Bird Watching as a Recreation and Nature Activity in Baguio City and Nearby Municipalities of Benguet Province Philippines: A Conservation Effort

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ABSTRACT---- ***The paper aimed to report the byproduct of bird watching as a recreation and nature activity in Baguio City and the nearby municipalities of Benguet province. It looked into the degree of acceptance of bird watching as a recreational activity among the participants and the level of awareness on the existence of different avian species found in the area. First, it was introduced as a Physical Education course in the University of the Philippines Baguio in the summer term of school year 2013-2014 wherein eighteen students were introduced to bird watching as a recreational activity. It provided students a venue to encounter the different avian species found in the area which led to awareness on the wide variety of bird species both migratory and endemic. Second, photo exhibits of the birds found in the area were held twice. Third, photo sharing through social media and lastly, informal dialogues were conducted among the local residents. These endeavors have resulted to the proliferation of information on the different avian species found in Baguio City and nearby municipalities of Benguet thus creating a wider awareness and appreciation on the benefits of bird watching in the community. Also, when this endeavor began a year ago, no private and public agencies in Baguio city and Benguet province were able to provide a specific bird list in print in the area of consideration. After a year of thorough documentation, It yielded ninety(90) bird species found in Baguio City and the nearby municipalities of Benguet Province wherein 26 of which are endemic, 39 resident, 23 migrant and Migrant/Accidental are 2 as of this date.***

Keywords--- Physical Education, appreciation, awareness, acceptance

1. INTRODUCTION

Birds are one of the most heavily populated life forms on the planet, and that biodiversity have led to a richness of life and beauty (Mayntz M. 2014). The incredible number of bird species demonstrates amazing evolutionary adaptations and through proper education on the characteristics and behaviour of birds, this can provide people some of the most important information regarding the contributions of birds.

Most Philippine birds fall into about 250 genera, which in turn belong to about 73 families, included in 19 orders. (Rabor D.1977). Birdlife International has divided the Philippines into nine endemic bird areas where two or more restricted species of landbirds are confined while a restricted landbird is defined as species with breeding range of less than 50,000 km² (Phil. Biodiversity,1997), in which one of those is the Luzon Mountains. At present, bird watching as a major component in wildlife tourism is one of the rapidly growing past times in the western world. Nature tourism is one of the fastest growing sectors of the global tourism industry which grew from 4% per annum to 20-30% (Birdlife International, 2007). In the Philippines, there are almost 600 (+) species in which 33% is endemic (Haribon, 2014). Many species and/ or subspecies are facing extinction due to the disappearance of forest on many islands in the Philippines.

Resident birds are those that lived their entire life cycle in this country. Other residents endemic to the Philippines are confined to the geographical limits of the country and are not found outside of it. But some of it belong to species or sub species of wide distribution and may therefore be found also in other lands outside the geographical limits of the Philippines.

Baguio City is known as the summer capital of the Philippines owing to its cold climate. It is an urban area situated in a hilly region of the Cordilleras where both commercial and human settlements are highly visible. Benguet is a province with thirteen (13) municipalities with La Trinidad as its capital. It is also known for its mountainous terrains and vegetable

production. Out of the many bird documentations done in the Philippines, there are still no in-depth bird listing done in the area of Baguio City and Benguet province.

