

PERCEPTIONS OF THE ENVIRONMENTAL EDUCATION PROGRAMME AT PILANESBERG NATIONAL PARK:

Part I — Primary Pupils

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A sample of Std. 3 and 4 pupils (Grade levels 5 and 6) in Bophuthatswana were surveyed for their attitudes towards and opinions of the educational programme at Pilanesberg National Park. Methods used were observation, questionnaires and interviews. Pupils' responses varied significantly with the questions asked and suggested both strengths and weaknesses of the current programme. Other issues highlighted by the survey were; the role of the schools vis-à-vis the conservation agencies in promoting environmental awareness, the joy and pleasure which pupils experience in visiting the Park and areas requiring further research and investigation.

INTRODUCTION

During 1987 a preliminary investigation was carried out among Std. 3 and 4 pupils and their teachers visiting the Pilanesberg National Park for formal courses in general ecology and conservation. The primary aim was to elicit some provisional data from teachers and pupils on what they had seen and learnt in the Park and how they felt about some aspects of the programme in which they had participated. This paper deals with some aspects of the survey insofar as pupils are concerned. Teachers will be dealt with in a subsequent publication.

Std. 3 and 4 pupils were chosen because they are of particular importance to the environmental education programme operating at Pilanesberg. These standards are the ones upon which it had been decided to concentrate efforts both in terms of providing a high quality educational service and of attracting pupils and teachers to the educational programme at the Park. To the extent that the survey aimed at obtaining limited insights into pupils' knowledge and attitudes after the completion of the course, it was a form of summative evaluation. It was welcomed by the teaching staff at the Park, being conducted with their full support and co-operation and with the approval of the National Parks Board of Bophuthatswana under whose aegis the Pilanesberg National Park falls.

The origins, *raison d'être*, facilities and educational services of Pilanesberg have been described elsewhere (Boonzaaier et al., 1983; Monchusui & Hancock, 1986; Irwin, 1987 and SAJEE, 1987). It should be noted however that the educational courses not only have the approval of the Bophuthatswana Department of Education but are run largely by staff seconded from that department. Early in the research programme it became apparent in preliminary discussion with school principals and teachers, that they were not only aware of these facilities and services (largely through the extension services of a mobile film unit) but that there was a strong desire on their part to visit the Park and send pupils to it. Interestingly this was not only in preference to 'the zoo' where schools had traditionally undertaken their outdoor excursions, but also in preference to other national parks and reserves of Bophuthatswana. An added incentive appears to have lain in the fact that with the 1984 change from the 'Bantu Education' system to the new curriculum of Bophuthatswana, 'ecology' had become a significant aspect of the Geography, Biology, General Science and Agricultural Science syllabuses at both the senior primary and high school levels. Many teachers, untrained in this area and unfamiliar with it, looked to the Pilanesberg staff and programmes for help and guidance. To date some 45 000 pupils and 2 000 teachers have attended the two days/one night Std. 3/4 general ecology course.

The sample surveyed was drawn from the 48 schools and

4 096 Std. 3 and 4 pupils who visited the Park for the 'ecology' course during 1987. It consisted of 14 schools representing five of the 14 administrative regions of Bophuthatswana. Six of the schools were from urban areas and eight from rural areas. Participation was entirely voluntary and, apart from referring to children by their first name in the interview, anonymous. Nearly all teachers and pupils (> 99%) participated, resulting in the pupils' questionnaire being completed by 1 146 pupils and the teachers' two questionnaires by 52 teachers. A further 48 pupils selected at random from volunteers were interviewed. (Time constraints in the operational situation disallowed purposive sampling at this stage.) The total sample of pupils thus represented 29,15% of the 4 096 1987 pupils.

The ages of pupils interviewed ranged from 9 - 17 years. Ages 9 - 10 occurred exclusively in Std. 3 and ages 12 - 17 in Std. 4. There was one 11 year-old in Std. 3 and 14 children of this age in Std. 4. The average age of all pupils interviewed was approximately 11½ years with a standard deviation of approximately 1 year 9 months.

