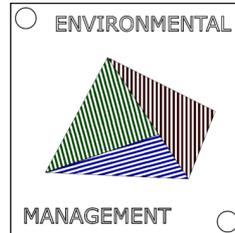


AVITOURISM TO FIGHT CLIMATE CHANGE: A PROPOSAL FOR MOTHER EARTH

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ABSTRACT

This article examines observatory field data to get better understanding about potential bird-watching tourism activities in SzentIstvánUniversity campus area as an educational environment to deal with the climate change risk. The analysis is based on scientific literature, field report observation, and qualitatively analyzed. The data is then presented, literature linked and connected in planning the possibility of avitourism as prospective activities within. From this research, it is known that bird-watching tourism can be a sustainable tool to generate pro-environment awareness and give deeper understanding to visitor the role of bird habitat to mankind.

KEYWORDS: Bird-watching tourism, environment, planning, conservation, climate change

1. Introduction

Climate change has become a challenge for the humankind[1]. In Europe, only 17% of EU-28 respondents stated that they consider their carbon footprint and adjust expenditure according to environmental awareness. European countries whose citizens have different perceptions about efforts to save the earth from the dangers of climate change[2]. So far, the negative effects that have been experienced by mankind regarding climate change are global warming, extreme hot days, extreme cold nights, sea level rise, ruins ecological systems, including increased saltwater intrusion, flooding and damage to infrastructure[3]. Related to these hazard risks, the UN, for example, through UNEP, disseminated the dangers of climate change. The United Nations Environment Program (UNEP) gives attention to six sectors to reduce the impact of climate change: the transition to renewable energy, the industrial sector through increasing energy efficiency. Furthermore, agriculture and Food sector with reducing food loss and waste, forests and land use sector with halts deforestation, improving ecosystems and restore degraded woodlands, transport sector by substantiate electric vehicles, cycle and non-motorized transport, building and cities sector by fitting for a low-carbon age and updating existing infrastructure(unesp.org). There was also a peaceful demonstration movement led by Greta Thunberg by inviting people to take to the streets to voice their concerns with her oration urging students around the world to join the climate strike. Understanding awareness of the dangers of climate change must be started from children and adults. More ever, global citizens must overhaul their production and consumption patterns to avoid the worst damage from climate change and environmental degradation. The use of various assets and activities designed to provide an understanding of the dangers of climate change must be carried out by various parties. In this article, I will propose awareness ideas about the issue of climate change with a tourism movement with the theme of eco-tourism, namely Avitourism or better known as bird-watching tourism. Avitourism is not new term in the tourism industry. However, its optimal use to fight climate change by utilizing the campus vegetation surrounding and avitourism activity is a new idea that can be applied in several campuses in Europe and even global around.

2. Materials and Methods

This research uses qualitative research methods. The data collection and analysis were conducted in the following order: desk research, observation and photography, and interviews. To obtain information, the researchers conducted field observation and email mediated interview to the Gödöllő Botanical Garden resources and green area of the Gödöllő Szent István University. Relevant literature review of previous studies is used to seek rationalizations in the discussion and find various relationships to make diagrammatic modeling. Satellite mode digital maps are used to ascertain the locations of vegetation and field observations are made to prove that trees are correlated with the presence of birds and also look for potential aspects that support Avitourism and ecotourism. The fieldwork was undertaken in several phases, namely in October 2020 to December 2020.

3. Literature Review

Ornithological tourism or Avitourism or Avian tourism, also known as bird watching or birding, is a form of cognitive tourism business which enables the tourist to observe birds in their habitat and simultaneously, with minimal threat to the natural environment and scenic values[4].

Birding or activities related to bird-watching is just one form of ecotourism touted as a conservation tool by many experts[5].

Ecotourism refers to forms of tourism which have characteristics and using :appreciation of nature as well as the traditional cultures prevailing in natural area which contains educational and interpretation features, organized by specialized tour operators for small groups and locally owned businesses, minimizes negative impacts upon the natural and socio-cultural environment, supports the maintenance of natural area[6].