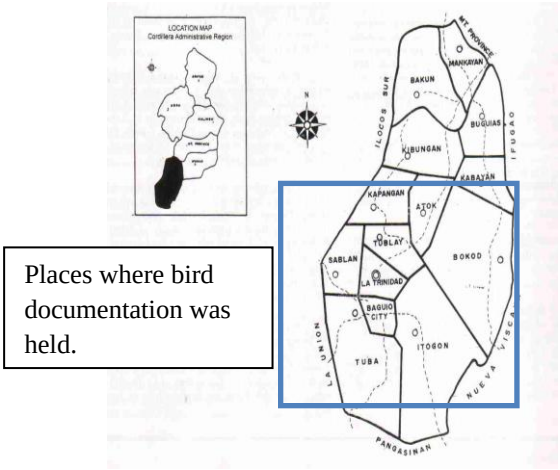
Recreation is one area of study of Physical Education where people engage in during their free time, enjoy and recognize as having socially redeeming values. It has a connotation of being morally acceptable not just to the individual but also to society as a whole. Thus it is programmed for those activities within that context (Hurd and Anderson, 2015) People also see recreation as a social instrument because of its contribution to society. That is, professionals have long used recreation programs and services to produce socially desirable outcomes such as the wise use of free time, physical fitness and positive youth development. The organized development of recreation programs to meet a variety of physical, psychological, and social needs has led to recreation playing a role as a social instrument for well-being. Bird watching as a recreation has long been a major component in wildlife tourism and is one of the rapidly growing past times in the western world (Buckley and Jones, 2014). In the Philippines, bird watching started with a few manila-based enthusiast way back in 1972 (Haribon Foundation, 2012). At present, it is slowly picking up as compared to other countries hence the Philippines now is already recognized as one of the top bird sites in the world by web sources and bird guide books. There are also national organizations which specifically deal with birds focusing on eco-tourism and conservation.

2. METHODOLOGY

The study employed the descriptive analysis design where it aimed to gain information by being involved in the interaction. This is to find out the degree of acceptance of bird watching as a recreational activity and to measure the level of awareness on the existence of different avian species found in the area. Interviews and documentary analysis were employed to gather qualitative data.

In analyzing the data, respondents were asked in such a manner that the degree of acceptance of the course as a recreational activity was determined and why? The verbatim comments were grouped according to the objectives of Physical Education such as: Physical aspect, Social aspect, Emotional aspect and Mental aspect. For example, if the response is: They enjoy being with their classmates, it will be grouped in the social aspect. If the respondents like it because they develop their observational skill, then it will be grouped in the mental aspect. The Physical aspect pertains to answers such as developing their physical body while emotional aspect relates to answers on behaviors and character building. For the level of awareness, the respondents were interviewed and solicited of their comments.

Per consultation by the author with concerned government agencies in Baguio, there were no available bird lists in print or related document. As an initial documentation of the bird species, the author and other bird enthusiasts (visiting birders from outside Baguio and Benguet) have taken the initiative to contribute and make an initial bird listing through bird photography in the area.



Adapted from: http://www.cordiwebs.com/co/index.php
Figure 1: Map of Benguet Province

The bird watching/ photography activity and documentation of data was held in Baguio City and in the nearby municipalities of Benguet. In Baguio City, bird watching was specifically held at UP Baguio campus, Camp John Hay (Eco trail and Yellow trail) and Loakan area while the nearby municipalities of Benguet were in La Trinidad (Long Long, Wangal,

Bahong), Itogon (Sangilo, Balatoc, Tinongdan, Acupan, Virac, Ucab), Tuba (Tadiangan, Asin and Nangalisan, Sto. Tomas, Cabuyao), Tublay, Sablan and Bokod (Ambuklao).

3. PROCEDURE

The organization of the paper started in April of 2014. Bird watching was introduced as a course in Physical Education under the Human Kinetics Program, University of the Philippines Baguio in the summer term of the School Year 2013-2014. There were eighteen (18) students enrolled in the course. A total of thirty six (36) hours was completed by the student participants. The first day of activity in bird watching was held in Camp John Hay Eco trail which was completed in six hour duration. Student participants were instructed to practice their observational skills while stationed in particular areas of the site. The next session was held in Tadiangan, Tuba, Benguet wherein the student participants together with the author were mobile all throughout the bird watching activity and stopping when a bird was spotted. The remaining hours of the course were spent in Asin and Nangalisan, Tuba, Benguet consuming the whole afternoon and early in the morning the following day spotting for birds. The time of the day was taken into consideration, as it was the period when the birds were highly active, i.e. 1500H and 0600H. The location chosen for the visit by the group was initially explored by the author to check whether birds are found in the area. As a requirement of the course, students must maintain a journal containing their personal bird list, description of the birds and date and location where they sighted the birds. They were also asked to write their personal perceptions about the activities performed.