As far as could be established no similar work of this nature has been conducted in a Southern African or African context although there is some literature on surveys of this kind carried out in Europe and North America and there is a vast body of theory on evaluation and attitude measurement. As stated initially, the investigation was a preliminary exploration and in retrospect not without problems and shortcomings of its own. Where relevant, comment is made in the discussion.

METHODOLOGY

The methods used to ascertain information about and from pupils were observation, questionnaires and structured interviews. Observation of pupils and their interactions with the Park staff and their own teachers took place informally during the operation of the courses. These observations, while noted, were not in any way quantified but used only to gain insights regarding the atmosphere of the course, modes of explanation employed and materials used.

The questionnaire (Appendix A) was administered directly to pupils either by the principal author herself, or by Pilanesberg teaching staff who had received specific training for the task. All groups of pupils completed their questionnaires in the same room under virtually identical conditions in order to enhance reliability. Ample time was allowed for completion. The content, structuring and length of the questionnaire were tested in and modified by a pilot survey. 'Ease of completion' by pupils and some comparability of results with the interview were considerations.

All interviews were conducted by the principal author with the aid of a tape recorder. Interviews were on an individual basis; the first question, 'What is your name?', being included specifically to encourage pupils to feel at ease. The technique of subsequently addressing each child by his/her first name proved, in the opinion of the interviewer, to be satisfactory. All questions on the interview schedule (Appendix B) were asked of each child but it was not adhered to rigidly and pupils were encouraged to express their views freely. All questions were expressed in English (the medium of instruction) and, where the interviewer

felt it necessary for clarity, in Setswana (the home language of all the pupils surveyed). This procedure was decided upon after a pilot survey had indicated a clear need in this regard and is a practice widely supported in research literature. The interviewer advised pupils to answer questions in Setswana but some of them chose to try the answer in English first and only on failing to express themselves clearly did they switch to Setswana. Many children aged 11 and under had difficulty in the interpretation of some questions, especially numbers 8 and 9.

RESULTS AND DISCUSSION

Questions and answers of both the questionnaire and interview may be grouped for discussion purposes into four broad categories; those relating to the pupils' 'background', conceptual questions, knowledge/factual questions and perspective/attitude questions. In respect of the last category the questions are seen to fall within a wide spectrum which would range from attitudes to the way phenomena are perceived.

Questions relating to pupils' 'background'

Questions 1, 2 and 3 of the interview schedule have already been referred to. Questions 1 and 2 of the questionnaire and part of question 4 of the interview are dealt with here.

The purpose of question 1 was to determine whether subjects most favoured by pupils included those with an 'ecology' component in the syllabus viz. Geography and General Science. It was answered by 94,94% (1 088 pupils). 16,58% (190) listed five subjects, 17,45% (200) four subjects, 50,00% (573) three subjects and 10,91% (125) two subjects. Results are shown in Table 1 and provide some illuminating information.

TABLE 1 Pupils' response to the question: "Which of the subjects you learn at school do you like the most?"

Subject	No. of occasions recorded	% of pupils recording	Rank
Setswana	875	76,35	1
English	655	57,15	2
History	478	41,71	3
Geography	442	38,56	4
Religious education	420	36,55	5
Afrikaans	360	31,41	6
General science	213	18,59	7
Health education	56	4,89	8
Mathematics	0	0,00	9

N = 1 088

The overall response was a relatively firm 'no', as Geography ranked only fourth and General Science seventh out of nine possible subjects. Both are widely regarded, especially among Black pupils, as relatively difficult not least because they are often poorly taught by inadequately qualified teachers and are in addition conceptually demanding, involving a significant degree of abstraction. In the same context it is significant that Mathematics was not mentioned by a single pupil.

While it may be true to some extent that pupils' like/dislike of a subject relates to the teacher presenting it, the sample is of sufficient size and diversity to regard these results as significant. It certainly suggests that any reliance upon developing 'environmental', 'ecological' or 'conservation' awareness through Geography or General Science syllabuses in the schools could be misplaced. Pupils could conceivably come to associate ecology (and the environmental and conservation awareness that potentially goes with it)

with 'difficult' subjects which they perceive to be beyond their grasp and thus either avoid it, develop negative attitudes to it or simply marginalise its perceived relevance to them and their future.

