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SERENGETI SECRETARYBIRD PROJECT

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SERENGETI SECRETARYBIRD PROJECT

Project supported by several national and international institutions:
University of Pavia (equipment, PhD grant), Eurafrica Conservation Projects, Fondazione Società Zoologica "La Torbiera", OIKOS, East Africa e Tanzania Wildlife Research Institute (TAWIRI), and Savannah Explorers Ltd. The research team is composed by Federico Romani e Elena Ramella Levis (UNIPV, EURAFRICA), Emmanuel Clamsen Mmassy (TAWIRI), Gianni Pavan (UNIPV), Francesco Rocca (La Torbiera), Mario Posillico (Carabinieri Biodiversità di Castel di Sangro).

The secretarybird is a IUCN red listed raptor widespread in the savannahs of Sub-Saharan Africa. Despite its conservation status, information about this species in East Africa is poor.

The ‘Serengeti Secretarybird Project’ aims to widen knowledge about ecology and population size of secretarybird in Serengeti ecosystem to support conservation strategies.

Serengeti National Park has been selected as study area because it could be a source site for the species across Tanzania and neighbors.

The project aims to define the distribution area, the densities in relation to different habitats, the potential threats, the reproductive behaviour and the vocal expressions.

Traditional observation methods are used with advanced technologies, including micro-cameras, photo-traps and acoustic recorders. The recorders also collect data to describe the typical soundscapes of the park for scientific purposes, but also for education and for developing a new touristic attraction.

After the first exploratory phase with autonomous recorders, new recorders and photo traps with real-time 3G/4G connection will be deployed to transmit data to a central server for analysis and public display to a wide international audience.

Individual recognition is a key-tool for censusing animals and study their behaviour at individual level.

Traditional approach is to find specific visual patterns/colours/shapes.

In some cases individual acoustic signatures can be found in the vocalizations.

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Species recognition

Ecosystem quality by species id

Biodiversity
Complexity
Richness

Ecosystem quality by indices

Biophony

Geophony

Streams, rain, wind

Anthropophony
Technophony

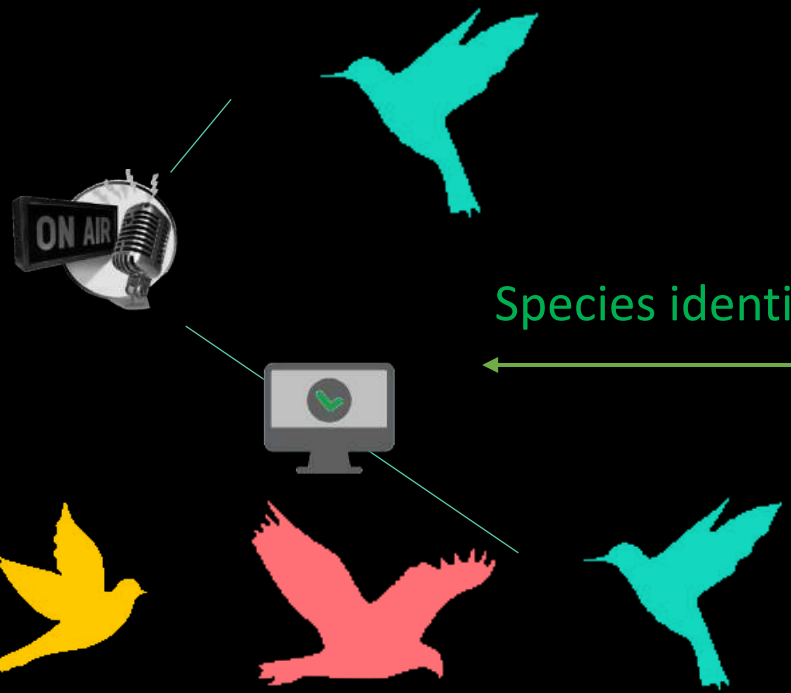
Noise pollution / Alerting

Soundscape

Acoustic environment

BIOACOUSTICS

Analytic approach at species level



Species identification

ECOACOUSTICS

Global description approach

Identification of unexpected events
(noises, shots, motor vehicles, chainsaw actiivity)

