Project Update: May 2021

Preview

Beginning March 2021, our team began a survey to understand northern ground-hornbill abundance and habitat use in Yankari Game Reserve, northeast Nigeria. Using roadside counts and nest site data of northern ground-hornbill, we plan to provide new information on how ecological disturbances, specifically fire regimes, could alter habitat selection patterns by a cavity nesting bird in a fire-dependent savanna landscape.

Northern Ground Horn-bill abundance survey

Our project aims to collect abundance data for the northern ground-hornbill by surveying established roads and trails in Yankari. So far, we have completed transect mapping and have commenced bird surveys along mapped transects. Along each transect, we conduct mornings and afternoon surveys using a four wheel-drive vehicle (rented from the Yankari management). Bird directions as well as perpendicular distances away from the transect line are recorded to aid density estimation in Program Distance. So far, all transects have been surveyed at least five times. Our goal is to continue transect surveys through the end of the northern ground-hornbill breeding season in Yankari.

Nest search

Northern ground-hornbill is a cavity nester with males helping to care for females and young during incubation and nestling phases of its life history. The nest search has been based on observation of male behaviour and systematic inspection of large trees for cavities (see pictures below). Also, we have sought information on possible nest locations from field rangers and biologists with long term experience working in the reserve. So far, we have identified four cavities (see pictures below) that could serve as potential nest sites for northern ground-hornbill, but no nesting evidence has been recorded. Moreover, several visits to historical nest locations have also not resulted in nesting evidence. Although our surveys coincide with the documented breeding season for the northern ground-hornbill in Yankari, we have surprisingly recorded several females during transect surveys suggesting a mismatch between the bird's life history strategy and our field observation. Searches for nest locations are still ongoing in anticipation of possible nest discoveries.

Vegetation measurement

Vegetation surveys to assess habitat quality for northern ground-hornbill have been completed in three of our five designated transect lines. Vegetation plots measuring 20 m^2 are set up at 500 m intervals to record tree size, tree height, number of trees, and fire histories. Smaller plots of 2 m^2 within 20 m^2 plots are also taken to document anthropogenic activities, grass height, and ground and litter cover. We intend to collect vegetation variables at nest locations once we are able to find active nests.

Constraints

Occasional vehicle breakdowns have lowered the pace of our survey efforts, but we are on track to complete all survey exercises by the end of June 2021.

Appreciation
We are sincerely thankful to the management of Yankari Game Reserve for providing a vehicle and field assistants to facilitate nest search and vegetation surveys. We are also grateful to Professor SA Manu of the A.P. Leventis Ornithological Research Institute, University of Jos for sparing time from his main assignment in Yanakri to provide hands-on training on savannah vegetation sampling protocol and other technical support in the field.

Trees with cavities around the Yanakri Game Reserve

Left: Nguvan survey in a baobab tree. Right: Oldest Baobab tree in Yankari Game Reserve without cavity.

Picture of a male Northern Ground-Hornbill foraging