

Title: Program for the development of an environmental culture that promotes the conservation of birds in coastal communities of the APRM Baconao Biosphere Reserve Cuba.

Introduction

Our country expresses interest in the protection of its natural resources and especially the flora and fauna of the country and the region. This intention is expressed through current laws such as: Law 81/97 on the Environment, Decree Law No. 200/99 on Environmental Violations, Resolution 160/2011, which explains the regulations for control and the protection of species of special significance for biological diversity in the country, Law No. 85/98 Forest Law, Decree-Law 136/93 on Forest Heritage and Wild Fauna and Decree No. 268/99 of the Contraventions of the Forest Regulations (1999), among others. Despite the express intention of the State in the protection of our flora and fauna, an accelerated and unpunished growth in the trade and illegal trafficking of wild fauna in Cuba is observed with concern.

Year after year during the autumn migration, many people are observed in our fields and cities capturing birds to keep them in captivity and introduce them to the illicit market (eg Lazuli Bunting, Rose-breasted Grosbeak, Indigo Bunting and others). These birds do not belong only to Cuba, as they are also part of the fauna of other countries and many are protected in them. Likewise, species that breed in our country are captured such as the Parrots, Parakeets or Catheys, the Yellow-faced Grassquit, Red-legged Honeycreeper, Mockingbirds, Cuba Bullfinch, Western Spindalis, among others. The Flora and Fauna Company, a pioneer in the conservation of the country's biodiversity, has been developing for several years' actions aimed at reversing this situation in different areas of the Santiago de Cuba province where it has been observed to be the focus of illegal bird extractions.

The Baconao Biosphere Reserve Protected Managed Resources Area (APRM) is located east of the city of Santiago de Cuba, in the eastern portion of the Sierra Maestra. It is a migratory route for birds of prey that from North America migrate through and to the Caribbean, especially for the Guincho (*Pandion haliaetus*), Scissors-tailed Hawk (*Elanoides forficatus*) as well as other terrestrial and marine species. In her a community of 52 rural establishments is based, in which a total of 6 120 houses were located. The central area of the Baconao community activities is located in the last territorial portion of the reserve, it has 205 inhabitants of which 53 are infants aged between 1 to 12 years old and 152 adults who use the area's natural resources protected.

Goals / Objectives

Encourage the population of Baconao to conserve birds by developing and disseminating environmental ecological education programs in primary, secondary and adult schools in general.

1. Strengthen community participation in environmental conservation and outreach work, closely linked with the management of the Protected Area to create a sense of belonging of the inhabitants to natural resources, especially birds.

Proposed activities:

This environmental education program will be aimed at informing and raising awareness among local communities about the work that will be carried out in the APRM for the conservation of birds, especially those that are the object of illegal catches. In this way creating a link between the community and conservation, because without their support and commitment there is a risk of facilitating people's access to the chicks and, therefore, the

looting of nests for illegal commercialization. All these activities will be carried out in collaboration with organizations such as the Cuban Zoological Society, Friendship Association, Optics for the Tropics.

Environmental Education Program

1. National campaign through the mass media (television, radio, newspapers) to disseminate information on the current situation of birds with a threat category, and to discourage and expose the damage caused by current illegal trade.
2. Educate the general public about the Wildlife Law and species to avoid catches and illegal trafficking due to ignorance.
3. Involve local people in the protection of species through educational programs.
 - Creation of circles of interest in schools where the role and importance of birds in ecosystems is explained, as well as didactic materials (paper mache and watercolors techniques) that serve as a teaching medium for subjects such as Natural Sciences, Spanish Literature among others.
 - Observation of land and sea birds that use the area as a route for their migration or wintering site, this will allow the preparation of a list of species that will be used by researchers and published on the eBird.org platform.
 - Create, generate brochures, manuals and posters in relation to the natural history, conservation of these species.
 - Create a mural made by children and adolescents from the community with allegorical themes to the non-capture of wild birds.
 - Launch in the context of the school year a Drawing, Poetry or Story Contest for Children about Cuban and migratory birds that require protection.

Expected results

1. The stimulation of teachers, teachers and other members of the communities involved to incorporate ecological education in their activities and school curricula, from the preparation of teaching materials using papier-mâché techniques and watercolors to make and paint masks with the silhouette of birds, puzzles, games with chips and dice (Parcheesi).
2. Creation of a fixed point for the observation of migratory, aquatic and marine birds (in coordination with the CBC) whose information will be provided by community observers who will provide reliable data to APRM researchers.
3. Creation and dissemination of brochures among the residents of the Baconao Community on the role of birds in ecosystems, the dangers that migrant women in Cuba go through, as well as laws that sanction the illegal trade in wildlife.
4. Disclosure in the press, radio and television of the activities to serve as a guide and to replicate in other communities the inhabitants of the entire Santiago de Cuba province, and all of Eastern Cuba.

After each activity, a survey will be carried out to measure the degree of capture of the information provided to the inhabitants, as well as the acceptance of the activity.

Budget breakdown

Equipment and materials	UM	Price	Quantity	Amount USD
Colored pencils	Cajas	1	60	60
Sheets for drawing	Paquete	4	10	40
Pencil	U	0.5	30	15
Watercolors	Set	1.5	20	30
Brush Set	Set	2	20	40
Pigments for mural painting	U	2	29	58
Colored down	Set	2	20	40
White Cardboards	Set	1.5	60	90
Scissors	U	2	5	10
Glue	U	1	10	10
Coloring books	U	1.5	50	75
Datashow for the screening of bird documentaries in schools	U	500	1	500
Total				\$ 968.00

FONADEF (National Forest Development Fund): payment of the fees of specialists hired to carry out the activities.

Hours: The Program will be held for 11 months, starting in September 2020, beginning of the school stage in Cuba until August 31, 2021. It will also depend on the quarantine removal and the epidemiological situation that the country is going through.

Continuity: Once the project is completed, all activities will continue to be implemented in order to be more successful in developing an environmental culture in the communities, and actions with other fauna species with some degree of threat will also be implemented.

Implementing institution

Flora and Fauna Company Santiago de Cuba.

Project Officer:

MSc. Inés Lourdes Fernández Rodríguez. Wildlife Conservation Specialist.

Correspondence Address:

Ave. de los Libertadores N° 101 esq. Ave. Martí. Santiago de Cuba. Cuba

Email: biodiversity.cuba@gmail.com ; espfaun@scu.ffauna.cu

Telephone: +53 55326062 / +53 22622232 / + 53 22654982

Graduate of Bachelor of Biological Sciences. Eastern University. Santiago de Cuba. Cuba in 2009 and Master in Zoology and Animal Ecology. Faculty of Biology. University of Havana. 2014. She has worked as an Ornithologist and Environmental Educator. He has received courses on the Identification of migratory birds of prey and migration study. Theoretical-Practical; Diploma in ecology, management and research of Cuban fauna. Conservation Planning in protected areas; Environmental education. Their work results have been exposed in events such as: II National Ornithology Workshop. Pinares de Mayarí, Holguín. Cuba 2010; VIII Congress of Protected Areas. Convention Palace. Havana. July 2013; IV National Symposium on Administration, Management and Sustainable Use of Natural Resources. Ciego de Avila. Cuba, November 2014; 21st International Meeting of



Birds of the Caribbean (BIRDSCARIBEAN2017). Topes de Collantes Protected Natural Landscape July 2017. Preliminary inventory of the birds of the Pico Cristal National Park (El Oro sector); 22nd International BIRDS CARIBEAN 2019 Meeting. Le Gosier Guadalupe, July 2019. Kites for birds: An alternative to encourage people to love birds.