

PULU INDIGENOUS PROTECTED AREA

PLAN OF MANAGEMENT



Arafura Consulting and the Pulu IPA Committee

June 2009



**Plate 1. View of Kuyaman Kubay (Kwoiam's Throwng Stick) / Kawmayn, Pulu.
Photographed by Haddon in 1898.**

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SUMMARY

This Plan of Management has been developed to progress the establishment of an Indigenous Protection Area (IPA) over Pulu, an islet of immense cultural significance to the Goemulgal, the people of Mabuyag (Mabuiag Island), western Torres Strait, north-eastern Australia. The plan has been developed by Goemulgal to manage this special place, in keeping with customary practices, together with support from government agencies and other partners.

Goemulgal already have experience of the IPA program, being one of five communities with representatives on the Committee for the Warul Kawa IPA, declared in 2001. It is the wish of the Goemulgal to expand their engagement with the program to include Pulu and surrounding islets and sea country.

The Plan sets out the cultural and natural values of Pulu, and the management and conservation projects that the Goemulgal have identified as necessary to help them to look after their sacred islet, as their ancestors have done for millennia.

Funding for this plan has been provided by the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA). The consultation process has been supported by the Land and Sea Management Unit (LSMU) of the Torres Strait Regional Authority (TSRA).

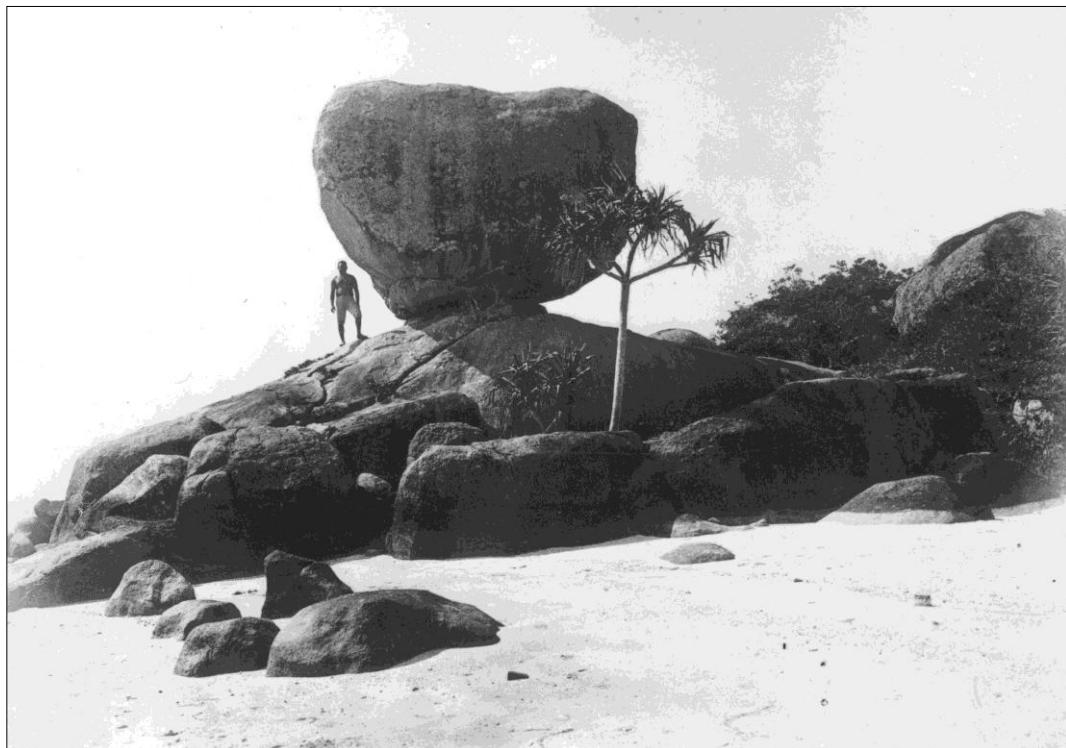


Plate 2. The balancing rock, Zeibu, at Pulu. Photographed by Haddon in 1898.

LIST OF ACRONYMS

AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
AM	Australian Museum, Sydney
DERM	Queensland Department of Environment and Resource Management
DEWHA	Commonwealth Department of the Environment, Water, Heritage and the Arts
EPA	Environmental Protection Agency
IPA	Indigenous Protected Area
IUCN	International Union for the Conservation of Nature
LSMU	Land and Sea Management Unit
MTSRF	Marine and Tropical Sciences Research Facility
NAILSMA	Northern Australia Indigenous Land and Sea Management Alliance
NRM	Natural Resource Management
NTO	Native Title Office
QM	Queensland Museum
RNTBC	Registered Native Title Body Corporate
SES	State Emergency Service
TSRA	Torres Strait Regional Authority

NOTE ON ORTHOGRAPHY AND GLOSSARY

The Goemulgal speak Mabuyaagi, one of four dialects of Kala Lagaw Ya, the Western Torres Strait language. Several orthographies have been developed for the language.

In recent years a number of Goemulgal have received linguistic training (e.g. at Bachelor College, Darwin). Together with renewed interest in their language, this has led to the development of their own preferred orthography, which is used in this Plan of Management.

<i>bau</i>	beach
<i>dhoey</i>	clearing (e.g. open grassland)
Goemulayg	a Mabuyag person
Goemulgal	the Mabuyag people (including people with ancestral connections to Mabuyag)
Goemulgaw	belonging to Mabuyag people
<i>kula</i>	rock / boulder on land
<i>kurasar</i>	rock / boulder in the sea
<i>mina pawa</i>	good ways / appropriate behaviours
<i>pad</i>	hill
<i>thag</i>	mangroves

Part 1: About this Management Plan

THE AREA OF THE IPA

Pulu is a small, granite-strewn and sparsely wooded islet, lying just off the western shore of Mabuyag (Figures 1-2, Plate 3). It is located at Latitude 9° 57' 25" South, Longitude 142° 9' 46" East. It is roughly rectangular in shape, on a NW-SE axis, and measures approximately 570 x 360 metres. Huge granite boulders (*kula*) are scattered along the beaches (*bau*), slopes and hill (*pad*) of the islet, some perched on top of one another. Small, sandy coves, enclosed by boulders, are found on the southern, eastern and northern shores, while mangroves line the western side of the islet.

The islet is described as Lot 27 on Survey Plan TS275 in the Parish of Orman, County of Torres, and has an area of about 15.1 hectares. The proposed boundary of the first stage of the Pulu IPA is the islet itself, that is, all areas on the landward side of the high water mark.

On 6 July 2000, the Federal Court of Australia determined that native title exists over Mabuyag, Pulu, and other small islets, which is recognition in Australian law of Goemulgaw ownership of their islands, in accordance with their traditional laws and custom (*Mabuiag People v. Queensland* [2000] FCA 1065). The native title is held by the Goemulgaw (Torres Strait Islanders) Corporation RNTBC, on behalf of all Goemulgal.

THE DECISION TO MAKE AN IPA

For over a decade, the Mabuyag community has hoped to progress the establishment of an IPA over the culturally significant islet of Pulu. The desire for an IPA reflects the ongoing commitment of the Goemulgal to protect Pulu and its sacred values and an understanding that the IPA program is consistent with, and respectful of, Goemulgaw cultural values.

During this period, the Goemulgal, together with the people of Boigu, Dauan, Saibai and Badu, decided to establish an IPA over Warul Kawa (Deliverance Island, also known as Leberen) and its surrounding reef flats. This IPA was declared in April 2001 (Commonwealth of Australia 2007).

Over one hundred years ago, English anthropologist A.C. Haddon described how Goemulgal managed the sacred islet of Pulu. Goemulgal continue to look after the island today, and now want to combine these practices, based on their own traditional laws and customs, with Western approaches to protected area management.

The Goemulgal vision for the Pulu IPA sees the development of their protected area in three stages:

1. Pulu Islet itself;
2. Widul, Mipa and possibly other islets;
3. Surrounding areas of sea country, including part of the home reef and seagrass beds.

