

Name of Protected Area: Hunstein Wildlife Management Area

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>	Gregory Peterson, SPREP/Protected Area Solutions, 283 Madill Road, Tandur, Q4570, Australia, gregpeterson53@hotmail.com, +61754835155
<i>Person 2: Name, Organisation, Address, Email, Phone</i>	Ovin Wafewa, UNDP, PO Box 1041 Port Moresby, PNG, ovin.wafewa@undp.org, 3212877
Today's Date	16/08/2016
Name (or names) of protected area	Hunstein Wildlife Management Area
Size of protected area (ha)	220,000
PNG Code or number	
World Database of Protected Areas site code (these codes can be found on www.unep-wcmc.org/wdpa/)	377712
What level or kind of protected area is it? (National Park, Wildlife Management Area, Sanctuary, Reserve, Locally Managed Marine Area etc)	Wildlife Management Area
IUCN Category	
International protected area? e.g. World Heritage or Ramsar?	
Country	Papua New Guinea
Province/s	East Sepik Province
District/s	Ambunti
Local level governments	Tunap Hunstein
Ward/s	2 Wards and could include more
Nearest big town	Wewak
Location of protected area (brief description)	The WMA is located south-west of Wewak and south of the Sepik River. It consists mainly of flat land with many rivers, some swamps and the steep sided Hunstein Range which rises to >1400m in the centre and which is densely forested. The east and western boundaries follow the position of two main rivers in this area. There is extensive lowland and wetland forests associated with the Sepik River floodplain and some montane forests, with hard wood and klinki and kauri pines.
Map references	1: 100 000 Topo sheets Wogamush, Ambunti, Chambri, Walawsi, Double, Kwenmas, 7389,7489,7589,7388,7488,7588
When was the protected area gazetted or formally established?	13/11/1997
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 Clan name(s)	Community/customary landowners; Wagu has nine clans, Igai has five clans and Gahom have seven clans.
Number of households living in the protected area	3 villages (Wagu has 65 households, Gahom and Igai are smaller and the number of households is unknown).
Population size within the protected area	Wagu has 355 people; Igai and Gahom are unknown.
Who manages the protected area? (e.g. please enter government, customary landowners [add clan names] management committee [how many and what gender])	Customary landowners with the help of the WMA Management Committee work together to manage the WMA (Tribe of Behenamom)
Total number of staff (this means anyone working on the protected area in paid jobs – whether NGOs, community, rangers or customary landowners	0
<i>Temporary paid workers</i>	0
<i>Permanent paid workers</i>	0
Annual budget (US\$) – excluding staff salary costs	0
Operational (recurrent) funds	0
Project or special funds	0
Reason for park establishment	To conserve the biodiversity and ecosystems of the area so that these are maintained and also provide an opportunity to carry out sustainable development activities for the community i.e. to protect the area from logging and save the forest for the villagers to use and also to enable people to benefit from carbon trading.
What are the main values for which the area is designated (Fill this out after data sheet 2)	Land and animals; water; trees; health and education; culture.
List the primary protected area management objectives (add lines if needed after the most important objectives): <i>Management objective 1</i>	Sustainable living.
<i>Management objective 2</i>	Manage resources.
<i>Management objective 3</i>	Prevent logging and mining companies from entering the area.
Number of people involved in answering the assessment questions	4
Name/organisation/contact details of people participating the assessment (<i>Please do not insert return/enter or dot points</i>)	<i>Mathew Kaku</i> , WMA Tourism, wagulake@gmail.com, 73786776; <i>Benny Wangi</i> , Hunstein Range WMA, 71400319; <i>Timothy Kenny</i> , Hunstein WMA, 71840427; <i>Moses Wamsari</i> , Hunstein WMA, 70235991.
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.	SPREP 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 large size (220,000ha), low number of people and isolation mean that there are many values in the area. Hunstein WMA is a large protected area in the Sepik wetlands. We want to protect fish, one of the most valued resources. They are good for eating. “For we Sepik people fish are our staple and we sell some for money and also sell shell fish”. Eaglewood, a species of tree is found in the protected area. Animals are protected and there are lots of them. They are good for food and as a source of income (e.g. pig, cassowary, black and white tree kangaroo). People are also very important – people are protected – our forefathers handed this area down to us and we protect it in our traditional ways. People look after the land and forest. It is a source of income and important for tourism. Tourists come to see the bird of paradise and we have a guest house for the tourists.

