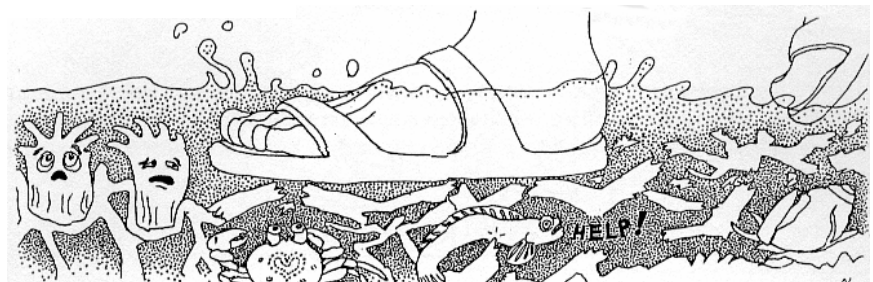


## PART 9 RECREATION AND TOURISM

### SUMMARY

- One of the objectives for the proposed Semporna Islands Park is to maximise opportunities for sustainable use. Tourism and recreational activities are seen as appropriate in this context. If well managed, they could bring economic, social and environmental benefits.
- The objectives for tourism development should be to facilitate appreciation and enjoyment of the natural environment, boost conservation efforts and bring benefits to local people and to Sabah as a whole.
- Tourism development has to be especially carefully controlled in order to protect the natural features, habitats, flora and fauna of this unique site. It must also be socially equitable and economically viable.
- The current very low level of tourism is advantageous because it means that plans for the park are not compromised or constrained by existing activities.
- Non-intensive eco-tourism is appropriate for this site. Tourism development will be governed by Park regulations and allowed only under permit. Operators will have to meet strict standards and environmental safeguards.
- There will need to be limits on the number of visitors who use the park at any one time. These measures will help to prevent overcrowding, and damage to vulnerable or ecologically sensitive areas.
- A detailed tourism development plan needs to be prepared once the park is gazetted. This should involve Sabah Parks, local community leaders, representatives from the government and private tourist sector, and other interested parties.

Figure 87.  
Tourism development  
could bring many benefits  
provided people's  
activities are carefully  
regulated.



Cartoon from *Save our Coral Reefs* (McAllister & Ansula, 1993)

## 9.1. INTRODUCTION

The proposed Semporna Islands Park has many attributes that make it suitable for tourism development, especially in relation to experiencing and appreciating the natural environment and way of life. Local communities and other interested parties generally see this as an appropriate way forward for the park.

*Potential benefits include:*

- Income, economic growth and jobs
- Incentives for conservation
- Opportunity to switch from extractive to non-extractive activities.
- Opportunities to promote education and environmental awareness

It is important to recognise that recreation and tourism also bring problems, for example,

*Potential impacts and problems include:*

- Disturbance of terrestrial habitats and loss of biodiversity (e.g. from buildings, human activities).
- Degradation of coral reefs (e.g. from snorkellers and divers, water pollution and sedimentation).
- Interference with local ways of life.
- Much of the income generated by tourism may end up elsewhere, rather than benefitting the local economy.
- The 'wilderness' characteristics and serene qualities of the islands may be lost.

Generation of income and provision of alternative livelihoods are stated objectives for the Semporna Islands Park, but it is vital that conservation remains the top priority and tourism development is very carefully planned and controlled. Without controls, tourism would probably expand rapidly to the detriment of the site.

Unmanaged recreation has, in many places throughout the world, led to environmental degradation and loss of biodiversity. In some cases it has destroyed the features that attracted people in the first place.

Thus it is vital to select the appropriate level and type of tourism from the start, and an 'environmentally-friendly' selection of recreational activities. The Parks Enactment makes it possible to introduce comprehensive tourism development regulations which are necessary if the attributes of the area are to be retained, enhanced and secured for the future well-being of both environment and people.

## 9.2. OBJECTIVES FOR TOURISM DEVELOPMENT

- ❑ To promote appreciation and enjoyment of the natural environment of the park.
- ❑ To support conservation initiatives and environmental protection.
- ❑ To be economically sustainable and channel proceeds from tourism back into park management.
- ❑ To provide alternative livelihoods for local communities.

### SABAH STATE POLICY ON TOURISM

Sabah's first *'Tourism Masterplan'* was completed in 1981, and this was followed by *'Sabah Tourism Development Guidelines: 1990-1995'*, produced by the State Ministry of Tourism and Environmental Development. A number of the principles outlined in this document are particularly relevant to the Semporna Islands, for example:

- Tourism development to be tailored in line with the State's unique characteristic of 'unspoilt nature'.
- Encouraging tourism to spread into the rural regions rather than concentrate in the towns so that village communities can benefit directly from tourism.
- To protect and conserve nature, forests and wildlife where such promotion is not in conflict with other forms of desirable development in the State.
- To protect and conserve, and at the same time make accessible, as much as possible, its natural environment and habitats.
- To promote Sabah's natural attractions which include our nature and wildlife heritage, cultures, tropical islands, beaches, marine life and water-based activity, and animal sanctuaries.
- To harmonise the relationship between tourism and culture without hurting the sensitivities of various ethnic groups in Sabah.
- To ensure that cultural associations are geared toward enforcing and strengthening the faith of the native people and their respective cultures.

### 9.3. OPPORTUNITIES FOR TOURISM DEVELOPMENT

The potential for tourism and recreational activities around the Semporna Islands has been recognised for many years. Private developers have made a number of applications to the Ministry of Environment, Tourism and Development, but these have been ‘frozen’ pending the production of this management plan, and a decision about designation of the park.

The Sabah Tourism Masterplan (1996) strongly endorses the Marine Park concept for Semporna and the range of tourism opportunities that it would provide.

The Semporna Islands Project, along with previous studies, has shown that the area has many attributes appropriate for tourism development, particularly in relation to experiencing and appreciating the natural environment and way of life, for example:

- Tranquil surroundings
- Stunning scenery
- Rich marine life
- Extensive coral reefs
- Safe snorkelling and diving conditions
- Excellent beaches for swimming
- Sites suitable for picnics and relaxation
- Unusual and interesting plant life
- Forests suitable for trekking
- Mangroves suitable for trails
- Population of flying foxes, ideal for ‘bat watching’
- Bird-watching (hornbills, kingfishers, megapodes etc)
- Forest and mangrove animals (monkeys, otters, monitor lizards etc)
- People with handicraft and boat building skills
- Local activities to observe (e.g. seaweed culture)
- Opportunity to learn about traditional use of plants (e.g. as medicines)
- Interesting legends associated with the islands
- Different cultures and lifestyles to experience
- Possibilities for village stays
- Opportunity to integrate with local events e.g. Semporna Lepa-Lepa regatta
- Opportunities for education and nature study to be a part of recreational activities

Different islands and reefs have different attributes, and the opportunities and constraints associated with different areas are discussed later.

