

## Name of Protected Area: Baiyer River Wildlife Sanctuary

### Part 1: Basic information about the protected area

**Table 1. Protected area information**

Name, organisation and contact details for person(s) conducting the assessment <i>Person 1: Name, Organisation, Address, Email, Phone</i>	Beside Thomas, Manager, Terrestrial Protected Area, Conservation and Environment Protection Authority, 6601, Boroko, National Capital District, beside.thomas@gmail.com, 3014500, 711091971, 76423755.
<i>Person 2: Name, Organisation, Address, Email, Phone</i>	Warren Jano, Secretariat of South Pacific Regional Environment Program, wjano2009@gmail.com, 7378 0348, 7538 8867.
Today's Date	07/10/2016
Name (or names) of protected area	Baiyer River Wildlife and Bird Sanctuary (gazettal notice – Bayer River Sanctuary)
Size of protected area (ha)	64 (740 ha at gazettal on 3/1/1968)
PNG Code or number	PNGG7
World Database of Protected Areas site code (these codes can be found on <a href="http://www.unep-wcmc.org/wdpa/">www.unep-wcmc.org/wdpa/</a> )	Nil
What level or kind of protected area is it? (National Park, Wildlife Management Area, Sanctuary, Reserve, Locally Managed Marine Area etc)	Sanctuary (National Park)
IUCN Category	Nil
International protected area? e.g. World Heritage or Ramsar?	No
Country	Papua New Guinea
Province/s	Western Highlands
District/s	Mul Baiyer Lumusa
Local level governments	Baiyer
Ward/s	Antenga, Gelg 1, Gelg 2
Nearest big town	Mt. Hagen
Location of protected area (brief description)	The Baiyer River Sanctuary is about 40 km north of Mt Hagen (about a one hour drive). It is located along the Baiyer River. The road to the Sanctuary is currently being sealed and there is signage on the main Highlands highway providing directions to the sanctuary. The park is being renovated. The forest cover is good and much remains in a virgin state. Birds are abundant and accessing the birds requires extensive trails to be constructed inside the forest. Tourists are currently not accessing the Sanctuary.
Map references	
When was the protected area gazetted or formally established?	8/2/1968 (gazettal notice – 3/1/1968)
Reference for gazettal or Memorandum of Understanding (MoU)	

Who owns the protected area? please enter Government Private Community/ customary landowners, private, Other (name) and include <b>Clan name(s)</b>	State land (National Government)
Number of households living in the protected area	0 (Previously when the management of the wildlife sanctuary was active, the people who were working in the sanctuary lived there, but currently there are no people living in the sanctuary.)
Population size within the protected area	0
Who manages the protected area?(e.g. please enter government, customary landowners [add clan names] management committee [how many and what gender])	There is a caretaker landowner management team of two and management is facilitated by the Mul Baiyer Lumusa District Administration and also the Provincial Administration (Commerce and Tourism Division).
Total number of staff (this means anyone working on the protected area in <b>paid jobs</b> – whether NGOs, community, rangers or customary landowners	24
<i>Temporary paid workers</i>	22 (20 casual workers and 2 Community Relations Officers)
<i>Permanent paid workers</i>	2
Annual budget (US\$) – excluding staff salary costs	0
Operational (recurrent) funds	0
Project or special funds	K500, 000
Reason for park establishment	The land was purchased from the customary landowners (Ugini clan) in 1950 and the original purpose was to develop a zoological garden and to protect forest ecosystems. The landowners were engaged in the management of the area. The customary landowners wanted to protect the land for future generations.
What are the main values for which the area is designated (Fill this out after data sheet 2)	Forest, animals and river systems.
List the primary protected area management objectives (add lines if needed after the most important objectives): <i>Management objective 1</i>	To protect the forest.
<i>Management objective 2</i>	To protect the animals (cassowary, wild dogs, pigs).
<i>Management objective 3</i>	To sustain community livelihoods.
Number of people involved in answering the assessment questions	3
Name/organisation/contact details of people participating the assessment ( <i>Please do not insert return/enter or dot points</i> )	<i>Mark Doa</i> , Baiyer Wildlife Sanctuary Coordinator, PO Box 67, Mt Hagen, 71434884; <i>Wanpis Waiya</i> , Baiyer Wildlife Sanctuary Supervisor, Baiyer River Sanctuary, PO Box 67, Mt Hagen, 71622533; <i>Yangga Treppe</i> , Baiyer District Administration, Planning and Project Officer, PO Box 14, Mt Hagen, kukipa46@gmail.com, 73519542.
Customary landowners/other community; CEPA, Other national government agency; Provincial govt; local level govt; Protected area staff (anyone working on the protected area in paid jobs; NGO; Donors; External experts; Others	Customary landowners.

