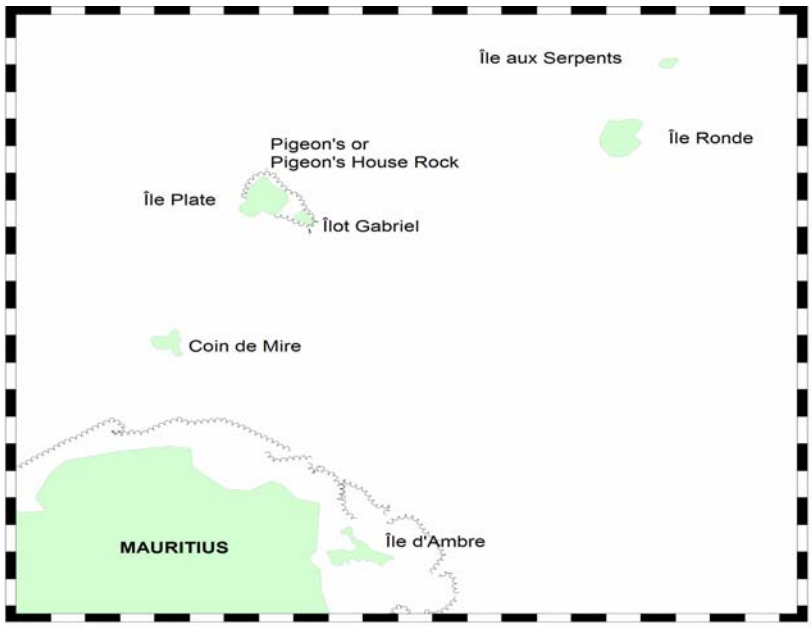
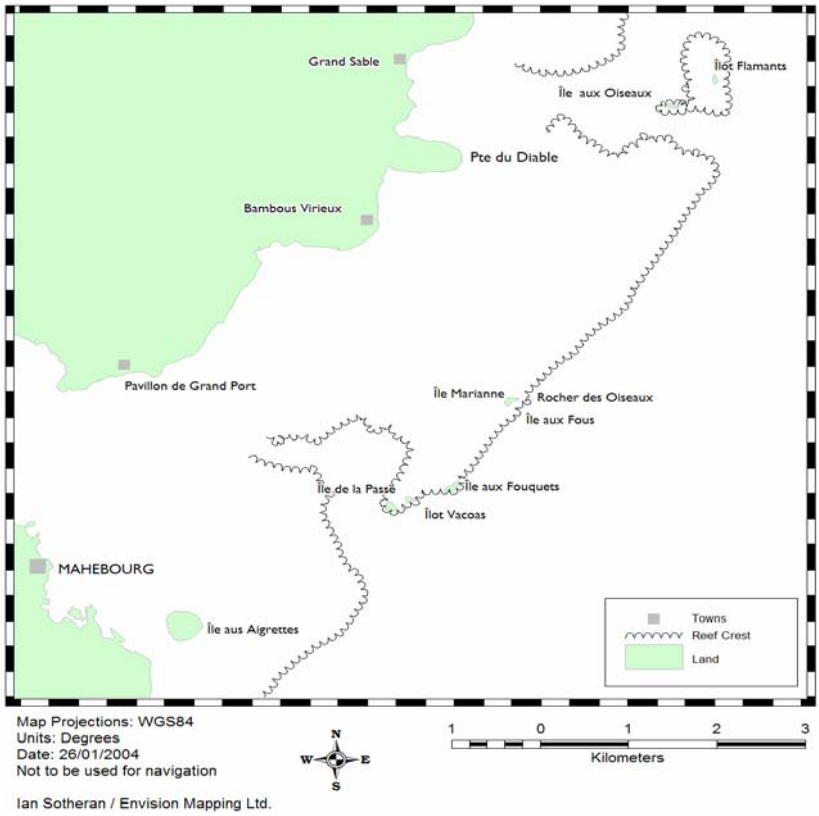
REPUBLIC OF MAURITIUS
Ministry of Agriculture, Food Technology & Natural Resources

The Islets National Park Strategic Plan

Development of a Management Plan for the Conservation and Management of Offshore Islets for the Republic of Mauritius





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The present document is the result of extensive consultations and visits to the various islets by a consultant team from the Belgian firm AGRER, which visited Mauritius from November 2003 through February 2004 and conducted a series of workshops, which considered the various aspects of the Strategic Plan for the 16 Islets that comprise the Islets National Park.

Funding was through the Environmental Investment Program II

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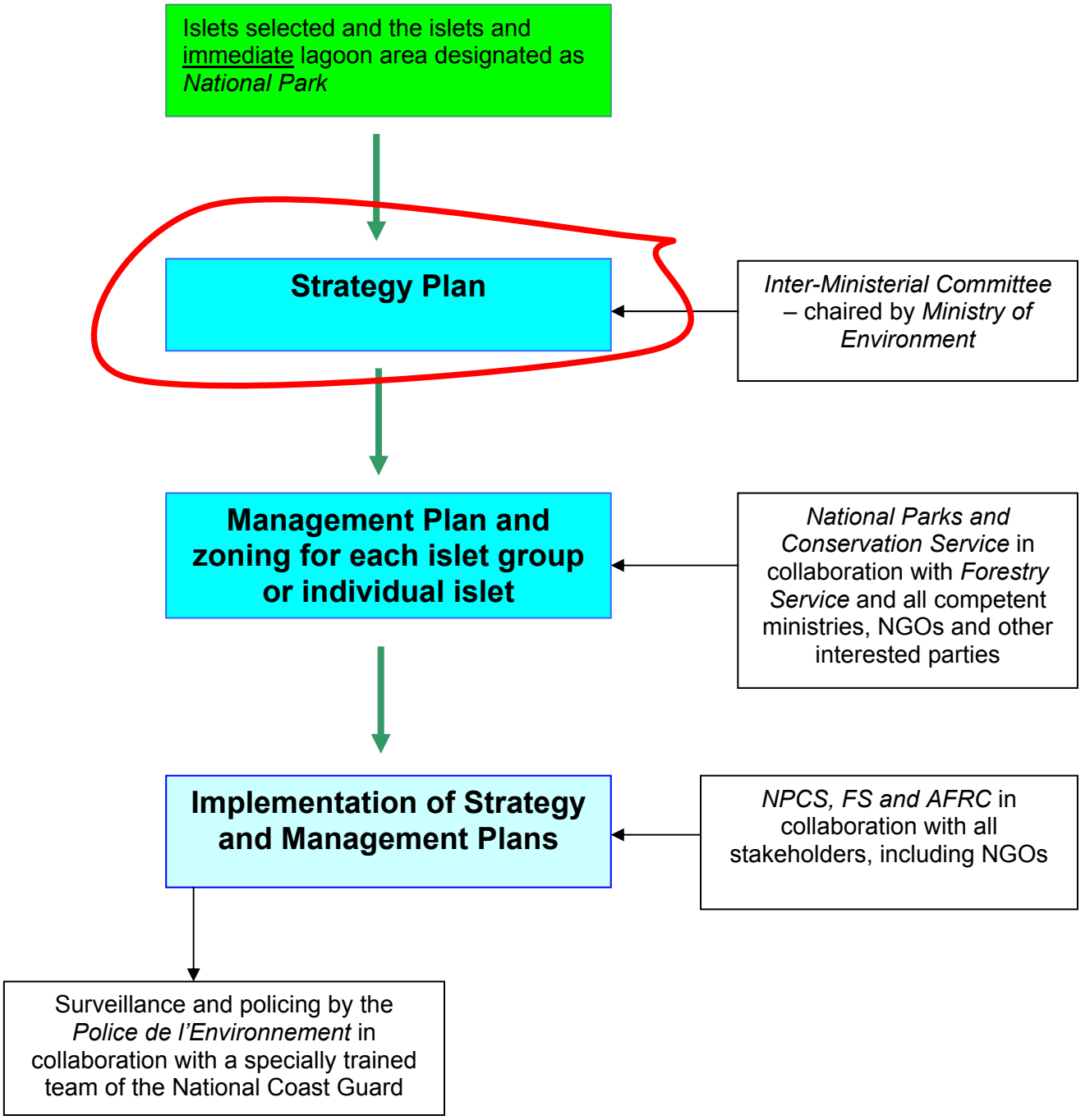
Executive Summary

Sequential Planning and Management of the Islets National Park



The flora and fauna of Mauritius and its offshore islets has evolved through millions of years of isolation and adaptation, and is characterised by a high diversity and endemicity that is particularly susceptible to population declines and extinction. Much of the native flora and fauna has disappeared over the past 400 years of human settlement, and many components of the remainder are internationally recognized as threatened and vulnerable. The major threat to biodiversity is the continuing degradation by invasive exotic species and human activities on the 1.6 % of the land that remains as native habitat.

This report is the development strategy for the proposed Islets National Park, the prime objective of which is the protection and conservation of the remnant native animal and plant populations that still exist on relatively isolated lagoon and offshore islets. The 16 islets that are the focus of this report were identified by the Islets National Park Task Force 2002, and are comprised of existing Nature Reserves under the Forest and Reserve Act of 1983 and those slated to be designated as the Islets National Park. They are extremely varied in size, geological composition, remoteness, accessibility, conservation value and rehabilitation potential. Management plans are to be developed for all of these islets. The State Law Office[1] has ruled that the National Parks and Conservation Service is responsible for drafting of management plans for all the islets to be included in the Islets National Park.

Institutional Issues

The protection of flora and fauna is largely the responsibility of the Ministry of Agriculture, Food Technology and Natural Resources. The declaration of a Nature Reserve is the prerogative of the Forestry Department of the Ministry of Agriculture under the Forest and Reserve Act of 1983. However, the declaration of the National Park is the prerogative of the National Conservation and Parks Service, also with the Ministry of Agriculture, under the Wildlife and National Parks Act of 1993. Although the combination of laws is quite comprehensive in scope there is potential for uncertainty and conflict between different aspects of legislation, which seek to protect potentially overlapping areas of land according to different criteria and under the control of different institutions. This needs to be resolved through the rationalization of land designations and consolidation of institutional responsibility.

The institutional affiliation of the Nature Conservation and Parks Service within the Ministry of Agriculture is due to the organic development of NPCS out of the Department of Forestry. Timber production is very limited on Mauritius, the Forestry Department has stated that it perceives one of its major tasks to be the conservation of the existing forestry resources; these include mountain reserves, and river banks as well as the nature reserves on the islets. However the NPCS is responsible for ensuring the survival of native species, both plant and animal species, in the wild.

There is a strong argument on the grounds of institutional efficiency for consolidating the conservation responsibility of the Islets into one authority, thereby allowing a more effective allocation of limited resources, information and experience.

Many of the islets proposed for inclusion in the Islets National Park are currently declared Nature Reserves under the Forestry and Reserves Act of 1983. It was the opinion of the Islets National Park Task Force that those islets that are currently designated Nature Reserves be re-designated as National Park under the Wildlife and National Parks Act of 1993. This would have made the Islets National Park a substantial recognizable single entity under one institution, subject to an unambiguous set of regulations, which would have streamlined administration, management and enforcement. However the Department of Forestry has objected to this arrangement. It now appears that the islets that are declared Nature Reserves are under the Forestry and Reserves Act of 1983 are to remain so, and that only those islets that are currently 'unclassified' are to be designated as National Park; this means the two substantial islets and a series of rocks and sandbanks off the other islets. It is the opinion of the consultants that this arrangement will cause bureaucratic complexity, legal uncertainty and a significant delay in any substantial implementation of the Strategy or the associated Management Plans.

[1] The State Law Office, under the Ministry of Justice, Human Rights and Corporate Affairs provides legal advice to all government ministries and is responsible for finalizing draft legislation submitted to it by government departments, prior to passage through Parliament.

Northern Islets	Mahebourg Lagoon Islets
Serpent Island*	Ilot Flammants
Round Island*	Ile aux Oiseaux
Pigeon Rock	Ile aux Mariannes*
Flat Island*	Ile aux Fous
Gabriel Island*	Rocher des Oiseaux
Gunner's Coin*	Ile aux Fouquets
Ile d'Ambre**	Ile aux Vacoas
Bernache	Ile de la Passe***
	Ile aux Aigrettes*

* *Nature Reserves under Forest and Reserves Act 1983;*

** *under control of Forestry Service*

*** *slated to be managed by the National Heritage Foundation*

There are various aspects with respect to 'institutional ownership' that need to be considered.

1. The Department of Forestry and the National Parks and Conservation Department are both under the Ministry of Agriculture.
2. The respective laws that established the departments and the regulation within the lands for which they have administrative and management responsibility are substantially different, in terms of rights of access and proscribed activities;
3. The Department of Forestry is not mandated in terms of protection of species, especially animals as opposed to plants;
4. The Department of Forestry is willing to 'hand-over' the responsibility for day- to-day management of the islets that are designated nature reserves, but wishes to retain 'institutional ownership';
5. The Forestry and Reserves Act of 1983 may be read to mandate the Department of Forestry to protect and conserve the ecosystem structure and function of forested lands, i.e., ensuring watershed protection, preventing erosion, ensuring aesthetic and recreational value;
6. Only one of the islets (Pigeon Rock) in the Northern Islets array is not under the institutional control of the Department of Forestry;
7. The Department of Forestry has a far greater amount of resources than the National Parks and Conservation Service;
8. The National Parks and Conservation Service is already undertaking restoration activities on some of the islets designated Nature Reserves.

It was the original intention of the Islets National Park Task Force that those islets that are currently designated Nature Reserves be 'deproclaimed' and then 'redesignated' National Park. However, this does not appear to be necessary in so much as the Wildlife and National Parks Act 1993 explicitly deals with this issue under section 11. It would appear that the decision of the final designation of the islets in question would rest with the President and the Cabinet of Ministers.

The table below provides a series of options that need to be considered by the decision makers responsible for the institutional arrangement of the Islets National Park.

	Option	Pros	Cons	Qualification
Designation Options				
1.	Islet designation remains as present	No additional administrative work	Islets will continue to degrade.	All lease agreements of State owned land rest with the Ministry of Housing and Lands; including the islets
2.	Designate 'Pigeon Rock' as a nature reserve	The Northern Islets would all be Nature Reserves under the responsibility of a single institutional entity	Development of Northern Islets as protected conservation areas for animal and plant species remains uncertain	The ruling by the Law Office on the requirement of the responsible institution to develop management plans appears to apply only to National Park designated islets
			If the management of the islets were still delegated by the Department of Forestry to NPCS then the work becomes administratively complex and the right of access remains in question.	Rights of access under recent amendment of Forestry and Reserves Act 1983
3.	Designate all islets in Mahebourg Lagoon and Lagoon itself as a Islets National Park	All Mahebourg islets would be under the responsibility a single institution and would form an easily recognized coherent group	Much of the native biodiversity and conservation value lies in the larger Northern Islets	Need to re-designate Iles aux Aigrettes and Iles Mariannes as these are currently Nature Reserves
4.	Designate all 16 islets recommended by the Islets National Park Task Force and Bernache as Islets National Park	All proposed islets would be under the responsibility a single institution and would form an easily recognized coherent group, with clear mandate and objectives.		Institutional objection by the Department of Forestry
5.	The formation of the Mauritian Islets Authority is 'fast-tracked' and responsibility of all islets off the Mauritius mainland is transferred to them	All Mauritian islets would be under the responsibility a single institution; which allow a fully integrated development strategy for multi-purpose use of this national resource	Possible further delay in implementation of Islets National Park Strategy and management plans	Removal of institutional responsibility of islets management from Ministry of Agriculture

There are various institutional options, which need to be considered. If the mandate of the Department of Forestry is recognized as primarily that of conservation, as declared by the Conservator of Forests at the Participatory Workshops, then the Department of National Parks and Conservation can be seen as a component of that mandate, with respect to conservation of native biodiversity. This could be reflected within the institutional arrangement within the Ministry of Agriculture. Alternatively, given that the Ministry of Agriculture is

primarily involved with production of agricultural goods and services, it may be more appropriate that the mandate for conservation of forests and native biodiversity be transferred to the Ministry of Environment, along with the respective responsible departments.

It is the opinion of the consultants that a decision on institutional ownership and responsibility needs to be made as soon as possible to prevent further waste of institutional resources. Ownership of any natural resource rests with the Nation and its people, and its future generations; Government are the guardians of those resources. Institutional ownership, without management responsibility, is meaningless under these circumstances.

For the purpose of this report, the consultants will remain with their original terms of reference and treat the 16 islets comprising of the Islets National Park as a single institutional entity.

This plan has been developed through consultation at an institutional level and through a stakeholder participatory planning process conducted at three workshops, held in November 2003 and February 2004.