Species behaviour and identification (manual and/or automatic)
Identification of alien / invasive species

Monitoring ecosystem quality by sound diversity and richness, monitoring anthropic noise and impacts

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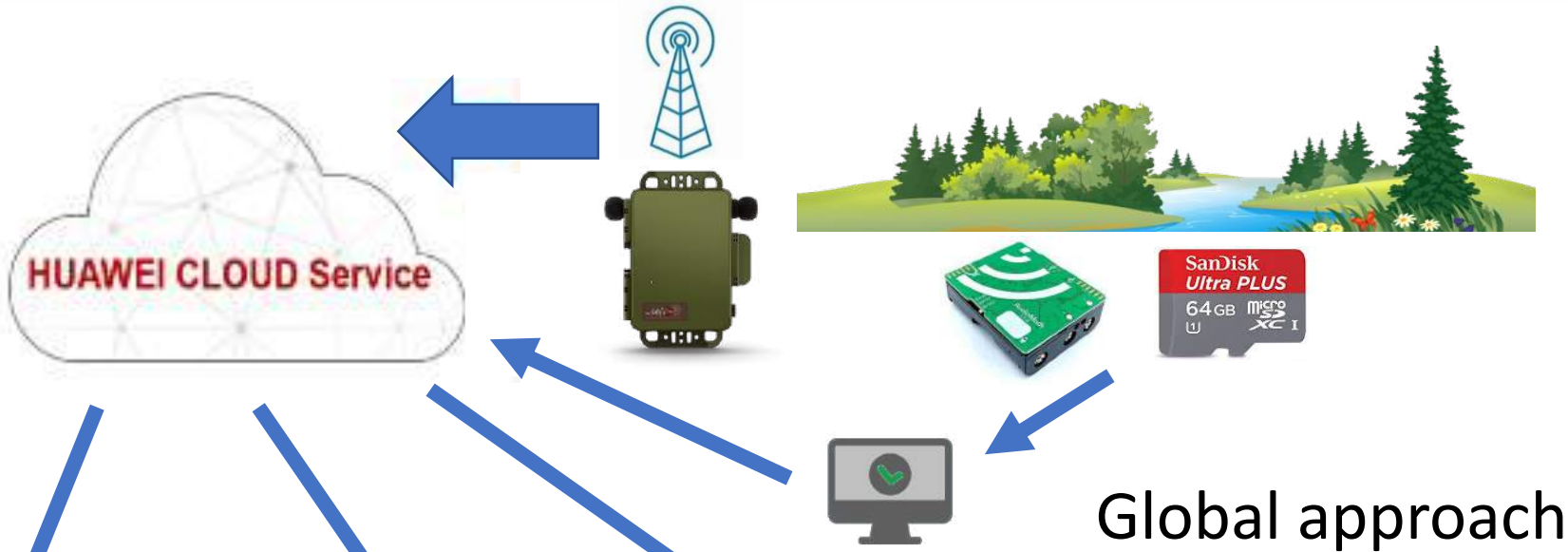
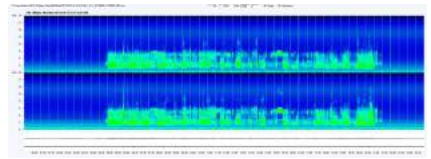
HUAWEI

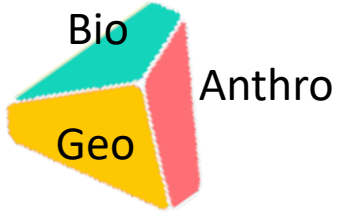
BIOACOUSTICS
ECOACOUSTICS



Global approach

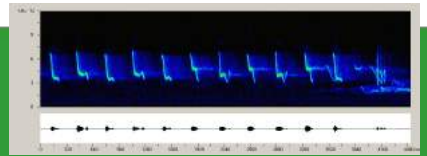


Sound Event Recognition



Acoustic Events ID
Surveillance: Shots – Vehicles - Chainsaw

Species ID



Evaluation of biodiversity and richness >> habitat quality

Public display

Traditional observations collected on a GIS for spatial data analysis and display