Please note if assessment was carried out in association with a particular project, on behalf of an organisation or donor.	Secretariat of the Pacific Regional Environmental Programme through the PNG Protected Area Assessment Project, which is a component of the GEF Community-based Forest and Coastal Conservation and Resource Management Project in PNG.
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## Part 2: What makes this protected area special and important?

The Baiyer River Sanctuary is to be revived to attract tourists, particularly bird watchers. This process is being driven by the local Member of Parliament in conjunction with the Conservation and Environment Protection Authority (CEPA) (Kinjap 2016). The Sanctuary was managed by the Western Highlands Provincial Government when it began in 1968. When funding ceased the Sanctuary closed and the facilities deteriorated. A rehabilitation program has been negotiated and it is expected that 10 new buildings will be erected (e.g. Administration Centre, conference areas and a lodge) and there will be inductions for tourists and school children. It is reported that when the zoo ceased operations, the local people looked after the area (e.g. retaining forest and prohibiting gardens and houses).

**Table 2. Key values of the protected area**

No.	Key values	Brief description	Note if endangered species or ecosystem (IUCN)
1	Forest	The main species are oak trees and they are in a very healthy, natural state. The area consists of mid-montane forests, riverine forests and patches of higher altitude savannah.	
2	Animals	The area is important for birds (e.g. raggiana bird of paradise, dwarf and northern cassowary and harpy eagle) and there are echidna (long and short beaked) and other mammals including rats and bandicoots. The people respect the area.	Reggianna bird of paradise, harpy eagle
3	River systems	The river system provides water for the community and is in relatively good condition.	

**Table 3. Checklist of values/benefits**

Not important 0; Important 1; Very important 2; Don't know DK

How important is the protected area for each of the listed values/benefits?	Score (0,1,2, DK)	Comment
1. Biodiversity – the presence of many different kinds of plants, animals and ecosystems	2	Biodiversity values (e.g. forest and animals) were an important reason for establishing the Sanctuary and will be important for future generations.
2. Presence of rare, threatened, or endangered species (plants and animals)	2	There are several rare and threatened species, including bird of paradise, harpy eagle, cassowary (northern and dwarf), echidna (both long and short beak).
3. Ecosystems (e.g. wetlands, grasslands, coral reefs etc) that are rare because they have been cleared or destroyed in other areas	2	Forest ecosystems are important.
4. Protecting clean, fresh water	2	Water is life and it is important for the community and visiting tourists and the animals need water.
5. Sustaining important species in big enough numbers that they are able to survive here	2	
6. Providing a source of employment for local communities now	2	That Sanctuary creates employment and this supports individuals and families.
7. Providing resources for local subsistence (food, building materials, medicines etc.)	2	The community benefits from the Sanctuary, which provides for sustainable livelihoods including food, building material and medicines.

8. Providing community development opportunities through sustainable resource use	2	Guest houses are being developed and this will generate income for the community.
9. Religious or spiritual significance (e.g. tambu places)	2	There is a belief that a wild meri (woman) kills men and protects animals i.e. there are masalai places of importance to the landowners.
10. Plant species of high social, cultural, or economic importance	2	Salat and tanget are used in traditional ceremonies; diwai skin (i.e. tree bark is used to cure headaches); some juices are placed on fresh cuts so that they will heal.
11. Animal species of high social, cultural, or economic importance	2	
12. Attractive scenery	2	Baiyer River Sanctuary has attractive scenery and this has 'placed PNG on the world map'.
13. Tourism now	2	The Sanctuary is identified on the internet as an important site (even though it is not functioning). We are trying to revive the Sanctuary.
14. Potential value for tourism in the future	2	Baiyer River can generate income from tourism (e.g. the community can produce cultural shows, showcase their small gardens and caves, purchase artifacts, view the scenery and go bird watching.
15. Educational and/or scientific value	2	This area is less developed so we need to send students from our area to do studies elsewhere.
16. Maintaining culture and tradition on customary land and passing this on to future generations	2	Teaching children about the Sanctuary and the environment is important.