## 9.4. CURRENT CONSTRAINTS

There are currently several constraints to tourism development that have to be addressed and solved, in particular:

### a) Access

Land claims, customary rights and ownership issues may impose constraints on what can be done in the proposed park. These issues will be dealt with as part of the park management plan, and do not prevent tourism development scenarios from being discussed.

### b) Security

Much has been done recently to improve security and make the area safer from 'pirates and kidnappers'. With involvement of the Police and other relevant authorities it should be possible to ensure security for visitors, local people and park staff alike.

### c) Acceptability

Tourism development will inevitably impinge on the way of life of local communities. But it will also provide many people with new opportunities. Tourism development can go ahead only if it is accepted and welcomed by local communities. Continued dialogue on tourism development issues and options are vital.

### d) Quality of the marine environment

There is considerable scope for diving tourism, but this will be successful only if a healthy and visually attractive 'product' is on offer. Poor quality will be a constraint to tourism development because divers will choose other locations in preference. The following are currently affecting the quality of the reefs:

- Past and continuing use of explosives and other damaging methods of harvesting marine resources.
- Fish populations greatly reduced as a result of intensive fishing
- Damage from large populations of coral-feeding starfish
- Coral bleaching and associated death of corals

It should be possible with sufficient manpower and commitment to stop destructive fishing. Over-fishing and damage from coral-feeding starfish can also be controlled in the long term, and the reefs that have been affected should gradually recover and improve. Coral bleaching is a difficult 'global' problem that is far beyond the control of the project, and about which nothing can be done locally except to monitor the situation.

### e) Conflicts of use

Tourism development will have to pay due regard to existing activities (e.g. seaweed farming, fishing) to ensure there are no conflicts.

## 9.5. POTENTIAL IMPACTS

Tourism development has to be undertaken with great caution because there are many potential impacts. There are numerous places around the world where unregulated tourism and recreation have led to environmental degradation and loss of biodiversity. In some cases the features that attracted people in the first place have been destroyed.

**Some of the potential negative impacts are:**

### **Environmental**

- a) Disturbance to vegetation and soils if developments occur on the islands, leading to loss of biodiversity, increased soil erosion and loss of scenic value.
- b) Increase in freshwater runoff and sediments from land disturbed during and after construction – a particular threat in the lagoon.
- c) Increased risks of pollution from boat fuel.
- d) Erosion and loss of stability of beaches if development occurs along the shoreline.
- e) Disturbance to wildlife, for example from noise and presence of buildings and people.
- f) Disturbance and possibly loss of rare and/or sensitive communities (e.g. rockfaces with scrub community; lagoon with fringing and patch reefs).
- g) Disturbance and possibly loss of rare and/or sensitive species (e.g. sea snakes, otters, hornbills, various plants species).
- h) Collection of shells and other ‘souvenirs’ from the shore and reefs.
- i) Physical damage to reefs from ‘trampling’ by snorkellers and divers.
- j) Shading and other effects if pontoons are installed.
- k) Water pollution and contamination of groundwater from sewage and other wastes generated by tourist development.
- l) Depletion of natural supplies of freshwater if use is unregulated.

### **Social/cultural**

- a) Loss of incomes and livelihoods for local fishermen and islanders.
- b) Social impacts on local people (e.g. crime, drugs and alcohol, interference with traditional ways of life).
- c) Loss of visual beauty and serene qualities of the Islands due to presence of possibly large numbers of people.
- d) Loss of culture and cultural roots.
- e) Introduction of diseases.

Conversely, there can be **positive impacts** from tourism and recreation, in addition to the direct benefits of employment and economic gain. For example, the presence of visitors and dive operators can, through increased vigilance, help in bringing activities such as fish blasting to an end. Tourism also provides an opportunity to boost environmental awareness, and to increase knowledge about the site through observation and monitoring schemes.

## 9.6. CARRYING CAPACITY AND ECO-TOURISM

The Semporna Islands Park, like any natural area, has the capacity to sustain a certain amount of different resource uses without becoming degraded. The *tourism carrying capacity* is the capacity of the park to sustain recreational use, without damaging the environment, reducing visitor satisfaction, interfering with other uses and disrupting local communities. It entails looking at physical, environmental, social and economic factors in relation to the principal objectives for the park, and then assessing how much and what type of tourism is appropriate.

Many planners now tend to use the concept of '*tolerable levels*' of visitation, which are lower than the maximal levels set by 'carrying capacity' (Brown, 1997). Both levels are difficult to determine because of the number of factors involved, and also because perceptions differ. Consideration of the objectives for the park is vital, because these influence how much tourism an area can safely absorb. The high nature conservation importance of the Semporna Islands Park and the value of activities such as seaweed farming mean that the tourism use limit may be lower than at sites of an equivalent size that do not have these attributes that need protecting.

Decisions about the scale of tourism development and the range of activities on offer at a particular site are sometimes taken primarily on economic rather than environmental grounds. It is often assumed that economic value will be higher the greater the number of visitors and range of activities on offer, and thus it may be tempting to over-develop. A common scenario is that, as the site becomes more popular, there is ever-increasing expansion to meet demand. Finally, a stage may be reached where managers are faced with the difficult task of trying to scale down established tourism operations after it is discovered they are inappropriate or causing damage.

Generation of income and provision of alternative livelihoods are stated objectives for the Semporna Islands Park, but it is vital that conservation remains the top priority and tourism development is very carefully planned and controlled. Without controls, tourism would almost certainly expand rapidly to the detriment of the site. It is even possible to destroy the features that attracted people in the first place.

Following discussion through the Semporna Islands Project, it has been agreed that well-managed, non-intensive '*eco-tourism*' is the most suitable goal. Eco-tourism is defined here as tourism which puts nature conservation at the top of the agenda, and has minimal or no negative impacts on the environment or on local communities.

The Semporna Islands Park offers a unique opportunity to 'get it right' first time because recreational and tourist activities are currently virtually non-existent. It is vital to select the appropriate level and type of tourism from the start, and an environmentally-friendly selection of recreational activities.

