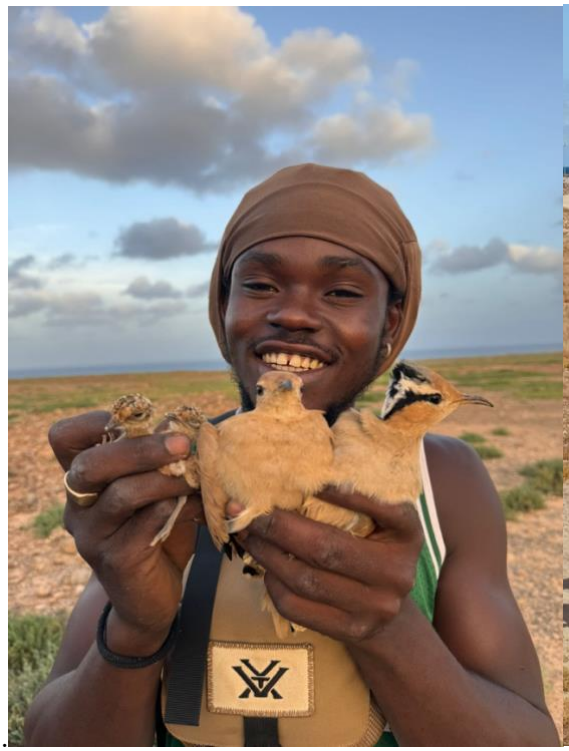
ABC Final Report: Conservation and Education Activities in Maio, Cabo Verde

Using the monitoring programme of an endemic subspecies of the Cream-coloured courser to deliver hands-on educational experiences and develop local teaching resources for primary and secondary students in Cabo Verde.



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1. Abstract

This project supported the conservation of the endemic Cream-coloured Courser (*Cursorius cursor exsul*) and strengthened local engagement with biodiversity through education in Maio, Cabo Verde. From September to December 2024, we monitored the species' breeding ecology—collecting key data on nesting, hatching success, and habitat use to inform wetland conservation and protected area planning. This included nest monitoring, bird ringing, weekly biodiversity surveys, and post-hatching family observations. Alongside the fieldwork, we delivered outdoor learning experiences to 226 local students — 94 in 4th grade and 132 in 8th grade — through guided visits to the Salinas do Porto Inglês. These field trips introduced students to local shorebird ecology, wetland conservation, and citizen science opportunities. From January to April 2025, we developed and delivered durable, locally relevant teaching materials in schools, grounded in the data collected. ABC's support made this integrated conservation and education project possible, contributing to both long-term ecological research and biodiversity awareness among youth.

2. Introduction and objectives

The Cream-coloured Courser (*Cursorius cursor exsul*) is a ground-nesting wader endemic to Cabo Verde. While the species is listed globally as "Least Concern" by the IUCN, the Cabo Verdean subspecies *exsul* has a decreasing population trend and remains poorly studied. It lacks formal conservation status due to data deficiency, yet it is considered a species of conservation concern (Dodman 2007; BirdLife International 2016; Rice et al. 2020). Understanding and protecting this unique bird is crucial to local biodiversity conservation.

The project took place on the island of Maio, a semi-arid island with increasing tourism pressures and urban development. Maio's Salinas do Porto Inglês, a designated Ramsar wetland site, is particularly important for resident, migratory, and endemic bird species. As the gateway to Maio for ferry visitors, the Salinas are both ecologically vital and visibly threatened by illegal sand extraction, off-road vehicles, and rubbish dumping. Despite its conservation importance, there is limited awareness among local communities of the ecological value of this site.

This project was designed to benefit both the species and the site through an integrated approach combining ecological monitoring, education, and local capacity-building.

Project Objectives:

1. **Monitor breeding ecology of the endemic Cream-coloured Courser**
    - Systematic monitoring of nests, habitat use, breeding behaviour, and population trends, with the goal of informing future conservation strategies.
2. **Deliver education through student field trips and school visits**
    - Facilitate hands-on environmental learning by taking local students to the Salinas do Porto Inglês to observe and learn about shorebirds and their habitats.
    - Reinforce this experience through classroom visits using materials rooted in local biodiversity and conservation data.
3. **Develop local teaching materials and build capacity**

- Produce accessible, engaging educational materials using locally collected ecological data.
- Inspire longer-term engagement with nature by maintaining a presence in schools and involving students in further conservation activities.
- Train a local assistant in bird monitoring and ringing techniques to support long-term conservation capacity on the island.

