

Papua New Guinea Protected Areas Programme

REGISTER OF PROTECTED AREAS

draft July 1992

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SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Bagiai WMA*
(2) SHEET NUMBER:
(3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
(2) TENURE: *Customary*
(3) GAZETTAL INFORMATION: *13/1/77 - Gaz. No. 7; rules gazetted in June 1977*
(4) AREA: *13,760 ha*

C. LOCATION

- (1) PROVINCE: *Madang*
(2) LOCAL GOVERNMENT AREA: *Karkar Local Council (covering the island)*
(3) CLOSEST MAJOR TOWN:
(4) AVAILABLE MAPPING INFORMATION: *Karkar Island is on two adjoining 1:100,000 Topo. maps i.e. Karkar sheet 8088 and Bagabag sheet 8188*

D. REASON/PURPOSE FOR DECLARATION AS PA

To meet the concerns over excessive hunting with shotguns, and clearing for gardens, the WMA was established.

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
(2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
(3) D.E.C. FILES: *DEC file 2-20-8 (4)*
(4) REFERENCES: *Eaton, P. (1986) Potential World Heritage Areas: Karkar and Long Island Ples 2:63-72*
Eaton, P (1986) Grassroots Conservation - Wildlife Management Areas in PNG Land Studies Centre Report 86/1 UPNG

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. the WMA was first proposed by the Karkar Local Council to protect what they saw as diminishing wildlife resources

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. there are two language groups on the island, the Waskia (on the northern side) and the Takia (on the southern side) (Eaton 1986)

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>Tladub Gem - Kubam</i>	<i>Kulubob Tarak - Buson</i>
<i>Sibon Luang - Wadau</i>	<i>Kel Kulon - Mom</i>
<i>Saki Shong - Nor No.2</i>	<i>Tubun Ulun - Ulun</i>
<i>Tun Gamal - Gamong</i>	<i>Bunbun Gubak - Wakon</i>
<i>Mario Natale - Kurum</i>	<i>Lakasa Mateviri - Urugen</i>

(from 1977 Gazettal notice)

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

. Eaton (1986) mentions traditional management practices still being used including tambo restrictions on places, at times of the year and following deaths in a village

(4) COMMUNITY PROFILE NOTES:

. further information is in Eaton (1986)

. as noted above there is a large resident population (25,000) and many villages (up to 83) intensively gardening the flat, rich volcanic soils along the coast (including areas within the WMA)

. there are two main language groups and authority to decide landuse rights is inherited patrilineally

(5) SUBSISTENCE USE:

. people traditionally gardened or hunted for their food and marine resources were (traditionally) only lightly used

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. Eaton (1986) reports this WMA as working actively, if variably, in the management of its resources;

. the community have developed new rules and appointed extra committee members to meet new conditions (these do not have legal backing),

. while the community supports the existence of the WMA but has expressed anger at the lack of government support

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

. officers from the Dept. of Primary Industries situated on the island assist in WMA matters

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. the island is serviced regularly by aircraft and there is a road following the entire coast around the island

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. 30/6/77 rules (amendments have been suggested, including visitor fees to volcano but it is not known if these have been gazetted)

. the rules prohibit hunting of fauna outside of customary areas where the person has rights and restrict methods to only customary methods except for the use of shotguns against pigs or kites attacking poultry

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. Eaton (1986) reports at least 6 successful enforcement actions taken by 1982

(2) FAILURES:

(3) PLANS FOR FUTURE:

. tourism is one of the development options raised over the years; these proposals include zoos, guides fees and tourist accommodation

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) *The WMA was used primarily to control and regulate over the customary use of wildlife - the primary issue is excessive hunting or non-adherence to customary rules by members of the landowning community.*

(2) *Reports indicate the Management Committee is having difficulty enforcing the rules and magistrates and police are unfamiliar with the management rules.*

(3) *The lack of government support for the management (and development) of the area.*

(2) SECONDARY ISSUES:

(4) *Eaton (1986) lists a number of other issues including the use of sling-shots, control over visitors walking to the volcano, there being inadequate representation of the island population on the committee, the need to restrict fishing activities inshore to customary users and the lack of understanding amongst the community of the function and purpose of the WMA*

(5) *In 1989 reports indicated pigs damaging gardens was a problem.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. there are estimated to be 25,000 people on the island (Eaton 1986) and intensive gardening on the rich volcanic soils; the files indicate commercial vegetable gardening and tourism are considered possible commercial activities within the WMA

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Volcanic Chain*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. Karkar Island is an active volcano rising to 1,840 m at the Mount Kunugui which has erupted as recently as 1979

D. GEOLOGY/SOILS:

. recent volcanic

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. areas of forest are regrowth vegetation after the destruction caused by the volcano eruptions

. much of the flat coastal lands are intensively gardened

H. CONSERVATION FEATURES:

. Paviopetalum (orchids), scenic moonscape, some insular species, very rich bat fauna,

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. WMA occupies an eastern portion of the island from the summit of the volcano to a boundary 2 km seaward of the coastline; The two islands and reefs (to 2 km seaward) of Tuale and Managamarek, off the NE side of Karkar are included in the WMA

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

. the top of the volcano is a sacred site (ples masalai)

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

. a number of scientific studies have been completed here, including studies on the volcano

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Baiyer River Sanctuary*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *Sanctuary (National Park)*
- (2) **TENURE:** *State land*
- (3) **GAZETTAL INFORMATION:** *Gazetted 3/1/68*
- (4) **AREA:** *740 ha*

C. LOCATION

- (1) **PROVINCE:** *Western Highlands*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:** *Mt Hagen*
- (4) **AVAILABLE MAPPING INFORMATION:** *1:100,000 Topo. Map ***

D. REASON/PURPOSE FOR DECLARATION AS PA

. to provide for the development of a zoological garden and to protect an area of riverine, high altitude forest

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:**
- (4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. the area was purchased from the landowners in 1950

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. Ugini clan are the recognised landowners of this area

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. the landowners are directly involved through employment policies in the running of the Area; many live adjoining the Area and consultation occurs informally on an almost continuous basis

(5) SUBSISTENCE USE:

. extractive subsistence use is prohibited within the Area

(6) CASH INCOME FOR LANDOWNERS:

. the only income is derived from employment opportunities

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. the indications of community attitude are variable with some antagonism recorded in the DEC file letters and reports and a residual claim of inadequate payment for the original (1950) purchase;

. the recent 1992 WWF-DEC visit, however, reported strong support for the presence and function of this protected area

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

. contact with the Area management should be directed at: Officer-in-charge, P.O. Box 490, Mt Hagen, W.H.P.

(2) ON SITE STAFF:

. there can be up to 20 staff on site including casual labourers; professional staff in these numbers include superintendent, assistant superintendent, curator and business manager

(3) STAFF RESOURCES:

. staff housing, office facilities, workshop, research facilities

(4) GOVERNMENT BUDGET:

. government funding has declined over the years from K142,000 in 1988 to K39,000 in 1991

(5) ACTIVITIES AND TASKS OF STAFF:

- . maintaining the zoo facilities*
- . fence maintenance*
- . landowner liaison*
- . patrolling the Area*

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

- . Baiyer River has been one of the major income generating sources for DEC - this has greatly declined with the drop in visitor numbers; for example, gate and lodge takings in the early 1980s was approximately K9,000, during 1987 this had declined to almost nothing*

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

- . visitor lodges, walking tracks, bird hides, information and captive fauna*

(3) NEAREST VISITOR ACCOMMODATION:

- . on-site lodges*

(4) PUBLIC INFORMATION/BROCHURES:

- . the facility has a library with relevant material on the flora and fauna of the Area*

(5) PUBLIC ACCESS:

- . approximately 55 km from Mt Hagen by road accessible by PMV services*

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. the landowners live nearby and many see the facility (and associated area) as their resource - the landowning community play an important role in enforcing the protective status of the site

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

. the staff suggested plans for improving the facility including maintaining and improving the visitor and staff accommodation, improving the fences to keep pigs out and building better cages for the captive fauna

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *Law and order problems constitute one of the most important issues for this Area as this has resulted in the drastic decline in visitor numbers experienced in recent years.*
- (2) *The lack of funding is an equally important issue - the zoo and research facility is inherently expensive and DEC funding has declined considerably over the past decade. This has resulted in the poor state of repair of many facilities and has even led to there being a lack of food for the captive fauna.*

(2) SECONDARY ISSUES:

- (3) *Landowner relations need to be established on a more consistent and positive basis.*
- (4) *Staff discipline and lack of skills has arisen as an issue in some cases - this should be part of any rehabilitation programme.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

. the greatest number of positions are for casual labourers which varies with funding levels and tasks that need addressing. The number of professional positions is limited to 4 and these must be filled with people of appropriate educational and skills ability

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

. a private tour company, Plumes and Arrows from Mt Hagen, is planning to include the Baiyer River Sanctuary in its activities (1992) and has discussed with Ugini landowners their involvement as "bodyguards" to counter the law and order threats

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. Mt Hagen is a major provincial centre within easy access of the Area

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Highlands*

B. CLIMATE: *Premontane Humid*

C. TOPOGRAPHY:

. the site covers an area of riverine flats and adjoining foothills

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. mid-montane forests, riverine forests and patches of (high altitude) savannah

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. the Area is in good condition having been totally protected since 1950

. high quality forest

H. CONSERVATION SIGNIFICANCE:

. national zoo, education values, excellent example of high altitude lowland forest

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Balek Wildlife Sanctuary*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *Wildlife Sanctuary (under the Fauna Act)*
- (2) **TENURE:** *customary ownership*
- (3) **GAZETTAL INFORMATION:** *4/11/77; Gaz. No 61*
- (4) **AREA:** *470 ha*

C. LOCATION

- (1) **PROVINCE:** *Madang*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:** *Madang*
- (4) **AVAILABLE MAPPING INFORMATION:** *1:100,000 Topo. Map Madang sheet:8087*

D. REASON/PURPOSE FOR DECLARATION AS PA

. To protect wildlife and to manage/develop tourism use of site near Madang.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:** *. Laurence Oro, Cons. Div. DEC; (provincial ranger Madang, during 1980s)*
. staff in DEC responsibility for WMA and Fauna Act areas
- (3) **D.E.C. FILES:** *DEC file 2-20-8 (5)*
- (4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. customary ownership by the Hep, Yaum and Belih clans located primarily at Awa village

(2) MANAGEMENT COMMITTEE MEMBERS:

. there is a specified group of clan leaders in the Sanctuary rules which may give permission for those with customary rights in the area to clear vegetation for gardens

. these men are:

(Hep)

Dira Baik,

Tegil Nanek,

Wagum Tegil

Sakel Tegil

(Yaum)

Bedem Bahuwai Biltal Damun

Ulul Damun

(Belih)

Kom Baukam

Oina Bultin

Jabe But

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. internal community disputes have hindered the operation and management of this sanctuary

(5) SUBSISTENCE USE:

. no hunting or gardening allowed; the only exceptions made, are by permission of named clan leaders and only for those with customary rights to garden in the area

(6) CASH INCOME FOR LANDOWNERS:

. plans are still held for developing a tourist/recreational site to generate income for the landowners; rules are established for the collection of entrance fees

(7) COST OF CON. MAN. FOR COMMUNITY:

. members of the landowning community exist around the boundary of the Sanctuary; people on the higher, southern boundary are at least 2 hours drive on rough roads from Madang

. Wagum Tegil, a clan leader, has recently bought fencing material to begin the redevelopment process but requires additional (official) support to begin

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. the only landowner interviewed, Wagum Tegil, indicated strong support for the Sanctuary but expressed disappointment and anger at the lack of support from DEC and Provincial Government

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

. no statistics on visitor use

. area is well known locally as a source of "healing water" and has been used for recreation by the local Madang community

(2) VISITOR FACILITIES:

. some development work done in the 1970s including a >K1,000 aviary; this has since been pulled down - its decline is blamed on neglect by the Provincial Government

. in 1992, the area was overgrown with the tracks and foot bridges in need of major maintenance work; the basic walking and picnic facilities formerly there could not be used now

(3) NEAREST VISITOR ACCOMMODATION:

. Madang is a developed tourist centre with at least three major resorts within or close to the town

(5) PUBLIC ACCESS:

. located close to Madang township, less than 10 minutes away on sealed road; there is also another road going into the area from the top (western) side

. walking tracks allow access through the area from the main road on the eastern side

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. the rules for the Sanctuary were gazetted on 27/9/77 and simply state there is a blanket prohibition on taking fauna, lighting fires, littering and a conditional prohibition on clearing vegetation. An exception is made for those with customary rights to garden the area (therefore to cut down vegetation) subject to permission being granted by the named clan leaders in the gazetted rules.

. a 1982 Amendment to these rules provided for the collection of entrance fees from non-customary users; these are: K5.00 for non-citizen, K1.00 for adult citizens and 50t for children.

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. files record successful prosecution of a company which built a road which crossed into the sanctuary boundaries; the fines were calculated on the basis of the standard Fauna Act penalties (K20) for each tree cut or damaged

(2) FAILURES:

(3) PLANS FOR FUTURE:

. as noted above landowners are looking for support in the redevelopment of the tourist facilities as a money-making exercise

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) The most important issue is the lack of support from DEC in maintaining the operations of the Sanctuary.*
- (2) There is a related issue, which probably is confused with the first issue, and this relates to the lack of development support (esp. funding) for the tourism proposals - as this is seen as a major purpose for this Sanctuary.*
- (3) Enforcement issues appear to be problems on occasions - there is the case of the road construction infringing the area and the files record problems with squatters, illegally gardening in the area. Notes on this latter issue indicate the customary authority of the leaders was insufficient to make the gardeners move and DEC received requests for organising police involvement.*

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

. in the 1970s (?) the community got V.E.D.F. funding for the construction of some walking tracks and picnic facilities

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II. SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Madang Lowlands*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. the Sanctuary encompasses a steep limestone ridge rising up a cliff face (>160m) on the eastern side and forming a hilly, upraised area leading on to flat land on the western side

. various karst landform features exist including caves and underground rivers

D. GEOLOGY/SOILS:

. limestone formation

E. VEGETATION DESCRIPTION:

. lowland rainforest on the limestone soils

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. rainforest appears to be storm and earthquake damaged and is mainly regrowth; the area may have suffered in the bushfires of the 1941 to 1943 period when drought conditions resulted in fire damage to much of the surrounding forests

. there may be some encroachments on the western side where the adjoining land is settled and gardened

H. CONSERVATION FEATURES:

*. bat cave and rainforest, probable interesting lst. flora, sulphur spring, Flame of the Forest (*Mucuna spp*)*

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

. the sulphurous spring has customary significance as a "healing place"; local people continue to wash in these waters to cure certain medical problems

B. HISTORICAL VALUES:

. there are World War II relics, tracks and bunker areas within the Sanctuary

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. the eastern boundary along the sealed road south of Madang forms a spectacular, rainforest covered cliff face

E. RECREATIONAL VALUES:

. the area was formerly developed as a picnic and recreational area and there are plans to redevelop this use

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Baniara Island*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *Protected Area*
- (2) **TENURE:**
- (3) **GAZETTAL INFORMATION:**
- (4) **AREA:**

C. LOCATION

- (1) **PROVINCE:** *Milne Bay*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:**
- (4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

The area was declared to protect the population of Agile Wallabies which had been introduced to this plantation island and had become established.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:**
- (4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

- (1) MOST IMPORTANT MANAGEMENT ISSUES:

. The role of this protected area in the PNG network needs to be critically reviewed to determine if it is an appropriate use of this conservation device.

- (2) SECONDARY ISSUES:
- (3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Morobe Coast*

B. CLIMATE: *Lowland Subhumid*

C. TOPOGRAPHY:

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Cape Wom*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *Historical Reserve (National Park)*
- (2) **TENURE:** *State Land*
- (3) **GAZETTAL INFORMATION:**
- (4) **AREA:** *105 ha*

C. LOCATION

- (1) **PROVINCE:** *East Sepik*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:** *Wewak*
- (4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

The area was established as a historical (memorial) reserve related to World War II and as a recreational resource for nearby Wewak township.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:**
- (4) **REFERENCES:** *James Apimia (1986) The declining mangrove resources of Cape Wom Ples 2:29-32*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

The Park is located close to original village site which was moved after damage to the area from war time bombing.

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

Many of the landowners come from the village of Wom and include those who moved out of the old village during World War II

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

The people living at the village make extensive use of the nearby mangrove forests for subsistence food gathering and fishing (Apimia 1986). Almost all of their basic food requirements are met from this resource use and a significant proportion of their cash income also comes from the sale of mangrove-based resources.

(5) SUBSISTENCE USE:

Apimia (1986) lists a variety of shells, crabs, birds which are caught and eaten and notes that timber is also a major product.

(6) CASH INCOME FOR LANDOWNERS:

The sale of mangrove based resources at the local markets provides income.

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

DEC files indicate there is a serious law and order problem in the Cape Wom vicinity; this, together with other information, suggests the landowners have little respect for the park designation and some individuals may be antagonistic to DEC officers.

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

Provincial Ranger

Wewak

(2) ON SITE STAFF:

There is a DEC Provincial Ranger stationed in Wewak who is responsible for management at this site. The Provincial Government also have wildlife officers who contribute to management here.

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

This Park is jointly managed with the Provincial government who contribute to the cost of management. The level of this contribution was not recorded for this data sheet.

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

Cape Wom has been identified as one of the major income generating National Parks in PNG. It is unlikely that this income will amount to much in 1992.

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

. the park has picnic facilities (shelters, fireplaces) and access tracks and roads

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

Access is via 12 km of good quality road from Wewak township.

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:**
- (2) EXISTING RESOURCE USE AGREEMENTS:**
- (3) OTHER PLANNING DEVICES IN OPERATION:**
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:**

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:**
- (2) FAILURES:**
- (3) PLANS FOR FUTURE:**

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) Cape Wom is considered to be a dangerous site to visit by many observers due to the record of criminal activity at the Park and nearby.*
- (2) Vandalism and poor landowner relations is also a major management issue at this site.*

(2) SECONDARY ISSUES:

- (3) Problems with previous Provincial Rangers and poor level of control over these field staff by DEC's Port Moresby office has caused problems and remains as a potential issue into the future.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:**
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :**
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:**
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:**

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Sepik Coast*

B. CLIMATE: *Lowland Dry Subhumid*

C. TOPOGRAPHY:

. Cape Wom is a former island which is currently connected to the mainland with a build up of sediments and mangroves. The land mass is topographically low.

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. the site was extensively damaged during the war and subsequent park developments have cleared many areas for visitor facilities

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Garu*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *WMA*
- (2) **TENURE:** *customary and State land*
- (3) **GAZETTAL INFORMATION:** *26/11/76*
- (4) **AREA:** *8,700 ha*

C. LOCATION

- (1) **PROVINCE:** *West New Britain*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:**
- (4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

The major purpose is to protect the megapod resources from over exploitation and to prevent logging operations affecting the megapod nesting areas.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:**
- (4) **REFERENCES:** *Peter Eaton (1986) Grassroots Conservation - Wildlife Management Areas in PNG Land Studies Centre Report 86/1 UPNG*
- Liem, D.S.,(1977) Wildlife Utilisation in the Proposed Garu Wildlife Management Area, West New Britain PNG, in J.H. Winslow (ed.) The Melanesian Environment ANU Press Canberra*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. Landowners are from the village of Garu (within the Area) and of the Garu clan

(2) MANAGEMENT COMMITTEE MEMBERS:

. there are four members of the Committee

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

. there are customary rules regarding the taking of megapod eggs and fowl

(4) COMMUNITY PROFILE NOTES:

. the village population is approximately 200 people; the Garu clan can be sub-divided into the Vagulu and Bere groups

(5) SUBSISTENCE USE:

. gardens and a wide variety of wildlife including wallabies, bandicoot, and turtle; the inshore areas are also considered important to the landowners

. megapod eggs are collected from a number of nesting grounds within the area from April to November; it has been estimated the number of eggs collected ranges from 20,000 to 30,000 (Liem 1977)

(6) CASH INCOME FOR LANDOWNERS:

. the eggs are sold at the markets

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. the rules restrict collecting and hunting to customary landowners; eggs can only be collected on Tuesdays and Thursdays and there is a limit of 80 eggs per day; holes must be filled, dogs prohibited near nests and only customary landowners can use shotguns

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

(3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) *There has been a lack of DEC contact and support for the landowners.*

(2) SECONDARY ISSUES:

(2) *The tenure is partially State owned land and it is uncertain how this affects the legal ability of the landowners to enforce rules. There is also TRPs close to, and possibly within, the WMA.*

(3) POTENTIAL ISSUES:

(3) *Logging appears to be an option which considered by some (Eaton 1986).*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Volcanic Chain / New Britain Lowlands*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. coastal area of gently sloping land dropping from higher eastern side where two volcanos exist, Mt Welcker and Mt Krummel; the southern boundary is formed by the Kulu River

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. most of area is covered with lowland rainforest with swamps and mangroves along the coast especially close to the mouth of the Kulu River

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. there are patches of grassland and regrowth from clearing for gardens or which resulted from logging activities

H. CONSERVATION FEATURES

. strand and lowland RF, megapodes, tourism values

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Iomare*
(2) **SHEET NUMBER:**
(3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *WMA*
(2) **TENURE:** *Customary ownership*
(3) **GAZETTAL INFORMATION:** *7/11/87 Gaz. 81*
(4) **AREA:** *3,827.5 ha*

C. LOCATION

- (1) **PROVINCE:** *Central*
(2) **LOCAL GOVERNMENT AREA:**
(3) **CLOSEST MAJOR TOWN:** *Port Moresby*
(4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

The main purpose was to control the hunting activities of people from outside the landowning community (e.g. from Port Moresby via a new sealed road to Brown River and nearby forestry areas).

