

Name of Protected Area: Nanuk Island Reserve

Part 1: Basic information about the protected area

Table 1. Protected area information

Name, organisation and contact details for person(s) conducting the assessment Person 1: Name, Organisation, Address, Email, Phone	Ann Peterson, SPREP/Protected Area Solutions, 283 Madill Road, Tandur, Q4570, Australia, a.peterson@uq.edu.au, 0414300955
Person 2: Name, Organisation, Address, Email, Phone	Warren Jano, SPREP, wjano2009@gmail.com, 73780347
Today's Date	4/06/2016
Name (or names) of protected area	Nanuk Island Reserve
Size of protected area (ha)	12
PNG Code or number	111
World Database of Protected Areas site code (these codes can be found on www.unep-wcmc.org/wdpa/)	
What level or kind of protected area is it? (National Park, Wildlife Management Area, Sanctuary, Reserve, Locally Managed Marine Area etc)	Reserve
IUCN Category	
International protected area? e.g. World Heritage or Ramsar?	
Country	Papua New Guinea
Province/s	East New Britain
District/s	Kokopo
Local level governments	Duke of York
Ward/s	Mioko, Pal
Nearest big town	Kokopo
Location of protected area (brief description)	One small island and the western half of the adjacent larger island (Palakur) make up Nanuk Island Reserve in the St George Channel. The reserve is a short boat ride from Kokopo. The island has a Pisonia forest and fringing shrub vegetation and adjacent coral reef. It is close to Mt Tavurvur, an active volcano.
Map references	152 4'E 4 5'S
When was the protected area gazetted or formally established?	6/12/1973
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)	Government
Number of households living in the protected area	0
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])	Customary landowners, Clan - Mar Mar.
Total number of staff (this means anyone working on the protected area in paid jobs)	0

–whether NGOs, community, rangers or customary landowners	
<i>Temporary paid workers</i>	0
<i>Permanent paid workers</i>	0 (four years ago there were three people, currently none). Kelly Locksy is the caretaker who looks after the island, but is not paid.
Annual budget (US\$) – excluding staff salary costs	0
Operational (recurrent) funds	0
Project or special funds	0
Reason for park establishment	To add to the size of other marine reserves in the area.
What are the main values for which the area is designated (Fill this out after data sheet 2)	Reef and island ecosystems, tourism and sustainable resource use.
List the primary protected area management objectives (add lines if needed after the most important objectives): <i>Management objective 1</i>	Provide a good recreational and tourist site.
<i>Management objective 2</i>	Protect the reef and the island environment.
<i>Management objective 3</i>	
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>Kelly Locksy, Duke of York Island, Mioko Pal Pal, 79790935; Jane Larne, Environment Officer, Policy Planning and Research Division, ENBPA, PO Box 714 Rabaul, ENBP, atipjane!@gmail.com, 9829604, 70665164; Beside Thomas, CEPA.</i>
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 landowner; Environment Officer (Provincial Government), CEPA.
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 is important to look after the island so that tourists will come, including divers. The reef supports fish and shells and coral. The island has large trees. The local people from the mainland come to fish at Nanuk.

Table 2. Key values of the protected area

No.	Key values	Brief description	Note if endangered species or ecosystem (IUCN)
1	Reef ecosystem	Protect fish, shells, coral, sea cucumber, turtle nesting (Green and Hawksbill) and have clean water.	
2	Terrestrial ecosystem	Protect birds and trees and wild flowers.	
3	Tourism and local visitors	If we look after the reef and island the people will come to visit. Activities are diving, swimming, snorkeling, walking on the island and beaches.	
4	Resource use by other local people for family consumption	Taking of fish and shells for family consumption and not for commercial use. Customary landowners take resources from Palakur Island, which is much bigger.	

