

## Name of Protected Area: Oya Mada Wa'a 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<br><i>Person 1: Name, Organisation, Address, Email, Phone</i>    | Greg Peterson, SPREP/Protected Area Solutions, 283 Madill Road, Tandur, Q4570, Australia, a.peterson@uq.edu.au, 0414300955  |
| <i>Person 2: Name, Organisation, Address, Email, Phone</i>  | Ann Peterson, SPREP/Protected Area Solutions, 283 Madill Road, Tandur, Q4570, Australia, a.peterson@uq.edu.au, 0414300955   |
| Today's Date  | 18/6/2016   |
| Name (or names) of protected area   | Oya Mada Wa'a Wildlife Management Area (Oi Mada Wara)   |
| Size of protected area (ha)   | 22,840  |
| PNG Code or number  |   |
| 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> ) | 15787   |
| 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  | Milne Bay   |
| District/s  | Kiriwina-Buddina  |
| Local level governments   | Goodenough  |
| Ward/s  |   |
| Nearest big town  | Bolubolu (administrative centre)  |
| Location of protected area (brief description)  | Located on Goodenough Island in the D'Entrecasteau Islands group, the WMA is situated on Mt Vineueo (2,536m) a large mountain peak, and it extends from just over 750m to the summit. This is one of the most precipitous islands in the world. It consists of closed forest and upper montane grassland with tree ferns. The mountain peak is rocky with native grass, but has no shrubs (these have disappeared). |
| Map references  |   |
| When was the protected area gazetted or formally established?   | 6/08/1981   |
| Reference for gazettal or Memorandum of Understanding (MoU)   |   |
| Who owns the protected area? please enter Government Private Community/ customary   | Customary landowners – several clan groups, who live mainly on the lowlands of Goodenough Island. Only a couple of villages are found at altitude above 750m.   |

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|--|--|
| landowners, private, Other (name) and include <b>Clan name(s)</b>  |  |
| Number of households living in the protected area  | There are two villages in the WMA, with a maximum of 50 houses. One village is on the north-east side and Wakanai is on the south-west side. Most people live below 750m to enable them to have gardens (i.e. outside the WMA), although other people still enter and use the resources of the WMA.  |
| Population size within the protected area  | Approx. 300 people   |
| Who manages the protected area?(e.g. please enter government, customary landowners [ <b>add clan names</b> ] management committee [ <b>how many and what gender</b> ]) | Customary landowners - each clan manages their clan land to produce sustainable livelihoods and the land is not managed as a protected area. There is no Management Committee, or elected body, and no chair to formally manage the protected area.  |
| Total number of staff (this means anyone working on the protected area in <b>paid jobs</b> – 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 protect the endemic Black Dorcopsis ( <i>Dorcopsis atrata</i> ) known as Wagi Oia. It is endemic to the island, is an IUCN redlisted species and included on the Alliance for Zero Extinction (AZE). It also has customary use for feasting. There are also endemic birds, butterflies and frogs in the WMA. It is an internationally recognised AZE site.  |
| What are the main values for which the area is designated (Fill this out after data sheet 2)   | Diverse biodiversity, with several endemic species. Hunting (e.g. wallaby and flying fox) is important to pass on culture and skills. Strong cultural connection e.g. there are caves and sacred/cultural sites, with legends and stories about the mountain peaks – the mother that provides for us. Only a few people who have knowledge can climb the mountain – there is a clan custodianship of the rights to go into the mountain. The wallaby has cultural value for feasting and trading. It maintains the skills set of hunting within the community. |
| List the primary protected area management objectives (add lines if needed after the most important objectives):<br><i>Management objective 1</i>                      | Maintaining sustainable livelihoods.   |
| <i>Management objective 2</i>  |  |
| <i>Management objective 3</i>  |  |
| Number of people involved in answering the assessment questions  | 1  |
| Name/organisation/contact details of people participating the assessment ( <i>Please do not insert return/enter or dot points</i> )                                    | <i>David Mitchell</i> , Conservation International/Eco Custodian Advocates, PO Box 943, Alotau, Milne Bay Province, dmitchell.eca@gmail.com, 72003300  |
| 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 |  |
| 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. |