The strategic plan has three main themes:

1. The development of **a management strategy** for protection and enhancement of the existing natural resources, local environment and conservation of native species;
2. Encouraging support for conservation efforts through **public awareness** campaigns, education, and by the use of some islets to raise awareness of biodiversity and conservation issues through the provision of research, educational and recreational facilities; and
3. The **enforcement of laws** that prevent habitat degradation and destruction, littering, poaching and theft of protected plant and animal species

Following recommendations from the participatory workshops the **islets** have been **grouped in terms of their geographical distribution**; to facilitate this it was agreed to include Bernache as an additional islet to the sixteen under consideration as it formed a natural geographical grouping with Ile d'Ambre.

The individual islets are then classified in terms of their proposed designation. The main purpose of the designation is to make apparent and easily understood the degree of access allowed to the individual islets. This will facilitate understanding by the general public, and enable more effective policing and enforcement. Two designations were agreed upon: **Open Reserve** and **Closed Reserve**. This is equivalent to the Strict Nature Reserve and Open Nature Reserve designation recommended by the Islets National Parks Task Force but it was the consensus of the workshops that for the time being, the designation closed and open reserve would lead to less confusion as many of the islets are already designated Nature Reserves under the Forestry and Reserves Act of 1983. When the issue of institutional ownership detailed above has been resolved, the exact terminology used in designation could be revisited.

The Closed Reserves are strictly for the purpose of conservation and protection of native biodiversity and access is restricted to authorized personnel for the purposes of monitoring, enforcement and restoration of native habitat. Open Reserves can be multipurpose with an array of activities allowed, ranging from protection, conservation, research, eco-tourism, education, and public awareness to recreation.

The range of activities has been determined through consideration of each individual islet's potential in supporting the three major themes of the strategic plan; and their current value in terms of:

- Native species biodiversity;
- Cultural importance;
- Naturalness[2] and habitat fragility; and
- Current use and potential for restoration.Different parts of a particular islet may have different conservation value and therefore may require different management techniques and interventions. A series of zones are proposed to identify particular areas associated with

[2] Level of degradation

different conservation values and to assist in management design. These zones should be developed within the islet management plans; based on biotope maps and location of fragile habitats and important native species.

Proposed Zonation

1. *Protection Only* signifies a focus on **protection** of a relatively undegraded resource. Access is severely restricted to authorized personnel for monitoring and evaluation purposes only. The number and duration of visits by authorized personnel should also be limited. No management interventions other than enforcement are necessary.

2. *Restoration Only* signifies a focus on **conservation management**; the level of environmental degradation merits intervention either for the purposes of habitat restoration or to protect ecosystem functions. This may include re-introduction of endangered native species as a way of increasing their distribution among the various islets, thereby reducing the risk of extinction. Access is limited to authorized management and enforcement personnel.

3. Limited Public Access 1 signifies a focus on development of the area for **scientific experimentation** in restoration techniques and **eco-tourism**; the zone characteristics indicate a relatively robust ecosystem, where such activities pose little risk to endemic species, either because of the low level of native species biodiversity or because they are well established and resilient. The relative robustness of the ecosystem would also allow low-risk experiments in conservation management techniques with respect to environmental habitat manipulation, habitat restoration and reintroduction of native species. Specific vulnerable areas may still require protection, other areas habitat restoration and conservation management. Given the likely high level of capital investment needed to enhance the relatively degraded islet ecosystems, Public-Private-Partnerships should be encouraged. Eco-tourist visits should be encouraged but restricted in number and supervised through the provision of guided tours, the cost of which would be included in an entrance fee.

4. *Limited Public Access 2* signifies a focus on **education and public awareness**. The zone would be developed to inform and encourage a public interest in conservation issues. The zone would have a network of signed pathways leading visitors through the various habitats and ecosystems present. It would also provide a venue for information dissemination to the general public of the progress in environmental conservation, rehabilitation and restoration activities pursued by the government. Community participation and involvement would be actively encouraged; local government and other interested community group representatives would be progressively given “ownership” of islet developments. Opportunities may exist to establish a field centre and infrastructure to enable high school and undergraduate students to carry out environmental management and ecological field experiments. Education and public awareness facilities such as a small museum, displays of native species, aquarium and the like may be considered.

5. Recreation signifies public access for the prime purpose of **recreation**. Unlike the other zone classifications, overnight camping would be allowed. However, other conservation management activities would be necessary and desirable to support the prime objective of the strategy and to ensure the sustainable development and management of a particular islet resource.

Spatial zoning will facilitate management on the “multipurpose” islets; the different zones signifying different sanctioned activities, thereby ensuring adequate protection of ecosystem integrity, and conservation of fragile habitats and areas of scientific interest.

Zonation Scheme for Islets

	Zones	
a	Protection Only	- Monitoring, protection and enforcement only
b	Restoration Only	- Conservation management only
c	Limited Public Access 1	- Eco-tourism and scientific research, conservation management
d	Limited Public Access 2	- Education and public awareness, conservation management
e	Recreation	- Mainly recreation

To facilitate the establishment and operation of the Islets National Park, various policy and enforcement issues need to be addressed.

Policy

The *strategic objectives* for the environment at a national level have been set and are presented in the *National Environmental Strategy and Action Plan* 1999.

Environmental and conservation issues need to become part of the national agenda, which recognises the importance of environmental quality to the economy of Mauritius, especially with respect to its reputation as a prime tourist location. To this end, as stated in NEAP2 *"It is necessary to inform and mobilize the public since national environmental policy places great emphasis on the duties of the individual in environmental protection."*

Public awareness and education needs to be a prime policy initiative of the Islets National Park development strategy. The protection and conservation of native species will be difficult to sustain without the support of the general public, from political, financial and implementation perspectives. Public interest creates the demand for specific environmental services, and eco-recreational facilities. Public support encourages continuous government commitment and funding; and enforcement is less onerous and more effective with the cooperation of the general public. It is imperative that the Islets National Park Strategy includes mechanisms through which the public becomes much more informed about the importance of conservation and biodiversity to Mauritius.

These would include, embedding environment and conservation in the primary and secondary school curriculum with a specific emphasis on the environment of Mauritius; the development of a public awareness campaign that dealt with environmental stewardship as well such matters as littering and fire-lighting; the encouragement of youth groups to participate in management of certain islets, and the development of some islets for public education and eco-recreation.

The Department of Environment and the National Parks and Conservation Service need to **enhance** their **public awareness and education capacity** by cooperating with the Ministry of Education and Scientific Research to develop curricula; organizing awareness raising events; educating the media to inform and interest the public in the natural heritage of Mauritius as well as informing them of their responsibilities; supporting NGOs in taking forward environmental education projects; and working with the Ministry of Tourism and Mauritius Tourism Promotion Authority to raise awareness of tourists and tour operators to the environmental sensitivity of Mauritius.

Finally, on a separate issue, although the Islets National Park is being developed to protect remnant populations of terrestrial species, it needs to be recognized that these islets are part of the coastal and marine ecosystem. Their protection, management and development will not be successful if they are treated as isolated plots of terrestrial habitat. There is a need to **integrate the Islet National Park into a broad-based integrated coastal zone development strategy.**

Enforcement Issues

Enforcement of existing legislation is the responsibility of several authorities, including the National Coastguard, but there appears to be inconsistency and a general lack of co-ordination at an operational level between them in the fulfilment of enforcement functions. There is a general lack of dedicated resources with respect to native biodiversity conservation, including properly trained officials, to carry out assigned functions in a consistent and effective way.

Given the success of the Environmental Police, as a dedicated force to deal with enforcement issues arising from the Environmental Protection Act 2002, the establishment of a special affiliated force within the coastguard to police the various issues that will arise from the creation of the Islets National Park may be considered.

However, it is the opinion of the National Coastguard that such a dedicated force is unnecessary. Since the National Coastguard are better placed and equipped to carry out monitoring and surveillance of activities on and adjacent to the islets of the National Park, it may be more beneficial to provide additional training to NCG officials, on native biodiversity conservation enforcement issues. The development of some form of **Memorandum of Understanding between the National Coastguard, and other enforcement authorities** including the Ministry of Environment, the Ministry of Fisheries and the NPCS is desirable.

Information

1 Successful planning and management requires information, monitoring and evaluation of present and past experiences.Existing information and data storage and dissemination facilities need to be upgraded and linked to facilitate easy access. The establishment of an Inter-Agency Network, accessible through the Internet, should be considered, with the relevant agencies servicing the requirements of dedicated information nodes. Monitoring and evaluation capabilities need to be enhanced in all institutions that are currently involved in wildlife conservation.

Public Private Partnerships

Following the recommendations of the Inter-ministerial Committee on Islets Management, the Cabinet agreed on the 22nd of March 2002 to entrust the management of certain islets to the various organizations listed below, through Memoranda of Understanding:

Organization responsible for management	Islets	Purpose of Management
AHRIM	Flat Island, Ilot Gabriel	Eco-tourism and conservation
Mauritian Wildlife Foundation	Ile aux Vacoas, Ile aux Fouquets Ile aux Mariannes Rocher des Oiseaux Ile aux Fous	Conservation
Green Valley Resort	Ile aux Oiseaux	Eco-tourism

Certainly public private partnerships between the private sector, NGOs, etc. should be encouraged as they allow access to complementary resources and experiences and have been shown to be successful in Mauritius, as illustrated by the partnership developed between the National Parks and Conservation Service (NPCS) and MWF.

However, such partnerships **must be firmly rooted in formal legally binding contractual obligations** that detail expectations from the viewpoint of all partners so as to minimize potential misunderstandings and give necessary redress to remedy perceived conflicts of interest. Given the recent ruling of the State Law Office that the NPCS is responsible for the development of all management plans pertaining to the National Parks, the allocation of management responsibilities will need to be based on these Management Plans. It is also essential to develop adequate and agreed to protocols of monitoring and evaluation of these contractual agreements.

Community Participation

It is fundamental for the long-term effectiveness of any management plan that it attract local community support. This is particularly true for the Mahebourg Islets and the Ile d'Ambre / Bernache Islet group. Public participation in the management of reserved areas needs to be encouraged and needs to be legally strengthened.

Although the public may make written representations in relation to draft management plans, under the Wildlife and National Parks Act, 1993, these do not have to be taken into account by the Director. Furthermore there is no statutory guidance or objective to be followed in drawing up the plans. Given the importance of the plan for future management of the area (particularly the power to build or to remove resources (see section 14) the **process of drawing up the plans could be made more transparent and participatory** than is required by law.

If the islet grouping suggested above is accepted, then there is an excellent opportunity to develop a fully participatory plan for the Ile de la Passe, Ile aux Fouquets and Ile aux Vacoas group, with a partnership that would include NPCS, MWF, the National Heritage Trust Fund, and the local community through local government and other representation, such as youth groups, small enterprise associations and other local commercial enterprises. This would be particularly relevant given the high use of this islet group by the local community for recreational purposes.

Where the demarcation of the islets includes coastal margins or marine areas, the **local use by fishermen** needs to be taken into account. Collaborative efforts need to be developed. Demarcation, whether in the form of a marine protected area or a buffer zone, does not necessarily mean that fishing will be proscribed, although specific areas of the zone may be off limits or specific gear types may be proscribed. Given the local knowledge that the fishermen of the area have, it is important to include them in the development of the islets, and where possible enable employment within the system, or if a planned development is likely to impact on livelihood, to facilitate the movement to alternative livelihoods.

Global Warming and Fire

Some of the sand-bar islets and low-lying islets, such as Flammants, Ile aux Oiseaux, Benitiers and the Mariannes group, will be susceptible to global warming induced sea-level rise. They are to differing degrees already highly influenced by the sea, and cyclone storm surges, and as such there are no plans to have substantial developments on these islets. The remaining islets, which are basaltic based, have high topographic features and cliff frontage will be less influenced by any predicted sea-level rise.

The risk of fire on many of the islets will increase given the proposed use of some of the islets for eco-tourism, education and recreation. Various management measures and contingency plans need to be drawn up to ensure that the risk of fire is minimised and that in the event of an outbreak of a serious fire the response will be rapid and effective. It is recommended that the islets be cleared of potential tinder remaining from weed clearance and path clearance, that signs warning of fire risk are clearly posted and that the development of a rapid response force be considered within the coastguard and other relevant authorities. Each islet management plan should address locality specific risks with regard to fire and cyclones.

1 Introduction: the Islets National Park in Context

1.1 Strategic Objective and Planning Development

Much of the work needed to develop a strategic plan for the *Islets National Park* has already been initiated and significantly advanced in planning and analysis by the review and recommendations made by the *Task Force on Islets* May 2001, chaired by the Director of the Ministry of Environment, with representation of all major agencies.

The Task Force made an assessment of the forty-nine islets that border the main island of Mauritius with respect to their ecological sensitivity, endemic species diversity, and environmental value.

The strategic objective of the creation of an Islet National Park is clearly stated on page 69 of the "Task Force" report.

"Many of the above mentioned islets are biologically very important and have great conservation potential due to their unique native flora and fauna. Some still contain endemic species of flora and fauna. Others that have undergone some degradation owing to human and animal interference still have the potential for rehabilitation for preservation of native plants and vegetation.

Many constitute the only possibility to safeguard some types of native vegetation such as the palm rich forest and the lowland forest. Thus some plants and vegetation types, which are very difficult to preserve on the mainland, may be preserved on those islets".

All islets of the Islets National Park are therefore to contribute to the preservation and protection of endemic species of flora and fauna. All activities and utilization of their natural resources should therefore be planned in the light of this over-arching conservation objective. The use of the remaining 33 islets outside of those designated for the Islets National Park may be used for non-conservation objectives but should still be used in a sustainable manner.

The Task Force visited a selection of the islets; consulted and considered proposals from NGOs, private sector organizations and various individuals; reviewed the current classification of the islets; and taking account of the existing legislative framework and government policies recommended designating 16 of the islets as *National Park* due to their conservation potential with respect to the native flora and fauna[3].

The main recommendations of the Task Force were:

- Initiate immediate measures to prevent further environmental degradation;
- The creation of the Islets National Park;
- Develop comprehensive long-term planning and management of the islets for their optimal utilization.

[3] See Appendix VI

National Islets Park as Proposed by the National Islets Task Force	
Northern Islets	**Mahebourg Lagoon Islets**
1. Serpent Island*	8. Ilot Flammants
2. Round Island*	9. Ile aux Oiseaux
3. Pigeon Rock	10. Ile aux Mariannes*
4. Flat Island*	11. Ile aux Fous
5. Gabriel Island*	12. Rocher des Oiseaux
6. Gunner's Coin*	13. Ile aux Fouquets
7. Ile d'Ambre**	14. Ile aux Vacoas
	15. Ile de la Passe***
	16. Ile aux Aigrettes*

* *Nature Reserves under Forest and Reserves Act 1983;*
** *under control of Forestry Service*
*** *slated to be leased to and managed by the National Heritage Foundation*[4]

Out of the 33 remaining islets, 22 are leased (Ministry of Housing and Lands) for specific uses and therefore the Task Force decided that since they are already managed by the leaser / lessee, no action need to be taken at this stage.

Of the other 11 islets one is privately owned, one is a declared public beach, and nine are uncommitted. These have no bio-diversity or wilderness value as such and therefore can be used for eco-tourism, recreational and associated activities.

The future policy of these islets will rest at the level of the Inter-Ministerial Committee that is proposed in the Task Force report. In the long run it was recommended that this should evolve into the *Mauritian Islet Authority*, which would have overall control over the 49 islets. The Task Force also recommended that a strategy plan for the 49 islets should be prepared after undertaking a strategic EIA.

The Task Force also proposed the following classification for the 16 Islets of the National Park based on their biodiversity, educational / research, tourist and recreational potential.

- *Strict Nature Reserve* (SNR) for islets of major conservation importance, which need to be protected to safeguard and preserve the exiting species. Access would be limited to essential monitoring and maintenance visits by permission of the National Parks and Conservation Service;
- *Open Nature Reserve* (ONR) which may be used for educational, eco-tourism and recreational purposes;
- Some islets may be classified as having recreational and touristic potential with little or no conservation value.

Current Institutional Setting

The current institutional setting is that the seven islets designated Nature Reserves under the Forestry and Reserves Act of 1983 will remain as such for the for the time being. The remaining islets identified by the Task Force, as "unclassified" will be designated as National Parks and are part of the Islets National Park, as an exigency measure so as to enable the necessary protection management activities needed in the short-term to have a valid institutional and legal foundation.

It was the original intention of the Islets National Park Task Force that those islets that are currently designated Nature Reserves be 'deproclaimed' and then 'redesignated' National Park. However, this does not appear to be necessary in so much as the Wildlife and National Parks Act 1993 explicitly deals with this issue:

[4] The consultants have been informed that as per cabinet decision 22 March 2002, Ile de la Passe will not form part of the Islets National Park.

Part IV – National Parks and Other Reserves

11. Proclamation of National Parks and Other Reserves

(1) The President may, by Proclamation, declare any State land, nature reserves, *Pas Géométriques*, or other land to be a national park or other reserve, where –

a. Such land is of natural, scenic, scientific, educational, recreational or other importance or value to the State;

b. The preservation of the land is necessary to properly protect, to permit access to, or management of, or to allow public viewing or enjoyment of such land.