Table 2. Key values of the protected area

No.	Key values	Brief description	Note if endangered species or ecosystem (IUCN)
1	Land	The land has important animals e.g. cassowary, pigs, birds [birds of paradise], snakes, tree kangaroos [tenkile and Donkey tree] and pigs. It provides all that is needed by people to have a sustainable life.	
2	Water	Extensive river and lake systems and waterfalls. Water is the source of life, i.e. important for drinking water and washing, and as a means for transport. The rivers and swamps also support freshwater crocodiles and provide a refuge for birds and other fauna. There is small scale gold mining along the rivers.	
3	Trees	Tropical forest vegetation with hardwood and pines. Important commercial produces are eaglewood (<i>Gyrinops spp</i> or Gaharu) and massoy bark (used in food flavor and fragrance industries and sought after in Asian markets and globally. Other trees are used to build houses and canoes.	Eaglewood
4	Health and Education	When children are healthy and educated they will be able to do more to protect the conservation area.	
5	Culture	Maintain culture to keep peace within the communities and also preserve traditions and promote conservation	

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	1	Important to have a range of plants and animals. Important for many mammal species and birds (e.g. bird of paradise, cassowary), pythons and Kauri pine (<i>Agathus spp</i>). These are relatively untouched and in good condition, although there has been little or no recent research or surveys of these species. Communities depend on these resources for their subsistence livelihoods.
2. Presence of rare, threatened, or endangered species (plants and animals)	2	There is a relatively high number of rare and threatened species. It is important to maintain species for cultural and economic benefits, e.g. crocodile habitat and eaglewood. Many unnamed plant species are thought to exist in the WMA.
3. Ecosystems (e.g. wetlands, grasslands, coral reefs etc) that are rare because they have been cleared or destroyed in other areas	1	Large wetlands, and forest ecosystems. It is important to protect all different species.
4. Protecting clean, fresh water	1	For consumption.
5. Sustaining important species in big enough numbers that they are able to survive here	1	
6. Providing a source of employment for local communities now	2	
7. Providing resources for local subsistence (food, building materials, medicines etc.)	1	
8. Providing community development opportunities through sustainable resource use	1	
9. Religious or spiritual significance (e.g. tambu places)	1	There are several important spiritual places within the WMA.
10. Plant species of high social, cultural, or economic importance	1	Eaglewood and massoy bark and some vanilla.
11. Animal species of high social, cultural, or economic importance	1	Bird of paradise for traditional use and sale and possibly crocodile skins.
12. Attractive scenery	1	There are lakes and rivers, forest and iconic wildlife (e.g. bird of paradise and mammals).
13. Tourism now	1	
14. Potential value for tourism in the future	1	Important, but need more facilities and this needs to be promoted. The area has sufficient wildlife to attract tourists (e.g. bird of paradise and cassowaries) and its waterways.
15. Educational and/or scientific value	1	Research in 1990 discovered more than 100 species.
16. Maintaining culture and tradition on customary land and passing this on to future generations	1	