The author as a hobbyist and teacher of bird watching voluntarily joined bird photography exhibits as part of the conservation advocacy and awareness campaign of different agencies promoting the cause. The first photo exhibit was held at Maryknoll Ecological Sanctuary while the second was in UP Baguio. These exhibits served as venues where comments of the participants were gathered as well as record the number of participants who were made aware of the existence of various avian species in Baguio and the nearby municipalities of Benguet.

Third, bird photos were uploaded in social media for identification purposes, soliciting comments and creating awareness that Baguio City and Benguet are hosts to various bird species.

Lastly, the residents of communities visited for bird watching were given informal presentations of the birds found in their locality. Different bird photographs taken by the author was shown to the residents and had informal discussion about birds and their contribution. Likewise, comments were solicited among the locals.

4. RESULTS AND DISCUSSION

4.1 Degree of acceptance of bird watching as a recreational activity

Among the student participants

At the beginning of the course, the students were asked what motivated them to enroll the subject. Among the top three reasons were: They do not know what bird watching is all about; they have no other choice since it is the only subject available; and lastly, solely out of curiosity. At the end of the course, all of the student participants favorably endorsed bird watching as a very worthwhile recreational activity. The highest ranked objective was *emotional aspect* (38.89%). Their comments were: They feel excited whenever they see a 'new bird' and they feel relaxed when they hear the birds. The second ranked objective was *social aspect* (27.78%). Their reason is that it is an opportunity to be with their friends. Third (22.22%) was *Mental aspect* as manifested in their learning the ability to focus and memorize the names of the birds found in the area. Last is physical aspect (11.11%) since they like the walking/ hiking part of bird watching as a physical fitness activity.

4.2 Degree of awareness about the avian species found in Baguio City and the nearby municipalities of Benguet province.

Participants of the Bird Photo Exhibit

An estimated 100 participants attended the first presentation of the bird photo exhibit where a symposium was also held in support to the awareness campaign. Based on interview, most of the participants were not aware of the various species found/exhibited. Twenty (20) of the respondents revealed that they only knew two of its kind, the Crow (uwak) and the Eurasian tree sparrow (common brown house bird). But after the presentation, they became aware that such avian species are found in the area. The second presentation of the bird photo exhibit was held at UP Baguio. There were seventy seven (77) who participated and articulated favorable comments about the exhibit. One hundred (100) percent made positive comments about the bird photographs and received verbatim comments such as "Magnificent! I never knew how vast bird species may

be found in Benguet", "Stunning pictures. I never knew that there were such beautiful birds in Baguio and Benguet", among others were solicited.

Uploads in Social Media

The power of social media has led to a nationwide proliferation of information about bird species found in Baguio and the nearby municipalities of Benguet. The discovery/ sighting by the author of the very elusive Red Crossbill and the threatened endemic Mountain Shrike has led twenty three (23) national professional bird photographers to come up to Baguio and successfully photograph the said bird species. With every upload of a rare or elusive bird in the web account, the "likes" ranges from 100 to 170 which is a manifestation of awareness on their part. With the author serving as guide, other bird enthusiasts are continuously signifying to come to Baguio to see the avian species found in the area.

Mountain Shrike


Red Crossbill

Figure 2: Part of the bird photos uploaded in social media

Local Residents

Through the informal consultations and discussions with the residents in the area regarding the avian species that are found in their locality, there were equally positive replies except for two participants in the area of Mt. Sto Tomas who answered negatively. Eighty (80) percent of the respondents made positive comments about the birds. Their comments were: "they like the presence of the birds because it gets rid of worms in their vegetable produce and drive away the rats that eat their root crops." Twenty (20) percent perceived negatively. This is due to the reason that birds destroy their vegetable product.

