

**CONSERVATION MANAGER'S PERCEPTIONS
REGARDING BIODIVERSITY IN THE NORT-WEST PARKS
AND TOURISM BOARD**

**PROJECT REPORT PRESENTED TO THE
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ABSTRACT

Biodiversity perceptions of conservation managers in the North West Parks and Tourism Board are “teased out” to find how they view biodiversity issues in general and also how they perceive the functioning of their organisation. This report is the discussion and interpretation of responses to the questionnaire by managers at different ranks of the organisational structure. The results intend to show areas where the organisation is seen to be doing well and where it seen to be lacking. The tables and the appendices are used to indicate trends if any between high level managers and lower level managers (which level tends to rate the organisation lower or higher most of the time).

INTRODUCTION

The Question of biodiversity and its conservation is subject of research interest to many conservation biologists.”Despite a weak knowledge base and lack of precise measurements, enough is now known to direct activities to critical areas.”Shen (1988).One of such important areas is the conceptualisation of biological diversity. In this regard, a general consensus exists that biodiversity can be considered at three levels- genetic level, species level and ecosystem level.(Bisby,1995; Guston, 1996; Heywood, 1994; Hunter, 1994; Krattiger, 1994; Stuart,1990; and Shen 1988).

Further critical area is how humans relate to this biodiversity. Sustainable utilisation of biodiversity is held as best possible approach based on available information.(Guston, 1996; Hunter, 1996; Munro, 1991 and White Paper, 1997)

The role of conservation organisations, institutions and Government Departments in South Africa is to ensure that proper measures and mechanisms as put forward by the Convention on Biological Diversity are implemented to enhance biodiversity and its conservation. This study looks into such mechanisms as applied in The North West Parks and Tourism Board of the North West Province.

“South Africa’s obligations to the Convention on Biological Diversity (CBD) are presently being pondered in various forums around the country, a process which is expected to culminate in the production of a white paper (policy document) early in 1997” Van Jaarsveld (1996). The policy document, as was already forecast in 1996, has indeed materialized. The white paper on the Conservation and Sustainable use of South Africa’s Biological Diversity was launched in July 1997.

This document is intended to serve as guide and yardstick to conservation and environmental bodies. The realization of aims and objectives for South Africa as set out in this document depend on, amongst others, the attitudes and perceptions of people who are tasked with the implementation of strategies on biodiversity conservation and sustainable utilization thereof.

This study focuses on the perceptions of conservation managers in the North West Parks and Tourism Board (NWPTB) toward biodiversity and how these relate to their management. The study took place at the time when this organisation was at the final stage (July - October 1998) of a four to five year of restructuring process, during which four formerly unrelated bodies were merged into one organisation. The four bodies are the former Bophuthatswana National Parks Board (Bop Parks); part of the former Transvaal Provincial Administration (TPA) part of the former Cape province Administration (CPA) within the borders of the North West Province; and former Bophuthatswana Tourism Council. At that incipient stage of the new organisation that was emerging, members were fairly unfamiliar with its approaches. Respondents in many instances reflected their experiences with their old organisation. This has a limiting effect on accurately relating the findings of the research to the new organisation.

METHODS

A questionnaire consisting of twenty-two main and four supplementary questions was designed. All the questions were derived from the articles of the convention on Biological Diversity White Paper (1997) (Appendix 1).

There are three main parts to the questionnaire. The first part consisted of eight open ended questions which required the respondent's own opinion or understanding of issues raised. The second part consisted of twelve questions which provided five rating options, using Likert's scale (Du Plooy 1995), that provided an opportunity to qualify one's rating. The last part consisted of two Yes / No questions with a challenge to account for one's option. In order to persuade respondents to give thought to the ratings they marked, the questionnaire requested reasons for their choices: (Du Plooy 1995).

Some of the concepts used in the questionnaire were quite unfamiliar to most respondents. There were general complaints about the "technical" language of the questionnaire. However, it is the opinion of the researcher that this is an unwarranted complaint, given the fact that these concepts are clearly defined in the White Paper (1997), which is widely circulated and incorporates the language currently used in conservation circles.

However, to facilitate the interviews, the researcher first had to explain the concepts and then respondents formulated their responses. To ensure a fair level of consistency, the White Paper (1997) was used as reference throughout.

Interviews

Data were collected through personal interviews. Telephone interviews were conducted in a few instances where respondents could not be met personally. In the case of telephone interviews, respondents were sent questionnaires to fill in and were provided with telephone numbers they could use to contact the researcher for any clarity. The researcher also initiated telephonic discussions after receiving the questionnaires back for purposes of clarity. The questionnaire could be fairly completed within one hour, but because of explanations that accompanied most interviews, it sometimes took up to two hours to complete.

Selection of respondents

To select respondents, Protected Area Management (PAM) division structure was used. This division is responsible for establishment, development and running of conservation areas within the province. Four respondents were selected randomly from each of the five management levels in the structure.

The five levels are as follows:

Managers

Park Wardens

Rangers

Cadet Rangers

Field Rangers

Only two of the participants were women. In the entire structure of PAM, there were only three women within the levels indicated above.

RESULTS AND DISCUSSIONS

The questionnaire received a 90% response. This means that out of 20 targeted respondents, only two did not respond. The first one was in the “managers” level, and offered the following reasons for his decline to participate in the study: the questions are too complex, the questionnaire is too long, the research was not preceded by any pilot study; and the use of subjective questions in the questionnaire (Appendix 1). The second was in the “Park Warden” level, and was simply not available for the interview.

All who participated in the project commented that the study stimulated their thinking about critical issues of conservation. It also challenged them to take good look into their organisation, particularly into its contribution to conservation. At the “Cadet Ranger” level, in particular, participants felt like they had gone through a training session after the interview. The overall response of participants was fairly positive (Appendix 2) and lower management levels generally showed more positive response than higher management levels (Appendix 3).

Question 1: How would you define biological diversity?

The White Paper (1997) defines biological diversity as the variability among living organisms from all sources including inter alia; terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part including diversity within species, between species and ecosystems. This view is shared by Bisby (1995) and Gaston (1996) among others, who further argue that biodiversity can be considered at three levels (i.e. genetic, species and ecosystem level).

Respondents used a variety of terms in their definition of biological diversity (Table 1). The most popular definition was “different plants and animals”; followed by “different species”. “Different wild animals” also occurred as a definition. There is clearly no reference to the genetic aspect of biodiversity. The ecosystem aspect of biodiversity was alluded to in phrases such as “different plants and animals in their habitats”.