The question 'Are you visiting the Park for the first time?' was asked in both the questionnaire and in the interviews, the purpose being both to act as a reliability indicator and to pursue the issue in greater depth (see under the perspectives/attitude heading). Comparable responses to the two questions are shown in Table 2 which indicates some disparity. Possible reasons for this are a degree of unreliability, possibly related to language difficulties experienced by pupils at both the comprehension and expression levels, or to pure chance. An alternative explanation may be that pupils who were on a repeat visit felt greater confidence in the Park milieu and were thus more likely to volunteer for an interview.

TABLE 2 Pupil responses to question 2 of the questionnaire and question 4 of the interview: 'Are you visiting this Park for the first time?'

Response	Questionnaire n	Questionnaire %	Interview n	Interview %	Total n	Total %
YES (i.e. first visit)	837	73,04	31	64,58	868	72,70
NO (i.e. repeat visit)	309	26,96	17	45,42	326	27,30
N =	1 146	100,00	48	100,00	1 194	100,00

Conceptual questions

Two questions fall within this category; 'What is ecology?' and 'What is conservation?' (questions 4 and 5 of the questionnaire and question 5 of the interview). Both were asked in order to find out to what extent the pupils understood the terms. A proportion of the pupils (refer Table 3) had, according to their teachers, already completed the sections on 'ecology' in either their Geography or General Science syllabuses or both before being brought to the Pilanesberg. Ideally this should have included at least an introduction to the concept of conservation even though it is not a specific syllabus requirement. Because of the anonymity of the survey no correlation could be made between teachers' declarations and pupil performance on these questions.

TABLE 3 Numbers of teachers (N = 52) stating whether the 'ecology' sections of syllabuses had been completed at school prior to visiting the Pilanesberg

	Completed in ...	
	Geography	General Science ('Biology')
re Std. 3 pupils:	Yes	30
	No	18
	No response	4
re Std. 4 pupils:	Yes	40
	No	10
	No response	2

Projected to pupil numbers, these figures suggest that roughly 75% of pupils would have completed the relevant sections of work.

Responses to the first question, summarised in Table 4, were largely consistent with school textbook definitions. Ecology as 'the study of how nature works' is the operational definition used by Irwin and Lehobye (1985 and 1986) in their pupils' textbooks for Std. 3 and 4, while 'the study of things in our surroundings' is the corresponding explanation used by Hurry and

Craig (1984a and 1984b). (These two sets of textbooks are the most widely used in the schools). What is interestingly absent however is any direct reference to ecology as 'the study of interrelationships of living organisms to each other and to their total environment' - the terminology used by Irwin, Curror and Lehbobe (1986) in their Teachers Manual for Std. 3 and 4.

The differences between questionnaire and interview responses for these two answers are difficult to explain and may be similar to reasons outlined for earlier questions. Other possibilities are that the Irwin and Lehbobe 'definition' is used more often by the Pilanesberg staff and that in conjunction with this the interview response represents to a greater extent than the questionnaire what had been learnt over the previous 24 hours. Concomitantly the questionnaire response may represent a truer reflection of the school situation.

TABLE 4 Summarised responses to the question 'What is ecology?'

Responses	Questionnaires		Interviews	
	n	%	n	%
The study of how nature works.	396	34,55	33	68,75
Things in the environment.	288	25,13	1	2,08
Study of living and non-living things.	217	18,94	3	6,25
Inadequate answers (e.g. 'soil', 'water', 'sunlight', 'air' and 'plants')	123	10,73	6	12,50
No response	122	10,65	5	10,42
N =	1 146	100,00	48	100,00

Overall, results suggest that the base for pupils' theoretical conceptualisation of the term 'ecology' lies in the school milieu. There is also some evidence to suggest that teachers may use the pupils' textbooks as their sole source of information. It is not possible however from the questions asked to determine what role and importance the pupils' Pilanesberg experience might have played in either re-inforcing or internalising the term. Likewise, while one might surmise that the experience helped pupils to see in concrete terms what had up to then been a largely theoretical notion, there is no evidence to support this. Determination of this type of information would be a most worthwhile research undertaking from the point of view of the Pilanesberg programme.