In Wangal, La Trinidad Benguet, the residents were made aware of the existence of various bird species in the area. For a time, according to the respondent, all they knew is the brown bird that makes a shirking sound (Brown shrike) and the common brown house bird (Eurasian Tree Sparrow). After the author made an in-depth documentation of the avian species found in the place, there were almost 20-30 different species found in the area.

4.3 List of Bird Found in Baguio City and the Nearby Municipalities of Benguet

After a year (March 2014- March 2015) of bird documentation in Baguio City and Nearby Municipalities of Benguet, there are ninety (90) bird species found in Baguio City and the nearby municipalities of Benguet Province wherein twenty six (26) of which are endemic, thirty nine(39) resident , twenty three (23) migrant and Migrant/Accidental (2) as of this date.

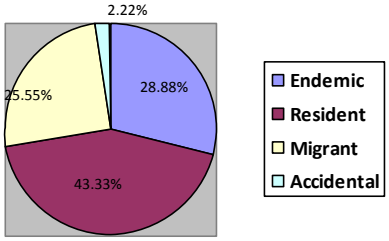


Figure3 : Percentage of Endemism

Table 1: List of avian species found in Baguio and the nearby municipalities of Benguet province

Common Name	Scientific Name	*Key to Range*
PASSERIFORMES: Laniidae		
1. Brown Shrike	*Laniuscristatus*	*Migrant*
2. Long-tailed Shrike	*Laniusschach*	*Resident*
3. Gray-capped Shrike/ Mountain Shrike	*Laniusvalidirostris*	*Endemic Near-threatened*
PASSERIFORMES: Muscicapidae		
4. Pied Bushchat	*Saxicolacaprata*	*Resident*
5. Blue Rock-Thrush	*Monticolasolitarius*	*Migrant*
6. Ferruginous Flycatcher	*Muscicapaferruginea*	*Migrant*
7. Gray-streaked Flycatcher	*Muscicapagriseisticta*	*Migrant*
8. Blue-and-white Flycatcher	*Cyanoptilacyanomelana*	*Migrant/accidental*
9. Little Pied Flycatcher	*Ficedulawestermanni*	*Resident*
10. Siberian Rubythroat	*Calliope calliope*	*Migrant*
11. Narcissus Flycatcher	*Ficedulanarcissina*	*Migrant*
12. Mugimaki Flycatcher	*Ficedulamugimaki*	*Migrant*
13. Dark-sided Flycatcher	*Muscicapasibirica*	*Migrant*
14. White-browed Shortwing	Brachypteryxmontana	*Resident*
15. Snowy-browed Flycatcher	*Ficedulahyperythra*	*Resident*
PASSERIFORMES: Locustellidae		
16. Tawny Grassbird	*Megalurustimoriensis*	*Resident*
17. Striated Grassbird	*Megaluruspalustris*	*Resident*
18. Long-tailed Bush-Warbler	*Locustellacaudata*	*Endemic*
PASSERIFORMES: Cettiidae		
19. Philippine (Luzon) Bush-Warbler	*Horornisseebohmi*	*Endemic*
20. Mountain Tailorbird	*Phyllergatescucullatus*	*Resident*
PASSERIFORMES: Phylloscopidae		
21. Arctic Warbler	*Phylloscopus borealis*	*Migrant*
22. Lemon-throated Warbler	*Phylloscopuscebuensis*	*Endemic*
23. Mountain Warbler	*Phylloscopustrivirgatus*	*Resident*
PASSERIFORMES: Zosteropidae		
24. Everett's White-eye	*Zosteropseveretti*	*Resident*
25. Yellowish White-eye	*Zosteropsnigrorum*	*Endemic*
26. Mountain White-eye	*Zosteropsmontanus*	*Resident*
27. Chestnut-faced Babbler	*Zosterorniswhiteheadi*	*Endemic*
PASSERIFORMES: Motacillidae		
28. Grey Wagtail	*Motacillacinerea*	*Migrant*
29. Olive-backed Pipit	*Anthushodgsoni*	*Migrant*
30. Paddy field pipit /oriental pipit	Anthusrufulus	*Migrant*
CORACIIFORMES: Alcedinidae		
31. Common Kingfisher	*Alcedoatthis*	*Migrant*
32. Indigo-banded Kingfisher	*Ceyxcyanopectus*	*Endemic*
33. White throated kingfisher	Halcyon smyrnensis	*Resident*
CORACIIFORMES: Meropidae		
34. Blue-tailed Bee-eater	*Meropsphilippinus*	*Resident*
PICIFORMES: Picidae		
35. Philippine pygmy Woodpecker	*Dendrocoposmaculatus*	*Endemic*
36. Luzon Flameback	*Chrysocolapteshaematribon*	*Endemic*
PASSERIFORMES: Artamidae		
37. White-breasted Woodswallow	*Artamusleucorynchus*	*Migrant*
PASSERIFORMES: Hirundinidae		