Table 1. The frequency in which different definitions of biodiversity were used by different managers.

Number of Respondents					
DEFINITIONS GIVEN	Managers	P Wardens	Rangers	C Ranger	F Ranger
Different plants and animals	-	1	1	3	3
Variety of life forms	2	-	2	-	-
Different species	1	2	1	-	1
Wild animals	-	-	-	1	-

Question 2 : How would you translate that in biodiversity conservation?

A generally accepted definition of conservation by IUCN / UNEP and WWP is the management of human use of the biosphere so that it may yield the greatest sustainable benefits to present generations while maintaining its potential to meet the needs and aspirations of the future generations (Hunter 1996). However, the focus of the question is not on the definition of conservation as such, but rather on what can be done to conserve biodiversity. The White Paper (1997) suggests, amongst others, legislation, protected area designation, giving attention to endangered species and support for research. Fifty percent of respondents view conservation of biodiversity in terms of the establishment of parks. There are references to education, law enforcement and sustainable use of resource (Table 2).

Table 2. Approaches to conservation according to NWPTB conservation managers.

Number of Respondents					
CONSERVATION APPROACHES	Managers	Park Wardens	Rangers	C Rangers	F Ranger
Establishment of parks	1	-	4	1	3
Education and research	1	-	-	1	1
Law enforcement (patrols / monitoring)	-	1	-	2	-
Management of ecosystems	1	-	-	-	-
Controlled / sustainable use	-	2	-	-	-

Question 3: What are the biodiversity conservation objectives of your organisation?

The NWPTB has several conservation objectives for the province. These can be put in three broad categories that are inter-linked. They are: economic objectives, social objectives and ecological objectives. The integration of conservation with other practices ensures that conservation programs come closer to people and that benefits can be more widespread.

The following objectives were offered:

- manage ecosystems / biodiversity within protected areas.
- develop and manage parks cost - effectively
- participate in land use planning
- promote tourism
- contribute to job creation
- contribute to wise use of resources
- protect endangered species
- human resource development.

All these objectives are in line with the guidelines of the White Paper (1997). However, there is no sign of agreement between management levels on what actual objectives are. Perhaps objectives have not been communicated well within the organisation.

Question 4: How would you rank levels of biodiversity?

There are three levels at which biodiversity can be considered (Bisby 1995 and Gaston 1998) - the genetic, species and ecosystem levels. Genetic diversity refers to the variation of genes within species. Species diversity refers to the variety and abundance of species within a geographic area. Ecosystem diversity can refer to the variety of ecosystems found within a certain political or geographical boundary (White Paper. 1997).

There is a tendency among conservation agencies to focus on the species aspect of biodiversity with emphasis on certain mammals. This approach undermines the roles of other species such as insects and poorly known species in the functioning of ecosystems.

To this question, respondents showed high preference for ecosystem approach. However, it remains to be seen how they view their organisation's position in this regard.

Table 4. The three approaches towards ranking biodiversity levels. Numbers refer to respondents.

	Very Important	Important	Less Important
Genetic	7	8	3
Species	8	5	5
Ecosystem	13	3	2

Question 5: How would justify your ranking of biodiversity levels?

The following acknowledgments about biodiversity levels were made:

- ecosystem approach treats everything as equally important
- you cannot isolate one level from the rest
- species concept is unsophisticated
- a genetic concept is much more difficult to implement
- genetic approach helps to maintain clean bloodlines
- if ecosystems are protected, genetic material and species will automatically be protected as well.

Question 6: How would define biological resources?

“Biological resources is used in the convention to include genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems, with actual or potential use or value to humanity” (White Paper 1997).

Respondents gave the following definitions: natural resources, useful plants and animals, fauna and flora for human use. The scope is much narrower here as it bears no consideration for genetic resources and is confined to species consideration only. The most common definition have direct reference to plants and animals that have known use to humans.

Table 6. Definitions used by respondents

Definitions	Number of Respondents				
	Managers	P Wardens	Rangers	C Rangers	F Rangers
Natural resources	-	1	-	1	1
Useful plants and animals	2	1	1	3	2
Fauna and flora for human use	1	-	-	-	-
Living things needed by humans	-	1	3	-	1

Question 7: What do you think entail sustainable utilization of biological resources?

The question required personal views on what actions would constitute sustainable utilization of biological resources. Sustainable utilization is defined as: “The use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations”(White Paper.1997)

Respondents mainly suggest the following approaches as ways of ensuring sustainable utilization of biological resources.

Table 7. Approaches to sustainable utilization by respondents.

Sustainable Utilization	Managers	P Wardens	Rangers	C Rangers	F Rangers
Planned harvests	1	2	2	1	-
Wise use	-	1	-	1	1
Law enforcement	-	-	-	1	2
Education	-	-	1	-	1
Allow systems to replenish	2	-	1	1	1

Question 8: What organisational measures can be implemented to ensure sustainable utilization of biodiversity resources?

This question was intended to find out what respondents think their organisation should do in order to contribute to the sustainable utilization of biodiversity resources.

It is interesting to note that 50% of the respondents think that research is an important source of information for the organisation. This is in agreement with McNeely's (1995) argument that research must serve to inform, supplement and improve conservation efforts, but it should not be a substitute for immediate action.

The second popular suggestion is that of public awareness of the state of biodiversity and ways of using it sustainably. It is McNeely's (1995) conviction that effective action must be based on accurate information and that, the more widely shared the information, the more likely it is that individuals and institutions will agree on the definition of problems and solutions. Only one respondent thinks that the sustainable utilization of resources can be reached through law enforcement.

Table 8. Respondent's suggested measures to their organization to implement sustainable utilization.

Organisational Measures	Managers	P Wardens	Rangers	C Rangers	F Rangers
Public Awareness	3	2	-	-	-
Well researched policies / approaches	2	2	2	-	4
Audit of resources to plan harvests	1	1	-	-	-
Law enforcement	-	-	1	-	-

Question 9: How do you think your organisation is performing with regard to issues raised?

Tables 9.1-9.9 and 12 will present ratings as follows:

- excellent
- very good
- good
- fair
- poor

Question 9.1 Interaction with other organisations involved in biodiversity conservation.