3. Methods and Activities

Part 1: Breeding ecology monitoring

Fieldwork focused on monitoring the breeding ecology of the cream-coloured courser (*Cursorius cursor*) in Maio. Nest searches were carried out using a "stop and scan" technique, watching for incubating birds or signs of nervous behaviour. Once nests were located, eggs were measured, floated to estimate incubation stage, and GPS coordinates recorded. Nests were discreetly marked for future monitoring. Adult birds were captured either on the nest, using funnel and spring traps, or using chicks to lure parents. Biometric data (bill, tarsus, wing, weight) were recorded, and individuals were ringed with a unique combination of metal and plastic rings. Small blood samples were taken from both adults and chicks for genetic analysis. Chicks were ringed where possible, following age-appropriate protocols. Weekly biodiversity surveys were conducted at *Salinas do Porto Inglês* to record other bird species and contribute to long-term ecological monitoring. Resightings of marked individuals and family groups were regularly logged to assess movement, survival, and reproductive success.

Photo 1. (Left): Claudino measuring a Cream-coloured courser tarsus. Photo 2. (Right): Cream-coloured courser nest, with GPS and spring trap.

Part 2: Educational activities

During the project, educational activities were designed to engage students in hands-on learning about local biodiversity, with a focus on the cream-coloured courser and its habitat in *Salinas do Porto Inglês*. A total of 94 5th graders (ages 9-10) and 132 8th graders (ages 13-14) participated in these activities, which combined field trips and classroom-based exercises to deepen their understanding of ecology, conservation, and the importance of protecting local species.

Field trips to Salinas do Porto Inglês

The students were taken on field trips to *Salinas do Porto Inglês*, a key habitat for local biodiversity. The trips involved a range of activities designed to introduce the students to ecological principles, species identification, and conservation efforts in a hands-on, interactive environment. Some of the key activities included:

- **Bird watching and identification**: Students were introduced to local bird species, including the cream-coloured courser. They learned about different species' characteristics, behaviors, and habitats.
- **Learning about the Salinas**: The students were given an overview of the ecological significance of the *Salinas do Porto Inglês* and its role in the local environment, particularly for migratory birds and other species.
- **Interactive activities with fake nests and birds**: To avoid disturbing real nests and birds, students engaged with models, such as fake bird nests and fake eggs. Activities included taking turns measuring fake eggs, simulating bird ringing by putting rings on fake birds, and learning how to monitor nest conditions.

These hands-on activities were aimed at giving students a direct understanding of the work done to monitor and protect species like the cream-coloured courser, while also fostering a sense of responsibility and connection to their local wildlife.

Photo 3. (Top left): FMB staff Daniel Santos aiding with birdwatching using telescope. Photo 4. (Top right): Student activity in the Salina do Porto ingles. Photo 5. (Bottom left): Claudino showing how to measure fake courser eggs. Photo 6. (Bottom right): Claudino showing students the fieldwork monitoring protocol.

Classroom activities

Following the field trips, classroom-based activities reinforced the lessons learned and provided further opportunities for students to engage with the material. These activities included:

- **Video Sessions**: Students watched educational videos on local birds, including the cream-coloured courser, which showcased the birds' behaviors, habitats, and conservation challenges.
- **Quizzes and games**: Engaging quizzes and interactive games helped to test students' knowledge of bird species, the *Salinas do Porto Inglês*, and general ecological concepts. This made learning fun and competitive while reinforcing the lessons from the field trips.
- **Worksheets and active learning**: Students completed worksheets focused on identifying local bird species and understanding their ecological roles. One popular activity involved matching birds to their habitats, helping students learn about the specific environments each species needs.

These classroom activities were designed to complement the field trips, ensuring that students had opportunities to reflect on their experiences and build a deeper understanding of local biodiversity and conservation efforts.

