**4.4 SCRIPT – Example of ecological monitoring in a terrestrial PA of the savannah.**

The Nazinga Game Ranch is located in the South of Burkina Faso, 200 km from Ouagadougou, the capital city. It covers around 900 km² and is entirely made of savannah.

The ranch’s main management targets are the conservation of biodiversity and the valorisation of natural resources through hunting and vision tourism. Because of this, the park falls under a PA of category VI.

Population growth in the many surrounding villages is one of the greatest threats faced by the ranch – this causes poaching and creates the need for agricultural space which greatly impact fauna and flora.

Despite these constraints and with the aim of reaching all its targets in mind, the Ranch has implemented a continuous ecological monitoring system of some values of the ecosystem:

So, in Nazinga, the **climate is monitored** to know the state of the environment and the factors that can affect it. To give an example, making the right decisions regarding bush fire ignition (preferred date and time) is key, as this will then influence the quality of pastures available for the park’s herbivores, who are also monitored values.

Climatic factors are monitored through the weather station located in the Ranch, as well as another station located in Pô, a city near the PA, and more recently, via the station set up by WASCAL, a research program studying climate change.

**Monitoring water points** is also considered when monitoring certain habitats. This type of monitoring aims at controlling the presence of surface water over time to know its availability for the park’s animal species, especially elephants which are also one of the Ranch’s values. To do this, the water level progression of the main dams and watercourses is assessed every season through direct observation. If water runs out, the decision can be made to fill it up artificially to avoid animals dispersing outside the park.

**The fauna dynamics** are also monitored to set collection limits, especially when it comes to huntable species (roan antelopes, warthogs, waterbucks…). After several tests, the line-transect walking sampling method was chosen as the one giving the best sampling results at the lowest cost.

To get even more information on the diversity of species in the park, scientific results are also used, as well as the data collected by tourists who monitor out of curiosity. This is a way of completing the already long list of 290 bird species of the Ranch for example.

**Hunting enables the collection of species biometric data from killed animals** (weight, height, horn size etc.). This gives information on the health condition of the species such as the waterbucks or the roan antelopes, and indirectly on the food availability inside the park over the years.

**Monitoring the anthropic pressures** on different animal and plant values listed until now, is essentially conducted through surveillance. This gives the possibility of specifically recording any form of harm done to the targeted species, namely signs of poaching or wood cutting and collection.

**Monitoring habitat and flora** is enhanced by research activities that are focused on specific themes identified during the ecological monitoring process. They are mostly carried out by students or researchers in direct link with the park staff and are coordinated by the park manager.

**One of Nazinga’s main problems is related to elephants** -which are one of the monitored values of the PA - as they create conflict in the villages surrounding the park. This threat is monitored by collecting information on the damages around the Ranch, which are systematically recorded and allow to understand the elephant population dynamics, their movements and the damage frequency. This will eventually help to implement suitable preventive measures.

All in all, the ecological monitoring system implemented in Nazinga enables Ranch managers to obtain both the qualitative and quantitative information they need to carry out inter-annual comparisons, and to evaluate the shifting trends of PA values (in terms of number of animals or habitat quality), or the anthropic pressures they face. This also allows to evaluate and adjust management and valorisation decisions of natural resources inside the PA, especially when it comes to hunting game - a key value of the park.