The “good” rating (good), was used more frequently to describe the organisation’s interaction with others involved in biodiversity conservation (Table 9.1). The most cited reason for this is the re-introductions of animals in the Pilanesberg National Park and the Madikwe Game Reserve where animals were bought from, or donated by many conservation organisation throughout Southern Africa.

There are few indications of interactions with national and international organisation on issues of policies, strategies, finance and information.

Table 9.1 Rating of the organisation on interaction with others involved in conservation.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	1	-	-	-	-	1
V good	2	1	1	2	2	8
Good	-	2	3	2	2	9
Fair	-	-	-	-	-	0
Poor	-	-	-	-	-	0

Question 9.2: Inventorying and monitoring.

This refers to the identification of components of biodiversity that are important for conservation by the organisation and can be sustainably utilised.

All the respondents based their ratings on annual animals censuses in the parks and monitoring programs of very important species (VIS) conducted by ecological services division in each park. These animals do not include smaller mammals, birds, reptiles, insects and other small organisms. It certainly does not include plants except for burning programs. Despite this discrepancy, concentration of ratings is between very good and fair, which suggests good a level of confidence in the organisation's performance.

Table 9.2 Spread of ratings.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	-	-	-	1	1	2
V good	2	-	3	1	3	9
Good	1	1	1	2	-	5
Fair	-	2	-	-	-	2
Poor	-	-	-	-	-	0

Question 9.3: In-situ conservation

The question refers to conservation of biodiversity within natural environment, habitat or ecosystem. The terminology was strange to most respondents, but soon became clear when explained. It became one of the questions to receive high "very good" rating (Appendix 3).

Respondents gave reasons such as:

- ecological research preceding all re-introductions of animals when stocking the parks;
- good scientific procedures being followed in park management.

Table 9.3. Rating of the organisation on in- situ conservation.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	-	1	1	1	-	3
V good	1	1	2	-	3	7
Good	1	-	2	3	1	7
Fair	1	1	-	-	-	2
Poor	-	-	-	-	-	0

Question 9.4: Ex-situ conservation

This question referred to the conservation of components of biological diversity outside their natural habitats. This was another question with intimidating terminology. With the understanding facilitated by the researcher's explanation, most respondents felt that their organisation is doing nothing on its own and that it is not contributing to any such program. Thus the highest "poor" rating in the entire questionnaire and no single "excellent," rating. The only "very good" rating was given by one of the park wardens who knows about relations between his park and Onderstepoort Research Center whereby testes and tissues of dead or sick animals are taken to the research center for diagnostic purposes or for genetic analysis. None of his subordinates were aware of this (Appendix 3).

It is possible that most of them have seen these things being done, but did not know for what purpose. There are two probabilities here. Either they do not fully understand other facets of ex-situ conservation or there is lack of sharing of information within the organization, in which case this information is only known to the top management.

Table 9.4 Rating of the organization on ex-situ conservation.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	-	-	-	-	-	0
V good	-	1	-	-	-	1
Good	3	-	-	-	-	3
Fair	-	2	-	1	1	4
Poor	-	-	4	3	3	9

Question 9.5: Community participation / ownership

This question focused on the involvement of communities in conservation of biodiversity, as carried out by the organization. Communities that are directly or indirectly affected by the existence of parks for instance are an important part in the planning and decision making processes of such parks. They can make their contribution if they are genuinely consulted. It is important that they are aware of opportunities and challenges faced by conservation.

This question received the highest “fair” rating (Appendix 2). The general reason is that the ex- Bophuthatswana National Parks Board had very good community participation programs which recognised the role that traditional leaders could play in advancing the cause of conservation and sustainable use of biological resources both in and outside protected areas. There is also an argument that although the present organisation has ideas of good community participation, it still lacks policies and structures for implementation.

Table 9.5 Respondents rating on community participation / ownership.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	-	-	1	-	1	2
V good	1	-	-	-	-	1
Good	-	1	2	1	1	5
Fair	2	2	1	2	2	9
Poor	-	-	-	1	-	1

Question 9.6: Research and Training

This question dealt with the role of the organisation in promoting and encouraging research which contributes to the conservation and sustainable use of biological diversity. The focus is on research programs initiated by the organisation or its co-operation with research initiatives of other institutions. The second issue focuses on human resource development in terms of training based on latest researched information and technology.

The respondents indicate a fair amount of research, which they attribute to the work done by ecological services division of the organisation. Some suggest that there is participation in a small way in research activities initiated by other institutions. As for training, there is general agreement that it is non-existent.

Table 9.6 Rating of the organisation on research and training.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	-	-	-	-	-	0
V good	-	-	1	1	-	2
Good	1	-	1	2	1	5
Fair	-	3	1	1	3	8
Poor	2	-	1	-	-	3

Question 9.7: Public Education and Awareness

The South African government is convinced that without the support and commitment of all South Africans, efforts to conserve the country's biodiversity are unlikely to succeed (White Paper 1997). As a result of this position, public education and awareness is considered to be one of the most critical issues to address in the implementation of the policy on conservation and sustainable use of South African biodiversity. All respondents argue that their organisation is not doing any public education and awareness.

They all refer to the ex-Bop Park's good environmental education programs with schools and general public. The single excellent rating is for ex Bop Parks (Table 9.7). The top management levels acknowledge that education and awareness are very important and that the organisation is not doing as well as it should in this regard.

Table 9.7. Rating of the organisation on public education and awareness.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	-	-	1	-	-	1
V good	-	-	-	-	-	0
Good	2	-	2	1	2	7
Fair	1	2	1	2	2	8
Poor	2	1	-	1	-	4

Question 9.8 : Impact assessment and minimising adverse impacts.

The level of confidence in the organisation's performance on this issue is fairly high. No one rated it below "fair". Two reasons were advanced for this. The first is that research preceded all establishment of all the parks and continue to precede all developments within such established parks. The second make reference to Environmental Impact Assessment (EIA) procedures that are being implemented by the organisation prior to any development.

The lowest management level argue that socio-economic impact of establishment of parks is being minimised by making benefits available to affected communities and thus make up for loss of use of their lands.

Table 9.8 Rating of the organisation on impact assessment and minimizing adverse impacts.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	-	-	-	1	-	1
V good	-	1	1	1	2	5
Good	2	2	2	1	1	8
Fair	1	-	1	1	1	4
Poor	-	-	-	-	-	0

Question 9.9: Community Resource Access

The question addresses systems (if any) used by the organisation to facilitate access to biodiversity resources by neighbouring communities. Often this access is used as incentive for communities to support conservation efforts or as a form of compensation for total loss of use of land as result of establishment of a protected area.