Summarised and grouped responses to the question 'What is conservation?' are given in Table 5. 26,35% of pupils' answers embraced the standard lay definition of conservation as 'wise use' indicating, in the opinion of the authors, that at least in theoretical terms they had a reasonable grasp for their age. A further 59,15% had a more limited notion of the concept, while 14,48% (approximately 1 in 7) failed to respond. These results suggest that even at a simple theoretical level the concept is not getting across to the majority of the target group in a clear and unambiguous form at school. It is evident from the results however that the Pilanesberg ecology course has a comparable lack of success in conveying the concept, despite it being actively taught and repeatedly explained there. It should also be noted that the definition above appears in only one of the sets of textbooks referred to which, as the results on 'ecology' suggest, may be a crucial factor. Clearly the matter requires further investigation.

Knowledge/factual questions

Questions 7 and 8 of the questionnaire and 6 and 7 of the interview refer. The purpose of these questions was to gauge pupils' knowledge of aspects of three key ecological concepts (habitat, trophic levels and energy flow) which they had been taught and shown whilst in the Park and, in the case of question 8, what they had learnt about any one animal of their choice.

The results of the interview question 6 are shown in Table 6, which indicates that only 20,83% of pupils

TABLE 5 Summarised responses to the question 'What is conservation?'

Responses	n	%
Wise use of nature	302	26,35
Keep place clean	288	25,13
Save animals and birds	187	16,31
Save natural resources	203	17,71
No response	166	14,48
N =	1 146	100,00

were unable to give satisfactory answers. As this concept is, in the considered opinion of the authors, seldom taught at a practical/concrete level in the school milieu the results suggest substantial learning by pupils during their visit to the Park. Certainly the dam (where a part of the course is carried out), 'forest' (i.e. thick bush), high hills and patches of grassland are the dominant features of the Park to which pupils would have been exposed. With the exception of the 'don't know' group, two pupils mentioning 'land' and one 'nests', the remaining 38 (79,17%) can be credited with a knowledge of the concept reasonable for their age and standard.

TABLE 6 Habitats which children recorded having seen in the Park

Habitat	No. of occasions recorded	% of pupils recording	Rank
Water/dam	25	52,08	1
Forest	20	41,67	2
Mountains/hills	19	39,58	3
'Under trees'	12	25,00	4
Veld/grassland	11	22,92	5
Rivers	2	4,16	6
'In holes'	2	4,16	6
'Land'	2	4,16	6
'Nests'	1	2,08	9
'Don't know'	7	14,58	-

N = 48

By contrast relatively few pupils indicated any clear idea of what a food chain is. 20,83% (10) were able to provide reasonably acceptable explanations such as 'energy from sun - plant grows - giraffe eats plant - lion eats giraffe'. No pupil was able to express the idea in other than concrete terms. The remaining 79,17% (38) said they 'didn't know' what it was. It appears the issue was not covered at school despite explanations and examples in both sets of textbooks referred to above nor, although it was loosely talked about, was it demonstrated in the field at Pilanesberg. Where aspects of the food chain occurred in films shown to the pupils, direct attention was not drawn to it in the cases observed. Thus it appears that to a majority of pupils demonstrable knowledge of the concept is at best confined to an abstract notion and at worst non-existent.

The correct answers to questions 7a, b and c of the questionnaire were deemed to be 'false', 'true' and 'true' respectively. (The authors assumed, possibly wrongly in retrospect, that Std. 3 and 4 pupils were unlikely to be acquainted with hydroponics). The results shown in Table 7 indicate that while approximately half of the pupils were able to answer 'a' and 'b' correctly only about one third were able to do so in the case of 'c'. These results are surprising and in seeking an explanation for the failure of pupils to

answer correctly such apparently simple and obvious questions, both the validity and reliability of the questions themselves must be brought into consideration. Allusion has already been made to potential confusion in sub-question 'a' and there is clearly ambiguity in 'b' if the 'sun' is taken literally (not allowing for cloud cover). In the case of 'c' it is possible that the double negative may have resulted in confusion and misunderstanding. Overall the results of this question are viewed with considerable reservation.

