubon.org/educate/toolkit/module3.php. Downloaded on 29 October 2016.
- Ardoin, N. M., Wheaton, M., Bowers, A. W., Hunt, C. A. & Durham, W. H. 2015. Nature-based tourism's impact on environmental knowledge, attitudes, and behavior: a review and analysis of the literature and potential future research. *Journal of Sustainable Tourism*, **23**(6):838-858.
- Arva, L. & Deli-Gray, Z. 2011. New types of tourism and tourism marketing in the post-industrial world. *Applied studies in agribusiness and commerce*, 5:33-37.
- Barney, E. C., Mintzes, J. J., & Yen, C. F. 2005. Assessing knowledge, attitudes, and behavior toward charismatic megafauna: The case of dolphins. *The Journal of Environmental Education*, **36**(2):41-55.



- Ballantyne, R. & Packer, J. 2011. Using tourism free-choice learning experiences to promote environmentally sustainable behaviour: the role of post-visit 'action resources'. *Environmental Education Research*, **17**(2):201-215.
- Barongi, R., Fisken, F. A., Parker, M. & Gusset, M. (eds). 2015. *Committing to Conservation: The World Zoo and Aquarium Conservation Strategy*. Gland: WAZA Executive Office.
- Ballantyne, R., Hughes, K., Deery, M. & Bond, N. 2007. *Handbook for Managers and Staff of Visitor Information Centres.* CRC for Sustainable Tourism Pty Ltd, Australia.
- Ballantyne, R., Packer, J., & Falk, J. 2011. Visitors' learning for environmental sustainability: Testing short-and long-term impacts of wildlife tourism experiences using structural equation modelling. *Tourism Management*, **32**(6):243-1252.
- Ballantyne, R., Packer, J., Hughes, K. & Dierking, L. 2007. Conservation learning in wildlife tourism settings: lessons from research in zoos and aquariums. *Environmental Education Research*, **13**(3):367-383.
- Baloglu, S. & McCleary, K. 1999. A model of destination image formation. *Annals of Tourism Research*, **26**(4):868-897.
- Bandara, R., & Tisdell, C. 2003. Comparison of rural and urban attitudes to the conservation of Asian elephants in Sri Lanka: empirical evidence. *Biological Conservation*, **110**(3):327-342.
- Batt, S. 2009. Human attitudes towards animals in relation to species similarity to human: a multivariate approach. *Bioscience Horizons*, **2**(2):180-190.
- Belle, C. V. 2017. *Thaipusam in Malaysia: A Hindu Festival in the Tamil Diaspora*. ISEAS-Yusof Ishak Institute.
- Birney, B. 1988. Brookfield zoo's flying walk exhibit: Formative evaluation aids in the development of an interactive exhibit in an informal learning setting. *Environment & Behavio*r, **20**(4):416–434.
- Blair-Loy, M., Wharton, A. S. & Goodstein, J. 2011. Exploring the relationship between mission statements and work-life practices in organizations. *Organization Studies*, **32**(3):427-450.
- Bogdan, R. & Biklen, S. 2003. *Qualitative research for education: An introduction to theory and practice 4th edition*. Pearson Education Inc., London.
- Booth, K. L., Cessford, G. R., McCool, S. F. & Espiner, S. R. 2011. *Exploring visitor experiences, crowding perceptions and coping strategies on the Milford Track, New Zealand.* Science for Conservation 313. Department of Conservation, Wellington.
- Bostock, S. S. C. 1981. Zoo education and the ethics of keeping animals in captivity. Newsletter *of the International Zoo Educators Association*, **6**:19–20.



- Bowd A.D. & Bowd A.C. 1989. Attitudes toward the treatment of animals: A study of Christian groups in Australia. *Anthrozoos*, **3**:20–24.
- Boyd, S. F., Johnny, C. & Bakansing, S. M. 2014. Man-Made Wildlife Tourism Destination: The Visitors Perspective on Lok Kawi Wildlife Park, Sabah, Malaysia. *SHS Web of Conferences*, **12**:1-9.
- Braithwaite, R. W. & Reynolds, P. C. 2002. Wildlife and tourism. *In* Dickman C. (ed.). *A Zoological Revolution. Using Native Fauna to Assist in its Own Survival.* pp. 108-115. Royal Zoological Society of New South Wales: Mosman & Australian Museum.
- Bright, A., & Pierce, C.L. 2002. Information and education for managing wildlife viewing. *In* Manfredo, M. J. (ed.). *Wildlife viewing: A management handbook*, Oregon State University Press, Corvallis, Oregon.
- Bucholz, J. L. & Sheffler, J. L. 2009. Creating a Warm and Inclusive Classroom Environment: Planning for All Children to Feel Welcome, *Electronic Journal for Inclusive Education*, 2(4):1-13.
- Buckley, R. 2000. Tourism in the most fragile environments. *Tourism Recreation Research*, **25**(1):31-40.
- Buhalis, D. 2000. Marketing the competitive destination of the future. *Tourism management*, **21**(1):97-116.
- Burghardt, G. M., & Herzog, H. A. J. 1980. Beyond Conspecifics: Is Brer Rabbit Our Brother?. *BioScience*, **30**:763-768.
- Burton, I. & Kates, R. W. 1964. The perception of natural hazards in resource management. *Natural resources journal*, **3**(3):412-441.
- Burton, T. & Ford, J. 1991. Environmental enrichment in zoos-Melbourne Zoo's naturalistic approach. *Thylacinus*, **16**(1):12-16.
- Carlstead. K., Seidensticker, J. & Baldwin, R. 1991. Environmental enrichment for zoo bears. *Zoo Biol.*, **10**:3-16.
- Caro, T., Pelkey, N. & Grigione, M. 1994. Effects of conservation biology education on attitudes towards nature. *Conservation Biology*, **8**:846–852.
- Carr, N. & Cohen, S. 2011. The public face of zoos: Images of entertainment, education, and conservation. *Anthrozoos*, **24**(2):175-189.
- Carrus, G., Scopelliti, M., Lafortezza, R., Colangelo, G., Ferrini, F., Salbitano, F., Agrimi, M., Portoghesi, L., Semenzato, P. & Sanesi, G., 2015. Go greener, feel better? The positive effects of biodiversity on the well-being of individuals visiting urban and peri-urban green areas. *Landscape and Urban Planning*, **134**:221-228.
- Catibog-Sinha, C. 2008. Zoo Tourism: Biodiversity Conservation through Tourism. *Journal of Ecotourism*, **7**(2&3):160-178.