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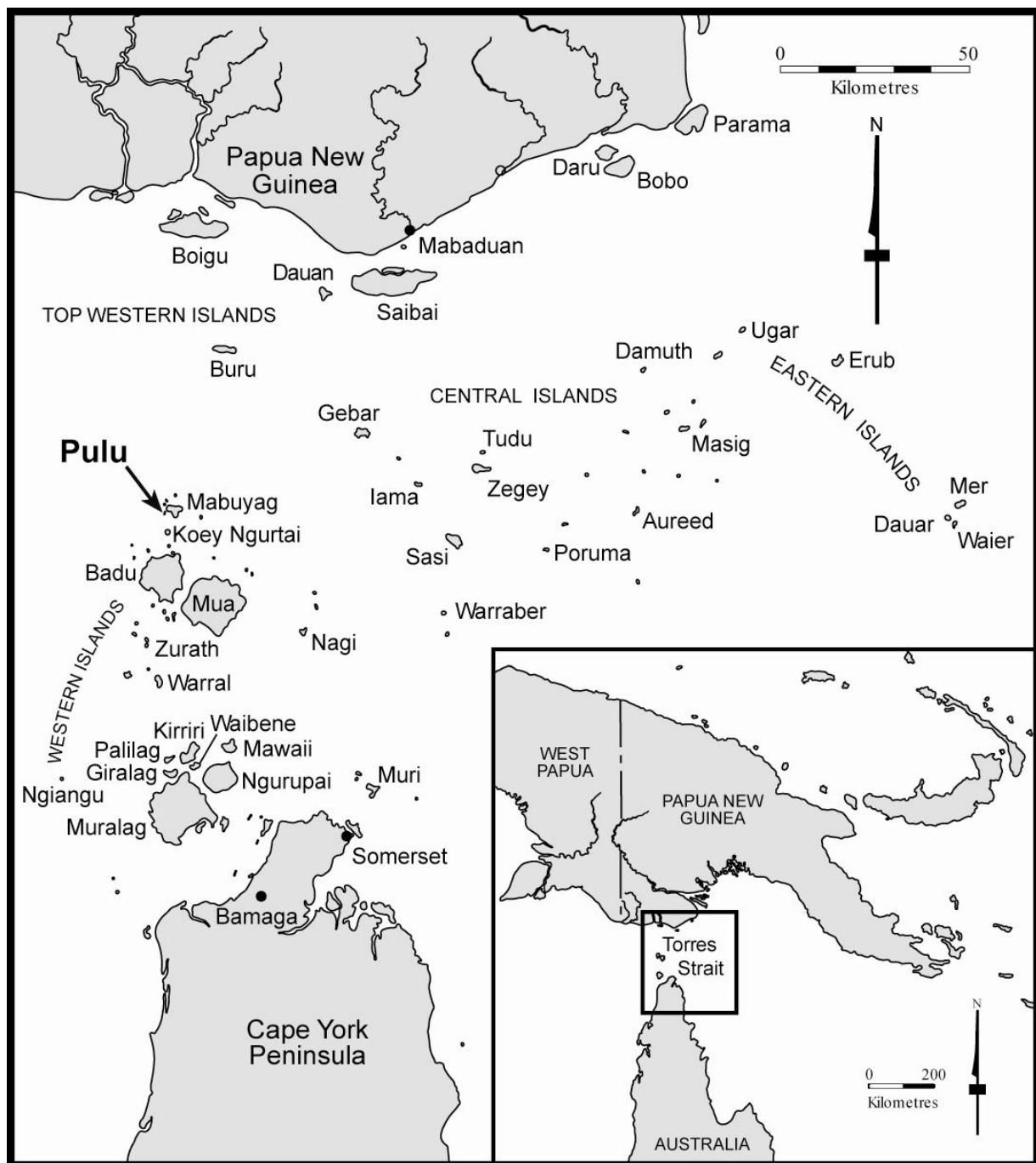


Figure 1. Pulu and Mabuyag in relation to Torres Strait.

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Figure 2. Detail of Mabuiag 1:50,000 Topographic Map Sheet 7378 3, showing location of Pulu in relation to Mabuyag.

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Plate 3. Aerial view of Pulu, 19 June 2008 (Photo: Garrick Hitchcock).



Plate 4. Goemulgal meet to discuss the Pulu IPA, Mabuyag, 5 June 2008. (Photo: Garrick Hitchcock).

THE CONSULTATION PROCESS

Community meetings about a possible IPA over Pulu have taken place since 1998, in tandem with discussions about the Warul Kawa IPA. In June 2008, community consultations took place on Mabuyag on two separate occasions, which led to the development of this Plan of Management. At public meetings, workshops with the IPA Committee, and one-on-one consultations with Traditional Owners, a range of objectives, priorities and activities for the management of the cultural and natural resources of Pulu were identified. The Plan was ratified at a community meeting held at Mabuyag on 17 April 2009, at which time the community made the decision to declare Pulu an IPA.

GOEMULGAW VALUES FOR MANAGEMENT

Goemulgaw thumayawayay pawa iman muynu, apasin, muruyguw ngulayg-a-kuykumabaygaw kupay.

Free translation: In Goemulgaw conservation, you will find humility, ancient ways and dignified inheritance of leadership.

Goemulgaw principles for management are based on reference to Pulu's singular cultural significance, as a place of authority, knowledge, story, hunting magic ceremony, mortuary ritual, initiation, dance and performance:

Muruyguw ngulayg – Ancestral knowledge

Apasin – Respect, humility and humbleness

Buway garkaziw-a-kuykumabaygaw niyaylag – The sitting place of authority and leadership

Uthuylag kerngew – The sleeping place of the initiates

Yaburaw sagulaw lag – The place of dance, including the Yabur dance

Adhiw lag-adhilnga – The story place

Goemulgaw kupay – The Goemulgal worldview

Goemulgaw conservation philosophy is founded on *mina pawa* (appropriate and respectful ways), in particular, respect of traditional values and the collective knowledge and wisdom of Elders. This respect extends to the responsibility of on-going active management of ancestral places to honour the ancestors and spirits of places. Such management also helps ensure the spiritual and material nourishment and collective well-being of current and future generations of Goemulgal. As Islanders and a sea people, Goemulgal have always sought to build alliances based upon mutual respect and trust. In this sense, the Goemulgal embrace the opportunity to work in partnership with various outside agencies through the Pulu IPA Committee to maintain the cultural and natural values of Pulu.

Goemulgaw wish their perspectives and worldview to structure and guide future actions on Pulu. At the same time, the community acknowledges and respects the information and benefits that flow from collaborative partnerships with outside others, and look forward to combining the approaches to safeguard Pulu, as Goemulgal have for thousands of years.

The Plan combines the results of community consultation and planning with current information on the cultural and natural heritage values of the islet from Indigenous and non-Indigenous perspectives, to present a way forward for Goemulgal to continue to protect and manage this special place, while always being respectful of Goemulgal Elders, and the cultural lore, traditions and practices they pass on to future generations.

GOEMULGAW VALUES – CULTURAL SIGNIFICANCE

The sacred island of Pulu, associated as it was with initiation and death ceremonies and with some of the exploits of Kwoiam, contained no more sacred spot than the cave of Augudalkula. No woman might approach the place; its custody was entrusted to the oldest and most influential men of Mabuiag, the *tumaiawai-mabaegal*, that is, ‘the watching men,’ or watchers (Haddon and Wilkin 1904:368).

Pulu is a sacred islet and the most important cultural place of the Goemulgal. This significance centres on two key sites – the ceremonial complex (*kod*) and totemic skull cave (Awgadhalkula). Both sites are central to Goemulgaw clan identity and are revered across western Torres Strait. The *kod* with its well-preserved shrines of dugong bone mounds and *bu* (Australian Trumpet, *Syrinx aruanus*) shell arrangements and associated rock-art was where key ceremonies related to male initiations, mortuary rites, war, and turtle and dugong hunting magic were performed. Awgadhalkula contained skulls from headhunting raids and the sacred emblems of the legendary Mabuyag warrior culture-hero Kuyam. Detailed recordings of the *kod* by famous Cambridge anthropologist Alfred Cort Haddon in 1898 represent the most comprehensive 19th century archive of information available for an Australian Indigenous ceremonial site. Archaeological excavations suggest that the *kod* and the sacred status of Pulu emerged 300-400 years ago. Prior to this status change, Pulu was a place of regular visitation and camping from at least 4,000 years ago. Between 1,500 and possibly 2,500 years ago, visitors to Pulu used finely-made red-slipped pottery. This pottery was made from western Torres Strait clays and represents Indigenous Australia’s first known pottery tradition. Continuing cultural restrictions on use of Pulu by the Goemulgal has ensured preservation of the islet’s unique cultural places and associated terrestrial and marine environments. The islet also has a number of burial sites, which Goemulgal wish to see protected and respected.

Pulu is also an important storyplace. Some of the feats of Kuyam took place there, and it also features in the well-known stories of ‘Wameal / The Stone that Fell from the Sky [Menguyzi Kula]’, ‘Kamutnab’ and ‘Uga’. Each of these four stories has material manifestations, in the form of rocks and boulders viewed as being created by or evidence of the actions of the various story beings (see Haddon 1904b; Lawrie 1972; McNiven *et al.* in press).

To date, cultural heritage research on Pulu has focused on archaeological excavation and site mapping at three important places: the *kod* precinct; Mask Cave; and Tigershark Rockshelter (Baidamau Mudh) (McNiven 2006; McNiven *et al.* 2002, 2006, 2008, in press). A recent preliminary survey, undertaken in November 2008, identified fifteen new sites across other parts of the islet, including burials, rock-art, middens, artefact scatters (including post-contact materials), and a stone cairn. An additional rock-art site was also discovered during an assessment of the natural values of the islet in April 2009. This demonstrates the diversity of cultural heritage site types to be found on Pulu, and indicates that much remains to be learned about its cultural values (Hitchcock and McNiven 2009).