## 9.7. GENERAL GUIDELINES FOR TOURISM DEVELOPMENT

- a) Plans need to be acceptable in the context of State and Federal government policies, such as the National Ecotourism Plan and the State Conservation Strategy.
- b) Tourism development must be set within the primary goal for the proposed park, which is to protect and conserve ecosystems, natural features, habitats and fauna and flora of the Park whilst providing for ecologically sustainable use of the area.
- c) Tourism should actively promote understanding and appreciation of the natural environment. If properly planned and conducted, it should help to support the conservation management plan and protection of the area.
- d) Although economic gain should not be a primary aim, tourism activities need to be economically sustainable. Mechanisms should be in place to ensure that economic benefits are channeled back to local communities and to activities that support conservation management activities.
- e) All aspects of tourism development, operation of facilities and entry into the park for purposes of recreation will be coordinated and regulated by Sabah Parks. This will enable certain standards, protocols and limits to be imposed.
- f) All visitors will be required to obtain an entrance permit and pay a fee. A limit will be placed on the total number of visitors who can be in the park at any given time. An initial rough estimate of carrying capacity is included in this plan.
- g) Tourism and recreation need to be integrated with and not conflict with other legitimate activities in the proposed park. A mechanism should be in place to ensure that conflicts can be discussed and resolved.
- h) Local communities should continue to be involved in planning for tourism, for example in discussing what kind of tourism occurs, where and when. Local people should be directly involved in operation of facilities (e.g. trained as 'nature' guides).
- i) Care should be taken that tourism development does not jeopardise the cultural and social values of the area.
- j) All facilities built for tourism should be based on local designs, be in harmony with the natural environment and be operated in an environmentally friendly way.
- k) Promotion of the area as a tourism destination should be carried out in line with objectives and kind of tourism desired i.e. ecotourism.
- l) Education and awareness must be an integral part of tourism and recreational activities. The materials should include a guide to the park and its regulations, together with field guides for purchase.
- m) Mechanisms should be in place to monitor and evaluate tourism and recreational activities, and to make adjustments to the overall programme as necessary.



## 9.8. ACCOMMODATION

Once established, the Semporna Islands Park will have the capacity to attract local, regional and international visitors. For people who do not live locally, accommodation will be required somewhere in the vicinity. This could be inside or outside the park. The main benefits and constraints are shown in Table 5.

Location	Benefits	Constraints and Threats
<b>Outside park</b>	<ul style="list-style-type: none"> <li>▪ No impact on the park from visitor overnight facilities.</li> <li>▪ Easier control on activities because people are not staying in the park.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Less satisfying for visitors who want full experience of the islands.</li> <li>▪ Visits to park would involve journey time.</li> </ul>
<b>Inside park</b>	<ul style="list-style-type: none"> <li>▪ Satisfying experience for visitors and could lead to better support for the park.</li> <li>▪ Presence of tourist facilities should help with surveillance.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Possible environmental impacts.</li> <li>▪ Possible social &amp; cultural impacts.</li> </ul>

Table 5. Benefits and constraints of locating accommodation inside or outside the park

### Recommended actions

- The majority of visitors should be accommodated outside the park. Use should be made of existing hotel and guest house capacity in Semporna. Other towns and villages both on the mainland and on neighbouring islands may also wish to provide accommodation for people visiting the park. This could include ‘home-stay’ style accommodation.
- Limited capacity, eco-friendly accommodation could be provided at several locations in the park, provided that rigorous standards of construction and operation are set. These facilities should not be luxury resorts, but small-scale operations built in local style and with limited capacity.
- Accommodation units might either be land-based or sea-based (water village style). Bajaus in the Semporna area have a very strong tradition of living in houses on stilts in the sea. Many of the dwellings in the proposed park are built in this way, as are tourist facilities at Mabul and in Semporna.

---

## Site suitability for accommodation: island by island

---

<b>Boheydulang</b>	The old Pearl Farm site on the west coast is very attractive, with a rocky backdrop, a small sandy beach suitable for swimming, and reasonable snorkelling close by. The area is sheltered and accessible by boat at low water. It would be an ideal location for a rest house or a few chalets or lodges, set back from the beach. The Park Centre is also recommended for this area, but much depends on arrangements made with the new Pearl Farm (assuming the lease is signed).
<b>Bodgaya</b>	This large island is not very well suited for overnight accommodation because access is difficult except at high water, the island terrain is steep and rocky in some places and there are no sandy beaches. Stands of mangrove occur in many places and need to be kept intact. Much of the low-lying land is currently taken up with houses, crops or fruit trees, and higher ground is of considerable conservation importance. Home-stay accommodation could be a possibility at some of the kampongs.
<b>Tetagan</b>	The north-western end of the island is accessible at low tide, and at one time there was a large kampong here. However, the area is now re-growing and is best left undisturbed.
<b>Sebangkat</b>	The south-west corner of the island is accessible at low tide and has an attractive beach. It would be very suitable for a small 'water-village' style development, or chalets set back from the sea. It is also recommended as a visitor centre because it is the first island that visitors encounter if they are coming in from Semporna. Currently, these options are complicated by the presence of the kampong, but over 80% of the people here are non-Malaysian, so the situation may change.
<b>Selakan</b>	Access becomes more difficult at low tide, but is still possible with small boats. The village here is well established, and home-stay accommodation is a possibility. It would also be suitable to have a craft centre here, as an outlet for suitable items made by local people. Establishment of a pilot giant clam facility here is also recommended.
<b>Maiga</b>	This attractive island is very suitable for accommodation, either on the island itself, and/or in 'water-village' style. Currently, this option is complicated by the presence of the kampong, but over 90% of the people here are non-Malaysian, so the situation may change. This island is also an alternative site for the pilot giant clam facility.
<b>Sibuan &amp; Mantabuan</b>	It is recommended that the outlying islands of Sibuan and Mantabuan are left uninhabited, for the following reasons: <ul style="list-style-type: none"> <li>• Both are very small and have a limited amount of space and shade.</li> <li>• Part of the attraction of these islands is their solitude, which would be lost if the islands are developed.</li> </ul>

- Natural patterns of erosion and deposition of sand might be altered by developments, and this could affect the stability of any buildings erected (as happened at Sipadan). Conversely, erection of buildings may themselves have an impact on movement of sand and sediment.
- This could be exacerbated by the threat of sea level rise and increase in stormy seas due changes in the global climate. Both islands are only about one metre above sea level and so at risk from inundation.
- Mantabuan and possibly Sibuan are nesting sites for turtles. Turtles are easily disturbed and disorientated by lights and noise from land-based developments.
- Access to Mantabuan is possible only at medium to high water.