A second purpose was to develop a source of cash income from the commercialisation of hunting.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
(2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
(3) **D.E.C. FILES:** *DEC file 2-20--1 (13)*
(4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. in 1979 the Varagade clan put in a claim for their land surrounding the site which had been developed for forestry plantations (teak); the claim was successful and resulted in the clan gaining considerable forestry infrastructure and plantations

. the WMA was approved by the Minister in 1980 - it took 7 years for this approval to result in gazettal of the WMA

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. the Varagadi clan are the landowners which apparently separate into two family groups - the Oroï family and the Rove family

(2) MANAGEMENT COMMITTEE MEMBERS:

the gazettal notice lists the following, all of Iomare village:

*Paul Rove (chair), Varai Orol, Varai Rove, Dokai Mavit, and Kauve Venana and John Arave
- these two men have since died and have not been replaced*

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. a conflict exists within the clan as a result of differing opinions as to the best way to exploit the plantation resources within their claimed land; this resulted in a court case which divided the plantation lands into two sections (one given to the Rove family group and the remainder to the others)

. it was said that this problem will not have repercussions for the WMA although both groups share this area

. there is no village of Iomare (referred to in the gazettal notice) on the available maps

. squatters are said to come from the Goilala area; some, at least, were given permission to settle in area by landowners

(5) SUBSISTENCE USE:

. the village of Ruburego exists within the WMA on the western side near the road; gardens and other uses occur around here

. the landowners stated there was little subsistence use of the rest of the WMA except by squatters along the road who occasionally hunted there; the opinion offered was that they were busy making a real living out of the commercial development of the plantations

(6) CASH INCOME FOR LANDOWNERS:

. no income from the site - for the Rove family, however, the plantation harvesting is beginning to provide very large amounts of money which is being handled under company name of the Brown River Development Trust

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. largely indifferent but mildly supportive if asked - they have much bigger things on their mind

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

. there is a forestry officer who has 6 workers under his control in this locality which work in the TRP and teak plantations; he indicated his willingness to help in the WMA management

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

. apparently there have been no Committee meetings since its gazettal

. DEC responded to a request for help in 1988 by visiting the site to investigate a squatter problem - there are no records of further action

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

. none

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

. there are no facilities or signs

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. site is within 40 km of Port Moresby along a good sealed road; the boundaries of the WMA do not touch the road and there is no road access within the Area

. there are no publicly available tracks although there will be hunting tracks for those who know of them

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

- . the rules reserve the right, only for landowners, to hunt and fish on the site and they may use any method;*
- . outsiders may hunt for special purposes if they obtain a licence and pay a royalty fee*
- . other rules regulate the process of collecting fees and distributing the same; 50% of the royalty goes to the particular landowner of the locality where the animal is taken*

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

- . the lack of developed access into the major part of the Area restricts use*

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

- . there was an attempt to move squatters along the road edge in 1988 - there is no record of the result of this action and there remain squatters here in 1992*

(3) PLANS FOR FUTURE:

- . at some stage, vague plans for crocodile and deer farming were suggested*
- . the NZ consultancy of C. Darby included this WMA in its plans for brochures and associated visitor facilities such as picnic areas etc, - this consultancy has yet to report back*

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

1. *There has been a lack of DEC interest and activity in spite of its close proximity to Port Moresby - this has contributed to a related lack of interest by the landowners.*
2. *Squatters are encroaching on the western boundary and probably illegally hunting in the WMA; these people have refused to comply with the directions of the landowners leading to a request for police action.*

(2) SECONDARY ISSUES:

3. *Wildfire regularly moves through the WMA maintaining the fire adapted ecosystems and possibly leading to a reduction in the closed forest patches.*

(3) POTENTIAL ISSUES:

4. *There are some valuable timber resources within the WMA which could be the subject of future logging interest*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES: *none*

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. : *none*

(3) RESOURCES AVAILABLE FROM OTHER SOURCES: *none*

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. site is bordered to the north by large teak plantations which are currently (1992) being logged

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Gulf Hills*

B. CLIMATE: *Premontane Humid*

C. TOPOGRAPHY:

. Area occupies the foothills of the Herron Range with altitude range from below 80 m to 400 m;

. primarily hilly country towards the NE dissected by two large flat valleys and bordered along the southern and western side by low flat plain

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. fire grasslands and open sclerophyll forests cover much of the Area; closed forest in patches especially in the more mountainous NE sections

F. FAUNA:

. typical fauna for this open habitat, includes Birds-of-Paradise

G. CONDITION AND INTEGRITY OF THE SITE:

. some clearing and disturbance close to and inland from the village of Ruburego

. apparently far more extensive occurrence of fire induced grassland, especially in the south west and southern sections, then is mapped on the topographic maps which used air photos from the early 1950's and 1973

H. CONSERVATION FEATURES

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. north border includes extensive teak plantations, east is continuous with largely undisturbed mountainous bush, the southern and western borders adjoin cleared and disturbed savannah - the western side is under pressure from squatters and landowner settlements which follow a strip development pattern along the main road

(2) CATCHMENT CONSIDERATIONS:

. site covers the upper catchment of a number of small, intermittent streams radiating out from the area.

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Jimi Valley National Park*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS: *Photocopy of 1:100,000 Topo.*

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *National Park*
- (2) TENURE: *State land*
- (3) GAZETTAL INFORMATION: *Reserved 11/4/86 under the Lands Act (Gaz.No 28)*
Declared 3/10/91 (Gaz. No 93)
- (4) AREA: *4,180 ha*

C. LOCATION

- (1) PROVINCE: *Western Highlands*
- (2) LOCAL GOVERNMENT AREA: *Baiyer River (30 km away)*
- (3) CLOSEST MAJOR TOWN: *80 km from Mt. Hagen; the small centre of Ruti, a cattle station owned by the Provincial Government Authority is approximately 3 km from the Park;*
- (4) AVAILABLE MAPPING INFORMATION: *144 16'E, 5 16'S*

D. REASON/PURPOSE FOR DECLARATION AS PA

To protect a significant forest area that is in good condition and on State land and to protect two rare birds-of-paradise which are common in the area.

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *Godfried Angi DEC (Hohola) - survey of Park*
- (3) D.E.C. FILES: *DEC file 25-8-1*
- (4) REFERENCES: *Canduo Davies Pty Ltd (1988) for AIDAB and PNG Dept. of Transport. Environmental Plan for the Mt. Hagen to Baiyer River to Ruti Road upgrading, Port Moresby*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. originally purchased by the colonial government for agriculture development but was recognised as being too rugged for this activity - thus made available for National Park

. in recent years the development of the road from Baiyer River has increased interest in the area and led to an influx of people

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. area is sparsely populated and there are no villages within the Park;

(5) SUBSISTENCE USE:

. hunting with guns and dogs is commonly observed within the Park

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. a local village based timbering company (Jimi Timbers) has attempted to log within the Park (see issues section)

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

. Henry Koim from Baiyer River Sanctuary; Mamaro Gawi was (?) the ranger in 1990;

(2) ON SITE STAFF:

. there are 6 (casual) labourers in 1992

(3) STAFF RESOURCES:

. there are very few facilities for the park labourers; they live in bush huts and are currently squatting on Investment Corporation land; they have no vehicle or means of communication from the Park

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

. the primary (only?) work is marking and clearing the boundaries and monitoring

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

. gate fees are charged but few visitors

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

. Baiyer River Sanctuary

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. 30 km from Baiyer River by road

. small aerodrome at nearby Ruti

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

. very little appears to have been developed since this Park was declared

(3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) There is a serious lack of DEC resources, including transport and communication which makes monitoring and other management activities very difficult.

(2) Jimi Timbers (a landowner company) have made several attempts to log within the Park and this pressure is likely to continue.

(3) The above issue suggests the local landowners do not respect the purpose of the National Park.

(4) This is considered high risk area for rascal activity, and few tourists now travel beyond Baiyer River. Ruti staff travel in convoy or fly in light aircraft to Mt Hagen.

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. agricultural activities and forestry on adjoining land

. the road from Mt Hagen/Baiyer River is likely to stimulate settlement and agricultural activities here especially the growing of betel nut (as it is closer to the large markets of the highlands than other growing areas)

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Sepik Slopes*

B. CLIMATE:

. Lowland Perhumid

. despite the area being within the "highlands", the climate is warm coastal. Temp. 16 deg to 32 deg; rainfall 3,000 to 3,500 mm

C. TOPOGRAPHY:

. low metamorphic ridge and flat valley floor varying in altitude from 400m to 1000m. Surrounded by high mountains rising to 2,700m, including Schrader Ranges (N), Sepik-Wahgi Divide (S), Bismarck R.(E) and Saw-Wapi Divide (W)

D. GEOLOGY/SOILS: *alluvial soils*

E. VEGETATION DESCRIPTION:

. wholly forested, with complex lowland rainforest to lower montane forests (with mixed Araucaria, Klinki Pine)

F. FAUNA:

. surveys indicate a rich fauna typical of these rainforests in good condition; includes Pesquet's Parrot, Little King and Lesser Birds-of-Paradise

G. CONDITION AND INTEGRITY OF THE SITE:

. forest appears to be in good condition with few disturbances

H. CONSERVATION FEATURES:

. Birds of Paradise, lower montane forest

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. exists as a narrow 'tongue' of forest (3x1.5 km) which extends out along the Jimi River. Jimi River and Knegai Creek form two boundaries and edge of agricultural land on the east side - that is, much of boundary is easily defined

(2) CATCHMENT CONSIDERATIONS:

. as an upraised area within a flat valley floor it is secure from downstream influences

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Kokoda Historical Track (Reserve)*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *historical reserve (National Park)*
- (2) **TENURE:** *state land (customary land along track)*
- (3) **GAZETTAL INFORMATION:**
- (4) **AREA:** *(only a small reserve in Oro has been gazetted, the track remains in customary land)*

C. LOCATION

- (1) **PROVINCE:**
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:** *Kokoda*
- (4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

. the track is an important element from the World War II PNG campaign and has become a major, internationally recognised, recreational resource

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:** *Kokoda 25-11-1*
- (4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. the Kokoda Track is a customary route used for many years as a trading and access route between the highlands and coastal people

. during the Second World War the campaign centred on this track was crucial in turning back the Japanese advance on Port Moresby

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. the Kokoda Track passes through a number of clan areas (particularly the Koari clans) and through numerous villages

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

. a number of guest houses have been developed along the track including the villages of Alola, Kagi, Efogi, Menari and Naoro (1988 information)

. trade stores also sell food and materials to people on the track

(7) COST OF CON. MAN. FOR COMMUNITY:

. landowners maintain the part of the track passing through their land

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. it appears attitudes are variable with some resenting the payments/benefits derived from (particularly) the visitor use while others support the presence of the track and wish it to be further developed

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

. DEC staff do limited maintenance work along the track especially sections not maintained by customary landowners

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

. guest houses and trade stores exist along the track

. visitors are expected to employ a guide, usually from Korelo village on the north side, to accompany them on the track; a return flight is usually required for the guide

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

. there is a small museum at the Kokoda end of the track

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. as a customary track, which is still used as a trading and transport route, the adjoining landowners have a vested interest in maintaining the track and ensuring paying tourists are protected (although the latter objective has not been achieved)

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

(3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) Overall management control has not been established for the entire track and DEC has no legal authority to manage the track which lies within customary land. There is currently little planning for this recreational and historical "site".*
- (2) Landowners along the track are often in dispute about who has authority to control each section of track and who gets to provide guides.*
- (3) Rascals are a problem along the track which is limiting its use by paying tourists.*
- (4) The potential for benefits to be derived by landowners along the track has not been realised and this has resulted in a lack of interest and support for the development and maintenance of the track.*

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. the track has considerable significance to war veterans and the Australian government which could be used to generate interest and financial support; it also has important tourism value (potential)

which could be further developed

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Morobe Hills*

B. CLIMATE: *Premontane Humid*

C. TOPOGRAPHY:

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

H. CONSERVATION FEATURES:

. only location of some primitive fern allies on mainland New Guinea, typical range of hill forest to mid-montane fauna, historic collecting sites (Carr)

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Lake Lavu*
(2) **SHEET NUMBER:**
(3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *WMA*
(2) **TENURE:** *Customary land*
(3) **GAZETTAL INFORMATION:** *Gaz. 17/2/81*
(4) **AREA:** *2,640 ha*

C. LOCATION

- (1) **PROVINCE:** *Milne Bay, Fergusson Island*
(2) **LOCAL GOVERNMENT AREA:** *West Fergusson L.G.C. (and/or Iamalele town)*
(3) **CLOSEST MAJOR TOWN:** *Iamalele*
(4) **AVAILABLE MAPPING INFORMATION:** *1:100,000 Topo. Esa'ala sheet No. 9078
9 32'E - 15 36'S*

D. REASON/PURPOSE FOR DECLARATION AS PA

The major purpose was to control the excessive taking of crocodiles by expatriates and other outsiders.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
(2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
(3) **D.E.C. FILES:** *DEC files 2-20-10 (1), 2-20-10 (5)*
(4) **REFERENCES:** *Report by E. Broome (23/8/89) after visit to area; includes plans for tourist developments (in DEC 2-20-10 (5))*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. landowners request for WMA supported by local government to control crocodile hunters who wasted the meat and shot excessive numbers of animals

. in 1976 Imalele L.G.C. wrote support for WMA

. it is also said the area was to stop a proposed mining operation high up in the catchment of a stream which was feared to adversely affect the downstream users

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. landowning clan is Imalele, other villages have use rights

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>Siapen Kelegu (chair)</i>	<i>-</i>	<i>Lapapai village</i>
<i>(replaced on his death by his son Dinou Kelegu)</i>		
<i>Nualadina Gaimonina</i>	<i>-</i>	<i>Niubuwo</i>
<i>Matagubigui Laiava</i>	<i>-</i>	<i>Masimasi</i>
<i>Balasi Watai</i>	<i>-</i>	<i>Yamalele No 2</i>
<i>Tom Wamaya</i>	<i>-</i>	<i>Ebadidi</i>
<i>Dailgelu Ivegegaua</i>	<i>-</i>	<i>Salakadi</i>
<i>Saula Waumaya</i>	<i>-</i>	<i>Yamalele No 1</i>

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

. some subsistence gardening

(6) CASH INCOME FOR LANDOWNERS:

. files note that the community gains income from the sale of baby crocodiles to Bolu Bolu. Sale of other crocodile products. The area is open for (paying) visitors

(7) COST OF CON. MAN. FOR COMMUNITY:

. In 5/5/81 Committee asked DEC for funds for outboard, dinghy and torches - this was refused and community was told to try UNDP for funds.

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

- . no shotguns allowed
- . only traditional landowners allowed to hunt in WMA
- . only traditional methods allowed
- . no collection of crocodile eggs

(rules first drawn up in 1982)

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

- . recent contact from DEC officers (1989) and committee meetings occurring (at least one recorded in 1990)

(2) FAILURES:

- . in 1989 reports the last Committee meeting in 1981; DEC visits during this time in 1984 and 1985

(3) PLANS FOR FUTURE:

- . in 18/3/90 Committee expressed their desire for tourism developments and proposed asking for N.Z. funding for facilities/equipment, road improvements from the Iamalele airstrip; E. Broome (DEC) reports (1989) favourably and suggests walking tracks, etc which are mapped

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

Will share the same issues as are commonly found in other similarly situated WMA including

- . the lack of DEC contact,
- . inadequate funding for management,
- . lack of development options for landowners,
- . poor communications and services.

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *D'Entrecasteaux*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. generally flat with low hills in the northern and eastern part of the lake which is swampy and floods seasonally; the lake covers approximately one third of the WMA area; upraised area forms an island in the lake and there are villages here

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. surrounded by disturbed lowland rainforest areas, secondary forest, grassland and freshwater swamps

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. disturbed forest surrounds lake with regrowth and weeds noted in files

H. CONSERVATION FEATURES:

. Freshwater lake surrounded by lowland forest and tall grassland

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. high scenic value

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

. breeding population of saltwater crocodiles in Lake - a freshwater lake ?

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Lihir Island*
(2) SHEET NUMBER:
(3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *Protected Area*
(2) TENURE: *customary land and mining lease*
(3) GAZETTAL INFORMATION: *Gazetted 1991*
(4) AREA:

C. LOCATION

- (1) PROVINCE: *New Ireland*
(2) LOCAL GOVERNMENT AREA:
(3) CLOSEST MAJOR TOWN:
(4) AVAILABLE MAPPING INFORMATION:

D. REASON/PURPOSE FOR DECLARATION AS PA

This Area was established to protect megapod resources and nesting areas from the activities of non-customary people attracted to a large mining operation about to begin on the island. Establishment did not achieve this purpose (see Issues).

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
(2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
(3) D.E.C. FILES:
(4) REFERENCES: *NSR / Kennecott E.P. Environmental studies completed for the Lihir Island gold mine.
Burrows, I (1991?) Major study on the common scrubfowl (*Medapodius freycinet*)*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. a large scale mine is to be developed on the island leading to fears this would reduce/destroy the megapod resources

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

. the lowland/coastal areas are heavily gardened

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

. High due to mining activities

(2) VISITOR FACILITIES:

. Mainland N.I., Rabaul or at the mining camp.

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. the rules prohibit the taking of megapod eggs or adults by anyone except the landowners

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

(3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

. It has been claimed the mine operations will destroy most of the megapod nesting areas in spite of controls over non-customary people and thus make this Protected Area designation irrelevant.

. Local people use the land for gardens, and birds including making heavy use of the eggs

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *New Ireland*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

. Megapodes, the common scrubfowl (Medapodius freycinet) nest in the warm sandy soil - do not construct mounds.

G. CONDITION AND INTEGRITY OF THE SITE:

. island is heavily gardened with good forest in hilly / mountainous interior.

H. CONSERVATION FEATURES:

. lowland rainforest, megapodes, tourism values, important bamboo forest with orchids

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Lorko*
(2) **SHEET NUMBER:**
(3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *Provincial Park (National Park)*
(2) **TENURE:** *State land*
(3) **GAZETTAL INFORMATION:**
(4) **AREA:** *100 ha*

C. LOCATION

- (1) **PROVINCE:** *West New Britain*
(2) **LOCAL GOVERNMENT AREA:**
(3) **CLOSEST MAJOR TOWN:** *Kinhe*
(4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

Site will be developed as a "sanctuary" (i.e. zoo facility) presenting the fauna of the PNG islands.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
(2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
(3) **D.E.C. FILES:**
(4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. formerly a crocodile farm

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

. site is currently undeveloped (and not managed ?)

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

. the site is to become one of four regional sanctuaries in PNG, illustrating the flora, fauna and ecology of the PNG islands

L. MANAGEMENT ISSUES

- (1) MOST IMPORTANT MANAGEMENT ISSUES:
- (2) SECONDARY ISSUES:
- (3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE:

B. CLIMATE:

C. TOPOGRAPHY:

. river flows through the centre of site

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. former crocodile farm with many of the facilities from that venture still here

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Maza*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
- (2) TENURE: *Customary ownership*
- (3) GAZETTAL INFORMATION: *Gaz. date 7/12/78*
- (4) AREA: *184,230 ha*

C. LOCATION

- (1) PROVINCE: *Western Province*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN: *Daru*
- (4) AVAILABLE MAPPING INFORMATION: *Located from Binturi River (west) to Moon Passage in the Warrior Reef complex (south) to Parama Island (east) to highwater along the coast*

D. REASON/PURPOSE FOR DECLARATION AS PA

. to conserve turtle and dugong resources

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING: *Dugong surveys done between 1978 and 1981*
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *On-site Fisheries officers (Daru)*
- (3) D.E.C. FILES:
- (4) REFERENCES: *Eaton, P. (1986) Grassroots Conservation - Wildlife Management Areas in PNG Land Studies Centre Report 86/1 UPNG*
- Asigau, W. (1991) The Maza Wildlife Management Area, Western Province, PNG: the Resources and its Management. In Lawrence, D & Causfield-Smith, T. (Ed). (1991) Sustainable Development for the Traditional Inhabitants of the Torres Strait Region GBRMPA Workshop 16: 461-70.*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. in 1976 the dugong was declared a "protected fauna" which required that these be hunted by traditional methods and for traditional purposes; after representations from Daru people a special exemption was made for the Daru markets in order that dugong could be sold as a commercial activity but with the attached condition that they manage this resource (with a WMA committee and rules) (Eaton 1986); this exemption has apparently lapsed and has not been renewed

. it is also said the declaration of area resulted from a three year study into the use of dugongs (joint FAO and DEC) which indicated the populations were being over-harvested and were in danger of extinction here

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. this area is an important source of food resources for the Kiwai people (Asigau)

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>Kawoi Songoro</i>	<i>Mabudian Corner (Daru)</i>
<i>Baudu Sabake</i>	<i>Mabudian village</i>
<i>Wea Amuku</i>	<i>Mabudian</i>
<i>Duba Sedu</i>	<i>Tureture Corner (Daru)</i>
<i>Taneba Ma***</i>	<i>Tureture village</i>
<i>James Daniel</i>	<i>Katakai Corner (Daru)</i>
<i>Saga Matama</i>	<i>Katakai</i>
<i>Kewi Owiba</i>	<i>Barama Corner (Daru)</i>
<i>Sibuku Tawai</i>	<i>Barama</i>
<i>Rupert Alie</i>	<i>Mawata Corner (Daru)</i>
<i>Kanae Tura</i>	<i>Mawata</i>

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

. the Fish. Res. Officer states that:

. people take dugong from their "home" reef and selling at the Daru market (for K5.00 a "bundle"), and

. in April 1992, the Kiwai people were not catching dugong.

. the WMA rules require that traditional harpoons be used to capture dugong but this is being widely ignored and most now caught with nets

(4) COMMUNITY PROFILE NOTES:

. Daru at the centre of the WMA is the Provincial capital and as such is populated by people from many different areas of the region and PNG

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

. the Daru markets provide a source of cash income in supplying the food needs of people working in the provincial centre

(7) COST OF CON. MAN. FOR COMMUNITY:

. there are no facilities for meetings or equipment (such as boats) for the management operations

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. the WMA Committee appears disorganised and unmotivated ; there is a lack of regular meetings

. the management rules are being ignored by the Daru fishing community

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

There is no DEC staff in Daru and wildlife management issues are usually the responsibility of other resource-based government officers. For example, in Daru the following are stationed at Daru,

. Augustin Mobiha (Fisheries Research Officer)

. Kebia (?) (Fisheries Enforcement Officer)

. Charles Hesabada (Prov. Fisheries Officer)

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

. Daru, Wyben Hotel

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. regular commercial flights land at Daru

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

The 1979 rules were repealed and replaced by these 1981 rules.