All respondents agree that communities neighbouring protected areas have access to renewable resources like fire wood, thatch grass and medicinal plants. However, it is the concern of the top management level that these things happen without clear organisational policies. This is a very important matter which should be guided by clear policy guidelines. It is therefore a serious omission on the side of management not to have addressed this yet. (Appendix 2 and 3).

Table 9.9 Rating of the organisation on community resource access.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Excellent	-	-	-	-	-	0
V good	-	1	-	1	2	4
Good	2	1	1	3	2	9
Fair	-	1	2	-	-	3
Poor	1	-	1	-	-	2

Question 10: Should your organisation be concerned about intellectual property rights?

The question focuses on the control that countries should exercise over access to genetic material and information within their borders. In practical terms, it refers to benefitting the local communities, farmers, and other parties holding traditional or indigenous knowledge from ownership of research data and patents and products derived from their knowledge. An organisation such as NWPTB should be involved through educational and awareness programs in which this issue and many others can be brought to the attention of possible beneficiaries.

Does such amount and quality of information exist to warrant such efforts? Seventeen out of 18 respondents think that their organisation should be concerned about intellectual property rights. Fourteen out of 18 think that this is a very important matter.

Table 10. Response on the organisation's concern about intellectual property rights.

(a)			(b)		
	YES	NO	V.IMP	IMP	L.IMP
Managers	2	1	1	1	1
P Wardens	3	-	3	-	-
Rangers	4	-	4	-	-
C Rangers	4	-	3	1	-
F Rangers	4	-	3	1	-

Question 11: Should your organisation be concerned about access and transfer of technology?

Closely linked to intellectual property rights is the question of access and transfer of technology relevant to biodiversity conservation and sustainable utilisation thereof. This question focused on co-operation in exchange of technology which helps to advance the cause of biodiversity conservation. The agreed-upon exchange programs can be between countries or organisations.

One hundred percent of respondents agree that this is an issue their organisation should be concerned about and that it should contribute in any way possible to the success of technological exchange.

Table 11. Response on the organisations' concern about access and transfer of technology.

(a)		(b)			
	YES	NO	V.IMP	IMP	L.IMP
Managers	3	-	3	-	-
P Wardens	3	-	3	-	-
Rangers	4	-	3	1	-
C Rangers	4	-	4	-	-
F Rangers	4	-	3	1	-

Question 12 : How do you experience your organisational position with regard to making information available to research communities and other conservation agencies?

Research is the basis of planning and decision making in biodiversity conservation. In its absence, everything becomes trial and error. Considering vital systems that are involved, conservation becomes a matter that should not be treated lightly.

Organisation involved in conservation have two options to research in this regard, making their research information available to interested research institutions or allowing research institutions to use their facilities (parks) for research. With regard to this matter, 50% of respondents rated their organization as "very good"(Appendix 2).

Table 12. Rating of organisation with regard to co-operation with research communities and other conservation agencies.

	Managers	P Wardens	Rangers	C Rangers	F Rangers	Total
Exc	1	-	-	-	-	1
V good	1	2	2	2	2	9
Good	-	1	1	1	2	5
Fair	-	-	1	1	-	2
Poor	1	-	-	-	-	1

Question 13 : Do you think your organisation experiences any particular financial constraints in carrying out its biodiversity conservation task?

Seventeen out of the 18 respondents answered yes. The CBD appreciates the financial difficulties which confront many countries and organisation in their implementation of biodiversity conservation measures. Many conservation bodies, including the NWPTB, depend to a large extent on government grants to implement their programs. With continually decreasing government budget allocation to conservation, affected organisation are bound to suffer unless such organisation develop mechanisms of generating revenue to supplement their government grants. There is a high indication that the NWPTB is aware of this and is addressing the issue.

This is suggested by the fact that only respondent who argued that the organisation does not experience any financial constraints added that “tourists bring lots of money,” and by the fact that high priority is given to activities that would ensure continued inflow of tourists to the parks as reflected in their answers to the question of “which areas require increased funding”.

Table 13. Areas that need increased funding.

Research	- 4
Ecological	- 3
Infrastructure	- 5
Human Resource Development	- 2
Training	- 3
Development	- 5
Salaries	- 4

Question 14: Do you think your organisation is administered efficiently?

The question on the administration of the organisation refers to systems and procedures used by the organisation for different sections to carry out their duties efficiently and accountably. When systems and procedures are too cumbersome, they result in slow delivery of operations and renders the whole organisation inefficient.

The question also refers to policies that guide decisions and planning within the organisation. Lack of clear guidelines hinders the performance of the organisation. To this question, 13 out of 18 respondents gave a negative response. Only five respondents thought that the organisation is administered efficiently. Areas which require improvement according to the 13 negative respondents are: systems and procedures (purchases and controls), leadership, planning and communication.

CONCLUSIONS

— The use of plants and animals (especially large animals) in the definition of biological diversity is prevalent within the organisation. This limits the understanding of the complexity of biodiversity at genetic, ecosystem and even at species level since as not all known, let alone unknown, species are considered. The conservation approach that is likely to emanate from this is bound to be narrow in focus and thus least effective in embracing entire biodiversity within its scope.

— There is a general understanding of the importance of the ecosystems approach to conservation. However, the species concept (plants and animals), still dominates the analysis and designs of conservation for NWPTB.

— There is a vigorous utilitarian approach to conservation. This is suggested by both consumptive and non-consumptive references made by respondents. These are also accompanied by research, planning and control measures. This shows not only awareness of sustainability, but also steps taken to ensure it.

— There is a high level of confidence in management of protected areas in terms of research, monitoring and interaction with other conservation organisation.

— Conservation at genetic level is the least familiar concept. The participation of the organisation in ex-situ conservation is only known to top managers. This is not good for endangered species protected by the organisation since it is the lower ranked managers who are in contact with these species. If they do not know entirely what they are involved with, they may take certain important things for granted.

— Both community participation and community resource access do not have organisation guiding policies. There is no evidence of participation in planning and decision making within the organisation. Communities are consulted when the organisation finds it suitable.

- Although education and awareness is cited as a good tool to communicate biodiversity conservation and sustainable utilization thereof, at the moment the organisation has nothing of that nature in place. This is not in fulfilment of the obligations of the CBD.