Bird watching tourism as an Ecotourism activity emphasis on local economic, social, and environmental concerns and Like ecotourism as whole, bird-watching is a non-consumptive activity; it is based on existing natural resources and participants' interest in those resources [7].

The local community has been benefitting from bird watching tourism. Furthermore, the local community can provide food, accommodation, and transport services to visitors or work as guides, souvenir makers, and local niche producers. The economic impact also have motivated locals to engage in the long-term monitoring and conservation of birds, making for an efficient conservation strategy[8].

The bird-watching tourism industry has the potential to meet important criteria for social sustainability[9].

The potential to link avitourism and conservation may depend on avitourist attitudes to conservation generally. The birder familiarity with specific conservation interventions will also affect their willingness to support them[10].

According to eBird (ebird.org) which is among the world's largest biodiversity-related science projects organization, Hungary has 389 bird species observed, and Pest province, whereas Szent István University (SZIU) and Gödöllő Botanical Garden located, has 304 species. According to information from the Gödöllő Botani Garden website, there are even Nearly 30 of 75 bird species spawns, and 40 species regularly occur as migratory or for food (botanikus kert.szie.hu). Thus, the Pest province is the second largest after the province Hajdú-Bihar (ebird.org). Furthermore, for the need of visitor's guide, the role of SZIU student and local people become notable. Local people often make the best guides, as they have intimated first-hand experience with the local landscape and wildlife[9].

The involvement of students and local residents will encourage them to become environmental volunteers in the future.

There are 3 categories bird-watching tourist as named Hard Core Birders, Enthusiastic Birders, and Casual Birders (Ecotourists). The Hard Core Birders are full enthusiast visitor, for bird-watching they tend to be solitaire and desire small group size with high comparable experience base. Their intention comes almost entirely from nature observations, or related activities, not from interaction with other birders or locals, they immerse to nature. The other kind are Enthusiastic Birders which more broad-

based nature lovers, are not focused simply on birds and are not too consider with a larger group (up to 15 persons) and peoples of various ability in bird understanding. They Satisfied enough by observing birds and social interactions. This segment also desires a large and diverse bird list to see. The last typical bird-watching visitor are Casual Birders/ Ecotourism tourists. They typically make up the biggest number of visitors to nature destinations. The largest group which are casual birder's Satisfaction notably from the superficial relationship with nature and the sense of discovery associated with it. This group visitor are prefers seeing and visiting areas which commonly easy to access by road and viewing jazzy and emblematic life creatures with minimal effort and extra comfort[11].

This casual birder will be the target of the environmental campaign by avitourism activity against climate change because of their large number in society. However, a deeper strategy and attention is needed related to the behavior of bird-watching tourists so that damage and disturbance to species can be minimized[12].

The involvement of multi-disciplinary experts is needed to design a comprehensive strategy and the campus is a good resource of intellectuality. Bird-watching-based ecotourism requires careful planning, significant investment, and attentive management[7]

The decision of bird-watching enthusiasts to visit their desired destination also needs to be considered since the decisions they make tend to come from books and information related to conservation despite from travel books or travel agents instead[12]. Thus, this became a good asset when we want to instill awareness about the environment and the dangers of climate change with the target of the massive community. Youth education about environmental has been at the center of political discussion issues because the lack of integration of cognitive and affective experiences in climate change in their schools may have a lasting effect on future adult attitudes and behavior, and social dynamics related to distrust and division, all associated with it[13].

4. Results & Discussion

There are many trees, shrubs and vegetation in the SZIU Gödöllő campus area. The vegetation provides habitat for many fauna including birds and squirrels. Next to the vegetation surrounding the campus buildings, there is also a Botanical Garden located within the SzentIstván University Gödöllő campus area. Its name is SZIE Gödöllő Botanikus kert/ Botanical Garden. The garden began to be founded in the experimental area of the university in the autumn of 1959. The Botanical Garden is located in the heart of the campus area of SzentIstván University, occupies a 4,3 hectares site. Almost a dozen of thematic collections and a rare, natural forest community make it also an ideal place for recreation [14].