- Ceriaco, L. M. P. 2012. Human attitudes towards herpetofauna: The influence of folklore and negative values on the conservation of amphibians and reptiles in Portugal. *Journal of Ethnobiology and Ethnmomedicine*, **8**(8):1-12.
- Chan, J. K. L. & Baum, T. 2007. Ecotourists' Perception of Ecotourism Experience in Lower Kinabatangan, Sabah, Malaysia. *Journal of Sustainable Tourism*, **15**(5):574-590.
- Chan, J. K. L. & Baum, T. 2007. Motivation Factors of Ecotourists in Ecolodge Accommodation: The Push and Pull Factors. *Asia Pacific Journal of Tourism Research*, **12**(4):349-364.
- Chan, J. K. L., & Xin, T. K. 2015. Exploring definitions and practices of responsible tourism in Kinabalu National Park, Sabah, Malaysia. *Journal of Tourism and Hospitality Management*, **3**(5-6):87-101.
- Chapman, R. J. 2002. Exploiting the Human Need for Nature for Successful Protected Are Management. *The George Wright FORUM*, **19**(3):52-56.
- Chardonnet, Ph., des Clers, B., Fischer, J., Gerhold, R., Jori, J. & Larmaque, F. 2002. The value of wildlife. *Rev.sci. tech. Off. Int. Epiz,* **21**(1):15-51.
- Cheng, Y. C. 1994. Classroom environment and student affective performance: An effective profile. *The Journal of experimental education*, **62**(3):221-239.
- Christie, M. F. & Mason, P. A. 2003. Transformative tour guiding: Training tour guides to be critically reflective practitioners. *Journal of Ecotourism*, **2**(1):1-16.
- Chu, R. K. S. & Choi, T. 2000. An importance-performance analysis of hotel selection factors in the Hong Kong hotel industry: a comparison of business and leisure travellers. *Tourism Management*, **21**:363-377.
- Clark, T. W. & Wallace, R. L. 1998. Understanding the human factor in endangered species recovery: an introduction to human social process. *Endangered Species Update*, **15**:2-9.
- Cochrane, J., & Tapper, R. 2006. Tourism's contribution to World Heritage Site management. *In* Leask, A. & Fyall, A. (ed.). *Managing World Heritage Sites*, pp. 97-109. Elvisier Ltd., Oxford. United Kingdom.
- Coe, J. C. 1986. Towards A Co-evolution of Zoos, Aquariums and Natural History Museums. *AAZPA* 1986 Annual Conference Proceedings. American Association of Zoological Parks and Aquariums, Wheeling, WV. 366-376.
- Coleman, T. C. 2014. Positive emotion in nature as a precursor to learning. *International Journal of Education in Mathematics, Science and Technology*, **2**(3):175-190.
- Clayton, S., Fraser, J., & Saunders, C. D. 2009. Zoo experiences: Conversations, connections, and concern for animals. *Zoo Biology*, **28**(5):377-397.



- Couper, R., 2013 Placing the Origins of the Zoo An Architectural Analysis of the Metamorphosis of the Menagerie into the Zoological Garden. *Proceedings of the Society of Architectural Historians, Australia and New Zealand: 30, Open.* Gold Coast, Qld: SAHANZ. 235-246.
- Creswell, J. W. 2013. *Research design: Qualitative, quantitative, and mixed methods approaches 4th edition*. Sage Publications, Inc. United States of America.
- Crowley, S.L. & Fan, X. 1997. Structural Equation Modeling: Basic Concepts and Applications in Personality Assessment Research. *Journal of Personality Assessment*, **68**(3):508-31.
- Crumb, S. J. 2014. The Role of Zoo Playgrounds: Beyond Playtime & into Conservation Awareness. *IZE Journal*, **50**:24-26.
- Curtin, S. 2009. Wildlife tourism: the intangible, psychological benefits of humanwildlife encounters. *Current Issues in Tourism*, **12**(5-6):451-474.
- Curtin, S. & Kragh, G. 2014. Wildlife Tourism: Reconnecting People with Nature, *Human Dimensions of Wildlife: An International Journal*, **19**(6):545-554.
- Daily, G. C., Alexander, S. E., Ehrlich, P. R., Goulder, L. H., Lubchenco, J., Matson, P. A., Mooney, H. A., Postel, S., Schneider, S. H., Tilman, D. & Woodwell. G. M. 1997. Ecosystem services: Benefits supplied to human societies by natural ecosystems. *Issues in Ecology*, 2:1-18.
- Dange, J. K. 2015. Learning and Experiences: A step model. The Online Journal of New Horizons in Education, 5(3):101-108.
- Davey, G. 2006. Relationships between exhibit naturalism, animal visibility and visitor interest in a Chinese Zoo. *Applied Animal Behaviour Science*, **96**:93–102.
- Davies, M. 1990. Wildlife as a tourism attraction. *Environments (Waterloo)*, **20**(3):74-77.
- de Boer, W. F. & Baquete, D. S. 1998. Natural resource use, crop damage and attitudes of rural people in the vicinity of the Maputo Elephant Reserve, Mozambique. *Environmental Conservation*, **25**:208–218.
- de Pinho, J. R., Grilo, C., Boone, R. B., Galvin, K. A. & Snodgrass, J. G. 2014. Influence of Aesthetic Appreciation of Wildlife Species on Attitudes towards Their Conservation in Kenyan Agropastoralist Communities. *PLoS ONE*, **9**(2):1-10.
- de Pinho, J. R. 2016. Beautiful and ugly animals in Kenya Maasailand: Why beauty matters for biodiversity conservation in Africa. *Progress 2-Ciências Sociais e Desenvolvimento em África*, 96-117.
- Dermol, V. 2012. Relationship between mission statement and company performance. *Annals of the Alexandru Ioan Cuza University-Economics*, **59**(1):321-336.



- DeWitt, J., & Osborne, J. F. 2007. Supporting teachers on science-focused school trips: Towards an integrated framework of theory and practice. *International Journal of Science Education*, **29**(10):685–710.
- Diener, E., Oishi, S., & Lucas, R. E. 2002. Subjective well-being: The science of happiness and life satisfaction. In C.R. Snyder & S.J. Lopez (Ed.). *Handbook of Positive Psychology*. Oxford University Press. New York.
- Dierking, L. D., Burtnyk, K., Buchner, K. S. & Falk, J. H. 2002. *Visitors learning in zoos and aquariums: A literature review.* pp. 1-24. Silver Spring, MD: American Zoo and Aquarium Association.
- Doering, Z. D. & Pekarik, A. J. 1996. Questioning the entrance narrative. *Journal of Museum Education*, **21**(3):20–25.
- Drews, C. 2002. Attitudes, knowledge and wild animals as pets in Costa Rica. *Anthrozoos*, **15**(2):119-138.
- Duffus, D. A. & Dearden, P. 1990. Non-consumptive wildlife-oriented recreation: A conceptual framework. *Biological Conservation*, **53**(3):213-231.
- EAZA (European Association of Zoos and Aquariums). 2001. *EAZA Education Standard.* http://www.aiza.org.es/pdf/estandares.pdf. Downloaded on 17 April 2016.
- EAZA (European Association of Zoos and Aquariums). 2016. *EAZA Conservation Education Standards.* https://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA-Conservation-Education-Standards-2016-09.pdf. Downloaded on 10 March 2018.
- Edwards, P. J. & Abivardi, C. 1998. The Value of Biodiversity: Where Ecology and Economy Blend. *Biological Conservation*, **83**(3):239-246.
- Esson, M. & Moss, A. 2014. Zoos as a context for reinforcing environmentally responsible behaviour: the dual challenges that zoo educators have set themselves. *Journal of Zoo and Aquarium Research*, **2**(1):8-13.
- Falk, J. H. 2005. Free-choice environmental learning: framing the discussion. *Environmental Education Research*, **11**:265-280.
- Falk, J. H. 2009. *Identity and the museum visitor experience*. Walnut Creek, CA: Left Coast Press.
- Falk, J. H., & Adelman, L. M. 2003. Investigating the impact of prior knowledge and interest on aquarium visitor learning. *Journal of Research in Science Teaching*, **40**:163-176.
- Falk, J. H., Ballantyne, R., Packer, J. & Benckendorff, P. 2012. Travel and learning: A neglected tourism research area. *Annals of Tourism Research*, **39**(2):908-927.
- Falk, J. H., & Dierking, L. D. 2000. *Learning from museums: Visitor experience and the making of meaning*. Walnut Creek, CA: Alta Mira Press.