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	Turtle (green and hawksbill) nesting site, coral, fish, and vegetation on the island.
2. Presence of rare, threatened, or endangered species (plants and animals)	2	Turtles. Before there were people on the island monitoring and now there is no presence and some species are reducing in number – people take eggs, kill turtles and disturb habitat (e.g. stand on nests).
3. Ecosystems (e.g. wetlands, grasslands, coral reefs etc) that are rare because they have been cleared or destroyed in other areas	2	Reef ecosystem is declining – crown of thorns is impacting.
4. Protecting clean, fresh water	2	
5. Sustaining important species in big enough numbers that they are able to survive here	1	It is one small island in a much larger reef system. It plays an important role, but cannot on its own sustain large numbers of species or ecosystems.
6. Providing a source of employment for local communities	0	Previously there was employment, but not currently. Need to talk with the Provincial Authority and if boats are coming in they should make payments to the Customary landowners (with a payment system that requires payment at the point of booking a tour).
7. Providing resources for local subsistence (food, building materials, medicines etc.)	0	Customary landowners mainly take resources from the larger island of Palakur. Only local people (from the mainland) take resources (e.g. fish) from Nanuk.
8. Providing community development opportunities through sustainable resource use	2	Opportunities for tourism e.g. diving, fishing, swimming/snorkeling and sightseeing
9. Religious or spiritual significance (e.g. tambu places)	0	
10. Plant species of high social, cultural, or economic importance	2	Tree which provides the bark which is boiled for medicinal purposes
11. Animal species of high social, cultural, or economic importance	0	
12. Attractive scenery	2	Reef, island, and view to Tavurvur volcano
13. Tourism now	2	A little money is received and this pays for maintenance
14. Potential value for tourism in the future	2	Important source if fees are organized to be paid to the customary landowners
15. Educational and/or scientific value	2	
16. Maintaining a tradition of protection by customary landowners (of places, animals, or plants) within the protected area	1	Few traditional practices associated with Nanuk, but important for medicinal plants.

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	0	There are no dwellings or structures on Nanuk.
1.1a Population increase in the protected area community	0	There is no one living on the island.
1.2 Commercial and industrial areas	0	
1.3 Tourism and recreation infrastructure	H	Visitors from the local area destroy turtle sites and collect eggs (turtle and megapode) and harvest fish. Hotels/resorts (e.g. Rappopo, Kulau) arrange for guests to visit the island. They do not inform the customary landowners or pay any entry fee.
2.1 Customary land owner and community gardens and small crops	0	There are no gardens.
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	M	Deep sea mining vessels park in/near the reserve and people enter and fish in the reserve and camp overnight on the islands. There is no by-law to restrict this entry (aim is for Local level government law to include Nanuk as an area where entry is restricted). Deep sea mining of the reserve is also a possible threat in the future.
3.2 Mining and quarrying	0	
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)	0	
4.3 Shipping lanes	H	Mining ships and all ships from Rabaul enter the reserve (Rabaul port is the busiest port for overseas vessels; also a fish terminal for all fishing boats).
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	People collect turtle and megapode eggs and kill the animals. This is mainly done by visitors to the island. People from mining vessels often stay overnight and are known to kill the local pigeons.
5.2 Gathering terrestrial plants or plant products (non-timber)	0	Overnight visitors often cut timber to make shelters and for firewood.
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	H	Killing of turtles and megapodes.
5.4b Fishing, killing and harvesting aquatic resources for commercial use	0	
6.1 Recreational activities and tourism	L	
6.2 War, civil unrest and military exercises	0	

Threat type	Score (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	H	Visitors from the mainland leave rubbish, make fires, and damage the island.
7.1 Fire and fire suppression (including arson)	0	
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	0	
7.3d Loss of keystone species (e.g. top predators, pollinators etc.)	0	
8.1 Pest plants	0	
8.1a Pest animals	H	Crown of thorns impact on reef. Some parts of the reef are dying.
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	H	Visitors leave rubbish on the island.
9.5 Air-borne pollutants	0	
9.6 Excess energy (e.g. heat pollution, lights etc.)	0	
10.1 Volcanoes	H	This causes trees to fall over into the water, and ash from the volcano killed fish and parts of the reef. Lava covered the reef and surrounding islands. The impact lasted for 3-4 weeks and then the reef recovered.
10.2 Earthquakes/Tsunamis	0	
10.3 Avalanches/Landslides	0	
10.4 Erosion and siltation/ deposition (e.g. shoreline or riverbed changes)	M	Some erosion on the eastern side of both islands (trees falling in) and sediment is transported to the south-western side.
11.1 Habitat shifting and alteration	H	Loss of coral reef ecosystems due to coral bleaching events.
11.2 Droughts	0	
11.3 Temperature extremes	H	
11.4 Storms and flooding	0	Increase wind which causes trees to fall over – especially the Pisonia trees.
11.5 Coral bleaching	H	Coral on northern and eastern side of the islands have been bleached – approximately 40% affected and the rest is intact. Last bleaching event was in about 2010.
11.6 Intrusion by saltwater into gardens etc.	H	Saltwater intrusion affects the turtle nests and impacts on turtle numbers and impacting on water quality – some presence of water/muddy areas in the middle of the island.