(2) Notwithstanding any other enactment, no work or development shall take place on a reserved land unless it is approved by the Minister or in a management plan under section 13.

12. Buffer Zones for reserved lands

(1) The Minister may, by regulation, declare any land adjoining the reserved land to be a buffer zone for that reserved land.

(2) Notwithstanding any other enactment, a buffer zone shall not, except with the approval in writing of the Minister and subject to such conditions as the Minister shall impose, be put to any use which may have a negative effect, whether direct or indirect, on reserved land, or plants or animals within the reserved land.

13. Management plans for reserved land[5]

(1) The Director shall prepare, for submission to the Minister, a management plan for each area of reserved land, together with any adjoining buffer zones.

(2) A management plan may relate to part of an area of reserved land, or to more than one area of reserved land.

It would appear **that the decision of the final designation of the islets in question rests with the President and the Cabinet of Ministers.**

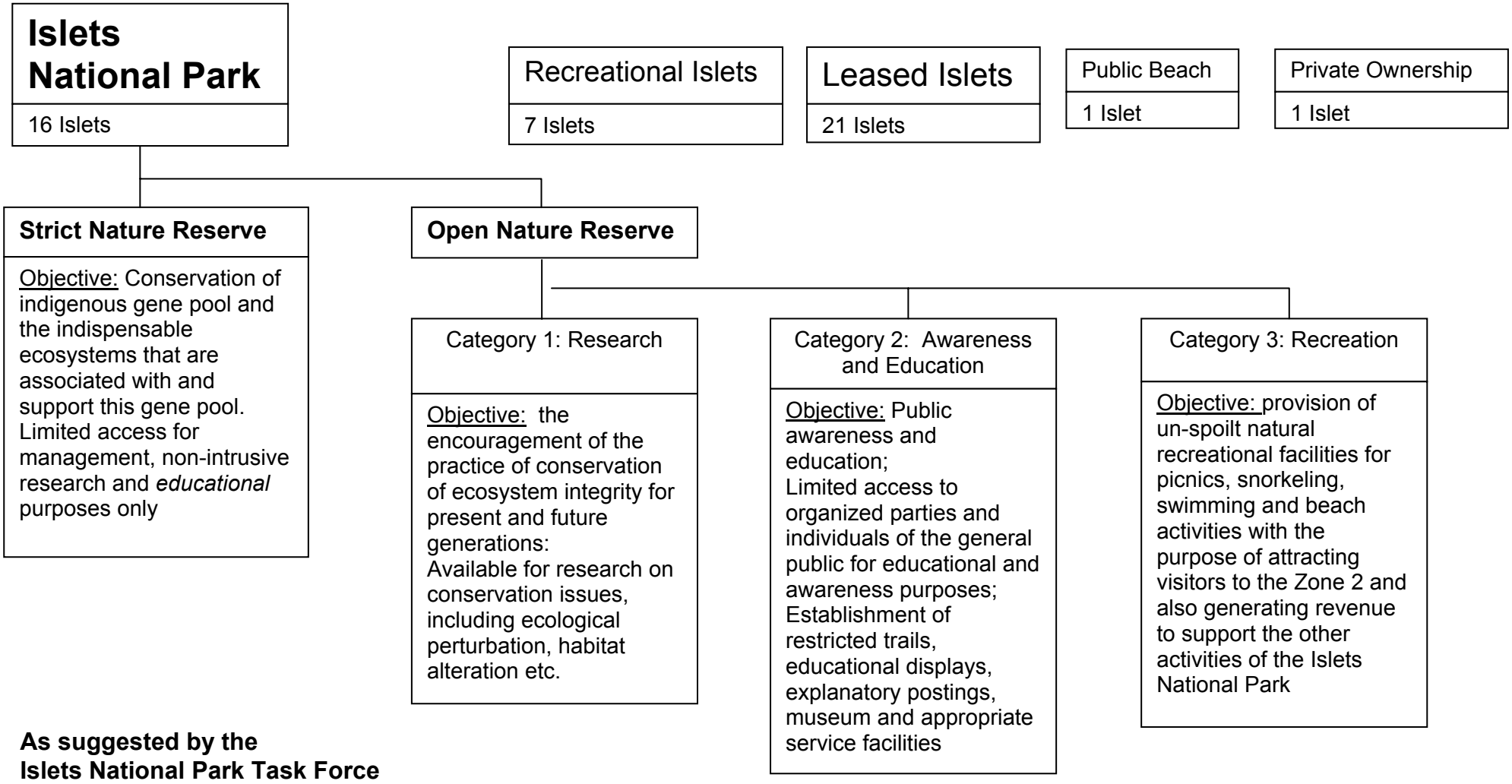
The apparent existing institutional situation which exists with respect to the Nature Reserves where: the vested "ownership" on behalf of the government rests with the Housing and Lands together with responsibility for lease agreements with the private sector or NGOs; the right of access is vested in Forestry; and the responsibility for management given over to National Parks and Conservation, cannot be said to engender administrative efficiency or confidence in other non-government partners. A representative of the State Law Office at the participatory workshops said that they would investigate the possible institutional conflicts and give an opinion at a later date.

Strategically, in the long term, **unambiguous institutional responsibility will facilitate management and enforcement**, and prevent duplication of effort and streamline administration. If the ambition of developing Public – Private – Partnerships is to be effectively realized there is a need to consolidate authority for the 16 islets, identified by the Islets Task Force, under a single institution or authority.

There is a danger that non-government partners in development will find themselves burdened with unnecessary bureaucratic procedures and uncertainty. It is recommended that this situation be resolved as soon as possible, so as to provide a practical and streamlined administration, which will allow coherent policy implementation

[5] For more details of the law regarding management plans see Appendix III

Proposed Mauritian Islet Authority



As suggested by the Islets National Park Task Force

1.2 The Importance of the Islets for the Preservation of Mauritius Wildlife and Native Species

The coastal islets off the Mauritius mainland are the last refuges of the plants and animals that were once common in the lowland and coastal regions of the mainland. The relative isolation of the islets has meant that they are less affected by the introduction of exotic species and predation that followed the initial visits, and eventual colonization of the previously uninhabited islands by seafarers and European settlers.

The Dutch sailor and Artic explorer Jacob van Heemskerck named the island of Mauritius, which he "discovered" on his passage to the East Indies in 1598. The island was named after Prince Maurits van Nassau. It is reported that van Heemskerck's men ate heartily on the easy to catch wildlife and amused themselves by riding on the giant tortoises and lounging on the beaches. Realising that Mauritius could be a valuable port of call for Dutch ships Heemskerck put a rooster and some hens ashore and planted orange and lemon seeds, invoking "the Almighty God's blessing that he may lend His power to make them multiply and grow for the benefit of those who will visit the island after us". Thus from the time of the first recorded visit exotic species were introduced to the Island of Mauritius.

As predicted by van Heemskerck, Mauritius became a useful victualling stop on route to the "Spice Islands" of Indonesia. Mauritius also attracted attention for its endemic ebony *Diospyros tesselaria*, which was sought after in Europe. The importance of the spice trade and the intense rivalry between the British and the Dutch, prompted the Dutch to occupy the island from 1638.

Even at this time Mauritius was not pristine. Rats (*Rattus* species) were mentioned in 1602 and are likely to have become established on the island before colonisation, as a result of the increasing visits of passing ships and the many shipwrecks that occurred on the reefs around the island. Javanese macaques (*Macaca fascicularis*) are mentioned in 1606. Cattle (*Bos taurus*), Java deer (*Cervus timorensis*), wild pigs (*Sus scrofa*) and goats (*Capra hircus*) were introduced to Mauritius before 1648 in order to provide food for passing sailors.

The dramatic effects of introduced mammals on the fauna of oceanic islands is vividly illustrated by the fact that between 20-25% of 'large vertebrate species' found on the Mauritian mainland were already extinct (or at least made severely rare) before permanent settlements were established.

Increased hunting, extensive agriculture and the introduction of farm animals and rabbits and hares that followed colonization led to further extinction and the large-scale destruction of suitable habitats that could support endemic fauna.

Human settlement also led to the intentional and accidental introduction of exotic plants and "weed" species. As human settlements and activities increased, rats, rabbits and hares were introduced to all but a few offshore islets.

Less than 2% of Mauritius is now under native forest (defined as forest with a native canopy of more than 50%). All of this has been degraded by the impact of invasive alien species to some extent and in most areas this degradation is continuing. The largest contiguous area of native forest in Mauritius using the definition given above is about 75 ha. **82% of the native flora and 94% of the endemic flora of Mauritius are threatened** according to IUCN criteria. 155 of Mauritius' flowering plant species are listed as critically endangered; 79 of these taxa are represented by ten or fewer known individuals in the wild and 10 taxa are represented by only a single known individual. A further 93 species are endangered and 241 vulnerable. Plant extinctions are still occurring. Recent possible extinctions include that of the endemic screw pine or Vacoas species (*Pandanus pyramidalis*), the last of which was cut down in 1994.

The small islets around Mauritius have been very important refuges for a significant amount of native biodiversity that has disappeared or is threatened on the mainland. By virtue of lack of settlement, and in many cases relatively limited introductions of invasive alien species, these areas have been spared some of the destructive impacts seen on the mainland. Of the 20 or so native **reptile species** that once inhabited mainland Mauritius, 5 are now extinct and **7 of the remaining 15 are restricted to remnant populations on the offshore islets**. Some

reptile species are restricted to a single islet, making these endemics very vulnerable to extinction. Other reptiles (e.g., *Phelsuma*) may need translocation.

Only 13 of the approximately 30 **species of land bird** (including freshwater species), known to have been present on Mauritius when the first settlers arrived, now remain. Of these, **7 are threatened** according to the IUCN, 2002. No bird species from Mauritius have become extinct since the first half of the 19th century. This is probably only because of the effort that has gone into recent recovery captive-breeding programs for Mauritius' rarest species.

Each islet has its own unique blend of characteristics and historical impacts that need to be considered in the development of the Strategic Plan. These characteristics, such as bedrock geology, exposure etc, coupled to anthropogenic impacts, such as invasion of exotics, forestry etc, are the major determinants of the present day flora and fauna. Different islets have differing conservation potential and are home to different remnant species populations. Round Island and Ile aux Aigrettes are good illustrations of this variety.

Round Island is a 219 ha maritime islet about 20 km from the northern coast of Mauritius. Round Island vegetation suffered through the introduction of rabbits and goats in the 19th century and soil erosion increased with the resulting destruction of ground-cover vegetation. The rabbits and goats have now been removed and activities are underway to renovate the island's vegetation. Round Island contains the last remnants of the palm-rich forest that once covered much of northern Mauritius. However, many of its native plants are endangered and invasive weed species are widespread. Round Island also has the most important population of native reptiles remaining in Mauritius, with largest number of endemic reptile species; presumably because rats and exotic reptiles never became established on the islet, probably due to its remoteness and inaccessibility.

Ile aux Aigrettes is a 26 ha islet located inside the coastal lagoon system of mainland Mauritius, less than one kilometer from the southwest coast. Rats and shrews and six alien reptiles have established themselves, and the islet has been used for many purposes over its recent history, including as a gun emplacement during the Second World War. The islet was highly degraded but despite this, contains the best remaining remnant example of the coastal ebony forest that used to surround much of the mainland.

Ile aux Aigrettes is presently under the management of the Mauritius Wildlife Foundation, through a lease arrangement with the Department of Forestry. MWF has been successfully restoring the native vegetation of Ile aux Aigrette over the past two decades.

Many of the coastal and maritime islets also serve as a refuge and breeding grounds for numerous shore and marine birds. Especially of note is the remote and inhospitable Serpent Island, which is a major sea bird nesting site of the region, with an estimated 200,000 to 300,000 breeding pairs of Sooty Terns, 20,000 to 30,000 Brown and Lesser Noddys, and 40-60 Masked Boobies. Round Island and Pigeon Rock are also important bird islands.

1.3 Legislative and Policy Support

There are a number of legal and policy tools[6], which, if adequately enforced and implemented, provide the basis for the protection, conservation, and restoration of the islets at the state and international level.

Developments in conservation have been accompanied by new or modified legislation that has dealt specifically with conservation concerns. Endemic reptiles were given protection in 1973. Protection was extended to all native birds in 1977. Fruit bats were given protection in 1983. The Forests and Reserves Act (1983) contains conservation provisions while the Environment Protection Act (1991) provides the overall framework for environmental protection in Mauritius. In 1994 Mauritius' first National Park was established under the Wildlife and National Parks Act (1993)[7], an act that also contains other biodiversity conservation provisions.

Recommendations for the development of marine parks and active marine conservation in Mauritius date back to the early 1970s. Awareness of marine ecosystem degradation became more mainstream in the late 1970s both at a public and government level. A marine reserve

[6] see Appendix II &III
[7] see Appendix III

at Blue Bay was proclaimed a National Park in 1997, under the Wildlife and National Parks Act, 1993.

The Ministry of Agriculture developed a conservation strategy plan in 1985. This has now been largely superseded by the National Biodiversity Strategy and Action Plan for the Republic of Mauritius (2001)[8].

The *strategic objectives* for the environment at a national level have been set by the *National Environmental Strategy and Action Plan* 1999[9]. The sections on *Terrestrial Biodiversity and Coastal Zone Management* are particularly relevant, describing the important aspects that need to be considered and incorporated into any strategic planning for the *Islets National Park.*

1.4 Institutional Setting

1.4.1 Government Agencies

Government responsibility for the control of protected areas is divided between two sub-divisions of the Ministry of Agriculture, Food and Technology and Natural Resources, whereas the Ministry of Environment is more involved with environmental protection through the pollution abatement activities and administration of Environmental Impact Assessment.

The National Parks and Conservation Service (NPCS) was created in 1994 as a result of NEAP1. NPCS is responsible for the protection and preservation of terrestrial biodiversity and is responsible for the management of the 6,574 ha of protected areas made up of the Black River Gorges National Park and the offshore islets if they are to be proclaimed National Park. However, the Forestry Service still maintains "institutional ownership" of all Nature Reserves, even if the NPCS have been given responsibility for management. This, through a recent modification to the Nature Reserves under the Forestry and Reserves Act of 1983, means that the Forest Department has the right to determine access.

The Forestry Service is responsible for the management of all state land under forestry plantation and native vegetation including Nature Reserves. The service also has a *droit de regard* on River Reserves and Mountain Reserve, which are privately owned and is the lessor of state land for shooting and fishing leases. Consequently much of the 21,867 ha that is under its responsibility has high native biodiversity and Forestry is responsible for conservation of these resources. The Forestry service inputs are far greater than those under the NPCS.

The Albion Fisheries Research Centre is responsible for researching, monitoring and evaluation of the marine and coastal resources, and also the management of the declared coastal Fishery Reserves and Marine parks. Currently there are two designated Marine Parks and six Fishery Reserves on the coast of Mauritius.

1.4.2 Non-Government Organizations

The development of terrestrial conservation work in Mauritius since 1973 has been a story of fruitful national and international collaboration. The activities of the non-government organisation Mauritian Wildlife Foundation (MWF) are highly significant. The relationship between the NPCS and the MWF has been one of parallel collaborative and supportive development. Established in 1984 as the Mauritian Wildlife Trust with support from the Durrell Wildlife Conservation Trust, Jersey, MWF has worked closely with government, in particular with the NPCS with whom it signed a Memorandum of Agreement in 1994, which was renewed in 2000. MWF has focused on terrestrial conservation and biodiversity issues.

The first NGO addressing marine environmental issues, the Mauritius Marine Conservation Society (MMCS), was formed in 1980. While this organisation has continued to support marine conservation it operates under severe constraints, as its entire staff is composed of volunteers. The other NGOs focusing on the coastal zone in Mauritius includes: the Mauritius Scuba Diving Association (MSDA) and the Mauritius Underwater Group (MUG). They are actively involved with awareness raising activities, training local fishermen in sustainable techniques, planting buoys and building capacity for reef surveys.

[8] Not yet finalized, see Appendix IV
[9] see Appendix V

1.4.3 Global Environmental Fund

GEF is funding the Republic of Mauritius Biodiversity Restoration Project, with sites on Ile aux Aigrettes. This project is aimed at restoring native ecosystems and controlling invasive species, focusing mainly on Mauritian coastal ebony forest. A second WB-GEF funded initiative located on Round Island is developing native plant habitat restoration and weed control techniques, to facilitate large-scale restoration.

1.4.4 Other Stakeholders

The stakeholders identified above (Government and NGO) are the key and secondary stakeholders, i.e. they are involved with plan delivery. However, consideration must be made to the primary stakeholders (i.e. those affected in a positive or a negative way by the plan, but who traditionally have little involvement with its delivery). Primary stakeholders include local people and their representatives, who exploit the natural resource of the islets (e.g. fishermen, hunters, fishermen representatives, and community groups in towns adjacent to the near shore islands, members of the tourist and recreational sector and boat operators.