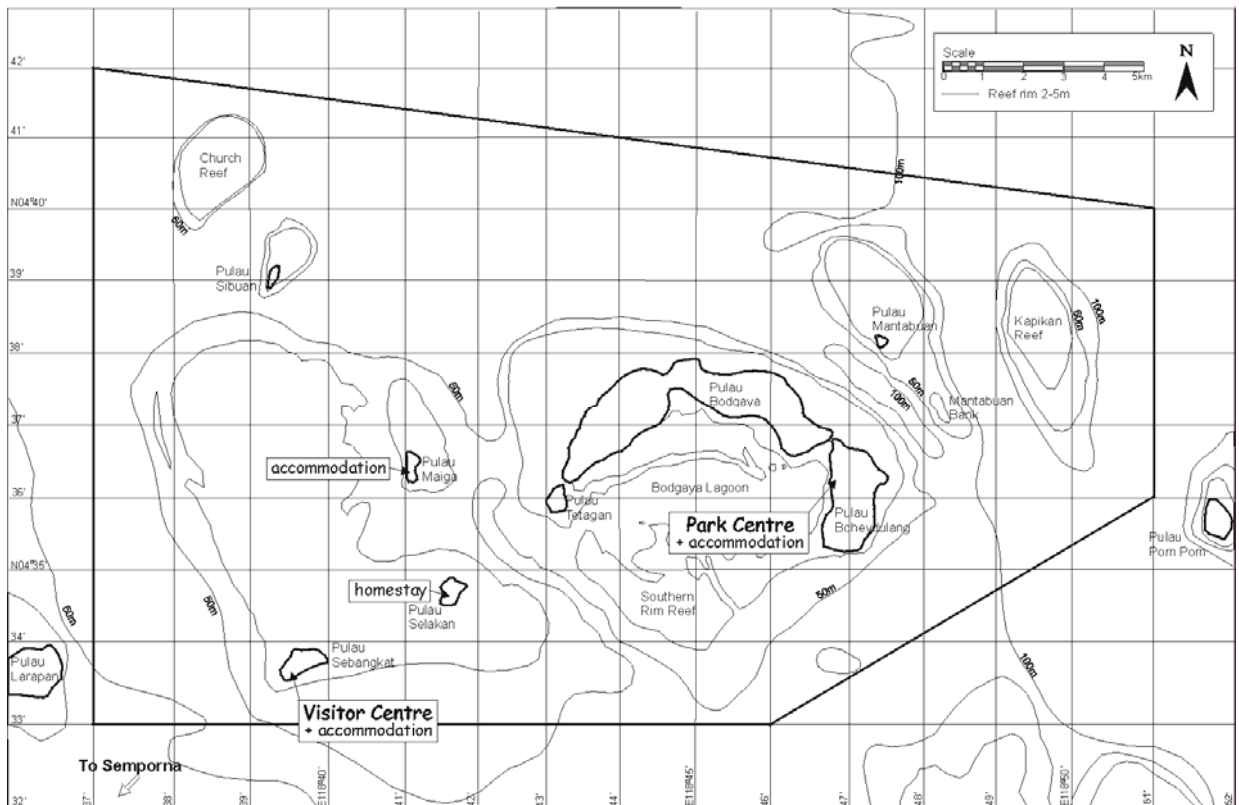


Figure 88. Suggested locations for Park Centre, Visitor Centre and accommodation

## 9.9. OTHER FACILITIES IN THE PARK

Other facilities (i.e. apart from accommodation) need to be planned in accordance with the objectives for the park. The aim should be to enable visitors to enjoy the peaceful and beautiful surroundings and have the opportunity to appreciate and learn about the natural environment. Activities such as swimming, snorkelling, diving, sea canoeing, sailing and forest trekking fit well with the concept of the park. Obtrusive activities such as jet skiing, water skiing and paragliding are inappropriate, and best conducted outside the park boundary. Recreational angling is also not suitable for a relatively small area that is established primarily for nature conservation.

Preliminary concepts only are presented here. As with the building of accommodation units and the park centre, full and detailed plans for all facilities and activities will have to be developed and submitted to the park Co-Management Committee (see 11.1). Impact assessments will have to accompany these plans, as outlined in Part 10.6 and these will have to show that the facility will operate to the highest ecological principles.

The recommendations are intended to ensure that visitors will be provided with a range of facilities and activities which do not exceed the carrying capacity of the park. It will be possible to provide facilities both on the land and 'at sea', as described below:

### 9.9.1. Land-based

#### a) Park Centre

The Park Centre would ideally be located on Boheydulang, at the Pearl Farm site. This is an excellent, central location which Sabah Parks have been using as a base for many years to keep a watching brief over the area. However, as mentioned previously, the establishment of the Park Centre will be governed to some extent by the arrangements made with the new Pearl Farm (assuming the lease is signed).

#### b) Visitor Centre

It is recommended that a Visitor Centre is established on Pulau Sebangkat. This island is easily accessible even at low tide, and is located at the entry point into the park for people coming from Semporna (the closest town to the park). Whilst some information about the Park will be in the Sabah Parks Headquarters in Semporna, the Visitor Centre should have a range of interpretive materials and also act as a 'Customs Post', where boats bringing visitors into the park have to stop, register and show their permit.

#### c) Shelters and trails

Whilst the small islands (e.g. Mantabuan), can be circumnavigated in as little as 10 minutes the large islands provide many opportunities for interesting trails and guided nature walks. Routes for the trails and position of structures such as canopy walkways, scenic viewpoints and shelters need to be carefully planned by Sabah Parks in conjunction with the Forestry Department and local communities. Impact assessments would be required for all these developments.

### 9.9.2. Sea-based: floating pontoons

The idea of having floating pontoons in the Semporna Islands Park was first put forward by Meagher *et al.* (1992), who described how they have been used to good effect in Australia's Great Barrier Reef Marine Park.

Construction of the pontoons for the Semporna Islands Park would provide a challenge and an opportunity to produce structures that not only provide the requisite facilities for visitors, but also strongly reflect local designs.