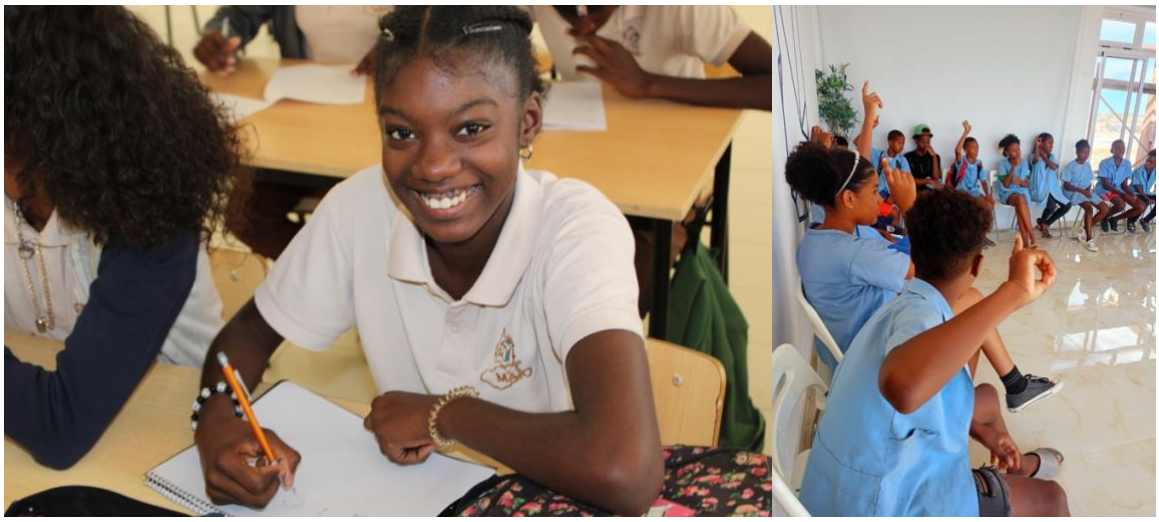

Photo 7. (Left): Secondary school student completing bird quiz. Photo 8. (Right): Primary school students doing interactive quizzes and bird-related educational games.

4. Project outcomes and impact

4.1 Summary of key data collected

- **Nests Monitored**: A total of 32 cream-coloured courser nests were found across various sites in Maio, with the majority at Lagoa Cimidor (23 nests). Most nests (31 of 32) had a clutch size of 2 eggs, with an overall hatching success rate of 71.9%.
- **Egg Morphometrics**: Mean egg width was 26.3 mm, and mean egg length was 33.5 mm. Mean clutch volume was 23.4 cm^3.

- **Bird Ringing**: 76 courser birds were captured, 71 of which were ringed (45 adults and 26 chicks).
- **Breeding and Resightings**: 59 broods were monitored, 31 of which were re-sighted. Of these, 26 broods had 2 chicks, and 22 had 1 chick. Four broods were observed leaving their original nesting sites.

4.2 Contribution to local conservation and wetland protection

The monitoring of nests and bird populations has provided valuable data for local conservation efforts, particularly in the protection of the Cream-coloured courser's breeding sites in Maio. The ringing of birds and tracking of broods contributes to the long-term understanding of population dynamics and helps inform conservation strategies.

4.3 Increased awareness and interest in biodiversity among youth

Educational activities involving field trips and classroom lessons reached 226 students (ages 9-14), helping to raise awareness and create a deeper connection with local biodiversity. The activities also encouraged interest in conservation efforts, particularly through hands-on learning about local species and their habitats.

4.4 Long-term potential of educational materials for continued use in schools

The educational materials and activities developed during the project—such as bird identification games, videos, and worksheets—have the potential for continued use in schools. These materials can be adapted and integrated into local curricula to promote ongoing learning about biodiversity and conservation.

4.6 Capacity building of local assistants

The project also focused on capacity building by providing training and development opportunities for a local assistant at Maio Biodiversity Foundation (FMB). This assistant was trained in field research techniques, including nest monitoring, bird ringing, and data collection. This capacity-building initiative strengthens the foundation's ability to continue conservation efforts and ensures the sustainability of the project in the future.

5. Acknowledgements

We would like to extend our sincere gratitude to ABC for their generous funding, which made this project possible. We would also like to acknowledge our valuable partners: FMB for their in-kind support, especially Daniel Santos, and expertise in local conservation efforts and the local schools that actively participated in the educational activities. Additionally, we would like to thank the many volunteers and assistants who contributed to the success of this project, including Callum Hughes and Romy Rice, Grant McDonald, and the team at University of Veterinary Medicine Budapest for the support during fieldwork. Without their dedication, this work would not have been possible. Thank you Patricia de Peso for support with the educational activities.

6. Future recommendations

Looking ahead to the 2025–2026 field season, the monitoring of the cream-coloured courser population will continue, building upon the data collected during this project. One of the key goals for the future is to further support the **Maio Biodiversity Foundation** in training local teachers in biodiversity education. This will empower schools to carry out long-term biodiversity education without sole reliance on FMB, fostering sustainable educational practices within the community. This project has also paved the way for new directions in both our monitoring and educational approaches. In the coming years, we aim to explore additional sites for monitoring and continue enhancing our engagement with local students. We plan to expand the use of educational materials, ensuring they are easily accessible for broader distribution and sustained use in schools.

7. Outputs and dissemination

We are in the process of preparing a scientific publication that will summarize the findings of this project, including nest monitoring, breeding success, and educational outreach. We will also be presenting these results at the Wilson Ornithology Society meeting in 2025. ABC will be properly credited in all scientific publications, presentations, and other outputs stemming from this project. In addition, we are actively engaging with the local community and broader audiences through various media outlets, and we will share relevant links to social media posts, media coverage, and related outreach activities as they become available.

8. Budget

Activity	**Budget (CVE)**	**Budget (GBP)**	**Spent (CVE)**	**Spent (GBP)**
Car rental 3 months	180000	1407	180000	1407
Salary of local assistant 3 months	105000	819	105000	819
Teaching materials	15000	117	12000	94
Fuel	45000	351	50000	391
Minibus	24000	192	23000	179
Total		2886		2890

9. References

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