- Falk, J., & Dierking, L. 2010. The 95 percent solution: School is not where most Americans learn most of their science. *American Scientist*, **98**:486–493.
- Falk, J. H., & Storksdieck, M. 2010. Science learning in a leisure setting. *Journal of Research in Science Teaching*, **47**(2):194-212.
- Falk, J., Dierking, L. & Holland, D. 1995. What do we think people learn in museums? *In* Falk, J. H. & Dierking, L. D. (ed.). *Public Institutions for personal learning: Establishing a research agenda,* pp. 17-22. Washington DC: American Association of Museums, Technical Information Service.
- Falk, J. H., Moussouri, T. & Coulson, D. 1998. The effect of visitors 'agendas on museum learning. *Curator: The Museum Journal*, **41**(2):107-120.
- Falk, J. H., Reinhard, E. M., Vernon, C., Bronnenkant, K., Heimlich, J. E., & Deans, N. L. 2007. Why zoos & aquariums matter: Assessing the impact of a visit to a zoo or aquarium. Silver Spring, MD: Association of Zoos & Aquariums.
- Farthing, G. 1992. *The Psychology of Consciousness*. Prentice Hall, Inc. Upper Saddle River, New Jersey.
- Fiffy, H. S., Matusin, A. M. R. A., Suki, N. M., & Dawood, M. M. 2015. Tourists Perspective: Inclusion of Entotourism Concept in Ecotourism Activity. *Journal of Tropical Biology & Conservation*, **12**:55-74.
- Fornell, C. & Larcker, D, F. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, **19**(1):39-50.
- Fraser, J., Clayton, S., Sickler, J. & Taylor, A. 2009. Belonging at the zoo: Retired volunteers, conservation activism and collective identity. *Ageing & Society*, **29**(3):351-368.
- Fraser, J., & Wharton, D. 2007. The future of zoos: A new model for cultural institutions. *Curator: The Museum Journal*, **50**(1):41-54.
- Friedrich, L. A., Jefferson, R. & Glegg, G. 2014. Public perceptions of sharks: Gathering support for shark conservation. *Marine Policy*, **47**:1-7.
- Frisk, E. & Larson, K. L. 2011. Educating for sustainability: Competencies & practices for transformative action. *Journal of Sustainability Education*, 2(1):1-20.
- Frynta, D., Liskova, S., Bultmann, S. & Burda, H. 2010. Being attractive brings advantages: the case of parrot species in captivity. *PLoS ONE*, **5**(9):1-9.
- Frynta, D., Maresova, J., Rehakova-Petru, M., Skliba, J., Sumbera, R. & Krasa, A. 2011. Cross-cultural agreement in perception of animal beauty: boid snakes viewed by people from five continents. *Human Ecology*, **39**:829–834.
- Frynta, D., Simkova, O., Liskova, S. & Landova, E. 2013. Mammalian collection on Noah's ark: the effects of beauty, brain and body size. *PLoS ONE*, **8**(5):1-12.



- Gadd, M. E. 2005. Conservation outside of parks: attitudes of local people in Laikipia, Kenya. *Environmental Conservation*, **32**(01):50-63.
- Ghazally, I. & Murtedza, M. 1998. *Biodiversity Conservation in Asean: Emerging Issues & Regional Needs.* Asean Academic Press Ltd, United Kingdom.
- Graetz, M. 1995. *The Role of Architectural Design in Promoting the Social Objectives of Zoos: A Study of Zoo Exhibit Design with Reference to Selected Exhibits in Singapore Zoological Gardens.* Singapore: National University of Singapore. (Unpublished).
- Gross, S. J. & Niman, C. M. 1975. Attitude-behavior consistency: A review. *Public Opinion Quarterly*, **39**(3):358–368.
- Gulick, R. V. 2004. <u>*Consciousness*</u>. Stanford Encyclopedia of Philosophy. https://plato.stanford.edu/entries/consciousness/. Downloaded on 10 January 2016.
- Hair, J. F., Black, W. C., Babin, B. J. & Anderson, R. E. 2014. *Multivariate Data Analysis* 7th *Edition*. Pearson Education Limited. England.
- Ham, S. 1992. *Environmental Interpretation: A practical guide for people with big ideas and small budgets.* North America Press, Golden, Colorado.
- Ham, S. H. & Weiler, B. 2002. Interpretation as the centrepiece of sustainable wildlife tourism. *In* Harris, R., Griffin T. & Williams, P. (ed.). *Sustainable tourism: a global perspective.* pp. 35-44. Oxford, Butterworth Heinemann.
- Hammitt, W. E., Dulin, J. N. & Wells, G. R. 1993. Determinants of quality wildlife viewing in Great Smoky Mountains National Park. *Wildlife Society Bulletin* (1973-2006), **21**(1):21-30.
- Hannah, R. 2013. *The Effect of Classroom Environment on Student Learning*. Michigan: Western Michigan University. (Unpublished)
- Hayward, J. & Rothenberg, M. 2004. Measuring success in the "Congo Gorilla Forest" conservation exhibition. *Curator: The Museum Journal*, **47**(3):261-282.
- Heberlein, T. A. 2012. Navigating environmental attitudes. *Conservation Biology*, **26**(4):583–585.
- Hediger, H. 1969. *Man and Animal in the Zoo*. Routledge and Kegan Paul Ltd., London.
- Higginbottom, K. & Tribe, A. 2004. Chapter 6 Contribution of Wildlife Tourism to Conservation. *In* Higginbottom, K. (ed.). *Wildlife Tourism: Impacts, Management and Planning*, pp. 99-124. Common Ground Publishing Pty Ltd, Australia.
- Higginbottom, K. 2004. Chapter 1 Wildlife Tourism: An Introduction. In Higginbottom, K. (ed.). Wildlife Tourism: Impacts, Management and Planning. pp. 1-14. Common Ground Publishing Pty Ltd, Australia.