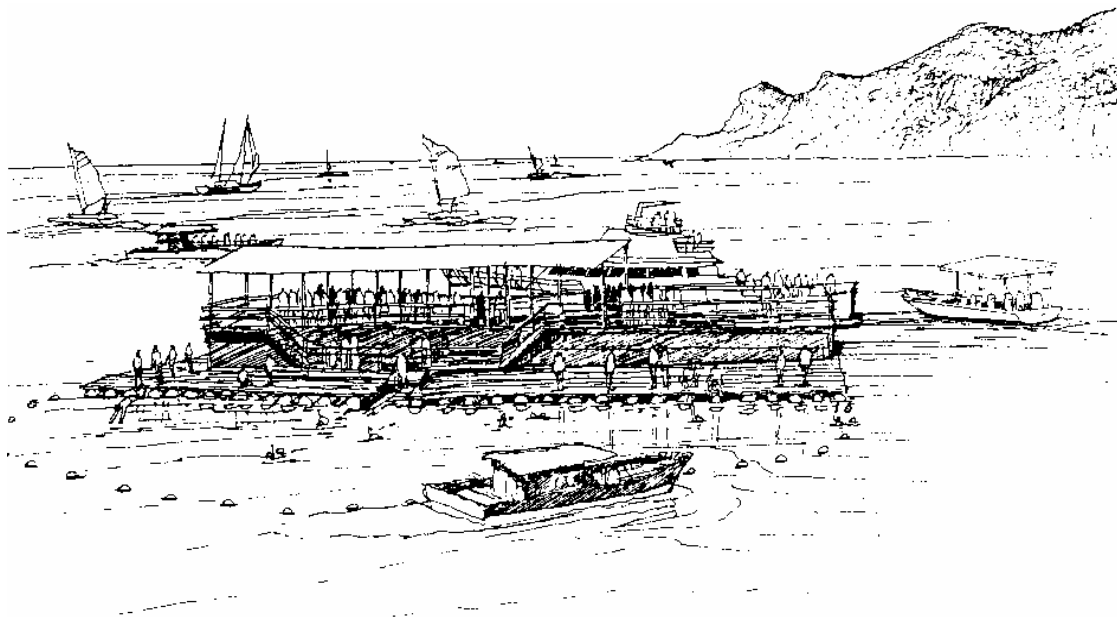


Figure 89. Sabah version of the Great Barrier Reef floating pontoon concept. Drawing taken from *Sabah Tourism Masterplan, 1996*.

**Amenities:** The pontoons are not just simple platforms in the sea, but provide various amenities to enable visitors to engage in interesting and enjoyable activities, and also to take a rest and have drinks and refreshments. The following can be incorporated, although it would not necessarily be advisable to have all the facilities on each pontoon:

- Open-sided seating area with roof to protect against sun and rain.
- Semi-submersed platforms that enable easy and safe access to the sea for swimmers and snorkellers.
- Changing rooms and toilets.
- Small café providing drinks and snacks
- Built-in underwater observatory with side windows looking out onto the reef.
- Scuba diving facility
- Mooring points for semi-submersible viewing boats.

## Advantages

There are several arguments for promoting use of pontoons for sea-based activities, rather than developing facilities on the islands.

- It means that the islands can be kept free of developments, and so retain their natural qualities.
- Having the facilities all together in a self-contained unit means that impacts (if they occur) are restricted to a relatively small area.
- The pontoons can be constructed off-site (e.g. in Semporna) and then towed to the park – thus avoiding any impact within the park.
- The pontoons can be moved and re-located in a different environment if they are found to be causing damage.
- The pontoons provide much easier access to good snorkelling because they can be located closer to the reef rim.
- Easy access into the water provided by the platforms may help to persuade people to go snorkelling when they might otherwise be reluctant to try it, so meeting the objective of the park to provide opportunities to appreciate the natural environment.

## Site selection

If carefully sited, installed and operated, the pontoons should cause minimal or no environmental damage. Many factors have to be taken into consideration in selecting the location for the pontoons, for example they should be:

- In an area where it is possible to fix the anchor points without causing damage
- Close to an area of reef with attractive shallow ‘corals gardens’ and fish.
- Within easy snorkelling distance of the reef.
- Located over sand rather than directly over the living reef because shade kills corals.
- At sites where the corals are fairly resilient, rather than in ecologically sensitive areas.
- As sheltered as possible from prevailing winds and waves.
- In areas that do not experience strong tidal currents.

Pontoons could be established at Boheydulang (off ‘Palm Beach’) and Bodgaya (adjacent to the cliffs), with smaller ones (simple platforms for snorkelling and swimming, with a shaded changing area) in the lagoon and off the south-east of Mantabuan and south-west Sibuan.