Plate 5. Recording a rock-art site on the south-eastern side of Pulu, 28 November 2008 (Photo: Ian McNiven).

FLORA AND FAUNA

At present, little Western scientific knowledge exists about the natural heritage values of Pulu. However, Goemulgal possess detailed traditional ecological knowledge of the islet. Recent preliminary surveys and community consultations have expanded our knowledge. The mammals *ap* (Coastal Sheathtail Bat, *Taphozous australis*), *sapur* (Black Flying-fox, *Pteropus alecto*) and *makas* (Grassland Melomys, *Melomys burtoni*) occur there, as well as a range of reptile species, including pythons, goannas and skinks. The avifauna list for Mabuyag, which previously stood at 24 species (Draffan *et al.* 1983), has been increased by 50 species, to 74, as a result of field research in 2008-2009; 25 of these species were identified on Pulu itself (see Appendix 3; Watson 2009). Furthermore, community members state that a considerable number of other species occur on the islands.

The vegetation of Pulu has recently been mapped, through interpretation of aerial photography in light of field surveys on Mabuyag (Stanton *et al.* 2008). Additional data has been generated as a result of a 2009 survey on Pulu. Though small, Pulu is home to a number of different vegetation communities, including mangroves, *thag*, and open grassland, *dhoeiy* (see Appendix 4), as well as a large number of plant species – 198 have now been recorded on the island, which is 15% of the Torres Strait region’s known flora (Fell 2009).

Future studies, including further exploration of Goemulgaw traditional ecological knowledge and their system for classification of the natural world, will expand our knowledge of the islet’s fauna and flora, and indeed, the biogeography of the western Torres Strait islands.



Plate 6. Vegetation among boulders in the vicinity of Baidamau Mudh (Tigershark Rockshelter), Pulu, 17 June 2008. Lewis Whap, Terrence Whap and Ian McNiven in picture (Photo: Garrick Hitchcock).



Plate 7. Roosting Coastal Sheathtail Bats (*Taphozous australis*) at Mask Cave, Pulu, 17 June 2008 (Photo: Garrick Hitchcock).



Plate 8. Skink (*Carlia* sp.) on Pulu, 17 June 2008 (Photo: Garrick Hitchcock).

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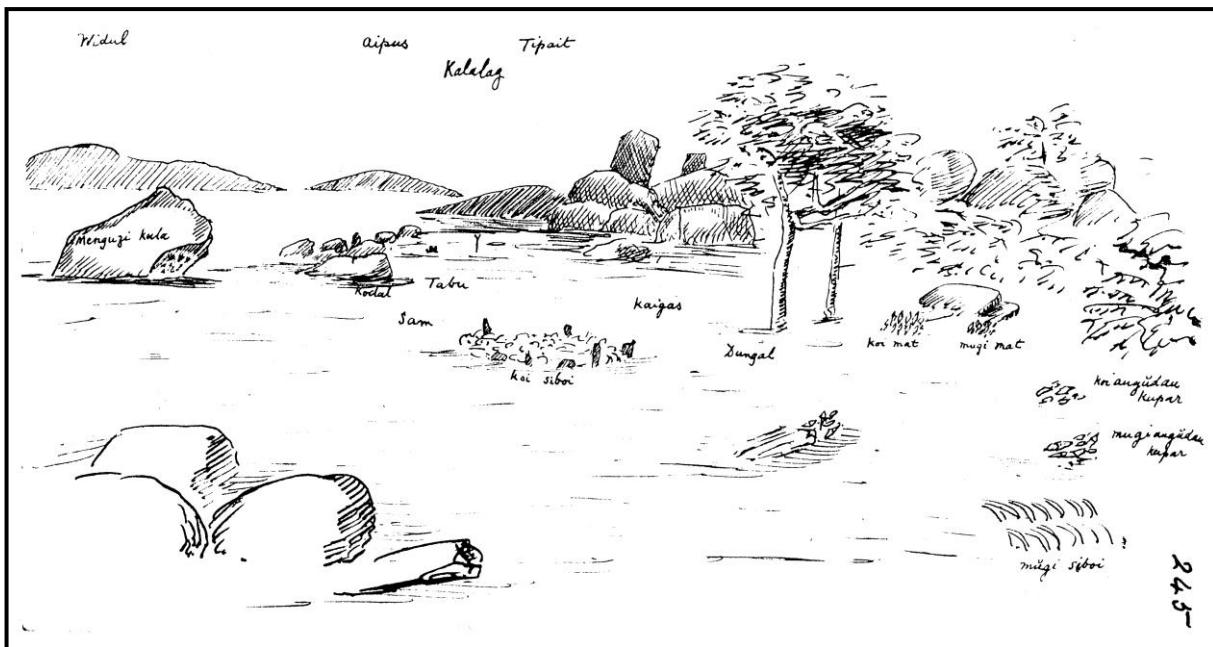


Figure 3. Haddon's sketch of the Pulu *kod* site, 1898 (Haddon 1898:245).

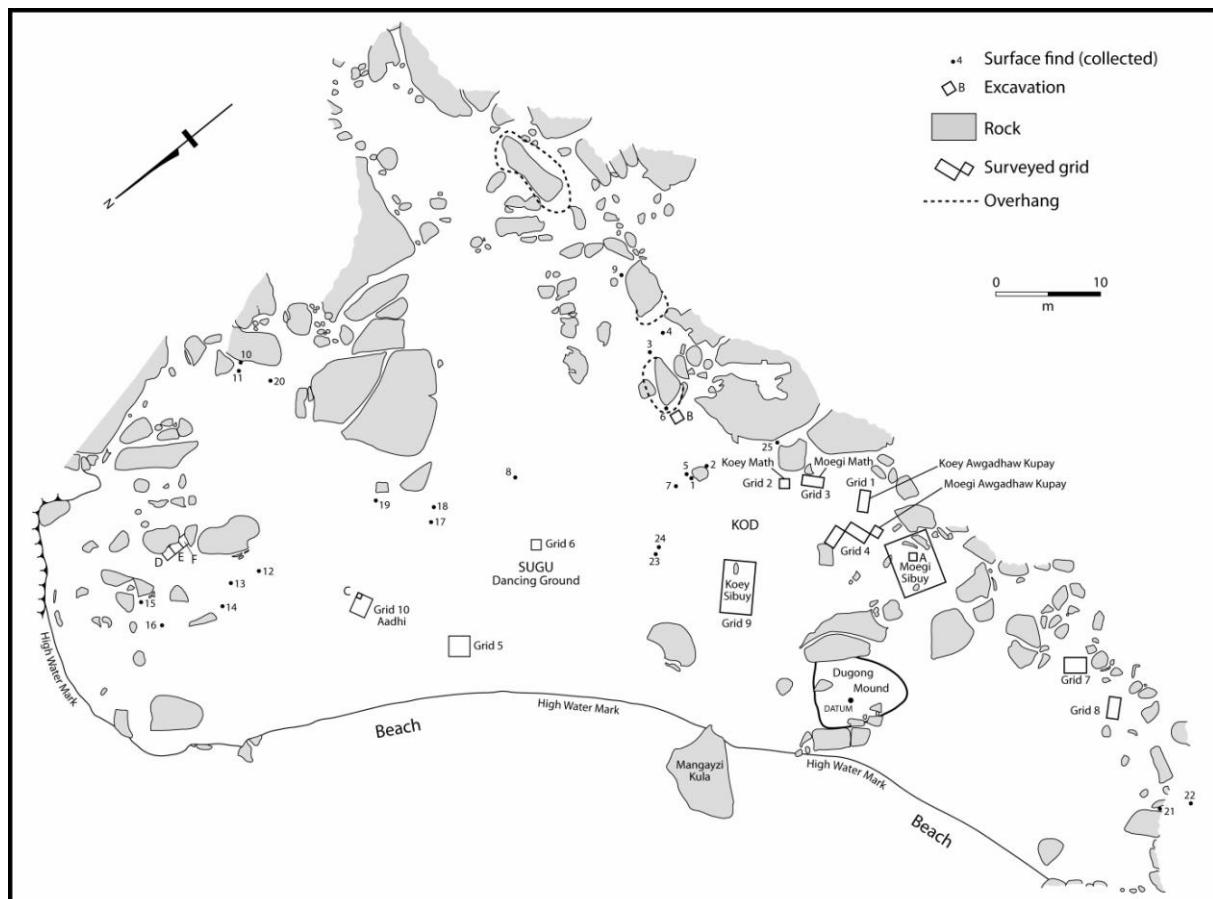


Figure 4. Detailed plan of the Pulu *kod* site, 2001 (McNiven et al. in press).