This garden also functioned as field study area in the framework of various studies of the two faculties of SzentIstván University (Agricultural and Environmental Sciences, Economics) and it also provides space for the research of undergraduate and postgraduate students (botanikus kert.szie.hu). The garden management has also understood the importance of the climate change issue so they mentioned in the guide brochure, and it is occasionally mentioned during guidance with the visitors. According to their visitor records, the average number of registered visitors is 3000 person/year. Based on interviews with the staffs, there are bird-watching activities with flyer facilities containing bird information usually spotted in the area. The flyer map provides information about several birds regarding: where the birds can be found in different seasons (see *Figure 1b*).

In Figure 1a, which is an enlargement of the flyer map, it is informed that grass and shrubs, bark or tree trunk, canopy, bird feeder, and lakes are where the bird spotted. Alongside from the Botanical Garden there are many vegetation, it is also a potential area for the development of a larger lively avitourism activity as an ecotourism based tourism.



Figure 1a,b. Bird-watching Flyer map of Gödöllő Botanical Garden
 Source: own documentation, 2021

The SZIU Gödöllő campus area (blue circle) as shown in Figure 2 has many large trees and undergrowth that are home to various species of birds. The green image shows an area of vegetation that birds frequently encounter.



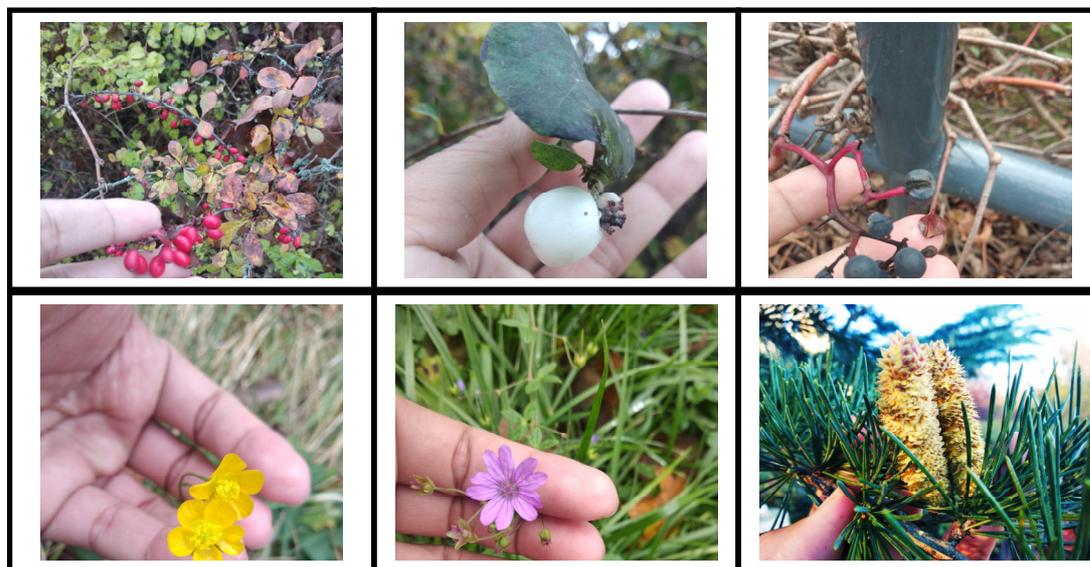
Figure 2. Trees spotted in SZIU campus area
 Source: www.arcgis.com

The green area shown as location where there is a lot of vegetation. Large trees and bushes as habitat for birds and small wildlife such as squirrels are well conserved around the SzentIstván campus as shown in picture 3 below.



*Figure 3. Trees spotted in SZIU campus area(left: autumn, right: winter)
 Source: own documentation, 2020*

There are also many species of vegetation which play a role as an integral part of an ecotourism area. Plants and flowers can be easily found as shown in Figure 4 below.



