

area of sal (*Shorea robusta*) forest interspersed with dense grasses. A linsang, presumably an adult, came to the remains of a tiger kill at about 1700 hr and began feeding. This loca-

tion was 2.8 km west of the 17 January observation. No other linsangs were observed at the three tiger kills, suggesting that these individuals were traveling alone.

CONSERVATION AND RESEARCH CENTER, NZP,
FRONT ROYAL, VIRGINIA 22630,
USA,
August 10, 1981.

M. E. SUNQUIST

REFERENCES

LIAT, L. B. (1973): The banded linsang and the banded musang of West Malaysia. *Malay. Nat. J.* 26: 105-111.

PRATER, S. H. (1971): The Book of Indian Ani-

mals. Bombay Natural History Society, Bombay, India.

WALKER, E. P. (1975): Mammals of the World (Third Edition). Johns Hopkins University Press, Baltimore.

6. BLACKBUCK CENSUS IN POINT CALIMERE: A REJOINDER

Dr. S. S. Nair (*JBNHS* 73: 304-310, 1978), after doing a one man survey of Black-buck in the Point Calimere sanctuary in October 1974, concluded that a) only 340 animals exist in the Sanctuary in opposition to the Forest Department estimate of 1000+; b) this indicates a steep population decline, or incorrect censussing. This is used to argue that there is both a lack of proper conservation measures and that Forest Department estimates anywhere in India cannot be trusted (He appears to miss the contradiction between these two statements). He further warns that unless corrective measures are taken soon, black-buck will become a memory of the past, without unfortunately spelling out what these corrective measures should be.

I will not stress here the obvious point that more animals need not necessarily mean better management, as the carrying capacity of the habitat could easily be exceeded. I would like, however, to point out some of the methodological flaws in Dr. Nair's census.

The technique used by the Forest Department is that of a total visual count, a tested

and simple method recognised and used as a standard technique today and is known as Spatial census 2 in which a count is made of all the animals in a specified area at a specified point in time. The count is instantaneous in its properties. This technique, which is ideally suited for open habitat animals, like the black-buck at Point Calimere calls for no special qualification, training, skill or scientific knowledge except that the enumerators should be able to age and sex the animals they see. As we are not omniscient and omnipresent, we usually employ sufficient numbers of census parties and more than one individual in each census party.

On the other hand, some of the disadvantages of the one man survey may be considered. The black-buck is not a static animal, and duplications are likely, especially since individual recognition is extremely difficult. Visibility is reduced due to the undulating terrain at Point Calimere and the evergreen thickets. Waterlogged conditions in October would also prevent any observer from moving in a straight line. At one time normally, any

observer cannot command a view greater than 140° and an area of 44 Ha. is very flat country if the view is not obstructed upto 600M. In such situations any count arrived at cannot be called "Total" but in effect is a rather inefficient sampling method.

To illustrate my point Dr. Nair states that there were "no animals in plots 9, 11, 13 and 14" (his table 1). The only valid inference however is that no animals were sighted by him at the time of the survey! The counting in each plot may have taken, say, one hour projecting randomly selected one hour results to 24 hours is hardly likely to lead to accuracy in this case.

Again the total length of the census lines works out to be approximately 18 Km. where compared with from Survey of India maps (unfortunately, Nair has not indicated the scale of the map). These census lines and triangles appear efficient on paper. They are useless for census work since they are not marked on the ground. Also, because of possible duplicates in counting due to the animals moving, caution should be exercised in interpreting density, herd composition and age structure. Using Dr. Nair's own data, if the minimum herd size is multiplied by the number of herds, the total number of animals arrived at is 722+ Minimum 722 Maximum

1140 and mean 931. It is a pity that the enumerator did not take along local staff to assist him, as was done in Mr. J. C. Daniel's census in 1967. It is obvious that even a total census will result in some errors. However, Nair's sampling is vitiated by the fact that he does not give estimates of variance, or the confidence limits to be placed on his observations. In view of this, one would fail to understand why Forest Department census estimates in India as a whole should be condemned. I would like to state that a number of non-Forest Department, non-official people have always been involved with our censussing and this data is not "Cooked up" as the implication seems to be. We would happy to correct our techniques if some specific fault was pointed out. We would be happy to have Dr. Nair as an observer on our next census.

I would like to make a final point. Absolute numbers of an animal species are less important than the population structure, age class distributions. And the trends over time that matter. Judgements should therefore not be made on "absolute numbers" alone, but the other factors, which are more relevant in conserving and managing a particular eco-system.

To quote Aldo Leopold, "When people run out of ideas, they start counting in the hope that somehow it will give them some....."

J. MANGALRAJ JOHNSON

WILDLIFE WARDEN,
KALAKAD SANCTUARY,
TIRUNELVELI- 627 011,
TAMIL NADU,
April 1, 1981.

REFERENCES

JOHNSON, J. MANGALRAJ (1974): The Black-buck in Point Calimere Sanctuary, Tamilnadu Population Dynamics and observation on behaviour. *Indian Forester* 101 (8).

NAIR, S. S. (1978): A population survey and ob-

servations on the behaviour of the black-buck in the Point Calimere Sanctuary, Tamil Nadu. *J. Bombay nat. Hist. Soc.* 73 (2): 304-310.

OVERTON, W. SCOTT (1971): Wildlife Management Techniques.



Johnson, J M. 1982. "BLACKBUCK CENSUS IN POINT CALIMERE SANCTUARY INDIA A REJOINDER." *The journal of the Bombay Natural History Society* 79, 186–187.

View This Item Online: <https://www.biodiversitylibrary.org/item/191543>

Permalink: <https://www.biodiversitylibrary.org/partpdf/156858>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In Copyright. Digitized with the permission of the rights holder

License: <http://creativecommons.org/licenses/by-nc/3.0/>

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.