Threat type	Score (H,M,L,O)	Notes
11.7 Sea level rise	H	Sea level rise is occurring and tidal change is impacting on both islands and pushing nesting areas for megapodes further inland.
Other		
12.1 Loss of cultural links, traditional knowledge and/or management practices	0	
12.2 Natural deterioration of important cultural site values	0	
12.3 Destruction of cultural heritage buildings, gardens, sites etc.	0	
Other (please explain)	0	

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	Volcanic eruption	10.1	Caused ash and lava to affect the reef.
2	Crown of thorns	8.1a	Widespread and causing destruction of the reef.
3	Climate change – from wind and saltwater intrusion	11.6 & other	Sea level is rising and this is causing saltwater intrusion into the island and affecting turtle nesting sites.

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.	
1b. Legal status			
2a. Protected area regulations	2	A few rules are written down which prevent killing or hunting of birds, taking of species from the reef, removing trees and other plant material and requiring management of visitors and tourism operations to the island. Some visitors do not follow the rules.	The informal managers of the reserve (i.e. Mar Mar Clan) will work with the Tourism Authority to re-write the rules relating to entry into the reserve and use of the resources. There is a need to work out a process to improve the outcomes from visitation.
2b. Protected area regulations			
3. Law enforcement	1	The government has no staff and no budget for law enforcement. The customary landowners act as caretakers. When visitors enter the Reserve the customary landowners don't enforce the rules if conditions are windy/rainy. They have a presence in fine conditions and try to ensure that visitors comply with the rules.	Nothing is planned to change this lack of staffing. There have been requests to the National Government by the Provincial Government to give responsibility for law enforcement to the Provincial Government, but this is thought to be unlikely as this is a national responsibility. There needs to be a presence on the island especially at night to protect the pigeons.
4. Protected area objectives	0	There is no management plan in place.	Unclear
5. Protected area design	0		The aim is to expand and include neighbouring islands.
6. Protected area boundaries	1		The aim is to expand and include neighbouring islands.
7. Management plan	0		Unclear
7a. Planning process	0		
7b. Planning process	0		
7c. Planning process	0		
8. Regular work plan	0		
9. Resource inventory	0		Unclear
10. Protection systems	0		The new Protected Area Policy will provide guidance on this. Customary landowners are willing to participate in discussing the management and permitting arrangements.
11. Research and monitoring	0	2010 marine survey – to establish whether there were changes related to sea level rise.	Unclear
12. Resource management	1	This is not undertaken by government, but customary landowners are engaged in visiting and managing various threatening processes.	Unclear for government, but customary landowners are starting a process to review their management rules and have discussions about visitation.
13a. Staff numbers	0		