*Figure 4. Fruits and flowers found on the observation area
 Source: own documentation, 2020*

Observations made in the area found birds of various species as well as squirrel. Establishment of bird watching routes and supporting facilities that are managed with good system will make it up as a good destination for bird-watching tourism. There are several reasons why the SZIU Gödöllő campus area deserves to be created and established as a destination for bird watching tourism activity, namely: it is easy to find various bird species with easy observation because they are

used to seeing humans, the perimeter of the observation area is clear and safe. Godollo Botanical Garden, which has been an inspiration for environmental activities, can be a start and finish route point for bird-watching visitors in a broader area.

More ever,in additional from having intellectual resources, the campus is also a place used as a symbol of life learning center. The campus area has easily accessible by various modes of land transportation. The birds are also easily spotted over short distances with their chirping sound which can easily be heard. Even some birds are not afraid of the presence of researcher less than 5 meters away as shown in Figure 5 below. Of course, the number of observers or visitors will affect bird behavior because of the in excess of the limits of acceptable change (LAC) of visitors.

This LAC stipulates not only a maximum number of visitors for bird-watching observation points, but also a minimal distance to be maintained between visitors and birds[15].



*Figure 5. Observed birds near student dormitory and in the bush near campus main building
 Source: own documentation, 2020*

Furthermore, bird watching activities that need to be prepared are: 1. Observation routes designed for various visitor segments. The routes for Hard Core Birders, Enthusiastic Birders, and Casual Birders (Ecotourists) must be distinguished because it will be related to their interest and experience in enjoying the bird-watching area 2. Observation spots with open and camouflage hut, 3. Information boards about birds which often appear in certain spots (see aluminum printed board model as shown in *Figure 6* from Muriwai Beach, New Zealand) 4.

Create stories telling local legends about the relationship between birds and nature visa a versa if available. 5. Souvenirs and cafés with natural vibes. 6. Collaborating with bird lovers associations throughout Europe and with the Euro Bird Census Council (EBCC). 7.

Create seasonal events according to the stopover time for certain bird species in the campus area



Figure 6. Muriwai Gannet Bird Colony Information Board, Auckland
 Source: own documentation, 2018

The activity that will be prepared is aimed at providing a comprehensive experience of the ecosystem story by studying birds and their environment as an environmental education. Environmental Education is one of the most effective strategies for increasing the general level of public environmental awareness, developing skills for solving environmental problems and maintaining and improving the quality of life and the environment [16].

This concept takes visitors from small environmental understanding to awareness of the wider environment, namely the human environment with its spheres. More over, build an understanding about human environment with natural surroundings and then finally human environment with mother earth. By analyzing and understanding the components and relationships of the environment as an “eco-socio-system”, people can gain a global understanding of environmental realities and thus have the necessary inputs for judicious decision-making [17].

Thus, it can be said that bird-watching tourism is a structured environmental educational program that will induce and empower visitor understanding regarding the environment which will help increase their pro-environmental attitude and pro-environmental behavior [18].

The concept can be illustrated in the diagram below.