Part 2: The Planning Framework

IUCN CATEGORIES

The Pulu IPA will be managed in accordance with the following World Conservation Union Protected Area Management Categories (IUCN 1994). Full details of these categories can be found at Appendix 5.

IUCN Category III

Natural Monument: Protected Area managed for conservation of specific natural features.

Area containing one or more specific natural or natural/cultural feature which is of outstanding value because of its inherent rarity, representative or aesthetic qualities or cultural significance

IUCN Category V

Protected Landscape/Seascape: Protected Areas managed mainly for landscape/seascape conservation and recreation.

Area of land, with coast and seas as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, cultural and/or ecological value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

GOVERNANCE

The Pulu IPA Committee comprises six members: one member from the local Mabuyag cultural heritage body (the Goemulgau Kod), one member from the Registered Native Title Body Corporate (the Goemulgaw (Torres Strait Islanders) Corporation RNTBC) and one representative from each of the major totemic clan districts on Mabuyag: Panai/Dabangai, Goemu, Maidh and Wagadagam/Mui.

The committee will be set up under the constitution of the Goemulgaw RNTBC. This will require the rules of the RNTBC to be changed at its next Annual General Meeting.

RANGERS

The TSRA has recently been successful in an application under the Commonwealth Government's Caring for Our Country initiative, to deliver a Torres Strait Indigenous Ranger Program across the region (TSRA 2009:1-2). The Mabuygiw Ranger program was officially launched on 18 May 2009, and three rangers – a Senior Ranger and two Rangers – are currently employed, with funding for five years (Anonymous 2009).

The Mabuygiw Rangers, working under the direction of the IPA Committee, are best placed to deliver many of the recommended activities in this Plan of Management. The five year funding and planning cycle of the ranger program dovetails with the scope of work in this document, which identifies activities according to three priority levels, to be actioned within a five year period:

- Immediate Priority Actions – 12-18 months;
- High Priority Actions – within the next three years;
- Moderate Priority Actions – within the next five years.

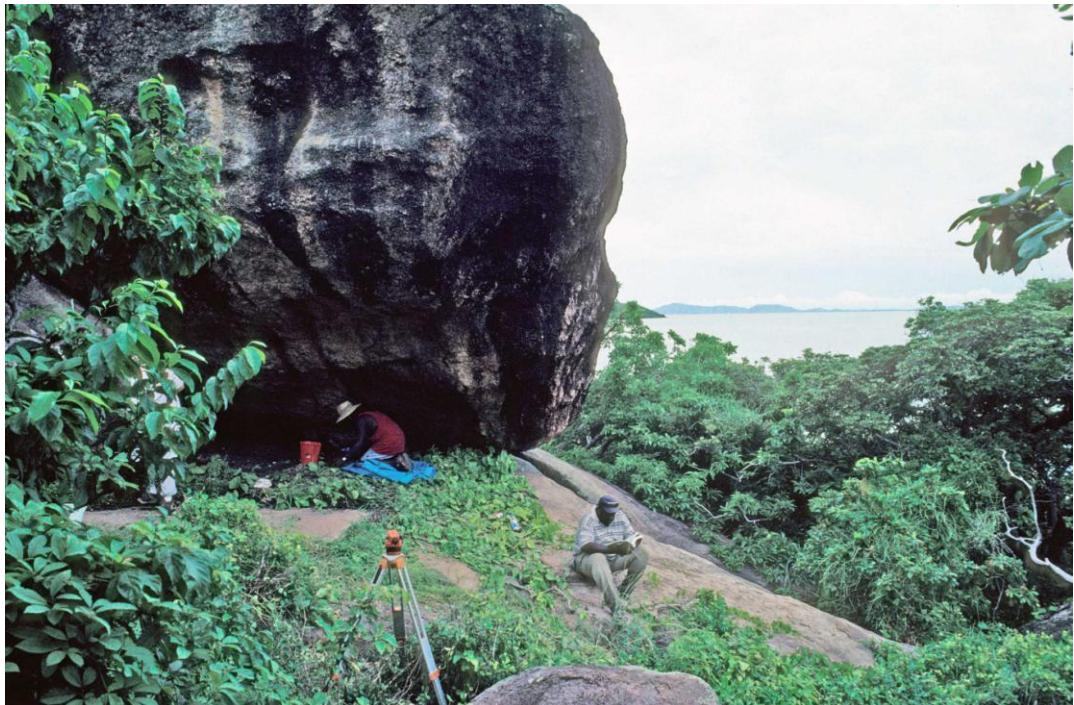


Plate 9. Iona Mooka and John Bani participating in excavations of Baidamau Mudh (Tigershark Rockshelter), Pulu, 1999 (Photo: Ian McNiven).

EXISTING AND POTENTIAL PARTNERS

Managing the IPA will require funding from, and partnerships with, a range of government and non-government agencies. A number of these are listed below.

Goemulgaw RNTBC	Representation of Traditional Owners; framework for IPA Committee rules and governance structure
Goemulgal Elders	Education about customary protocols; assistance formulating Goemulgaw Research Protocols
Goemulgau Kod Association	Local cultural heritage research activities
Mabuygiw Rangers	Implementation of IPA activities
TSRA	Funding under the Heritage, Culture and Environment subprogram
LSMU, TSRA	Support for ranger program and Dugong and Turtle Management Plan
NTO, TSRA	Support for Goemulgaw RNTBC
MTSRF	Research funding
NAILSMA	Support for land and sea management initiatives
AIATSIS	Cultural heritage funding
Cultural Heritage Coordination Unit, DERM	Site recording training for Rangers (including GPS); cultural heritage funding
DEWHA	Indigenous Heritage Program (funding)
EPA	Environmental management advice and assistance.
NRM Caring for Our Country initiative	Community Coastcare funding
Programme for Australian Indigenous Archaeology, School of Geography and Environmental Science, Monash University	Ongoing collaborative cultural heritage research
Cambridge University, England	Repository of cultural artefacts and archival material
Natural History Museum, London, England	Repository of human remains from Pulu

RELATIONSHIP TO OTHER DOCUMENTS AND STRATEGIES

Other relevant documents and strategies include:

- IUCN Guidelines for Protected Area Management Categories III and V (see Appendix 5 for full details)
- The National Reserve System
- Indigenous Heritage Program, DEWHA
- Caring for Our Country
- Working on Country
- Mabuygiw Ranger Program
- TSRA Land and Sea Management Strategy (TSRA 2005)
- Draft Mabuyag Dugong and Turtle Management Plan (TSRA 2008)
- Pulu Culture Site Mapping Project (McNiven *et al.* 2002)
- Warul Kawa IPA

Part 3: Management Issues and Activities

VISITATION MANAGEMENT

Currently, people from Mabuyag utilise the waters around Pulu to fish and dive for *kayar* (Tropical Rock Lobster, *Panilurus ornatus*). They also make trips to the island to harvest *ubar* (Wongai fruit, *Mimusops kauki*). Visits by non-local peoples are rare, with landings by mariners from beyond Torres Strait a once in a decade event. However, with more infrastructure developments and the presence of associated contractors, immigration of peoples from mainland Australia, and illegal fishers from Indonesia, inappropriate and potentially damaging visitation to Pulu may increase.

Unsanctioned and unguided visitation to the *kod* ceremonial complex can jeopardise the spiritual significance of the site and potentially damage fragile features such as *bu* shells via treadage (McNiven *et al.* 2002:75). The Goemulgaw wish to continue their management policy of limiting visitation to the islet to small parties, accompanied by senior members of the community. Such guidance will ensure that appropriate behaviour is maintained and that inadvertent visitation does not take place to exceptional sites such as Awgadhalkula.

At no time is it appropriate for non-Goemulgal to visit Pulu without the consent of the Mabuyag community. Visitation by outsiders must take place under the guidance of senior Goemulgal. Research activities undertaken by outsiders must be collaborative, and comply with Goemulgaw Research Protocols (to be finalised). The progress and results of such investigations must be made available to Goemulgal in appropriate formats (e.g. plain English reports, posters etc.)

In order to manage visitation to this sacred islet, the Pulu IPA Committee have decided to zone the islet into two categories, Red and Yellow.

Red Zone:

Visits to red zone areas require permission from Elders, through the IPA Committee. At present, four important traditional cultural places and significant archaeological sites have been designated red zone areas:

Kod precinct. The *kod* precinct includes the *kod* proper (taking in the sacred *bu* shell shrines and clan fireplaces, and the dugong bone mounds Koey Sibuy and Moegi Sibuy), *sugu* (dancing ground) and surrounding rock art sites. One of the paintings is the only known rock art site in Australia showing a man playing a drum. The *kod* is underlain by an old village site (midden) dating back to 1400 years ago (McNiven *et al.* in press).