### Part 3: What are the threats to the protected area?

**Table 4: Threats to the protected area**

- H** High significance threats are seriously degrading values. This means they are badly damaging some value –it might be a kind of animal or plant, or your traditional gardens
- M** Medium threats are having some negative impact – they are damaging values but not so badly
- L** Low threats are present but not seriously damaging values
- 0** N/A where the threat is not present in the protected area or where something is happening but is not threatening the values at all

Threat type	Score (H,M,L,0)	Notes
1.1 Housing and settlement	L	Settlement does not affect the area, as people know that they can be moved away.
1.1a Population increase in the protected area community	L	There are not many people living in this area. However, the growing numbers place pressure on the resources of the protected area.
1.2 Commercial and industrial areas	0	
1.3 Tourism and recreation infrastructure	L	Tourism facilities have fallen into disrepair. However, they will be revived and tourism will begin again.
2.1 Customary land owner and community gardens and small crops	L	
2.1a Drug cultivation	0	
2.1b Commercial plantations	0	
2.2 Wood and pulp plantations	0	
2.3 Livestock farming and grazing	0	
2.4 Marine and freshwater aquaculture	0	
3.1 Oil and gas drilling	0	
3.2 Mining and quarrying	0	

Threat type	Score (H,M,L,O)	Notes
3.3 Energy generation	0	
4.1 Roads and railroads (include road-killed animals)	L	We will build fencing to protect wildlife in the Sanctuary.
4.2 Utility and service lines (e.g. electricity cables, telephone lines)	0	
4.3 Shipping lanes	0	
4.4 Flight paths	0	
5.1 Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict)	H	As there is no fence, people are free to move around the Sanctuary and hunt wildlife, mainly for subsistence purposes. This is causing a reduction in species numbers.
5.2 Gathering terrestrial plants or plant products (non-timber)	H	As there is no fence, people are free to move around the Sanctuary and gather plants. Preventing the gathering of plants will be a priority when the Sanctuary is revived.
5.3a Logging and wood harvesting for local/customary use	0	
5.3b Logging and wood harvesting – commercial logging	0	
5.4a Fishing, killing and harvesting aquatic resources for local/customary use	0	
5.4b Fishing, killing and harvesting aquatic resources for commercial use	0	
6.1 Recreational activities and tourism	M	We will utilise two options, caging and also building bigger fencing so animals can move freely, and also plant trees that fruit to provide food for animals and birds and this will support bird watching for tourists.
6.2 War, civil unrest and military exercises	0	
6.3 Research, education and other work-related activities in protected areas	L	The impact depends on the research and the number of people involved.
6.4 Activities of protected area managers (e.g. construction or vehicle use)	L	Vehicles will be restricted in some areas within the protected area and there will be rules on the use of cars to minimise impacts on biodiversity.
6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors	L	
7.1 Fire and fire suppression (including arson)	H	Drought is and will propagate fire and we need to fence the area (480 ha has been surveyed).
7.2 Dams, hydrological modification and water management/use	0	
7.3a Increased fragmentation within protected area	0	
7.3b Isolation from other natural habitat (e.g. deforestation)	0	
7.3c Other 'edge effects' on park values	L	There are villages along the edges of the Sanctuary and this results in a range of negative impacts on the protected area.
7.3d Loss of keystone species (e.g. top predators, pollinators etc.)	L	The area is big enough to support keystone species.
8.1 Pest plants	H	There are four types of invasive species (e.g. paipa spp).
8.1a Pest animals	H	Talapia is found in the waterways, and there are dogs and pigs.
8.1b Diseases such as fungus or viruses that make native plants or animals sick	L	
8.2 Introduced genetic material (e.g. genetically modified organisms)	0	

