**3.9. SCRIPT - Special case: monitoring primate populations**

Just like with other species, start by choosing the ecological attributes to monitor. Then, based on these attributes, select the methods among the ones we will be presenting shortly, that will provide information on the indicators to assess.

The direct line transect method is recommended. In this case, detect the animal as follows: early in the morning or in the late afternoon, observers slowly (at an average speed of 1km/hour) and quietly walk along the transect line.

The weather can influence primate detection: some species cry less in windy conditions, and they are all more difficult to see when it’s raining. Therefore, avoid counting during a shower or right after.

As soon as a primate is spotted, take note of the following information: the name or transect number, the distance travelled along the transect (measured thanks to a topofil), the date, the time, the detection method (seen, heard, branch movements, falling fruit, animals running away…), the species, the distance between the observer and the animal, the angle of observation, the perpendicular distance between the animal and the transect line (measured with a tape measure, a non-elastic rope or an optical or laser rangefinder).

Also, write down the information concerning the group of primates: the number of individuals in the group per gender, age group and species, the surface area covered by the animals and their main activity (eating, travelling, social interaction, rest).

To analyse the data, two or three data sets are needed:

1. The distance travelled along the transect line, which is determined by multiplying the line’s total length by the number of times it was travelled.
2. The number of groups encountered, specifically groups having both male and female individuals.
3. The forest surface on which a given number of primates was recorded (it is obtained by multiplying the transect width by the distance covered).

The relative abundance of a species, or the number of groups per km travelled, can be calculated using the first two sets of data.

With all three data sets, the population density can be calculated (expressed in groups per km²) using the DISTANCE software, which, as Emmanuel explained, considers detectability variations of animals in different zones.

Another approach, indirect this time, is nests counts: when a nest is spotted, the process is similar to when a primate is detected.

Some information is vital to capitalising the nest counts per km², namely: the nest construction rate per individual (given the age differences) and the time it takes for nests to decay to a point they can no longer be identified as such (this time depends on factors such as seasons, altitude, species etc.).

As soon as you have the information concerning nest-making and their decay rate (per site and per season), it is possible to calculate reasonable estimates of the decline rate of gorilla and/or chimp populations (this often varies).

Finally, let’s talk about call mapping: because of their powerful shouts, some animals can be detected from a greater distance only by observation. This method is especially useful to indirect monitoring in places where apes “chatter” loudly.

In the case of diurnal species, the observer should start working early in the morning (in many cases, right before dawn), walk slowly (1km/hour in average) and stop at certain marked locations to listen to the shouts. As soon as he hears the shouts, he should wait between 15 and 30 minutes when the interaction between the two groups is over.

In the case of nocturnal species, the detection work depends on the species: generally, bush babies squeal at nightfall, and for around an hour at dawn.

The task should be repeated over several days depending on the species, the site, the season and the weather conditions. For particularly loud species (like the red colobus), three days can be enough to record all the groups present in the surveyed zone, but more time is needed where shouts are scarce and quieter. Generally speaking, the census should carry on until coherent results are obtained.

To record data, proceed as follows:

When the observer hears shouts, he should take note of the following information: the date, the time, the species, the type of shout, the position (of the shout to where he is), the estimated distance between the observer and the animal, the observer’s geographical coordinates at that moment.

If the same group can be heard after the observer has moved away, a new survey should be carried out so that the group position can be calculated more precisely by means of triangulation.

Finally, the information should be processed as follows:

* Draw up a precise map of the surveyed area (preferably on a 10mm:100m scale) on graph paper, and note the main topographic elements (such as waterways, ridgelines etc.). Copy this map as many times as needed so that the data on different species can be noted separately.
* On the map, write down the date and time on a pencil-drawn line where the shouts were recorded and where the observer was positioned. The distance between the observer and the animal is estimated and noted on the map. Make sure to triangulate the shouts of a group heard at different moments.
* Make sure not to count species that cover great distances quickly and that can be heard at different places (such as white-eyelid mangabeys) twice. To reduce this type of mistake, it is important to know the size of the surveyed zone, potential overlap between fields, and travelling and feeding patterns (obtained through a long-term survey).
* Notes on the animals observed and not heard can also be written on the map – this will enable you to draw up a complete table of all the present groups.