Issue	Score (0,1,2,3 NA)	Comment	Next steps
13b. Other people working on the protected area	3	Six men work on the island; three women do the raking/cleaning. Rubbish is buried on the island. Work takes place about every two weeks.	The Chairman will discuss with the Provincial Government to request assistance.
14. Training and skills	1	One customary landowner is a district coordinator and he has some skills to manage the area. Local level government has Department of Primary Industries officers and Fisheries officers, and rural development officers who work to develop small and medium enterprise and develop inventories (e.g. of trade stores). They work with the landowners to develop skills.	Other customary landowners need training in protected area management e.g. monitoring, inventory, local government laws, marketing, leadership, tourism/ hospitality.
15. Current budget	0	CEPA has provided no budget. The Provincial government has been provided with funding (i.e. the Forestry and Conservation unit) and positions are being filled. Districts also have funding.	Funds from the Provincial and Local level Government should be accessed to provide better management for Nanuk. It was hoped that these funds would begin to flow in 2016.
16. Security of budget	0		The provincial government representative indicated that there was an allocation of 50,000 Kina at the Provincial level for conservation activities (e.g. workshops, training, monitoring). Project proposals are expected to be received from protected areas and then money can be directed to conservation areas such as Nanuk. Also the Local level government has forest and conservation activities that are funded. Nine Strategic Result Areas have been identified e.g. governance and management and there is a District Service Improvement Program, which has money for conservation purposes. The key is to provide capacity building in the community to assist the customary landowners to complete project proposals to obtain some of the available funds. Cooperation is also required between CEPA and the Provincial Government's planning division to address funding opportunities for the parks, including Nanuk.
17. Management of budget	NA		
18. Equipment	0	Government has no equipment. Customary landowners have no boat or other equipment.	
19. Maintenance of equipment	NA		
20. Education and awareness	0		Need to raise awareness with tourist operators/hotels e.g. brochure, which would indicate the rules of the protected area.

Issue	Score (0,1,2,3 NA)	Comment	Next steps
21. Planning for land use or marine activities	2	Kokopo is a tourist hub. There is a proposal to develop a tourist resort on the eastern half of the large island. This is an initiative of the LLG and the customary landowners to develop the facility.	The Provincial Environment Policy (2005) needs to be reviewed to ensure that if there is any damage to the environment this is identified as an offence with relevant penalties. There is a need to integrate the new Protected Area Policy with other policies (e.g. national strategy on sustainability). We also need to work with the Local level government to establish policies that will provide the authority to enforce regulations in the protected area.
22. State and commercial neighbours	0		We would like to establish contact with hotels and other tourist operators to regulate their activities and impacts on the protected area and to encourage people to act sustainably. There should be a benefit-sharing arrangement to provide a return to the customary landowners.
23. Indigenous people/ Customary landowners	2	Customary landowners try to limit entry of people into the reserve and are the key decision makers at the moment.	The aim is to increase the role of government at all levels and other stakeholders in working with the customary landowners to improve management outcomes.
24a. Impact on communities- communication with others	0		Needs to be improvement in communication among the stakeholders (e.g. tourism, hotel operators, all levels of government)
24b. Impact on communities - welfare	0		
24c. Impact on communities - support	1		
25. Economic benefit	0	Customary land owners have approached hotels which offer diving to get a payment for entering their area, but this has been refused.	There should be benefit-sharing with other users of the protected area.
26. Monitoring and evaluation	0		
27. Visitor facilities	0		Would like to provide places for walking and resting (i.e. structures and facilities) and also security for visitors.
28. Commercial tourism operators	0		Benefit sharing arrangements are needed with tourist operators.
29. Fees	0	The fees are not paid.	Benefit sharing arrangements are needed with a range of commercial operators and charges for visitors who enter the protected area. We need to create one type of fee for all the diving; designate people to collect fees from the hotels.
30. Condition of values	2		
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
Protect reef ecosystem	G	I	The reef is recovering. Actions occurring to destroy the crown of thorns (by collecting) – people are currently doing this.
Protect terrestrial ecosystem	F	D	Bird numbers are declining (hunted) and trees are being cut by visitors. Declining because customary landowners have little control over the management. Need improved enforcement of rules relating to the island – these need to be established by law (e.g. through the protected area legislation).
Tourism values	VG	I	Tourists like the island experience (reef and beach and looking at marine life). Tourist numbers are increasing.
Sustainable take of resources	VG	D	Fish size is decreasing, sea shells (clams, slugs) declining in number. It may be possible to implement a tambu area, which establishes a temporary closure of the reef to local visitors and the general public and tourist operators.

Table 8. Recommendations and ways forward

1.	2.	3.