Threat type	Score (H,M,L,O)	Notes
9.1 Household sewage and urban waste water	0	
9.1a Sewage and waste water from protected area facilities	0	
9.2 Industrial, mining and military effluents	0	
9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)	0	The area growing sorghum for animal feed and the residue may affect the Sanctuary in the future.
9.4 Garbage and solid waste	0	
9.5 Air-borne pollutants	0	
9.6 Excess energy (e.g. heat pollution, lights etc.)	0	
10.1 Volcanoes	0	
10.2 Earthquakes/Tsunamis	0	
10.3 Avalanches/Landslides	0	
10.4 Erosion and siltation/deposition (e.g. shoreline or riverbed changes)	M	Erosion occurs at the picnic area.
11.1 Habitat shifting and alteration	H	Seasonal weather patterns are affecting plants.
11.2 Droughts	M	Droughts that are continuous for 2-3 years can affect habitats and animals.
11.3 Temperature extremes	M	
11.4 Storms and flooding	M	There are big rivers along the Sanctuary and floods can affect the habitat.
11.5 Coral bleaching	0	
11.6 Intrusion by saltwater into gardens etc.	0	
11.7 Sea level rise	0	
Other (please explain)		
12.1 Loss of cultural links, traditional knowledge and/or management practices	L	When the Sanctuary is revived it will help support the development of cultural and traditional links to the protected area.
12.2 Natural deterioration of important cultural site values	M	There are important cultural places, but they need maintenance.
12.3 Destruction of cultural heritage buildings, gardens, sites etc.	0	
Other (please explain)	H	Politics

**Table 5. Worst threats and ways forward**

Threat No.	Threat (Most significant first)	Threat number or name (copy no. from Table 4)	Nature of the threat, impact and how to reduce the impact.
1	Natural	8.1,8.1a,11.2,11.4	Invasive species of plants (paipa species) and animals, (tilapia fish), drought, flood and wind.
2	Human-made	5.1,5.2,7.1	Hunting practises (fishing) using poison rope, fire escapes from gardens, domesticated animals, tribal fights, compensation claims and jealousy.
3	Politics	Other	Regardless of who wins in the elections, this should not affect the Sanctuary. We should develop management strategies that are binding with the Conservation and Environment Protection Authority, Baiyer Sanctuary and the current member of parliament and Provincial Government, District and LLG and wards members.

## Part 4: What is the management like in the protected area?

**Table 6. Management effectiveness scores, comments, next steps**

Issue	Score (0,1,2,3, NA)	Comment	Next steps
1a. Legal status	3	Nationally gazetted protected area.	Formal boundary mapping should be undertaken.
1b. Legal status			
2a. Protected area regulations	2		Develop a Management Plan and identify relevant strategies and regulations.
2b. Protected area regulations			
3. Law enforcement	2	There is some capacity to enforce rules, but there is no funding and no law enforcement or management.	
4. Protected area objectives	2	The Sanctuary has some agreed objectives, but lacks effective on-ground management. The objectives do not relate to biodiversity management.	Annual funding is needed to hire personnel for management.
5. Protected area design	3	The size and boundaries are sufficient to enable the achievement of the objectives.	
6. Protected area boundaries	3	The boundary has been mapped.	Portion 166 needs to be checked to determine whether it was mapped into the PA and also portion 94.
7. Management plan	0	There is no Management Plan.	Develop a Management Plan in consultation with all the stakeholders (land owners, Ward Councillors, Local Level Government, District and Provincial Government).
7a. Planning process	0	There is no Management Plan and thus no input into this process.	The protected area should be managed as government property.
7b. Planning process	0		
7c. Planning process	0		
8. Regular work plan	1	There is a work plan, but there is no effective management and funding.	Funding should be available to support a manager.