## Part 2: What makes this protected area special and important?

It provides a critical landscape function and has a relatively high number of endemic, endangered and vulnerable species. The small black dorcopsis (*Dorcopsis atrata*), the only wallaby known to be endemic to a Pacific Island is endangered. The agile wallaby (*Macropus agilis*) was abundant, but has not been seen in recent times. Rainfall varies between 1500-2500mm per year, although droughts occur. Streams with waterfalls drain from the central mountain. Rainforest exists at the higher elevations, with secondary forest and grassland on the lower slopes and coastal plain. Soils are acidic. The WMA is designed to capture the habitat of several IUCN redlisted species, many of which are found in areas >750m. This however, has resulted in an isolated protected area. Customary landowners are largely unaware of the existence of the protected areas and its boundaries, which are not demarcated on the ground or signed. The WMA has important cultural and spiritual values. There are important links between the people and the mountain and the people and certain animals, such as the black dorcopsis. There is a view that the missionary churches have tried to sever this spiritual link between the people and the mountain and that there is a loss of culture and traditional practices (e.g. hunting and bush craft skills and language).

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

| No. | Key values  | Brief description  | Note if endangered species or ecosystem (IUCN)  |
|-----|---|--|---|
| 1   | Biodiversity, including high levels of endemism, AZE site | Important for several IUCN redlisted species, many of which are endemic, including <i>Dorcopsis wallaby</i> ( <i>Dorcopsis atrata</i> ), frogs, butterflies and land snails. The wallaby is critically endangered. It continues to be hunted using dogs and numbers are declining. The WMA is one of the most mountainous islands of its size in the world – above 700m. It is important for rare and threatened species, high levels of endemism, its landscape function, and possible function as a refugia in the face of climate change. | <i>Dorcopsis wallaby</i> ( <i>Dorcopsis atrata</i> ); loud big-eyed tree frog ( <i>Nyctimystes avocalis</i> ); Milne Bay Mehely frog <i>Copiula minor</i> ; <i>Myristica polyantha</i> Boelen’s python ( <i>Morelia boeleni</i> ) & <i>Tropidonophis stasticus</i> ; Goodenough cross frog ( <i>Oreophryne insulana</i> ) also found on the mainland; <i>Rhododendron goodenoughii</i> (800-1,500m); new <i>Lentipes</i> species, <i>Homalanthus goodenoviensis</i> |
| 2   | Cultural/spiritual  | The mountains have cultural significance (e.g. important associations between the people and the wallaby); and sacred sites in the mountain villages.  |   |
| 3   | Watershed   | The WMA is important for maintaining fresh water in the main rivers and streams on the island. Most rivers flow after rain and the WMA is a central water source for all coastal springs, rivers and streams. People on the lowlands are on alluvial soils and the mountain has value for its provisioning services of soil (washed from the mountain) to lowland communities. The mountain has its own microclimate because of its size.  |   |
| 4   | Hunting   | Retaining the skills related to hunting are important for the community, i.e. to retain and pass on important bush-craft skills.   |   |
| 5   | Endemics  | Frogs, plants etc are OK, although the wallaby is declining.   |   |