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	
1.1a Population increase in the protected area community	M	
1.2 Commercial and industrial areas	L	
1.3 Tourism and recreation infrastructure	L	
2.1 Customary land owner and community gardens and small crops	L	
2.1a Drug cultivation	L	
2.1b Commercial plantations	L	
2.2 Wood and pulp plantations	L	
2.3 Livestock farming and grazing	L	
2.4 Marine and freshwater aquaculture	L	
3.1 Oil and gas drilling	L	
3.2 Mining and quarrying	L	
3.3 Energy generation	L	
4.1 Roads and railroads (include road-killed animals)	0	
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)	M	There is some poaching from outside groups e.g. villagers from the main Sepik River.
5.2 Gathering terrestrial plants or plant products (non-timber)	L	Collecting eaglewood.
5.3a Logging and wood harvesting for local/customary use	L	
5.3b Logging and wood harvesting – commercial logging	L	
5.4a Fishing, killing and harvesting aquatic resources for local/customary use	M	There is some poaching from outside groups.
5.4b Fishing, killing and harvesting aquatic resources for commercial use	M	
6.1 Recreational activities and tourism	L	
6.2 War, civil unrest and military exercises	0	
6.3 Research, education and other work-related activities in protected areas	0	
6.4 Activities of protected area managers (e.g. construction or vehicle use)	0	

Threat type	Score (H,M,L,O)	Notes
6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors	L	
7.1 Fire and fire suppression (including arson)	L	
7.2 Dams, hydrological modification and water management/use	L	There is a water supply in Wagu and there are some problems with the rusting pipes.
7.3a Increased fragmentation within protected area	L	Very large park not subject to fragmentation.
7.3b Isolation from other natural habitat (e.g. deforestation)	O	
7.3c Other 'edge effects' on park values	M	Mining from Frieda mine can affect the water flowing into the lake.
7.3d Loss of keystone species (e.g. top predators, pollinators etc.)	M	Crocodile habitat is being destroyed.
8.1 Pest plants	L	Giant mimosa (no research undertaken)
8.1a Pest animals	M	Pacu (Pirhana type fish) with impacts on the grass in the lake, cane toads (no research into these species)
8.1b Diseases such as fungus or viruses that make native plants or animals sick	O	
8.2 Introduced genetic material (e.g. genetically modified organisms)	O	
9.1 Household sewage and urban waste water	L	
9.1a Sewage and waste water from protected area facilities	O	
9.2 Industrial, mining and military effluents	H	From Frieda Mine (copper and gold) which is located along the Sepik River. Impacts from tailings dams, road construction, runoff, loss of forest, damage to sago and other crops.
9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)	M	Activities from logging company upstream in the Sepik River.
9.4 Garbage and solid waste	M	Garbage and solid waste being thrown into the river.
9.5 Air-borne pollutants	M	From fire.
9.6 Excess energy (e.g. heat pollution, lights etc.)	O	
10.1 Volcanoes	O	
10.2 Earthquakes/Tsunamis	M	Felt in the WMA and can cause landslides.
10.3 Avalanches/Landslides	M	Caused by earthquakes.
10.4 Erosion and siltation/deposition (e.g. shoreline or riverbed changes)	M	Some change, with deposition of sediment into rivers.
11.1 Habitat shifting and alteration	M	Experiencing changes in climate affecting habitats.
11.2 Droughts	M	Happened early in 2016
11.3 Temperature extremes	H	There is belief that temperature extremes are increasing
11.4 Storms and flooding	M	Happening from time to time
11.5 Coral bleaching	O	
11.6 Intrusion by saltwater into gardens etc.	O	
11.7 Sea level rise	L	
Other (please explain)		
12.1 Loss of cultural links, traditional knowledge and/or management practices	H	Children are not being taught traditional dances, songs and stories by the elders. Decreasing interest shown by young people in maintaining traditional ways.
12.2 Natural deterioration of important cultural site values	L	
12.3 Destruction of cultural heritage buildings, gardens, sites etc.	M	Cultural change, young ones don't have the same values.
Other (please explain)		Social problems caused by youths by alcohol and drug abuse.

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	Effluents (mining)	9.2	From Freida mine which is located along the Sepik River. The company built a road instead of using the river and this has caused loss of vegetation, increased runoff and erosion and sediment input into rivers. CEPA should research and assess the environmental impacts before mining takes place.
2	Temperature extremes	11.3	Global effort is required on reducing the impact of climate change, including changes in temperatures.
3	Loss of cultural links, traditional knowledge and/or management practices	12.1	Cultural studies are needed as part of the school curriculum.

