

# A simplified punch-card system for recording biological information in the field

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## I. INTRODUCTION

Biologists and other research workers in wildlife management are having to rely to an ever increasing extent on biological records and observations by field staff. Field staff, especially those stationed in game reserves, are in a position to obtain a great deal of basic information regarding wild life. This information, especially when records over an extended period of time are available, is of importance for the management of wildlife, both in game reserves and farms and for policy decisions regarding conservation.

Prior to the initiation of the punch-card system in South West Africa, field staff were issued with notebooks for recording their observations. On completion the notebook was handed in and a new one issued. This system had several disadvantages, the more serious being:

- (a) As there is no index the only method of finding a specific item of information was by reading through all completed notebooks.
- (b) difficulty in deciphering certain handwritings.
- (c) due to the nature of their work these notebooks could become soiled, often completely obliterating one or more pages.
- (d) losing an almost complete notebook, could result in the loss of a possible rich source of information.
- (e) there was no guide to the type of information required, resulting in uncertainty as to what type of information would be needed by the biologists (this was especially true before formal training for field staff was initiated).

## II. THE PUNCH-CARD SYSTEM

In consideration of the abovementioned problems it was decided to develop a system which would be simple, would enable one to use a filing system for quick retrieval of data and would also serve as a constant guide to field staff as to what information is needed. The choice of a punch-card system was almost automatic. Although much more information can be stored on a punch-card if some type of coding is used, it was decided to keep the card as simple as possible to minimize human errors.

Seven of the more important basic categories on which information for management is needed, and which could be gathered by the field staff, such as predation, feeding records, game counts, reproduction records, measurements, herd compositions and carcasses found in the field can be recorded on the punch card. On the back of the punch-card instructions regarding the information required for each of these categories, as well as how to use the punch-card, are given. On the front of the punch-card the observer has to note his name, date, time, locality and number of the card. Provision is also made for

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the herbarium number of any botanical sample collected as well as any other remarks.

The instructions on the back of the punch-card under each of the seven basic categories mentioned earlier are as follows:

Predation: mark:

- (i) predation
- (ii) prey
- (iii) predator
- (iv) method of killing (strangled, neck or back fractured)
- (v) date, time of predation.

Additional information to be gathered and noted:

- (i) where the predator starts feeding and who feeds first.
- (ii) composition (age and sex) of the pride (pack etc.) of predators.
- (iii) if possible take bloodsmears and collect skull and lower jaw of prey. Number material collected.

Feeding records: mark:

- (i) feeding record
- (ii) animal utilizing plant
- (iii) browser or grazer
- (iv) plant eaten
- (v) rainy or dry season

Additional information to be gathered and noted:

- (i) collect sample for herbarium and identification
- (ii) note species eaten
- (iii) note which part of plant utilized (leaves, flowers or fruits)
- (iv) general condition of plant (wilted, dry etc.)

Game counts: mark:

- (i) game count
- (ii) wet or dry season
- (iii) species counted

Additional information:

- (i) record counts
- (ii) locality (name of waterhole etc.)

Reproduction records: mark:

- (i) reproduction
- (ii) animal species

Additional information:

- (i) number of young
- (ii) date first young noted

Measurements: mark:

- (i) measurements

Additional information

- (i) body circumference (behind shoulder)
- (ii) ear length
- (iii) shoulder height
- (iv) body length

- (v) tail length
- (vi) hind foot length c.u.
- (vii) circumference front foot
- (viii) horn length

Herd composition: mark:

- (i) herd composition
- (ii) herd size (total number)
- (iii) number males, females and young
- (iv) males or females alone
- (v) ages — if possible.

Carcasses found: mark:

- (i) carcass found
- (ii) possible cause of death (disease — anthrax, predation, etc.)

Additional information

- (i) note locality
- (ii) gather skull and lower jaw — and number.

The field staff only mark the holes which need cutting. The actual cutting is done by a technical assistant. One punch-card is used for each observation. These punch-cards are returned monthly by the field staff together with their monthly reports. They are then handed over to the biologist and filed in a steel cabinet. The size of these punch-cards is approximately 12,6 cm by 20 cm.

This system has been in use for approximately twelve months and seems to work satisfactory.

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