For long term and sustainable success of the National Park, it is vital that many of the present primary stakeholders become more involved with the plan and its implementation, and thus have some sense of ownership over the National Park.

Educational and scientific institutions also need to be consulted as potential users of the open status islets and nature parks.

2 Development of the Islets National Park Strategic Plan

This plan was developed through dialogue with key stakeholders through three participatory Strategic Planning Workshops held in November 2003 and February 2004. The participants of the workshops took as a given the over-arching objective or development goal as that determined by the *Islets Task Force;* namely the conservation, protection, and enhancement of endangered and endemic fauna and flora of Mauritius, through the development of a series of islet management plans.

The long-term development vision is to enable this invaluable resource to be used to enhance the reputation of Mauritius as a highly desirable tourist venue; to ensure that any use of the islets is sustainable and does not endanger the continued existence of these unique ecosystems with their component habitats and attendant flora and fauna; while continuing to provide recreational amenities for present and future generations of Mauritians.

The workshop participants recognized that in order to ensure the continuation of these natural resources for the use of future generations, it would require not only a technical strategy of wildlife protection and enhancement, but also concomitant strategies for education and public awareness and cost effective enforcement which would ensure success in the long-term, by eliciting the support of the general public and engaging the key stakeholders.

Taken as a whole, the consensus of a strategy for conservation of native species through the development of the Islets National Park may be thought of as a series of inter-related and interacting priorities:

1. To ensure adequate protection and restoration to enhance the existing natural resources;
2. To reduce the risk of extinction of any endangered species that are limited to one or two islands through the reintroduction of these species to islets where they have been exterminated; and
3. To increase public awareness of the importance of the conservation of Mauritian native species biodiversity.

Three parallel **strategic objectives** were therefore developed which addressed these priorities:

1. **Conservation and Protection**;
2. **Public Awareness and Education**; **and**
3. **Legislation and Enforcement**

Underpinning all these objectives is the need to enhance information development, exchange and dissemination to all parties interested in the conservation of the native species of Mauritius.

2.1 Strategy for Conservation and Protection

The participatory workshop round-table on conservation and protection developed the following planning schematic

Planning Objective

Preservation of Bio-diversity & Natural and Cultural Heritage

Outcome 1

- Protection of Endangered Species and Habitats
- Conservation of terrestrial and marine bio-diversity
- Restoration of natural habitats

Outcome 2

- Conservation of Historical Sites
- Restoration of cultural identities

General Outputs

- Zoning of Islets
- Identify natural characteristics of each islet and designate functionality / role in overall strategy
- Identification of threats and issues to be addressed (short-term / long-term)
- Input requirements: identification of available resources / institutional responsibilities / private public partnerships

General Activities

- Consolidation of sites and areas
- Rehabilitation / Maintenance of sites and areas
- Capacity building

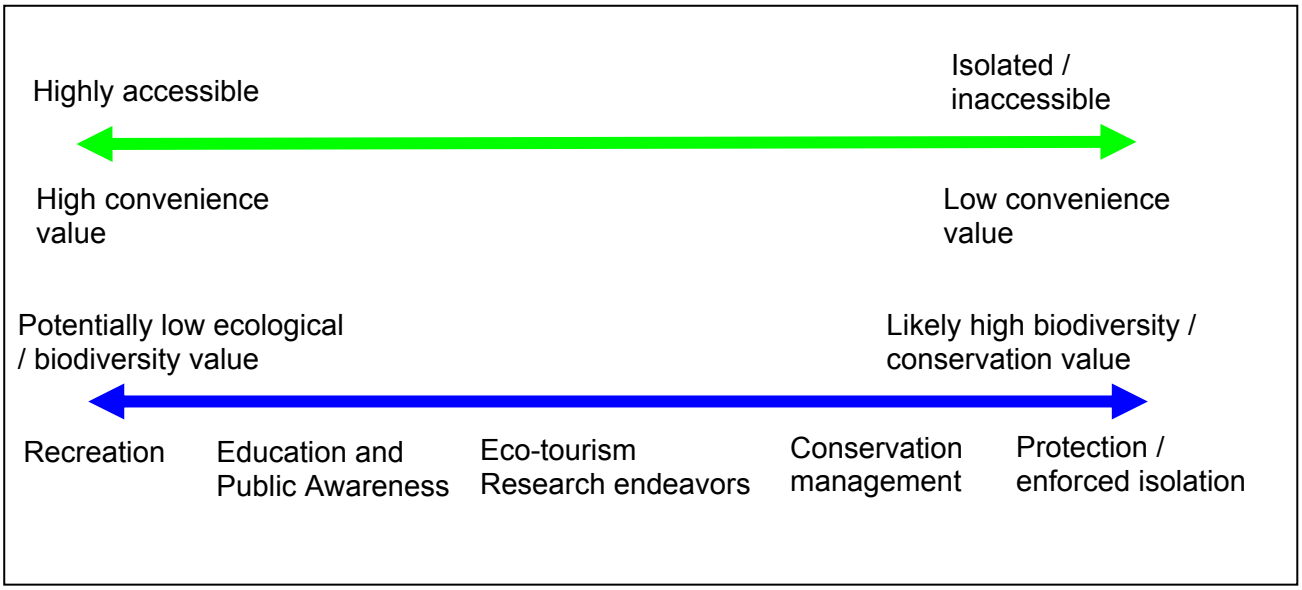
2.1.1 Grouping of the Islets

The importance of the islets to conservation and protection of Mauritian native species is by virtue of their separation from mainland Mauritius, that to a greater or lesser extent has protected them from the ecologically degrading forces that abound on the mainland. The more isolated and inaccessible the islet the more likely it is that it will act as a refuge for threatened species and habitats.

Relative isolation is therefore an important islet characteristic that needs to be taken into account. In this respect the islets, with the exception Ile d'Ambre,[10] fall into two categories: the relatively accessible coastal islets of the Mahebourg lagoon in the south of Mauritius and the more remote oceanic islets that comprise the Northern Islets.

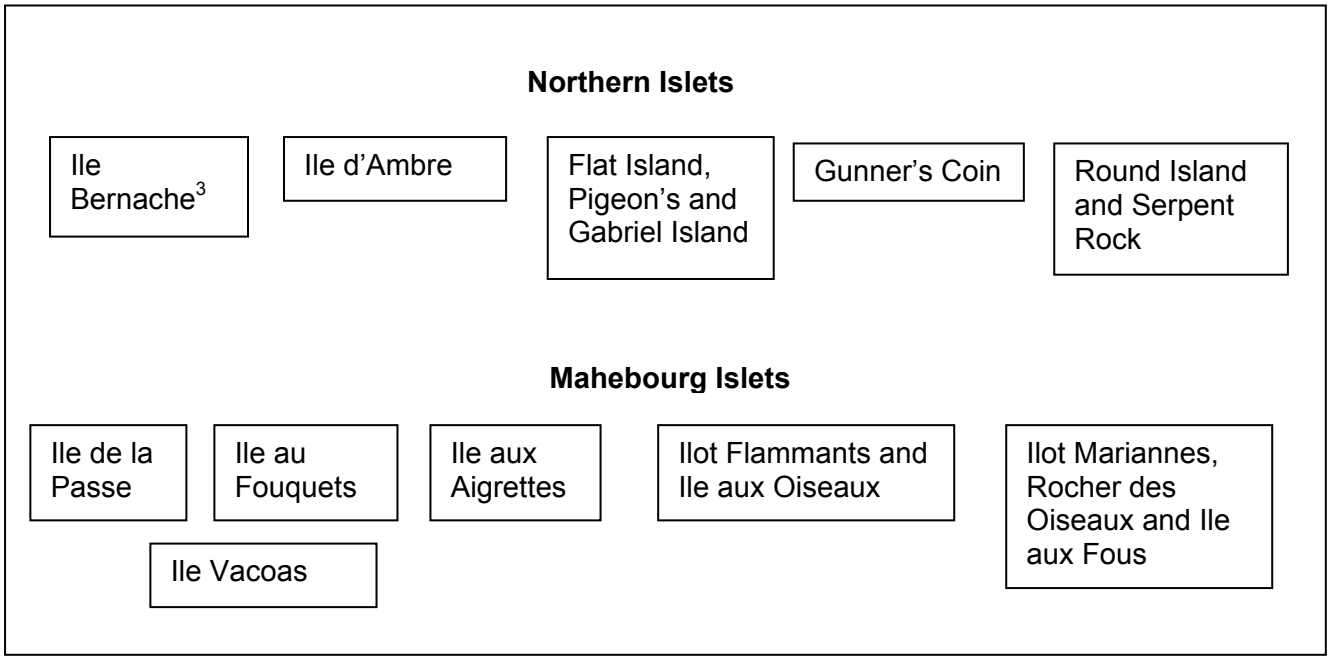
Their **relative isolation and accessibility** determines to a certain extent the level of environmental degradation the islets have suffered and therefore influences their **biodiversity value**; the more isolated and inaccessible, the higher their potential biodiversity value, and the easier they are to protect. However, accessibility means convenience for human activity and therefore the greater accessibility the greater **potential utility**. The interaction of these two aspects of the characteristic of remoteness or accessibility determines the relative usefulness of each islet for protection, conservation, eco-tourism, education and public awareness and recreation. There are of course always exceptions such as Ile aux Aigrettes that is home to the last remnant ebony forest and yet is easily accessible from the mainland.

Geographically, the islets also form convenient spatially distributed islet groups. The northern islets are much farther off the coast, far less accessible than the Mahebourg Islets; they are also much larger.



[10] Ile d'Ambre is a lagoon islet on the northeast coast.

Acknowledgement of this grouping in the strategy increases efficient use and allocation of the limited resources and inputs available to support conservation activities. A major benefit from this systematic grouping is that it makes managing and



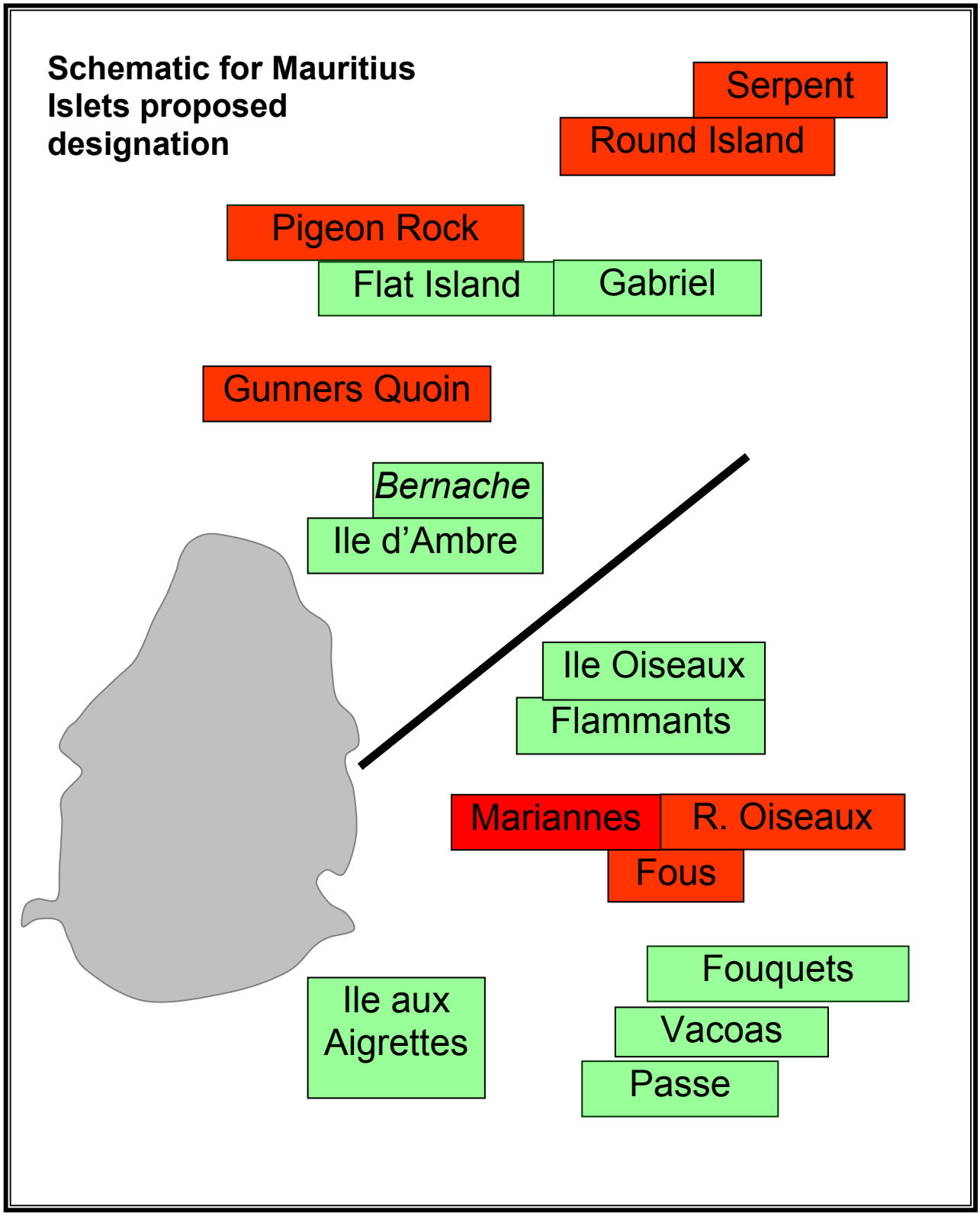
policing the various islets much more straightforward, and also encourages a more holistic integrated approach to management, which should include, where appropriate, the immediate lagoon and coastal margin of the islet group.

2.1.2 Islet Designation

Within these groupings different islets have different characteristics that influence their potential conservation utility and value. The individual islet characteristics allow categorisation with respect to their potential use in supporting the overall strategic objective of the Islets National Park, i.e., to contribute to the preservation and protection of endemic species of flora and fauna, which in turn determines the array and types of activities, which will be allowed on individual islets.

The designation of the islets is primarily to describe in clear terms the allowable access to the islets. This will facilitate clear understanding by the general public and enable more effective policing and enforcement. The consensus of the workshop participants was that simple division of islets into Closed and Open Reserves would best serve this purpose, and would also facilitate planning at the strategic level. The word 'Nature' was omitted to avoid confusion with the present institutional terminology of 'NatureReserve' declared under the Forestry and Reserves Act of 1983.

The Closed Reserves are strictly for the purpose of conservation and protection of native biodiversity and access is restricted to authorized personnel for the purposes of monitoring, enforcement and restoration of native habitat. Open Reserves can be multipurpose with an array of activities allowed, ranging from protection, conservation, research, eco-tourism, education, and public awareness, to recreation.



Legend
Closed Reserve
Open Reserve

2.1.3 Islet Zonation

Islets that have multiple uses will more than likely need to be zoned into different areas where the different activities are focused to ensure that no conflict arises. According to the Wildlife and National Parks Act 1993 Part IV; 13(3) zones within a reserved land should be included in the management plan[11]. The main purpose of the spatial zonation scheme presented here is to facilitate management.

Spatial zoning will facilitate management on the "multipurpose" islets; the different zones signify different sanctioned activities, thereby ensuring adequate protection of ecosystem integrity, and conservation of fragile habitats and areas of scientific interest. Zonation of the islets is primarily a management tool that allows clear understanding by all users and stakeholders in the Islets National Park, of what specific activities are allowed in which particular locations. The suggested zonation terminology has been developed with this in mind.

The range of activities has been determined through consideration of each individual islets potential in supporting the three major themes of the strategic plan; and their current value in terms of:

- Native species biodiversity;
- Cultural importance;
- Naturalness[12] and habitat fragility; and
- Current use and potential for restoration.**Zonation Scheme for Islets**

	Management Zones	
a	Protection Only	- Monitoring, protection and enforcement only
b	Restoration Only	- Conservation management only
c	Limited Public Access 1	- Eco-tourism and scientific research, conservation management
d	Limited Public Access 2	- Education and public awareness, conservation management
e	Recreation.	- Mainly recreation

The zonation layout for each individual islet should be detailed in the management plans, based on the geomorphology of the islet, ecosystem functionality, the spatial distribution of biotopes, the location of rare endemic species and the need and practicality of visitor control.

a. *Protection Only* focuses on protection of a relatively undegraded resource. Access is severely restricted to authorized personnel for monitoring and evaluation purposes only. The number and duration of visits by authorized personnel should also be limited. No management interventions other than enforcement are necessary.

b. *Restoration Only* signifies a focus on conservation management; the level of environmental degradation merits intervention either for the purposes of habitat restoration or to protect ecosystem functions. This may include re-introduction of endangered native species as a way of increasing their distribution among the various islets, thereby reducing the risk of extinction. Access is limited to authorized management and enforcement personnel.

c. *Limited Public Access 1* signifies a focus on development of the area for scientific experimentation in restoration techniques and eco-tourism; the zone characteristics indicate a relatively robust ecosystem, where such activities pose little risk to endemic

[11] See Appendix III
[12] Level of degradation

species, either because of the low level of native species biodiversity or because they are well established and resilient. The relative robustness of the ecosystem would also allow low-risk experiments in conservation management techniques with respect to environmental habitat manipulation, habitat restoration and reintroduction of native species. Specific vulnerable areas may still require protection, other areas habitat restoration and conservation management. Given the high levels of capital investment needed to enhance the relatively degraded islet ecosystems, Public-Private-Partnerships should be encouraged. Eco-tourist visits should be encouraged but would be restricted in number and supervised through the provision of guided tours, the cost of which would be included in an entrance fee.

d. *Limited Public Access 2* signifies a focus on education and public awareness. The zone would be developed to inform and encourage a public interest in conservation issues. The zone would have a network of signed pathways leading visitors through the various habitats and ecosystems present. It would also provide a venue for information dissemination to the general public of the progress in environmental conservation, rehabilitation and restoration activities pursued by the government. Community participation and involvement would be actively encouraged; local government and other interested community group representatives would be progressively given "ownership" of islet developments. Opportunities may exist to establish a field centre and infrastructure to enable high school and undergraduate students to carry out environmental management and ecological field experiments. Education and public awareness facilities such as a small museum, displays of native species, aquarium and the like may be considered.

e. *Recreation* signifies public access for the prime purpose of recreation. Unlike the other zone classifications, overnight camping will be allowed. However, other conservation management activities will be necessary and desirable to support the prime objective of the strategy and to ensure the sustainable development and management of a particular islet resource.

