

Fauna

Counts of large mammals

The Profiles Project analysed aerial counts of large game, cattle and settlements done in 1995. This was the most recent and most complete aerial survey, and covered the whole of the Caprivi except for the area west of Mahango Game Reserve. The survey strips were at five- or one-kilometre intervals. All the original data are stored in the Profiles databases, but permission to use these data should be obtained from the Division of Specialist Support Services, Ministry of Environment and Tourism, Windhoek (Attention: Dr Malan Lindeque). The Profiles Project estimated game densities from these data for grids five kilometres by five kilometres in size. These estimates are also available.

Information from an aerial survey in 1994 is also available. The 1994 survey was less complete than the one in 1995 and the codes used for species differ from those used in 1995. Results from the 1994 survey are summarised and compared with previous surveys by Rodwell, Tagg & Grobler (1995). Wildlife Resources in the Caprivi, Namibia: The Results of an Aerial Census in 1994 and comparisons with past surveys. Directorate of Environmental Affairs, Research Discussion Paper No. 9. Available from the Directorate of Environmental Affairs.

Processing the game count data

Pauline Lindeque provided the 1995 game-count. The 1994 data was given to us by Tim Rodwell.

Species codes used in 1995 were different from those used in 1994. The 1994 data were appended to the 1995 data in three files.

Following this, species codes in the field "species" were transformed into new codes (in "species1") to have the same codes in 1994 and 1995. Codes were as follows:

BABOO	baboon
BUFF	buffalo
BUSHB	bushbuck
CATT	cattle
CROC	crocodile
DONK	donkey
DUIK	duiker
ELAND	eland
ELEPH	elephant
ELE_D	dead elephant
GIRAF	giraffe

GNUS	wildebeest
GOAT	goats
HIPPO	hippo
HONEY	honeybadger
HYAEN	hyaena
IMPAL	impala
KUDU	kudu
LECHW	lechwe
LION	lion
ORYX	gemsbok
OSTR	ostrich
REEDB	reedbuck
ROAN	roan
SABLE	sable
SITAT	sitatunga
STEEN	steenbok
TSESS	tsessebe
VILL	village
WARTH	warthog
W_DOG	wild dog
ZEBRA	zebra

In the first, games1.dbf all the original data are present except for waypoints with no species or only altitude recorded. In the second, games2.dbf, records were added together when the same species was recorded at the same place within the same strip width (either 250 or 500 m) - records on the left and right side of the plane are therefore pooled. In the third, games3.dbf, all records of the same species at the same place were pooled irrespective of the strip width or side of the plane. games1.dbf has 2225 records, games2.dbf has 1973, and games3.dbf has 1805 records.

The structure for the database of each of these three files is:

YEAR	(19)94 or (19)95
SESSION	counting session
BLOCK	area block
TRNO	transect number
IDNT	waypoint number
DATE	date of flight
SIDE	left or right side of the aircraft
STRIP	strip width
SPECIES	old code for species
NO	number counted
NOTES	
LATITUDE	latitudinal position
LONGITUDE	longitudinal position
SPECIES1	new code for species (see above)

Notes on estimation of densities from 1995 game census data

1. A five kilometre by five kilometre grid was prepared over the whole region.
2. A file showing the GPS track of the aircraft during the census was obtained and a buffer area of 250 m on either side of the track was created. This buffer area represented the area counted and was overlaid on the grid. From this we could calculate what proportion of each grid block had been sampled, i.e. a sampling frequency factor.
3. The file showing positions of all sightings was then overlaid on the grid and the total number of each species was summed per grid block. The sampling frequency factor was then applied to the total count for each species per grid block to obtain an estimated total number per grid block. Note that for elephants and buffalo the sampling frequency factor was doubled since these animals were counted over a distance of 500 m either side of the aeroplane. The estimate total number per block was then divided by 25 km to obtain a density estimate per kilometre.
4. The polygon file of grid blocks was then rasterized into 500 m x 500 m pixels or grids and that was then overlaid on a 500 x 500 m grid for the whole Caprivi. This allowed parts of the 5x5 km grid that jutted over the border to be cut-off.

Other files in \fauna\game

- cens95.shp is a point file for each sighting
- gamesum.shp has density estimates for all species per 5x5 square
- the 5 sq km grid is in g5kmsht.shp
- the flight lines are in flight95.shp