

BIRDS ARE BRILLIANT!

ACTIVITY GUIDE FOR TEACHERS



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ISBN 99931-53-04-4

<u>FOREWORD</u>

I am aware that the term 'Biodiversity' entered into common usage relatively recently, but that the concepts associated with it have galvanised scientists, decision-makers, and even the public. I prefer biodiversity to "wildlife" because for us most of us wildlife means large animals, more commonly associated with the great plains of Africa. We do not have that kind of "wildlife" but we do have biodiversity. Lots of it. In the last 25 years the Seychelles Government has put in place a system of protected areas, species and habitat legislation, physical planning policy, and implemented a host of biodiversity related projects and programmes. We were the first country in Africa to develop a national Environment Management Plan (EMPS) 1990-2000 based on the principles of sustainable development. And now we are the first to initiate the second generation of management plans in Africa, the EMPS 2000-2010.

This is all well and good. But as custodians of a rich heritage, how do we ensure that future generations not only inherit a healthy and functioning environment but that they themselves use it wisely and leave it intact for their grandchildren? The best way, I think, is to get young people excited about biodiversity. We have two great flagships for biodiversity in Seychelles: birds and fish. They are conspicuous. They have economic and social value. They affect our lives. And for birds in any case, they are in our backyards. What a wonderful mechanism therefore to introduce students to the living world. What a brilliant way to introduce teaching concepts, ideas and tools for living on and understanding the planet. Birds are indeed brilliant.

I am delighted that BirdLife Seychelles has decided to produce this manual for teachers. The manual, which contains ideas and activities that have been tested amongst many teachers and students, is a mine of information. It is not only easy to read but also introduces complex notions in a non-threatening manner. What I like the most about it are the activities that are fun to do and will I am sure excite teachers and students alike. I do hope that everyone who uses this manual will find it useful in their work in schools but also in understanding and protecting our unique biodiversity.

The Honourable Danny Faure

Minister of Education

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INTRODUCTION

Birds are an excellent starting point for teaching children about their environment and conservation. They are found all around us: in the school compound, around our homes, nearby forests and along the coast. They are exciting and easy for children to observe: moving, resting, feeding, breeding and looking after their young.

Many of the bird species in Seychelles are found only here, and nowhere else in the world: these are our endemic birds.

Learning more about birds can open the door for Seychellois children to learn more about their natural heritage, and can introduce them to some of the problems facing birds and other wildlife here and everywhere in the world: habitat loss, pollution, introduction of alien predators as well as predation by humans. Helping birds can also develop children's sense of responsibility toward the natural environment, and learn skills for protecting and improving their environment, skills which will later help them to contribute toward building a more environmentally sustainable future for Seychelles.

This resource pack is intended to help teachers integrate the study and conservation of birds into their lessons. It contains a number of lesson ideas which have been selected to suit the learning needs and interests of children aged 8-13, although they can be adapted for use with other age groups. As a theme, birds can be easily integrated into any subject of the curriculum, and an attempt has been made to provide a cross-curricular approach to this pack.



It is hoped that the resource pack will also be useful to leaders of wildlife clubs and other extra-curricular groups who are interested in embarking on a project or study of birds.

While learning about birds is interesting and fun in itself, doing something concrete to help birds and other wildlife is even more interesting, fun, satisfying and ultimately worthwhile.

All teachers and club leaders who use this pack are strongly encouraged to engage their children in a hands-on project to rehabilitate or create habitat for birds and other wildlife as part of their study, such as that suggested in the last section of this teachers guide. A project such as this has the ability to make a difference for wildlife, as well as to their school and community. Involving others from outside the school in such a project will enable you to make an even greater impact.

Nirmal Jivan Shah Chief Executive BirdLife Seychelles



BACKGROUND INFORMATION

WHAT IS A BIRD?