38. Barn Swallow	*Hirundorustica*	*Migrant*
39. Pacific Swallow	*Hirundotahitica*	*Migrant*
40. Striated Swallow	*Cecropisstriolata*	*Resident*
APODIFORMES: Hemiprocnidae		
41. Whiskered Treeswift	*Hemiprocnecomata*	*Resident*
GRUIFORMES: Rallidae		
42. Barred Rail	*Gallirallustorquatus*	*Resident*
43. Plain Bush-hen	*Amaurornisolivacea*	*Endemic*
44. White-breasted Waterhen	*Amaurornisphoenicurus*	*Resident*
PASSERIFORMES: Monarchidae		
45. Black-naped Monarch	*Hypothymisazurea*	*Resident*
PASSERIFORMES: Corvidae		
46. Large-billed Crow	*Corvusmacrorhynchos*	*Resident*
PASSERIFORMES: Rhipiduridae		
47. Blue-headed Fantail	*Rhipiduracyaniceps*	*Endemic*
48. Mountain Verditer-Flycatcher	Eumyiaspanayensis	*Resident*
ACCIPITRIFORMES: Accipitridae		
49. Philippine Serpent-Eagle	*Spilornisholospilus*	*Endemic*
50. Brahminy Kite	*Haliasturindus*	*Resident*
51. Common Buzzard	*Buteobuteo*	*Migrant*
52. Besra	Accipiter virgatus	*Resident*
FALCONIFORMES: Falconidae		
53. Peregrine Falcon	*Falco peregrinus*	*Migrant*
54. Grass Owl	Tytocapensis	*Resident*
PASSERIFORMES: Estrildidae		
55. Scaly-breasted Munia	*Lonchurapunctulata*	*Resident*
56. White-bellied Munia	*Lonchuraleucogastra*	*Resident*
57. Chestnut Munia	*Lonchuraatricapilla*	*Resident*
58. Tawny-breasted Parrotfinch	*Erythrurahyperythra*	*Resident*
PASSERIFORMES: Passeridae		
59. Eurasian Tree Sparrow	*Passer montanus*	*Resident*
CUCULIFORMES: Cuculidae		
60. Philippine Coucal	*Centropusviridis*	*Endemic*
61. Scale-feathered Malkoha	*Phaenicophaeuscumingi*	*Endemic*
62. Brush(rusty breasted) Cuckoo	*Cacomantisvariolosus*	*Resident*
63. Red-crested Malkoha	*Phaenicophaeussuperciliosus*	*Endemic*
PASSERIFORMES: Stenostiridae		
64. Citrine Canary-Flycatcher	*Culicicapahelianthea*	*Resident*
PASSERIFORMES: Dicaeidae		
65. Orange-bellied Flowerpecker	*Dicaeumtrigonostigma*	*Resident*
66. Pygmy Flowerpecker	Dicaeumpygmaeum	*Endemic*
67. Fire-breasted Flowerpecker	*Dicaeumignipectus*	*Resident*
68. Red-keeled Flowerpecker	*Dicaeumhaematostictum*	*Endemic Vulnerable*
PASSERIFORMES: Pachycephalidae		
69. Green-backed Whistler	*Pachycephalaalbiventris*	*Endemic*
PASSERIFORMES: Sittidae		
70. Sulphur-billed Nuthatch	*Sittaoenochlamys*	*Endemic*
PELECANIFORMES: Ardeidae		
71. Cattle Egret	*Bubulcus ibis*	*Resident*
72. Little Egret	*Egrettagarzetta*	*Migratory*
73. Little Heron	*Butorides striatus*	*Migratory*
74. Cinnamon Bittern	*Ixobrychuscinnamomeus*	*Resident*
PASSERIFORMES: Nectariniidae		