. restrict the taking of dugong to traditional harpoon methods and prohibit the taking of mother or baby animals,

. nets, of specified mesh size may only be used to catch barramundi

. regulates over the sale of dugong or turtle, limiting the permitted size and requiring that the animal taken is noted by authorities and a royalty paid

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. Fisheries regulations covering commercial species (and in doing so, many subsistence species) are enforced and backed up with government officers and researchers; these species include barramundi, crayfish, crabs and sea cucumbers

. as part of the work completed by Fisheries officers, regular monitoring of the Daru markets occur

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. the WMA is said to have operated successfully for the first 3 years

(2) FAILURES:

. the WMA rules and organisation no longer functions

(3) PLANS FOR FUTURE:

. the fishing community (and landowners) have clearly identified the need to develop an income generating mechanism such as a commercial operators fee and/or tourism development (Asigau)

. recommendations from DEC officers include training of Committee members, the review and amendment of the rules and increased research

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- 1. Enforcement of the Fauna Act in Maza WMA appears to have ceased and there were many reports of infringements which went without any management response from the Committee or the Provincial Ranger.*

The opportunity to involve on-site Fisheries officers in the enforcement of WMA rules is found at Daru as they regularly check the catch at the markets.

3. *The cost of management is prohibitive and funding support non-existent. The costs of effective management will include facilities for meetings, equipment and boats for travel and enforcement and a reliable source of funding support.*

The lack of government assistance for the Committee is identified as a major problem.

4. *Royalties provided for under the WMA rules, are not collected.*
5. *The Committee members have expressed their lack of interest in the WMA process.*
6. *Dugong are now being most commonly caught using nets and being sold at the markets at all times - both contrary to the WMA rules.*

No reliable records of the number of dugong being landed at Daru have been kept. One group from Parama estimated they were bringing up to 5 dugong per day to be sold at the markets since December 1991.

(2) SECONDARY ISSUES:

7. *The WMA rules need to be reviewed and amended. For example, the mangroves close to Daru are being cutdown for fire wood and settlements but this is not addressed in the WMA rules.*
8. *The magistrate and police need to be informed of the intent and contents of the WMA rules.*
9. *The size of mud crabs being sold at the markets is said to be decreasing.*
10. *There is an identified problem in the lack of good management information.*
11. *Fisheries officers are also using an impractical enforcement boat which hampers their activities.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

. a variety of people both customary, non-customary and expatriate exploit the resources of the WMA for cash income - resources used include dugong, turtle, fish, crabs at the Daru market and bech-der-mer for export

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Western*

B. CLIMATE: *Lowland Subhumid*

C. TOPOGRAPHY:

. large shallow, mostly soft bottomed marine area including a number of islands and sand spits

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. extensive seagrass beds and mangrove forests

F. FAUNA:

. coral reefs are found within the area including Wapa, Auomaza, Gemini, Sitner, Kokopi, Parakivori, Kumusi, Otomabu and the "home reefs" of Tureture and Parama villages

. spiny lobsters (crayfish), prawns and barramundi are commercial fisheries

. other species taken include bech-der-mer, and trochus (mother-of-pearl)

. eating fish include garfish, rabbit fish, trevally and mud crabs

. Bristow Is. provides a bird nesting areas in the mangroves (e.g. cormorants) and a small stand of mangroves on Otomabu Reef is important roost site for pelicans, cormorants, egrets and sandpipers

G. CONDITION AND INTEGRITY OF THE SITE:

H. CONSERVATION FEATURES

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

. major dugong breeding and feeding area

. contains a high diversity of marine habitat

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Mc Adams National Park*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *National Park*
- (2) TENURE: *Crown Land*
- (3) GAZETTAL INFORMATION: *Reserved from lease or sale for the purposes of National Park on 22/2/62*
Gazetted to the care and control of National Park on 1/7/70
- (4) AREA: *2,080 ha*

C. LOCATION

- (1) PROVINCE: *Morobe*
- (2) LOCAL GOVERNMENT AREA: *Wau - Bulolo*
- (3) CLOSEST MAJOR TOWN: *Bulolo*
- (4) AVAILABLE MAPPING INFORMATION: *Topo. 1:100,000 - Wau - sh.8283*
Forestry maps and Mining maps are available

D. REASON/PURPOSE FOR DECLARATION AS PA

. to protect a representative area of forest rapidly being lost to mining, settlements and forestry operations; in particular, it was intended that a good examples of the Klinki and Hoop Pines be protected

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING: *Local Forestry office has done surveys in the Park*
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
- (3) D.E.C. FILES:
- (4) REFERENCES: *External Pressures on McAdams National Park (1991) - Marmaro Gawi; (dissertation requirement for Diploma in Park Management from Lincoln University, New Zealand)*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. the land was declared "waste and vacant" in colonial times and thus became the property of the crown

.in 1973-74 moves were made to return crown land to the customary landowners in the region under the Wau Heads of Agreement, but that McAdams be retained as Park in return for cash payment

. disputes arose over who should get this payment with three clans contesting - the Biangais, the Mankis and the Nauti; there has been one court ruling that the first two should share this compensation and another appeal at the (lower?) district court level which reversed the previous decision and included the Nauti clan in the claim

. there is further court proceedings still pending and as a result no compensation has been paid to anyone

. a portion (of approx. 500ha) was excised from the reserved land in 1969 for the settlement of the Kumalu people who migrated from the Mumeng district to for mining activities

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. the landowners are currently in dispute and include three clans as described in section F above; these clans are the Biangai, the Manki and (in dispute) the Nauti

(2) MANAGEMENT COMMITTEE MEMBERS:

. there is no community organisation related to Park management; a key player in the Nauti clan, who make up the bulk of the squatters, is Ben Joseph

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. community structure and cohesion appears to weak, although each of the three clans are sufficiently organised to claim compensation;

. the people surrounding and impacting on the Park are from these clans and many other areas - some have come in for the mining, some remained after forestry operations were closed in the eighties (these activities have been started again in 1990), while others have come into the area to use the garden lands

the impression is of loose associations, scattered settlements and many "outsiders" moving in and out of the area

. the population is increasing as more people move in to exploit opportunities and to squat on land

(5) SUBSISTENCE USE:

. there are small scale mining operations on mining leases along the entire length of the Bulolo River in this area - it is estimated there are 2,000 miners in the region

. gardening accompanies all mining and other settlements and is encroaching on the Park (see details in section N (Issues))

(6) CASH INCOME FOR LANDOWNERS:

. there is no cash income from the Park except (possibly) from illegal gardening

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. appears to be little support for the Park or its authorities due to attempts to move squatters and because compensation payments have not been made after being promised over 15 years ago.

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

Marmaro Gawi - Provincial Ranger, Bulolo

(2) ON SITE STAFF:

. the above ranger and three labourers

. Marmaro Gawi has a diploma from the Bulolo Forestry College and a recently completed diploma from Lincoln College (N.Z.) in park management

(3) STAFF RESOURCES:

. office, ranger house (but no office equipment except phone, no car)

(4) GOVERNMENT BUDGET:

. in 1991, approx. K 12,000 (Gawi pers.com.) which covers all costs including labourer wages

(5) ACTIVITIES AND TASKS OF STAFF:

*. track construction
. boundary definition
. sign erection
. monitoring squatter and mining activities*

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

. no fees collected

I. VISITOR USE

(1) VISITATION STATISTICS:

. no statistics available but the ranger estimates there are only very low numbers visiting the site (possibly less than 100 per year)

(2) VISITOR FACILITIES:

. developed walking track from Bulolo to Weibak Creek

(3) NEAREST VISITOR ACCOMMODATION: *Pine Lodge, Bulolo*

(4) PUBLIC INFORMATION/BROCHURES: *none available*

(5) PUBLIC ACCESS:

. Park borders roads close to Bulolo (at the North) where walking track has been developed

. road to Wau follows the Bulolo River which forms the Eastern boundary of the Park

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. the ranger has partially completed a boundary track to mark out the eastern border along the Bulolo River

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. in 1977 up to 7 families had to be evicted from a significant area in the north-west section of the Park where gardens, including coffee, were established - many of these people remain as squatters along the west boundary

. the boundary marking and internal walking track is of uncertain value as it promotes access into the Park by squatters; for example, there are clearings and side tracks off into the centre of the Park from the developed walking track

(2) FAILURES:

. in 1987 (?) a concerted effort to deliver eviction notices was made on squatters, these were not delivered and not followed up with police actions;

. the actions of the ranger against these squatters is severely constrained by his isolation from authority support, his need to "get on" friendly terms with his neighbours and the threat of violence from the squatters

(3) PLANS FOR FUTURE:

. the ranger estimates he needs at least another 4 workers and related funding support to deal with the major problems (especially squatters)

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) The most important issues stem from the presence of antagonistic squatters surrounding and within the Park boundary. These people surround the Park:

. west - extensive settlements of the Manki and Nauti people where gardens and hunting infringe on the Park; this is where the worst infringements continue to occur

. south - where the Park excision of 1969 for the settlement of Kumalu people from Mumeng and, now, mining squatters along the Eddie Creek area; it is intensively settled and the people are using resources within the Park because of over-exploitation where they live

. east - a 20 m easement and wider mining lease boundaries follow this border along the Bulolo River; associated activities and settlements/gardens result in landslides and clearings within the Park, along with the collection of bush materials

To the North, forestry plantations concentrate in the form of pine monocultures. These are

clearfelled when the trees mature. There are no bush corridors or drainage line vegetation cover. The presence of forestry operations does mean regular patrols and road maintenance here.

- (2) *The provincial ranger stationed here is isolated from head office in more ways than one. He apparently does not receive many visits or frequent contact. He has not been given strong or clear direction as to his responsibilities or the highest priorities for action. Enforcement of eviction notices has not been followed through with police action. He is under-funded and does not possess a car.*
- (3) *The compensation payments for the presence of the Park on customary land has not been paid out (because of inter-clan disputes) and this fuels resentment and lack of respect for the Park and its authorities. The Nauti clan in particular, are actively encouraging squatters and have moved back inside the park on the NW section which was cleared of settlers in 1977. They are violently opposed to eviction actions.*
- (4) *There is a serious law and order problem here which appears to be worst than many other places in PNG. This makes enforcement of rules almost impossible at present and eliminates the possibility of tourism.*
- (5) *The creation of walking and boundary tracks appears to facilitate the access of squatters, gardeners and illegal hunters.*

(2) SECONDARY ISSUES:

- (6) *There is a lack of coordination and support from other government agencies especially from Forestry who have a large presence in the area. This limits the opportunities for improving management.*

For example, there are forestry regulations prohibiting squatters which could be used to shift people away from the boundaries of the Park. The ranger has one phone which only connects to his office - if an extension to the nearby forestry office was made calls could be recorded when the NP office is unattended.

- (7) *The ranger does not have detailed mining lease or forestry lease maps which would indicate where squatters are infringing the Park, and other, land.*
- (8) *Mining activities are poorly regulated and there are many illegal mines, e.g. along the Weibak Creek to the south. This exacerbates an already difficult enforcement problem.*
- (9) *Similarly the western boundary is poorly defined as it passes through the squatter settlements and cannot be easily or permanently marked.*

(3) POTENTIAL ISSUES:

- (10) *The settlements along the western boundary are rapidly diminishing the chances of a planned expansion of the Park in this direction.*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

. there is a lodge in Bulolo, called Pine Lodge, whose guests occasionally use the walking track

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

. no other resources are available (e.g. Forestry does not help)

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. there is no tourism of any significance and regional economic activities revolve around mining and forestry plantations

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE:

. Owen Stanleys

. typical of the lower to mid montane PNG forests being at altitudes ranging from 670m to 2,000m

B. CLIMATE: Lower Montane Humid

C. TOPOGRAPHY:

. most of the Park is steep and hilly slopes rising to the Three Sisters peaks to the south west and dissected by the drainage lines of Weibek Creek; there are steep slopes dropping into the Bulolo River along the east boundary; the area of major incursions by squatters on the NW is a area of relatively flat high land and apparently good soils

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. Araucaria mixed rainforest characterised as lower to mid montane forest

. patches of secondary growth occur throughout where previous gardens and other activities have occurred; a large area of secondary growth is found covering the northern section of the Park

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. as described above the Park continues to suffer from numerous small scale clearings and mining activities

. the major drainage, Weibek Creek, is also under pressure from water borne siltation and other pollutants from the upstream squatter settlements

H. CONSERVATION FEATURES:

. significant area of Auracaria forest, lower montane forest, Reggiana trees

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. adjoining land use activities are a major source of problems for management of this Park - these are detailed in section N under "Issues"

. almost all of the accessible areas in the region have been cleared and burnt; the recent history of the region indicates massive loss of vegetation over the last 10 years - in particular, a severe drought in the early to mid eighties allowed fires to extensively damage the closed forests that once covered much of the hill slopes; these fires have been followed by regular burning and clearing for gardens, mining and firewood resulting in the grassland systems that now cover most of the hills, especially to the west and south east of the Park

(2) CATCHMENT CONSIDERATIONS:

. the Park covers most but not all of the drainage lines into Weibak Creek and the west side of Bololo river

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Moitaka Sanctuary*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *sanctuary (National Park)*
- (2) **TENURE:** *state land*
- (3) **GAZETTAL INFORMATION:**
- (4) **AREA:**

C. LOCATION

- (1) **PROVINCE:** *Central*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:** *site is within Port Moresby*
- (4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

. to develop a research, educational and visitor facility

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:**
- (4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

. there is a serious lack of suitable resources for staff; for example, the officer-in-charge has few office facilities (no fax, photocopier or secretarial staff)

(4) GOVERNMENT BUDGET:

. K150,000 was allocated in 1991 for an upgrading programme - of this K5,000 was redirected towards other programmes and K30,000 returned to consolidated revenue as unspent monies (due to delays in getting administrative approvals)

(5) ACTIVITIES AND TASKS OF STAFF:

*. maintenance of the captive fauna facilities
. patrols to protect against vandalism and theft
. office services and administration for sanctuaries throughout PNG*

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. sanctuary is accessible using the Port Moresby PMV transport

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

. detailed plans have been drawn up for the upgrading and redesign of the facility; in 1991 a landscape architect completed design plans and K68,000 has been spent on a butterfly aviary (from Melbourne)

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *Lack of funding is the most important issue which is reflected in the poor state of repair and maintenance and low staff numbers.*
- (2) *Law and order problems prevalent in the Port Moresby city are also a major problem at this site.*

(2) SECONDARY ISSUES:

- (3) *To date the purpose and policy directions for the site have been poorly defined leading problems such as, inefficiencies and low staff morale. The recent upgrading and design work may have lessened this problem.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. as the only sanctuary the nation's capital this site has considerable potential to become a major educational and recreational facility

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Moresby Coast*

B. CLIMATE: *Lowland Dry Subhumid*

C. TOPOGRAPHY:

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

H. CONSERVATION FEATURES:

. possibly some tourism values

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Mojirau*
(2) SHEET NUMBER:
(3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
(2) TENURE: *customary land*
(3) GAZETTAL INFORMATION: *gazetted 2/6/78*
(4) AREA: *5,079 ha*

C. LOCATION

- (1) PROVINCE: *East Sepik*
(2) LOCAL GOVERNMENT AREA:
(3) CLOSEST MAJOR TOWN: *Wewak*
(4) AVAILABLE MAPPING INFORMATION:

D. REASON/PURPOSE FOR DECLARATION AS PA

. to protect the Area from excessive hunting

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING: *DEC Wildlife Div. have completed surveys in the Area*
(2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
(3) D.E.C. FILES:
(4) REFERENCES: *Eaton,P (1986) Grassroots Conservation - Wildlife Management Areas in PNG Land Studies Centre Report 86/1 University of PNG*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. landowners live in the villages of Tring, Samap, Wau, Wandomi and Yibab

(2) MANAGEMENT COMMITTEE MEMBERS:

. the committee was amended in 1980

<i>Sigau Wobi</i>	<i>Tring</i>	<i>Wogiu Dob</i>	<i>Samap</i>
<i>John Gitoro</i>	<i>Samap</i>	<i>Dambere Limayngi</i>	<i>Yibab</i>
<i>Michael Wiwo</i>	<i>Wandomi</i>	<i>Mund Wigata</i>	<i>Wau</i>

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

. Eaton (1986) reports that the cost of travel is limiting the ability of committee members to get to meetings

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. the community have indicated their strong support for the WMA and Eaton reports that this has lead to the landowners creating new rules and extending the managed area to include a buffer zone (these have no legal backing);

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. there is an airport at Tring (mission) and the road between Wewak and Angoram passes close to the WMA boundary

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. the rules only allow customary landowners to hunt and use shotguns, dogs are prohibited and camping is prohibited;

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. an illegal logging operation within the WMA was stopped (by the withdrawal of the company's licence from Forestry Dept.) in 1991; the time taken to achieve this, however, resulted in (it is said) considerable damage being done;

(2) FAILURES:

(3) PLANS FOR FUTURE:

. the landowners have long proposed ventures for visitor and tourism use;

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) The logging operation within the Area was the most important issue and this needs to be followed by prosecution action to demonstrate the value of these protected areas.*
- (2) The lack of development for income generation (particularly visitor/tourism use) is seen as an issue by the landowners.*
- (3) The damage done by the logging operation needs to be documented as some reports suggest as much as one third of the area was logged.*

(2) SECONDARY ISSUES:

- (4) The boundary needs to be clearly marked or changed to follow natural boundaries which are evident on the ground.*

(3) POTENTIAL ISSUES:

- (5) Logging will continue to exert pressure on this Area and its landowners.*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. logging activities are occurring throughout the region and the road from Wewak (completed in the

early 1980s) will increase pressure on the WMA.

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Toricelli*

B. CLIMATE: *Premontane Humid*

C. TOPOGRAPHY:

. the area covers part of a low ridge which rises from close to sea level to 200m;

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. good quality lowland rainforest with patches of kunai grass

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. the damage resulting from the logging operations needs to be documented;

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. the boundaries follow straight survey lines which don't relate to features (natural boundaries) on the ground

(2) CATCHMENT CONSIDERATIONS:

. the upper headwaters of a number of rivers occur in the WMA

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Mount Gahavisuka Provincial Park*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *National Park*
- (2) TENURE: *49 year lease (from 1983) to the National Government*
- (3) GAZETTAL INFORMATION: *Gaz. as reserved land (and leased to National Government) - 20 March 1983*
- Gaz. as National Park on 27/7/89 (Gaz. No 49)*
- (4) AREA: *77.4 ha*

C. LOCATION

- (1) PROVINCE: *Eastern Highlands*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN: *Goroka (11 km away by road)*
- (4) AVAILABLE MAPPING INFORMATION: *1:100,000 Topo Goroka sheet 7985*
- In the foothills of Mount Otto,
145 20'E, 6 0'S*

D. REASON/PURPOSE FOR DECLARATION AS PA

. primarily to maintain scenic and recreational values and because of the presence of a botanic garden

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING: *Surveys have been completed by the staff and scientists at the Botanic Gardens*
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *Gopsy Gozapao is acting Curator at the Botanic Gardens and has worked at this site for a number of years*
- Bing Siga
Provincial Ranger
c/o Eastern Highlands Prov. Gov.
PO Box 348
Goroko ph. 72-2368*
- (3) D.E.C. FILES:
- (4) REFERENCES: *** (1988) "Mt Gahavisuka Prov. Park at Goroko, in the Eastern Highlands Province of Park" Ples 4*
- Draft Management Plan,*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

the Botanic Garden (and to lesser extent, the National Park) was the idea of Father Crutwell; he collected and studied the highland plants of PNG, and identified numerous rhododendron species in the area.

lease is a 49 year lease paid with a lump sum of K15,000; there is apparently no conditions on the lease

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

*area is leased from the landowning community at Nagamiza village
landowners come from a number of clans (which appear to be ill defined) - the main contact is with family groups and compensation is paid to individuals through these families*

(2) MANAGEMENT COMMITTEE MEMBERS:

a Park Advisory Committee has been formed to discuss issues of concern to the Park including land matters and management problems;

the chairman of this committee is Auauwo Kedauo

there are 10 members in the committee primarily landowners, but also including a botanist (M. Jebb from Christiansen Research Institute, Madang), lecturer from the Goroka Teachers College Goroka and the staff from the Botanic Gardens

the Committee meets quarterly or as the need arises

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

there are 3 main landowner villages: Masi, Kerefa and Nagamiza; and more than one clan - ownership and management is mainly the responsibility of specific families within this broad grouping of people

(5) SUBSISTENCE USE:

there is no subsistence use of the Park allowed but some poaching of cuscus and other arboreal fauna occurs on moonlit nights

(6) CASH INCOME FOR LANDOWNERS:

the park labourers are employed from the landowning community and have been paid at city rates (K100 - K150 per week); this rate has been reduced recently due to budget cuts to approximately half this rate

plans are advanced for a guesthouse just outside the Park to be run by a prominent landowner (chairman of the Advisory Committee and former Provincial Minister)

the landowners are anxious to receive payment for the proposed extension area as they feel it should go the older members of the landowning group who fought for and maintained the land in the old days - it is feared they will die before they can benefit from the payment

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

a meeting on the 12/3/92 indicated landowners are strong in their support for the Park; they are proud of the significance of the Botanic Garden and wish to protect the flora and fauna; the same meeting also raised the notion that some wish to sell their land to the government but they wanted to retain ownership of anything that was in the ground (they were thinking of mining) the park area is not considered good for cultivation

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

Provincial ranger at Goroka (address above)

(2) ON SITE STAFF:

*National Government - 1 Provincial Ranger, 1 Park Ranger, 2 park workers
Provincial Government - (primarily for the botanic gardens): 1 curator and 1 assistant curator and 4 labourers. The curator position is currently vacant with little prospect of being filled without external funding*

(3) STAFF RESOURCES:

There are two residences for Botanic Garden staff; there is no phone or radio contact between the on-site staff and Goroka office

(4) GOVERNMENT BUDGET:

Total current budget from the Provincial Government (operations and wages) is K 30,000 per annum for Botanic Garden (half of which is spent on wages). Operations budget from National Government is K12,000 which must be shared with operations for Mt Wilhelm National Park (a large proportion of this, approximately K10,000 is used to provide a car for the Provincial Ranger). Funds are budgeted on a quarterly basis - this quarter has insufficient funds to hire car from the PTV pool

(5) ACTIVITIES AND TASKS OF STAFF:

*maintaining the park facilities (e.g. tracks, picnic areas, etc) and operating the botanic gardens
the Provincial Ranger reports monthly to Port Moresby office*

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

camping fees, donations at the orchid house

I. VISITOR USE

(1) VISITATION STATISTICS:

estimated 300 visitors per month (Gopsy Gozapo, Bing Siga pers. comm.)