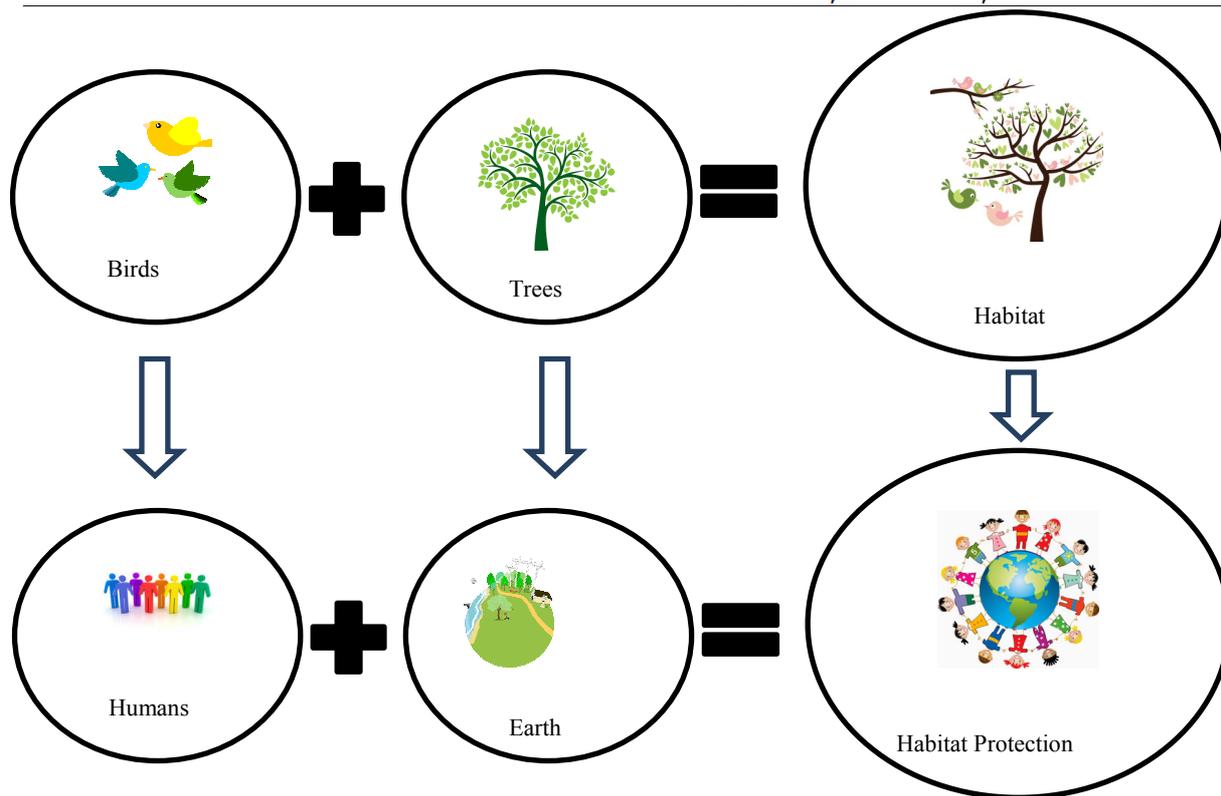


Figure 7 Associating Avitourism contents to pro-environmental consciousness
 Source: researcher, 2020

The diagram will also allow many disciplines to collaborate in further developing and refining the technique in its many forms and for various functions[19]. From the diagram above, it is explained that environmental awareness arising from avitourism activities will create concern for the preservation of the earth. Visitors will get an understanding that bird as a life creature entity need trees to support their life as well. Trees and vegetation become as a house with a nest and as a food provider with fruit or seeds produced by them. Thus, as an environmental education activity, bird-watching tourism has the potential to generate ideas that associate birds with human life. It is believed that the values brought by visitors from conducting bird-watching tourism activities will influence their views on a more macro scale, namely the human sphere, not only the bird life sphere. Birds and humans alike need habitat and a good environment as well. Awareness of protecting habitat illustrates that pro-environmental attitude and pro-environmental behavior will slow down damage to the earth, which means preventing the occurrence of the destructive climate change effect.

5. Conclusions

Avitourism provides more benefits not only for the local economy but also for environmental sustainability. The challenge of dealing with climate change risks has become the agenda of the global community. Ecotourism through avitourism activities initiated by campuses that have good environmental assets has the potential to become an environmental education proposal. Campuses or areas that have a lot of vegetation and tend to be inhabited by birds and wildlife will have the potential to become centers for environmental awareness learning. Its accessible location is advantageous for the casual birder visitor and opens up opportunities to bring people from varies background of community to learn and understand nature and push them into pro-environment supporter. Route engineering and the addition of tourism support facilities are important so that the environmentally total experience becomes the value that visitors will bring home. These pro-environmental values by

kind of tourism will become part of people's thinking about the importance of protecting the earth and reducing the impact of climate change.

6. Further research

In the future, more comprehensive research and data collection is needed on plant and animal assets in the SZIU campus area related to ecotourism. The population and species present must be known so that changes can be monitored time over time as well. Research on the behavior patterns of casual ecotourism visitors' activities towards their understanding of the dangers of climate change is also needed because they are the largest part of society and influence the environment globally.