Awgadhalkula. This cave site is the most sacred place of the Goemulgal. It was where the sacred emblems of the warrior culture hero Kuyam were kept and where skulls taken in headhunting raids were stored in sacred totemic baskets signifying the two moieties of the Goemulgal. The site is associated with two large *bu* shell arrangements. Haddon and Wilkin (1904:368) reported that the “custody” of Awgadhalkula “was entrusted to the oldest and most influential men of Mabuiag, the *tumaiawai-mabaegal*, that is, ‘the watching men’, or ‘watchers’”.

Tigershark Rockshelter. This site with midden deposit and rock-art commenced 1,400 years ago and stopped being used 500 years ago. It was a place of regular camping during the period prior to Pulu being transformed into a sacred landscape with restricted access in the 17th century AD (McNiven *et al.* 2008).

Mask Cave. This cave site was used between 1,500 and nearly 4,000 years ago and contains the earliest evidence of human use of Pulu. It is also one of the oldest archaeological sites in Torres Strait showing marine specialisation in terms of turtle hunting and reef fishing. Most significantly, the site revealed locally made red-slipped pottery dating back to 1700 and possibly 2,500 years ago. This the first evidence for pre-contact pottery manufacture by Indigenous Australians (McNiven 2006; McNiven *et al.* 2006).

Yellow Zone:

Beaches (*bau*) and the intertidal area (including mangroves, *thag*) surrounding Pulu have been identified as areas that may be visited by Goemulgal without special permission from community Elders.

Zoning of additional areas of Pulu awaits the conduct of more comprehensive surveys of its cultural and natural values.

General Visitation Protocols

Goemulgal have developed a series of protocols, in keeping with their long-standing tradition of managing visitation:

- Visits to the interior of the island must be sanctioned by Elders. Appropriate Goemulgal (as identified by the IPA Committee) should announce their visit to ancestors/spirits upon their arrival and introduce their guest/s.
- No rubbish is to be left on Pulu.
- No alcohol or drugs are allowed on Pulu.
- Women may not approach or visit Awgadhalkula, in keeping with tradition.
- Sharp objects (e.g. knives, fishing spears) are not to be taken near Awgadhalkula, in keeping with tradition.
- Neither plants nor wood are to be collected from Pulu, unless permission has been granted by IPA Committee, and no plants or trees (including mangroves) are to be damaged.
- No animals (e.g. dogs) are to be brought onto Pulu.
- No butchering of dugong or turtle is to take place on Pulu.
- The presence of any outsiders (i.e. non-Goemulgal) on Pulu is to be reported to the IPA Committee, who will advise the Rangers.
- Rubbish (e.g. flotsam and jetsam) is rare on Pulu, on account of the nature of the local tides. However, any such rubbish should be reported to the IPA Committee, who will advise the Rangers.
- Any weeds, pigs, dogs or other pests seen on Pulu are to be reported to the Rangers, through the IPA Committee.

Immediate Priority Actions – 12 to 18 months

- Creation of a brochure detailing the cultural significance of Pulu and visitation protocols. Brochure should be trilingual (Kala Lagaw Ya, Torres Strait Creole and English) and will be distributed amongst the Goemulgal and nearby communities (e.g. Badu);
- Development of a website for the Goemulgaw RNTBC that includes promotion of the Pulu IPA and details its cultural significance and visitation protocols (in Kala Lagaw Ya, Torres Strait Creole and English).

High Priority Actions – within the next three years

- Erection of signage on Pulu (e.g. at the *kod* site) and on the waterfront at Bau village on Mabuyag, detailing the cultural significance of Pulu and visitation protocols. Signs should be trilingual (Kala Lagaw Ya, Torres Strait Creole and English).

Moderate Priority Actions – within the next five years

- Continue to monitor visitation to the islet.



Plate 10. Mumuguw Buth (Mumuguw Beach), with the balancing rock Zeibu visible at its northern end, 19 June 2008 (Photo: Garrick Hitchcock).

FIRE MANAGEMENT

Fire management has two principle concerns – conserving the spiritual significance of the islet and preserving the fabric of cultural sites. In terms of spiritual significance, Haddon and Wilkin (1904:370) were informed by senior Goemulgal in 1898 that:

If a bush fire arose at Pulu the men always stamped it out with their feet, and not as they usually did by beating it out with branches – as the leaves on the trees signified the people of Mabuiag, and if the leaves were burnt a number of men would be killed in the next fight.

Fires have been recorded as a major destructive process impacting *bu* shell arrangements at the *kod* (McNiven et al. 2001:74).

General Fire Protocols

- Under normal circumstances, people are not permitted to light fires on Pulu. This is in accordance with traditional belief and management, which holds that the leaves of the trees on the islet represent the people of Mabuyag.
- Fires can only be lit with the permission of Elders, through the IPA Committee.
- Any fires or evidence of recent fires on Pulu should be reported to the IPA Committee, who will advise the Mabuygaw Rangers.

Immediate Priority Actions – 12 to 18 months

- Develop fire response action plan for Pulu, in association with the Mabuygaw Rangers. This plan should complement the Mabuyag fire management plan (refer local SES unit);
- Inclusion of fire management protocols within visitation brochure and signage;
- Ground-truth existing map of vegetation communities on Pulu to allow modelling of potential impact of fires on local floral and faunal values. This work must comply with Goemulgaw Research Protocols (to be finalised).

High Priority Actions – within the next three years

- Continue to monitor fire impact to islet.

Moderate Priority Actions – within the next five years

- Continue to monitor fire impact to islet.

CULTURAL HERITAGE

Goemulgal wish to continue to protect the cultural values and associated culturally significant sites on Pulu. Sea level rise, bushfires, pest species (e.g. rubbing of rock art, and treadage of artefacts by pigs), and termite mounds (covering/damaging rock art) are all potential threats to the cultural heritage of this sacred islet, which need to be monitored and responded to. The community also wishes to learn more about the cultural heritage and history of Pulu and surrounding islets, through collaborative site surveys and archaeological excavations. This work must comply with Goemulgaw Research Protocols (to be finalised).

The Pulu Culture Site Mapping Project (McNiven *et al.* 2002) contained detailed information on the cultural heritage of some – but by no means all – of the islet, and includes recommendations for ongoing conservation and management.

Immediate Priority Actions – 12 to 18 months

- Culture site surveys of Pulu, to produce comprehensive inventory of cultural sites and their cultural significance values and conservation needs, and to allow completion of visitation zonation of islet;
- Arrange detailed topographic mapping (e.g. one metre contour intervals) in conjunction with existing aerial photography, and development of GIS layers for Pulu and other nearby islets to assist with management of cultural and natural values;
- Assessment of need for pest control measures (wire mesh covering) at Tigershark Rockshelter, including replacement of current material with stainless steel mesh;
- Nomination of Pulu to the National Heritage List.

High Priority Actions – within the next three years

- Analysis of potential impacts on cultural heritage of processes associated with climate change, in particular storm surge events and sea level rise linked to global warming. Analysis to begin with monitoring of erosion at *kod*.
- Culture site surveys at Widul and other nearby islets, including assessment of their cultural heritage significance and conservation needs;
- Site recording training for Mabuygiw Rangers.

Moderate Priority Actions – within the next five years

- Development of protocols for culturally appropriate storage and handling of *kod* and Awgadhalkula items in Australian and overseas museums and universities. Development process to include trip to England by IPA Committee representatives to establish status of items and negotiate protocols with museum staff.

- Develop new and continue to foster existing relationships with Australian and international institutions holding Goemulgaw cultural material (e.g. Monash University, Melbourne, and Cambridge University and the Natural History Museum, England).



Plate 11. Terrence Whap standing beside Menguyzi Kula, 17 June 2008 (Photo: Garrick Hitchcock).



Plate 12. The *kod* site with Koey Sibuy dugong bone mound and people standing next to sacred clan fireplaces. Photographed by Haddon in 1898.



Plate 13. Thomas Mene, Aaron Whap and Matthew Paipai mapping Koey Awgadhw Kupay *bu* shell arrangement at the Pulu *kod*, 2001. Koey Sibuy dugong bone mound located immediately left of tripod (Photo: Ian McNiven).

TERRESTRIAL AND MARINE ENVIRONMENT

There is a need for greater understanding about the natural values of Pulu and surrounding islets, as well as near- and off-shore reefs and sea grass beds. It is also important that information on terrestrial and marine biodiversity is obtained for adjacent islets and waters as a baseline for potential expansion of the Pulu IPA in the future. Such surveys need to be undertaken as collaborative research with the Goemulgal and to include study of Goemulgaw traditional ecological knowledge and ethnotaxonomy. All mapping and assessment work must comply with Goemulgaw Research Protocols (to be finalised) and must be approved by the Goemulgaw RNTBC and the Pulu IPA Committee, and involve the Mabuygiw Rangers. The progress and results of all research must be distributed in an appropriate form to Goemulgal (e.g. plain English reports, posters etc.).