TABLE 7 Responses to question 7 of the questionnaire
(Correct answers boxed)

Sub-question	True		False		No Response	
	n	%	n	%	n	%
a	378	32,98	608	53,05	160	13,96
b	619	54,01	367	32,02	160	13,96
c	367	32,02	344	30,02	435	37,96
$N = 1\ 146$						

Implicit in question 8 of the questionnaire was the assumption that pupils would write about the animals which they found most interesting or attractive. The short essays were on the whole interesting and knowledgeable, such as the following examples illustrate:

"I saw the baboons. The baboons eat anything like people. The baboon has two hands and two feet. It has not afraid of people."

"In the park we saw the waterbuck. They are usually found near the water. They are feed on the grass. They often take the refuge in the water. It occur in groups."

The proportion of animals which pupils chose to write about are shown in Figure 1 which is an interesting indication not only of the relative attractiveness of the animals to the pupils, but the likelihood with which particular species can be seen in the Pilanesberg. These results would broadly concur with the experience and observations of the authors. The possibility does exist however that despite specific instruction in the question, pupils may have written about animals which they had seen in films shown to them.

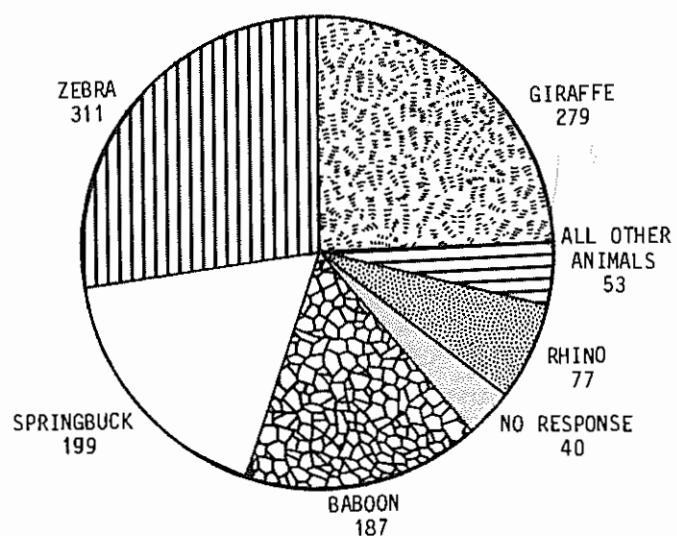


FIGURE 1 Proportional representation of animals written about in response to question 8 of the questionnaire ($N = 1\ 146$).

Perspective/attitude questions

Questions 3 and 6 of the questionnaire and 4a and b, 8, 9 and 10 of the interview are considered to fall within this category. The purpose of the two queries as to what had been learnt in the Park was to gain some idea of what might have been most meaningful to the pupils. Comparative results are shown in Table 8.

TABLE 8 Responses to question 3 of the questionnaire and 4a of the interview: 'What have you learnt about in this Park?'

Concept	Questionnaire:		Interview:	
	n	%	n	%
Animals	579	52,09	16	33,34
Ecology	357	31,15	13	27,08
Natural resources	151	13,18	4	8,34
Plants (incl. trees)	90	7,85	3	6,25
Manyane gates	40	3,49	2	4,16
Soil	49	4,28	3	6,25
Water	49	4,28	3	6,25
People	41	3,58	-	-
Film	49	4,28	1	2,08
Environment	49	4,28	-	-
Conservation	-	-	6	12,50
No response	82	7,16	17	35,41

$N = 1\ 146$ 48

'Animals' are clearly the top attraction, and with 'ecology' constitute the bulk of responses. The importance attached to animals which were incidental to the teaching of 'ecology' is perhaps to be expected; this is probably what most people go to a game reserve for and find most interesting. The rating accorded to 'ecology' also suggests that at least some of the pupils perceived what they had learnt to correspond with the purpose of their visit.