For the sake of consistency and ease of understanding, it is recommended that this zonation scheme be adopted for all islet management plans within the Islet National Park.

2.1.4 Final Comment: the Need to take an Ecosystems Approach (Coastal Zoning)

Although the Islets National Park is being developed to protect remnant populations of terrestrial species, it needs to be recognized that the islets are part of the coastal and marine ecosystems. Their protection, management and development will not be successful if they are treated as isolated pieces of terrestrial habitat. There is a need to **integrate the Islet National Park into a broad-based integrated coastal zone development strategy**. It is therefore recommended that adjacent lagoon and coastal margins be surveyed to assess coastal resources as part of the information requirement for the development of islet management plans.

There is no exclusive marine-parks legislation in Mauritius. Marine parks are subject to the same treatment as National Parks under part IV of the 1993 Act, with provisions for buffer zones management plans, licences and leases. Under section 11 (1) of the Wildlife and National Parks Act 1993 the President of the Republic may by proclamation declare a Marine Park, as land is defined as being inclusive of land covered by sea or other waters, and the part of the sea or those waters covering the land and the atmosphere above the surface of the land". At this time there are two designated marine parks in Mauritius: Blue Bay in the SE sector and Balaclava in the NW sector. There are also six designated fishery reserves in the coastal lagoons, in which the use of certain fishing gears is proscribed.

The Islets National Parks Task Force recommended that a 1 km buffer zone be proclaimed around each of the designated islets.There are in reality two separate practical objectives in the creation of a demarcated coastal or marine zone around the individual islets or islet groups.

The first reason is to protect the ecosystem functionality of the islet and coastal margin resources; such demarcation can be designated a Marine Protected Area, in which an array of activities are allowed and others are proscribed. The demarcation of a MPA needs to be based on the coastal ecosystem functionality and habitat identification developed through

coastal surveys and biotope mapping, with the objective of protecting key areas such as mangroves, seagrass beds and coral reefs, all of which are important in the protection of the islet fringe and the sustainability of coastal fisheries; they are the nursery grounds and feeding grounds of coastal fish and shrimp species.

The second reason for coastal water demarcation is with respect to facilitation of enforcement, whereby a buffer zone is created around the islet. For example a 1 km zone, which has restricted access to boats either in time or space: access is given for specific activities such as diving or fishing but only during daylight hours and at specific locations. This will enable control of illegal activities such as poaching and theft from the islets and ensure that various infrastructure such as mooring buoys are used in an appropriate manner.

The exact spatial demarcation of the MPA or buffer zone is dependent on the individual islet characteristics and should be detailed within the individual islet management plans.

The idea of creating islet-based marine parks has previously been proposed by Proctor and Salm in 1974. Their recommendations included: the Flat Island–Gabriel Complex; the seaward extension to Round Island nature reserve to a depth of 20m; and the seaward extension of Gunner's Quoin Nature Reserve to a depth of 20m.

However, there is legislative and institutional overlap and ambiguity in jurisdiction that needs to be addressed. Not withstanding the Wildlife and National Parks Act of 1993, by virtue of section 7 of the Fisheries and Marine Resources Act 1998, the Minister to whom the subject fisheries and marine resources is assigned may by proclamation declare to be a Marine Protected Area (a) any area called "Mauritius waters" including seabed underlying such waters; (b) any land associated with such waters; and (c) any wetland. Under the 1998 Act, MPAs may themselves be designated as fishing reserves, marine parks or marine reserves and the Minister may prescribe measures for protection, conservation and management of these areas including the prohibition of certain activities and the carrying out of activities subject to imposed conditions.

Just as section 25 of the Wildlife and National Parks Act 1993 institutes a National Parks and Conservation Fund to cater for expenses incurred by the Director of National Parks and Conservation Service in performing functions under that Act, section 8 of the Fisheries and Marine Resources Act 1998 establishes a Marine Protected Areas Fund to be applied towards the payment of expenses which may occur in the management of that Act.

There needs to be a more active participation of the Albion Fisheries and Research Centre in the development of the Islets National Park. Ideally, a single Government Agency should develop policy and legislation, manage investment, identify research priorities and coordinate development activities affecting the coastal zone, including private sector developments.

2.1.5 Designation of The Northern Islets

- **Group 1: Ile D'Ambre *(Ile Bernache[13])***

Current status: Ile D'Ambre: plantation (Forestry), *Ile Bernache,* now under the management of the Ministry of Environment;

Recommended islet designation: Ile d'Ambre and *Ile Bernache*: Open Reserve

Ile d'Ambre and Ile Bernache are two associated islets, close to shore, within the reef lagoon of the northeast coast. Ile d'Ambre is a rocky islet with no major sandy beaches but with numerous small lagoons and associated mangrove stands. It once served as parkland, and there are still many remnant pathways and constructed stonewalls, as well as a derelict orchard and buildings. There is also a pine plantation in the centre of the island. Trapping has shown that there are rat and shrew populations on the island, which is hardly surprising given its close proximity to the mainland and its past use.

Ile Bernache is separated from Ile d'Ambre by an about 10 m wide tidal channel at its closest point. It is much smaller than Ile d'Ambre but is mainly a sandy island with a number of beaches on the west, north and south sides and as a consequence is much more popular with

[13] Not originally part of the 16 islets recommended for the national park but included here as Bernache forms a functional unit when paired with Ile d'Ambre, i.e., the utility value of the pairing is greater than the sum of the individual islets.

day visitors. Visitor pressure is likely to increase on Bernache as a housing development is being constructed on the adjacent mainland, which will not only establish a community near by but also improve the road access to the small jetty that serves the two islands.

The Ministry of Environment is planning to establish Ile Bernache as a people's recreational centre, with a limit on the amount of construction to ensure that the development is sustainable and not be environmentally destructive. This could certainly be encouraged and made more apparent, if Bernache were to be included in the Islets National Park along with its sister islet Ile d'Ambre. Bernache and the Northern part of Ile d'Ambre would be zoned as a recreational area with camping facilities and visitor chalets, and the remainder of Ile d'Ambre zoned for public awareness, education, experimental management and eco-tourism.

The lagoon surrounding the islets and its protective barrier reef should be declared a Marine Protected Area[14], managed in consultation with the local area stakeholders including fishermen. The lagoon south of Ile d'Ambre is already a declared fishery reserve under Ministry of Fisheries managed by the Albion Fisheries Research Centre.

With its improved access, Ile d'Ambre would be a very suitable location for a Nature-Park and educational field centre where the public could come to view the variety of interesting habitats already present on the islet. In addition, bridging the channel between Bernache and Ile d'Ambre could help to minimise visitor pressure on Bernache, by location of planned recreational facilities (Ministry of Environment) on Ile d'Ambre.

Establishment of Ile d'Ambre Nature Park would serve to educate the public and encourage an interest in Mauritius's natural resources. The existing trails could be enhanced and laid out so as to move the public through the various terrestrial and coastal biotopes existing on the islet and with educational signing explain the importance of the biodiversity of Mauritius.

The enhancement of Ile d'Ambre could be developed in parallel with that of Bernache, so that visits to Ile d'Ambre would be seen as part of the "day out" to Bernache. There are already various places on the islet that would be suitable to develop as picnic areas, with toilets, litter bins and other facilities. Eventually a small museum could be established. A small entrance fee would cover the costs of management of the public facilities to ensure removal of litter etc.

An effort should be made to encourage participation of the local community and school groups in the rehabilitation of the isle. For example, they could be encouraged to "adopt" plots on the islets and undertake rehabilitation projects under the guidance of the NPCS. School and university groups could conduct ecological surveys and experiments, on the islets and in the neighbouring lagoon area.

Ile d'Ambre could also display various examples of the endangered species of animals and plants that are found in the *Closed* islets; a place where various "escapees" from the closed and restricted islets are kept, when they cannot be returned to their original islet for fear of spreading disease.

NPCS views the islet as a potential area to establish more robust bird (passerine) populations. The above activities would not interfere with this objective.

- **Group 2: Flat Island, Gabriel and Pigeon Rock**

Current status: Flat Island and Gabriel are designated Nature Reserves under the Forestry and Reserve Act, 1983,

Pigeon Rock is not designated.

Recommended islet designation: Flat and Gabriel: Open Reserve;
Pigeon Rock: Closed Reserve

Flat Island, Gabriel and Pigeon's Rock should be considered a single islet group for the purposes of strategy design and management. Pigeon Rock is a small rock offshore from Flat Island, and Gabriel is close by.

The Flat Island group is popular with boat owners and operators as a recreational and tourist destination as there is an accessible beach and a fringing coral reef adjacent to Flat and Gabriel. Visitors tend to use Gabriel in preference to Flat Island. Zonation of the islets would

[14] MPA do not necessarily preclude economic activities

need to take into account the present recreational use of both islets. There is a reported 200 or more visitors a day during peak season. Despite this, Gabriel has the highest percentage of indigenous plants of any of the Northern Islets. Only one weed species, *Lantana camara* is present in significant number. It also has a good population of shearwater and a number of white-tailed tropicbirds. Gabriel is also populated by various native reptiles: *Cryptoblepharus boutonii*, *Gongylomorphus bojerii* and *Phelsuma ornate,* as well as at least one exotic reptile.

Flat Island has a significant population of reptiles: Bojer's skink, Orange-tailed skink, and *Nactus*, C. *boutonii* and *P*. *ornata*, but also has at least three exotic reptiles.

Flat and Gabriel are of historic and cultural importance as both have been used in the past as isolation settlements for smallpox victims. There is an old graveyard and various ruined buildings on Gabriel. Flat Island has a functional lighthouse, which is no longer manned. However, the coastguard has established a temporary monitoring post (encampment) on Flat Island. It would be beneficial to the morale of the personnel if the accommodation could be more permanent and would allow them to dedicate more of their time to official duties rather than camp duties.

Flat Island, Pigeon's Rock and Gabriel have been cleared of rodents and are monitored every four months by the NPCS. Flat Island is therefore suitable for the re-introduction of native plants. However, doubt remains as to the feasibility of introduction of native reptiles due to presence of exotic reptiles. There is a need for an effective weed control, if not eradication program and the development of an integrated management plan that takes in to account the relative position and fragility and biodiversity value of the three islets.

Ideally, this group of islets, as a whole, including the surrounding sea area, should be declared part of the Islets National Park, which would enable not only restriction of the number of visitors but also islet zonation thereby increasing protection of vulnerable-sensitive areas and allowing multiple usage through control of activities. Alternatively, Pigeon's Rock should be declared, at the very least, a Nature Reserve under the Forest & Reserves Act, 1983.

The precise zonation and MPA demarcation needs to be detailed in the islets management plans. Ideally these should be developed in consideration of the islet grouping and delivered as a single integrated document.

- **Group 3: Gunner's Quoin**

Current status: designated Nature Reserve under the Forestry and Reserve Act, 1983

Recommended islet designation: Closed Reserve

Although Gunner's Quoin is closer to the mainland than the Flat Island group it has recently been shown to have a greater number of native species. The Gunners Quoin vegetational ecosystem is presently composed of mainly exotic species, however, native coastal fringe vegetation can be identified as well as small remnant pockets of palm savannah (e.g. *Pandanus* sp.) and scattered *Lomatophyllum* individuals. The islet also has important populations of reptiles: Bojers skink (*Gongylomorphus bojerii*), Boutons skink (*Cryptoblepharus boutonii)* and the Ornate day gecko (*Phelsuma ornata*). Gunners Quoin also has the lesser night gecko (*Nactus coindemirensis*). The only other northern islet where it is known to exist is Pigeon Rock. In addition, the islet provides nesting for and estimated 3000-5000 wedgetail shearwaters, 200-300 red-tailed tropicbirds and 50-100 white-tailed tropicbirds.

Although Gunners Quoin is less than 5km for the mainland, access by boat remains problematic. Access by boat is via the natural "landing rock" in a bay on the SW side, however this can be difficult or dangerous in moderate to severe swells. In addition, once landed, a scramble up a steep cliff is required to access the island plateau. Due to this difficulty of boat landing, visitor pressure has been limited to occasional recreational tourists and visitors, as well as fishermen and poachers.

Although the islet has been heavily impacted over the last 400 years, remnants of the original ecology remain; this coupled to the difficulty of boat access means that Gunners Quoin presently has considerable conservation value and immense potential for ecosystem restoration. Consequently, it is proposed that the islet be designated as a Closed Reserve. Once it has been restored to a functional envisioned "past" ecosystem (minimum of 15-25

years) then it might be possible to permit controlled visitor access and modify the designation to Open Reserve with Limited Public Access zones.

- **Group 4: Round Island and Serpent Island**

Current status: designated Nature Reserve under the Forestry and Reserve Act, 1983;

Recommended islet designation: Round and Serpent: Closed Reserve

Situated over 22 kilometres to the north east of Mauritius, Round Island and Serpent Island are farthest from the coast and quite difficult to access. Serpent Island is extremely inhospitable and Round Island can only be accessed with difficultly for a limited time during the year. Both islands are the most important refuges for flora and fauna. Round Island has been studied extensively since the 1970s. A complete inventory of the flora and fauna has been made. The number of endemic plants species living there, some of which no longer exist on the mainland, together with the presence of endemic reptiles make this island a unique place. Given the high number of endemic reptiles, Round Island has been given the highest priority for restoration in the second National Environmental Action Plan.

Serpent Island is a major seabird-nesting colony, home to the *Nactus* gecko, a centipedes (*Scolopendra abnormis* and *Cryptops decoratus)* and a yet to be identified tarantula. The centipedes are also found on Round Island. Given their rich biodiversity with respect to native species and their relative inaccessibility, these islets should receive maximum protection. Any conservation and rehabilitation effort should be mindful of the original ecosystems and habitats of the islets.

The Mauritian Wildlife Fund, in cooperation with the NPCS, with GEF funding, is in the process of implementing a restoration program, which includes eradication of exotics, and the planting of native hardwood species. They have a full-time presence on the Round Island and are carrying out an intensive search for the burrowing boa, which may still exist on the island.

Serpent Island needs little or no management and the recommended management option is to leave well alone, severely restricting access to a limited number of monitoring visits.

Seabird species found on the Northern islands and the estimated number of breeding pairs (MWF, 2003 and 2004).

SPECIES		**Round Island**	**Flat Island**	**Gabriel Island**	**Gunner's Quoin**	**Serpent Island**	**Pigeon Rock**
Latin name	**Common name**						
Pterodroma arminjoniana & *P. neglecta*	R.I. Petrels	150-200					
Bulweria bulweria	Bulwers Petrels	>2					
Puffinus pacificus	Wedge-tailed Shearwater	40000-80000	10-20	250-400	3000-5000	5-10	3000-5000
Phaeton rubricauda	Red-tailed tropic bird	1000-2000	15-30		200-300		200-300
Phaeton lepturus	White-tailed tropic bird	+750-1500	5-10	15-30	50-100		50-100
Sula dactylatra	Masked (Blue footed) Booby					40-60	
Sterna fuscata	Sooty Tern					200000-300000	
Anous stolidus	Brown Noddy					20000-30000*	

SPECIES		Round Island	Flat Island	Gabriel Island	Gunner's Quoin	Serpent Island	Pigeon Rock
Latin name	**Common name**						
Anous tenuirostris	Lesser Noddy					20000-30000	
* 2003 estimate from MWF of 40,000							

Reptile species found on the northern islets. Ex = Extinct; E = Endemic; / = not recorded; + = present.