75. Olive-backed Sunbird	*Cinnyrisjugularis*	*Migratory*
76. Handsome Sunbird	*Aethopygabella*	*Endemic*
77. Luzon Sunbird	Aethopygapulcherrima	*Endemic*
PASSERIFORMES: Paridae		
78. Elegant Tit	*Periparuselegans*	*Endemic*
COLUMBIFORMES: Columbidae		
79. Emerald Dove	*Chalcophapsindica*	*Resident*
80. White-eared Dove	*Phapitreronleucotis*	*Endemic*
81. Philippine Cuckoo-Dove	*Macropygiatenuirostris*	*Endemic*
PASSERIFORMES: Pycnonotidae		
82. Yellow-vented Bulbul	*Pycnonotusgoiavier*	*Resident*
83. Philippine Bulbul	*Hypsipetesphilippinus*	*Endemic*
PASSERIFORMES: Turdidae		
84. Island Thrush	*Turduspoliocephalus*	*Resident*
85. Eye browed Thrush	*Turdusobscurus*	*Migrant*
86. Brown-headed Thrush	*Turduschrysolaus*	*Migratory*
PASSERIFORMES: Sturnidae		
87. Crested Myna	*Acridotherescristatellus*	*Resident (Introduced Specie)*
PASSERIFORMES: Fringillidae		
88. Red Crossbill	*Loxiacurvirostra*	*Resident*
PASSERIFORMES: Sittidae		
89. Sulphur-billed Nuthatch	*Sittaoenochlamys*	*Endemic*
90. Philippine Hanging parrot	*Loriculus philippinensis*	*Endemic*

5. CONCLUSION

The initial introduction of bird watching as a Physical Education course has led to the very high degree of acceptance as a recreational activity. Students learned to understand and accept the benefits of bird watching in their emotional, social, intellectual and physical aspect of development.

Bird photo exhibits are found as a very important venue to create a very high level of awareness on the presence of birds in the areas of Baguio City and the nearby municipalities of Benguet. The positive comments of respondents manifested that through information campaigns, there will be a wider awareness on the presence as well as the importance of various bird species.

Utilizing social media as a tool to proliferate the information on the presence of bird in the area is found to be very effective and as evidence, the visit of bird enthusiasts in Baguio City continues to flow.

Having discussions among the local residents in the area where a particular bird species can be found is a magnifying tool to conserve the birds and could lead to its preservation.

The bird list that was presented in the paper shows a promising lead to the many bird species found in the area of Baguio City and the nearby municipalities of Benguet.

6. RECOMMENDATIONS

The offering of Bird Watching as a Physical Education course shall be a continuing program and support of the University and is highly encouraged as this has elicited favorable results where the participants in the activity found it very beneficial in their total development.

An in-depth study on the level of acceptance of bird watching among students and the community is highly recommended to prove the benefits that one may achieve in this endeavor.

There should be a wider dissemination of information through photo exhibits in many areas of Baguio City and Benguet province, local symposia, formal and informal discussions among residents, utilization of mass media and web accounts on the presence of birds in the locality.