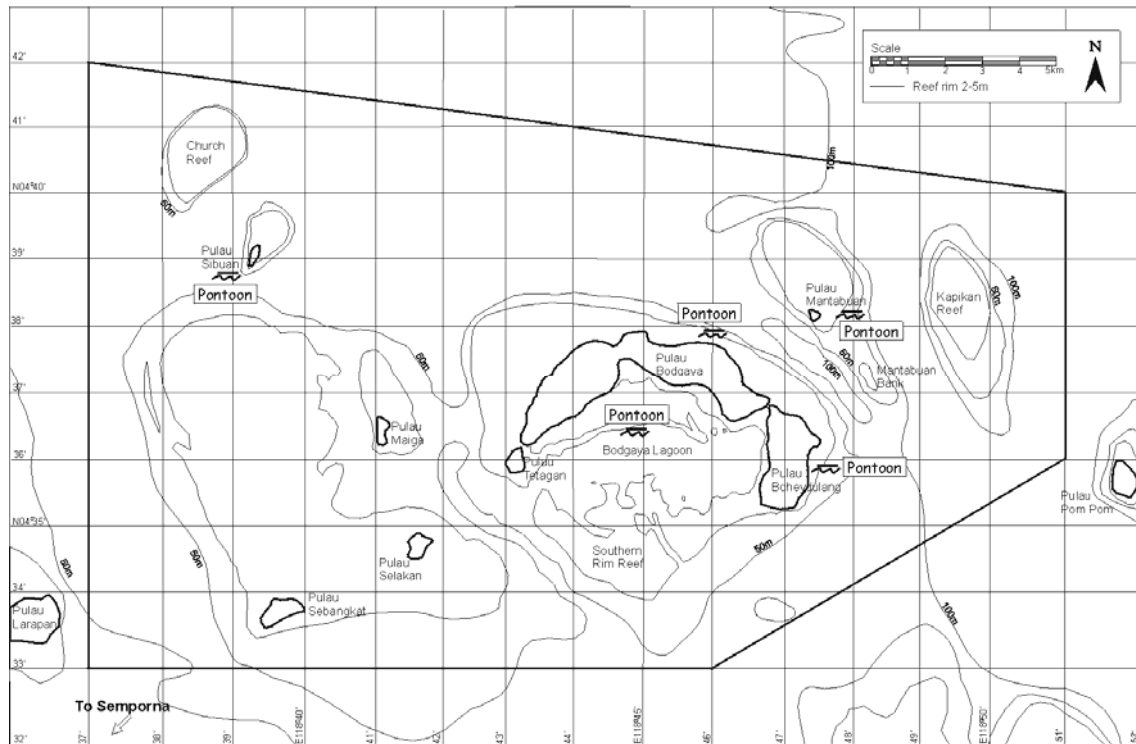


Figure 90. Possible locations for pontoons in the proposed park.

### 9.9.3. Jetties

Currently, there are jetties at the following islands: Sebangkat (one jetty at the south-west point); Selakan (two jetties in the south-west) and Boheydulang (one jetty at the old Pearl Farm).

It will be advisable to build small jetties at Sibuan, Mantabuan and Tetagan, and probably a larger one on Maiga. Small to medium-sized boats would be required to use the jetties (mooring points would be provided), rather than run up onto the beach. With the exception of Tetagan, the south-west corner of the island is the most suitable location because it is sandy and drops away more steeply than elsewhere. The best place for the Tetagan jetty is towards the north-western end of the island, but there is nowhere that is completely sandy. Small jetties would not be appropriate for large boats, which would have to use special mooring points.

### 9.9.4. Moorings

Deployment of anchors by dive boats in coral reef areas has been a major cause of damage in many countries, and their use in the Semporna Islands Park will be prohibited. An adequate number of mooring points will therefore need to be provided.

There are several accepted types of mooring point – one that is commonly used for small to medium-sized boats is the Halas mooring system, in which a stainless steel pin is embedded into hard substratum on the reef (e.g. an old limestone head). The pins can occasionally pull out of the rock, and a cheaper alternative is to use conventional mooring buoys. For example, large drums (at least 2 drums of 200 litre capacity each) filled with rock or concrete have been successfully used in the Komodo National Park on soft seabed. These types of mooring are easier and cheaper to install, use local materials and tools, and prevent damage to the reef.

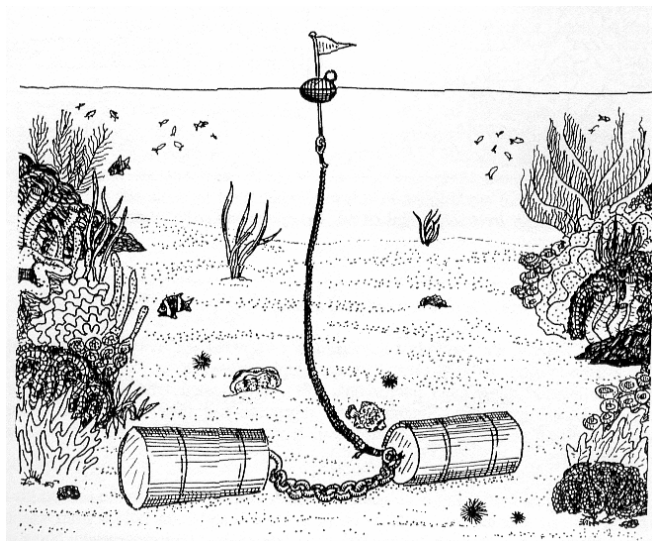


Figure 91. Low-tech moorage system suitable for small or medium size boats

Cartoon from *Save our Coral Reefs* (McAllister & Ansula, 1993)

The main purpose of moorings is to provide access to suitable dive or snorkel sites and a safe place for boats to wait without the need to anchor. Moorings help to direct visitors to specific locations, and can also be used to control visitor use by restricting the numbers of boats that are allowed to tie-up at any one time.

Moorings are not necessarily appropriate for all the reefs. A more even distribution of divers along the reef can be achieved by allowing boats to drop-off and pick-up without mooring, much as they do at Sipadan. This is satisfactory where the boat can easily maintain its position, or needs to drift with the divers.

Location of moorings needs to be discussed fully as the tourism plan is developed, but one firm recommendation is to have at least two fixed mooring points on the east side of the Mantabuan Bank reef. Under the zoning scheme, the west side of the bank is a Preservation (no-entry) Zone, while the east side is open to limited diving. The top of this reef is at about 10m depth, and is not always visible from the surface, so the most effective way of ensuring that dive boats go to the correct place is to provide mooring points.



## 9.10. VISITOR NUMBERS

One of the main objectives for the park is to enable people to come and enjoy the area and its natural features. Tourism is also seen as a way of promoting economic development and sustainable (non-extractive) use. The park therefore needs to attract and welcome visitors.

As mentioned earlier, it is sometimes assumed that more equals better, because there will be greater economic benefit. However, this conclusion is not necessarily correct when it comes to tourism and the environment.

The impact of visitors depends to some extent on what they are doing, and how carefully they are doing it, but there is little doubt that large numbers of people are more likely to cause problems than smaller numbers. Not only is there a greater 'trampling effect' (both on land and on the reefs), but more infrastructure, support staff, transport etc will be required to meet the needs of these visitors, and this in itself will create more disturbance.

Controls therefore need to be exerted, because otherwise there will tend to be an unregulated 'free-for-all' which is unlikely to be in the best interests of the park.

It is quite difficult to assess how many visitors can be allowed into a protected area without detriment to the natural environment, to local communities and the enjoyment of visitors themselves. Relatively few studies have been carried out, and in any case, every site has different management needs, attributes and sensitivities. A few examples are given below.

The Tunku Abdul Rahman Park off Kota Kinabalu (4,929 ha), had 160,000 visitors in 1999 (Cabanban, 2000), but the impact is unknown. Bonaire Marine Park (2,600 ha) in the Caribbean was expecting 30,000 divers in 1997, plus an unspecified number of snorkellers, windsurfers and others (De Meyer, 1997). The Park is now rapidly approaching the estimated maximum carrying capacity of the reefs (De Meyer, 1997).

