

Project Update: September 2022

July 2022 – September 2022

1. WORK COMPLETED

- Attended and presented at the International Ornithological Congress.
- Obtained the Cape Nature sampling permit for new localities.
- Obtained the Northern Cape sampling permit.
- Obtained the Department of Agriculture, Land Reform and Rural Development Section 20 permit for additional sampling methods and additional localities.
- Submitted an abstract for the Pan-African Ornithological Congress.

2. WORK IN PROGRESS

- Awaiting sampling permit approval from KwaZulu-Natal.
- Organising field trip to Northern Cape (Port Nolloth and Springbok), Western Cape (Langebaan and Paternoster), KwaZulu Natal (Groenvlei, Wakkerstroom) and Mpumalanga (Wakkerstroom and Daggakraal) to survey habitat and collect feathers samples from my targeted species.

Table 1: Progress on the specific project objectives

Objective	Progress
Chapter 1 General introduction	Awaiting corrections from supervisors.
Chapter 2 Comparison of ancient and recent climate data in the areas of occupancy of South African endemic larks	The chapter was circulated to supervisors at the end of July. Currently addressing the methodology and results (re-analysis) corrections. Manuscript is currently being drafted, will be circulated to supervisors by the end of September and expected to be submitted to a journal by the end of October. Suitable journal to publish in will be decided when the manuscript has been finalised.
Chapter 3 Life-history traits literature review	Awaiting corrections from supervisors.
Chapter 4 The assessment of genetic diversity of the South African endemic larks	Currently re-extracting DNA from the already collected samples (both museum and field) using the phenol chloroform protocol at the University of Pretoria – completion by end of September. Data analysis training has commenced on the two mitochondrial DNA Cytochrome b and NADH dehydrogenase subunit 2 gene regions on the sequences obtained.

	For the nuclear DNA, microsatellites will be used, and I am currently mapping the microsatellites designed by Mèndez et al. (2010) on to the lark genomes to determine whether they will be able to amplify on my targeted species. Also writing up the literature review and methodology.
Chapter 5 Assessment of the habitat occupied by the South African endemic larks.	The chapter will be completed and circulated to supervisors for review by the end of November upon surveying the rest of the localities during the upcoming field trip. Currently writing up the literature review and methodology.

3. WORK PLANNED

Laboratory work

- Complete DNA re-extraction.
- Complete laboratory work for the mitochondrial DNA (CYTB and ND2).
- Complete analysis for the mitochondrial DNA.
- Order and optimise microsatellites.
- Commence with microsatellites laboratory analysis.

Write up

- Complete write up for chapter 1.
- Complete literature review, methodology, results and discussion for chapter 2.
- Complete literature review write-up for chapter 3.
- Complete literature review, methodology, analysis and discussion write up on CYTB and ND2 for chapter 4.

Field trip

- Obtain more samples from the field trip.
- Obtain more habitat survey data from the field trip.

Conferences and symposiums

- Submit an abstract and attend the Foundational Biodiversity Sciences symposium.
- Attend and present at the Pan-African Ornithological Congress.
- Submit an abstract for the Learn About Birds Conference.

Publication

- Submit Chapter 2 (comparison of ancient and recent climate data in the areas of occupancy of South African endemic larks) manuscript for publication.

4. PROBLEMS ENCOUNTERED

- None.

5. MILESTONE

I. Abstract has been accepted for the Pan-African Ornithological Congress.

II. Talks given (scientific and other)
Presented at the International Ornithological Congress.

III. Meetings/Conferences/Workshops/Fora attended

- Golden mole workshop hosted by Endangered Wildlife Trust (EWT).
- Introduction to QGIS hosted by the University of Pretoria and QGIS georeferencing hosted by SANBI both provided by Dr Ian Engelbrecht.
- Introduction to R workshop by William Hemstrom hosted by SANBI.
- International Ornithological Congress.
- Journal club:
I presented at the MEEP journal club – Introduction to phylogenetics.

IV. Papers and popular articles

An article based on this project was featured on the Daily Maverick newspaper upon the NZG visitation by the Minister of Forestry and Fisheries and Environmental affairs Ms Barbara Creecy.