**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                 | Significant importance for IUCN red-listed species and endemic species.  |
| 2. Presence of rare, threatened, or endangered species (plants and animals)   | 2                 | IUCN red-listed species and endemic species.   |
| 3. Ecosystems (e.g. wetlands, grasslands, coral reefs etc) that are rare because they have been cleared or destroyed in other areas | 1                 |  |
| 4. Protecting clean, fresh water  | 2                 | Valuable water catchment function in providing clean fresh water to the WMA communities.   |
| 5. Sustaining important species in big enough numbers that they are able to survive here  | 2                 | The WMA has high level significance because many species are endemic.  |
| 6. Providing a source of employment for local communities now   | 0                 | The WMA is not providing any employment currently; only a few guides (1 every 2 years) and there is low payment for guides. This is potentially very important in the future of the WMA.   |
| 7. Providing resources for local subsistence (food, building materials, medicines etc.)   | 1                 | People collect resources mainly at lower altitudes (i.e. outside the WMA), but there is some collection of canes in the WMA and these are brought down to the coast. As population increases this will become more important.  |
| 8. Providing community development opportunities through sustainable resource use   | DK                | The WMA provides a niche market. There are only backpackers at the moment and some scientists. If the people don't sustain the wallaby population they will risk losing their environmental capital. Cultural management of the wallaby is a community development opportunity, but the wallaby is not harvested sustainably and as a consequence the community is eroding their environmental capital.  |
| 9. Religious or spiritual significance (e.g. tambu places)  | 2                 | Important role. The mountain has special spirits and is a foundation in the beliefs of the community.  |
| 10. Plant species of high social, cultural, or economic importance  | 2                 |  |
| 11. Animal species of high social, cultural, or economic importance   | 2                 | Wallabies, frogs, butterflies which provide an important sense of identity.  |
| 12. Attractive scenery  | 2                 | Beautiful mountain scenery – very high wilderness values.  |
| 13. Tourism now   | 0                 |  |
| 14. Potential value for tourism in the future   | 1                 | Magnificent scenery and mountain walks.  |
| 15. Educational and/or scientific value   | 2                 | The mountain top is an unknown environment, it is very important – “a pandora’s box” waiting to be explored and researched.  |
| 16. Maintaining culture and tradition on customary land and passing this on to future generations                                   | 2                 | In general, the young people don't know about the WMA. They have not gained a conservation ethic and older people don't talk about the values of the WMA and what is important and how it should be protected. This traditional knowledge has not been transferred to the younger generations. Rarely do the older people talk about the old days. There is not a voluntary passing on of traditional knowledge. Schooling and education has taken the children away from their customs and tradition. |

### 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  | M               | Settlements are expanding due to population increase.  |
| 1.1a Population increase in the protected area community  | L               | Population is increasing and this will impact on the WMA as more resources may be taken from the WMA.  |
| 1.2 Commercial and industrial areas   | 0               |  |
| 1.3 Tourism and recreation infrastructure   | 0               | The main tourists are backpackers and occasional scientists. There are no facilities provided for these groups and their impact is negligible.   |
| 2.1 Customary land owner and community gardens and small crops  | 0               | All on the lower slopes and this does not impact on the WMA.   |
| 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  | L               | Some gas exploration in the past and there may be exploration licences in the future   |
| 3.2 Mining and quarrying  | M               | There is an exploration license and this can cause damage.   |
| 3.3 Energy generation   | 0               |  |
| 4.1 Roads and railroads (include road-killed animals)   | 0               |  |
| 4.2 Utility and service lines (e.g. electricity cables, telephone lines)  | L               | There is a communication tower on the top and this could result in some damage,  |
| 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               | Wallaby are hunted, primarily for ceremonial purposes. There is impact also as a result of hunting by outsiders in the area. Dorcopsis wallabies are moving upslope and there has been a decrease in the breeding population.  |
| 5.2 Gathering terrestrial plants or plant products (non-timber)   | L               | Mainly canes for use in housing construction.  |
| 5.3a Logging and wood harvesting for local/customary use  | L               |  |
| 5.3b Logging and wood harvesting – commercial logging   | 0               | Against the law to log on steep slopes.  |
| 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   | L               | This is a sacred mountain to the customary landowners and they have beliefs in the mountain spirits. However, the mountain is visited by scientists and priests and members of the charismatic churches and their purpose is to “take away the power of the mountain”, or to refute the villagers’ beliefs in supernatural spirits that live on the mountain. This is eroding the social values of the past and impacting on the current traditions and beliefs related to the mountain. |
| 6.2 War, civil unrest and military exercises  | 0               |  |