With reference to question 4b, several of the 17 pupils who were on repeat visits to the park claimed they had gained new knowledge of plants, animals and ecology. Ecology for example was mentioned by 35,30% (6 pupils). In the opinion of the interviewer, this group was also more systematic and selective when answering questions. Obviously an empirical investigation in the benefits or otherwise of repeated visits to the Pilanesberg would be of considerable value to the Park's education programme.

Question 6 of the questionnaire was deliberately broad and open-ended and was intended to search the extent to which the target group knew about their environment in general. Table 9 indicates that the dominant concerns are 'keeping the environment clean' and 'care of animals and plants' - a heartening response from an environmental point of view. It should be noted however that 'non-littering' and 'environmental cleanliness' have been subjects of national campaigns (including that of the Lengau Conservation Clubs of Bophuthatswana) over the past two years. Furthermore a statement of knowledge on a topic does not necessarily mean that concomitant behaviour will result.

TABLE 9 Responses to question 6 of the questionnaire:
"How should we use our environment?"

Response (use)	n	%
Keep environment clean	553	48,25
Take care of animals and plants	301	26,26
Have enough water, sunlight and air	50	4,36
Take care of plants, trees, flowers	90	7,85
Take care of trees	21	1,83
No response	131	11,43

$N = 1\ 146$ 100,00

The gap between 'a good idea' and 'putting it into practice' is to some degree reflected by the responses to questions 8 and 9 of the interview. In question 8 'the school' (where there is direction and supervision) rather than the wider environment is seen to be the focus of action (refer to Table 10). It is possible that most of the pupils at this stage tend to respond more to demands from school than home and prefer not to disappoint the school and teachers. It may also be that pupils at the age of about 11 accord more respect to their teachers than to their parents.

TABLE 10 Responses to question 8 of the interview:
"Where do you hope to practise the lessons
you have learnt in this Park?"

Place	n	%
At home	12	25,00
At school	30	62,50
At university	2	4,16
When I grow	1	2,08
Everywhere	1	2,08
At my village	2	4,16
N =	48	100,00

Pressed further in question 9 as to what action they envisaged 31,25% (15) either indicated difficulty in grasping the question, as noted earlier, or were unable to respond. (Refer to Table 11). All the remainder were able to make some form of positive answer ranging from relatively active and potentially community orientated (e.g. planting trees) to passive and self-focussed (e.g. learning Geography). Perhaps most interesting is the relatively large proportion (22,92%) who wanted to relate to friends and parents what they had seen and gained at the Park. This says something about the interest and excitement which the pupils felt, even if it does not focus any thought on concrete action.

TABLE 11 Responses to question 9 of the interview:
"What do you actually wish to practise?"

Response	n	%
Collect natural things in our environment and learn about them	1	2,08
Use environment wisely	1	2,08
Help conservation clubs to conserve natural things	1	2,08
Learn Geography	1	2,08
To plant trees	4	8,33
To conserve birds	2	4,17
Study ecology	6	12,50
Look after the animals	2	4,17
To be clean	4	8,33
Tell parents and friends about what I saw and learnt in the park	11	22,92
We were to answer the test question	8	16,66
Write test	3	6,25
To be a doctor	2	4,17
No response	2	4,17
N =	48	100,00

Responses to the final question of the interview are shown in Table 12 and speak largely for themselves. Observation of these particular courses and others by both authors have repeatedly borne these results out even if not always in such unequivocal terms. When the

interviewer probed further among the 48 pupils as to why they felt 'happy', 'good' etc. a further interesting pattern emerged which is shown in Table 13.

TABLE 12 Responses to question 10 of the interview:
"How do you feel about this Park?"