- There is no training and therefore no human resources development in biodiversity conservation that keep abreast with developments in this field. It is important for the future of the organisation that its human resource is familiar with current language and technology in conservation :

- Insufficient funds is seen to stand on the way of delivery on the objectives of the organisation.

- There is high confidence in the potential of the organisation to be economically viable.

- Most managers would prefer shorter and easier procedures in acquiring resources for their operations.

- Higher management levels are more critical about their organisation than the lower ranks. They demonstrated more insight into issues raised than the lower management levels.

- The appreciation by managers that a number of policies still need to be formulated is an indication that the organisation is eager to improve its performance.

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APPENDIX 1

QUESTIONNAIRE FOR INTERVIEWS

1. How would you define biological diversity?

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.....
.....
.....

2. How would you translate that in biodiversity conservation?

.....
.....
.....
.....
.....

3. What are the biodiversity conservation objectives of your organisation?

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.....
.....
.....
.....

4. How would you rank the following? In order of importance (very important, important, less important)

- genetic approach to biodiversity ()
- species approach to biodiversity ()
- ecosystem approach to biodiversity ()



5. How would you justify the above?

.....
.....
.....
.....

6. How would you define biological resources?

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.....
.....
.....

7. What do you think entail sustainable utilisation of biological resources?

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.....
.....
.....

8. What organisational measures can be implemented to ensure sustainable utilisation of biodiversity resources?

.....
.....
.....
.....

9. How do you think your organisation is doing with regard to the following issues ?
Tick the option that best describes your perception and then give a brief explanation.



9.1 Interaction with other organisations involved in biodiversity conservation.

- 1. Excellent
- 2. Very good
- 3. Good
- 4. Fair
- 5. Poor

Explain

.....
.....
.....
.....

9.2 Inventorying and monitoring

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Explain

.....
.....
.....
.....



9.3 In-situ conservation

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Explain

.....

.....

.....

.....

9.4 Ex-situ conservation

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Explain

.....

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.....

9.5 Community participation / ownership

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Explain

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.....

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.....



9.6 Research and training

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Explain

.....

.....

.....

.....

9.7 Public education and awareness

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Explain

.....

.....

.....

.....

9.8 Impact assessment and minimising adverse impacts

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Explain

.....

.....

.....



9.9 Community resources access

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Explain

.....

.....

.....

.....

10.a Do you think intellectual property rights is something your organisation should be concerned about?

Yes or No

10.b If yes, how important is intellectual property rights. Use the following scale to indicate your thinking.

- 1) Very important
- 2) Important
- 3) Less important

11.a Do you think access and transfer of technology is something your organisation should be concerned about ?

Yes or No

11.b If yes, how important is access and transfer of technology. Use the following scale to indicate your thinking.

- 1) Very good
- 2) Important
- 3) Less important

12. How do you experience your organisational position about making information available to other conservation agencies?

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor

13.a Do you think your organisation experiences any particular financial constraints in carrying out its biodiversity conservation task?

YES/NO.....
.....

13.b If yes, which areas require increased funding?

.....
.....
.....

14.a Do you think your organisation is administered efficiently?

.....
.....
.....

14.b If no, which areas can be improved?