| Threat type  | Score<br>(H,M,L,0) | Notes   |
|--|--------------------|---|
| 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                  |   |
| 6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors | L                  | Some loss of contemporary history e.g. tourists make inscriptions on the stones on the mountain.  |
| 7.1 Fire and fire suppression (including arson)  | H                  | Fires have occurred on the ridges and sides of the mountains. These are often started by the customary landowners e.g. it is easier to walk across their landscape when there is no high grass. |
| 7.2 Dams, hydrological modification and water management/use                                     | L                  | Some potential  |
| 7.3a Increased fragmentation within protected area   | L                  |   |
| 7.3b Isolation from other natural habitat (e.g. deforestation)                                   | 0                  |   |
| 7.3c Other 'edge effects' on park values   | 0                  | There are no gardens infringing on the boundary of the WMA.   |
| 7.3d Loss of keystone species (e.g. top predators, pollinators etc.)                             | 0                  |   |
| 8.1 Pest plants  | L                  |   |
| 8.1a Pest animals  | L                  | No cats, although there are some wild pigs and hunting dogs.  |
| 8.1b Diseases such as fungus or viruses that make native plants or animals sick                  | 0                  |   |
| 8.2 Introduced genetic material (e.g. genetically modified organisms)                            | 0                  |   |
| 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                  |   |
| 9.4 Garbage and solid waste  | L                  | People and tourists leave rubbish when they go to the mountain.   |
| 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  | L                  | Can cause landslides.   |
| 10.3 Avalanches/Landslides   | L                  | Can come from high rainfall events and greater intensity storms.  |
| 10.4 Erosion and siltation/ deposition (e.g. shoreline or riverbed changes)                      | M                  | Natural process on the mountain; it is a dynamic environment and soil is moved from the mountain to the coastal lowlands.   |
| 11.1 Habitat shifting and alteration   | DK                 | Hard to know at this stage. An "unknown known" at the moment.   |
| 11.2 Droughts  | M                  | Potentially more frequent and severe. They come about every 7 years and cause big local changes especially because of fires, which impact on the mountain vegetation and related habitats.      |
| 11.3 Temperature extremes  | L                  | Some species will be affected by temperature extremes.  |
| 11.4 Storms and flooding   | M                  | There was a cyclone that caused massive damage. Cyclones are increasing in frequency, intensity and the damage caused. Water is a big erosive power in this mountainous environment.            |
| 11.5 Coral bleaching   | 0                  |   |
| 11.6 Intrusion by saltwater into gardens etc.  | 0                  |   |

| Threat type  | Score<br>(H,M,L,O) | Notes  |
|--|--------------------|--|
| 11.7 Sea level rise  | 0                  |  |
| Other (please explain)   | M                  | There is a possible underestimating of the impact of La Nina on flowering and fruiting for the species that are dependent on these plants. Long rainfall events are having an impact. Seasonality is changing and there is a sense of catastrophe among the community i.e. all the usual signs are not working. We are “on the cusp of major changes as a result of climate change”. |
| 12.1 Loss of cultural links, traditional knowledge and/or management practices | M                  | This is occurring as a result of formal education (children going to school and spending less time learning their traditions and skills) and Christianisation. There is a loss of social capital.  |
| 12.2 Natural deterioration of important cultural site values                   | 0                  | Some rock art, but in generation this is OK.   |
| 12.3 Destruction of cultural heritage buildings, gardens, sites etc.           | 0                  |  |
| Other (please explain)   | H                  | Lack of understanding of the earth’s finite limits; the tragedy of the commons   |

