



VULTURE TREE NESTING SURVEY PROTOCOL

VulPro initiated vulture tree nesting surveys several years ago and throughout the years, we have refined our process to achieve the highest level of accuracy and productivity whilst out in the field. It is also important to follow the step by step protocol in order to make sure results are comparable between observers and sites and that due process is followed where trends can be monitored and analyzed yearly.

Survey sites vary greatly from protected nature reserves and game farms to private lands, hunting farms, piggeries and mining. This all needs to be recorded and taken into consideration when undertaking surveys and it makes it that much more important to follow the protocol detailed below.

To start off with, surveys should be done with a minimum of two people. Never alone as you need additional hands and eyes. Three is optimal as one person can drive whilst the others walk.

Equipment and resources needed

- Hat and sun cream.
- Comfortable walking clothes and we recommend long sleeved cotton shirts given the African sun and sun/skin damage.
- Good, comfortable walking shoes.
- Water and backup water as field sites are located in areas where temperatures regularly reach 40 degree Celsius.
- Snacks and food to eat on the go. Fruit is also a good option with natural sugars and energy bars as well as biltong for added protein.
- Clip board and pens with some extras incase the pen stops working.
- Handheld GPS specific to the site you are monitoring at as each site has its own handheld GPS unit.
- Spare batteries for the handheld GPS
- Good binoculars.
- Camera.
- Backpack to make things easier for carrying equipment.
- Cell phone for comms and phone charger or portable phone charger as you are out in the field the whole day.
- Lastly a sense of humor as the days are long and hot and physical and mental exhaustion takes over.

Methodology

Ground surveys are the preferred method VulPro uses as some vulture species nest in forks of trees and not in the canopies of the trees making aerial surveys inaccurate. We also prefer

this over road surveys as you tend to miss many of the nests and again, not always able to document and see hidden nests within the tree canopy and forks. VulPro’s protocol is thus about undertaking walking surveys which maximizes the accuracy of each site’s survey results.

Surveys are walked, often along river courses and along the river beds and banks of the river to document for all possible nests. Not every vulture chooses to breed along rivers and thus, there could be clusters of nests more “in-land” and these too need to be walked. Each field site will differ with regards to starting and ending points but try follow the same line each survey and each year to avoid missing any potential nests and double-backing to avoid lost time. Every nest needs to be documented which includes: vulture species, GPS positions (co-ordinates), tree species, location in the tree and if possible, approximate height of the nest. We also recommend noting the tree location in reference to identifiable landmarks. You may also find 2 nests in one tree and this needs to be documented with both nests given their own GPS co-ordinates and an explanation. For example, ‘Nest N02 is located in the same tree, 2 m below nest N03’. Survey date and survey number must also be recorded.

Details to be entered as per the attached addendum.

Three surveys annually are ideal for each site, however this is not always possible and two surveys are thus the minimum requirement. The first survey documents the number of breeding pairs. A breeding pair is noted only when an adult is found perching on the nest or just adjacent to it, pairs are seen copulating near the nest, they are actively ‘working’ to build the nest, or incubating. The second survey documents the number of nestlings successfully produced and survived so far and the third survey documents the number of fledglings or larger chicks that have survived. The last survey thus records breeding success for that year and for that site. We use the same terminology as in the case of cliff nesting monitoring in order to keep terminology consistent with all vulture breeding surveys (see codes and descriptions below). It is important to also realize that human disturbance will sometimes flush adult birds and fledglings. Therefore you should anticipate upcoming nests in the survey and take care to watch from a distance to observe bird behaviors.

Code	Meaning
A	Adult at the nest
B	Adult brooding, usually sits slightly elevated at 15° to 45° to the horizontal, sometimes the nestling can be seen under the adult.
C	Nestling in the nest (we no longer use the term ‘chick’ as it is too imprecise)
D	Dead bird in or close to the nest
E	Egg in the nest, often only seen when the adult rises up to turn it.
F	Fledgling
H	Nest is hidden, i.e. you can see or infer that a nest is there but the contents are not visible.
I	Incubating = a bird sitting tight on an egg in the nest. An incubating adult usually sits horizontally on nest but may rise up occasionally to roll the egg or to sit in another position.
K	Copulation, usually at or on the nest
L	Lost nest, there was a nest at the site on a previous visit but it is no longer visible, and whitewash has gone.

R	Ringed nestling or fledgling seen at the nest
T	Tenanted nest, one or more adults standing on or close to the nest as if to demonstrate that they are holding the site
W	Working i.e building a nest or working on or with its nest
Z	Ringed, or marked adult at nest
?	Code, or observation uncertain
-	Nest present but no other activity

We take care to observe bird behaviors from a distance and as we approach underneath the tree. If no breeding activity is noted, we approach and check the ground under the tree and nest to document amount of feces on the ground, egg shell fragments or dead chicks to confirm failed breeding attempts.