Immediate Priority Actions – 12 to 18 months

- Terrestrial faunal and floral surveys of Pulu;
- Survey of Pulu for weeds, pest species and marine debris;
- Incorporate Mabuyag Dugong and Turtle Management Plan (TSRA 2008) into IPA activities;
- Arrange for detailed beach and reef flat mapping as a basis for modelling the potential impacts of projected sea level rise from global warming on cultural and natural values.

High Priority Actions – within the next three years

- Terrestrial faunal and floral surveys of Widul and adjacent islets;
- Develop and implement management strategies for weeds, pest species and marine debris.
- Marine environment surveys of the waters surrounding Pulu and adjacent islets as baseline to monitor potential impacts of projected sea level rise.

Moderate Priority Actions – within the next five years

- Continue to monitor the environment of Pulu and surrounding islets and seas.

INTERPRETATION AND EDUCATION

The Goemulgal want to continue to pass on their knowledge of Pulu, and its special management requirements, to future generations of their people. They also want to share information about this sacred place with others, on their own terms, guarding that which is sacred. As such, the IPA Committee will work with the Mabuygiw Rangers to develop an Awareness Strategy for Pulu IPA to provide culturally appropriate interpretative and educational outcomes for Goemulgal and non-Goemulgal alike.

Immediate Priority Actions – 12 to 18 months

- Induction for Mabuygiw Rangers – Pulu IPA and associated ranger activities;
- Rangers to give talks to school students at Tagai State College (Mabuiag Island Campus) outlining the IPA management plan and activities;
- Develop program of school student excursions to Pulu;
- Rangers and the IPA Committee to give regular presentations to the Mabuyag community outlining the IPA management plan, priorities and activities;

High Priority Actions – within the next three years

- Interpretive, trilingual signage at *kod* (Kala Lagaw Ya, Torres Strait Creole and English);
- Signage in Bahasa Indonesia, advising illegal fishermen they are trespassing;
- Development of management protocols booklet (trilingual) for Mabuyag community and western Torres Strait communities;
- Foster school student education/participation in research programs;

Moderate Priority Actions – within the next five years

- Development of a DVD of Pulu IPA to showcase and promote its cultural and natural values, its management activities, and the Mabuygiw Ranger program.

CAPACITY BUILDING

The declaration of the Pulu IPA and the beginning of the Mabuygiw Ranger program will provide Goemulgal with new opportunities to develop skills and knowledge to enable them to continue to monitor and manage their sacred islet, and indeed all of the Goemulgaw lands and seas. Wherever possible, the rangers and IPA Committee will work to establish partnerships with other agencies to access relevant funding and training opportunities.

Immediate Priority Actions – 12 to 18 months

- Training for IPA Committee and Mabuygiw Rangers;
- Establish relationships with key partners;
- Seek funding for identified cultural heritage and biodiversity studies and management schemes;
- Attend National Indigenous Land and Sea Management Conference;
- Establish an IPA office on Mabuyag.

High Priority Actions – within the next three years

- Relevant training for Mabuygiw Rangers (e.g. culture heritage site recording, GPS, coxswain etc.);
- Establish additional relationships with relevant agencies;
- Develop and implement program of visitation to other IPAs in Australia;
- Establish architect-designed, culturally and environmentally appropriate ranger outstation (shelter, solar power, water tank and catchment) on Pulu;
- Identify and acquire relevant equipment for IPA Committee and Mabuygiw Rangers.

Moderate Priority Actions – within the next five years

- Continue to engage with key partners;
- Ongoing networking with other IPA programs in Australia.

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APPENDIX 1: MAP OF PULU – PLACES, CULTURE SITES, ZONING



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metres

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PULU

United Photo & Graphic
Film 285, Run 98, Frame 43
Scale: 1:8,000
30/08/1999

APPENDIX 2: CONTACT DETAILS FOR THE PULU IPA COMMITTEE

C/- Goemulgaw (Torres Strait Islanders) Corporation RNTBC
Mabuiag Island
Via Thursday Island
QLD 4875
Tel: 07 4069 4184

APPENDIX 3: FAUNA OCCURRING ON PULU, OR TO LIKELY TO OCCUR THERE

Mammals

Scientific Name	Common Name	Kala Lagaw Ya Name	Reason for Inclusion / Notes
Pteropidae			
<i>Pteropus alecto</i>	Black Flying-fox	<i>Sapur</i>	Heard at Pulu, June 2008; QM identification of photograph by Watson, Mabuyag, April 2009
Emballonuridae			
<i>Taphozous australis</i>	Coastal Sheathtail Bat	<i>Ap</i>	QM identification of photograph by Hitchcock, Pulu, June 2008
Muridae			
<i>Melomys burtoni</i>	Grassland Melomys	<i>Makas</i>	Community information; McNiven pers. obs. 2001 (<i>Kod</i> Precinct); collection at Mabuyag, April 2009; presence of remains of <i>Melomys</i> cf. <i>capensis</i> in archaeological deposits at Tigershark Rockshelter (McNiven <i>et al.</i> 2008:25)

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Amphibians and Reptiles

Scientific Name	Common Name	Kala Lagaw Ya Name	Reason for Inclusion / Notes
AMPHIBIANS			
Hylidae			
<i>Litoria caerulea</i>	Green Tree Frog	<i>Kutube</i> or <i>Kut</i> for short [general name for all frogs]	Collection at Mabuyag, April 2009
Myobatrachidae			
<i>Platyplectrum ornatus</i>	Ornate Burrowing Frog	<i>Kutube</i> or <i>Kut</i> for short [general name for all frogs]	Collection at Mabuyag, November 2008 and April 2009
REPTILES			
Agamidae			
<i>Diporiphora bilineata</i>	Two-lined Dragon	<i>Walek</i>	Community information
Colubridae			
<i>Dendrelaphis</i> sp.	Tree Snake	<i>Tabu</i>	Community information; presence of remains of a tree (colubrid) or venomous (elapid) snake (not a python) in archaeological deposits at Tigershark Rockshelter (McNiven et al. 2008:25); tree snake (unknown species) observed on Mabuyag, April 2009
Crocodylidae			
<i>Crocodylus porosus</i>	Saltwater Crocodile	<i>Koedal</i>	Community information; Hitchcock pers. obs. 2008 [Mabuyag]
Gekkonidae			
<i>Gehyra</i> sp.	Gecko	<i>Sis</i> or <i>Teybak</i>	Collection at Pulu and Mabuyag, April 2009
<i>Hemidactylus frenatus</i>	Asian House Gecko	<i>Sis</i> or <i>Teybak</i>	AM records for Mabuyag (48571-2, as <i>Hemidactylus</i> sp.); collection at Mabuyag, April 2009
Pygopodidae			

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Scientific Name	Common Name	Kala Lagaw Ya Name	Reason for Inclusion / Notes
<i>Lialis burtonis</i>	Burton's Snake-lizard	<i>Su</i>	QM identification of photograph taken by Hitchcock at Pulu, November 2008
Pythonidae			
<i>Antaresia maculosa</i>	Spotted Python	<i>Tabu</i> [general name for snakes, specific name for pythons]	Watson, pers. obs. [Mabuyag], May 2009.
<i>Morelia amethistina</i>	Scrub Python	<i>Tabu</i> [general name for snakes, specific name for pythons]	Watson, pers. obs. [Mabuyag], May 2009.
Scincidae			
<i>Carlia longipes</i>	Skink	<i>Moegay</i>	Collection at Pulu and Mabuyag, April 2009
<i>Cryptoblepharus litoralis</i>	Skink	?	Collection at Pulu, April 2009
<i>Cryptoblepharus virgatus</i>	Wall Skink	?	AM records for Mabuyag (R48464-7); collection at Mabuyag and Pulu, April 2009
<i>Ctenotus spaldingi</i>	Spalding's Ctenotus	<i>Ziziruk</i>	Collection at Mabuyag, April 2009
<i>Egernia frerei</i>	Major Skink	?	QM identification of photograph by Hitchcock, Redfruit Island, April 2009
<i>Emoia longicauda</i>	Scrub Whiptail Skink	?	QM identification of photograph by Fell, Mabuyag, 2008
<i>Eugongylus rufescens</i>		?	Collection at Mabuyag by Watson, May 2009
<i>Lygisaurus macfarlani</i>	MacFarlane's Skink	<i>Moegay</i>	AM record for Mabuyag (R48562); collection at Pulu, April 2009
Typhlopidae			
<i>Ramphotyphlops leucoproctus</i>	Blind Snake	?	Collection at Mabuyag by Watson, May 2009
Varanidae			
<i>Varanus indicus</i>	Mangrove Monitor	<i>Karum</i>	Community information
<i>Varanus panoptes</i>	Yellow-spotted Monitor	<i>Karum</i>	QM Identification of photograph taken by Hitchcock, Mabuyag, June 2008
<i>Varanus scalaris</i>	Spotted Tree Monitor	<i>Thamay</i>	AM record for Mabuyag (R48581); QM identification of photograph by McNiven, Pulu, April 2009