- Higginbottom, K., Rann, K., Moscardo, G., Davis, D. & Muloin, S. 2001. Status *Assessment of Wildlife Tourism in Australia: An Overview*. CRC for Sustainable Tourism, Gold Coast: Queensland.
- Holdershaw, J. & Gendall, P. 2008. Understanding and predicting human behaviour. *Paper presented at the ANZCA08 Conference, Power and Place. Wellington*, New Zealand, 9-11 July.
- Holzer, D., Scott, D. & Bixler, R. D. 1998. Socialization influences on adult zoo visitation. *Journal of Applied Recreation Research*, **23**(1):43-62.
- Hooper, D., Coughlan, J. & Mullen, M. 2008. Structural Equation Modelling: Guidelines for Determining Model Fit. *Electric Journal of Business Research Methods*, 6(1):53-60.
- Hooper-Greenhill, E. 1995. A museum educator's perspective. *In* Chadwick, A. & Stannett, A. (ed.). *Museums and the education of adults,* pp. 49-64. Leicester, UK: National Institute of Adult Continuing Education.
- Howe, C. 2009. *The Role of Education as a Tool for Environmental Conservation and Sustainable Development.* London: Imperial Colege of London. (Unpublished).
- Hummel, E., Ozel, M., Medina-Jerez, W., Fancovicova, J., Usak, M., Prokop, P. & Randler, C. 2015. Interest in birds and its relationship with attitudes and myths: A cross-cultural study in countries with different levels of economic development. *Educational Sciences: Theory and Practice*, **15**(1):285-296.
- Hunter, L. M., Hatch, A., & Johnson, A. 2004. Cross-national gender variation in environmental behaviors. *Social science quarterly*, **85**(3):677-694.
- Hvenegaard, G. T. 2002. Birder specialization differences in conservation involvement, demographics and motivations. *Human Dimensions of Wildlife*, 7:21-36.
- Hyson, J. 2000. Jungles of Eden: The Design of American Zoo. *In* Conan, M. (ed.). *Environmentalism in Landscape Architecture* Vol. 22. Dumbarton Oaks. United States of America.
- Hyson, J. 2004. Education, entertainment, and institutional identity at the zoo. *Curator*, **47**:247–51.
- Infield, M. 1988. Attitudes of a rural community towards conservation and a local conservation area in Natal, South Africa. *Biological Conservation*, **45**: 21–46.
- INTOSAIWEGA (International Organization of Supreme Audit Institutions Working Group on Environmental Auditing). 2013. *Impact of Tourism on Wildlife Conservation.* auditing.org/LinkClick.aspx?fileticket=ecrH%2BPLw7Cc%3D&tabid=128&mi d=568. Downloaded on 22 March 2015.



- IUCN (International Union for Conservation of Nature). 2002. *Education and Responsibility: Responding to the Global Challenge.* http://www.mma.gov.br/port/sdi/ea/deds/arqs/educandsust.pdf. Downloaded on 30 October 2014.
- IUCN (International Union for Conservation of Nature). 2008. The Ecosystem
Approach:LearningfromExperience.https://www.cbd.int/doc/external/iucn/iucn-ecosystem-approach-en.pdf.
Downloaded on 24 October 2014.
- IUCN (International Union for Conservation of Nature). 2009. *Public Awareness Indicator Measuring Public Awareness of Biodiversity.* https://cmsdata.iucn.org/downloads/public_awareness_indicator_caucasus. pdf. Downloaded on 28 September 2015.
- IUDZG/CBSG (IUCN/SSC). 1993. *Executive Summary, The World Zoo Conservation Strategy: The Role of the Zoos and Aquaria of the World in Global Conservation*. Chicago Zoological Society. United States of America.
- Jacobs, M. H. & Harms, M. 2014. Influence of interpretation on conservation intentions of whale tourists. *Tourism Management*, **42**:123-131.
- Karanikola, P., Tampakis, S., Tsantopoulos, G. & Digbasani, C. 2014. The public zoo as recreation and environmental education area: Visitor's perceptions and management implications. *WSEAS Transactions on Environment and Development*, **10**:81-91.
- Kaplan, S. & J. F. Talbot. 1983. Psychological benefits of a wilderness experience. *In* Altman, I. & Wohlwill, J. F. (ed.). *Behavior and the Natural Environment*. pp. 163-203. New York: Plenum.
- Kapoor, N. 2011. Role of mass media in promotion of environmental awareness along with skill development among the rural people of Shringverpur, Allahabad district, India. *Paper presented at the International Conference on Chemical, Biological and Environment Sciences*. Bangkok, Thailand, 23-24 December.
- Karanth, K. K., Kramer, R. A., Qian, S. S. & Christen, N. L. Jr. 2008. Examining conservation attitudes, perspectives and challenges in India. *Biological Conservation*, **141**:2357-2367.
- Kellert, S. R. 1985. Attitudes towards animals: Age-related development among children. *Journal of Environmental Education*, **3**:29–39.
- Kellert, S. R. 1993. Values and perceptions of invertebrates. *Conservation Biology*, **7**:845–855.
- Kellert, S. R. 1996. *The Value of Life: Biological Diversity and Human Society*, Island, Washington, DC.
- Kephart, N. C. & Floyd, W. 1954. Classroom environment and pupil welfare. *Journal* of Educational Psychology, **45**(1):52-59.



- Kideghesho, J. R., Roskaft, E., & Kaltenborn, B. P. 2007. Factors influencing conservation attitudes of local people in Western Serengeti, Tanzania. *Biodiversity and Conservation*, **16**(7):2213-2230.
- Kisling, V. N. 2001. 5 Zoological Gardens of the United States. *In* Kisling, V. N. (ed.). *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens*, pp. 147-180. CRC Press LLC, United States of America.
- Kisling, V. N. 2001. *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens*. CRC Press LLC, United States of America.
- Kioko, J. & Kiringe, J. W. 2010. Youth's knowledge, attitudes and practices in wildlife and environmental conservation in Maasailand, Kenya. *Southern African Journal of Environmental Education*, **27**:91-101.
- Kola-Olusanya, A. 2005. Free-choice environmental education: Understanding where children learn outside of school. *Environmental Education Research*, **11**(3):297- 307.
- Kollmuss, A. & Agyeman, J. 2002. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?. *Environmental education research*, **8**(3):239-260.
- Knight, A. J. 2008. Bats, snakes and spiders, Oh my!" How aesthetic and negativistic attitudes, and other concepts predict support for species protection. *J. Environ. Pscchol*, **28**:94-103.
- Kraus, S. J. 1995. Attitudes and the prediction of behaviour: A meta-analysis of the empirical literature. *Personality and Social Psychology Bulletin*, 21(1):58–75.
- Kusen, E. 2010. A system of tourism attractions. *Tourism*, **58**(4):409-424.
- Lalley, J. & Miller, R. 2007. The Learning Pyramid: Does it Point Teachers in the Right Direction?. *Education*, **128**(1):64-79.
- Landova, E., Maresova, J., Simkova O., Cikanova, V. & Frynta, D. 2012. Human responses to live snakes and their photographs: evaluation of beauty and fear of the king snakes. *Journal of Environmental Psychology*, **32**:69–77.
- Langenwalter, G. 2006. "Life" is Our Ultimate Customer: From Lean to Sustainability. *Target*, **22**(1):1-5.
- Lindemann-Matthies, P., Constantinou, C., Lehnert, H. J., Nagel, U., Raper, G. & Kadji-Beltran, C. 2011. Confidence and perceived competence of preservice teachers to implement biodiversity education in primary schools—Four comparative case studies from Europe. *International Journal of Science Education*, **33**(16):2247-2273.
- Lindemann-Matthies, P. 2005. Loveable mammals and lifeless plants: How children's interests in common local organisms can be enhanced through observation of nature. *International Journal of Science Education*, **27**:655-677.