**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          | No understanding of the earth’s finite limits  | Other   | In relation to the wallaby and other species and resources, there is a lack of understating of the finiteness of these resources. For example, when villagers who were on a hunting expedition to catch some wallaby weren’t finding any, they said they would be there (i.e. around the corner, over the hill etc). They have a belief in abundance i.e. they will be there somewhere, we just need to keep looking. However, the community needs to know that resources are finite and we must be more sustainable. This requires substantial awareness raising in relation to the earth’s finite resources, which must be managed sustainably. Not many communities know or consider the issue of stress on resources or understand the concept of limits or carrying capacities in relation to the island they live on. To date the land in most instances has been enough to satisfy a sustainable rotation of subsistence agriculture and hunting pressure. However, now with increasing populations, the resources are not so abundant and capable of supplying the needs of the community. In the past there have been processes in place to protect environmental resources (e.g. where to garden and when; bans on hunting some animals; seasonal bans on animals; not eating totem animal etc– based on traditional law). Now some people just say I will put my garden where I like. There is no permeating environmental ethic in the society, but rather a utilitarian use by the society. For example, the bird of paradise is killed for its feathers, but the people don’t know much about the species (reproductive rates etc). Often for westerners, there is a closeness to creation when entering a forest, but for villagers it is a dark and difficult environment. There are few people that love it in the forest and in the mist; women don’t go to high altitudes on the mountain and children more rarely. They like to create clearings in the forest. There are some fears related to spirits, owls, witchcraft, which are associated with the depths of the forest. There is no custodian ethic. There may be disputes over ownership rather than fighting for custodianship for their children. |
| 2          | Tragedy of commons driven by population growth | Other   | Tragedy of the commons drives exploitation of resources to their final limits, “I’ll get it before the next guy gets it”.   |
| 3..        | Climate change                                 | 11.2,11.3,11.4                                | “This is the elephant in the room”. There is experience that would suggest that climate change is playing a role, but there is no evidence.   |



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

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

| Issue                          | Score<br>(0,1,2,3 NA) | Comment  | Next steps  |
|--------------------------------|-----------------------|--|---|
| 1a. Legal status               | 3                     | Legally gazetted.  |   |
| 1b. Legal status               |                       |  |   |
| 2a. Protected area regulations | 2                     | There are some rules relating to people/climbers entering the protected area. They are required to talk to the customary landowners. There are many gate keepers (e.g. at various levels of government and the customary landowners) to get to the top of the mountain.  | Greater clarity of the rules for entry are required and better integration of the process among the various gatekeepers.  |
| 2b. Protected area regulations |                       |  |   |
| 3. Law enforcement             | 1                     | Ward members and village ward recorders are government gatekeepers concerning entry to the mountain and ask visitors to pay fees, while the customary landowners think they are the gatekeepers and the fees should be going through them, especially for scientific investigation. The people do not have a clear idea of their rights, roles and responsibilities. There are no financial resources for law enforcement. | All levels of government must work together for gatekeeper approvals. The Ward development committee needs to make a plan for their area; then notify the Local Government assembly, which needs to recognise the plan requirements. If researchers/climbers want to come into the WMA they need to know there is a gate fee and that they need to pay for customary guidance. There is a correct process and the customary landowners want some return for their resources and this needs to be more informed and factored in by scientists in their programs before they reach the WMA. |
| 4. Protected area objectives   | 0                     |  |   |
| 5. Protected area design       | 3                     | It is the best design in terms of size and boundaries to protect the species important to the mountain. The siting was based on the need to delineate habitat for IUCN redlisted species, which were found mainly in areas >750m. The areas below 750m provide a biodiversity buffering role. The design means however, that the WMA is insular and not connected to any other land mass.                                  |   |
| 6. Protected area boundaries   | 0                     | The protected area boundary is mapped, but not known by people on the ground. People are generally unaware of the existence of the protected area and its boundaries.  |   |

| Issue                       | Score<br>(0,1,2,3 NA) | Comment  | Next steps  |
|-----------------------------|-----------------------|--|---|
| 7. Management plan          | 2                     | There is no formal management plan (the rules were not gazetted), but each clan has undertaken planning in relation to its area and this is implemented. It is derived by the customary landowners (in this patrilineal society), who have a say in their plans. It is not a chieftainship society, so there is some discourse about planning and management. The plans are partially implemented as there are always dissenters (e.g. those who don't listen to the elders). A Management Committee was established when the WMA was first gazetted, but it is not functioning. The knowledge that existed has now been lost. | Need a Management Plan with clearly identified rules and enforcement strategies. Need to re-establish the Management Committee to progress this planning. |
| 7a. Planning process        | 1                     |  |   |
| 7b. Planning process        | 0                     |  |   |
| 7c. Planning process        | 0                     |  |   |
| 8. Regular work plan        | 0                     | There is no formal work plan, but the landowners are organised to fulfil necessary customary activities in the protected area.   |   |
| 9. Resource inventory       | 2                     | People have intimate knowledge of their environment e.g. where individual trees are located, the caves etc to be able to manage it. However, the people might not know specific information on breeding habits of some species or what is a sustainable take in order to manage effectively. There is no formal inventory of resources.  |   |
| 10. Protection systems      | 2                     | Customary management of resources, with formal traditional information. However, some of these elements of control within the community are breaking down, e.g. fear of witchcraft and retribution (i.e. where previously there may have been controls on cutting trees, today people are less concerned about retribution/ punishment if they break traditional rules). These changes are producing negative impacts on the environment.  |   |
| 11. Research and monitoring | 2                     | There is research and broad monitoring of many species e.g. butterfly, birds, frogs, trees and the information is directed towards management in some regards. There is considerable survey work, both scientific and traditional (know fruiting times etc)  |   |
| 12. Resource management     | 1                     | There is a pervasive view that there is plenty of resources and this is resulting in the 'tragedy of the commons'.   |   |