SPECIES		Round Island	Flat Island	Gabriel Island	Gunner's Quoin	Pigeon Rock	Serpent Island
Latin name	**Common name**						
Leiolopisma telfairii	Telfair's skink	+E	Ex	/	Ex	/	/
Gongylomorphus bojerii	Bojer's skink	+	+	+	+	+	+
Gongylomorphus sp.	Orange-tailed skink	/	+E		/	/	/
Cryptoblepharus boutonii	Bouton's skink	+	+	+	+	/	/
Phelsuma ornata ornata	Ornate day gecko	+	+	+	+	/	/
Phelsuma guentheri	Gunther's gecko	+E	/	/	/	/	/
Nactus serpensinsula durrelli	Durrell's night gecko	+E	/	/	/	/	/
Nactus serpensinsula serpensinsula	Serpent I. night gecko	/	/	/	/	/	+E
Nactus coindemirensis	Lesser night gecko	/	/	/	+	+	/
Casarea dussumieri	Keel-scaled Boa	+E	Ex	/	Ex	/	/
Bolyeria multocarinata	Burrowing Boa	/ E (Ex?)	Ex	/	Ex	/	/

2.1.6 Designation of the Mahebourg Islets

- **Group 5: Ile de la Passe; Ile Vacoas and Ile aux Fouquets**

Current status: Ile de la Passe, Ile aux Fouquets, Ile Vacoas, undesignated.

Recommended designation: Ile de La Passe and Ile aux Fouquets: Open Reserve
Ile Vacoas: Closed Reserve

This group of islets is by far the most accessible of the islets of the proposed Islets National Park and as a consequence are currently the most popular with visitors. Situated at the reef

edge at the lagoon entrance to the only natural "deep-water" anchorage in Mauritius, they have a major cultural and historical importance with a historical fortress on Ile de la Passe and a lighthouse and associated buildings on Ile aux Fouquets. Ile Vacoas is a small low-lying islet in between the two larger islets. Ile de la Passe has been given to the National Heritage Foundation to manage.

Ile aux Fouquets is naturally divided into a higher rocky outcrop, where the lighthouse is situated and a lower area, which is separated from the higher area by a sandy storm-surge channel. The lower ground has a variety of native plants and is used as a resting and nesting area for various seabirds. The islet therefore needs to be zoned to restrict public access in order to protect its relative fragility and the nesting birds habitat. Ile Vacoas is an important area for nesting shearwaters and has a remnant population of *Nactus* geckos (*Nactus coindemirensis*), Bojer's (*G. bojerii*) and Bouton's (*C. boutonii*) skinks and native plants. It also has a small beach, which is accessible to day visitors and fishermen.

The presence of wardens on Ile de la Passe would ensure that the zonation regulations would be adhered to, but enforcement of Ile Vacoas as a Closed Reserve may prove to be problematic given its close proximity to the other two popular islets.

Accessibility to Ile de la Passe needs to be improved by upgrading the landing jetty. Eventually the vegetation of both Ile de la Passe and Ile aux Fouquets could be enhanced with native species.

- **Group 6: Ile aux Aigrettes**

Current status: Nature Reserve under the Forestry and Reserve Act, 1983;

Recommended designation: Open Reserve

This islet possesses a unique flora representing the last remnant of coastal forest that once surrounded much of Mauritius. The island harbours over 40 species of native plants, many of which are rare on the main land, 18 species are classified as rare or endangered. The fauna of the island is not as rich; the only endemic gecko found is quite common.

Since 1986 Ile aux Aigrettes is managed by MWF, through a Memorandum of Agreement with the NPCS, under a lease agreement with the Ministry of Housing and Lands, with right of access controlled by the Department of Forestry. Currently the islet is used as a restoration and captive breeding centre, a plant nursery and eco-tourist venue. The restoration program includes a rat eradication program, removal of exotic plant species, restoration of native plants (UNDP/GEF funded), the release of the Mauritius kestrel (*Falco punctatus*) and the Pink pigeon (*Columba mayeri*). The Mauritius Fody (*Foudia rubra*) has also been released on the island.

Eco-tourism has helped finance the program and a visitor's centre has been opened.

These activities will continue under the proposed Open Reserve islet designation with zones of Limited Public Access.

- **Group 7: Ile aux Mariannes, Ile aux Fous, and Rocher des Oiseaux**

Current status: Mariannes: Nature Reserves, under the Forestry and Reserve Act, 1983;
Ile aux Fous and Rochers des Oiseaux: undesignated

Recommended designation: Mariannes: Open Reserve
Ile aux Fous and Rocher des Oiseaux: Closed Reserve

The final group of the Mahebourg Islets is the one with the most conservation potential. Ile aux Fous and Rocher des Oiseaux are small rocky outcrops immediately adjacent to Mariannes, and need not be dealt with separately. Neither has much terrestrial vegetation, and both are highly susceptible to storm surges.

Ile aux Mariannes has a highest level of native plant species of the Mahebourg Islets, and has a significant level of butterflies and other insect life. This may be because there is purportedly no reptile life on the islet. It has been suggested that this islet would be a good area to conduct reintroduction experiments. However, the consequences of this to the thriving insect population should be well researched before any decision is made.

Given its local importance in native plant biodiversity this islet group should be declared as an Open Reserve but with a single zonation of Limited Public Access 1, which would allow supervised visits of eco-tourists as well as experimental investigations in conservation management, but would not allow visitors without an official guide.

- **Group 8: Ile Flammants and Ile aux Oiseaux**

Current status: undesignated

Recommended designation: Open Reserve.

These islets are very small sand bars to the north of the main Mahebourg lagoon, and are separated from it by a deep channel. Ile Flammants has no vegetation or terrestrial habitat; Ile aux Oiseaux has two species of exotic plants that cover <0.5% of the area. Both islets are highly unstable dynamic systems, which result from sand transportation and the interaction of tidal currents within the lagoon system. They could easily disappear in the event of sea-level rise or natural or man-made changes in sand transportation within the lagoon.

It is likely that sea birds periodically rest on Ile aux Oiseaux; this might be the reason for its name. However, when visited in December 2003, Ile Flammants was overtopped by waves at mid-tide in calm conditions, and thus is probably rarely used by resting seabirds. The continued existence of these sandbars should be monitored. The area of the semi-enclosed reef in which these islets are situated may be considered for designation as a Marine Protected Area.

There is a plan to lease Ile aux Oiseaux to Green Valley Resort for eco-tourism and recreational purposes. There seems little reason to object to this, although both sand bars have limited recreational potential.

2.1.7 Summary of Recommendations for the Designation and Zonation of the Islets of the Islets National Park

These recommendations differ from those of the Islet Task Force in so much as they include Bernache, and the islets have been reclassified, on the recommendation of the Third Stakeholder Workshop, using a less ambiguous terminology to prevent confusion between the present islet designation under the Forestry and Reserves Act of 1983 and the present proposals.

Islet Group		Designation	Management Zones				
Northern Islets			**a**	**b**	**c**	**d**	**e**
Group 1:	**Serpent**	**Closed**	a				
	Round	**Closed**	a	b			
Group 2:	**Pigeon**	**Closed**	a				
	Flat	**Open**	a	b	c	d	e
	Gabriel	**Open**	a	b	c	d	e
Group 3:	**Gunner's Quoin**	**Closed**	a	b			
Group 4:	**d'Ambre**	**Open**		b	c	d	
	Bernache	**Open**					e
Mahebourg Islets			**a**	**b**	**c**	**d**	**e**
Group 5:	**Vacoas**	**Closed**	a	b			
	Fouquets	**Open**			c	d	e
	Passe	**Open**				d	
Group 6:	**Aigrettes**	**Open**			c	d	
Group 7:	**Fous**	**Closed**	a				
	R. Oiseaux	**Closed**	a				
	Mariannes	**Open**		b	c		
Group 8:	**I. Oiseaux**	**Open**			c		
	Flammants	**Open**	Not suitable for zoning				

The management zones recommended above were developed bearing in mind

- Native species biodiversity;
- Cultural importance;
- Naturalness[15] and habitat fragility; and
- Current use and potential for restoration

of each of the individual islets and there position within the various islets groups.

Precise zone locations need to be included in each of the individual islet management plans based on 'ground-truthed' biotope mapping.

[15] Level of degradation

2.1.8 Threats and Issues to Biodiversity Conservation

Threats and issues fall under six separate categories:

1. Intentional or accidental destruction or degradation of habitat by humans;
2. Disturbance by humans;
3. Removal, poaching, theft of valuable species;
4. Introduction of invasive plants and animals that threaten the existence of the native species, through destruction of habitat, competition or predation;
5. Introduction of native species that have not previously been known to exist in a particular location;
6. Sea-level rise and fire
7. Accidental transference of protected species to other locations.

Degradation of Habitats by Humans

Major threats such as construction and agriculture are obvious and easy to control. Less easy is to control is destruction caused by fire, trampling and littering.

The lighting of fires is prohibited in all designated Nature Reserves. However, cooking on open fires is a tradition at picnics in Mauritius. The provision of barbeque facilities at frequently visited sites and strict patrols to ensure compliance will hopefully reduce this risk. Presently it appears that the Forestry Department, when it clears underbrush and exotic species from forested land leaves the felled scrub *in situ*. This unfortunately provides excessive tinder during the dry season may facilitate the spread of fire. All such clearing of scrub in the future should also include its removal either physically or through controlled burning or mulching at site.

Trampling of important habitat can normally be prevented by the provision of good pathways, which encourage people to stay on particular tracks, as they are easier to negotiate.

Littering is unsightly but also more importantly provides a potential source of food to pest species. There is a need to provide litter disposal facilities and collection routines at all popular islet venues.

Disturbance by Humans

Certain areas in designated Open Reserves, such as nesting grounds or sensitive habitats should be protected. This can either be done through zoning (see above), by fencing and signposting the area or by provision of pathways that lead away from the area.

Removal, Poaching, Theft of Valuable Species

Specimens of some species will be attractive to collectors, given their rarity value. This inevitably leads to poaching and theft. Islets that are planted with rare plants or repopulated with endangered species will have to be made secure, though stationing of wardens, regular patrols and effective law enforcement.

Introduction of Invasive Plants and Animals

All islets, to a greater or lesser extent, are affected by invasive species, which have a disruptive effect on the native flora and fauna.

Animal pests (e.g., rats, hares, rabbits, shrews, goats dogs, cats, and alien reptiles such as house geckos and wolf snakes, invertebrates and disease vectors.)

Currently, all islets under consideration have been cleared of the larger mammals. It is likely that, with the exception of Ile aux Aigrettes, the Mahebourg Islets are currently free of rat and shrew populations. Of the Northern Islets, Round Island, and Serpent Island, Gunner's Quoin, and Pigeon Rock are free of all introduced mammals and reptiles. Gunner's Quoin, Gabriel Island, and Flat Island have been previously cleared of rodents. Trapping surveys, carried out under the present contract, confirmed rat and shrew populations on Ile d'Ambre, but none on

the Mahebourg Islets of La Passe, Fouquet and Mariannes[16]. House geckos and wolf snakes are found on Ile aux Aigrettes.

Plants and weeds

Weed species particularly *Flacourtia* (prune), *Cordia, Leucaena* and *Lantana* are a major problem, as they crowd out and constrain the re-establishment of native plant species. New threats include the Spear grass *Heteropogon contortus* found on Round Island in 1994 and Triffid weed or Siam weed *Chromolaena odorata*, found on Round Island in October 2000. *Chromolaena* is acknowledged as one of the world's worst weeds in warm dry areas and it has the potential to become the most serious threat to native habitats. Other weed species include: *Achyranthes aspera.*

The **need to aggressively control the spread of dominant weed species** has increased since the removal of introduced grazers, i.e., goats, hares and rabbits, from some of the islets.

Woody plants, under certain circumstances, also pose a problem, e.g., Bell recommended the removal of *Casuarina* from the centre of the Gabriel Island, where it is slowly spreading at the expense of *Psiadia* and other indigenous species. However, under other circumstances *Casuarina* performs an important function of windbreak on the immediate coastal fringe of many of the islets and should be maintained, until a more appropriate functional native species replacement is found.

Any islet that has a significant number of visitors has an increased risk of accidental introduction of exotic species. This is not an important issue where islets are relatively degraded or already have established populations of exotic species but is a major concern on islands that are relatively pristine or are being rehabilitated, i.e., designated Closed Reserve islets or on Open Reserve islets which are primarily comprised of Zones a, b & c. There needs to be some form of quarantine system established to limit this risk.

Establishment of Quarantine Procedures for the Islets

Quarantine is vital for the long-term survival of many of the islets ecosystems. Much of the degradation to the islets has been caused by accidental or planned introduction of exotic plant and animal species, which have proceeded to invade and impact upon the natural system. In light of the increasing number of visitors to the islets, provision must be made for quarantine procedures.

There will be a greater need to minimize the risk of transference of pests to the islets from the Mauritian mainland, from other islets and from other countries. The type of person interested in visiting the islets from aboard is likely to have travelled to other similar natural regions in other tropical countries. It is quite likely that within their clothing and bags there are seeds, possibly even animals, from other destinations. Visitors from Mauritius and the boats than carry them could also unwittingly transport pest that are common on the mainland to the islets.

It will therefore be essential to develop appropriate quarantine and vetting procedures to ensure that these accidental transfers don't take place. Each islet will need to develop its own appropriate quarantine procedures, dependent on the risk of accidental transference and the risk that this transference poses to an individual islet. It will also depend on the location and facilities developed for the islets.

The Forests and Reserves Act (1983) states that no plant or animal should be introduced to a nature reserve. This includes islet Nature Reserves. Some of the islets proposed under the National Park are not Nature Reserves under the Forests and Reserves Act, and thus need to have quarantine procedures established as part of their management strategy. Guidelines to the types of procedure are given below:

Various scales of quarantine are proposed, which are linked to the proposed uses of the island and also the degree of impact of possible invasion. It is proposed that 3 levels of quarantine are carried out and associated with the islets Status as part of the National Park:

- Baseline – for Open and Controlled Access islets,
- Simple – for Limited Access islets,
- Intensive – for Restricted and Closed Islets.

[16] No mammals were caught in the traps and no evidence of rats was seen near large potential food sources found in the litter on the islets.

The following quarantine procedures are proposed:

Baseline:

1. No planned release of any plant or animal species, unless determined to be of conservation benefit and complementary to the islet Management Plan, as determined by the statutory authority.

Simple:

As Baseline procedures, plus:

1. All visitors to must ensure that their clothing and footwear are completely free of seeds prior to boarding boat.
2. Captains to check on boats for small mammals and vegetation prior to boarding and departure.

Intensive:

As Baseline and Simple, plus:

1. All construction equipment, to be fully checked prior to departure (e.g. inside pipes etc).
2. Check on stores and equipment prior to departure.
3. Sealing of boxes, crates, tents and other equipment, and use of plastic crates and drums.
4. Check on helicopters. Helicopters are much less likely to be carrying pests and plant material than boats but nonetheless there is some quarantine risk. The comments made above in regard to boats equally apply to helicopters.
5. Brush the concrete helicopter-landing pad before the first trip and after each trip.
6. The helicopter take off area needs to be a weed-free site[17].
7. Unloading of equipment and supplies from vehicle to concrete and then onto boat/helicopter. Equipment should not be placed on vegetation prior to departure.
8. Inspection of gear during unpacking.
9. Regular monitoring for signs of introduced animals should be carried out on Gunners Quoin and Round Island. In addition, casual surveying by restoration teams should be encouraged, and any sightings reported to the officer in charge.
10. If permanent mooring points are close to the island (e.g. Gunners Quoin), then clear signage should be maintained clarifying the islet status to discourage access.
11. Response plans for likely species should be developed, as part of each islet management plan.

Introduction of Native Species to New Habitats

As a matter of principle, native species should only be reintroduced to habitats where they are known to have previously existed. If there is a need to conserve *per se* then this should be within the confines of botanic gardens, arboreta etc., not within habitats and ecosystems that are undergoing restoration. The exception to this rule would be in the case of introduction of a functional replacement species where a particular niche needs to be filled to ensure ecosystem functionality and resilience.

Sea level rise and fire

Some of the sand-bar islets and low-lying islets, such as Flammants, Ile aux Oiseaux, Benitiers and the Mariannes group, will be susceptible to global warming induced sea-level rise. They are to differing degrees already highly influenced by the sea, and cyclone storm surges, and as such there are no plans to have substantial developments on these islets. The remaining islets, which are basaltic based, have high topographic features and cliff frontage will be less influenced by any predicted sea-level rise.

The risk of fire on many of the islets will increase given the proposed use of some the islets for eco-tourism, education and recreation. Various management measures and contingency plans need to be drawn up to ensure that the risk of fire is minimised and that in the event of an

[17] The current site used at Petite Raffray is surrounded by a waste ground that is home to 49 weed species. In the short term the football field at Petite Raffray should be used as it is much further from the weedy area.

outbreak of a serious fire the response will be rapid and effective. It is recommended that the islets be cleared of potential tinder remaining from weed clearance and path clearance, that signs warning of fire risk are clearly posted and that the development of a rapid response force be considered within the coastguard and other relevant authorities. Each islet management plan should address locality specific risks with regard to fire and cyclones.