- Lindemann-Matthies, P. 2016. Beasts or beauties? Laypersons' perception of invasive alien plant species in Switzerland and attitudes towards their management. *NeoBiota*, **29**:15-33.
- Lindemann-Matthies, P., & Kamer, T. 2006. The influence of an interactive educational approach on visitors' learning in a Swiss zoo. *Science Education*, **90**(2):296-315.
- Leask, A. 2003. The nature and purpose of visitor attarctions. *In* Fyall, A., Garrod, B. & Leask, A. (ed.). Managing Visitor Attractions: New Directions, pp. 5–15. Elsevier Butterworth-Heinemann, Amsterdam,
- Leask, A. 2010. Progress in visitor attraction: Towards more effective management. *Tourism Management*, **31**:155-166.
- Lee, W. H. & Moscardo, G. 2005. Understanding the Impact of Ecotourism Resort Experiences on Tourists' Environmental Attitudes and Behavioral Intentions. *Journal of Sustainable Tourism*, **13**:546-64.
- Leinhardt, G. 2014. Museums, conversations, and learning. *Revista Colombiana de Psicología*, **23**(1):13-33.
- Leiper, N. 1990. Tourist attraction systems. *Annals of Tourism Research*, **17**(3):367-384.
- Lindsay, P., & Norman, D. A. 1977. 1 Perception. *In* Lindsay, P. & Norman, D. A. (ed.). *Human information processing: An introduction to psychology*, pp. 3-56. Academic Press, Inc. London.
- Lindsey, P. A., Alexander, R., Mills, M. G. L., Romanach, S. & Woodroffe, R. 2007. Wildlife Viewing Preferences of Visitors to Protected Areas in South Africa: Implications for the Role of Ecotourism in Conservation. *Journal of Ecotourism*, 6(1):19-33.
- Liskova, S. & Frynta, D. 2013. What determines bird beauty in human eyes? *Anthrozoos*, **26**:27–41.
- Lomas, C. A., Piggins, D. & Philips, C. J. C. 1998. Visual awareness. Applied Animal Behaviour Science, 57:247-257.
- Lucas, A. M., McManus, P. M., & Thames, G. 1986. Investigating learning from informal sources: Listening to conversations and observing play in science museums. *European Journal of Science Education*, 8(4):341–352.
- Lucas, N. 2003. Ecosystems and human well-being: a framework for assessment. *CBD Technical Series*, **9**:25-26.
- Luck, M. 2003. Education on marine mammals tours as agent for conservation: but do tourists want to be educated?. *Ocean and Coastal Management,* **46**:943-956.
- Luebke, J. F., & Grajal, A. 2011. Assessing mission-related learning outcomes at zoos and aquaria: Prevalence, barriers, and needs. *Visitor Studies*, **14**(2):195-208.



- LWRD (Lila-Wallace Reader's Digest Fund). 2000. *Service to People: Challenges and Rewards How museums can become more visitor-centered.* http://www.wallacefoundation.org/knowledge-center/Documents/How-Museums-Can-Become-Visitor-Centered.pdf. Downloaded on 10 January 2016
- Lyles, A. M. 2001. Zoos and Zoological Parks. *In* Levin, S. A. (ed.). *Encyclopedia of Biodiversity: Volume 5*, pp. 901-912. Academic Press. San Diego.
- Maineri, T. 1997. Green buying: The influence of environmental concern on consumer behaviour. *The Journal of Social Psychology*, **137**(2):189-204.
- Manfredo, M. J., Driver, B. L. & Tarrant, M. A. 1996. Measuring leisure motivation: a meta-analysis of the Recreation Experience Preference Scales. *Journal of Leisure Research*, **28**(3):188–213.
- Maple, T. & Finlay, T. 1987. Post-occupancy evaluation in the zoo. *Appl. Anim. Behav. Sci.*, **18**:5-18.
- Maresova, J. & Frynta, D. 2007. Noah's Ark is full of common species attractive to humans: The case of boid snakes in zoos. *Ecological Economics*, 64:554–558.
- Maresova, J., Landova, E. & Frynta, D. 2009. What makes some species of milk snakes more attractive to humans than others?. *Theory in Biosciences*, **128**:227–235.
- Martinez-Espineira, R., Garcia-Valinas, M. A., & Nauges, C. 2014. Households' proenvironmental habits and investments in water and energy consumption: Determinants and relationships. *Journal of environmental management*, **133**:174-183.
- Mason, P. 2000. Zoo: The Need for more Research. *Journal of Sustainable Tourism*, **8**(4):333-339.
- Matiasek, J., & Luebke, J. F. 2014. Mission, messages, and measures: Engaging zoo educators in environmental education program evaluation. *Studies in Educational Evaluation*, **41**:77-84.
- Matthews, L. R. & Hemsworth, P. H. 2012. Drivers of change: Law, international markets, and policy. *Animal Frontiers*, **2**(3):40-45.
- Mazur, N., & Clark, T. 2001. Zoos and conservation: Policy making and organizational challenges. *Bulletin Series Yale School of Forestry and Environmental Studies*, **105**:185–201.
- Mazur, N. 1995. Perceptions of zoos' roles in conservation: An ongoing Australasian case study, *Journal of the International Association of Zoo Educators*, **31**:19-21.
- Mbugua, P. 2012. Wildlife Conservation Education. *The George Wright Forum*, **29**(1):59-66.



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- McCrink-Goode, M. 2014. Pollution: A global threat. *Environment international*, **68**:162-170.
- McDonald, R. P. & Ho, M. H. R. 2002. Principles and Practice in Reporting Statistical Equation Analyses, *Psychological Methods*, **7**(1):64-82.
- McGrath, N., Walker, J., Nilsson, D. & Phillips, C. 2013. Public attitudes towards grief in animals. *Animal Welfare*, **22**:33-47.
- McGuire, N. M. 2015. Environmental Education and Behavioral Change: An Identity-Based Environmental Education Model. *International Journal of Environmental & Science Education*, **10**(5):695-715.
- McNeely J., Miller K., Reid W., Mittermeier R. & Werner T. 1990. Conserving the world's biological diversity. The International Union for Conservation of Nature and Natural Resources (The World Conservation Union/IUCN), World Resources Institute, Conservation International, World Wildlife Fund-US & The World Bank, Gland and Washington, DC, pp. 200.
- MEA (Millennium Ecosystem Assessment). 2005. *Ecosystems and Human Wellbeing: Synthesis*. Island Press, Washington, DC.
- Mehta, J. N., & Heinen, J. T. 2001. Does community-based conservation shape favorable attitudes among locals?. An empirical study from Nepal. *Environmental management*, **28**(2):165-177.
- Mennen, F., Beumer, C. & Martens, P. 2016. *The Sustainable Zoo: Mediating the Sustainability message through education in GaiaZOO, Kerkrade.* International Centre for Integrated assessment and Sustainable development, Maastricht University, The Netherlands.
- Milan, L. M. & Wourms, M. K. 1993. The world of birds at the Bronx Zoo/Wildlife Conservation Park: visitor expectations and experiences. *International Zoo Yearbook*, **32**:204-212.
- Miles, J. & Shevlin, M. 1998. Effects of sample size, model specification and factor loadings on the GFI in confirmatory factor analysis, *Personality and Individual Differences*, **25**:85-90.
- Mitchell, G. F. 1991. Conserving biological diversity: A view from the zoo. *Today's Life Sciences*, **3**:10-18.
- Morris, D. 1967. The Naked Ape, McGraw-Hill, New York.
- Moscardo, G & Saltzer, R. 2004. Chapter 9 Understanding Wildlife Tourism Markets. *In* Higginbottom, K. (ed.). *Wildlife Tourism: Impacts, Management and Planning*. pp. 167-186. Common Ground Publishing Pty Ltd, Australia.
- Moscardo, G., Woods, B. & Saltzer, R. 2004. Chapter 12 The Role of Interpretation in Wildlife Tourism. *In* Higginbottom, K. (ed.). *Wildlife Tourism: Impacts, Management and Planning*. pp. 167-186. Common Ground Publishing Pty Ltd, Australia.