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Birds

Scientific Name	Common Name	Kala Lagaw Ya Name	Reason for Inclusion / Notes
Accipitridae			
<i>Elanus axillaris</i>	Black-shouldered Kite	?	Recorded during 2008-09 surveys, Mabuyag
<i>Accipiter fasciatus</i>	Brown Goshawk	?	Recorded during 2008-09 surveys, Mabuyag
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	<i>Ngagalaiig</i>	Recorded during 2008-09 surveys, Mabuyag and Pulu
Anatidae			
<i>Anas superciliosa</i>	Pacific Black Duck	<i>Ad</i> [general name for ducks]	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag
Apodidae			
<i>Apus pacificus</i>	Fork-tailed Swift	<i>Dhumaw kuma</i> ?	Recorded during 2008-09 surveys, Mabuyag
Ardeidae			
<i>Ardea ibis</i>	Cattle Egret	<i>Karbai</i> ?	Recorded during 2008-09 surveys, Mabuyag
<i>Ardea modesta</i>	Eastern Great Egret	<i>Karbai</i> ?	Recorded during 2008-09 surveys, Mabuyag
<i>Egretta sacra</i>	Eastern Reef Egret	<i>Kunai</i> (black phase); <i>Karbai</i> (white phase)	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Ardea intermedia</i>	Intermediate Egret	<i>Karbai</i> ?	Recorded during 2008-09 surveys, Mabuyag
<i>Nycticorax caledonicus</i>	Nankeen Night-heron	<i>Gawt</i> ?	Recorded during 2008-09 surveys, Mabuyag
<i>Egretta picata</i>	Pied Heron	<i>Kiapit</i>	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag
<i>Butorides striata</i>	Striated Heron	?	Recorded during 2008-09 surveys, Mabuyag and Pulu

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Artamidae			
<i>Artamus leucorynchus</i>	White-breasted Woodswallow	Poesey	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
Burhinidae			
<i>Esacus magnirostris</i>	Beach Stone-curlew	?	Recorded during 2008-09 surveys, Mabuyag and Pulu
Campephagidae			
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	?	Recorded during 2008-09 surveys, Mabuyag
Charadriidae			
<i>Charadrius leschenaultii</i>	Greater Sand Plover	?	Recorded during 2008-09 surveys, Mabuyag
<i>Charadrius mongolus</i>	Lesser Sand Plover	?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Vanellus miles</i>	Masked Lapwing	Kerkere	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag
<i>Pluvialis fulva</i>	Pacific Golden Plover	?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag
Cisticolidae			
<i>Cisticola exilis</i>	Golden-headed Cisticola	?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
Columbidae			
<i>Geopelia humeralis</i>	Bar-shouldered Dove	Kuduluk	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Ducula bicolor</i>	Pied-imperial Pigeon	Goeynaw	Draffan <i>et al.</i> 1983
<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	?	Recorded during 2008-09 surveys, Mabuyag
Coraciidae			
<i>Eurystomus orientalis</i>	Dollarbird	?	Recorded during 2008-09 surveys, Mabuyag
Cuculidae			

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<i>Eudynamys scolopaceus</i>	Asian Koel	?	Draffan <i>et al.</i> 1983
<i>Cacomantis variolosus</i>	Brush Cuckoo	?	Draffan <i>et al.</i> 1983
<i>Urodynamys taitensis</i>	Long-tailed Cuckoo	?	Recorded during 2008-09 surveys, Mabuyag
Dicruridae			
<i>Dicrurus bracteatus</i>	Spangled Drongo	San	Recorded during 2008-09 surveys, Mabuyag
Estrildidae			
<i>Lonchura castaneothorax</i>	Chestnut-breasted Mannikin	<i>Baibai baimut</i>	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
Eurostopodidae			
<i>Eurostopodus mystacalis</i>	White-throated Nightjar	Roega	Recorded during 2008-09 surveys, Mabuyag
Falconidae			
<i>Falco longipennis</i>	Australian Hobby	Awb	Recorded during 2008-09 surveys, Mabuyag
Frigatidae			
<i>Fregata minor</i>	Great Frigatebird	Waumer	Recorded during 2008-09 surveys, Mabuyag
<i>Fregata ariel</i>	Lesser Frigatebird	Waumer	Recorded during 2008-09 surveys, Mabuyag and Pulu
Glareolidae			
<i>Stiltia isabella</i>	Australian Pratincole	?	Recorded during 2008-09 surveys, Mabuyag
Halcyonidae			
<i>Todiramphus chloris</i>	Collared Kingfisher	?	Recorded during 2008-09 surveys, Mabuyag
<i>Todiramphus macleayii</i>	Forest Kingfisher	?	Recorded during 2008-09 surveys, Mabuyag
<i>Todiramphus sanctus</i>	Sacred Kingfisher	Zaikas	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu

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Hirundinidae			
<i>Petrochelidon nigricans</i>	Tree Martin	?	Recorded during 2008-09 surveys, Mabuyag
<i>Hirundo neoxena</i>	Welcome Swallow	?	Recorded during 2008-09 surveys, Mabuyag
Laridae			
<i>Sterna sumatrana</i>	Black-naped Tern	Sara ?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Hydroprogne caspia</i>	Caspian Tern	?	Recorded during 2008-09 surveys, Mabuyag
<i>Anous stolidus</i>	Common Noddy	?	Recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Thalasseus bergii</i>	Crested Tern	Sara ?	Recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Gelochelidon nilotica</i>	Gull-billed Tern	?	Recorded during 2008-09 surveys, Mabuyag
<i>Chroicocephalus novaehollandiae</i>	Silver Gull	Kekey	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Chlidonias leucopterus</i>	White-winged Black Tern	Sara ?	Recorded during 2008-09 surveys, Mabuyag and Pulu
Megapodiidae			
<i>Megapodius reinwardt</i>	Orange-footed Scrubfowl	Surka	Recorded during 2008-09 surveys, Widul; community information
Meliphagidae			
<i>Lichmera indistincta</i>	Brown Honeyeater	?	Recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Ramsayornis modestus</i>	Brown-backed Honeyeater	?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag
Meropidae			
<i>Merops ornatus</i>	Rainbow Bee-eater	Birubiru	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
Monarchidae			