distribution & density maps

Videocameras with wi-fi transmission

Autonomous acoustic recorders and photo-traps

8 recorders and 4 photo-traps installed in the NP

The nest

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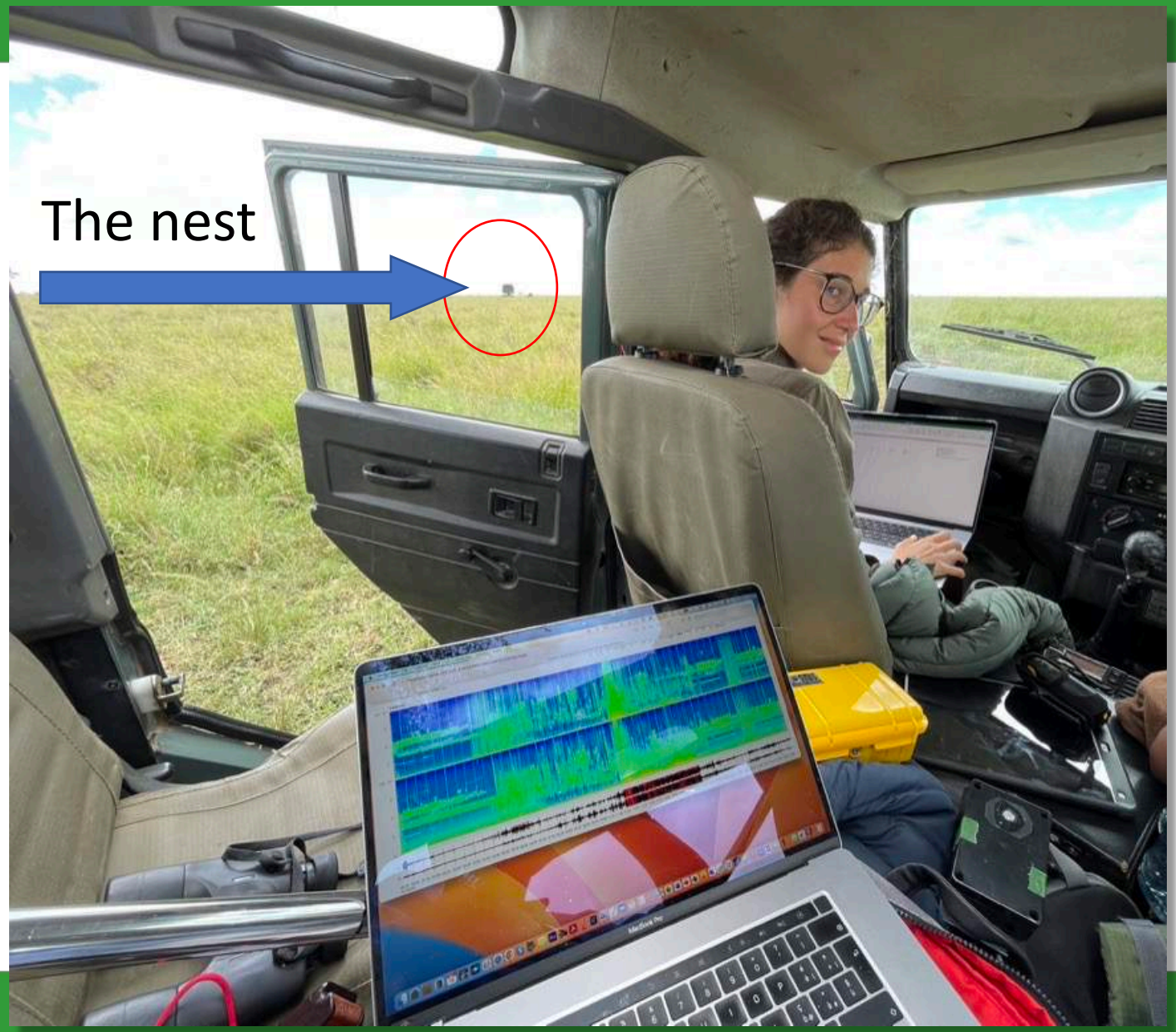

Remote control of a nest

Hi-tech
field work