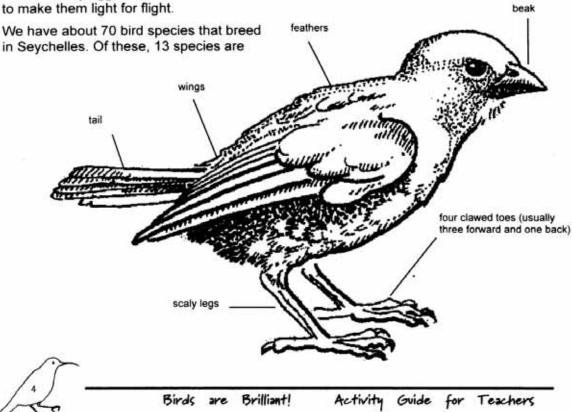
Scientists believe that birds evolved from a dinosaur-like animal called Archeopteryx which lived on earth about million years ago. Today birds are found in almost every ecosystem on earth, from rainforests to temperate forests, from plains to deserts, from the arctic to the antarctic. It is believed that about 9000 species exist today on earth, but there are probably many more that have not yet been described by science.

Birds come in many shapes, colours and sizes, each adapted perfectly to their environment. But all birds have several physical features in common: a beak, two legs, feathers, two wings, etc.

Birds also lay eggs and have hollow bones to make them light for flight.

introduced (alien) species which were brought here from other countries accidentally or on purpose by humans. The rest of our birds are native, which means that they were here long before humans arrived in Seychelles. Some of our native species are also found in other countries, such as the White-tailed tropicbird (payanke). Others are endemic which means that they are only found in Seychelles, and nowhere else in the world.

More information about our birds can be found in the book, "Birds of the Republic of Seychelles" by Ian Bullock or "Beautiful Birds of Seychelles", by Adrian Skerrett.



IMPORTANCE OF BIRDS TO PEOPLE

Birds have always been important to people, for a number of reasons. Since people first walked the earth they have eaten bird eggs, chicks and adults. Feeding seabirds help direct fishermen to schools of fish and long ago helped navigators find their way toward land as they followed them back to their roosting sites. In many cultures birds played an important role in art, dance, music, fashion, science and

religion.

In Seychelles birds play an important role in our culture

and society: the white-tailed tropicbird features in our national crest,

Air Seychelles uses the fairy tern in their emblem, many of our postage stamps feature birds. Our local artists and musicians are inspired by birds.

Economically birds have become important to

Seychelles as more and more eco-tourists visit our islands in order to see our native birds and other wildlife. We have also realized that some birds can give us important clues as to the state of health of our environment. For example, by monitoring changes in seabird populations we can find out if our oceans

and fish populations are healthy or in need of better conservation.

Birds are obviously important to us, but it is wrong to think that we should protect them only because they have value to us. We share the earth with a huge variety of fascinating animals and plants, and each has an equal right to live here. Birds were here long before humans were, and it is our responsibility to ensure that they and

our other wild neighbours have enough space to lead their own lives.

Today, people realize that through ignorance, cruelty and greed we have caused many birds to decline in numbers, and some such as the dodo from Mauritius, have disappeared forever from the planet. Seychelles is no exception.

None of the original birds of Seychelles are as common now as when the first people arrived over 200 years ago.

People killed and ate too many of them, Sevchelles brought foreign animals like rats and cats which killed them, and cut down the forests in which they and many other species used to live. As a result, some species, like the Seychelles green parakeet, have gone extinct.

> Slowly we are coming to appreciate the beauty of

birds and their importance to our ecosystems, and understand how we can help to protect them and their habitats, along with the many other species that live alongside them.



WATCHING BIRDS

Watching birds as they go about their business of feeding, moving around, preening, bathing and breeding is fascinating for bird lovers of any age. Some birds are much easier to observe than others, especially those that are found around our home, school or village, such as

sunbirds, mynah birds, barred ground doves and Madagascar fodies. However you do not have to go too far to observe other less common species like the Seychelles kestrel or the Seychelles cave swiftlet. A few species are only found or only breed on one or two islands, and you may have to travel there if you want to see them.

A pair of binoculars will help you see birds in greater detail, but for much birdwatching, just a pair of eyes and ears will do! Try to keep quiet and well hidden if possible, so as not to frighten or disturb the birds.

You can make birdwatching easier by attracting birds to your school compound or garden. Try building a bird bath, a feeding station or better yet, creating a natural garden which will attract birds with native trees, plants and a pond.