Issue	Score (0,1,2,3, NA)	Comment	Next steps
9. Resource inventory	1	There is insufficient information about the protected area. Previous information was lost.	Need to undertake new studies to collect data for species management.
10. Protection systems	1	Protection systems have lost their effectiveness.	Develop effective protection systems for the Sanctuary.
11. Research and monitoring	1	There has been a small amount of survey work.	There needs to be contractual agreements with scientist to provide data from their research.
12. Resource management	1	No management and no data to develop a Management Plan and strategies.	
13a. Staff numbers	1	There are insufficient staff to undertake management activities. The Provincial Government employs two people to assist the Sanctuary.	We need fully funded employees to work at the Sanctuary.
13b. Other people working on the protected area	1	There are insufficient landowners working in the Sanctuary.	People are willing to provide their support, but some form of payment is needed. Perhaps two paid workers would be sufficient.
14. Training and skills	0		Training of staff and customary landowners is needed.
15. Current budget	0	K500, 000.00 was provided to the Baiyer Sanctuary for project activities. This was not for management of the Baiyer Sanctuary.	Funding is needed for ongoing management.
16. Security of budget	0	No annual budget.	
17. Management of budget	NA		
18. Equipment	1	There is limited equipment.	Secure essential equipment.
19. Maintenance of equipment	1	Maintenance is done on an ad hoc basis by Mark Doa and Wanpis Waiya.	When equipment is bought ensure effective maintenance of equipment.
20. Education and awareness	1	Very limited funding and resource to undertake appropriate awareness raising.	
21. Planning for land use or marine activities	2	There is respect for Baiyer Sanctuary.	
22. State and commercial neighbours	1	There is communication with state and commercial neighbours e.g. the Shogum Plant development.	
23. Indigenous people/ Customary landowners	2		Need better managers to support the current team in managing the Baiyer Sanctuary.
24a. Impact on communities	0	Little or no communication with government.	
24b. Impact on communities	0	For the last twenty years nothing has happened in the Sanctuary.	
24c. Impact on communities	1	The customary landowners support the Sanctuary.	
25. Economic benefit	1	Potential economic benefits are recognised e.g. through ecotourism.	Management Plans need to be developed.
26. Monitoring and evaluation	0		
27. Visitor facilities	0	All visitor facilities have been destroyed.	Currently the facilities and being revived.

Issue	Score (0,1,2,3, NA)	Comment	Next steps
28. Commercial tourism operators	1	Landowners want to form their own touring operators.	
29. Fees	0	Previously, fees were collected, but currently nothing is done.	Review the fees, create a fee account and utilise the fees for rehabilitation of the Sanctuary.
30. Condition of values	2	The condition of the values in general remains good.	Reassess the values, review the management actions, use the management plan to identify funding and implement action plans.
30a. Condition of values	0	There was no scientific assessment used to assess the values.	
30b. Condition of values	0	There are no specific management programs to address the threats.	
30c. Condition of values	0	There are no regular park management activities.	

## Part 5: Condition and trends of protected area values

**Table 7. Values, condition and trend**

Key value (from Table 2)	Condition Score (VG, G, F, P, DK)	Trend Score (I, S, D, DK)	Information source and justification for Assessment and HOW the condition can be IMPROVED
Forest	G	D	Because of the long delay in revitalizing the Sanctuary we need to: (1) fence out the pigs; (2) plant new trees; (3) drain waterlogged areas; and (4) attract funding and resource personnel to collect data and better manage the Sanctuary.
Animals	VG	S	Identify annual funding sources, employ a resource person, obtain relevant equipment, develop a Management Plan and review existing rules, create awareness among the customary landowners about the rules and regulations. Conduct breeding within the Sanctuary to sustain viable populations of animals.
Water systems	VG	S	Provide awareness within the community on how to protect the water quality, plant trees for water protection and provide water management rules.

**Table 8. Recommendations and ways forward**

1.	2.	3.
Management – provide effective staffing, equipment and facilities to manage the protected area.	Annual funding – obtain financial support to assist management of the Baiyer River Sanctuary from the Conservation and Environment Protection Authority and the provincial and district authorities.	Conduct data collection to assist with improved management strategies.

**Table 9. Strengths and challenges (facilitator/recorder synthesis)**

	Strengths	Challenges
1	Community ownership and support for the Sanctuary.	Establishing effective benefit sharing arrangements from the Sanctuary.
2	Political support for renewing the Sanctuary.	Securing continuous funding to support the long-term goals of the Sanctuary.
3	The habitat and animals remain in good condition.	Attracting and keeping good managers, who will undertake the on-ground management of the Sanctuary.
4	Strong people are starting to work again to revive the Sanctuary.	

**References**

Kinjap PS 2016. World famous Baiyer Zoo revived and rehabilitated, Papua New Guinea Today, 2 November 2016.