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7. References

- [1] Zwicker M V., Nohlen H U, Dalege J, Gruter G J M and van Harreveld F 2020 Applying an attitude network approach to consumer behaviour towards plastic *J. Environ. Psychol.* **69** 101433
- [2] Jakučionytė-Skodienė M and Liobikienė G 2020 Climate change concern, personal responsibility and actions related to climate change mitigation in EU countries: cross-cultural analysis *J. Clean. Prod.* **281** 125189
- [3] IPCC 2018 *IPCC Special Report on the impacts of global warming of 1.5°C* (Intergovernmental Panel on Climate Change)
- [4] Szczepańska M, Krzyżaniak M, Świerk D, Walerzak M and Urbański P 2014 Birdwatching as a Potential Factor in the Development of Tourism and Recreation in the Region *Barom. Reg.* **12**
- [5] Kerlinger P 1993 Birding economics and birder demographics studies as conservation tools *Status Manag. Neotrop. Migr. birds Sept. 21-25, 1992, Estes Park. Color. Gen. Tech. Rep. RM-229* 32–8
- [6] UNWTO 2002 Ecotourism and Protected areas *UNWTO*
- [7] Glowinski S L 2008 BIRD-WATCHING, ECOTOURISM, AND ECONOMIC DEVELOPMENT: A REVIEW OF THE EVIDENCE *Appl. Res. Econ. Dev.* **5** 65–77
- [8] Shaoliang Y 2017 *Bird Watching Tourism in Gaoligongshan National Nature Reserve, China* (Kathmandu)
- [9] Ocampo-Peñuela N and Winton R S 2017 Economic and Conservation Potential of Bird-Watching Tourism in Postconflict Colombia *Trop. Conserv. Sci.* **10** 1–6
- [10] Steven R 2015 *The Relationship Between Birders, Avitourism and Avian Conservation* (Griffith University)
- [11] CREST 2017 *Market Analysis of Bird-Based Tourism: A Focus on the U.S. Market to Latin America and the Caribbean Including Fact Sheets on The Bahamas, Belize, Guatemala, Paraguay*
- [12] Green R J and Jones D N 2010 *Practices, Needs and Attitudes of Bird-Watching Tourists In Australia* (Queensland: CRC for Sustainable Tourism Pty Ltd)
- [13] Jones C A and Davison A 2020 Disempowering emotions: The role of educational experiences in social responses to climate change *Geoforum* **IN PRESS**
- [14] Szirmai O, Horel J, Pándi I, Czóbel S, Neményi A and Gyuricza C 2014 Overview of the collections of the first agrobotanical garden of Hungary *Hungarian Agric. Res.* **4** 19–25
- [15] Collins-Kreiner N, Malkinson D, Labinger Z and Shtainvarz R 2013 Are birders good for birds? Bird conservation through tourism management in the Hula Valley, Israel *Tour. Manag.* **38** 31–42
- [16] IGES 2001 *Report of the First Phase Strategic Research <Environmental Education Project>*

- (Kanagawa)
- [17] Sauvé L 2002 Environmental education: possibilities and constraints **XXVII**
- [18] Yorkovsky Y and Zysberg L 2020 Personal, Social, Environmental: Future Orientation and Attitudes Mediate the Associations between Locus of Control and Pro-environmental Behavior *Athens J. Soc. Sci.* **7** 1–18
- [19] Umoquit M, Tso P, Varga-Atkins T, O'Brien M and Wheeldon J 2013 Diagrammatic elicitation: Defining the use of diagrams in data collection *Qual. Rep.* **18** 1–12
- <https://www.unep.org/interactive/six-sector-solution-climate-change/> retrieved December 26, 2020
- <https://ebird.org/region/HU/regions?yr=all&m=>retrieved December 27, 2020
- <https://www.arcgis.com/home/webmap/viewer.html?useExisting=1>retrieved December 28, 2020
- <http://botanikuskert.szie.hu/botanikus-kert-madarvilagaretrieved> January 4, 2021
- <http://botanikuskert.szie.hu/botanikus-kert/oktatas-kutatasretrieved> January 4, 2021

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