If you enjoy birdwatching, you may wish to try photographing or sketching birds. It takes patience and practice to be able to capture the essence of birds on paper or film, and drawing and photographing can help you further develop your birdwatching skills.

Many people enjoy the challenge of trying to identify the birds that they watch. In Seychelles this is not too difficult as we

have a relatively small number of resident birds. Visiting migrants are more difficult, as are some of our resident seabirds. A guide book such as Ian Bullock's, "Birds of the Republic of Seychelles" (for children) will help you identify most of the resident species, but you will need a more comprehensive field guide such as "Birds of the Indian Ocean" by IanSinclair and Olivier Langrand, or Malcolm Penny's "Birds of Seychelles", for the shorebirds and migrants.

Look out for the following features to help you observe birds and identify which species they belong to:

Body size & shape: is the bird bigger or smaller than a mynah? Is it fat or slim? Does the bird have a long neck, a short neck, a long tail?

Beak: Is the beak long, medium or short? Is it small and pointed, short and thick? Is it bent? Is it sharp? What colour is it?

Legs: Does the bird have long, medium or short legs? What colour are they? Do the legs have feathers? What do the feet look like? Small toes and claws? Does the bird have large talons? Webbed

Colour: What colour(s) is the bird? Are males and females different colours? Are young birds a different colour? Does the colour change at different times of the year?

feet?



BACKGROUND INFORMATION CONT'D

Behaviour: does the bird fly, walk or hop or act in a distinctive way? Does it feed on the ground, on the wing, or in trees and plants? Does it swim? Is the bird alone or in a flock? Does it spend most of its time out in the open or hidden among leaves? Does it seem timid, or is it very tame?

Breeding behaviour: Does the bird display any courtship behaviour? Does it make a nest? What is the nest made of? Where is the nest

built? Do both birds help build the nest? How many eggs are there? What

Fairy tern and chick Colour are they?

Habitat: Where did you observe the bird? Near your house, near the beach, on the sea, near a marsh?



Song: Does the bird have a distinctive cry, alarm call or song? Do males and females make different sounds? Do the birds have special songs during their breeding season?

The way a bird looks is closely related to how it lives. In other words, birds, like many other kinds of animals, are adapted to their environment.

For instance, the green-backed heron (mannik) is well camouflaged for hunting along the shore. Its sharp beak is perfect for hunting fish, and its long legs are ideal for wading in shallow water.

Green-backed heron

The tiny Seychelles sunbird (colibri) is well adapted for sipping nectar from flowers with its long beak, and its tiny legs allow it to perch on small branches.

As you observe birds, try to determine how their behaviour and appearance are adapted to their environment.



HELPING BIRDS AND OTHER WILDLIFE

Since people first came to settle in Seychelles over 200 years ago, they have changed the natural environment drastically. Large native trees were cut and removed from the forests, the thick mangrove swamps originally found along long stretches of the coast were cleared, coconuts and other commercially important trees like cinnamon were planted on the coastal plateaus and up in the hills. Plants like fruit trees, coconut trees, and crop plants were introduced for agriculture. Alien species such as pigs. chickens, cats and dogs were introduced, and others, like rats found their way

While many of the changes to the natural environment and ecosystems seem to have benefited humans, they have created problems for much of our native wildlife. Before humans arrived here, birds like the Seychelles magpie-robin, Seychelles white-eye and Seychelles warbler were probably widespread in the granitic

ashore from ships.

loss and alien predators, these and other bird species are threatened with extinction. Birds are large and have been quite well studied; but no-one knows how

many insects, spiders, molluscs, ferns, mushrooms and many other species are also endangered because of human activities.

Some other bird species declined in numbers because of predation by humans: people used catapults to kill birds like Seychelles bulbuls, Seychelles blue pigeons and many others, often just for fun. Luckily, and thanks to education, practices like these are becoming much less common, and many of these species are now increasing in numbers.

Today we continue to make changes to our environment: reclaiming land, filling in wetlands, clearing vegetation for housing, roads and other construction. Pollution

from industries, vehicles, energy generation and other activities also change our environment, often in ways we do not yet even understand. The challenge which faces us now is to learn how to meet our needs for shelter.

space, food and water without destroying the environment and wildlife along the way. Ultimately, we too depend on the health of the environment and it is also in our interest to ensure that our developments are environmentally sustainable.