(2) VISITOR FACILITIES:

Picnic areas, interpretative material, labelled vegetation, information centre. Lipizauga Botanic Sanctuary, includes two orchid houses. Walking tracks to lookout and rough track to Mt Gihizuveka is being upgraded to provide a 4 to 6 hour walk

(3) NEAREST VISITOR ACCOMMODATION:

Goroko accommodation

(4) PUBLIC INFORMATION/BROCHURES:

a 1990 brochure has been produced with information and map (see attached)

(5) **PUBLIC ACCESS:** *11 km road from Goroka,*

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) MANAGEMENT ACTIONS:

on moonlit nights people have been employed to patrol the Park to detect hunters (without success)

(2) PLANS FOR FUTURE:

A number of plans have been developed and will be implemented subject to available funding; these include:

a Lae Unitech plan and design for visitor facilities and tracks has been completed and is currently being drawn up

part of the above will include upgrading of the forestry road (to west) and movement of the existing camping area to this location, and construction of a propagation house for the sale of orchids and rhododendrons.

The expansion of the Park area is already well advanced, it has already been surveyed and the landowners have reached a decision to go ahead with the plan. This expansion will add approximately another 100 ha to the Park.

The deal is to be an outright purchase and the landowners are now asking about their money.

An existing rough track to Mt Gihizuveka is currently being upgraded - this will provide a day long walk into the park extension area and include a cave site of cultural significance to the landowners.

A mini-hydro electricity system is planned for the site.

A toll gate is to be constructed when the access road is upgraded.

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) The most pressing issues relate back to funding needs. In 1992 the Provincial Government budget was cut in half (to K 30,000). The problems that arise from this underlying issue include:

the position of curator at the Botanic Gardens is vacant and needs to be filled as soon as possible,

basic support equipment such as a car for the Provincial Ranger and communication links (phone/radio) with Goroka are absent,

the planned developments, especially the propagation house, will need funding

support

the road into the Park is in very poor condition and has not been maintained for 2 years.

the current low level of funding has led to park labourers being asked to accept lower wages (which they have agreed to)

(2) *Current good landowner relations need to be developed by:*

building on the existing support in the community with educational and employment programmes, enhancing the role of the Advisory Committee and supporting the development plans of the adjoining landowners.

(2) SECONDARY ISSUES:

(3) *Pigs cause damage to the Gardens and fencing is necessary to keep them out.*

(4) *Some of the landowners apparently do not fully understand the notion of selling one's land for conservation protection (as indicated by their desire to keep the mining option open).*

(5) *Occasional rascalism occurs, particularly thefts, although this is a minor concern in spite of significant levels of this activity in nearby Goroka.*

(6) *Research results of work completed at the site is not sent back to the centre for their library.*

(7) *The lack of cooperative planning and action between the PNG Tourism Corporation (and similar bodies) and DEC has resulted in the full potential of the site not being realised.*

(3) POTENTIAL ISSUES:

(8) *Should the site be developed according to plans and, in particular, if the guesthouse and visitor facilities are successful in attracting people, rascals are likely to become an issue. It is currently thought that the minor incidence of this problem relates to its position at the end of a road, the presence of the landowning community along the road into the Park and the current low number of visitors (i.e. 'victims').*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

donations are sought from organisations interested in the work of the Botanic Garden (particularly, scientific institutions, orchid and rhododendron interest groups)

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

Goroka is a major provincial centre close to the Park

II SITE DESCRIPTION

A. BIOGEOGRAPHIC REGION:

highlands

B. CLIMATE:

Lower Montane Subhumid

rainfall not measured, expected to exceed 2500mm

C. TOPOGRAPHY:

altitude of 2,000 m to 2,600 m

located on a spur of Mt Otto in the Bismarck Ranges; most on a steeply sloping side facing west

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

*approximately 70% covered with a mid-montane rainforest (dominated by *Saurauia* sp.) and remainder grassland;*

*the *Rhododendron* scrubs are noteworthy*

over 1,000 species of orchid have been identified in this locality

F. FAUNA:

6 species of Bird-of-Paradise have been recorded

G. CONDITION AND INTEGRITY OF THE SITE:

in places, particularly along the lower slopes, the park is recovering from logging operations and there is a former village (and gardens) area along the SW side and in the proposed extension; remainder, especially high on the mountain ridge, is in good condition

H. CONSERVATION FEATURES:

important lower montane area rich in fauna, major rhododendron & orchid collection (Crutwell), value for tourism and local community education, high potential for scientific research (good access from Goroka), good populations of Birds of Paradise

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

proposed extensions will make the access road a (more rational) SW boundary and include the top of the adjoining ridge line to Mt Gihizuveka

(2) CATCHMENT CONSIDERATIONS:

Park protects the water supply for the adjoining landowners, and for Goroka township.

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

*there is a culturally significant cave high on Mt Gihizuveka and within the proposed extension area (place of the Nokundi - half man creatures)
the park area was also where the community hid during the tribal fights in the old days*

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

The sedimentary deposit in the large cave on Mt. Gihizuveka suggest it contains archaeological remains.

D. SCENIC/LANDSCAPE VALUES:

area is noted for its high scenic values with views to the Mounts Michael, Wilhelm, Koriggoma and surrounding ranges

E. RECREATIONAL VALUES:

easily accessible from Goroka with visitor facilities

F. SCIENTIFIC VALUES:

*a number of rare species have been identified in and around Mt. Gahavisuka. These include:
3 undescribed species of Rhododendron along the ridge to Mt Gihizuveka (within the proposed extension area)
4 rare species of orchid of the genus Bulbophyllum i.e. B. punchrum, B. speciosum, B. mitidium, B. monosephlum
Lipizauga Botanic Sanctuary contains one of the best collections of PNG highland plants in the world and is an invaluable scientific resource; specimens collected by the garden staff are lodged with the National Herbarium at Lae
site is used by visiting scientists for study (estimated 3-4 per year)*

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

ADDITIONAL NOTES AND COMMENTS

*compensation for the land included special payments for planted food trees (e.g. Pandanus) which are considered "improvements" and is paid to individuals
attempts to discuss the land with women in the landowning group was stopped by an order from one man - many of the women are from other landowning areas having married into the group
a prominent man in the community, Auauwo, is chairman of the Advisory Committee and proponent of the guesthouse, but is related to this landowning group through his marriage
the landowners refused compensation for water supplies from the park and power lines on their land which services other people down the hill, in the belief that this will encourage the government to extent these services to other settlements of their community*

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Mt Kaindi*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
- (2) TENURE: *Customary land*
- (3) GAZETTAL INFORMATION: *Gaz.16 15 February 1990*
- (4) AREA: *1,502.8 ha*

C. LOCATION

- (1) PROVINCE: *Morobe*
- (2) LOCAL GOVERNMENT AREA: *Bulolo-Wau*
- (3) CLOSEST MAJOR TOWN: *Wau*
- (4) AVAILABLE MAPPING INFORMATION: *1:100,000 Topo. Wau sheet 8283*

D. REASON/PURPOSE FOR DECLARATION AS PA

. The area was made a WMA to protect the interests of the landowners from encroaching miners and squatters and to protect the natural values of the site which had been studied by scientists of the Wau Ecology Institute (WIE).

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *Harry Sakulas, Wau Ecology Institute, Wau*
- (3) D.E.C. FILES: *DEC file 20-2-11 (C) and 20-2-11 (4)*
- (4) REFERENCES: *Gressitt, J.L. and Nadkarni (1978) Guide to Mt Kaindi: Background to Montane New Guinea Ecology. Wau Ecology Institute Handbook No 5*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. The WIE was instrumental in getting the Area declared and has played a major role in its continued management. In 1980 everything was organised, committee, rules and survey, yet it still took until 1990 to get it declared (i.e. 10 years).

H. Sakulas notes that it was over the 1985/86 period that most of the squatters moved in - had the WMA been declared this influx may have been controlled.

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. Biangai and Watut clans

(2) MANAGEMENT COMMITTEE MEMBERS:

<u>Biangai</u>	Wele Wane (chair.)	Waram Pabia	Kawi Yanduk
	Jacob Yerewre	Kawa Sera	Peter Paiva
	Waubu Kawa	Kuwan Yamu	Yahi Nalu
	Namo Yawa	Wawa Kawa	
<u>Watut</u>	Pomtawato Tatengi	James Saro	Weri Toando
	Membi Malayaki	Yausom Yapu	Lenny Yapu

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. the community of the region is plagued with law and order problems and subject to outside influences with the influx of squatters; there appears to be little that is stable;

(5) SUBSISTENCE USE:

. gardening by landowners and squatters occurs within the WMA and illegal taking of fauna continues in-spite of the rules

(6) CASH INCOME FOR LANDOWNERS:

. landowners are given support in the form of employment and services by the WEI

(7) COST OF CON. MAN. FOR COMMUNITY:

. the cost of protecting the area from squatters would be considerable if a serious attempt was made to arrest the problem (see M)

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. There were conflicting reports on landowner attitudes, although it appears they do support the WMA, and WEI which is seen as inseparable from it.

Reports of landowners breaking the WMA rules simply reinforces the view that enforcement of any rules in this lawless situation cannot be totally effective.

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

. There is a provincial ranger, Marmaro Gaw, stationed near McAdams National Park between Wau and Bulolo.

(3) STAFF RESOURCES:

. The role of this ranger in this WMA is limited by the scale of problems he has with the National Park and a lack of funds (e.g. in 1991 he has no car).

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

. visitor numbers to WEI are approximately:

(2) VISITOR FACILITIES:

. WEI has zoo, information/library and walking tracks into the WMA

. there are also research and educational facilities and educational programmes

(3) NEAREST VISITOR ACCOMMODATION:

. WEI has good accommodation facilities

(4) PUBLIC INFORMATION/BROCHURES:

. see reference above and the presence of a library

. there is also a small brochure available for visitors

(5) PUBLIC ACCESS:

. Wau is a small town connected by road, and PMV services, to Lae and there is an airport.

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. The WMA rules impose a blanket prohibition on lighting fires, cutting trees, killing fauna (by any means including traditional traps or shotguns), developing new gardens, building new houses and mining for gold.

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. The WEI has taken an active role in management of the WMA. It has organised meetings, carried out educational programmes and even paid for enforcement activities.

. The chairman of the Management Committee is also deputy chairman of WEI.

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. In spite of overwhelming pressures, WEI and the Committee have managed to effect some control over the situation. In 1990 they sent a team in to destroy gardens, mining boxes and residence belonging to a squatter family within the WMA. This was after DEC refused to become involved and at a cost of K 2,500 to WEI.

An encroaching coffee garden was also cut down and the owner paid K 1,000 compensation by WEI.

Both of these decisions were made by the Committee and supported by WEI.

Meetings are held as the need arises and probably more frequently than any other WMA. They are organised and held by WEI at their facilities.

(2) FAILURES:

. The management of the WMA is largely failing, however, due to the pressure of mining and squatters in a situation on increasing law and order breakdown.

For example, the destruction of the squatter area described above resulted in an angry mob descending onto WEI to burn the building down. They were stopped by police but facilities and buildings at the top of Mt Kaindi, belonging to WEI and telecommunication agencies, had to be dismantled and moved because of the destructive activities of the squatters.

(3) PLANS FOR FUTURE:

. Plans for the rehabilitation of the WMA area are estimated to cost approximately K 5,000 per year. It is anticipated a Trust Fund would be set up with funds which would include the government royalties collected from mining activities in the locality and this used to employ "rangers" who will continuously work on getting the squatters to move. It would be a gradual process using a combination of enforcement and incentives (such as replacement land elsewhere). This must be backed up by the local police.

. Tourism development is also seen as a means of generating employment and funds (using the existing

facilities at WEI).

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *Squatters and the break down of law and order is the dominant issue making enforcement of the rules almost impossible and leading to very destructive gardening and mining activities within the WMA. It also negates the positive effects of having the WEI adjoining and supporting the efforts of the landowners.*
- (2) *The delay in gazetting the WMA between 1980 and 1990 greatly diminished the chances of it being a success. The delay contributed to the squatter problem getting out of control so that now it is estimated there are 500 squatters in or around the WMA. Approximately one third of the vegetation within the WMA was lost during the mid-eighties before gazettal. Destruction has continued since then at a slower rate.*

(2) SECONDARY ISSUES:

- (3) *Some landowners appear to have little respect for the rules of the WMA in the present context and are continuing to hunt, collect wood and garden within its boundaries.*
- (4) *The educational facility was built at a cost of K 60,000 on the understanding that DEC would make a significant contribution and offer support. This has apparently not eventuated.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

. The WMA serves as a study site for the WEI and therefore plays some role in maintaining this Institution's existence. Although the WEI only partially relies on the WMA, it can still be said to underpin the employment and income generating opportunities provided by that Institution.

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. The population increase of the region, related to mining, forestry, and gardening activities has led to the extreme squatter problem being experienced on this site and nearby McAdams National Park (see issues, section N).

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Owen Stanleys*

B. CLIMATE:

. Lower Montane Humid, typical mid-montane conditions for PNG - a lack of distinct seasons, moderate rainfall, high humidity (and fog), limited temperature range

C. TOPOGRAPHY:

. altitude range : 1150m to 2362m

D. GEOLOGY/SOILS:

.schists, mudstone, clay with volcanic intrusions

E. VEGETATION DESCRIPTION:

. there are four distinct forest sub-types (3 being mixed rainforests):
- Araucaria mixed forests (with oaks- grading to almost pure stands),
- Eleocarpus mixed rainforest
- Nothofagus mixed rainforest
- alpine forests

F. FAUNA:

. typical of the altitude range for PNG, includes the rare Short-spined Echidna

G. CONDITION AND INTEGRITY OF THE SITE:

. vegetation has suffered greatly due the illegal activities of the squatters as described above - up to one third of the area has been cleared / forest totally destroyed

H. CONSERVATION FEATURES:

.type locality for Psychampterus hobbit (?), some tourism values

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. the WMA covers the top of the mountain, with the boundary following the road for much of the way. There is a (2ha ?) block of privately owned land within the main block of the WMA. The WMA is surrounded on all sides by mining and settlements.

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. very scenic area with access road to top of mountain and visitor facilities at WEI

E. RECREATIONAL VALUES:

. as above, with additional value for natural history activities in the facilities of WEI

F. SCIENTIFIC VALUES:

. there are high scientific values in the site as the research completed at WEI since the 1960's has provided a large number of the type species lodged at museums in PNG and elsewhere

. WEI area (Mt Kaindi) was one of the first places in PNG to be subject to scientific study and the continued existence of the Institute greatly enhances this value for the site

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

ADDITIONAL NOTES AND COMMENTS

(1) *The role of WEI is crucial in this WMA and if it was not for the exceptional nature of the surrounding landuse this could have provided an example for WMA's throughout PNG.*

(2) *WEI is actively involved in conservation management investigating alternate development options and sustainable gardening practices. It has an active landowner education unit which teaches landowners about the environmental consequences of development options and trains extension workers.*

It is invaluable as a resource for conservation managers in PNG.

(3) *The problems associated with Mt Kaindi have resulted in new research areas being investigated. An area on nearby Mt Missen has been chosen as the site a new field station and*

negotiations are advancing with the landowners.

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Mt Susu*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *National Park*
- (2) **TENURE:**
- (3) **GAZETTAL INFORMATION:**
- (4) **AREA:** *Less than 100 ha*

C. LOCATION

- (1) **PROVINCE:** *Morobe*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:**
- (4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

. To protect a small representative example of the original forest in this otherwise plantation setting.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:**
- (4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

- (1) MOST IMPORTANT MANAGEMENT ISSUES:

. The site is currently undeveloped and its one potential, as a visitor recreational area, is undermined by low tourist interest in the region and high incidence of rascal activity.

. potential recreational and visitor resources. Currently undeveloped but its close proximity to Bululo town and ready access to boundary with forestry roads, make this a possibility.

- (2) SECONDARY ISSUES:
- (3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Owen Stanleys*

B. CLIMATE: *Lower Montane Humid*

C. TOPOGRAPHY:

. 800 to 1,000 m (lower to mid montane). Small forested hill.

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. Araucaria mixed rainforest on hill, in the midst of plantation forests; condition of habitat is good;

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. The area is too small to provide long term protection for mobile fauna and is completely surrounded by forestry plantations making even the survival of flora unlikely. It may, however, provide a useful example of the original forest for scientific surveys and collection and as a comparison with the nearby McAdams National Park forests. High quality un-logged forest (due to presence of wartime shrapnel)

H. CONSERVATION FEATURES

. Important stand of Araucaria and associated limestone flora

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Mt Wilhelm*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *National Park*
- (2) TENURE: *State Land*
- (3) GAZETTAL INFORMATION: *The Park has yet to be gazetted National Park under the National Parks Act;*

In 1981 it was purchased outright from the landowners and declared government land reserved for National Park in Gazette 28, 17 (4?) May 1990
- (4) AREA: *810 ha*

C. LOCATION

- (1) PROVINCE: *Simbu*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN: *The government sub-district headquarters of Gembogl is approximately 8 km away and the major town of Kundiawa is 58 km away by road*
- (4) AVAILABLE MAPPING INFORMATION: *1:100,00 Topo. Bundi sheet 7986 - 145' 1'E 5'47'S*

On the junction of the Sepik-Wahgi divide in the Bismarck Ranges

D. REASON/PURPOSE FOR DECLARATION AS PA

. site has high biological conservation value including the most extensive occurrence of alpine and sub-alpine vegetation in PNG; a rare species of frog is found here; an important research site; the only protected area in PNG with intact clear glacial depositional landforms

E. INFORMATION SOURCES

(1) SURVEYS/MONITORING:

Numerous scientific studies have been completed in this Park (see below)

(2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:

(3) D.E.C. FILES:

DEC File 25-7-1 (1), (2)

(4) REFERENCES:

Draft Plan of Management by Samuel Antiko, PNG National Parks Service, Dec. 1991

Hnatiuk, R.J., J.M.B. Smith, N.N. McVean (1976), Mt Wilhelm Studies : the Climate of Mt Wilhelm

Hope, G.S. (1970) Vegetation History of Mt Wilhelm, J. of Ecology :64: 677- 863

Wade, L.K., D.N. McVean (1969) Mt Wilhelm Study I: The Alpine and Sub-Alpine Vegetation Research School of Pacific Studies ANU Canberra

Smith, J.M.B. (1977) Vegetation and Microclimate of the East and West Facing Slopes in Grasslands of Mt Wilhelm

Smith, J.M.B (1990) Environmental Change on Mt. Wilhelm. Science in New Guinea 16:13-21

Löffler, E (1982) Pleistocene and present-day glaciations. In Cressiff, J.L. Monographic Biological, 42:39-55, Junk, The Hague

Löffler, E (1986) Macquarie Island - Mt. Wilhelm: periglazialscheinungen einer subantarktischen Insel und eines tropischer Hochgebirges im Vergleich. Zeitschrift f. Geomorphology Supp. Bd. 61:55-64 (with summary and captions in English)

Numerous other studies have been completed as part of visiting scientist work and/or UPNG student studies

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. the Park area was purchased for K 12,563.00 in 1981; this purchase, however, is surrounded by problems as described in the Issues section (N)

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. clan name : Wandike - landowners who can negotiate over the land are specific families within this clan

. a key person for the high altitude land within the park is Joseph Dua Demkama (his father is still alive and was one of the people who negotiated with authorities over the sale of the land)

. there are two landowners of the disputed area surrounding the access track into the Park: John Kail and Dor Gemba

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

. the Park area was used for hunting in the old days

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

. landowners respect the National Park status of the area and do not carry out any exploitive activities within the Park boundaries

(6) CASH INCOME FOR LANDOWNERS:

. employment as guides and park labourers

. food and craft goods (billums) are sold to visitors

. the guest house outside the Park provides an income to the clan with charges of K 10 per night for visitors

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. a meeting with landowners (13/3/92) indicates they support the presence of the Park on their land but are dissatisfied with compensation payments

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

*. provincial ranger Bing Siega
 address: National Parks
 PO Box 657
 Goroka. ph. 722368*

(2) ON SITE STAFF:

- . 1 caretaker (on minimal rural wages)
- . 5 park workers from nearby villages
- . Provincial Ranger is based at Goroka and usually visits Park twice a month
- . there is a vacant position to be filled at the Park which is awaiting government funding

(3) STAFF RESOURCES:

- . newly completed ranger house (in 1991) on State land at the base of the access track

(4) GOVERNMENT BUDGET:

- . operating budget (does not include wages or salaries) of K 12,000 for both Mt Gahivisuka and Mt Wilhelm;
- . Estimated average (S. Babo, DEC)
 - maintenance K 2,000 per annum
 - salary K 6,000
 - wages K 2,000

(5) ACTIVITIES AND TASKS OF STAFF:

- . general maintenance of tracks and facilities
- . maintenance of the research hut at Lake Piunde and collection of fees
- . considerable time is spent with landowners in negotiations and discussing issues

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

- . hut fees - annual total unknown; in January 1992 collected K 291.00
- . donations also come from scientific bodies (e.g. UPNG Geography donated K300 in 1988), and from payment for specimens collected

I. VISITOR USE

(1) VISITATION STATISTICS:

- . in January 1992 a total of 585 visitors were recorded of which 301 were PNG nationals; the main nationalities in the remainder were USA (72), Australian (62) and Japanese (51)

(2) VISITOR FACILITIES:

- . there is a hut at Lake Piunde along the walking track, which was built by the Australian National University
- . a second hut exists near to this which was built by a landowner and is now subject to dispute over payments - it was closed by National Parks and is not being used at present
- . walkers are provided with guides from the local landowning community

(3) NEAREST VISITOR ACCOMMODATION:

- . a guest house is available at the base of the track; this was built with Provincial Government money and local community contributions and is run by the community

(4) PUBLIC INFORMATION/BROCHURES:

- . no brochures available

(5) PUBLIC ACCESS:

- . there is an airstrip at the start of the track
- . PMV transport will also take visitors to Park
- . there is only one track in and out of the Park

. most suitable time for visitors is during the dry season from July to September; the period from November to April is dangerous for visitors because of rain, high winds and cold temperatures.