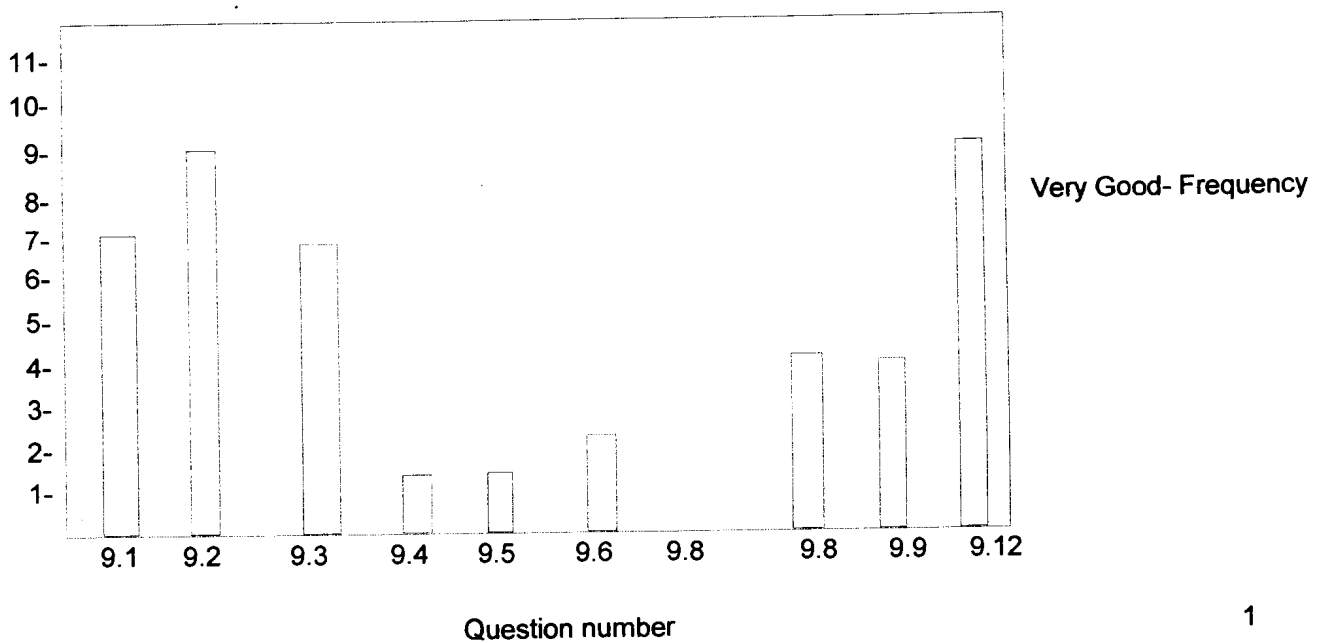
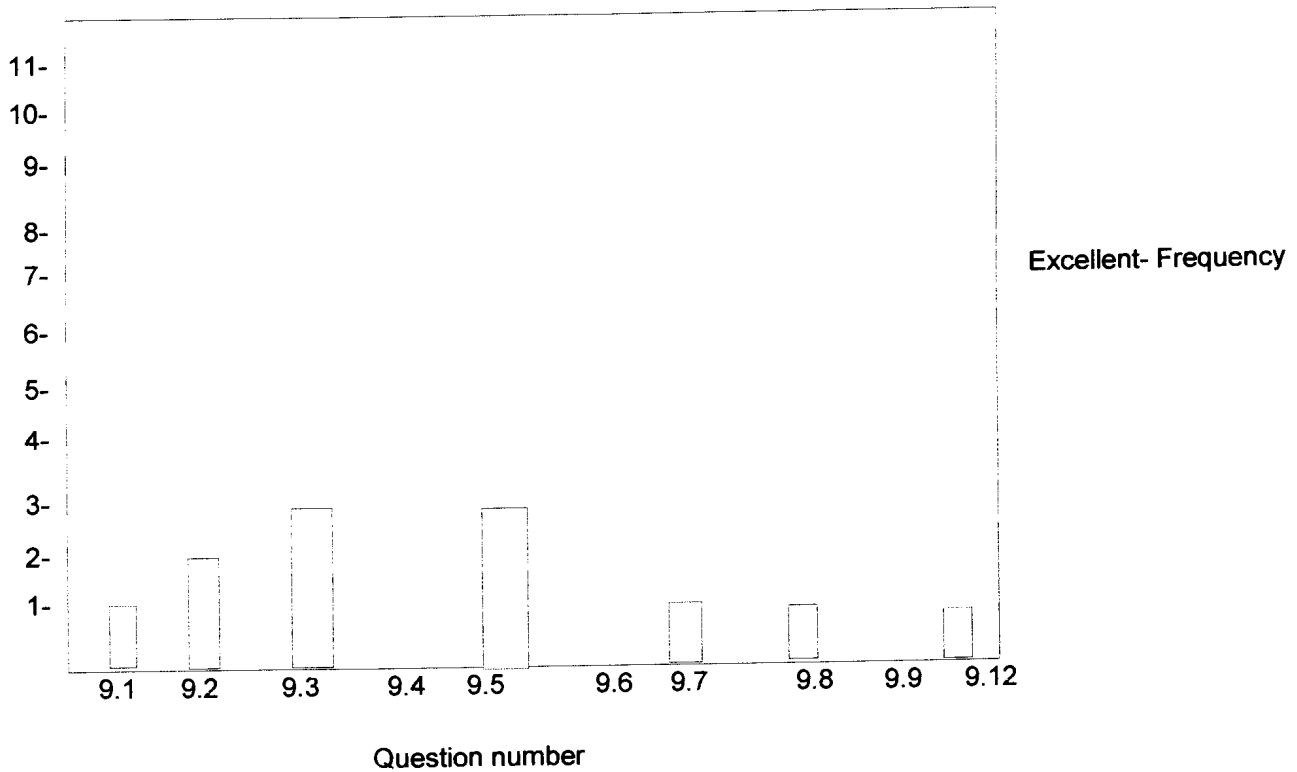
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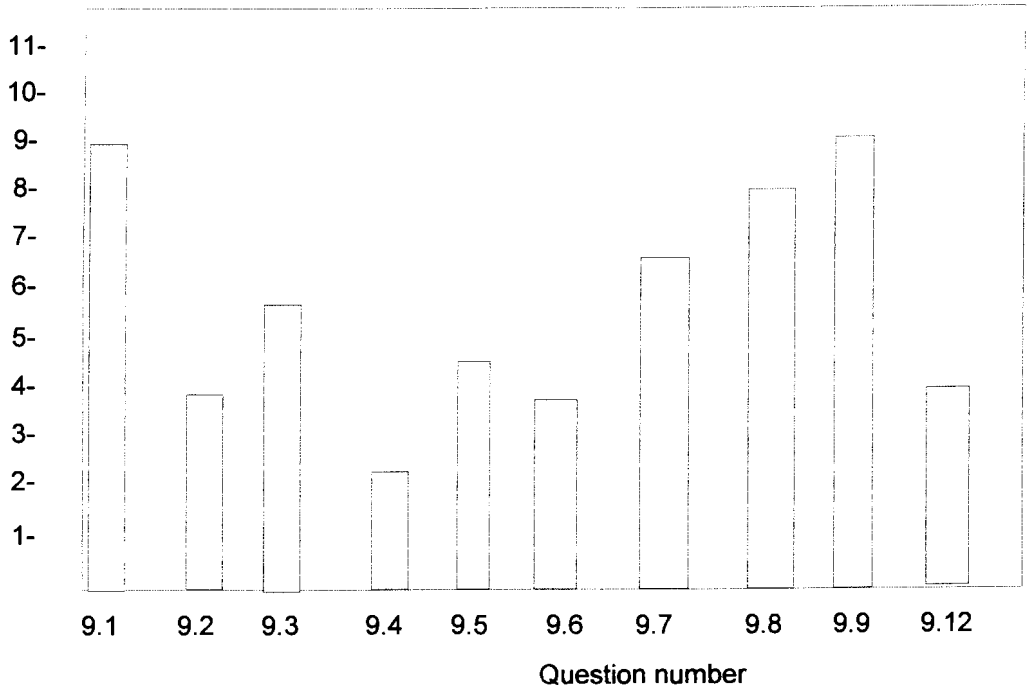
Thank you for your participation and time.

Appendix 2

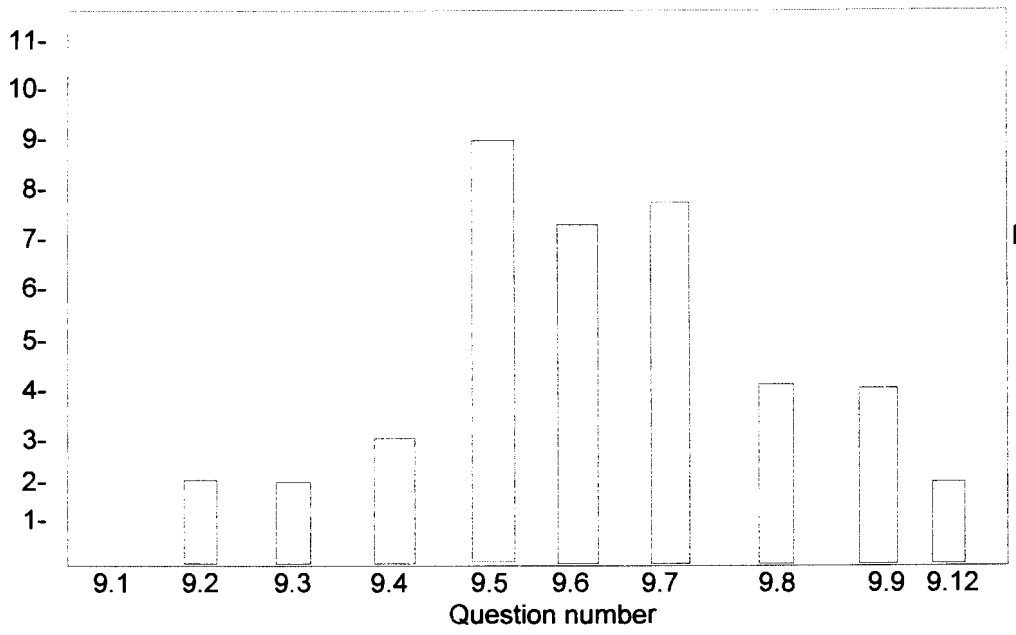
Shows how many times each rating (Excellent - Poor) was used in each question
9.1 - 9.9 and 9.12