Little by little, people in Seychelles and elsewhere in the world are becoming more conscious of the effects that our activities have on the environment and wildlife. We are learning that we need to study and minimize the effects that developments will have on the environment before we start



Wildlife Club leaders helping an injured bird



BACKGROUND INFORMATION CONT'D

making changes. We have put in place laws to protect the environment and are setting up systems for ensuring that people respect these laws. We are starting to teach our children about the environment and show them how to respect and protect it. We are learning the importance of planting.

As more people become committed to conservation and sustainable development, birds and other wildlife are sure to benefit. We ourselves will also benefit from clean air, healthy and diverse ecosystems which can provide us with food, medicines, and materials to build our homes. Tourists concerned about the environment will visit our islands to see

and learn more about our biodiversity and how we live sustainably, in harmony with nature.

The main objective of this resource pack is ultimately to help more students, teachers and other people working with schools get involved in practical projects which will be of direct benefit to birds, other wildlife, and their habitats. This means getting outside where birds and other wildlife live and doing something to help them: planting more native trees for shelter and nesting sites, creating a wild natural area in the school compound to provide habitat for wildlife, convincing members of your community to establish and rehabilitate natural areas for wildlife in the district.



Wildlife Club members visiting a National Park



BIRDS IN THE CURRICULUM

Integrating birds across the curriculum is easy: the topic of birds lends itself well to all subjects: art, geography, languages, history, science, physical education (dance), maths, etc. The key and challenge is then to use the study of birds to help your students gain the attitudes and skills they need to participate in conservation and live sustainably in their environment. Here are a few ideas on how to include birds in lessons across the curriculum:

LANGUAGES

All three national languages have many spoken and written references to birds. Students can explore proverbs, expressions, poetry, songs and literature which refer to birds of Seychelles and other countries.

Local newspapers and magazines often contain articles about the birds of Seychelles: students can research a variety of bird-related topics from these sources as well as field guides, cd-roms, and the internet.

Role plays, debates and drama can focus on birds, and help students gain language skills in reading, writing and speaking while the same time developing their knowledge of birds and formulating their attitudes and opinions about birds.

MATH & SCIENCE

A survey of birds in the schoolground, community and/or a nearby natural area will help students gain skills of observation, gathering and analysing data, and working with numbers. At the same time, their findings may provide them with information to initiate practical conservation actions, such as improving and diversifying habitats to attract more native species.

A bird feeding study or experiment can also help students to learn about the different foods eaten by birds while at the same time develop their skills in numeracy and science.

Classes can also study the ecosystems that support birds and other biodiversity, investigating the relationships between different species and the availability of food, water, shelter and other habitat needs.

GEOGRAPHY

Very young students can learn more about their local environment by studying the birds found in their local community, and how they are affected by environmental quality.

Birds provide many links to world geography: many of the shorebirds found in Seychelles spend part of the year breeding in countries of the northern hemisphere. Family ties can be explored between the birds of Seychelles and their close relatives in Africa and Asia.



PERSONAL AND SOCIAL EDUCATION

Students can explore the ways in which people's decisions and actions have had an impact on the environment, affecting birds and other biodiversity. A study can be undertaken to determine the attitudes of students or the general public towards the environment / birds / biodiversity.

Role plays can help students understand the points of view of different people in situations involving environmental issues, and help them clarify their own environmental values.

Research projects can provide students with hands on experience investigating environmental problems, interviewing people about environmental issues affecting birds and other biodiversity, and exploring solutions. The results can be reported to the the school / community through posters, exhibition, magazine, newpaper articles, etc.

Students can contribute to the improvement of their community by organising environmental activities such as clean-ups, tree planting, habitat restoration together with other community groups.

HISTORY

Students can explore the ways in which birds have historically been exploited in Seychelles and elsewhere in the world: for food, feathers for fashion, collection for science and museums. Over the years the range and numbers of many local species has diminished, while some new species have been introduced. Archival materials contain many references to birds, and give us an idea of how the natural environment and social attitudes towards wildlife have

changed since the islands were first explored and settled.

ART

Bird feathers found in the environment and used eggshells can be used as art materials.