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. the Provincial Ranger Bing Siga maintains very good relations with the landowners in spite of substantial disputes between them and DEC over land payments and compensation

(2) FAILURES:

(3) PLANS FOR FUTURE:

. there is to be appointed a permanent ranger on site (the position has not been advertised)

. the landowners indicated they were willing to provide more land for an extension to the Park when existing disputes are resolved

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) Landowner disputes concerning payment of the original Park area and compensation for people using the access track through customary land are a major issues requiring immediate attention.

These issues are:

. claims by Joseph Dua Demkama that the upper part of the valley was not included in the original purchase of land and is therefore still outstanding,

. John Hendrik had a guesthouse operating within the Park at the time of purchase - he claims he was not paid for this (estimated value K7,000); the house was closed on the orders of DEC in 1985 and he is claiming K5,760 in lost revenue (K120/week); he has engaged a lawyer to present his case in a letter to DEC (dated 1987),

. John Kail and Dor Gemba are two landowners of the area leading into the Park and are claiming compensation for use of the track through their land; they want an entrance fee at the start of the track and on several occasions have stopped walkers in support of their claim, and demanded money before allowing them to proceed.

An interim payment of K5,000 was made in 1991 (to allow the public to continue to use the track) with the balance to be paid out when the track is surveyed and (Lands Dept.) valuation made. This is estimated to be an additional K5,000 - unfortunately the landowners know of this estimate and are demanding the other K5,000 now.

The K5,000 paid out to date was split between the two major landowners (K3,000) and the community (K2,000).

- (2) *Compounding the above problem is the apparent loss of all documents related to the purchase and the boundary survey. Searches in all the expected localities has so far failed to find these papers.*
- (3) *Funding for management is a major problem. For example:*
 - . the allocation for the Provincial Ranger's car could not be made for this quarter (beginning of 1992); the on-site ranger position has been planned for some time without money being made available*
 - . the ranger house took over 3 years to complete after starting*
 - . surveys for the disputed area surrounding the access track is estimated to cost K11,000 - that is, more than the estimated cost of the land*
- (4) *The ANU research hut is in a state of poor repair and needs major renovation or replacing.*

(2) SECONDARY ISSUES:

- (5) *Access to the Park beyond the airstrip is via a very rough road which must be maintained by Provincial Government. Access to Gembogl is also via a rough, and sometimes dangerous, road.*

(3) POTENTIAL ISSUES:

- (6) *Visitor induced contamination of the community water supply is possible as the track and huts are close to the water sources. Toilet facilities need improvement.*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

- . visiting scientists and educational groups provide a valuable source of information*

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

- . in the last 5 years a government sponsored agricultural development project has resulted in the settlement of people on former State land approximately 2 km further up the valley from the airstrip/school and closer to the Park boundary; the project involves the leasing of land for growing vegetables which are transported out to the markets*

- . a major school is located near to the airstrip below the Park*

- . a private sawmill is located near the airstrip and a wok-about saw mill is available for hire at K50/day*

- . a timber reforestation project is planned for the valley centred on the government station at Gembogl*

- . it is estimated the population of the valley centred on Gembogl is 4,469*

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *High Mountains*

B. CLIMATE:

. Upper Montane Humid of McAlpine

. two basic seasons - wet and dry, temperature ranges from -3.8 to 14.4 deg. C within the Park, rainfall at 3,840m is 2,976 mm

. there is ephemeral snow on the summit at most times of the year

C. TOPOGRAPHY:

. Park rises from 3,400m to 4,500m above sea level;

. the Park covers a glacier formed U-shaped hanging valley; the valley floor has a moderate slope for its length (approximately 6.5 km and .8 km at its widest), rising abruptly through a cirque backwall at the top from 3,800m to the peak of 4,500m;

. there are two glacial lakes, Lake Piunde and the higher Lake Aunde, cores from which have provided important information on late Pleistocene environments in an alpine tropical location.

D. GEOLOGY/SOILS:

. high water table makes the surface of the valley floor wet and swampy

. extensive terminal moraines below 3,400m

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. the Park is in good condition with little disturbance and no internal exploitive activities, local threats through tourism impacts.

H. CONSERVATION FEATURES:

*. Scenic beauty, highest peak in PNG, alpine lakes and vegetation, Birds of Paradise, glacial landforms, high altitude fauna, population of long-bearded *Melidictes princeps*, important area of high altitude biodiversity, research centre (currently non-active), provides water catchment protection, 123 species of phytoplankton recorded - many previously unrecorded from Malesian/Australasian region - plus 12 crustacean species.*

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. the upper boundary of the Park is disputed by the landowners (see N below)

. the boundary has not been fully surveyed on the ground with the more inaccessible areas marked from air photos; essential documents in this boundary work are missing (see N below)

(2) CATCHMENT CONSIDERATIONS:

. Park covers the Pindaunde Valley, along the SE side of the mountain

. the Pindaunde catchment provides the drinking water for the landowning community and school

downstream

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. Mt Wilhelm is a major scenic site for PNG

E. RECREATIONAL VALUES:

. the Park is known throughout the world for its bush walking recreational opportunities

F. SCIENTIFIC VALUES:

. the ANU research activities begun in the sixties have been continued by UPNG and other research institutions, making this a valuable scientific resource

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Namanatabu Reserve*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *Nature Reserve (National Park)*
- (2) TENURE: *State land*
- (3) GAZETTAL INFORMATION: *Land acquired in 1947, reserved from lease 15/3/79, Gaz.No 41, for historic reasons;*
- (4) AREA: *27.44 ha*

C. LOCATION

- (1) PROVINCE: *Central*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN: *Port Moresby*
- (4) AVAILABLE MAPPING INFORMATION:

D. REASON/PURPOSE FOR DECLARATION AS PA

. Australian General Blainey, chose the site during the war as a memorial to soldiers killed and buried on the battlefield

. a secondary goal was to establish a nature study site and educational facility

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
- (3) D.E.C. FILES: *DEC files 25-9-1, 25-9-4*
- (4) REFERENCES: *Detailed report on site in DEC file 25-9-1 General*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. see notes above; the area became State land in 1947 when the site was purchased from 12 named landowners for 100 pounds

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. clan names are not recorded in the files but the area lies within the Koiari lands

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

. hunting will occur in the site on occasions and minor harvesting of sago

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. there is some dispute over the exact location of the eastern boundary and it is said fires are deliberately lit to run through the Park

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

. the 4 labourers working in the Central Province maintain the access track, an old road leading into the site

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

. no facilities provided, buildings and bridge built in the first years have been destroyed and/or removed

. the walking track in and around the site is cleared by DEC labourers

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. access is by walking the 3 (?) km from the Varirata road in across a river and up an old road to the site; the river crossing is a few logs from the old bridge; the walk in is very strenuous and there are no sign posts until the border of the site

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

. the original development plans aimed to create an educational centre, accommodation and educational programmes; a Botanic Garden was begun with introduced and in-situ plants labelled along the walking track

(3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *Difficult access and lack of DEC resources makes public use very unlikely and development far too expensive.*
- (2) *Area is known to be risky from rascal activity and the site is isolated from public roads and scrutiny.*

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Gulf Hills*

B. CLIMATE: *Premontane Humid*

C. TOPOGRAPHY:

. area is a swamp depression at the base of cliffs, high in the foothills

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. small pocket of lowland rainforest and swamp forest in the midst of open forest/grasslands

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. the site is in good condition except for the effects of fire along the edge and minor harvesting of sago

H. CONSERVATION FEATURES

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

. the area is a small swamp arising from springs coming out at the base of high rocky cliffs; this swamp lies well above the valley floor in the foothills

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

. may have scientific value in providing good example of remanent forest patch

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Nanuk Island*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *Provincial Park (National Park)*
- (2) **TENURE:** *State land*
- (3) **GAZETTAL INFORMATION:** *Gazetted 6/12/73*
- (4) **AREA:** *18 ha*

C. LOCATION

- (1) **PROVINCE:** *East New Britain*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:** *Rabaul*
- (4) **AVAILABLE MAPPING INFORMATION:** *152 4'E 4 5'S*

D. REASON/PURPOSE FOR DECLARATION AS PA

To protect the natural values of the island and to develop a recreational/tourism resource.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:** *25-5-1*
- (4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

. Provincial Ranger (DEC) at Rabaul

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

. contributions made to management by the Provincial Government

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

. visitors come from Rabaul and there was once a regular tourist boat visiting each Sunday

(2) VISITOR FACILITIES:

. island had some picnic facilities (shelters, tables, bar-b-cue) but these have been vandalised and are unusable

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. private boat

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

. destruction of facilities may have resulted from the lack of DEC presence and monitoring

(3) PLANS FOR FUTURE:

. in 1989 there were DEC plans for the reconstruction of picnic facilities

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) *The lack of DEC activity and funding for constructions and maintenance is a major problem with this site.*

(2) *The lack of DEC boats and equipment make monitoring very difficult.*

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. there was a resort proposal for nearby Miako Island

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Volcanic Chain*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. coral cay

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. typical coral cay vegetation

F. FAUNA:

. small fringing reef

G. CONDITION AND INTEGRITY OF THE SITE:

. appears to be a well used site and there are reported problems with destruction of trees for fire wood

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Ndrolowa*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
- (2) TENURE:
- (3) GAZETTAL INFORMATION:
- (4) AREA: *5,850 ha*

C. LOCATION

- (1) PROVINCE: *Manus*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN:
- (4) AVAILABLE MAPPING INFORMATION:

D. REASON/PURPOSE FOR DECLARATION AS PA

. The site was created for subsistence and biodiversity reasons

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
- (3) D.E.C. FILES:
- (4) REFERENCES:

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

- (1) MOST IMPORTANT MANAGEMENT ISSUES:

. enforcement is an important issues, also commercial fishing activities in the vicinity of the site.

- (2) SECONDARY ISSUES:
- (3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Manus*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

H. CONSERVATION FEATURES

. Mangrove wetlands

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Neiru (Aird Hills)*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS: *Photocopy of 1:100,000 topo.*

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
- (2) TENURE: *Customary*
- (3) GAZETTAL INFORMATION: *7/11/87*
- (4) AREA: *3,984 ha*

C. LOCATION

- (1) PROVINCE: *Gulf*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN: *Nearest settlement Kikori Station (approx. 20 km away)*
- (4) AVAILABLE MAPPING INFORMATION:

D. REASON/PURPOSE FOR DECLARATION AS PA

. to protect local fauna from the hunting activities of outsiders, especially fishermen and crocodile hunters

. A more recent purpose is to protect wildlife and the environment so that a tourism venture could be started.

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING: *Biological survey completed between 9/3/82 and 3/4/82, by M.E. Broome, L. Seri and C. Unka*
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *Mr. Allan Oupai, Euro Village, P.O. Box 1, Kikori.*
- (3) D.E.C. FILES: *DEC file 2-20-7*
- (4) REFERENCES: *Rhodes, J.W (1980) Through a glass darkly: present and past land-use systems of Papuan sago palm users. Unpubl. PhD thesis, Depart. of Prehistory, ANU.*
- Chevron Nivgini (1989) Environmental Plan for the Kutubutu Oil Development NSR, Port Moresby*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. some local village people were in the Western Province and saw and spoke with the people in the existing WMA there (Tonda), and brought the idea back home with them

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. landowners are from Ero village; area under customary tenure

(2) MANAGEMENT COMMITTEE MEMBERS:

.Committee:

*Allan Oupai
Kawaitero Eimoruo
Ovei Tiramau
Tarapo Gerai
Ove Mamau
Kemaru Buari
Kemaru Akaro
Ebei Tobue*

(note: they said they are planning a meeting soon to elect a Chairman)

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

. not examined during this visit, although it is apparent that a number of areas are considered 'sacred' and use restrictions apply

(4) COMMUNITY PROFILE NOTES:

. apparently there were three traditional villages in the WMA. Missionaries from the London Missionary Society established a Mission at Euro in the 1930s and successfully encouraged the three villages to resettle to Euro. Wowo is apparently also a relatively recent village. Euro houses about three hundred people and Wowo about sixty. The people of both villages are customary landholders for the WMA. The customary landholding system is maintained by a patrilineal system.

. the village of Samoa (approximate population of 100 people), which is in close proximity to Euro, was formed by people from outside of the current WMA (down stream) who were brought in by the missionaries. There is some friction between these villages but the WMA Committee did say that the Samoa villagers generally abided by the rules of the WMA

(5) SUBSISTENCE USE:

. food is predominantly fish and sago, which are both collected from within and outside of the WMA. These appear to be the staples of the diet. A wide variety of fish are caught, now by the use of monofilament lines and gill nets. Prawns, crabs and fresh water tortoises are also caught from within and outside of the WMA. Sago is processed by hand by bringing logs into the village or by processing on site in the forest

. hunting for wildlife, including cassowaries in the wet season, occurs outside of the WMA

. a variety of nuts and fruits are used from the forest are used for food, and medicinal plants are collected from the forest (although it was not clear to what extent they are currently used)

. forest products including trees, timber, Nippa Palm leaves and bamboo are used respectively for

canoes, building and fire wood, roofs and walls of houses, and spears and cooking utensils.

. limited gardening occurs near the village of Euro, and some young wild pigs are captured and raised in bamboo cages

(6) CASH INCOME FOR LANDOWNERS:

. major sources is currently tied to the activities of Chevron Niugini as described above. It should be noted that it would appear that this cash income will be substantially higher (often once off with activities such as compensation) during the current construction phase as compared to the operational phase. Five local landholder companies have been established in the lower Kikori River basin, and one of these was formed by the landholders within the WMA. The benefits to the lower Kikori basin peoples will be much lower than those to the peoples in the Lake Kutubu region. Royalty and compensation payments are distributed unevenly because only those clans being directly impacted by the oil operations receive these benefits

. barramundi fishing, both inside and outside the WMA, currently returns K 1.50 a kilogram sold to a small fish processing plant at Kikori; and prawns return K 1.00 a kilo

. young crocodiles are captured at night, stored in an old water tank in Euro, and periodically sold to the Lae crocodile farm. The financial return depends on size, with a ten inch croc apparently bringing K 1.00

(7) COST OF CON. MAN. FOR COMMUNITY:

. no direct cash cost for management. Local fines do apply for breach of rules, with funds going to the WMA Committee account. It is not clear whether this is actually effected or not.

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. the WMA members felt that the local support for the WMA was strong. Apparently, during the discussions about establishment of the WMA some community members were concerned that they would have to travel further for fishing and hunting, but were convinced that the natural resources of the WMA 'needed protecting for future generations'.

. the WMA Committee members perceived that with increasing pressure on these resources due to population increase and development that the recognition of the importance of the WMA had increased

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF: *nil*

(3) STAFF RESOURCES: *not applicable*

(4) GOVERNMENT BUDGET: *NA*

(5) ACTIVITIES AND TASKS OF STAFF: *NA*

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES: *NA*

I. VISITOR USE

(1) VISITATION STATISTICS:

. apparently only one brief visit in the last few years by an American sports fishing party

(2) VISITOR FACILITIES:

. no facilities although there is discussion about the establishment of a small lodge as a local tourism venture, partly 'sponsored' by Chevron Niugini's local business development activities

(3) NEAREST VISITOR ACCOMMODATION:

. nothing currently within region

(4) PUBLIC INFORMATION/BROCHURES:

. not available

(5) PUBLIC ACCESS:

. isolated part of the PNG with only boat access to nearby Kikori Station or Vairu Mission

. accessibility and volume of people in the region is rapidly changing due to intense activity associated with Chevron Niugini. Note that Chevron Niugini is operating under a policy of minimum impact of work force. Camps are self contained and recreational activities outside of camps, including fishing, are not allowed

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. the recollection of all of them by WMA Committee was not complete

. the WMA Committee members' said that no hunting could occur in the WMA and indicated that fish catch limits were in place.

In the DEC files a note recorded the rules as following (NOTE: the gazetted rules not seen):

. entry restricted to landowners only unless permission given

. entry fee of K5.00

. controls over hunting methods including only one shotgun per hunting group, net mesh of 3-4 inches banned and 6-7 inch mesh allowed

. no hunting permitted for one year following declaration

. landowners then allowed to hunt and fish at 3 month intervals

. only allowed to take one type of animal per time

. Royalties: (with all payments into the WMA Trust Fund)

Cassowary K100.00

Pigs K50.00

Cuscus K20.00

Wallabies K10.00

Birds (all) K 5.00

Crabs K 1.00

Barramundi K 2.00 (per kilo, whole)

Other fish K 1.00 (per kilo, whole)

. Penalties for breaches of these rules are K100.00 for outsiders and K10.00 for landowners

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. they indicated that they wanted the Department of Environment and Conservation to send someone to advise them on what sort of fish closure seasons would be needed to protect their fish stocks

. they were concerned about the threat of outside timber interests and said that they would like to get a Timber Rights Purchase for their own land to protect it from being sold off to others (these 'management' mechanism has been suggested by Chevron Niugini staff)

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. with little or no outside assistance or oversight there is a commitment to conservation and wise use of natural resources for future generations that appears to have broad community support

. some sound management practices, such as limits on hunting and fishing, are being attempted

(2) FAILURES:

. the WMA has been motivated enough to seek management advice from outside but none has been forthcoming yet

. despite seemingly good intent, the knowledge and application of some of the more detailed rules appears uneven

. the rules don't appear to have been adapted to meet all changing management needs such as the

introduction of a 'walkabout' saw mill

. surrounding land use decisions that could have a major impact on the WMA, such as the allocation of substantial adjacent areas of forest for timber extraction, appear to have not taken into account the conservation needs of the WMA

(3) PLANS FOR FUTURE:

. see above

. WMA Committee Members were interested if WWF could provide them with management assistance

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) The potentially major impact on water quality, fisheries and wildlife from adjacent impending major logging operations.*
- (2) There are direct and indirect impacts of the Chevron Niugini oil operations: efforts are being made to minimise both social and environmental impact, but the social impact is major - some good [schools and health and some appropriate development], some bad [increased expectations for cash incomes, increased pressures for unsustainable development]*
- (3) There is a need for technical advice and assistance with issues such as fisheries and forest management.*
- (4) Population growth and pressures for increased resource extraction have led to the use of new technologies, such as wide spread use of fishing nets, that can have a more substantial impact on the environment*
- (5) There is a lack of government support for the Committee.*
- (6) The village of Samoa lies centrally within the WMA area yet these people are not landowners.*

(2) SECONDARY ISSUES:

- (7) The rules need updating to meet new conditions.*
- (8) Outsiders continue to come into the area to fish and hunt.*

(3) POTENTIAL ISSUES

- (9) A major oil spill is possible with the pipelines and ship unloading facilities.*
- (10) Substantially increased logging activity in the region is likely with the a possible related increased pressure for logging to occur within the WMA or in other critical areas.*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

. see notes in J. (traditional landowners)

. local landowner company (Ido Forest Pty Ltd for the Poromi people - covers an area about five times the size of the WMA) has contracts with Chevron Niugini for the supply of sawn timber (from a walkabout saw mill - established in Euro late 1991) for a new school and aid post in Euro (part of agreement for the oil pipeline traversing down the river bed outside of WMA, but in areas recognised as customary title by landholders based in the WMA). These facilities are also being constructed, under contract to Chevron Niugini, by the local landowner company. Approximately 20 people are currently employed by this company.

. casual fishing for barramundi (receive K 1.50 per kilo at a small Govt/Japanese aid fish processing plant at Kikori)

. casual catching of baby crocodiles for sale live to crocodile farm at Lae (collected by plane from Kikori. Return K 1.00 for seven inch croc).

. has some potential for sport fishing/tourism generated employment according to Chevron Niugini local business developers and some members of the WMA

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

. from timber resources (origin of timber not clear, but appeared to be coming from outside WMA - floated in as rafts) - timber purchased by Chevron Niugini at going mill rates for construction of School and Aid post

. lease fee for a small area of land in the WMA being used by Chevron Niugini for a repeater tower

. once off compensation payment for placement of repeater tower

. once off compensation payment for passage of oil pipeline down the river bed outside of WMA but traversing areas customary owned

. casual fishing for barramundi (receive K 1.50 per kilo at a small Govt/Japanese aid fish processing plant at Kikori)

. casual catching of baby crocodiles for sale live to crocodile farm at Lae (collected by plane from Kikori. Return K 1.00 for ten inch croc).

. has some potential for sport fishing/tourism generated employment according to Chevron Niugini local business developers and some members of the WMA

. there is a rubber tree plantation beside the village of Wowo that apparently has never been utilised. It is unclear whether it could be utilised or whether the landholders really want this.

. Chevron Niugini is considering building a sago processing plant in Kikori or Kopi. It is unclear whether this will entail any access to sago palms on land owned by people residing in Euro or Wowo, and thus some payment to WMA landholders and inhabitants.

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

. fish capture rate has been increased by access to gill nets for barramundi (nets observed were about 20-30 meters in length) and cast nets for prawns

. the above described business developments, mostly sponsored by Chevron Niugini, all involve the access to resources from other areas

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. the major adjoining and regional economic factor is the operations of Chevron Niugini, which are extracting oil from near lake Kutubu and piping it beside and down the Kikori River, passing within 10 kilometres of the WMA, to a marine terminal 20 kilometres offshore in the Gulf of Papua. This has involved compensation payments and small business enterprises that have and continue to involve landholders within the WMA. This is a major economic intervention into the region the likes of which have never been seen before.