Example : The highest "Excellent" rating of the organisation was on question 9.4.

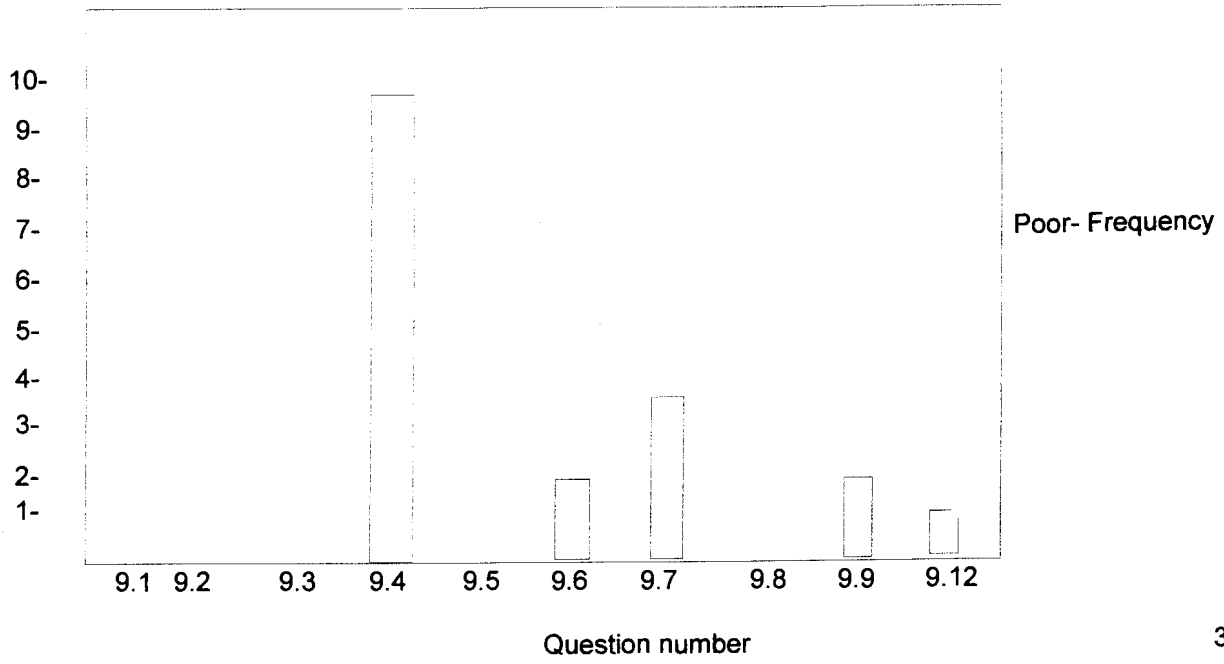




Good- Frequency



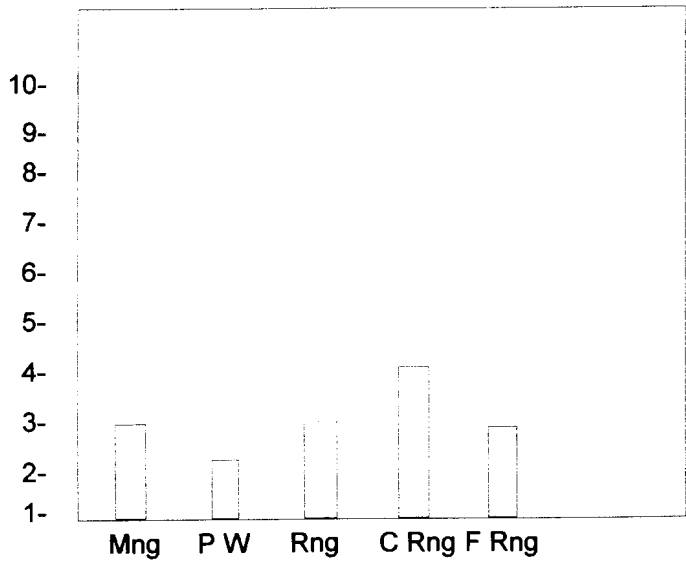
Fair- Frequency



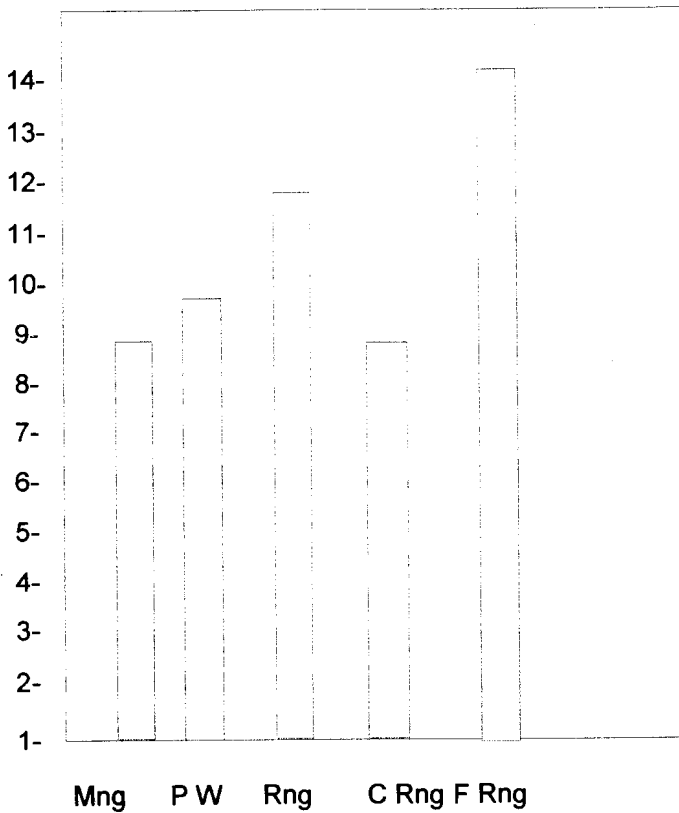


Appendix 3.

