

## CONSERVATION PROJECT REPORT

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### PROYECTO PAIZ: THE ENDANGERED BLUE-HEADED QUAIL-DOVE (*STARNOENAS CYANOCEPHALA*) AS AN UMBRELLA SPECIES FOR BIRD CONSERVATION IN CUBA

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CUBA QUALIFIES as one of the world's top hot-spots for biodiversity with a high rate of endemism, but it is under increasing pressure demanding urgent conservation action (Mittermeier *et al.* 1999, Niekisch and Wezel 2003, Vales *et al.* 1998). The entire island of Cuba is regarded as an Endemic Bird Area (EBA), defined as an area of special conservation concern and importance (Birdlife International 2003). Currently only about 15% of Cuba's landscape remains uninfluenced by human activities due to a long history of human impact on Cuba's rich biological resources. Hunting and animal trapping have long been popular and have severely impacted many bird species, a notable example being the Cuban Red Macaw (*Ara tricolor*; Robiller and Grimm 2006). Invasive species such as rats (*Rattus* spp.), followed by the intentional introduction of Javan mongoose (*Herpestes javanicus*) as a predator for their control have, in combination with feral dogs (*Canis lupus familiaris*), cats (*Felis catus*), and pigs (*Sus domestica*), proved to be a serious threat to native ecosystems and susceptible endemics (Woods and Sergile 2001).

Cuba is home to 12 different species of pigeons and doves (order Columbiformes), of which two other than the Blue headed Quail-Dove (*Starnoenas cyanocephala*) are endemic to a certain degree. The Gray-fronted Quail-Dove (*Geotrygon caniceps*) is classified as vulnerable (BirdLife International 2009) and it is partially sympatric with the Blue-headed Quail-Dove; the two subspecies from Cuba (*G. c. caniceps*) and Hispaniola (*G. c. leucometopius*) may be separate species (Garrido *et al.* 2002). The Plain Pigeon (*Patagioenas inornata*) is currently classified as near threatened; the Cuban population of the subspecies (*P. i. inornata*) is nearly endangered and in need of attention (Wege and Anadón-Irizarry 2005). The paucity of literature

regarding the biology of these species indicates that all three species will undoubtedly benefit from research into the Blue-headed Quail-Dove and its habitat.

The Blue-headed Quail-Dove is a terrestrial dove that is endemic to Cuba. Although the species (with colour variations) was reported on Key West by John James Audubon in 1834, and later confirmed by Garrido (2005), the species appears to have since disappeared completely from this island (Gibbs *et al.* 2001). With typical *Geotrygon* facial markings, it possesses a unique feature in the black, white-bordered breast bib which, together with the hexagonal scales on the front of its legs as well as the fact that it lays white eggs (as opposed to buff coloured eggs laid by *Geotrygon* doves; Garrido 1986), is sufficient to justify retaining it in an independent monotypic genus. The striking similarities in colour between this species and the national flag of Cuba provides an added advantage to its selection as a flagship species for ground-dove conservation.

The Blue-headed Quail-Dove is a resident species with limited dispersal, and is often found in the undergrowth of forests and sometimes swamps, where it spends the majority of its time on the forest floor in search of food. It prefers to walk rather than fly, often choosing to run rather than take flight when fleeing. Its food consists mainly of seeds and berries; it probably also eat small invertebrates as well as seeds from agricultural crops (Gibbs *et al.* 2001).

The birds occur mostly in pairs, but often a single bird is seen and occasionally larger congregations of up to 15 birds appear at water holes, a sight that is now exceedingly rare. Breeding is reported to occur from April to June (Garrido and Kirkconnell 2000). The male performs its territorial call, a simple "huu-up" or "who-oo-up," which is repeated every 3-4 sec at intervals throughout the day. Calls are given from

the ground or a low perch. In the courtship display, the male bows for the female, moving its head up and down, and may also lift its tail and spread its wings. At the same time a deep “cooo” or rumbling “brrrooh” can be heard (Gibbs *et al.* 2001, Goodwin 1983, Soy pers. comm.). The nest is placed low, often poorly concealed on a tree stump, a low bush, or on an epiphyte, and one or two distinctive white eggs are laid.