. a substantial area of land directly to the NW of the WMA (unclear whether it adjoins or is close to the boundary of the WMA) is reported to have been allocated as a Timber Rights Purchase to a Malaysia company in the last 2 weeks. This may involve an area in excess of 200 sq kms. Members of the WMA Committee expressed concerns about the potential impacts of this operation on the water quality, fisheries and wildlife

. other regional economic factors are minor, but do include the relatively new (established within the last couple of years) small fish processing plant run by the government and a regional store at Kikori that purchases some produce, such as barramundi, and apparently is a significant site for the expenditure of money on items including alcohol

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Coastal part of the Gulf wetlands*

B. CLIMATE: *Lowland Perhumid, monsoon*

C. TOPOGRAPHY:

. very low coastal swampland except for the low rise of Aird Hills (to 120m)

D. GEOLOGY/SOILS:

. limestone hills in alluvial floodplain

E. VEGETATION DESCRIPTION:

. lowland rainforest on upraised areas, closed wet forest (including sago forests) on low lying areas, and nippa palm and mangrove forest on the intertidal areas

F. FAUNA:

. surveys indicate a rich fauna and is "known" for its marine resources (including crocodiles)

G. CONDITION AND INTEGRITY OF THE SITE:

. some of the forests appeared to be secondary/regrowth, but the general integrity and quality of the terrestrial and marine areas is good - for example their has been minimum clearing in the WMA. Locals say there has been a large decrease in fauna numbers

H. CONSERVATION FEATURES:

. limestone and lowland RF, locally endemic plants, surrounded by mangroves

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. boundary extends up the waterways of the Saboro River between the banks of the river

(2) CATCHMENT CONSIDERATIONS:

. central core is upraised but most of the area is low lying and subject to upstream and downstream influences including fishing pressures, and potential pollution from industrial timber operations, potential major but apparently low risk pollution from an oil spill from an accident at the marine terminal or with the pipe.

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

. apparently substantial cultural value is still given to the areas within the WMA by landholders, including the identification of 'sacred' places

B. HISTORICAL VALUES:

. the mission building established by the London Missionary Society in the 1930s still stands, as does a simple monument to one of the early missionaries

C. ARCHAEOLOGICAL VALUES:

. Significant prehistoric archaeological sites near Samoa and elsewhere on elevated land near the Kikori River Channel. (see Rhodes, 1980 unpublished. Phd thesis, Dept. of Prehistory ANU)

D. SCENIC/LANDSCAPE VALUES:

. in the extensive low lying delta system of the Kikori and other rivers these lush green hills present a prominent and attractive landscape

E. RECREATIONAL VALUES:

. the people living in the WMA practice many recreational pursuits

. of some potential for sports fishing

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

**** COMMENTS ****

- (a) *The presence of a non-landowning village within the WMA must be problematic, especially when, from the few notes in the files and the "tone" of the rules, it would appear relations between these villages is antagonistic.*
- (b) *The rules appear a little unrealistic and unenforceable - need to check the success or otherwise of these rules.*

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Nuserang*
(2) SHEET NUMBER:
(3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
(2) TENURE: *customary land*
(3) GAZETTAL INFORMATION: *Gazetted 6/3/85*
(4) AREA: *22 ha*

C. LOCATION

- (1) PROVINCE: *Morobe*
(2) LOCAL GOVERNMENT AREA:
(3) CLOSEST MAJOR TOWN: *Finschaffien*
(4) AVAILABLE MAPPING INFORMATION: *Lat 06 30'S Long 147 46"E*

D. REASON/PURPOSE FOR DECLARATION AS PA

. the primary purpose was to protect fauna, particularly Birds of Paradise, from hunting by non-landowners and to gain cash income from paying visitors.

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
(2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *Edward Broome, John Wilmot (DEC Port Moresby)*
(3) D.E.C. FILES: *2 - 20 - 11*
(4) REFERENCES:

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. initial decision to establish a WMA first acted upon in 1978 at the request of villagers . A series of follow up meetings occurred in 1979, 1980, 1981 and 1982.

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. landowners come from the villages of Masangko and Maruruo

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>Tom Rabisang</i>	<i>Maruruo</i>	<i>Akine Fezo</i>	<i>Maruruo</i>
<i>Nongdengnao Isau</i>	<i>Maruruo</i>	<i>Miling Biang</i>	<i>Masangko</i>
<i>Hambong Subadi Masangko</i>		<i>Mumbi Nange</i>	<i>Masangko</i>
<i>Natung Hatanao</i>	<i>Masangko</i>	<i>Honeo Gubong</i>	<i>Masangko</i>

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

. hunting area, too steep for gardens

(6) CASH INCOME FOR LANDOWNERS:

. entrance fees and fines

. files report a plan to hunt pigs in the WMA and the sale of the meat going to improving the WMA

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. area finally declared is small because of refusal by adjoining landowners to be included

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

. there is no information or promotion of this site which is remote from any population centres

(5) PUBLIC ACCESS:

. visitors must get to Finschafften (fly or drive from Lae) then drive to near site from where a track

leads into WMA

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. rules are very protective of the fauna and habitat with restrictions on methods, gardening prohibited, fires prohibited, limits placed on the harvesting of pandanus nuts; the intention to develop this as a visitor resource is backed by entrance fees (K2.00 and K1.00 for nationals)

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

(3) PLANS FOR FUTURE:

. the landowners would like to see this developed as a tourist resource

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) The lack of development and income generation will be seen as a major issue to the landowners, however its isolation will probably ensure this cannot be successful.

(2) Lack of DEC visits and interest is evident in the DEC files with no correspondence with landowners recorded after 1986.

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. there is good forest cover surrounding the WMA

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Morobe Hills*

B. CLIMATE: *Lowland Perhumid*

C. TOPOGRAPHY:

. site is on an escarpment of a hanging valley with very steep cliffs

. altitude approx. 1,000m

D. GEOLOGY/SOILS:

. limestone

E. VEGETATION DESCRIPTION:

. mid-montane forests

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. site is in good condition

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. high scenic values

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Oia Mada Wara*
(2) **SHEET NUMBER:**
(3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *WMA*
(2) **TENURE:** *customary land*
(3) **GAZETTAL INFORMATION:** *1981*
(4) **AREA:** *22,840 ha*

C. LOCATION

- (1) **PROVINCE:** *Milne Bay*
(2) **LOCAL GOVERNMENT AREA:** *Goodenough Island*
(3) **CLOSEST MAJOR TOWN:**
(4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

. To protect the subsistence resources (wildlife) of the landowning community.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
(2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
(3) **D.E.C. FILES:**
(4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

- (1) MOST IMPORTANT MANAGEMENT ISSUES:
- (2) SECONDARY ISSUES:
- (3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC REGION: *D'Entrecasteaux*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. central mountainous area of the island

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. probably undisturbed

H. CONSERVATION FEATURES:

. whole spectrum of forest types to sub-alpine, highest elevation for a small island, endemic spp of wallaby Dorcopsis atrata, endemic bat Dobsonia pannietensis, important historic collection of grasses, highly local endemic flora, Ornithoptera goliath endemic to Goodenough and Fergusson Islands, Manucodia comrii, Varanus bogarti.

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

. Goodenough Island is recognised as having important biodiversity values including endemic species of wallaby, range of ecosystem from coastal to sub-alpine conditions; important historic collection of grasses from here

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Paga Hill Scenic Reserve*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *Declared under the National Parks Act*
- (2) TENURE: *State land*
- (3) GAZETTAL INFORMATION: *Gaz. 17/1/87 in Gaz. No. 59*
- (4) AREA: *13.1195 ha*

C. LOCATION

- (1) PROVINCE: *Central*
- (2) LOCAL GOVERNMENT AREA: *Port Moresby*
- (3) CLOSEST MAJOR TOWN:
- (4) AVAILABLE MAPPING INFORMATION:

D. REASON/PURPOSE FOR DECLARATION AS PA

. Gazetted as part of the National Park estate to protect its scenic and historical values (W. War II gun sites).

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
- (3) D.E.C. FILES:
- (4) REFERENCES:

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

- . the area has been crown land since the early colonial times and was used by Housing Corporation and other government agencies prior to its declaration a National Park*
- . area has been used by squatters for over 25 years*

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

- . crown land since colonial times but this site, along with other parts of Port Moresby city, have been subject of land claims/compensation - the main proponent of this has died in recent years*

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

- . Area recognised since mid 1980's as an area of violent rascal attacks; visitors are advised to take appropriate precautions*

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

- . the squatters have engaged in active resistance to the presence of the P.A. and DEC authorities who have made some attempts to move these people out of the reserve*

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

- . maintenance and other work of this site is part of the Central Province team (one ranger and 4 labourers) who also maintain the Holola office grounds and all N.P. except Varirata in Central Province*

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

- . no statistics available but site is commonly used by tourists and lunch-time visitors*

(2) VISITOR FACILITIES:

- . promoted as a scenic drive leading to developed look-out*

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. road or walk from central business district

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

(2) EXISTING RESOURCE USE AGREEMENTS:

. when the area came under DEC administration there were a number of existing uses which were allowed to remain within the declared National Park; these existing uses are :

- lease for telecommunication facilities

- government built housing developments (by the Housing Corporation) which may cover up to 60 % of the original reserve area,

- lease for Police Youth Club building (on one year occupation licence in 1988, but remains on site 1992),

- a water reservoir area

(3) OTHER PLANNING DEVICES IN OPERATION:

. the Park lies within the National Capital District and will be subject to their town planning jurisdiction

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

. all attempts to move squatters, and the existing leases, have failed; the former were to be moved with substitute residences but these could not be found;

(3) PLANS FOR FUTURE:

. in 1989 an ambitious redevelopment plan was drawn up for Paga Hill which involved moving squatters and housing estate to develop a scenic, picnic and recreational area; a design plan for this has been completed

. in 1990 the State Solicitors Office advised DEC that the Housing Corporation be given 5 years to move the houses on the land and that the squatters be given eviction notices (apparently this has yet to be implemented Jan. 1992)

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *There are at least 35 squatter residences on the reserve who are partially held responsible, by many people, for many of the site's problems, including vandalism, litter and rascals. All of the gun bunkers, part of the historical theme of the site, are occupied by squatters. Some squatters have been living on the area for over 25 years.*
- (2) *Other groups of urban youth are also responsible for the problems listed above - rascals are a particularly important problem throughout Port Moresby city.*
- (3) *Existing tenures and use rights occupy a significant proportion of the site and present some problems to developing the area as scenic/recreational area.*

(2) SECONDARY ISSUES:

- (4) *Litter is widespread and greatly reduces the aesthetic appeal of the scenic area.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. as an area of land alongside the main city centre and wharves this land has high real estate value for residences or other developments

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Moresby Coast*

B. CLIMATE:

. Lowland Dry Subhumid

. Pronounced dry season and short wet season with about 1100 mm rain annually

C. TOPOGRAPHY:

. site covers most of a small hill within the city precinct

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. disturbed open woodland/grassland; weed species and fires are dominant influences

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. small and very disturbed open woodland system

H. CONSERVATION FEATURES:

. some scenic values

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

. war relics (gun bunkers) exist

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. site provides an easily accessible scenic area within the city centre

E. RECREATIONAL VALUES:

. suitable for passive recreation activities

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Pirung*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
- (2) TENURE: *customary land and sea*
- (3) GAZETTAL INFORMATION: *Gazetted 1990*
- (4) AREA: *43,200 ha*

C. LOCATION

- (1) PROVINCE: *North Solomons*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN: *Kieta*
- (4) AVAILABLE MAPPING INFORMATION: *1:100,000 Topo. Maps: Kieta (sh.1085), Bagana (sh.9985), Wakunai (sh.9986)*

D. REASON/PURPOSE FOR DECLARATION AS PA

The major reason underlying the establishment of this Area was to control the use by non-customary people and to protect subsistence resources.

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *Pirung Community Government
P.O.Box 752
Arawa, N.S.P.*
- (3) D.E.C. FILES:
- (4) REFERENCES:

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. this Area was developed on the insistence of highly motivated landowners who began the process in 1981 and continually followed this up with DEC with correspondence and other contact;

. the process has been channelled through a locally based community organisation called the "Pirung Community Government";

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>Cyril Tivai (chair)</i>	<i>Rorovana</i>	<i>Michael Madaku</i>	<i>Rorovana</i>
<i>Louis Lebo</i>	<i>Rorovana</i>	<i>John Boboa</i>	<i>Rorovana</i>
<i>Patrick Karawaro</i>	<i>Rorovana</i>	<i>James Taworo</i>	<i>Taraa</i>
<i>Peter Aba</i>	<i>Taraa</i>	<i>Joeph Inauri</i>	<i>Arawa</i>
<i>Mathias Eva</i>	<i>Arawa</i>	<i>Ambrose Omariko</i>	<i>Donsiro</i>
<i>Ignatius Kakau</i>	<i>Donsiro</i>	<i>Joeph Pariku</i>	<i>Pangama</i>
<i>Cyril Pentasi</i>	<i>Pangama</i>	<i>Tony Tukaku</i>	<i>Pokpok</i>
<i>Robert Miramira</i>	<i>Pokpok</i>	<i>Charles Tapon</i>	<i>Toboroi</i>

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

. as a coastal/marine area the subsistence activities are primarily fishing and marine shell collecting;

(6) CASH INCOME FOR LANDOWNERS:

. the rules establish visitor fees and royalties for certain activities;

(7) COST OF CON. MAN. FOR COMMUNITY:

. the Area covers approximately 70 km of coastline and patrols and gathering for meetings is going to impose significant costs on the community;

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. local support is high and interest was maintained for the 10 years it took to get established and legally declared; in 1990 the landowners were using trespass laws to enforce control over access while they waited for the rules to be declared and gazetted;

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

. all government contact and support has been suspended due to rebel activities in the on-going war of independence;

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

. visitor statistics are not available but the intent of the rules and the content of correspondence indicates there is considerable use by people from the adjoining mainland centres;

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. in most places the WMA goes up to the high water level and thus covers the inshore and easily accessible areas along 70 km of coastline;

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. the rules focus on controlling visitor use and access; permits are required to visit the area and there is a fee attached (K50 per year); entry points to the Area are to be defined; controls over fishing and gathering by non-customary people are established and fees are imposed for certain activities such as underwater filming;

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

(3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

(1) The most important issue is the civil unrest that is dominating life in the Province in recent years - this has effectively stopped all management activity which relies on national government support and probably management control which arises from customary processes.

(2) SECONDARY ISSUES:

(2) The large size of the WMA imposes considerable costs on maintaining management activity and monitoring requirements.

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Bougainville*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. the WMA covers a 70 km stretch of coastal waters, reefs (11) and islands (8)

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. the boundary follows the high water level for most of the WMA except for 1 km out from the following population centres:

. Aropa, Kieta, Arawa, Loloko, Toniva which are designated "public recreational areas"

. 1 km out from the coast of Bravo and Tausina islands

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Pokili*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
- (2) TENURE: *Customary Land*
- (3) GAZETTAL INFORMATION: *Gaz. 26 June 1975*
- (4) AREA: *9,840 ha*

C. LOCATION

- (1) PROVINCE: *West New Britain*
- (2) LOCAL GOVERNMENT AREA: *Hoskins*
- (3) CLOSEST MAJOR TOWN: *Kimbe*
- (4) AVAILABLE MAPPING INFORMATION: *1:100,000 Topo. Bango sheet 9086*

D. REASON/PURPOSE FOR DECLARATION AS PA

. The major purpose is to protect a major megapod nesting ground from over-harvesting of eggs.

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *Stephen Babo DEC (landowner from area)*
- (3) D.E.C. FILES: *DEC file 2-20-18 (3) ("Synopsis")*
- (4) REFERENCES: *Downes, M.C. (1972) The Wildfowl Egg-grounds of West New Britain, Papua New Guinea Harvest 2:1:1-4*
- Eaton, P (1986) Grassroots Conservation - Wildlife Management areas in PNG Land Studies Report 86/1 UPNG*
- King, B. (1989) Does Wildlife Management by the people work ? A case study of the Pokili Wildlife Management Area of Papua New Guinea Science in New Guinea 15(3):111-118*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. there are nine villages with customary rights in the WMA; one village (Lavege) is within the Area

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>John Gali</i>	-	<i>Ubai</i>	<i>Moses Vua</i>	-	<i>Lavega</i>
<i>David Vua</i>	-	<i>Lavega</i>	<i>Joe Sogi</i>	-	<i>Koimumu</i>
<i>Ben Ubi</i>	-	<i>Koimumu</i>	<i>Ekonia Bubu</i>	-	<i>Rikau</i>
<i>Thomas Ragi</i>	-	<i>Rapuri</i>	<i>Ben Posoi</i>	-	<i>Rapuri</i>
<i>John Kariula</i>	-	<i>Varua</i>	<i>Bartha Waka</i>	-	<i>Varua</i>
<i>Eliakim Ragi</i>	-	<i>Galilo</i>	<i>Sebulon Sira</i>	-	<i>Galilo</i>
<i>Gabriel Tagai</i>	-	<i>Makasili</i>	<i>Henry Tuali</i>	-	<i>Makasili</i>
<i>Rutu Bai</i>	-	<i>Gule</i>	<i>Nelson Batili</i>	-	<i>Gule</i>

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

. family (and village) ownership of egg mounds; allocated use rights

(4) COMMUNITY PROFILE NOTES:

(5) SUBSISTENCE USE:

. eggs are collected for eating (and sale at the markets) and to a lesser extent adults and chicks are caught for eating; estimated there were an average of 160 eggs harvested per week (King 1989)

(6) CASH INCOME FOR LANDOWNERS:

. sale of eggs (30 t per egg in 1989)

. fines and licence fees are collected and placed in trust account; this account had K1352.00 in 1990

(7) COST OF CON. MAN. FOR COMMUNITY:

. Committee meeting in 1990 was estimated to cost K 70.00 for food and transport

. this same meeting decided to buy a gate to control unauthorised access and this was to cost K 388

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. from the 1990 meeting notes the community appear to strongly support the presence of the WMA but were having trouble controlling people using the area

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

. rural extension officers in the W.N.B. Provincial Government are the closest government officers who could be of assistance

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

. Walindi Plantation

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. unsealed road from Koimunu village on coast, through WMA to the (smaller) settlement of Lavege on the Kapiura River

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. rules in the 1976 gazettal include: no hunting of fowl except by custom owner in his own area; no taking or disturbance in August; must replace the soil after digging up nest; no taking or damaging trees within 100m of nesting mound; no dogs and the owners of dogs are responsible should dog come into the area;

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

(2) FAILURES:

. the 1990 meeting indicated the Committee was finding it very difficult to police the area and this is supported by the findings of King (1989)

(3) PLANS FOR FUTURE:

*.the 1990 meeting suggested a range of new rules including:
. higher penalties for cutting trees (K100); no children under 18 years old; no outsider vehicles (K200); egg collecting only allowed on Tuesday and Thursday (penalty K 50); no slings allowed; no digging utensils allowed; specific customs of the grounds should be respected by other villagers; no killing of chicks; all penalties to go into the Trust Account; and fees to be introduced for visiting tourists*

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) Rules are apparently not being respected even, in some cases, by committee members; committee are finding it difficult to enforce rules on people from their own community; It is difficult also to enforce rules on outsiders as it is very difficult to monitor the movement and activities of visitors.*
- (2) The end result of these factors (and possibly others) is that the megapod numbers are said to be declining.*

(2) SECONDARY ISSUES:

- (3) Tourists are visiting the area and not paying any fee.*
- (4) The village of Lavege, within the Area, have asked that the boundary of the WMA be moved to allow them some land for commercial development activity.*

(3) POTENTIAL ISSUES:

- (5) Logging occurs on the adjoining areas and there has been talk of reducing the WMA area to allow this activity to expand.*
- (6) There is good gardening soil in the WMA and an expansion of this activity may result in significant loss of forest habitat.*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. there are logging operations surrounding the site and at one time a TRP encroached on the WMA

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *New Britain Lowlands*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. most of the area is a flat river plain, rising to Mount Bango in the west; this is an active volcano of 800m

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. lowland rainforest covers most of the site, with swamp forest towards the mouth and alongside the river, secondary regrowth forest grows in areas disturbed by volcanic activity near Mt Bango

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

H. CONSERVATION FEATURES

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. boundaries are straight surveyed lines with little relevance to landforms and therefore probably difficult to identify on the ground; only the Kapiura River forms an easily recognised boundary

. the WMA does not go to the coast but is bordered by a straight line just behind the coastline

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

. the area's egg mounds have always been of special custom significance and use; there is a range of custom and ritual surrounding this activity

. there are only 4 megapod nesting areas of significance to villagers on New Britain and this is the largest (estimated to occupy 1,000 ha)

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. <u>SHEET IDENTIFICATION</u>	
(1) NAME OF SITE:	<i>The Long Island group of protected areas: (1) Ranba WMA (2) Ranba Sanctuary (3) Crown Island Sanctuary</i>
(2) SHEET NUMBER:	
(3) ATTACHMENTS:	
B. <u>FORMAL DESCRIPTION OF THE SITE</u>	
(1) TYPE OF PA:	<i>Ranba WMA, Ranba WS, Crown Island WS</i>
(2) TENURE:	<i>Customary land</i>
(3) GAZETTAL INFORMATION:	<i>(1) Ranba WMA: Gaz. Date- 16/6/77 (2) Ranba WS: Gaz. Date - 21/6/77 (3) Crown Is. WS: Gaz. Date - 21/7/77</i>
(4) AREA:	<i>(1) " - 41,922 ha (2) " - 15,724 ha (3) " - 58,969 ha</i>
C. <u>LOCATION</u>	
(1) PROVINCE:	<i>Madang</i>
(2) LOCAL GOVERNMENT AREA:	
(3) CLOSEST MAJOR TOWN:	<i>120 km from Madang</i>
(4) AVAILABLE MAPPING INFORMATION:	<i>Topo. map 1:100,000 - Long Island sheet 8387</i>

D. REASON/PURPOSE FOR DECLARATION AS PA

To manage the use of wildlife subsistence resources amongst the landowning communities and in particular to regulate the use of turtle in Ranba WMA and sea shells (Trochus and Turbo) in Crown Island WS.