Accidental transference of protected species to other locations

Occasionally, protected native species manage to hide in items being transported off closed status islets. If this happens they should not be transferred back to the islet of origin, because of the risk of transferring disease. Such peripatetic animals should be used to develop open educational displays, in one of the Limited Public Access Zones of the multi-purpose islets.

2.1.9 Input Requirements: Identification of Available Resources and Institutional Issues

Substantial expertise exists in Mauritius and a large amount of work has been achieved and is continuing with the assistance of NGOs and external funding (e.g., GEF).

However, the institutions dealing with biodiversity conservation need increased funding to enable them to enhance their capacity to respond to the growing pressure on the remaining native habitat. **More resources** need to be dedicated **to monitoring and evaluation** of remaining resources to enable effective policy formulation.

Both the Biodiversity Strategic Action Plan and National Environmental Strategy suggest the further involvement of NGO and private sector organisations, as well increased involvement of public in management activities.

Except for their close relationship with MWF, the main operating authority (NPCS) is not particularly experienced in dealing with NGOs or private sector organisations.

Islet leasing arrangements remain an invaluable part of the conservation management of the 16 islets. The ongoing activities with MWF involving agreements for conservation restoration on Ile aux Aigrettes and Round Island are a functional model that can be used to develop other agreements. However, further involvement of NGO and private sector, as proposed in state policies, must be carefully managed through NPCS, especially as the goals of other partner organisations might be less complementary to NPCS as those of MWF; other organizations may not have such a high degree of mutually compatible objectives.

Such arrangements should be developed, in part to access alternative funding resources and capacity, and in part to mainstream environmental and conservation issues into economic activities. It is proposed that future **leasing arrangements** are very clearly laid out in detail. It is proposed that the leasing contracts involve two aspects:

1. Service Level Agreement (SLA) – these identify the conditions of the maintenance of the lease. This could be, for example, thorough clearing of all litter on the islet and/or carry out yearly weeding operations on a set of identified species. The SLA would be clearly stated in a way that permits the NPCS to monitor the conditions of the lease.
2. Managed development – the aim of the strategic management plan is not to maintain the status quo, but to increase the conservation value of the islets whilst maintaining visitor and tourism potential of some of the islets. Thus a clear framework for development and a timeline should be agreed as part of the lease. This could be for example, development of a specific type of sanitary infrastructure within 2 years and the creation of walkways on specific areas to help visitor zonation on the islet. Such development should be expressed in a negotiated Logical Framework in which the activities up to the ultimate goal for the island are clear to both the NPCS and lessee.

There remains duplication, ambiguity and potential for conflict in the designation of protected areas and responsibility for their conservation. There is a strong argument on the grounds of institutional efficiency for consolidating the conservation responsibility of the Islets into one authority, thereby allowing a more effective allocation of limited resources, information and experience.

A major institutional issue is the **current position of Nature Parks and Conservation Service within the Ministry of Agriculture**. Its institutional affiliation is due to the organic

development of NPCS out of the Department of Forestry. The location of NPCS within the Ministry of Agriculture is not particularly logical and encourages the common institutional misperception that biodiversity and conservation should be treated as another sector rather than an over-arching environmental concern which needs to coordinate and collaborate with a variety of developmental sector ministries and line agencies.

It would make more institutional sense if NPCS were eventually moved to the Ministry of Environment, especially as the Ministry of Environment has initiated the development of the Islets National Park, chaired the Islet Task Force and is currently chairing the Strategic Planning Committee.

2.1.10 Community Participation

It is fundamental for the long-term effectiveness of any management plan that it engender local community support. This is particularly true for the Mahebourg Islets and the Ile d'Ambre / Bernache Islet group. Public participation in the management of reserved areas needs to be encouraged and legally strengthened.

Although the public may make written representations in relation to draft management plans, under the Wildlife and National Parks Act, 1993, these do not have to taken into account by the Director. Furthermore there is no statutory guidance or objective to be followed in drawing up the plans. Given the importance of the plan for future management of the area (particularly the power to build or to remove resources, see section 14) the process of drawing up the plans could be made more transparent and participatory than is currently required by law.

If the islet grouping suggested above is accepted, then there is an excellent opportunity to develop a fully participatory plan for Ile de la Passe, Ile aux Fouquets and Ile aux Vacoas group, with a partnership that would include NPCS, MWF, the National Heritage Trust Fund, and the local community through local government and other representation, such as youth groups, small enterprise associations and other local commercial enterprises. This would be particularly relevant given the high use of this islet group by the local community for recreational purposes.

Where the demarcation of the islets includes coastal margins or marine areas, the local use by fishermen needs to be taken into account. Collaborative efforts need to be developed. Demarcation, whether in the form of a marine protected area or a buffer zone, does not necessarily mean that fishing will be proscribed, although specific areas of the zone may be off limits or specific gear types may be proscribed. Given the local knowledge that the fishermen of the area may have, it is important to include them in the development of the islets, and where possible enable employment within the system, or if a planned development is likely to impact on livelihood, to facilitate the movement to alternative livelihoods.

2.2 Strategy for Education, Public Awareness and Eco-tourism

The participatory workshop round-table on Eco-tourism, Education and Awareness developed the following planning schematic

Planning Objective

Increase awareness of biodiversity and historic sites, and encouragement of the development of eco-tourism to support the local economy

Outcome 1	Outcome 2	Outcome 3
Future generations sensitized to the value of Mauritian biodiversity conservation and environmental protection	Increased Public Awareness	Establishment of sustainable eco-tourism (environmentally and financially)

Outputs1	Outputs2	Outputs3
Primary and secondary education on environment including conservation; the importance of local knowledge and resources.	Media campaigns for environment: Anti littering; Good-stewardship; Anti-poaching	Establishment of institutional arrangements: • "One-stop shop" for private operators, licensing authority, monitoring and control of operators; • Granting of leases; • Partnership facilitation and arrangements.
Funding mechanism for field-based education	Awareness training programs for: tour operators; guides, etc	
Established use of islets for research / study / outdoor classrooms	Environmental youth movement activities	Management Plan Frameworks for each Islet including: ▪ Legal obligations • Zoning; • Pest management; • EIA; • Access; • Carrying capacity; • Commercial exploitation.
Provision of infrastructure and materials		
Time frame		Community participation

2.2.1 Primary and Secondary Education / Public Awareness

The protection and conservation of native species will be difficult to sustain without the support of the general public, from political, financial and implementation perspectives. Public interest creates the demand for specific environmental services, and eco-recreational facilities. Public support encourages continuous government commitment and funding; and enforcement is less onerous and more effective with the cooperation of the general public.

Increasing the awareness of environmental issues is most effective when started at an early age; the development of a Mauritian identity and ethos is imperative to engender respect for the environment and to instil a sense of belonging. The right attitude towards the environment can be nurtured through visits, guided nature tours and "hands-on" activities; children will learn to conserve the environment. At higher levels students may undertake projects and research on the islets in conservation of endemic species and sustainable development[18].

The Department of Environment and the National Parks and Conservation Service need to work with the National Environmental Education Committee[19] to ensure that environmental issues are given sufficient recognition and weight in the school curricula, and that the lessons, which introduce children of all ages to environmental issues, are taught in a relevant manner. These would include environment and conservation, with emphasis on the national environment and the importance of the islets in conserving the native fauna and flora of Mauritius.

There is also a need to strengthen environmental awareness in government agencies that deal with issues that can impact on the environment or are associated with the maintenance of environmental quality. A basic understanding of how various human activities undermine the ecological processes that support biodiversity should be developed particularly among those responsible for various enforcement and control activities, e.g. coast-guard, customs, environmental police.

It is recommended that the DoE coordinate the development of a set of environmental training modules on specific subjects, including biodiversity and native species, with and for different target audiences such as schools, government agencies, and NGOs.

The Ministry of Education is responsible for reviews of policy and policy revision, with respect to school curriculum. The Chief Technical Officer under the Permanent Secretary supervises school curriculum development; local responsibility rests with the four district technical directors. The Ministry of Education charges the National Centre for Curriculum Development with the task of revision, the NCCD in turn resources staff from the Mauritius Institute of Education to develop curriculum and supporting texts.

The Department of Environment and NPCS need to enhance their Public Awareness and Education capacity through:

- Organizing awareness raising events, for example about the coastal zone and the islets. Such events need to be specifically designed to satisfy the interests and the needs of the target audience, e.g., youth, women's groups, farmers, fishermen, NGOs, tourism and recreation.
- Educating the media as to the importance of environmental issues and assisting them to entertain, inform and interest the public in the natural heritage of Mauritius as well as informing the public as to the threats and their responsibilities.
- Supporting NGOs in taking forward environmental education projects.
- Working with the Ministry of Tourism and Mauritius Tourism Promotion Authority to raise awareness of tourists and tour operators to the environmental sensitivity of Mauritius, through notices in hotels etc.

[18] See Management Plan for Ile d'Ambre

[19] Established in 1997 under the aegis of the Ministry of Education and Scientific Research; the committee represents 15 agencies.

The proposed establishment of a Nature Park at Ile d'Ambre would be an ideal venue for educational and awareness programmes in conservation that would be both practical and relevant.

2.2.2 Eco-tourism

Tourism affects environmental quality and yet is dependent on a high quality environment for its success. Mauritius has successfully targeted high quality, high spend tourist who are largely attracted by the promise of pristine lagoon water, un-crowded beaches and excellent facilities and service.

Although Mauritius has regulations and laws that protect much of the environment, inadequate planning and enforcement has lead to a **degradation of parts of the coastal zone**, which attracts most tourists to Mauritius. There is an increasing risk that the crowding of hotels, coastal pollution and erosion of the beaches and the large-scale destruction of the coral reef system will make Mauritius a less attractive destination in the future.

Without a long-term vision the uncontrolled tourist industry tends to mine coastal resources, consuming them rather than using them in a sustainable fashion. Construction on *Pas Geometrique* land and inadequate waste disposal has had a major deleterious impact on prime beach locations, such as the public beach area of Flic en Flac. Inappropriate attempts at erosion prevention and the removal of sea grass beds and lagoon coral to create "swimming areas" has also contributed to the widespread degradation of the coastal lagoon areas; making it much more susceptible to cyclone damage.

The islets represent a relatively undeveloped and as yet untapped resource for tourism, especially with increasing land pressure on the coastal mainland. However, traditional hotel-based tourism, especially the mid-market level, has not shown itself historically to be conducive to environmental protection or conservation. The record of the tourist industry is not one of eco-friendly sustainability.

It is important that **any tourist-based activities allowed in the Islets National Park be highly regulated**, **monitored and enforced**, to ensure that the overall objectives of the park are not compromised.

That said, it is also obvious that the development of a high profile conservation agenda by the NPCS in cooperation with the tourism sector will be mutually beneficial. Tourism is important to the national economy; a green image for the tourist industry helps attract the more desirable customer; and the tourist sector is able to invest sufficient funds to service high upfront capital costs to cover infrastructure and service development that are needed prior to any revenue generating activities.

The strategic goal of the tourism sector as stated in NEAP2 is:

"to support the tourism industry such that it can continue to fulfil its development role for the country without creating environmental or social impacts that would undermine its long-term future".

Essentially it is necessary to encourage the sustainable use of appropriate natural resources for tourism and recreation. Eco-tourism should enable funding of more expensive conservation projects without undermining their objectives.

Each islet group will need a **management plan** that will take the form of a **contractual agreement** between the NPCS and the contractor[20] which details all planned uses, buildings and infrastructure as well as accessibility constraints, activity restrictions, and enforcement; it should include agreed indices for management success that will allow assessment of adherence to agreements and covenants.

Leasing to large-scale tourist consortiums must ensure adequate access for local recreational or educational use, through group concession charges, special site days, licensing of local operators, and the like, to enhance the link between major tourist developers and the local community.

[20] whether NGO, private sector or individual

Following the recommendations of the Inter-ministerial Committee on Islets Management, the Cabinet agreed on the 22nd of March 2002 to entrust the management of certain islets to the various organizations listed below, through Memorandum of Understanding:

Organization responsible for management	Islets	Purpose of Management
AHRIM	Flat Island, Ilot Gabriel	Eco-tourism and conservation
Mauritian Wildlife Foundation	Ile aux Vacoas, Ile aux Fouquets Ile aux Mariannes Rocher des Oiseaux Ile aux Fous	Conservation
Green Valley Resort	Ile aux Oiseaux	Eco-tourism

The purpose of management of those islets provisionally allocated to MWF needs to be modified to incorporate eco-tourism, following the recommendations included in this report.

Certainly Public-Private-Partnerships between government agencies and the private sector, NGOs, etc. should be encouraged as they allow access to complementary resources and experiences and have been shown to be successful in Mauritius, as illustrated by the partnership developed between the NPCS and MWF.

However, such partnerships must be firmly rooted in formal legally binding contractual obligations that detail expectations from the viewpoint of all partners so as to minimize potential misunderstandings and give necessary redress to remedy perceived conflicts of interest. Given the recent ruling of the State Law Office the allocation of management responsibilities will need to be based on the management plans that are to be developed by the NPCS. Ideally, these management plans need to be developed in partnership with current and potential stakeholders to ensure effective implementation.

Planning of eco-tourism needs to be transparent and developed, in the case of the lagoon islands, in consultation with the local community, as well as taking into consideration the local recreational demands and the carrying capacity of the islets that will be accessed by the public and eco-tourists [21].

This is particularly relevant to the “Open Reserve” islets such as Ile d’Ambre, Ile de la Passe, and Ile aux Aigrettes, all of which have potential in terms of tourism, education, recreation, and income generation.

The long-term effectiveness of any management plan depends on local community support. This is particularly true for the Mahebourg Islets and the Ile d’Ambre / Bernache Islet group. Public participation in the management of reserved areas needs to be encouraged and needs to be legally strengthened.

The loss of public access to beaches commandeered by the large hotels and the restricted access to Ile aux Aigrettes nature reserve, managed by MWF, has caused some resentment among local residents.

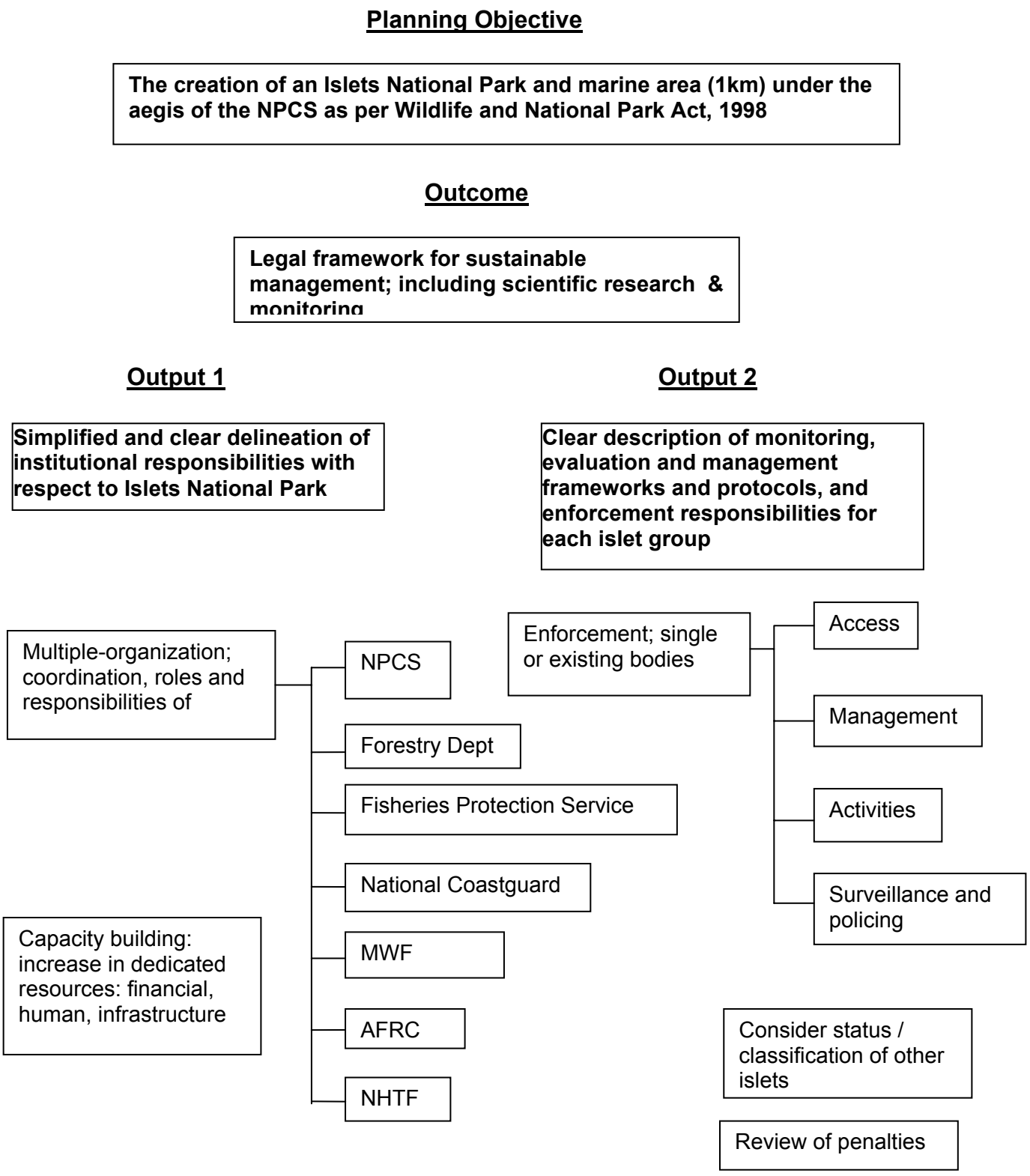
Although the public may make written representations in relation to draft management plans, under the Wildlife and National Parks Act, 1993, these do not have to taken into account by the Director. Furthermore there is no statutory guidance or objective to be followed in drawing up the plans. Given the importance of the plan for future management of the area (particularly the power to build or to remove resources, see section 14) the process of drawing up the plans could be made more transparent and participatory than is currently practised under the law.