Feelings	n	%
Happy	34	70,83
Good	3	6,25
Nice	1	2,08
Better	1	2,08
It is interesting	1	2,08
Proud	1	2,08
No response	7	14,58
N =	48	100,00

TABLE 13 Results of probing question 10 of the interview

Feelings	Elaborated feelings	n	%
Happy	Saw animals, mountains, rivers	1	2,08
	Enjoyed sleeping, eating, film	5	10,41
	Enjoyed lessons and game viewing	1	2,08
	Enjoyed wild animals and water	1	2,08
	Learn about animals and plants	1	2,08
	The park is just like home	1	2,08
	Enjoyed viewing animals	7	14,58
	Learn many things	2	4,17
	The place is beautiful	2	4,17
	Studied new animals	3	6,25
	Learnt about animals' habitats	3	6,25
	Learnt about Springbok and Rhino	1	2,08
	Can answer the asked questions	2	4,17
	We did not see a lion	1	2,08
	Learnt about animals and conservation of nature	2	4,17
	Enjoyed film and animals	1	2,08
Good	I love animals	1	2,08
	I learnt new things	1	2,08
	Enjoyed sleeping	1	2,08
Nice	To see animals in a film	1	2,08
Better	Teachers are like ours	1	2,08
Interesting	Saw animals, enjoyed sleeping	1	2,08
Proud	About animals, teachers and workers	1	2,08
No response		7	14,58
N =		48	100,00

The major feature to emerge with these elaborated feelings is the enjoyment and pleasure at seeing and learning about animals in particular. Clearly though, the available facilities added to the experience. Several pupils also added that they would encourage their parents and friends to visit the Pilanesberg to 'see what nature holds for them'. Such attitudes, if repeated on a large scale, are possibly one of the best assurances of a viable future for nature conservation (though not necessarily the broader issue of environmental conservation) in Southern Africa.

CONCLUSIONS

The investigation has drawn attention to a number of issues with a bearing on environmental education in Southern Africa in general and Bophuthatswana in parti-

cular. The most notable of these in the present context is the role of the school vis-à-vis that of the Conservation Agency/NGO in promoting a national sense of environmental awareness and a conservation ethic. The present study did not set out to specifically investigate or quantify this issue but has rather underlined the need for its investigation through a formal research design.

A further conclusion which may be drawn is that while there is clear evidence that pupils both enjoy their visit to the Park, and to some degree benefit from it, this experience is not yet being optimized. Future strategies will have to be developed jointly by the Education Department and the National Parks Board of Bophuthatswana if both pupils and the environment are to benefit fully.

This study in no way purports to be definitive but the overall results are, owing to the size and nature of the sample and notwithstanding some problems of validity and reliability discussed, to some extent generalisable to similar populations. Attention has also been drawn in several instances to important areas for further investigation. Many of these would be justifiable in their own right as well as making a valuable contribution to the wider evaluation of the environmental education programme at Pilanesberg National Park.

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APPENDIX A

QUESTIONNAIRE

1. Which of the subjects you learnt at school do you like the most?
2. Are you visiting Pilanesberg National Park for the first time? Answer yes or no.
3. What have you learnt about this Park?
4. What is ecology?
5. What is conservation?
6. How should we use our environment?
7. Answer True or False.
 - a. Plants can grow without soil
 - b. Plants need the sun for growth
 - c. Man cannot live without plants.
8. Write a short essay on one animal you saw in the Park.

APPENDIX B

INTERVIEW QUESTIONS

1. What is your name?
2. How old are you?
3. In which standard are you?
4. Are you visiting this Park for the first time?
 - a. (If yes) Give me the things you have learnt about.
 - b. (If no) Which things have you learnt now, which you have not learnt in your first visit?
5. What is ecology?
6. Which habitats have you seen in this Park?
(Ke madulo a feng a diphologolo ao o a bone mo phakeng eno?)
7. Explain a food chain you know about.
8. Where do you hope to practise the lessons you learnt in this Park?
(O bona gore o tla diragatsa thuto e o e bone phakeng kwa kae?)
9. What do you actually wish to practise?
(Ke eng selo seo o tota o rata o go se dira?)
10. How do you feel about this Park?
(O ikutlwa jang ka phaka eno?)