Students can explore various genre and styles of art from different cultures using birds as a focal point.

Posters, cartoons, drawings and other forms of artwork can enhance projects on birds done in any curriculum area.

MUSIC

References to birds can be found in many different genres of music including Seychellois music, rock, classical, etc.

Children can compose songs with lyrics, instruments and vocals inspired by birds.

PHYSICAL EDUCATION

There are strong associations between birds and dance in many cultures: students can be encouraged to create their own dance forms inspired by birds.

Gymnastics and movement work can imitate the graceful flight, lightness and agility seen in many birds.

PE classes can hike to nearby natural areas, national parks and other good places for watching birds and other wildlife.



ACTIVITIES

The following pages contain a series of lesson ideas for teaching about birds and conservation. Many of them are cross-curricular in approach, and can be adapted for use in a range of subjects, and with children of various ages.

Although most of the activities can be done in isolation, for more meaningful results we suggest that teachers plan a theme focusing on birds, and integrate the activities in a logical sequence within the theme. A key element of such a theme would be an activity designed to allow the children to participate in the maintenance or improvement of habitats for birds and

other biodiversity.

All of the activities include a suggested lesson plan, which can be used as is or adapted for different teaching situations. The lesson plans include ideas for introducing the topic, teaching / learning activities, a conclusion, and suggestions for follow up activities. Most of the activities are accompanied by worksheets for the students.

Both lesson plans and worksheets are intended primarily to give teachers ideas, and can be adapted for your specific needs, or used as is. All worksheets can be photocopied for educational purposes.



School children birdwatching in Victoria



ACTIVITY 1 - WHAT MAKES A BIRD A BIRD?

BACKGROUND INFORMATION

Birds are easily recognizable by even the youngest children. Their obvious characteristics which make them stand out from other animals are:

- They have feathers
- They have a beak
- · They have two feet
- · They have two wings
- They lay eggs

Also, but not as obvious, most birds fly, many make nests, they have scaled legs and feet, and clawed toes, and they have hollow bones to make them lighter for flying.

In Seychelles, we have about 70 different bird species, some of which are endemic, some are introduced, and others, like the seabirds, are native but also found in other countries. Birds can be identified with the help of a field guide, by considering their size, shape, colour, song, behaviour, and habitat.

INTRODUCTION

 Look at pictures of different kinds of animals, eg. bats, lizards, birds, insects, and discuss what features make birds special.

ACTIVITY

- Draw the outline of a bird on the chalkboard, and together label all of its' parts.
- Look at pictures of different kinds of birds to see how they vary in shape and size
- Go outside to observe different birds and how they behave. Have the children work in groups, and complete a worksheet (see worksheet).
- Use field guides to help you identify the birds seen.

SUMMARY

- Compare worksheet results back in class.
- Write a list of tips for successful birdwatching.

EXTENSION

- Make a key to help identify the birds around your school and community.
- Look for articles about birds in magazines, newspapers and books. Make an exhibition for you classroom.

KEY CONCEPTS: bird identification, adaptations, bird behaviour

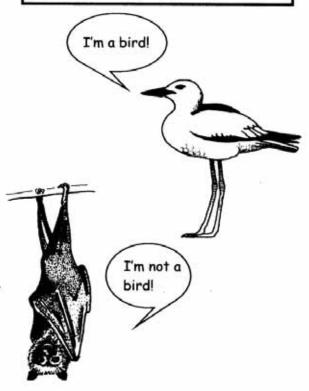
KEY SKILLS: observing, groupwork

CURRICULUM LINKS: science,

languages

SETTING: indoors and outdoors

MATERIALS: books and magazines with pictures of different animals, worksheet, field guides, binoculars (if available)



Answers to bird puzzles on worksheet:

Puzzle 1: 1.fly, 2.sunbird, 3.beaches, 4.insects, 5.white, 6.endemic

Puzzle 2: 1.warbler, 2.hollow, 3.migrate, 4. nest, 5.seeds, 6.dive, 7.yellow, 8.neck.