At Pulau Sipadan, it was accepted in the mid 1990s that the carrying capacity of the island had been exceeded when there were up to 200 visitors staying on the island, plus support staff, and in the region of 100 people coming on day trips.

It should be quite possible for the Semporna Islands Park (35,000 ha) to absorb many hundreds of visitors a day provided that they do not all want to be in the same place at the same time. There are bound to be certain activities or localities (e.g. popular dive sites) that are more in demand than others, and it will be important to have a mechanism for limiting access and spreading people out.

Detailed strategies need to be worked out as the tourism plan develops, but it is important that a cautious approach is taken from the outset. It is much more difficult to reduce numbers once tourism is well entrenched than it is to set limits in the first place. There need to be overall limits on the number of visitors in the park and control over how many people partake in various activities in different zones of the park. These measures will help prevent overcrowding and damage to vulnerable or ecologically sensitive areas.

Controls on some activities can be achieved by limiting the number of concessions – for example by allowing only two or three dive organisations to operate, and limiting the size and number of boats and sets of gear that they can use. Control over the number of visitors can be achieved by setting a limit on the number of permits issued each day, and by regulating the number of tourist and private boats allowed into the park.

The most difficult times will be during public holidays, when demand to visit the park will rise. Efforts should be made to promote off-peak visits in order to decrease the risks of over-crowding.

Further consideration will need to be given to this issue once the park is established, and the following figures are provided only as a guide for further discussion.

### 9.9.1. Numbers staying in the Park

Table 6 shows possible sites for accommodation within the Semporna Islands Park, with indications of maximum capacity. Under this scheme, if all the developments go ahead at some stage, the *maximum* number of people staying in the park at any one time would be 115. If staff are added, this would bring the number of people to about 150 (homestay does not involve bringing in additional staff).

Island	Type of accommodation and recommended maximum visitor numbers		
	Homestay	Lodges or bungalows	'Water village' style
Boheydulang	Possible. 10 - 15 max	Pearl Farm site 15 – 20 max	None
Bodgaya	Possible 10 - 15 max	None	None
Tetagan	None	None	None
Sebangkat	None	None	Off SW beach 20 - 25 max
Selakan	Possible 10 - 15 max	None	None
Maiga	None	None	SW beach 20 - 25 max
Sibuan	None	None	None
Mantabuan	None	None	None

Table 6.  
Possible sites for accommodation and maximum visitor numbers on islands in the Park.

### 9.10.1. Numbers on day visits, and engaged in different activities

#### a) land based

As mentioned previously, there are many reasons why people will want to visit the park, and a range of activities that they may wish to try. It is quite likely that some visitors might want to experience several things on a day visit – for example have a picnic on the beach and also go on an island trail. The suitable numbers below are rough estimates, but provide an indication of how many might be involved in a particular activity at any one time. Under this scheme, the park could probably absorb up to 300 visitors engaged in land-based activities *provided they were spread out* (this *includes* people staying on the islands).

Activity	Island location	Factors influencing carrying capacity	Suitable numbers*
Beach recreation, picnics & swimming	Boheydulang Lagoon beach	Small beach; less suitable for swimming at low tide.	Maximum 10
	Boheydulang Palm beach.	Small beach, but only accessible at mid to high tide.	Maximum 10
	Sebangkat (south-west)	Beach area restricted because currently occupied by kampong	Maximum 20
	Maiga	Some of beach area currently taken up by kampong. Swimming is best at high tide.	Maximum 30
	Sibuan	Good beach with shade all round island. Swimming best at high tide.	Maximum 50
	Mantabuan	Good beach with shade all round island. Swimming best at high tide.	Maximum 30
Nature trails; canopy walks; bird watching	Boheydulang Bodgaya Tetagan	Part of Bodgaya is a preservation (no-entry) zone, but the rest of these central islands have potential for trails of varying lengths, and one or more canopy walks. Terrain is difficult in places.	Depends on length/number of trails but plenty of opportunities and could probably absorb max 80
Seaweed farming	Sebangkat; Selakan	Should cause minimal intrusion on farming operations and local people.	Small parties e.g. max 10 people
Giant clam farm	Planned for Selakan or Maiga	Should cause minimal intrusion on farming operations and local people	Small parties e.g. max 10 people
Craft Centre; traditional activities	Selakan	Depends on extent to which traditional activities will be kept up or revived. Visitors should cause minimal intrusion on local people.	Small parties e.g. max 20 people
Visitor Centre	Sebangkat	Enough space to see exhibits etc	Maximum 30

Table 7.

Possible areas for land-based recreational activities within the Semporna Islands Park, with indications of maximum capacity\*.

\* These numbers are based on each visitor having at least a 30 m<sup>2</sup> area of beach (a standard cited by the World Tourism Organisation for 'de-luxe' beach capacity)

## b) Sea-based: snorkelling and diving

Table 8 provides a broad indication of the suitability of each reef system for snorkelling and diving. This is only a summary assessment. There are considerable variations in reef condition and attractiveness depending on depth and position along the reef. These features are described and illustrated in more detail in the SIP project report entitled '*Atlas of the Coral Reefs of the Semporna Islands*'.

Under the scheme below, the four pontoons between them could accommodate a maximum of 140 people *at any one time*. Only snorkelling would be offered on the smaller ones, but the larger ones might also include diving gear and semi-submersible viewing vessels. The reefs away from the pontoons could probably sustain 10 – 12 boatloads of 10 divers at a particular time, *provided they were spread out*. This gives a total of about 250 people engaged in sea-based activities. In planning for the development of snorkelling and diving in the park, mechanisms will have to be developed to ensure that 'clustering' does not occur.

	<b>Reef attractiveness and features of interest</b>	<b>Factors reducing carrying capacity</b>	<b>Recommendations for use</b>
Lagoon reefs	Moderately attractive. Sheltered, safe conditions. Some unusual species and growth forms present.	Reef surfaces are increasingly silty below about 5m and visibility is reduced. Sediment is easily stirred up and some of the slopes are unstable.	More suitable for snorkelling than diving, because of the silty conditions. Unsuitable for dive training. Two small pontoons recommended for ribbon reef, with capacity for about 20 visitors max on each.
Bodgaya outer reef	West Bodgaya reef is affected by black sponge, but north side moderately attractive, with mainly robust growth forms. Lower slopes and deep cliffs of particular interest.	Need to avoid conflict with traditional fishing.  Some moderately strong currents at eastern end (facing Mantabuan).	Suitable for snorkelling and diving, including introductory dives.  Pontoon recommended for north side, with capacity for a maximum of 50 visitors
Boheydulang outer reef	Moderately attractive, with mainly robust growth forms.	Need to avoid conflict with traditional fishing. Some fairly strong currents around South Point.	Suitable for snorkelling and diving, including introductory dives. Pontoon recommended for east side, with capacity for a maximum of 50 visitors.
Southern rim reef	Moderately attractive, with mixture of growth forms.	Need to avoid conflict with traditional fishing in western part.	Suitable for snorkelling and diving, including introductory dives.