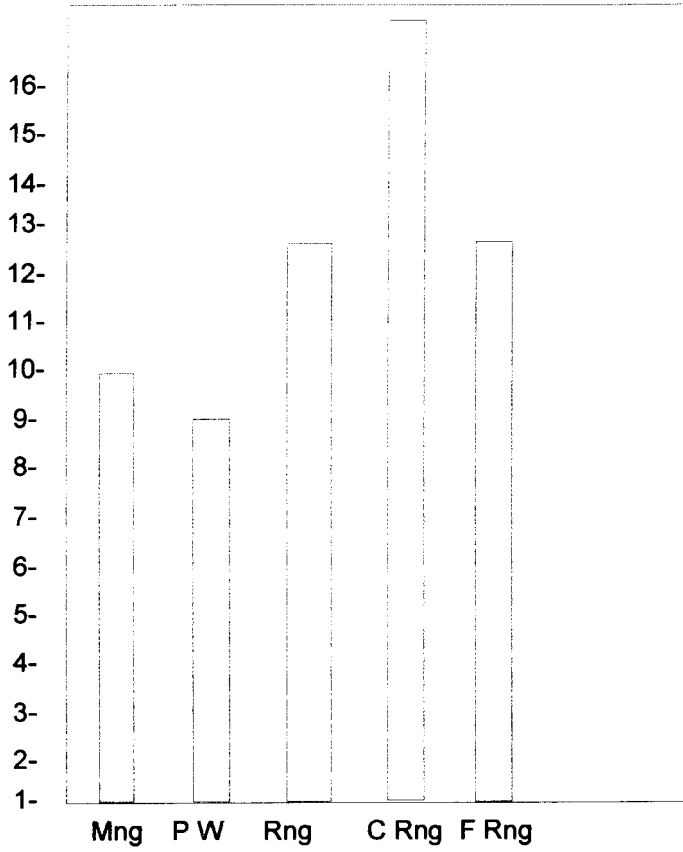
Frequency of rating per management levels
Shows how many times each management level
used a particular rating.



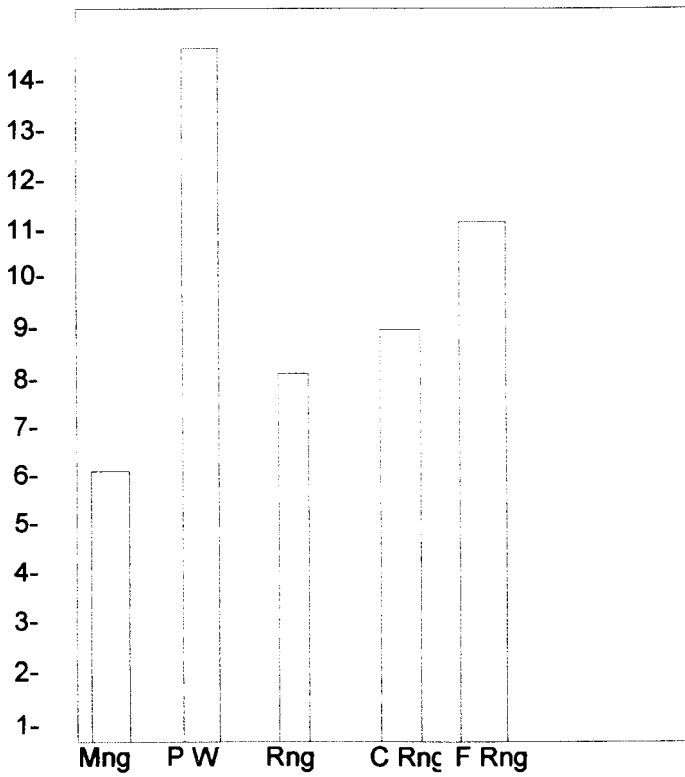
Excellent- Frequency



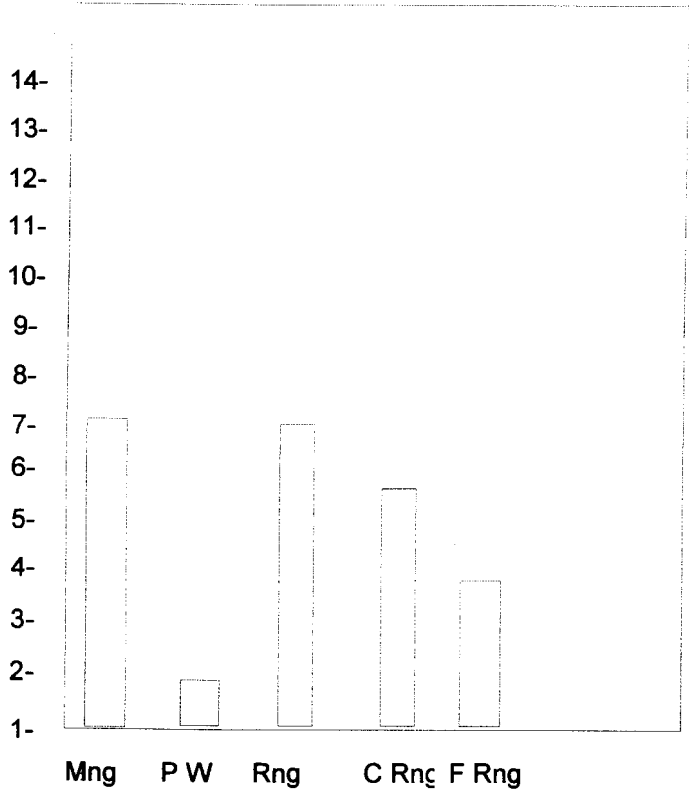
Very Good- Frequency



Good- Frequency



Fair- Frequency



Poor- Frequency