1. Tick if you see a bird doing any of the following:

2. Describe any other behaviours you have observed:





standing \square

preening

3. How many different kinds of birds did you see?





walking

eating





perching



4. Did you see any of Seychelles endemic birds? List them:







drinking

flying

bathing



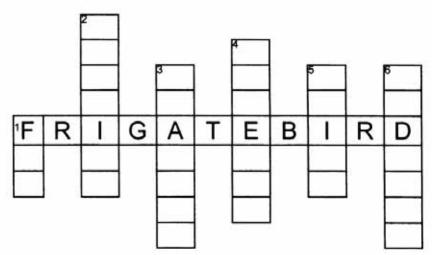


hopping

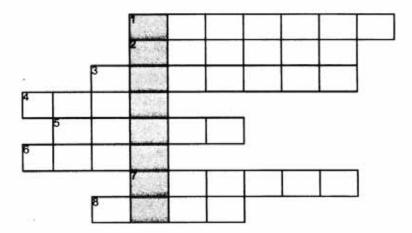
singing

1. Complete the crossword using the clues below:

- The Aldabra rail, "tyomityo" can not do this.
- Small nectar-feeding bird.
- A good place to find turnstones.
- The Seychelles warbler loves to eat these.
- Colour of fairy terns.
- Found only in a specific region, eg. Seychelles.



2. Find the mystery bird by filling in the missing words:



- 1. Small endemic insect eating bird.
- 2. A feature of bird bones that makes them light.
- 3. Birds do this to escape cold northern winters.
- 4. Most birds build one for their young.
- 5. Many birds love to eat them.
- 6. How many seabirds catch their food.
- 7. Colour of mynah birds' beak.
- 8. Herons have a long one.



ACTIVITY 2 - WHO AM 1?

BACKGROUND INFORMATION

This game is popular with children of all ages, and can serve as an introduction to the topic of birds, or as a review exercise after a field trip or lesson on birds.

INTRODUCTION

- Ask the children to name some of the local birds they are familiar with.
- Introduce the game and explain how to play:

ACTIVITY

- Choose a volunteer to begin the game. Ask her to come to the front of the class, and pin a card with a bird & its name on her back (don't let her see it!). Hint: choose an easy one to begin with.
- Ask the child to show the class the card on her back. She then faces them and asks the whole class questions in order to determine her identity. The questions can only be answered by the class with "yes", "no" or "maybe".

Examples of good questions:

Am I big?

Am I small?

Am I only found in Seychelles?

Do I have a big beak?

Do I eat fish?

Do I eat insects?

Example of wrong questions:

What colour am I?

What island do I live on? Etc.

- Once the child has guessed her identity, let other children take turns trying.
- Hint: use easier birds for younger or less able students.

SUMMARY

 Discuss the kinds of information that helped the students identify their bird: body size, shape of legs, feet, beak, body etc., colour, song, habitat, and how this same information helps birdwatchers identify birds in the field KEY CONCEPTS: bird characteristics, adaptations, habitat

KEY SKILLS: asking questions,

classifying

CURRICULUM LINKS: science, languages, geography

SETTING: indoors or outdoors

MATERIALS: pins or string, Who Am I?

cards

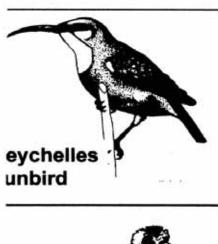
EXTENSION

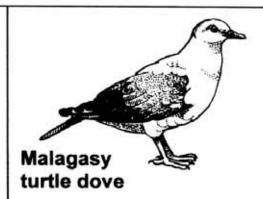
- Go birdwatching outside. Try to find some of the birds mentioned in the game.
- Investigate which of the birds in the game are rare or endangered and why.





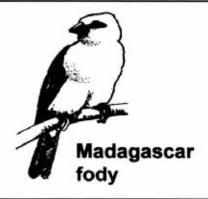
these cards out and use them for playing "Who am 1?" and other games.

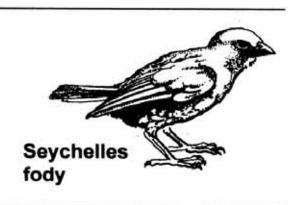




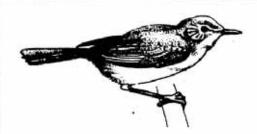












Seychelles warbler