Key threats identified in the past include hunting, with the tasty meat of the species combined with the relative ease with which it can be trapped, making it a preferred target. It is also vulnerable to predation by introduced and feral predators such as the mongoose and feral domestic cat. Finally, development of pristine lowland scrub forest for agriculture and an increasing incidence of hurricanes in the region compound existing threats (Birdlife International 2009). Because only an estimated 1000-2500 birds are thought to exist and the population is thought to be declining, it is officially red-listed as endangered and protected by law throughout Cuba (Birdlife International 2009). However, resources are often lacking to effectively enforce the laws. No captive populations are known to exist anywhere in the world.

#### PROYECTO PAIZ

The project’s title, Proyecto PAIZ, was chosen because it refers to birds called Paloma Perdiz in Spanish and also resembles the Spanish term for “land” or “country” (“pais”). Proyecto PAIZ is a national project of Cuba with the participation and exclusive funding from international partners such as the Al Wabra Wildlife Preservation (AWWP) of the State of Qatar, and technical cooperation with the Zoological Society for the Conservation of Species and Populations (ZGAP) in Germany. Proyecto PAIZ is officially administered in Havana through the national office of the Empresa Nacional para la Protección de la Flora y la Fauna (ENPFF).

Proyecto PAIZ aims to conserve the Blue-headed Quail-Dove through both *in situ* and *ex situ* methods in protected areas within its natural range. An awareness campaign for the people of Cuba aspires to use the familiarity and uniqueness of the Blue-headed Quail Dove to create a “flagship species,” an icon that will represent the other less charismatic ground-doves and other sympatric species within its habitat. The fact that the species is monotypic for its genus augments its status as a conservation priority.

Proyecto PAIZ initially concentrates both *in situ* work and an educational program in the Cuban

province of Villa Clara, east of the province’s capital Santa Clara in the protected area Sabanas de Santa Clara. The site is officially classified as a “Reserva Florística Manejada” (RMF), corresponding to the IUCN category IV (biotope-reserve with strict conservation management). The area has a size of 7,237 ha; since 1986 it has been administered by the ENPFF. The reserve receives around 2000 visitors annually as part of environmental education programmes carried out by the ENPFF in surrounding schools, local councils, and nature clubs. The province also has 32 educational units which regularly visit such reserves for training courses and workshops. A 500 m buffer zone surrounds the protected area and some smaller villages occur on the outskirts. In the Sabanas de Santa Clara reserve, 157 species of animals have been recorded, including the Blue-headed Quail-Dove (O. Alfonso unpubl. data). The total number of plant species is currently under assessment; however, at least 14 species of plants are endemic, hence the designation as a RFM. The existence of three dams and reservoirs in the area and their impact on the surrounding ecosystem remains to be ascertained, but the most immediate threat to the wildlife remains invasive species, especially the abundant mongoose, believed to be the major invasive predator, with feral dogs and cats playing a minor role. Some degree of firewood gathering, although prohibited, exists. Nine rangers employed by the ENPFF patrol the protected area and are assisted by an additional five wardens from the special anti-logging task force of the Interior Ministry—the “Cuerpo de Guarda Bosques.” Hunting is also prohibited and virtually non-existent due to the vigilant patrol as well as being limited to firearms in the region, but some trapping using snares has been reported (G. Meier and O. Alfonso pers. obs.).

#### GOALS OF THE PROJECT

Proyecto PAIZ has three goals. The first is the establishment of a captive population of the Blue-headed Quail-Dove and potentially two other native dove species for conservation breeding. The captive breeding facility, with inbuilt aviaries, a kitchen, offices, and an educational facility, is currently under renovation at the site of old dilapidated aviaries within the Sabanas de Santa Clara. Additional facilities to ensure electricity and water supply have also been constructed. The purposes of the captive breeding component are manifold. Although the current data on status, numbers, and threats to the species are inadequate to determine how urgent or

significant captive breeding will be for species recovery, the management and breeding in captivity of a small number of birds will always act as a safety net and a resource for research into many aspects of the species that will be impossible to study in the wild. In addition, captive bred birds will play a dual role as ambassadors, given the fact that due to the rarity and elusive nature of these birds, few people in Cuba have actually seen them in the wild. It is hoped that by making people aware of the presence and threats to this attractive and exceptional endemic, the direct pressure by hunting and other human activities will be reduced.