Sebangkat-Selakan reef	Moderately attractive with the most interesting sites on the west and north side.	Need to avoid conflict with traditional fishing. Visibility reduced on west and south side and reefs quite silty.	Suitable for snorkelling and diving, including introductory dives.
Maiga reef	Moderately attractive with the most interesting sites on the north and east side.	Need to avoid conflict with traditional fishing.	Suitable for snorkelling and diving, including introductory dives.
Sibuan reef	Many attractive areas, often with clear water.	Sanctuary Zone. Qualified divers only.	Very suitable for snorkelling and diving but not training. A small pontoon is recommended for the south-west corner, with capacity for about 20 people.
Church reef	Many attractive areas, often with clear water.	Sanctuary Zone. Qualified divers only.	Very suitable for snorkelling and diving but not training.
Mantabuan reef	Many attractive areas, often with clear water.	North part of reef is a no-entry 'Preservation Zone'. Rest is Sanctuary Zone. Qualified divers only.	Very suitable for snorkelling and diving but not training. A small pontoon is recommended for the south-east, with capacity for about 20 people.
Mantabuan bank reef	Many attractive areas, often with clear water.	North part of reef is a no-entry 'Preservation Zone'. Rest is Sanctuary Zone. May be fairly strong currents. Qualified divers only.	Very suitable for diving but not training.  Experienced divers only.
Kapikan reef	Many attractive areas, often with clear water.	Sanctuary Zone. Qualified divers only.	Very suitable for snorkelling and diving but not training.

Table 8.  
Reef features and possible sites for snorkelling and diving within the Semporna Islands Park.

### c) Other sea-based activities

Other activities could include sea canoeing, visiting mariculture sites (seaweed, giant clams and pearl oysters) and possibly taking sailing trips in traditional Bajau Laut boats. Further consideration will need to be given to developing these ideas as the plans for tourism evolve.

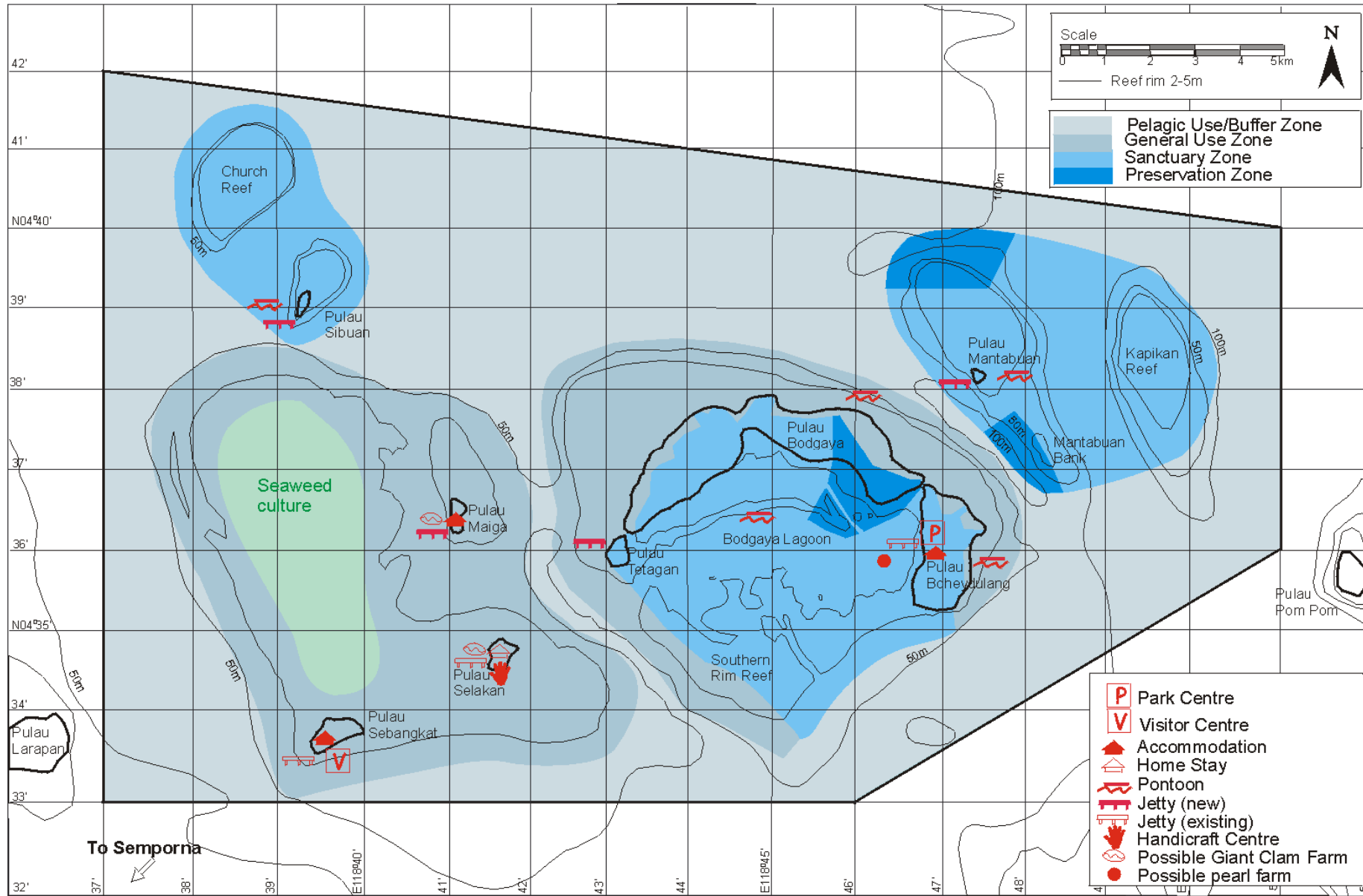


Figure 92. Zoning Plan for the Semporna Islands Park