| Issue   | Score<br>(0,1,2,3 NA) | Comment  | Next steps   |
|---|-----------------------|--|--|
| 13a. Staff numbers                              | 0                     |  |  |
| 13b. Other people working on the protected area | 2                     |  |  |
| 14. Training and skills                         | 1                     | Skills are OK from a customary point of view, but additional skills are needed.  | Need better understanding of science and how to manage people who come to exploit the area. Need awareness training in relation to enforcement and monitoring and how to manage visitors/scientists  |
| 15. Current budget                              | 0                     |  |  |
| 16. Security of budget                          | 0                     |  |  |
| 17. Management of budget                        | NA                    |  |  |
| 18. Equipment                                   | 1                     | No torches, camera traps. Some knives, tents etc.  |  |
| 19. Maintenance of equipment                    | 0                     |  |  |
| 20. Education and awareness                     | 1                     | This is spasmodic and directed at the community, and the hunters. It is limited (i.e. occurs occasionally) and is not delivered uniformly, and hence there are gaps in the content and gaps in who has undertaken the education/awareness training e.g. often no women or children. There are no educational institutions to assist with raising awareness and there is no signage. The founders of the WMA have died and there is little memory of the original gazettal. | Educational tools are needed e.g. to manage the wallaby it would be useful to create a cartoon book about the wallaby and what knowledge of it exists, how to manage it etc. It could be a self-guided exercise book with leading questions that ask questions of women, children and people who hunt. People need to visualise. The material should be distributed through schools and be in sufficient quantities to enable it to be taken home. Perhaps a video could be developed with 'a call to action' focus. Encourage people to seek help if they have limited knowledge. This could be backed up by scientific research e.g. camera traps to build upon the community's knowledge. We need to blend traditional knowledge and science. |
| 21. Planning for land use or marine activities  | 0                     | Fire is eating away at the fringes of the WMA and causing some changes.  |  |
| 22. State and commercial neighbours             | 1                     | There is not effective cooperation between the customary landowners and the Ward councillor. There is some friction between customary landowners and neighbouring officials, especially at the Local level government.   |  |