E. INFORMATION SOURCES	
(1) SURVEYS/MONITORING:	
(2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:	
(3) D.E.C. FILES:	<i>(1) (2) (3) Crown Island 2-20-8 (12)</i>
(4) REFERENCES:	<i>Eaton, P. (1986) Potential World Heritage Areas: Karkar and Long Island Ples 2:63-72 Eaton, P. (1986) Grassroots Conservation-Wildlife Management Areas in PNG <u>Land Studies Centre Report 86/1</u> UPNG Lindgren E. (1975) <u>Long Island - A Preliminary Land Use Plan</u> Dept. Agric. Stock and Fisheries, Wildlife Section Research Group Cousteau, J.(1990) <u>Cousteau's Papua New Guinea</u></i>

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. one language group (Koro)

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>Arina Yal (chair?)</i>	<i>Kiau village</i>	<i>Sari Goreka</i>	<i>Kiau</i>
<i>Beka Oro</i>	<i>Malala</i>	<i>Tangi Waro</i>	<i>Matafuna</i>
<i>Samaka Goreko</i>	<i>Bak</i>	<i>Dakis Bara</i>	<i>Kaut</i>

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. there are approx. 1,000 people on the island and 5 main villages (Eaton 1986); the major cash crop is coconuts

. land is inherited along patrilineal lines

. no group claims ownership of the central caldera area (the Wildlife Sanctuary) (Eaton 1986)

(5) SUBSISTENCE USE:

. hunting provides a major source of food for the landowners and is of greater importance than fishing which was not very important in customary times (Eaton 1986)

. the inner Lake area (i.e. most of the Sanctuary) is rarely used for hunting

. most of the flat coastal land (especially where there are good volcanic soils) are used for gardens

(6) CASH INCOME FOR LANDOWNERS:

. see (8) below

(7) COST OF CON. MAN. FOR COMMUNITY:

. see (8) below

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. report by S.Spring in the DEC file 2-20-8 (1) (the Madang province file) on a meeting at 3/7/81 it was noted:

. that enforcement was not working and committee members being implicated in the activities which broke the rules

. they wanted to increase the price of turtle and strengthen the controls over their use,

. travel and communication are management requirements that has been very difficult to achieve and there had been no Committee meeting between 1976 - 1980

. meeting notes in the DEC file (16/12/81) record intense dissatisfaction with the WMA and the following points:

. all except the Matafuna village were opposed to the WMA

. all except Matafuna, Malata wanted the use of shotguns

. development options are limited and people want to commercially use turtles

. a logging proposal for Crown Island (?) was not known to the landowners

. additional notes in DEC files from 1984 record that there was talk of abolishing the WMA. The non-legal division of Crown Island into two areas with allocated villages has had problems with individuals not keeping to "their side" of the island (DEC file 2-20-8(12))

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

- (1) GOVERNMENT CONTACT OFFICER(S):**
- (2) ON SITE STAFF:**
- (3) STAFF RESOURCES:**
- (4) GOVERNMENT BUDGET:**
- (5) ACTIVITIES AND TASKS OF STAFF:**
- (6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:**

I. VISITOR USE

- (1) VISITATION STATISTICS:**
- (2) VISITOR FACILITIES:**
- (3) NEAREST VISITOR ACCOMMODATION:**
- (4) PUBLIC INFORMATION/BROCHURES:**
- (5) PUBLIC ACCESS:**

The WMA is difficult to access being a (3 hr ?) boat trip from Madang or air flight. The coastal zone of the Long Island is settled and allows walking access to the entire coastline.

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

Ranba WMA:

- . rules regulate over the taking, and sale of turtles;*
- . turtle may only be taken by customary landowners in their customary areas or by persons with permission of the landowners (or the Committee where no customary ownership applies);*
- . turtles may be sold but only during specified seasons and size limits apply; rates of payment for sold turtles are established*

- . the rules also restrict terrestrial hunting to customary areas and prohibit the use of shotguns*

Ranba WS:

- . firearms may not be taken into the Sanctuary*

Crown Island WS:

- . firearms cannot be taken into the Sanctuary*
- . the taking of sea-shells restricted to customary landowners in their customary areas*

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

- . there is the Pono Committee who manages the Crown Island area (DEC file 2-20-8(12)) - this committee is not established in the rules of the Sanctuary of 27/9/77*

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

- . Crown Island is divided into two sides (non-legal, community agreement): one for the community surrounding Malala and Sororo villages, the other for the communities of Matafuna, Kaut, Bok villages*

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

- . Eaton (1986) reports "mild" success in enforcing the rules in 1985 - this is not supported by the information in the DEC files*

- . there has been a logging proposal for Long Island and a cardamom plantation for Crown Island - both opposed by the provincial government apparently for environmental reasons*

(2) FAILURES:

- . difficulties and failures in enforcing the rules have been reported on a number of occasions in the DEC files*

(3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *The lack of support from government agencies (including DEC) is a major concern of the landowners;*
- (2) *It is said the Provincial Government in helping this area get established raised the expectations of the community and when these expectations could not be met (in terms of funding, development especially) a lot of ill feeling has been created towards the protected area concepts (W. Asigau pers. comm.)*
- (3) *Enforcement problems are a major issue and specially;*
. in regulating the activities of neighbours and relations within the community of people living on the island, and

. in obtaining the support of a legal enforcement officer (as they have to come from Madang) and/or the local authorities appear unfamiliar with the rules and procedures .
- (4) *The cost to the community in adequately managing the areas (especially in travel and communication amongst the landowners/Committee members) is identified by the people as a major issue.*

(2) SECONDARY ISSUES:

- (5) *From notes in the DEC files, there appears to be a widely accepted misunderstanding that the Crown Island Sanctuary allows for the taking of turtles.*
- (6) *Reports have indicated on a number of occasions that the local people are antagonistic to researchers (even including health workers who are clearly of benefit to the community).*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. economic development is limited on the island and the landowning communities are often raising proposals for commercial developments

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Volcanic Chain*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. Long Island has a large caldera lake with active volcanic vents, this is between two peaks, Mt Remur (1312 m) and Cerisy Peak (1112 m)

D. GEOLOGY/SOILS:

. recent volcanic; the most recent (minor) eruption was in 1973 within the lake

E. VEGETATION DESCRIPTION:

. the vegetation is regrowth rainforest (from the destruction caused by volcanic activity)

F. FAUNA:

. there are fringing reefs surrounding both Long and Crown Islands

G. CONDITION AND INTEGRITY OF THE SITE:

. the condition of the area is said to be good within the higher mountainous parts of both islands, however, the coastal (flat) land is intensively gardened

H. CONSERVATION FEATURES:

. Ranba - Lake Wisdom, deep lake (one of the deepest in SE Asia/Australasian region) with important limnological values and unusual benthic fauna, active volcano, good quality advanced secondary forest, research area, possibly good area for flying foxes.

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. there is a significant proportion of these protected areas covering marine/coastal resources. The boundary encircles Long Island at a distance of 3 km and Crown Island at a distance of 1 km.

(2) CATCHMENT CONSIDERATIONS:

. the more protective Ranba Sanctuary encompasses the entire catchment of the mountain top Wisdom Lake (caldera).

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

. Lindgren (1975) identifies two culturally significant sites the island and reefs of Mot Kon and the volcanic island within the lake, Mot Mot

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

. there were three archaeological sites identified in 1975 (Lindgren 1975)

D. SCENIC/LANDSCAPE VALUES:

. area is commonly noted for its scenic values and potential for tourism

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

. there are a number of major scientific values recognised here including a sub-species of cuscus (Lindgren 1975),

. it is a recognised area for endangered species of turtle (Green, Hawksbill and Leatherback)

. it is an area already subject to a number of scientific studies including volcano studies and the study of colonisation and species distribution.

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Sawataetae*
(2) SHEET NUMBER:
(3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
(2) TENURE: *Agricultural and pastoral lease*
(3) GAZETTAL INFORMATION: *Gaz. on 30/6/76*
(4) AREA: *700ha*

C. LOCATION

- (1) PROVINCE: *Milne Bay*
(2) LOCAL GOVERNMENT AREA: *Normanby Island*
(3) CLOSEST MAJOR TOWN: *Esa'ala*
(4) AVAILABLE MAPPING INFORMATION:

D. REASON/PURPOSE FOR DECLARATION AS PA

WMA was established to control hunting, especially certain bird species and especially with the use of shotguns.

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
(2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
(3) D.E.C. FILES: *DEC files 2-20-10 (1) Milne Bay General file and 2-20-10(8)*
(4) REFERENCES:

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

*Landowners and leaseholder in 1970, proposed the area be made a WMA due to indiscriminate, and excessive, shooting of birds, particularly egrets and Goura Pigeons.
The manager of the plantation was important to getting the WMA established but has now left the area. The plantation was given over to the landowners and they are expected to regain title to the land.*

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. the landowners come from the 4 villages listed below

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>Aysong Tonney</i>	<i>-</i>	<i>Gomalimali village (chairman)</i>
<i>Allan Lawaka</i>	<i>-</i>	<i>Gomalimali</i>
<i>William Tomadiyo</i>	<i>-</i>	<i>Eneyai</i>
<i>Budo Kaipole</i>	<i>-</i>	<i>Paeweso</i>
<i>Bendo Kegwari</i>	<i>-</i>	<i>Sawataetae</i>

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

. there are taboos on eating certain birds including crows, eagles and cockatoos

(4) COMMUNITY PROFILE NOTES:

*. there are only approximately 300 landowners
. land is inherited along matrilineal lines*

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. the Committee has seen a need for the WMA and the area subject to the rules has been increased (and includes inshore marine areas) and new rules developed - these changes are not gazetted and therefore not legal

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

- . no shotguns except with the direction of a committee member
- . all native fauna protected including nests, eggs, etc
- . dogs and pigs can be killed in the WMA
- . no unnecessary burning unless for gardens
- . K70.00 fines for breaking these rules
- . landowners allowed to garden in the WMA providing they avoid unnecessary destruction of flora and fauna

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

- . Eaton (1986) reports that the rules are being followed

(2) FAILURES:

(3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) Difficult to discern the issues from the available information in the files, however, Normanby Island is visited only rarely by any government agencies, and its remote location and the paucity of correspondence and other related business in the files indicate this area will have had insufficient contact and involvement from DEC.

(2) SECONDARY ISSUES:

- (2) The tenure of the Area should be clarified and title returned to the customary landowners.

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC REGION: *D'Entrecasteaux*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. area includes a coconut plantation, areas of lowland rainforest and mangroves

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

H. CONSERVATION FEATURES:

. mangroves

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. the WMA gazetted area only covers the lease boundaries

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Siwi-Utame*
(2) **SHEET NUMBER:**
(3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *WMA*
(2) **TENURE:** *customary land*
(3) **GAZETTAL INFORMATION:** *13/01/77*
(4) **AREA:** *12,540 ha*

C. LOCATION

- (1) **PROVINCE:** *Southern Highlands, located on road between Mendi and Mt Hagen on the southern side of Mt Giluwe*
(2) **LOCAL GOVERNMENT AREA:**
(3) **CLOSEST MAJOR TOWN:**
(4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

The area was established to protect wildlife from excessive hunting and as a means of attracting development.

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
(2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
(3) **D.E.C. FILES:**
(4) **REFERENCES:** *Peter Eaton (1986) Grassroots Conservation - Wildlife management Areas in PNG Land Studies Centre Report 86/1 UPNG*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. there are 19 villages within the Area and these people are the landowners; all speak the Kawabi language

(2) MANAGEMENT COMMITTEE MEMBERS:

. the Committee has 14 members

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. estimated 6,000 people in the Area (Eaton 1986)

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. local people are variable in their support of the WMA and the previous high level of support appears to be decreasing

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

. there is a facility surrounded by the WMA called the Kume Wildlife Centre on land purchased by the Provincial Government; it was developed as a visitor centre and cassowary farm; by 1989 this had slipped into a state of disrepair

(3) NEAREST VISITOR ACCOMMODATION:

. limited accommodation was available at the Kume Wildlife Centre

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. the Highlands Highway between Mendi and Mt Hagen passes through the northern section of the WMA

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. the rules restrict hunting to customary landowners and limit the methods that are allowed

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. the landowners have developed new rules (which are not legally gazetted) which protect vegetation and in particular, specific important trees (e.g. Bird-of-Paradise display trees)

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. this WMA has had more successful enforcement actions than any other - estimated in 1986 to be approximately 35 such actions which were pursued in the village courts or at village meetings or in the district court; these resulted in fines ranging from K5 to K1200 (the latter for a Bird-of-Paradise)

(2) FAILURES:

(3) PLANS FOR FUTURE:

. the landowners want the Kume Wildlife Centre (and other tourism ventures) upgraded and maintained

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *The lack of government support for either the WMA or the Wildlife Centre has led to a decline in both.*
- (2) *There is a dispute with landowners regarding the monies paid for the land on which the Kume Wildlife Centre is located - although this is with provincial government and technically outside the WMA it is affecting relations and attitudes towards the WMA.*
- (3) *The lack of development is seen as a major management issue for this site.*

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Highlands*

B. CLIMATE:

. Lower Montane Humid

. high rainfall 3000mm

C. TOPOGRAPHY:

. located on the southern side of Mt Giluwe it is an area of steep relief ranging from 1800m to 2317m; the boundaries are partly set by rivers (e.g. Anggura River to the north and west, the Mambu in the south and the Iaro to the east)

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. rainforest over much of area but lower slopes are often fire generated grasslands; there is an area (approx. 2400ha Eaton 1986) of good quality primary forest in the central part of the WMA

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. condition is variable with gardening activities by people from the 19 villages and fire induced grasslands degrading the naturalness of the Area

H. CONSERVATION FEATURES:

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) **NAME OF SITE:** *Talele Islands*
- (2) **SHEET NUMBER:**
- (3) **ATTACHMENTS:**

B. FORMAL DESCRIPTION OF THE SITE

- (1) **TYPE OF PA:** *Nature Reserve (National Park)*
- (2) **TENURE:** *State land*
- (3) **GAZETTAL INFORMATION:** *Gazetted 26/11/73 Gaz. No. 111*
- (4) **AREA:** *12 ha (includes a number of small islands)*

C. LOCATION

- (1) **PROVINCE:** *East New Britain*
- (2) **LOCAL GOVERNMENT AREA:**
- (3) **CLOSEST MAJOR TOWN:** *Rabaul*
- (4) **AVAILABLE MAPPING INFORMATION:**

D. REASON/PURPOSE FOR DECLARATION AS PA

. protection of natural values including bird roosts

E. INFORMATION SOURCES

- (1) **SURVEYS/MONITORING:**
- (2) **CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:**
- (3) **D.E.C. FILES:**
- (4) **REFERENCES:**

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) **IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:**

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) **CUSTOMARY LANDOWNERS AND TENURE:**

(2) **MANAGEMENT COMMITTEE MEMBERS:**

(3) **TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:**

(4) **COMMUNITY PROFILE NOTES:**

(5) **SUBSISTENCE USE:**

(6) **CASH INCOME FOR LANDOWNERS:**

(7) **COST OF CON. MAN. FOR COMMUNITY:**

(8) **LOCAL ATTITUDE/SUPPORT FOR PA:**

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) **GOVERNMENT CONTACT OFFICER(S):**

. Provincial Ranger (DEC) at Rabaul

(2) **ON SITE STAFF:**

(3) **STAFF RESOURCES:**

(4) **GOVERNMENT BUDGET:**

(5) **ACTIVITIES AND TASKS OF STAFF:**

(6) **INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:**

I. VISITOR USE

(1) **VISITATION STATISTICS:**

(2) **VISITOR FACILITIES:**

(3) **NEAREST VISITOR ACCOMMODATION:**

(4) **PUBLIC INFORMATION/BROCHURES:**

(5) **PUBLIC ACCESS:**

. no public access; private boats sometimes visit these islands

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *There is a lack of management activity or monitoring on these islands and it appears to be difficult to know what condition they are in.*

(2) SECONDARY ISSUES:

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *New Britain Lowlands*

B. CLIMATE: *Lowland Humid*

C. TOPOGRAPHY:

. a number of small islands

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. includes mangroves

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. unknown but probably good due to remote location

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Tonda*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS: *Map of major vegetation zones*

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
- (2) TENURE: *Customary ownership with leasehold land covering the site of a tourist lodge*
- (3) GAZETTAL INFORMATION: *Gaz. date 20/1/75, first set of rules gazetted 6/2/75 with a number of amendments to these rules over the following years*
- (4) AREA: *590,000 ha*

C. LOCATION

- (1) PROVINCE: *Western Prov.*
- (2) LOCAL GOVERNMENT AREA: *Balamuk*
- (3) CLOSEST MAJOR TOWN: *Daru, district headquarters at Morehead*
- (4) AVAILABLE MAPPING INFORMATION: *Topo. maps 1:100,000; Weam sheet 7180, Morehead 7280, Jari 7380, Boigu 7379, Mari 7279, Bensbach 7279*

D. REASON/PURPOSE FOR DECLARATION AS PA

. To manage the taking of fauna and, in particular, to gain income from hunting/fishing permits

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
- (3) D.E.C. FILES: *2-20-16 (5)*
- (4) REFERENCES: *Eaton, P. (1986) Grassroots Conservation - Wildlife Management Areas in PNG Land Studies Centre Report 86/1 UPNG*
- Stewart, J.F. (1981) A Study of the Wild Rusa Deer in Tonda WMA, PNG **FAO Report***
- Tapari, B (199?) Dept. of Geography UPNG Occasional Paper No ?*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. the WMA was established at the request of the landowners with the opening of the Bensbach Lodge providing motivation for management control; the lodge (and especially its manager) have been a driving force in the operations and success of this WMA.

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

(2) MANAGEMENT COMMITTEE MEMBERS:

<i>Nema Sapiarang</i>	<i>Wando village</i>
<i>Sobili Batik</i>	<i>Korombo</i>
<i>Wamo Kapai</i>	<i>Mengete</i>
<i>Sokai Motua</i>	<i>Indorodo</i>
<i>Kasimu Gapoi</i>	<i>Weam</i>
<i>Seku Sekoi</i>	<i>Wekapere</i>
<i>Nakai Kuman</i>	<i>Kandarisa</i>

(Note: these are the villages listed in the gazettal notice; the field visit identified the village names of Balamuk, Wando, Karombo, Bula, Wamaneper and Bondabol)

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. estimated population within the WMA of 1,239 in up to 12 villages; the population density is very low

. Karombo, Balamuk have churches and school (to grade 6); police were recently withdrawn from community

. travel is primarily by canoe or walking; two member villages are at distant locations requiring air flights or long difficult travel to attend to WMA business

. refugee camps are located upstream and OPM activity reported in the area

(5) SUBSISTENCE USE:

(6) CASH INCOME FOR LANDOWNERS:

Licence fees and royalties include:

1978 - K14,748; 1979 - K17,314; 1980 - K16,044; 1982 - K19,514; 1987 - K25,207;

There are no records for the other years between 1978 and 1987. Fifty percent should have been placed in the Trust Fund and 50% should have gone to individual landowning families

. the lodge used to handle the royalties and fees collected but in 1980 relinquished this role and handed K27,000 to the WMA committee; the agents for handling this money were gazetted as Wandi Maradi and Iokopa (both) of Wando village

. crocodile skins are a source of cash income; crocodiles farms have been developed by landowners

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. the landowners support the presence of the WMA and in particular its integration with the lodge operations

. there is currently talk of the landowners buying the resort

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

. previously the Western Prov. had a wildlife officer working in this Province; the local Agricultural Officer (Giseire Sukawo) assists where possible

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

. the Lodge has 240 visitors booked for the period April to September 1992

(2) VISITOR FACILITIES:

. fully equipped lodge including facilities and equipment for hunting and fishing; guides available for hire

. in 1981 it was estimated 200 male deer per year taken, this has since decreased with fishing and bird watching becoming more popular

(3) NEAREST VISITOR ACCOMMODATION:

. Bensbach Lodge approx. K 100 per day (including meals)

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. access by air with scheduled flights and irregular charters

. overland access possible in the dry season

. rivers and water channels used as boat transport routes

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. The initial rules of 1975 have been amended at least four times in 1976, 1979, 1986 and 1990

The rules provide for the issuing of licences (commercial, tourist and individual use), it restricts the use of guns to those used by the lodge, sets limits on size and sex of fauna taken, establishing areas within which hunting is restricted and it sets licence and royalty fees and regulates the handling of monies received

Only the customary landowners are allowed to hunt freely.

(2) EXISTING RESOURCE USE AGREEMENTS:

. an agreement exists with the landowners restricting hunting within a certain distance of the lodge

. the mining exploration was preceded by an agreement and compensation payment to some members of the community

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. the landowners would like an on-site wildlife officer or at least more frequent visits

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. the WMA functions well primarily because of the activity of the lodge;

. water buffalos are eradicated from the area

(2) FAILURES:

. regular meetings of the committee are impossible because of the cost of travel

. there is a law and order problem blamed on the activities of the OPM rebels

. there are problems with handling the monies received; money was recently transferred to a Port Moresby account to be administered by a lawyer there - apparently the fate of this money is uncertain with the landowners not knowing where or how to check up on this fund

(3) PLANS FOR FUTURE:

. the landowners would like to buy the lodge and begin commercial operations using the deer

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *Poaching of crocodiles with skins being taken across the border. Also illegal netting of fish across the mouth of the Bensbach River. Officials are also said to be killing deer without permission.*
- (2) *The presence of refugee camps and OPM activity is becoming a law and order problem.*

(2) SECONDARY ISSUES:

- (3) *Should improve the methods of for calculating (weighing) and collecting royalties.*
- (4) *The deer farming operation needs attention; there is a need for wells and expert advice. Other development proposals concerning wildlife (cassowary, crocodile or butterflies) also need expert advice.*

(3) POTENTIAL ISSUES:

- (5) *The lodge manager has been involved in a shooting incident which resulted in the death of a local person - antagonism and compensation are currently being discussed*

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

- . *proposals exist for:*
 - . *a dried deer meat operation*
 - . *export of live deer through NAMI; this has been stopped by restrictions on the export of this exotic animal although hopes are still held for the export of an internal PNG market and/or the sale of the remaining captive deer*
- . *there is a current proposal for the establishment of a second lodge on the eastern side of the WMA as a specialist fishing operation for Bass; negotiations are continuing with problems perceived in having a lease-holding within a WMA; Lands Dept. does not see this as a problem however*

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

- . *the Bensbach Lodge has been successfully operating, although apparently not registering a profit, since 1975*
- . *some deer farming occurs on the site*

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

- . *a mining lease currently covers part of the WMA area and seismic testing has recently been carried out*

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Western*

B. CLIMATE:

- . Lowland Subhumid*
- . Annual rainfall 1500 - 2000 mm (beginning Dec/Jan.)*

C. TOPOGRAPHY:

- . flat alluvial plain rarely rising above 45 m*

D. GEOLOGY/SOILS:

- . swamp soils/conditions prevail over much of the area; CSIRO surveys classify this area as unsuitable for commercial agriculture*

E. VEGETATION DESCRIPTION:

- . estimated that 10 % of area is open grassland and savannah; common in much of the remainder is Melaleuca and Acacia; riverside gallery forests*
- . grassland typically Pseudoraphis spinescens and Phragmites karka (floating mat)*

F. FAUNA:

- . large and spectacular populations of migratory and wetland birds have been a major attraction in recent years*
- . includes wallabies, birds-of-paradise*
- . introduced fauna include brumbies, pigs, buffalo rusa deer (est. pop. 60,000),*

G. CONDITION AND INTEGRITY OF THE SITE:

- . the introduced fauna must be having an effect on the original ecology of the area, especially overgrazing by excessive numbers of deer.*
- . there is an unidentified tobacco/sage type weed infesting the plains*

H. CONSERVATION FEATURES:

- . seasonally flooded grasslands, Melaleuca forest, wetlands, gallery forest, Barramundi, very rich wetland avifauna including migratory waders (best in PNG), important refuge for Australian wetland avifauna in drought years, 63 spp of fish recorded from Bensbach River.*

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

- . too big to patrol or monitor; adjoining the Irian Jaya border and is easily crossed by local people*
- . this ease of crossing encourages movement by OPM rebel forces*

(2) CATCHMENT CONSIDERATIONS:

- . higher rainfall areas to north drain in to the WMA resulting in widespread flooding and inundation for half the year (at least)*
- . at the end of the dry season the Bensbach River becomes brackish and the Jarl River dries up; the watertable drops significantly*

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

. the population was previously much larger but this was reduced by a disastrous epidemic

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. this is a major element for tourism at lodge

E. RECREATIONAL VALUES:

. tourism activities at lodge

F. SCIENTIFIC VALUES:

. high diversity of wetland habitat and associated wetland birds

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Varirata*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS: *(i) brochure for park*
(ii) photocopy of Park on Topo. 1:100,000

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *National Park*
- (2) TENURE: *State Land*
- (3) GAZETTAL INFORMATION: *Reserved under the Lands Act 7/2/63*
Gazetted National Park 18/12/69
- (4) AREA: *1,063 ha*

C. LOCATION

- (1) PROVINCE: *Central*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN: *Port Moresby (48 km)*
- (4) AVAILABLE MAPPING INFORMATION: *1:100,000 Topo. sheet 8379*
147 2'E, 9 3'S

D. REASON/PURPOSE FOR DECLARATION AS PA

A major purpose is for the protection of plant and animal species. In addition its position near to Port Moresby has ensured a major purpose for this Park is to provide recreational and visitor resources.

