



## Bird Population Monitoring Programme-EEASA Conference Full Paper

**Project title:** Common Bird Monitoring in Botswana: Involving citizens in biodiversity monitoring



European Bee-eater

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**Title:** Involving Schools in biodiversity monitoring through use of a Bird Population Monitoring Scheme- School Birdwatch

**Subtheme:** Education for Sustainable Development and Research, Monitoring and Evaluation

### **Abstract**

It is widely acknowledged that birds are very useful indicators of biodiversity and the state of the environment. This is due to several reasons: birds occur in all habitats, often reflect trends in other animals and plants, and are sensitive to environmental change. Importantly, birds have a real connection with people and their lives. Birds if monitored, can therefore be used to report on the status of Botswana's biodiversity to the Convention on Biological Diversity. Until now much of BirdLife Botswana's work has been focused on monitoring and conserving globally threatened birds in Botswana through engaging communities, BirdLife Botswana members and stakeholders. This means that schools have been left out from participating in bird population monitoring in Botswana. There may be declines of bird populations without our knowledge as to why, yet such declines might indicate a fundamental flaw in the way school children treat their environment and thus influence the way they behave. Therefore, a bird population monitoring scheme for schools called School Birdwatch was developed. The overall objectives of the scheme are to demonstrate that birds are useful in showing changes in the overall condition of ecosystems or the environment and to expose school children to field work in science, research and monitoring. The scheme runs twice annually in February and November and offers exciting learning opportunities from practical outdoors work, and data handling, to developing individual school grounds for nature conservation-learning areas for science and mathematics, among others. School Birdwatch also encourages schools to develop their grounds in ways that help pupils learn about the natural world and sustainable living through biodiversity and conservation, and is an activity that can be linked to Education for Sustainable Development.

### **Introduction**

Bird species are great indicators of climate change (BirdLife International website) and as such, it is necessary to formulate systems that will oversee how they react to the environment. BirdLife Botswana has introduced a Bird Population Monitoring (BPM) programme for Botswana. The Bird Population Monitoring programme has been adopted from Royal Society for the Protection of Birds (RSPB), a BirdLife International Partner in the UK and it is being implemented by other African countries. The programme is aimed at demonstrating that birds are useful in showing changes in the overall condition of ecosystems or the environment.

The BPM scheme will develop a Wild Bird Index for Botswana showing bird population trends over time and to use these trends to set conservation priorities, to report on biodiversity changes/state of the environment in Botswana (and to contribute to African/global effort). The Bird Population Monitoring programme aims to engage everybody in Botswana to volunteer and participate except schools. Through this programme, it came with the consideration that the future generations which are school children are left out in monitoring and research initiatives such as these. This prompted introduction of the suitable monitoring and research programme for schools by BirdLife Botswana called the School Birdwatch programme (SBP).

The School Birdwatch programme is aimed at introducing school children to research and monitoring at early stages. It provides a perfect opportunity to educate and inspire children about the wildlife that share their outdoor space. The programme gives the school children an opportunity to interact with their school environment and to learn and understand it further. The objectives of the programme are:

1. To introduce school children into research and monitoring programme from grassroots level
2. To develop environmental awareness and sensitivity among school children particularly using birds
3. To promote conservation of biodiversity in schools and their surroundings
4. To provide bird identification skills and increase knowledge of birds among school children
5. To demonstrate to children that nature is beautiful and it is not far from them and they can experience it from everywhere and see the value for taking action

The School Birdwatch programme is a simple long term survey that can be carried out in schools from all levels and different needs. The programme has been developed in two levels; 1) primary and secondary, and 2) pre-school and disabled schools. The primary and secondary school level is about school children walking a 1km radius route or road of their schools and recording all the birds they see and hear. The pre-school and disabled school level is about children developing bird feeders and putting them in their school grounds and recording birds while they are watching them. The programme offers the element of mathematics, science, social studies and geography.

### **Why should schools participate in School Birdwatch programme**

Environmental Education necessitates outdoor learning activities for school children which makes learning fun. School Birdwatch programme provides learning outside the classroom. Learning outside the classroom contributes significantly to raising standards and improving pupils' personal, social and emotional development. Research shows that students better absorb and retain math, science, language arts, and other skills that incorporate their immediate environment and use all five senses (Lieberman and Hoody 1998) by being engaged in outdoor learning activities. The School Birdwatch programme will help school leaders, teachers and children to know what happening in their environment. It will guide conservation management and wise use of resources in schools therefore improving the school environment.

Taking part in the programme will also lead to environmental benefits to local communities; the children will become peer educators to the local community about conserving their environment and how they see it being important to their well being. The schools taking part will be seen as model of the village therefore. The school will have a list of common birds found in and around their school which they will use as guidance to conserve their environment to make it healthy for the wildlife. The list when compared annually it will give an idea of whether some birds are increasing or decreasing and if they are decreasing then what might be the problem. This will lead into children taking further research of what might be the course of the decrease.