| Issue  | Score<br>(0,1,2,3 NA) | Comment  | Next steps   |
|--|-----------------------|--|--|
| 23. Indigenous people/<br>Customary landowners | 2                     | The WMA is not formally recognised by the Ward Development Committee and Local Level Government.   | A management plan needs to be developed by the Clan and include rules and regulations; the WMA needs to be formally recognised through the Ward Development Committees and their plans and each ward should undertake planning for the environment. This then needs to be in the Local Level Government plan and then into the Goodenough Plan. With this framework, outsiders who break the rules can be sent to the village court. At the moment, there is poaching (often outsiders are going behind our backs and they have no fear of retribution anymore). |
| 24a. Impact on communities                     | 0                     | There are elements of communication and trust, but outsiders often break the rules.  |  |
| 24b. Impact on communities                     | 0                     | Little development and not linked to conservation – people are left to their own devices.  |  |
| 24c. Impact on communities                     | 0                     |  |  |
| 25. Economic benefit                           | 2                     | There is some flow of benefits from people wanting to climb the mountain (e.g. students, researchers), but this has delivered minimal trips.   |  |
| 26. Monitoring and evaluation                  | 1                     | When people go hunting, they do observe their environment, but this information is not going into a plan, or being used to help with more sustainable planning.  |  |
| 27. Visitor facilities                         | 0                     | No signs, guest houses, shelters.  |  |
| 28. Commercial tourism operators               | 0                     | No commercial tours, not even for birds.   |  |
| 29. Fees                                       | 2                     | Money may be given for guides and gatekeepers. This structure has made the people think there is value in the protected area.  |  |
| 30. Condition of values                        | 2                     | The environment and overall ecology have not been significantly impacted. Some of biodiversity is partially degraded, e.g. wallaby, but there is a lot of endemism and for these species, there is only partial degradation. | With a Management Plan in place the wallaby would be able to recover.  |
| 30a. Condition of values                       | 1                     |  |  |
| 30b. Condition of values                       | 0                     | There is no management program to address threats.   |  |
| 30c. Condition of values                       | 0                     |  |  |

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

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

| Key value<br>(from Table 2)               | Condition<br>Score<br>(VG, G, F, P,<br>DK) | Trend<br>Score<br>(I, S, D,<br>DK) | Information source and justification for Assessment and HOW<br>the condition can be IMPROVED  |
|---|--|------------------------------------|---|
| Biodiversity – high<br>endemism, AZE site | VG   | D                                  | The biodiversity is starting to deteriorate, e.g. the wallaby is being overhunted; fires are uncontrolled and there are elements of change in the environment. Firing is regular enough to cause a succession. In 1992 there were bushes on the mountain top, but now there are none and this is perhaps due to fires, which are too frequent for the shrubs to regenerate. Fire is eating away at the edge of the forest. There are a lot of native rats (not invasive). There is more frequent droughts and climate change. The community has a lack of understanding of the finite nature of the world's resources and the resources in their community. This requires awareness raising and understanding as well as deterrence, e.g. if you set a fire for no good reason, there will be a punishment/penalty. A culture of irresponsibility is developing that might not have been there before. It is the same for the wallabies, which are not being managed well. There is a need for better knowledge and deterrence. |
| Cultural                                  | VG   | S                                  | The community identifies with the mountain, the place – it is a big feature and people identify with it.  |
| Spiritual                                 | VG   | D                                  | Being eroded by ministers and charismatic churches which are eliminating the spiritual elements of the mountain. The spiritual values are under challenge. While this may be all right while the older generation is still alive, social change is a big threat and it is so fast in its impact.  |
| Watershed                                 | VG   | S                                  | Important for water supply.   |
| Hunting                                   | F  | D                                  | Status and capability is declining.   |
| Endemics                                  | VG   | S                                  | Frogs, plants etc are OK, although the wallaby is declining.  |

**Table 8. Recommendations and ways forward**

| 1.   | 2.                          | 3. |
|--|-----------------------------|----|
| Establish a program which is funded consistently for 10 years, to support identified local conservation champions within the communities where the WMA is located. This would enable the champions to educate and advocate ideas in natural resource management and gain ideas from the customary managers. It would be important to identify elements of the WMA that are of cultural significance, or ecosystem value that maybe the people haven't appreciated before (e.g. provisioning services of soil, water etc). People need to know the real value of the WMA so that when an alternative is on offer they can make effective decisions. The end point is a sustainable environment in the WMA which maintains its social and environmental integrity. | Mainstreaming conservation. |    |

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

|   | Strengths   | Challenges  |
|---|---|---|
| 1 | High levels of endemism and biodiversity value and scientific value | Over-hunting and the decline in the wallaby population.                     |
| 2 | Traditional practices are used to manage the WMA                    | Lack of a management plan that is recognized by the Ward Committee and LLG. |
| 3 |   | Population growth that is putting pressure on a range of resources.         |

**References**

Moi, WS (1978). A report on the Monitoring Studies on the status of Agile Wallaby (*Macropus agilis*) on the eastern Part of the Goodenough Island Milne Bay Province, Dept of Lands & Environment.

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