- Moss, A. & Esson, M. 2010. Visitor interest in zoo animals and the implications for collection planning and zoo education programmes. *Zoo Biology*, 29(6):715-731.
- Myers Jr, O. E., Saunders, C. D. & Garrett, E. 2003. What do children think animals need? Aesthetic and psycho-social conceptions. *Environmental Education Research*, **9**(3):305-325.
- Nalewajek, M. & Macik, R. 2013. The Role of Social Media in Building Awareness of Responsible Consumption. Active Citizenship by Knowledge Management & Innovation: Proceedings of the Management, Knowledge and Learning International Conference 2013. 19-21 June. Zadar, Croatia.
- Neuman, W. L. 2014. The meanings of methodology. *In* Neuman, W. L. (ed.). *Social Research Methods: Qualitative and Quantitative Approaches* 7th *Edition*, pp. 91-124. Pearson Eduaction Ltd., Edinburgh Gate. United States of America.
- Newsome, D., Moore, S. A. & Dowling. R. K. 2002. *Natural Area Tourism: Ecology, Impacts and Management.* Channel View Publications. Clevedon.
- Nimako, S. G. & Bondinuba, F. K. 2013. Relative Importance of Student Accommodation Quality in Higher Education. *Current Research Journal of Social Sciences*, 5(4):134-142.
- O'Bryhim, J. 2009. *Public knowledge, attitudes, and behavior towards sharks and shark conservation.* Virgnia: George Mason University. (Unpublished).
- Okello, M. M., Manka, S. G. & D'Amour, D. E. 2008. The relative importance of large mammal species for tourism in Amboseli National Park, Kenya. *Tourism Management*, **29**(4):751-760.
- Ormandy, E. H. & Schuppli, C. A. 2014. Public attitudes toward animal research: a review. *Animals*, **4**(3):391-408.
- Packer, J. & Ballantyne, R. 2002. Motivational factors and the visitor experiences: A Comparison of three sites. *Curator*, **45**(3):183-198.
- Packer, J. & Ballantyne, R. 2010. The role of zoos and aquariums in education for a sustainable future. *New Directions for Adult and Continuing Education*, **2010**(127):25-34.
- Packer, J. 2006. Learning for Fun: The Unique Contribution of Educational Leisure Experiences. *Curator*, **49**(3): 29-344.
- Page, S. J. 2011. Chapter 6 Accommodation and hospitality services. *In* Page, S. J. (ed.). *Tourism Management 4th Edition*, pp. 151-179. Elsevier Ltd. Spain.
- Page, S. J. 2011. Further web Reading 1 The supply of tourism. *In* Page, S. J. (ed.). Tourism *Management* 4th *Edition*, pp. e1-e23. Elsevier Ltd. Spain.
- Pascu, E. 2012. Tourism Infrastructure-a Factor which Influences the Quality of Tourism Services. *Romanian Statistical Review Supplement*, **60**(4):264-269.



- Patrick, P. G., & Tunnicliffe, S. D. 2012. *Zoo talk*. Springer Science & Business Media.
- Patrick, P., Matthews, C., Ayers, D., & Tunnicliffe, S. 2007. Conservation and education: Prominent themes in mission zoo mission statements?. *Journal of Environmental Education*, **38**(3):53–60.
- Patrick, P., Matthews, C., Tunnicliffe, S., & Ayers, D. 2007. Mission statements of AZA accredited zoos: Do they say what we think they say?, *International Zoo News*, **54**(2):90–98.
- Pattison, S. A. & Dierking, D. 2012. Exploring Staff Facilitation that Supports Family Learning. *Journal of Museum Education*, **37**(3):69-80.
- Parker, M. 2014. Conservation Connections Matter!. *IZE Journal*, **50**:6-10.
- Payne, J., Francis, C.M. & Phillipps, K. 1985. *A Field Guide to the Mammals of Borneo*. The Sabah Society, Kota Kinabalu, Malaysia.
- Pearce, D. G. & Wilson, P. M. 1995. Wildlife-viewing tourists in New Zealand. *Journal of Travel Research*, **34**(2): 19-26.
- Pearson, E. L., Lowry, R., Dorrian, J., & Litchfield, C. A. 2014. Evaluating the conservation impact of an innovative zoo-based educational campaign: 'Don't Palm Us Off' for orang-utan conservation. *Zoo biology*, **33**(3):184-196.
- Pekarik, A. J. 2004. Eye-to-eye with animals and ourselves. *Curator*, **47**:257–60.
- Pickens, J. 2005. Chapter 3 Attitudes and Perceptions. *In* Borkowski, N. (ed.). *Organizational Behavior in Health Care.* pp. 43-76. Jones and Bartlett Publishers, Sudbury. Massachusetts.
- Pooley, J. A. 2000. Environmental education and attitudes: emotions and beliefs are what is needed. *Environmental Behaviour*, **32**:711-723.
- Pough, F. H., Janis, C. M., & Heiser, J. B. 2013. *Vertebrate Life 9th Edition*. Pearson Education Inc. United States of America.
- 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.
- Powell, R. B. & Ham, S. H. 2008. Can ecotourism interpretation really lead to proconservation, knowledge, attitudes and behavior?. Evidence from the Galapagos Islands. *Journal of Sustainable Tourism*, **16**(4):467-489.
- Prokop, P., Medina-Jerez, W., Coleman, J., Fancovicova, J., Ozel, M. & Fedor, P. 2016. Tolerance of frogs among high school students: Influences of disgust and culture. *Eurasia Journal of Mathematics, Science & Technology Education*, **12**(6):1499-1505.
- Prokop, P., Usak, M. & Fancovicova, J. 2010. Risk of parasite transmission influences perceived vulnerability to disease and perceived danger of disease-relevant animals. *Behavioural Processes*, **85**(1):52-57.