In February 2007, a group of six birds (three males and three females) was confiscated from a farmer in the Villa Clara Province who had kept the birds illegally in substandard conditions. These birds provided the nucleus of the captive population and an important educational and research tool for the project. Blue-headed Quail-Doves were formerly kept in aviculture in Europe and North America in the last century but now seem to have vanished from aviaries, at least outside of Cuba (International Species Information System report from 1993; S. Bruslund and G. Meier pers. obs.). They are reported to have been fairly easy to breed. It is unclear just when the Blue-headed Quail-Dove disappeared from captivity outside of Cuba, but it is likely that some of the last birds were displayed in zoos in the beginning of the 1980s. The species was formerly common in exports and fairly inexpensive; thus, little effort was taken to breed these birds and to avoid inbreeding (Rutgers and Norris 1970, Jensen pers. obs.).

The second goal is to conduct *in situ* research on the ecology, abundance, distribution, and threats of the species. The *in situ* component of the project will be integrated into ongoing field studies by the ENPFF within the protected areas as well as special excursions to investigate and verify other localities where the Blue-headed Quail-Dove occurs. The main objective is to provide reliable and consistent data to verify conservation status of the species and map the distribution and dispersal of populations in the wild. The floral biodiversity, characteristics, and local conditions of areas confirmed to host quail-doves will be compared with habitats where the birds are absent. The main objective of this is to identify the threats and conditions responsible for population declines. Similarly, populations will be monitored in order to identify existing threats to the species survival. As the project has been initiated in the Villa Clara Province, the current strategy is to

develop effective methodologies for censusing and monitoring that can then be replicated in the rest of the country.

Once threats to the species have been identified, additional conservation measures may be initiated, such as reforestation of certain areas, establishing corridors of native vegetation for reconnecting isolated quail-dove populations within a predominantly agricultural environment, and eradicating or permanently controlling invasive predators, to ensure the best use of resources towards effective species recovery.

The third goal is to create an awareness program for endangered ground-doves using the Blue-headed Quail-Dove as a “flagship” species. The ENPFF emphasises environmental education with an active education unit that visits schools, universities, nature clubs, and local councils in each province. Although there is no structured agenda for these programs, the tools used include presentations, competitions, and even theatre—designed with the intent of promoting the importance of natural habitats and wildlife. By providing materials for these education programs, Proyecto PAIZ aims to work through these existing channels to disseminate awareness about the plight of the Blue-headed Quail-Dove in Cuba and to promote a sense of ownership to stakeholders in local communities where the doves occur. Simulation of the natural habitat of the doves in the breeding centre exhibits will provide information about the species and its habitat.

#### CONCLUSIONS

Proyecto PAIZ is truly an international collaborative effort and the enthusiasm, experience, and commitment of the ENPFF and Government of Cuba toward nature conservation, in spite of inconceivable economic difficulties, is commendable. Funding for the initial phase has already been provided by the Al Wabra Wildlife Preservation and construction work is almost complete. The recent official registration of the project under Cuban law makes Proyecto PAIZ a pioneering international effort in Cuban bird conservation.

The Al Wabra Wildlife Preservation has made an initial commitment to Proyecto PAIZ for 3 yr. Although the broader aims of the project are intended toward securing the long-term future of the species in Cuba, the initial success of the pilot project in the Sabanas de Santa Clara nature reserve and in the province of Villa Clara will determine the potential for future development and duration of the project. It is expected that birds will breed successfully in

the breeding centre, creating a natural resource for expanding the project to other regions, which may reduce the potential impacts of hurricanes or fire. As a first step, the acquisition of birds for the captive breeding programme, the sexing (using microsatellite DNA analysis) and captive management of these birds, and the development of an *in situ* research study are already underway in Cuba and the three project partners are optimistic about the further development of this project into a wider conservation programme with the Blue-headed Quail-Dove as a flagship species.

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