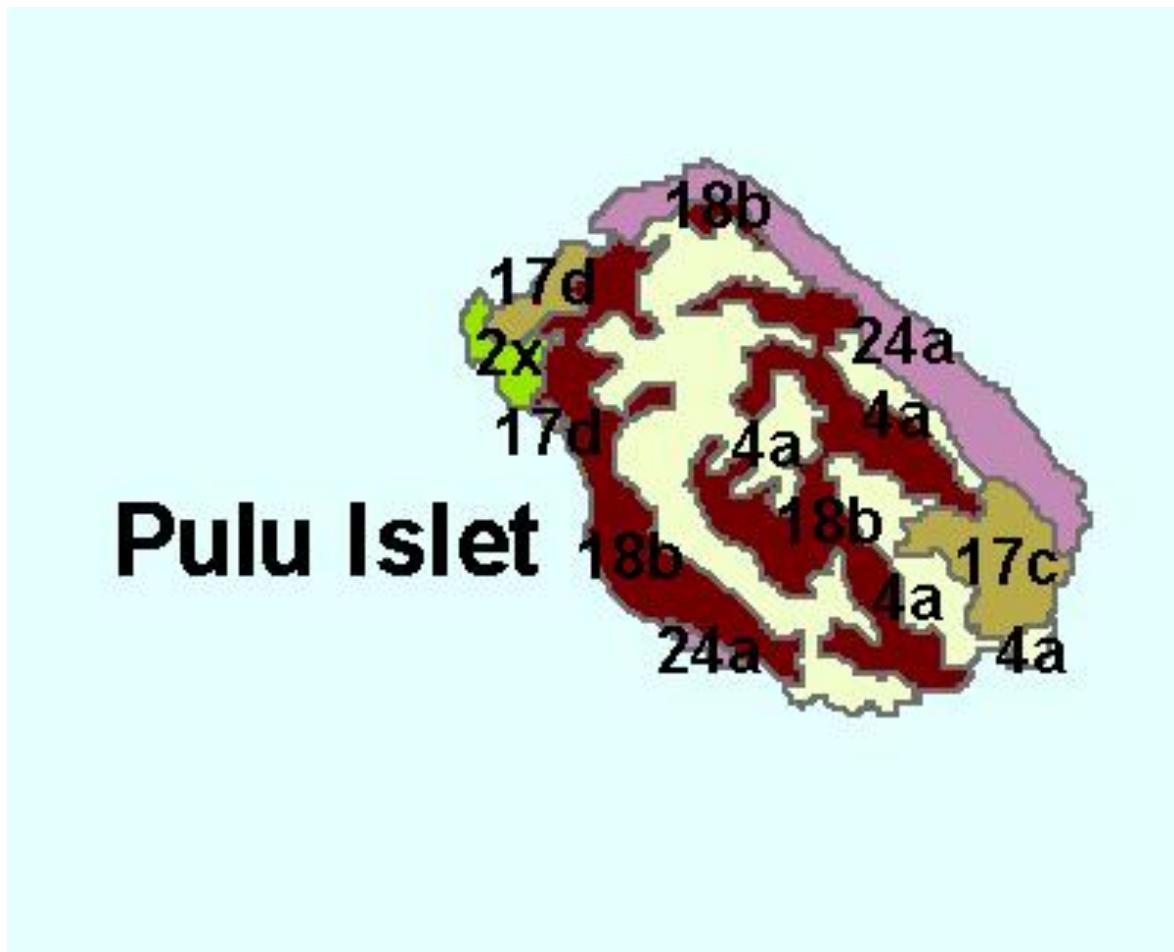
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<i>Myiagra ruficollis</i>	Broad-billed Flycatcher	?	Recorded during 2008-09 surveys, Mabuyag
<i>Myiagra rubecula</i>	Leaden Flycatcher	?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	?	Recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Myiagra alecto</i>	Shining Flycatcher	?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag
Nectariniidae			
<i>Dicaeum hirundinaceum</i>	Mistletoebird	?	Recorded during 2008-09 surveys, Mabuyag
<i>Nectarinia jugularis</i>	Olive-backed Sunbird	<i>Baimut</i> or <i>Mut</i> for short	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
Pachycephalidae			
<i>Pachycephala melanura</i>	Mangrove Golden Whistler	?	Recorded during 2008-09 surveys, Mabuyag
Passeridae			
<i>Passer domesticus</i>	House Sparrow	N/A [introduced species]	Recorded during 2008-09 surveys, Mabuyag
Pelicanidae			
<i>Pelicanus conspicillatus</i>	Australian Pelican	<i>Awai</i>	Photographed by Fell, 2008, Mabuyag
Phalacrocoracidae			
<i>Phalacrocorax varius</i>	Pied Cormorant	?	Recorded during 2008-09 surveys, Mabuyag
Rallidae			
<i>Gallirallus philippensis</i>	Buff-banded Rail	?	QM record for Mabuyag (O.13856); recorded during 2008-09 surveys, Mabuyag
<i>Porphyrio porphyrio</i>	Purple Swamphen	<i>Milu</i>	Recorded during 2008-09 surveys, Mabuyag
Recurvirostridae			

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<i>Himantopus himantopus</i>	Black-winged Stilt	?	Recorded during 2008-09 surveys, Mabuyag
Rhipiduridae			
<i>Rhipidura rufifrons</i>	Rufous Fantail	?	Recorded during 2008-09 surveys, Widul
Scolopacidae			
<i>Tringa nebularia</i>	Common Greenshank	<i>Kalu</i> ?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Tringa brevipes</i>	Grey-tailed Tattler	?	Recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Calidris ruficollis</i>	Red-necked Stint	?	Draffan <i>et al.</i> 1983; Recorded during 2008-09 surveys, Mabuyag and Pulu
<i>Arenaria interpres</i>	Ruddy Turnstone	?	Recorded during 2008-09 surveys, Mabuyag
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	?	Recorded during 2008-09 surveys, Mabuyag
<i>Xenus cinereus</i>	Terek Sandpiper	?	Recorded during 2008-09 surveys, Mabuyag
<i>Numenius phaeopus</i>	Whimbrel	?	Draffan <i>et al.</i> 1983; recorded during 2008-09 surveys, Mabuyag and Pulu
Threskiornithidae			
<i>Threskiornis molucca</i>	Australian White Ibis	<i>Bukari</i>	Recorded during 2008-09 surveys, Mabuyag
<i>Platalea regia</i>	Royal Spoonbill	?	Recorded during 2008-09 surveys, Mabuyag
<i>Threskiornis spinicollis</i>	Straw-necked Ibis	<i>Bukari</i>	Recorded during 2008-09 surveys, Mabuyag
Timaliidae			
<i>Zosterops citrinella</i>	Pale White-eye	?	Recorded during 2008-09 surveys, Mabuyag
Turnicidae			
<i>Turnix maculosus</i>	Red-backed Button Quail	<i>Gururu</i>	Recorded during 2008-09 surveys, Mabuyag

APPENDIX 4: VEGETATION CLASSIFICATIONS (STANTON ET AL. 2008)



- 2x.** Deciduous vine thicket + *Cochlospermum gillivraei* + *Bombax ceiba* var. *leiocarpum* + *Terminalia subacropetra* +*Sterculia quadrifida* + *Psydrax reticulata* + *Drypetes deplanchei*. Acid volcanic pavements.
- 4a.** Low *Welchiodendron longivalve* +/- *Acacia polystachya* open to closed forest. Acid volcanic and granite slopes and footslopes.
- 17c.** Open to closed tussock grassland with emergent shrubs. Coastal headlands.
- 17d.** Medium to tall *Mnesithea rottboellioides* + *Heteropogon triticeus* + *Cymbopogon spp.* +/- *Imperata cylindrica* +/- *Themeda triandra* grassland. Alluvial and residual plains, coastal dunes and granite footslopes.
- 18b.** Low *Acacia brassii* +/- *Welchiodendron longivalve* +/- *Cochlospermum gillivraei* shrubland/ rock pavement complex. Acid volcanic and acid plutonic hillslopes.
- 24a.** Mangrove closed and open forest, woodland and shrubland complexes. Estuarine muds.

APPENDIX 5: IUCN GUIDELINES FOR PROTECTED AREA MANAGEMENT CATEGORIES

CATEGORY III Natural Monument: protected area managed mainly for conservation of specific natural features

Definition

Area containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

Objectives of Management

- to protect or preserve in perpetuity specific outstanding natural features because of their natural significance, unique or representational quality, and/or spiritual connotations;
- to an extent consistent with the foregoing objective, to provide opportunities for research, education, interpretation and public appreciation;
- to eliminate and thereafter prevent exploitation or occupation inimical to the purpose of designation; and
- to deliver to any resident population such benefits as are consistent with the other objectives of management.

Guidance for Selection

- The area should contain one or more features of outstanding significance (appropriate natural features include spectacular waterfalls, caves, craters, fossil beds, sand dunes and marine features, along with unique or representative fauna and flora; associated cultural features might include cave dwellings, cliff-top forts, archaeological sites, or natural sites which have heritage significance to indigenous peoples).
- The area should be large enough to protect the integrity of the feature and its immediately related surroundings.

Organizational Responsibility

Ownership and management should be by the national government or, with appropriate safeguards and controls, by another level of government, council of indigenous people, non-profit trust, corporation or, exceptionally, by a private body, provided the long-term protection of the inherent character of the area is assured before designation.

Equivalent Category in 1978 System

Natural Monument / Natural Landmark

CATEGORY V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation

Definition

Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

Objectives of Management

- to maintain the harmonious interaction of nature and culture through the protection of landscape and/or seascape and the continuation of traditional land uses, building practices and social and cultural manifestations;
- to support lifestyles and economic activities which are in harmony with nature and the preservation of the social and cultural fabric of the communities concerned;
- to maintain the diversity of landscape and habitat, and of associated species and ecosystems;
- to eliminate where necessary, and thereafter prevent, land uses and activities which are inappropriate in scale and/or character;
- to provide opportunities for public enjoyment through recreation and tourism appropriate in type and scale to the essential qualities of the areas;
- to encourage scientific and educational activities which will contribute to the long term well-being of resident populations and to the development of public support for the environmental protection of such areas; and
- to bring benefits to, and to contribute to the welfare of, the local community through the provision of natural products (such as forest and fisheries products) and services (such as clean water or income derived from sustainable forms of tourism).

Guidance for Selection

- The area should possess a landscape and/or coastal and island seascape of high scenic quality, with diverse associated habitats, flora and fauna along with manifestations of unique or traditional land-use patterns and social organisations as evidenced in human settlements and local customs, livelihoods, and beliefs.
- The area should provide opportunities for public enjoyment through recreation and tourism within its normal lifestyle and economic activities.

Organizational Responsibility

The area may be owned by a public authority, but is more likely to comprise a mosaic of private and public ownerships operating a variety of management regimes. These regimes should be subject to a degree of planning or other control and supported, where appropriate, by public funding and other incentives, to ensure that the quality of the landscape/seascape and the relevant local customs and beliefs are maintained in the long term.

Equivalent Category in 1978 System

Protected Landscape