- Puan, C. L. & Zakaria, M. 2007. Perception of visitors towards the role of zoos: A Malaysian perspective. *International Zoo* Yearbook, **41**:226–232.
- Ramados, A. & Poyyamoli, G. 2010. Biodiversity Conservation through Environmental Education for Sustainable Development: A Case Study from Puducherry, India. *International Electronic Journal of Environmental Education*, **1**(2):97-111.
- Randler, C. 2010. Animal related Activities as Determinants of Species Knowledge. *Eurasia Journal of Mathematics, Science and Technology Education,* **6**(4):237-243.
- Randler, C., Ilg, A. & Kern, J. 2005. Cognitive and emotional evaluation of an amphibian conservation program for elementary school students. *The Journal of Environmental Education*, **37** (1): 43-52.
- Randolph, B & Troy, P. 2008. Attitudes to conservation and water consumption. *Environmental Science and Policy*, **2**:441-455.
- Rensenbrink, H. 1981. Education and conservation in zoos: How to create hope in a bad situation. *Journal of the International Zoo Educators Association*, **6**:8–13.
- Reade, L. S. & Waran, N. K. 1996. The modern zoo: How do people perceive zoo animals?. *Applied Animal Behaviour Science*, **47**(1-2):109-118.
- Reid G. McG., Macdonald, A. A., Fidgett, A. L., Hiddinga, B. & Leus K. 2008. Developing the research potential of zoos and aquaria The EAZA Research Strategy. EAZA Executive Office, Amsterdam.
- Reynolds, P. C., & Braithwaite, D. 2001. Towards a conceptual framework for wildlife tourism. *Tourism management*, **22**(1):31-42.
- Rolston, H. 1986. Values and Ethics in Conservation. *In* Dyke, F. V. (ed.). *Conservation Biology: Foundations, Concepts and Applications 2nd Edition*, pp. 29-55. Springer. United States of America.
- Rolston, H. 1988. Human Values and Natural Systems. *Society and Natural Resources*, **1**:271-283.
- Roskraft, E., Handel, B., Bjerke, T., & Kaltenborn, B. P. 2007. Human attitudes toward large carnivores in Norway. *Wildlife Biology*, **13**:172-185.
- Ross, G. F. 2003. Ethical ideals and expectations regarding visitor, staff, and management among potential tourist industry employees. *Tourism* Analysis, 8(2):211-215.
- Ross, S. R. & Gillespie, K. L. 2009. Influences on visitor behavior at a modern immersive zoo exhibit. *Zoo Biology*, **28**(5):462-472.
- Russell, R., Guerry, A. D., Balvanera, P., Gould, R. K., Basurto, X., Chan, K. M. A., Klain, S., Levine, J. & Tam, J. 2013. Humans and Nature: How Knowing and Experiencing Nature Affect Well-Being. *Annu. Rev. Environ. Resour.*, **38**:473-502.



- Saarinen, J. 2006. Traditions of sustainability in tourism studies. *Annals of Tourism Research*, **33**(4): 1121-1140.
- Salzen, E. A. 1998. Emotion and self-awareness. *Applied Animal Behaviour Science*, **57**(3):299-313.
- Sandifer, P. A., Sutton-Grier, A. E., & Ward, B. P. 2015. Exploring connections among nature, biodiversity, ecosystem services, and human health and well-being: Opportunities to enhance health and biodiversity conservation. *Ecosystem Services*, **12**:1-15.
- Screven, C. G. 1996. Visitor-based exhibit planning: A question of survival. *In* Scott,
 C. (ed.). *Evaluation and visitor research in museums towards 2000*,
 Conference Proceedings, Powerhouse Museum, Sydney, Australia. 81-96.
- Seetanah, B., Juwaheer, T. D., Lamport, M. J., Rojid, S., Sannassee, R. V. & Subadar, A. U. 2011. Does Infrastructure Matter In Tourism Development?. University of Mauritius Research Journal, **17**:89-108.
- SERI (Sustainable Europe Research Institute), Global 2000 a Friends of the Earth Europe. 2009. *Overconsumption? Our Use of the World's Natural Resources*. SERI, Vienna.
- Serpell, J. A. 2004. Factors influencing human attitudes to animals and their welfare. *Animal welfare*, **13**(1):145-151.
- Sharma, P. & Choudhary, A. 2015. Learning in Different Educational Settings; Methodological Concerns. *IOSR Journal Of Humanities And Social Sciences*, 20(4):18-25.
- Sharpley, R. 2000. The influence of the accommodation sector on tourism development: lessons from Cyprus. *International Journal of Hospitality Management*, **19**(3):275-293.
- Sharp, R. L., Larson, L. R. & Green, G. T. 2011. Factors influencing public preferences for invasive alien species management. *Biology Conservation*, 144:2097-2104.
- Shaw, A. *Public perception of conservation work by UK zoos.* London: Imperial College London. (Unpublished).
- Shinwary, S. S., Rahman, M. J. & Uddin, M. M. 2009. Zoo as Ecotourism Attraction– Case of Dhaka Zoo. *ASA University Review*, **3**(2):213-226.
- Sinha, C. C. 2001. Wildlife Tourism: A Geographical Prespective. *Paper presented at Geography Curriculum Inservice Conference, Tourism Geography: Issues, Challenges and the Changing Nature of Contemporary Tourism.* University of Western Sydney, Hawkesbury Campus, 27 July.
- Smith, L., Broad, S. & Weiler, B. 2008. A closer examination of the impact of zoo visits on visitor behaviour. *Journal of Sustainable Tourism*, **16**(5):544-562.



- Spence, A., Poortinga, W., Butler, C. & Pidgeon, N. F. 2011. Perceptions of climate change and willingness to save energy related to flood experience. *Nature climate change*, **1**(1):46-49.
- Steg, L. & Vlek, C. 2009. Encouraging Pro-environmental Behaviour: An intergrative review and research agenda. *Journal of Evironmental Psychology*, 29:309-317.
- Stokes, D. L. 2006. Conservators of Experience. *BioScience*, **56**:6–7.
- Stokes, D. L. 2007. Things We Like: Human Preferences among Similar Organisms and Implications for Conservation. *Human Ecology*, **35**(3):361-369.
- Stone, R. A. 1996. Mission statements revisited. *SAM Advanced Management Journal*, **61**(1):31-37.
- Sutton, S. 1998. Predicting and explaining intentions and behaviour: How well are we doing?. *Journal of Applied Social Psychology*, **28**(15):1317–1338.
- Swarbrooke, J. 2002. *The Development and Management of Visitor Attractions, 2nd Edition*. Butterworth Heinemann, Oxford, United Kingdom.
- Sweeney, D. L. 2009. *Learning in human-dolphin interactions at zoological facilities*. San Diego: University of California. (Unpublished).
- Tapachai, N., & Waryszak, R. 2000. An examination of the role of beneficial image in tourist destination selection. *Journal of travel research*, **39**(1):37-44.
- Tarlow, S. 2001. Decoding ethics. *Public Archaeology*, 1:245–259.
- Thomas, C. D., Cameron, A., Green, R. E., Bakkenes, M., Beaumont, L. J., Collingham, Y. C., Erasmus, B. F., De Siqueira, M. F., Grainger, A., Hannah, L. & Hughes, L., 2004. Extinction risk from climate change. *Nature*, 427:145-148.
- Tisdell, C. 1999. *Biodiversity, Conservation and Sustainable Development: Principles and Practices with Asian Examples.* Edward Elgar Publishing Ltd, United Kingdom.
- Tisdell. C. & Wilson, C. 2004. Chapter 8 Economics of Wildlife Tourism. *In* Higginbottom, K. (ed.). *Wildlife Tourism: Impacts, Management and Planning*. pp. 145-166. Common Ground Publishing Pty Ltd, Australia.
- Tisdell. C. & Wilson, C. 2005. Perceived Impacts of Ecotourism on Environmental Learning and Conservation: Turtle Watching as a Case Study. *Environment, Development and Sustainability*, **7**:291-302
- Townsend, M. & Weerasuriya, R. 2010. *Beyond Blue to Green: The Benefits of contact with nature for mental health and well-being*. Beyond Blue Limited: Melbourne, Australia.
- Tremblay, P. 2002 Tourism wildlife icons: Attractions or marketing symbols?. CAUTHE 2002: Tourism and Hospitality on the Edge. *Proceedings of the 2002 CAUTHER Conference*. Lismore, Edith Cowan University Press. 624-638.