An in-depth study on the level of awareness on the presence of bird species is also recommended so as to look further into the development policies and regulations on the conservation of bird species found in the area.

Environmental regulations pertaining to conservation of bird species found in the area shall be taken into consideration by policy makers, local councils of Baguio City and Benguet province. This is highly encouraged for the reason that it can contribute to the conservation of the bird species found in the area.

Enrichment of the quality of experience of visitors in the bird sites is highly encouraged as this can also lead to higher returns and could bring greater benefits for conservation (Bird life International).

A photo guide book for birds found in Baguio City and the province of Benguet is highly encouraged for production. This will help significantly in the identification of birds in the field by bird watchers, enthusiasts and researchers alike.

An in-depth documentation of birds that are still to be found in Baguio City and the Province of Benguet is highly recommended since the bird list presented in the paper is only an initial list.

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8. REFERENCES

1. Birdlife Asia Partnership (2007) *Bird tourism center: Guidelines for best practice in bird watching Tourism*. Tokyo: Birdlife International
2. BirdLife International (2015) IUCN Red List for birds. Retrieved 08/05/2015 http://www.birdlife.org on.
3. Bucher, C. (1960). *Foundations of physical education.* 3rd Edition. The C.V. Mosby Company
4. St. Louis USA.
5. Cordillera online. (2014)*Map of benguet province*. Retrieved March 2015. http://www.cordiwebs.com/co/index.php
6. *GoBaguio*.2012. *All Rights Reserved. !Your Complete Guide to Baguio City, Philippines.* Retrieved December 2014. www.gobaguio.com/general.html
7. Haribon Bird watching Manual (2012). *Haribon foundation for conservation of natural resources*. Quezon City Philippines.
8. Haribon Foundation. 2014. *State of philippine birds.*Haribon Foundation for The Conservation Of Natural Resources. Quezon City.ISBN:978-971-0465-12-5
9. Hurd and Anderson (2011). *Definitions of leisure, play, and recreation. An excerpt from The Park and Recreation Professional's Handbook.* Retrieved March 2015 http://www.humankinetics.com/excerpts/excerpts/definitions-of-leisure-play-and-recreation
10. Jones and Buckley (2001). *Wildlife tourism report series 2001. No. 10. State of wildlife tourism in Australia series. Copyright 2001 crc for sustainable tourism* Pty. Ltd. Australia. Retrieved March 2015. http://www98.griffith.edu.au/dspace/bitstream/handle/10072/7282/16857_1.pdf?sequence=l.
11. Lepage D. 2014. Avibase - *Bird checklists of the world-philippines*. Retrieved February 2015avibase.bsc-eoc.org/checklist.jsp?region=PH
12. Libosada C. et al. (2008). *Bird watching in the Philippines. Copyright Department of Tourism*. Manila Philippines.
13. Mayntz M. *The Importance of Bird Conservatio*n retrieved march 2015. http://birding.about.com/od/birdconservation/a/importconserve.htm
14. Ong, P.S., L.E. Afuang and R.G. Rosell-Ambal .2002.Philippine biodiversity conservation profile. 2002. *A second iteration of the nationalbiodiversity strategy and action plan final report.*Mallari A. (Birds), pp. 45 Copyright 2002 by Department of Environment and Natural Resources, Protected Areas of Wildlife Bureau, Conservation International Philippines, Biodiversity Conservation Program- University of the Philippines center for Integrative Studies, Foundation for the Philippine Environment, Quezon City, Philippines.
15. Philippine biodiversity. 1997. *An Assessment and action plan by the department of environment and natural resources.* Published by bookmark, Inc.

16. Rabor, D. 1997. *Philippine birds and mammals*. University of the Philippines Press for the U.P. Science Education Center.
17. Robert S. Kennedy et al. (2000) A Guide to the Birds of the Philippines Paperback – Oxford Ornithology Series Publisher: Oxford University Press; 1 edition ISBN-10: 0198546688 ISBN-13: 978-0198546689