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE: *Eleanor Brown and Mike Hopkins, Biology Dept. UPNG (involved in a long term research project within the Park)*
- (3) D.E.C. FILES: *25-1--9*
- (4) REFERENCES: *Nyama, V. (1989) Varirata National Park - Visitor Use and Income Generation, paper presented to Fourth South Pacific Conference on Nature Conservation and Protected Areas, Port Vila 1989.*

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

Land was purchased from the Koiari landowners in 1900 and was part of an extensive acquisition of land surrounding Port Moresby. Landownership and compensation disputes concerning that early land acquisition continue to this day.

Land was dedicated for park purposes in 1963 and placed under a Trust representing the District Commissioner, the Division of Forestry and local business interests. In 1973 it became the first National Park in PNG.

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. there are two clans who formerly owned the Park - these are the Omani and Nadeka clans of the Koiari people

(2) MANAGEMENT COMMITTEE MEMBERS:

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

(4) COMMUNITY PROFILE NOTES:

. the landowning Koiari people form a large group surrounding and extending West and North of Port Moresby; there are approximately 52 clans identified being grouped around the predominant ecosystems they own i.e. there are mountain (12), "bush" (14), grassland (24) and Vanapa/Brown River (2) clans

. the local Koiari people have long been involved in land and compensation disputes with government authorities; this is especially related to water and power infrastructure for the city of Port Moresby which is located near to the Park

(5) SUBSISTENCE USE:

. hunting for wildlife is prohibited but permits to hunt the introduced deer are given out to individuals in the landowning community

(6) CASH INCOME FOR LANDOWNERS:

. in 1984 K10,000 was provided by the government to build a canteen was built to allow the landowners to sell food etc to Park visitors - this was unsuccessful and is now closed

. Koiari landowners are given preferential selection for employment in the Park

(7) COST OF CON. MAN. FOR COMMUNITY:

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

*Division of Conservation
Dept. of Environment and Conservation
Waigani, Port Moresby*

(2) ON SITE STAFF:

Ranger-in-charge, Artisan, and 5 labourers

(3) STAFF RESOURCES:

. on-site residences, office, phone, vehicles

(4) GOVERNMENT BUDGET:

. operating costs was reported in 1989 to be K41,600 (Nyama 1989)

(5) ACTIVITIES AND TASKS OF STAFF:

. collecting fees, maintaining tracks and visitor facilities

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

. a toll gate collection is the major income generating facility and in 1989 the park was reported to earn approximately K15,000 which was 50 % of the total for the PNG National Park system (Nyama 1989)

I. VISITOR USE

(1) VISITATION STATISTICS:

. average to 2,000 visitors per year

(2) VISITOR FACILITIES:

. picnic areas, 3 look-outs, walking tracks, information centre

. visitor lodges, camping areas

. a Welcome House (a Koiari cultural guesthouse positioned in the trees) has been reconstructed in 1992

(3) NEAREST VISITOR ACCOMMODATION:

. on-site lodges, and nearby Kokoda Trail Motel (resort)

(4) PUBLIC INFORMATION/BROCHURES:

. information centre, one small brochure and poster map with information

(5) PUBLIC ACCESS:

. sealed road from Port Moresby, 48 km up the Sogeri Plateau

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) **MANAGEMENT RULES:**
- (2) **EXISTING RESOURCE USE AGREEMENTS:**
- (3) **OTHER PLANNING DEVICES IN OPERATION:**
- (4) **OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:**

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) **SUCSESSES:**

- . the Park presents a good public image, especially to overseas visitors visiting Port Moresby and provides recreational opportunities in a "bush" setting for those who want this type of recreation*
- . the Park has been successful in protecting viable populations of plant and animal species since pre-colonial times and has reserved a large part of its extent from extractive activities*

(2) **FAILURES:**

(3) **PLANS FOR FUTURE:**

- . the original plans for the establishment of this Park involved an area approximately twice the size of the existing Park - this remaining part of the proposal is still considered an possible extension by some*

L. MANAGEMENT ISSUES

(1) **MOST IMPORTANT MANAGEMENT ISSUES:**

- (1) *A key factor in the future success of this Park will be active involvement by the adjoining landowners, the Koiari people and the current issue is that this does not occur to a sufficient level at present.*
- (2) *Rascal activity limits the use of this Park and makes overnight camping or lodge accommodation risky*

(2) **SECONDARY ISSUES:**

- (3) *Wildfire and grazing damage from excessive populations of the introduced deer.*

(3) **POTENTIAL ISSUES:**

M. ECONOMIC CONSIDERATIONS

(1) **EMPLOYMENT OPPORTUNITIES:**

- . the local landowners provide the workers for the 5 permanent positions and also any casual labour that is required*

(2) **CASH INCOME GENERATED FOR NON GOV./TRAD.:**

- . there is a small resort which benefits from its location close to the Park and offers alternative accommodation for visitors*

(3) **RESOURCES AVAILABLE FROM OTHER SOURCES:**

(4) **INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:**

- . the Park's location within 50 km of Port Moresby, accessible on sealed roads, encourages continuing and increasing visitor use*

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE: *Gulf Hills*

B. CLIMATE:

. Premontane Humid

. typical of the Port Moresby area - rainfall approx. 3,500mm occurring between December and April with a pronounced dry season from June to October

C. TOPOGRAPHY:

. Park is located on the edge of the Sogeri Plateau with cliff faces along the western boundary

. altitude 750m to 1,050m

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. three main types - savannah open forest and grassland, regrowth, lower montane rainforest

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

. most of Park is in good condition - fire occasionally goes into Park from surrounding areas and previously cleared areas are recovering; a relatively small area is cleared and developed for Park facilities

. a large area in the south and east corner of the Park is designated "wilderness" and remains undisturbed.

. some impacts from nearby settlements and deer populations need control

H. CONSERVATION FEATURES:

. High scenic value, close proximity to urban population, ongoing botanical and zoological research, Reggiana display trees, important monsoon forest areas, further potential for easily accessible research sites

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. the northern and eastern boundaries of the Park follow straight survey lines which bear no relation to natural and/or readily recognisable features

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

. a part of the information presented at Varirata concerns the Koari culture and this is stated as a major emphasis and purpose by DEC officers

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. the Park is considered one of the major scenic attractions of the Port Moresby area

E. RECREATIONAL VALUES:

. major recreational site for Port Moresby and is the best planned and implemented visitor facilities of all PNG National Parks

F. SCIENTIFIC VALUES:

. the Park has been subject to a long history of scientific research and this continues in 1992; a number of study sites significant to PNG science and rainforest research generally are located within the Park

. there is a good factual basis for monitoring and ecological, and management, research to be derived from this work

. there are important monsoon forests and significant fauna populations

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Waigani Reserve*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *Nature reserve (National Park)*
- (2) TENURE: *State land*
- (3) GAZETTAL INFORMATION:
- (4) AREA:

C. LOCATION

- (1) PROVINCE: *Central*
- (2) LOCAL GOVERNMENT AREA:
- (3) CLOSEST MAJOR TOWN: *(within) Port Moresby*
- (4) AVAILABLE MAPPING INFORMATION:

D. REASON/PURPOSE FOR DECLARATION AS PA

. to develop an urban park

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING:
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
- (3) D.E.C. FILES:
- (4) REFERENCES:

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) **IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:**

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

- (1) **CUSTOMARY LANDOWNERS AND TENURE:**
- (2) **MANAGEMENT COMMITTEE MEMBERS:**
- (3) **TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:**
- (4) **COMMUNITY PROFILE NOTES:**
- (5) **SUBSISTENCE USE:**
- (6) **CASH INCOME FOR LANDOWNERS:**
- (7) **COST OF CON. MAN. FOR COMMUNITY:**
- (8) **LOCAL ATTITUDE/SUPPORT FOR PA:**

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) **GOVERNMENT CONTACT OFFICER(S):**

(2) **ON SITE STAFF:**

. this site is currently un-managed and has no specific staff allocated

(3) **STAFF RESOURCES:**

(4) **GOVERNMENT BUDGET:**

. no funds have been allocated to this site

(5) **ACTIVITIES AND TASKS OF STAFF:**

(6) **INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:**

I. VISITOR USE

- (1) **VISITATION STATISTICS:**
- (2) **VISITOR FACILITIES:**
- (3) **NEAREST VISITOR ACCOMMODATION:**
- (4) **PUBLIC INFORMATION/BROCHURES:**

(5) **PUBLIC ACCESS:**

. the site is undeveloped and access has not been developed

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

- (1) MANAGEMENT RULES:
- (2) EXISTING RESOURCE USE AGREEMENTS:
- (3) OTHER PLANNING DEVICES IN OPERATION:
- (4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

K. EXAMPLES OF MANAGEMENT ACTIVITY

- (1) SUCCESSES:
- (2) FAILURES:
- (3) PLANS FOR FUTURE:

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *The purpose of the site needs to be reviewed to establish how it "fits" into DEC responsibilities and concerns in order that DEC funding and staff attention meets this desired purpose.*
- (2) *Detailed planning for this site have begun but need to be completed.*

(2) SECONDARY ISSUES:

- (3) *Law and order problems experienced elsewhere in Port Moresby will be issues here.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

- (1) EMPLOYMENT OPPORTUNITIES:
- (2) CASH INCOME GENERATED FOR NON GOV./TRAD. :
- (3) RESOURCES AVAILABLE FROM OTHER SOURCES:
- (4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

II SITE DESCRIPTION

A. BIOGEOGRAPHIC REGION:

B. CLIMATE:

C. TOPOGRAPHY:

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

F. FAUNA:

G. CONDITION AND INTEGRITY OF THE SITE:

H. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

(2) CATCHMENT CONSIDERATIONS:

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE

SITE DATA SHEET

I SITE INFORMATION

A. SHEET IDENTIFICATION

- (1) NAME OF SITE: *Zo-oimaga*
- (2) SHEET NUMBER:
- (3) ATTACHMENTS:

B. FORMAL DESCRIPTION OF THE SITE

- (1) TYPE OF PA: *WMA*
- (2) TENURE: *Customary land*
- (3) GAZETTAL INFORMATION: *Gaz.18 - 17/2/81*
- (4) AREA: *1510 ha*

C. LOCATION

- (1) PROVINCE: *Central*
- (2) LOCAL GOVERNMENT AREA: *Rigo*
- (3) CLOSEST MAJOR TOWN: *Kwikila*
- (4) AVAILABLE MAPPING INFORMATION: *Topo. 1:100,000 Kwikila (sheet 8478)*

D. REASON/PURPOSE FOR DECLARATION AS PA

. *Stated purpose is the control of indiscriminate hunting, especially with shotguns, and especially of the Raggiana and King, Bird-of-Paradise.*

. *Discussions with landowners indicates other reasons including:*

- . *the hope that it would attract development funding based on wildlife, and*
- . *the declaration provides the landowners with a certain status related to establishing ownership and having government authorities interested in their land.*

E. INFORMATION SOURCES

- (1) SURVEYS/MONITORING: *Resource survey report completed by M. Koke (DEC); 8 days in field; copy in DEC file 2-20-1(9)*
- (2) CONTACTS WITH DETAILED KNOWLEDGE OF THE SITE:
- (3) D.E.C. FILES: *2-20-1-(9)*
- (4) REFERENCES:

SITE MANAGEMENT INPUTS

F. HISTORICAL NOTES

(1) IMPORTANT EVENTS IN THE ESTABLISHMENT OF THE PA:

. establishment was initiated by DEC officers and agreed to by the landowners

G. INTEGRATION WITH TRADITIONAL LANDOWNERS

(1) CUSTOMARY LANDOWNERS AND TENURE:

. the landowners are a single family group including people from the villages of Geresi, Gea, Varisra, Kodogera (surrounding area)

(2) MANAGEMENT COMMITTEE MEMBERS:

Committee is a four member group:

Kokosi Dauge

*Gini Aina **

*Nama Moki **

Imasi Buruna

*. two of the gazetted committee members have died since gazettal and have been replaced by their sons (marked *); it is not known if these new members have been legally endorsed*

(3) TRADITIONAL MANAGEMENT TECHNIQUES APPLIED:

. burning grasslands is a traditional way of flushing game for hunting which continues today in spite of the landowners disapproving

(4) COMMUNITY PROFILE NOTES:

. an important factor in the cohesion of this committee is the family relationships

(5) SUBSISTENCE USE:

. the WMA is used for hunting of all suitable fauna and in particular, freshwater prawns, wallabies, cuscus, bandicoot and pigs

. gardening occurs within the Area, primarily along the river-flats and there are small hamlets and connecting tracks related to these gardens

. this subsistence use is mainly by the landowning families with occasional intrusions by outsiders hunting here

(6) CASH INCOME FOR LANDOWNERS:

. limited cash income from wildlife meat sold in the markets

(7) COST OF CON. MAN. FOR COMMUNITY:

. maintaining a "patrol" presence throughout the Area is difficult as it must be done on foot and cover approximately 1500 ha; the subsistence use, however, maintains a presence and the area is probably reasonably well monitored

. meetings would probably be held in either of the two adjoining villages (Geresi or Gea) which are an hour's walk away from the gardens/hamlets of the chairman in the WMA

(8) LOCAL ATTITUDE/SUPPORT FOR PA:

. recent discussions with the landowners (Jan 1992) indicated they were in favour of the WMA because there were increasing numbers of wildlife; there was also the largely unsaid reason that the WMA reaffirmed their custom ownership and control

H. GOVERNMENT RESOURCES ALLOCATED TO MANAGEMENT

(1) GOVERNMENT CONTACT OFFICER(S):

(2) ON SITE STAFF:

(3) STAFF RESOURCES:

(4) GOVERNMENT BUDGET:

(5) ACTIVITIES AND TASKS OF STAFF:

. since gazettal there may have been only three visits by DEC (in 11 years), two of which arose out of consultancies (including the WWF project).

. there have been no Committee meetings since gazettal.

(6) INCOME GENERATED FROM SITE FOR GOVERNMENT AGENCIES:

I. VISITOR USE

(1) VISITATION STATISTICS:

(2) VISITOR FACILITIES:

(3) NEAREST VISITOR ACCOMMODATION:

(4) PUBLIC INFORMATION/BROCHURES:

(5) PUBLIC ACCESS:

. access to the area is via an approximately 8 km, rough and unsealed, road from Kwikila to the small village of Geresi or via a longer road to Gea; the roads end at these villages; these villages lie outside the WMA and all access into the area must be continued on foot

. the road from Port Moresby to Kwikila is a sealed highway recently completed

SITE MANAGEMENT

J. MANAGEMENT CONTROL MECHANISMS

(1) MANAGEMENT RULES:

. copies of the gazetted rules could not be found in the DEC files but the draft rules are said to be the same; however, there is reason to believe there will be differences, such as, the draft rule (1) prohibiting shotguns outside the WMA

. the intent of the rules, however, is probably accurate and this indicates that:

. outsiders cannot hunt within the area and that shotguns, in particular, are banned;

. fire is banned;

. only landowners are allowed to hunt in the Area and this is restricted to certain numbers, to certain times and for consumption only;

. given this accurately reflects the gazetted rules, discussions suggest the rules are often broken but not to the extent that landowners are concerned

(2) EXISTING RESOURCE USE AGREEMENTS:

(3) OTHER PLANNING DEVICES IN OPERATION:

(4) OTHER MECHANISMS FOR ENFORCEMENT OR COOPERATION:

. it was stated that the local community surrounding the WMA tend to respect the rules/wishes of the landowners;

K. EXAMPLES OF MANAGEMENT ACTIVITY

(1) SUCCESSES:

. as noted above the WMA appears to be functioning to protect fauna from the excesses of hunting; this appears to be due to:

. local respect for custom ownership and authority,

. the interest of the chairman and his family in exercising control over the land,

. the occupation and use of the WMA by landowners who can monitor the activities of people within the area, and

. the location of the WMA in a 'back water', at the end of a rough road and away from the main sealed roads greatly reduces outside pressure to use resources,

. it is suggested the Chairman gains status and favours by allowing surrounding communities to take wild fauna when needed for special occasions; neighbouring communities have asked that their area be included in a WMA

(2) FAILURES:

. DEC had not visited the Area from 1982 up until the late 1991

(3) PLANS FOR FUTURE:

. the landowners are interested in any development opportunities presented by the WMA; a recent consultancy by C. Darby for UNDP which aimed to produce brochures on a number of WMA (including Zo-oimaga) to encourage visitors has inspired talk of guest houses and educational tours

L. MANAGEMENT ISSUES

(1) MOST IMPORTANT MANAGEMENT ISSUES:

- (1) *The most important issue is the lack of attention given to the WMA by DEC; the landowners made it quite clear that they regretted there was no activity, government presence or support.*
- (2) *Partially because of this lack, there is very little active fauna management, except the villagers efforts to maintain their ownership rights and control over use by outsiders.*

(2) SECONDARY ISSUES:

- (3) *There is minor "poaching" occurring in the WMA and there have been no cases of successful apprehension and fines. The only successful enforcement comes from the indirect method of relying on the respect for custom ownership held by the surrounding communities.*
- (4) *The landowners noted that it is very difficult to enforce rules on people from within their own communities.*
- (5) *Fire is still an issue here, probably due to the movement of fire originating from outside the area.*
- (6) *There are no signs or other indications of the presence of the WMA area.*

(3) POTENTIAL ISSUES:

M. ECONOMIC CONSIDERATIONS

(1) EMPLOYMENT OPPORTUNITIES:

(2) CASH INCOME GENERATED FOR NON GOV./TRAD. :

(3) RESOURCES AVAILABLE FROM OTHER SOURCES:

(4) INDIRECT, ADJOINING OR REGIONAL ECONOMIC FACTORS:

. there are very few development opportunities in the district and none that would influence use of the area except for limited sale of wildlife meat at the Kwikila market

II SITE DESCRIPTION

A. BIOGEOGRAPHIC ZONE:

. SE Coast

. the WMA lies approximately 70 km from Port Moresby in the dry sclerophyll country typical of this coast

B. CLIMATE:

. Lowland Dry Subhumid

C. TOPOGRAPHY:

. hilly country (200 m to highest altitude of 360 m) before rising to the mountains of the Henty Range (approx. 10 km north)

D. GEOLOGY/SOILS:

E. VEGETATION DESCRIPTION:

. open sclerophyll forest/grassland with closed rainforest patches in protected gullies

F. FAUNA:

. no significant fauna known from the site except for the protected species of Bird-of-Paradise

G. CONDITION AND INTEGRITY OF THE SITE:

*. grasslands possibly maintained by regular fire;
. gardens and associated habitat loss occurs along the river flats where better soils are and probably resulting in the clearing of closed forest*

H. CONSERVATION FEATURES

I. INTEGRATION WITH SURROUNDINGS

(1) BOUNDARY CONSIDERATIONS:

. the area adjoins cleared and modified grasslands to its NW and SE; the boundary includes a section of continuous hilly country of open forest and closed forest patches running NE/SW;

(2) CATCHMENT CONSIDERATIONS:

. the headwaters of at least four small creeks arise within the WMA

III SPECIFIC SOCIAL OR HUMAN USE VALUES

A. CULTURAL VALUES:

. the chairman maintains a strong interest in his people's custom and probably sees the WMA as integral to this;

. there are a number of "sites" within the WMA, one a large rock which, if one's shadow falls on, will bring misfortune; the few identified sites do not include any man-made features;

B. HISTORICAL VALUES:

C. ARCHAEOLOGICAL VALUES:

D. SCENIC/LANDSCAPE VALUES:

. the area is similar to the surrounding land with no obvious features to distinguish it;

E. RECREATIONAL VALUES:

F. SCIENTIFIC VALUES:

IV SITE EVALUATION

A. ASSESSMENT OF CONTEXT OF VALUE:

local, regional, national, international

B. APPLICABILITY OF IUCN, AND OTHER, CLASSIFICATIONS:

C. ECONOMIC EVALUATION

D. LONG TERM VIABILITY OF THE SITE

E. CURRENT LEVEL OF THREAT

F. AGGREGATE VALUE