- Tribe, A. 2004. Chapter 3 Zoo Tourism. *In* Higginbottom, K. (ed.). *Wildlife Tourism: Impacts, Management and Planning*, pp. 99-124. Common Ground Publishing Pty Ltd, Australia.
- Tunnicliffe, S. 1996. Conversations with primary school parties visiting animal specimens in a museum and zoo. *Journal of Biological Education*, **30**(2):130–141.
- Turley, S. K. 1999. Conservation and tourism in the traditional UK zoo. The Journal of Tourism Studies, **10**(2):2–13.
- Turley, S. K. 2001. Children and demand for recreational experiences: The case of zoos. *Leisure Studies*, **20**(1):1–18.
- Turtureanu, A. G. 2005. Tourism Products Characteristics and Forms. *Œconomica*, **1**:141-157.
- UNDP (United Nations Development Program). 1998. *Human Development Report* 1998. Baltimore, Johns Hopkins University Press.
- UNEP (United Nations Environment Programme). 2005. *Forging links between protected areas and the tourism sector: How tourism can benefit conservation*. http://www.unep.fr/shared/publications/pdf/DTIx0591xPA-ForgingLinks.pdf. Downloaded on 10 January 2016.
- UNESCO (United Nations Educational, Scientific and Cultural Organizations). 2006. *Tourism, Culture and Sustainable Development.* http://unesdoc.unesco.org/images/0014/001475/147578e.pdf. Downloaded on 10 January 2016.
- UNEP (United Nations Environment Programme). 2013. *Green Economy and Trade: Trends, Challenges and Opportunities.* http://www.unep.org/greeneconomy/GreenEconomyandTrade. Downloaded on 5 November 2014.
- Vincenot, C. E., Collazo, A. M., Wallmo, K. & Koyama, L. 2015. Public awareness and perceptual factors in the conservation of elusive species: The case of the endangered Ryukyu flying fox. *Global Ecology and Conservation*, **3**:526-540.
- Wagner, K., Chessler, M., York, P., & Raynor, J. 2009. Development and implementation of an evaluation strategy for measuring conservation outcomes. *Zoo Biology*, 28(5):473-487.
- Wagoner, B. & Jensen, E. 2010. Science Learning at the Zoo: Evaluating Children's Developing Understanding of Animals and their Habitats. *Psychology & Society*, **3**(1):65-76.
- Waiblinger, S., Boivin, X., Pedersen, V., Tosi, M. V., Janczak, A. M., Visser, E. K. & Jones, R. B. 2006. Assessing the human–animal relationship in farmed species: a critical review. *Applied Animal Behaviour Science*, **101**(3):185-242.



- Walpole, M. J., & Goodwin, H. J. 2001. Local attitudes towards conservation and tourism around Komodo National Park, Indonesia. *Environmental conservation*, **28**(2):160-166.
- WAZA (World Associations of Zoos and Aquariums). 2005. Building a future for wildlife. The world zoo and aquarium conservation strategy. http://www.waza.org/conservation/wzacs_htm_versions.php. Downloaded on 12 June 2015.
- WAZA (World Associations of Zoos and Aquariums). 2006. Understanding Animals and Protecting Them – About the World Zoo and Aquarium Conservation Strategy. http://www.waza.org/files/webcontent/1.public_site/5.conservation/conserv ation_strategies/understanding_animals_brochure/Marketing%20brochure.p df. Downloaded on 21 September 2015.
- World Association of Zoos and Aquariums (WAZA). 2011. *Environmental education*. http://www.waza.org/en/site/conservation/environmental-education. Downloaded on 16 September 2015.
- West, C. 2008. Zoos...Catalysts for Conservation in the 21st Century?. *IZE Journal*, **44**:4-5.
- WHO, 2012. Our Planet, Our Health, Our Future. Human Health and the Rio Conventions. Discussion paper. Geneva: World Health Organization. http://www.who.int/globalchange/publications/reports/health_rioconvention s.pdf. Downloaded on 30 October 2014.
- Wicker, A. W. 1969. Attitudes versus Actions: The Relationship of Verbal and Overt Behavioral Responses to Attitude Object. *Journal of Social Issues*, 25(4):41-78.
- Wigner, E. P. 1992. On Becoming a Conservation Biologist: The Things Textbooks Never Tell You. *In* Dyke, F. V. (ed.). *Conservation Biology: Foundations, Concepts and Applications 2nd Edition*, pp. 415-441. Springer. United States of America.
- Wolf, R. L. & Tymitz, B. L. 1981. Studying Visitor Perceptions of Zoo Environments: A Naturalistic View. *International Zoo Yearbook*, **21**(1):49-53.
- Wong, A. 2017. Personal Communication. 28 August.
- WTTC (World Travel & Tourism Council). *Travel & Tourism: The Economic Impact* 2015 Malaysia. https://www.wttc.org. Downloaded on 5 January 2016.
- Vyas, D. M. & Veer, G. C. van der. 2005. Experience as Meaning: Creating, Communicating and Maintaining in Real-Spaces. *Paper presented at Tenth IFIP TC13 International Conference on Human-Computer Interaction*. Rome, Italy, 12-16 September.
- Xin, T. K. & Chan, J. K. L. 2014. Tour operator perspectives on responsible tourism indicators of Kinabalu National Park, Sabah. *Proceedia – Social and Behavioural Sciences*, **144**:25-34.



- Zamfir, A. & Corbos, R. A. 2015. Towards Sustainable Tourism Development in Urban Areas: Case Study on Bucharest as Tourist Destination. *Sustainability*, **7**(9):12709-12722.
- Zeppel, H. & Muloin, S. 2007. Marine wildlife tourism: education and conservation benefits. 5th International Coastal and Marine Tourism Congress: Balancing Marine Tourism Development and Sustainability. *Proceedings of the 5th International Coastal and Marine Tourism Congress*. 11-15 SEP 2007, Auckland, New Zealand.
- Zhang, W., Goodale, E. & Chen, J. 2014. How contact with nature affects children's biophilia, biophobia and conservation attitude in China. *Biological Conservation*, **177**:109-116.
- Zimmermann, A., Hatchwell, M., Dickie, L., & West, C. eds. 2008. *Zoos in the 21st Century – Catalysts for Conservation?.* Cambridge: Cambridge University Press.
- Zimmermann, A., Walpole, M. J., & Leader-Williams, N. 2005. Cattle ranchers' attitudes to conflicts with jaguar Panthera onca in the Pantanal of Brazil. *Oryx*, **39**(4):406-412.
- Zinn, H. C., Manfredo, M. J., Vaske, J. J & Wittmann, K. 1998. Using normative beliefs to determine the acceptability of wildlife management actions. *Soc. Nat. Resour.*, **11**:649-662.