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	Legally gazetted WMA.	
1b. Legal status			
2a. Protected area regulations	3		
2b. Protected area regulations			
3. Law enforcement	0		People need capacity training and awareness to understand their roles.
4. Protected area objectives	1	Not enough resources and interest to manage the WMA. People have not seen immediate benefits and have lost interest.	Engage in awareness raising and increase collaboration with all levels of government and NGOs.
5. Protected area design	3	Villages are inside the boundary. Design allows ample hunting and gathering opportunities in the WMA. It contains important forest and grassland ecosystems.	
6. Protected area boundaries	2		Community to increase awareness of the boundaries. Training and funding for WMA to manage the WMA.
7. Management plan	2	Lack of funds hamper implementation.	To mobilise more funds to encourage people to take action.
7a. Planning process	1		
7b. Planning process	1		
7c. Planning process	1		
8. Regular work plan	0	There are no funds to monitor and manage the WMA.	To get some funds to pay people to do work.
9. Resource inventory	1		
10. Protection systems	1		Need to mobilise funds to pay people to monitor the area.

Issue	Score (0,1,2,3, NA)	Comment	Next steps
11. Research and monitoring	0		Need finance to conduct activity for research and monitoring.
12. Resource management	0		Need finance to do the work.
13a. Staff numbers	0		
13b. Other people working on the protected area	0		Need finance.
14. Training and skills	0		Need finance.
15. Current budget	0		Need to mobilize funds.
16. Security of budget	0		
17. Management of budget	N/A		
18. Equipment	0		Need finance to get equipment.
19. Maintenance of equipment	N/A		
20. Education and awareness	1		Awareness material for school children to use.
21. Planning for land use or marine activities	1		
22. State and commercial neighbours	0		
23. Indigenous people/ Customary landowners	2		
24a. Impact on communities	0		
24b. Impact on communities	1		
24c. Impact on communities	1	Generally most people support the WMA.	
25. Economic benefit	2		Create products and establish markets and have a business plan.
26. Monitoring and evaluation	0		
27. Visitor facilities	0		
28. Commercial tourism operators	0		
29. Fees	N/A	No fees	
30. Condition of values	1		
30a. Condition of values	0		
30b. Condition of values	0		
30c. Condition of values	0		

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
Land and animals	G	S	Because of the size of the WMA it is not easy to monitor the land and use of land by surrounding villagers.
Water	G	S	Water supply provided by WWF needs maintenance.
Trees	F	D	There are some concerns related to Garu and Massoy bark, which have commercial values and have been harvested for income. All other trees are fine. We need government to provide some incentives through carbon trading. We have a good plan for WMA management. We will continue to cultivate Massoy bark and eaglewood. Having economic benefits from being a protected area is important to sustain conservation.
Health and education	F	S	To get some government funding for teachers' houses, classrooms and furniture and also to build a health post and employ health officers.
Culture	F	S	Education for young people is needed. This could include the spirit house to teach young children. This is a responsibility for chiefs. Encourage tourist activities which has an indirect impact of improving culture as it gives people the opportunity to learn their culture and to showcase it to the tourists.

Table 8. Recommendations and ways forward

1.	2.	3.
Encourage tourist activities which have an indirect impact on improve culture as it gives people the opportunity to learn their culture to showcase it to the tourists.	Follow up on carbon trading/carbon offsets	Seek funding for the WMA.

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

	Strengths	Challenges
1	A large protected area with a known and surveyed boundary.	The big area presents a challenge in monitoring park activities.
2	There is an existing Management Committee.	Potential problem from mine processing effluent flowing down the Sepik River and impacting the protected area.
3	Biodiversity is providing for the sustainable livelihoods of the landowners.	The threat to traditional cultural practices from western influences.
4		An almost total absence of financial support from government and non-government organisations.
5		The committee's work is significantly impeded by lack of funds to undertake maintenance and monitoring.