### **How to do carry out School Birdwatch programme**

#### **a. School Birdwatch programme for primary and secondary schools**

McColaugh (2007) states that there is a need to develop an awareness programme about birds in schools as a means to influence the further infusion of Environmental Education into the curriculum. Previous to the recent Botswana syllabus revisions, primary school children were more exposed to the study of bird directly or indirectly in various standards. The School Birdwatch programme for primary and secondary schools is mainly intending to address the problem of the skewed syllabus for the two levels. The schools that are taking part on the programme need to draw the map of their school including their surroundings which will help to identify places or routes around their school to adopt and undertake their count on. Once the children have drawn the map they have to choose available route or path or road for the length of a 1km. All the necessary materials needed for the count should be kept ready. These materials are recording sheet, a bird guide, binoculars and map of the area.

The children must be divided into groups of five each depending on the total number of those taking part on the count and each group must have its own 1km route or road. All the groups must arrange a day on every February and November to walk their route and record all birds that they see or hear. When walking the route groups are encouraged to record changes that they see along the route either negative or positive or environmental problems for example, note if they see litter, erosion, trees being cut e.t.c. For the first walk or the first visit groups need to mark where they start and where they end on the road or route so that it can be identified when visited again. Bird counts need to be started early morning because birds are very active and they generally become quiet and inactive during the middle of the day. Groups need to try to keep the starting times and dates similar within and across years.

#### **b. School Bird watch for Pre-schools and Disabled Schools**

According to McColaugh (2007) birds are found in every school ground and using them as living teaching resources is a way to bring excitement into lessons and activities. The School Birdwatch for pre-school and disabled schools requires setting up some feeders and baths in a convenient place near the classroom windows or a suitable place around school grounds. Placing a bird feeder helps attract feathered wildlife for closer viewing. The children will be required to put out different sorts of food in different feeders.

The children need to choose a day in February and November to watch birds for a total of forty-five minutes, keeping count of how many birds of the same kind they see.

During the period of the watch the children have to note the beaks, body size, shapes, feet and ways of feeding adapted to the different foods those birds like to eat. The children need to record the birds they see on the grounds or in the park or visiting the feed or bath, not those flying over. Any bird coming after forty-five minutes of watch should not be recorded. The schools that take part in the School Birdwatch programme need to note that they need to carry out this annually at a similar time-it is a long term process. The monitoring scheme months should be marked on the school calendar.

### **What to do with the results**

Once the children have collected the information about the number of birds they have seen. Each group need to add the total of their birds seen and share with other groups to have total of birds seen for the school for that particular count. Find out which bird species have been seen most. If bird count have been done in repeated times you can compare the results with the previous ones. Schools are requested to make a copy of the completed form and file it and send the original to BirdLife Botswana.

Once the school have sent in their results BirdLife Botswana will collect them together for all schools and do some serious adding-up. This helps us to see how birds are doing across Botswana and creates an overview of which birds are making the most of school grounds. As a thank you for taking part, schools will receive a certificate and letter giving feedback about the survey results of each school and all schools added up. Each school might be able to compare what BirdLife Botswana has seen with their results or with other schools.

### **What are the outcomes from the programme?**

The expected outcomes for the School Birdwatch programme are developing children's capability to undertake monitoring. The data collected will be useful in picking up trends of bird population around the school. The School Birdwatch programme helps schools to monitor the most common species associated with urban and rural areas.

### **What support do schools get from BirdLife Botswana?**

BirdLife Botswana will provide a short course about introduction to bird identification to school children taking part on School Birdwatch monitoring programme. Schools will be given guidance packs for teachers and school children taking part in the monitoring programme. They will also receive a bird guide, borrowed binoculars, a form to record the birds during February and November visits, a small poster to help identify common birds around their schools. The most common bird species found around rural and urban settlements are: House Sparrow, White-browed Sparrow Weaver, Blue Waxbill, Southern Masked-Weaver, Cape Glossy Starling, Crimson-breasted Shrike, Southern Yellow-billed Hornbill, African Grey-billed Hornbill, Laughing Doves, Cape Turtle-Dove, Namaqua Dove, African Red-eyed Bulbul, Crested Barbet, Familiar Chat, Yellow-billed Kite, Go-Away-Bird, African Hoopoe, Arrow-marked Babbler and Red-faced Mousebird.

### **Conclusion**

In conclusion it is believed that birds are the indicators of ecological changes. However, by taking part in bird monitoring schemes there will be enough scientific evidence provided for Botswana in order to lobby and advocate to the decision makers about making legislations pertaining to conservation of the country's natural resources. The School Birdwatch programme gives school children an opportunity to take part in contributing to change the world. Involving children at an early stage on monitoring programmes such as these provide a life time investment to conservation of Botswana's biodiversity.

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