If the Islet grouping suggested above is accepted, then there is an excellent opportunity to **develop a fully participatory plan** of the Ile de la Passe, Ile aux Fouquets and Ile aux Vacoas group, with a partnership that would include NPCS, MWF, the National Heritage Foundation, and the local community through local government and other representation. This would be particularly relevant given the high use of this islet group by the local community for recreational purposes.

[21] The carrying capacity is a function of the environmental value or scientific importance, habitat sensitivity or resilience, and the supportive infrastructure developed at the site

2.3 Strategy for Improvement of Legislation, Policing and Enforcement

The participatory workshop round-table on Legal Framework and Enforcement developed the following planning schematic:



The round table on Legislation and Enforcement, at the Strategy Planning Workshop identified the need to provide an effective and efficient enforcement mechanism for surveillance and policing of the islets, and suggested that this should rest with a single enforcement body to avoid duplication and inefficient use of resources.

There is a comprehensive legal and policy framework that supports the development of strategic plan for the Islets National Park. The protection of flora and fauna is defined in Mauritian Law and Policy and is, currently, largely the responsibility of the Ministry of Agriculture, Food Technology and Natural Resources, with the central role of NPCS clearly defined as the implementing authority for islet conservation.

In addition, the future conservation of the islets is directly in line with the International Conventions signed by the Government of Mauritius.

The law is quite comprehensive in scope; however:

- The legal and institutional framework is fragmented, with relevant provisions being dispersed across a number of different acts and regulations, often giving rise to jurisdictional overlap (e.g. powers of law-making and enforcement being conferred on a range of different authorities in respect to the same matters).

- There is a potential for uncertainty and conflict between different sets of legislation, which seeks to protect potentially overlapping areas of land according to different criteria and under the control of different institutions. This needs to be resolved through the **rationalization of land designations and consolidation of institutional responsibility**.

- There appears to be **insufficient coordination** between the planning regime under the Town and Country Planning Act, the EIA procedure under the Environmental Protection Act and the relevant nature protection legislation to ensure that proper consideration is given to protected areas and biodiversity conservation in general in the planning and development process.

A single piece of legislation is needed to address these legislative and institutional issues so as to clearly allocate institutional responsibilities and provide unambiguous instructions to facilitate the coordinative effort that will be required for sustainable management of the islets

Many of the islets are still being degraded, suggesting that full implementation of the objectives of the legal and policy framework have not been achieved. Central to this is the issue of enforcement. Most existing environmental laws are inadequately enforced, mainly due to **lack of resources and capacity in government departments**, a lack of awareness of the laws themselves, overlapping responsibility for enforcement, and legal limitations on the admissibility of evidence in court proceedings.

The Islets Task Force (2001) identified evidence of significant amounts of illegal activities on some islets (e.g. encampments, littering, fires).

The responsibility for the prevention of these activities at present fall under the mandate of National Coastguard. The National Coastguard clearly has extensive powers of enforcement under the National Coastguard Act, 1988[22], but it is not clear to what extent they are putting these powers into practice. The resources and training dedicated to prevention of islet degradation is limited and are included with the more substantive coastguard duties, which means supporting ongoing conservation management efforts may be given relatively low priority.

The responsibility for enforcement needs to be made clearer. The development of focused enforcement officers needs to be achieved. It may be more effective to hand over this role to the *Police de L'Environnement* (as proposed by the Task Force 2001) or to create a Special Marine Protection Squad, within the coastguard as (proposed by BSAP 2001).

Since they are better placed and equipped to carry out monitoring and surveillance of activities on and adjacent to the islets of the National Park, it would be beneficial to provide "wildlife and conservation" enforcement training to NCG officials, combined with the development of

[22] See Appendix III

some form of Memorandum of Understanding between the National Coastguard and the other enforcement authorities; this may include the Environment Ministry and the NPCS, and other involved management organisations.

In light of the coastguard's already extensive remit, a **focused special force of officers** (be it the *Police de L'Environnement* or a Special Marine Protection Squad) appears to be **necessary** to provide adequate law enforcement. The men of this unit should not only be adequately trained as law enforcement officers, but also as a group be aware of the conservation management issues of the islets as well as providing guidance, advice and interpretation to islet visitors and tourists. All of this will require additional training and resources, whatever the final institutional arrangement.

The National Coastguard has a training centre, which carries out induction courses as well as regular training of experienced staff to keep them informed on latest developments. The coastguard supports the idea of NPCS and MWF providing expertise to give input into the development and teaching of these courses as well as providing 'hands on' experience in the field in such areas as: rare and proscribed species identification; quarantine procedures; coastal systems dynamics and terrestrial ecology.

Given the success of the Environmental Police as a dedicated force to deal with enforcement issues arising from the Environmental Protection Act 2002, it is recommended that a special affiliated force be established **within the coastguard** to police the various issues that will arise from the creation of the Islets National Park.

A specific issue in the Northern Islets is the need to upgrade the temporary accommodation facilities on Flat Island to something more permanent. This would allow the coast guard to spend more time to concentrate on their duties rather than tending survival needs. The details of appropriate accommodation and facilities should be addressed in the specific management plan for Flat Island.

2.4 Information Requirements

Existing information and data storage and dissemination facilities need to be upgraded and linked to facilitate easy access. The establishment of an Inter-Agency Network should be considered, with relevant agencies servicing the requirements of dedicated information nodes.

It is recommended that the Ministry of Environment and the NPCS begin to **establish a Common Environmental Information System**. Once developed and maintained this should be able to process and analyze environmental information and disseminate reports to all concerned. Activities will include:

- Collecting and classifying environmental information and data relating to specific activities and locations, and analyzing this to provide top management, concerned staff and other organizations with the information needed in the preparation of policies and plans to rationalize decision-making.
- Development of a systematic environmental monitoring and evaluation system that will provide input to the information system.
- Documentation of the information systems, programs, and databases, and development of reports.

3 List of organisations consulted

1st Workshop delegates.

WORKSHOP ON DEVELOPMENT OF A MANAGEMENT PLAN FOR THE CONSERVATION AND MANAGEMENT OF OFFSHORE ISLETS FOR THE REPUBLIC OF MAURITIUS

Sofitel Imperial Hotel, Flic en Flac, Tuesday 18th November 2003

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WORKSHOP ON DEVELOPMENT OF A STRATEGY& MANAGEMENT PLAN FOR THE CONSERVATION & MANAGEMENT OF OFFSHORE ISLETS FOR THE REPUBLIC OF MAURITIUS

SOFITEL IMPERIAL HOTEL, FLIC EN FLAC

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3rd Workshop delegates.

WORKSHOP ON DEVELOPMENT OF A STRATEGY & MANAGEMENT PLAN FOR THE CONSERVATION & MANAGEMENT OF OFFSHORE ISLETS FOR THE REPUBLIC OF MAURITIUS

Hilton Mauritius Resort, Flic en Flac, Thursday 19th February 2004

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APPENDICES

Appendix I: Mauritian Legal Framework

There already exists a comprehensive legal and policy framework, which pertains to strategic management of the target Islets.

State Legal Instrument	Relevant issues to Islets
Forests & Reserves act 1983	Falling under Ministry of Agriculture, Food Technology and Natural Resources (MoA), this provides protection for areas of land designated as Nature Reserves. The Forestry Service is responsible for management, except for Nature Reserves under the jurisdiction of NPCS.
Wildlife and National Parks Act 1993	This is the predominant legislation for protection of islet flora and fauna and falls under, MoA implemented through NPCS. This Act permits designation of land by the President, which is of natural, scenic, scientific, educational, and recreational, of other importance or value to the State.
State Lands Act (1874)	State lands include the Pas Geometric (1895 Act) which include islets, which can be reached at low tide from the mainland. The Act ensures that no encroachment (e.g. building, cultivation) is carried out on State land (except with permission from the Minister of Housing and Lands), and that no dumping (e.g. sand, coral etc) shall be carried out. If Islets are leased then the Act requires that plantation are kept in a “neat and tidy” state, and that the lessee should prevent removal of sand, interference with rods, and cutting and removal of trees.
Environmental Protection Act (2002)	This Act includes the coastal zone (up to 81.21 m landward from the high tide mark) and the Exclusive Economic Zone (to 200 nm offshore). The act ensures protection of the environment.
National Coast Guard Act 1988	Under the Ministry of Home Affairs, the coast guard are responsible for the enforcement of any law pertaining to the maritime area and the “prevention and suppression” of any illegal activity.
Fisheries and Marine Resources Act (1988)	This act regulates fishing in Mauritian water and provides protection, conservation and protection of fisheries and marine resources.
Pleasure Crafts Act (1993)	Responsible for the licensing and control of pleasure craft
Continental Shelf Act (1970)	This Act prohibits or restricts any exploration or exploitation, which would cause unjustifiable interference with navigation, fishing, or the conservation of the living resources.
Removal of Sands Act 1975 (Amended 1997)	This Act regulates coral sand mining at sea, and co-ordinates sand extraction at the four designated sites around Mauritius.

International Conventions

Mauritius has also signed up to a number of International Conventions, which are relevant to Islet management.

International Convention	Relevant issues to Islets
Convention on Biological Diversity (CBD; 1992)	This Convention, signed by the Ministry of Environment but implemented through the NPCS, requires signatories to protect biodiversity and to implement sustainable development policies.
Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES; 1973)	This convention regulates international trade in endangered flora and fauna, and this compliment the Sate Law of the Wildlife and National Parks Act (1993).
UN Framework Convention of Climate Change (1992)	This objective of this Convention is the stabilisation of Greenhouse gases, and is implemented through the National Climate Committee under the Prime Ministers Office.
United Nations Convention on the Law of the Sea (UNCLOS; 1982)	Requires that coastal states ensure through conservation and management the maintenance of living resources in the Exclusive Economic Zone.

Appendix II: National Policy Support

In addition, Mauritius has a number of State and Regional policies and Plans, which provide a policy framework for a strategic plan of the islets.

National policy	Relevant issues to Islets
National Biodiversity Strategy and Action Plan (BSAP; 2001)	The National Vision set out in BSAP is: "*By the end of year 2010, the safety of biotic wealth for the Republic of Mauritius will be ensured, its values appreciated by society at large. The biodiversity resources will be sustainably used and managed through improved comprehensive policies, legal frameworks, and appropriate conservation techniques so as to enhance their environment, social and economic contributions……"* It specifically identifies the islets and proposes: "*As far as management of the offshore islets is concerned, conservation and restoration works are well underway on Round Island and Isle aux Aigrettes. However, it is felt that a coherent long-term plan for the remaining islets should be drawn up, which will cater for the different demands in a co-ordinated way*" The BSAP identifies a number of threats to the islets: • Lack of staffing and capacity in NPCS and Forestry Service. • Lack of co-ordination between the various organisations involved in biodiversity and an urgent need for a lead organisation to co-ordinate and disseminates information. • Strengthening public participation in the management of reserve areas. • A re-focus of coast guard on safety and security issues and the development of a Special Marine Protection Squad. It proposes a five-point action plan: 1. Bring all ecologically sensitive islets under NCPS. 2. Construction of permanent field stations on islets classified as strict nature and potential reserves. 3. Complete inventory of all existing biological resources. 4. Eradication and management plan of invasive species and introduction of native species. 5. Preparation of management plans.
National Environmental Strategy (NES; 1999)	Recommends protection of the islets be improved by: • Creation of a Management Plan • Restoring Biodiversity of Islets Further, it recommends: • Bringing Management under NPCS • Increasing capacity of NPCS • Maximise role of NGO's in specific projects • Increase involvement of private sector and public in conservation activities • Identifying options for income (e.g. sponsorship, entrance levies).
National Physical Development Plan (NPDP; 1994)	Aimed to balance development and protection of the environment. The Plan proposes: • Development of a conservation plan for the Islets

	• Prior to adoption of this management plan, no development will be allowed which could destroy or adversely affect the islets • Prior to adoption of the management plan, no intensification of visitor or tourist activities would be permitted.
Outline Schemes	These schemes for the North, South and Moka/Flaq suggest that: • The Northern Islets be retained in their natural states • Ile d'Ambre will be maintained in its natural state, though simple visitor facilities will be permitted. • The Mahebourg Islets (excluding Ile aux Aigrettes) will be maintained in their natural state, protected from development and some may be protected in total.

Appendix III: Summary of Acts Significant to the Development of the Islets National Park Strategic Plan

The Forests & Reserves Act, 1983 and Wildlife and National Parks Act, 1993 are the two laws critical to the development of Islets National Park.

Forest and Reserves Act, 1983

The Forest and Reserves Act established and delineated forest, mountain, river and nature reserves throughout Mauritius and Rodrigues. This is the principle legislation governing the management of forest resources including brushwood and nature reserves on mainland and on some of the islets. Many of the issues addressed are related to the planting and the felling and removal of trees and protected plants, and the introduction of animals to the delineated areas without proper authorization.

Other offences include: destruction of plants, introduction of weeds, , lighting fires, littering, and activities leading to soil erosion.

Wildlife and National Parks Act, 1993

This is the principle legislation for the protection of flora and fauna with the Wildlife Regulations of 1998, giving effect to the CITES Convention in Mauritian law.

Part II of the Wildlife and National Parks Act establishes and mandates the *National Parks and Conservation Service*, to include: the management of reserved land and the conservation of wildlife within a national park; carry out educational activities and provide and disseminate information, related to reserved land and conservation of wildlife within the national parks….

Part IV – National Parks and Other Reserves

11. Proclamation of National Parks and Other Reserves

(1) The President may, by Proclamation, declare any State land, nature reserves, *Pas Géométriques*, or other land to be a national park or other reserve, where –

a. Such land is of natural, scenic, scientific, educational, recreational or other importance or value to the State;

b. The preservation of the land is necessary to properly protect, to permit access to, or management of, or to allow public viewing or enjoyment of such land.

(2) Notwithstanding any other enactment, no work or development shall take place on a reserved land unless it is approved by the Minister or in a management plan under section 13.

12. Buffer Zones for reserved lands

(1) The Minister may, by regulation, declare any land adjoining the reserved land to be a buffer zone for that reserved land.

(2) Notwithstanding any other enactment, a buffer zone shall not, except with the approval in writing of the Minister and subject to such conditions as the Minister shall impose, be put to any use which may have a negative effect, whether direct or indirect, on reserved land, or plants or animals within the reserved land.

12. Management plans for reserved land

(1) The Director shall prepare, for submission to the Minister, a management plan for each area of reserved land, together with any adjoining buffer zones.

(2) A management plan may relate to part of an area of reserved land, or to more than one area of reserved land.

(3) A management plan ---

a. Shall contain information regarding the relevant reserved land or buffer zone, statement of objectives for management and prescriptions for the management of the subject land;

b. May designate zones within reserved land to which the public shall not have access except on written authorisation by the Minister.

(4) (a) The Director shall provide a copy of the draft of each management plan to the Advisory Council.

(b) The Advisory council shall within 30 days of receipt of the draft, submit its comments to the Director.

(5) On receipt of comments of the Advisory council, the Director shall publish a draft of each management plan to the Minister, together with comments of the Advisory Council and shall advise the Minister of any changes which have been made to the draft in light of these comments.

(6) Subject to the approval of the Minister, the Director publish a draft of each management plan and shall cause notice to be printed in at least two local newspapers stating where copies of the draft plan may be inspected and purchased.

(7) Any person may within 60 days from publication of any notice under subsection (6) make written representation to the Permanent Secretary in relation to the draft management plan.

(8) In response to any representation made under subsection (7) the Director may make such amendments to the draft plan as the Permanent secretary may approve.

(9) The Director shall submit each draft management plan, incorporating any amendment made under subsection (8), to the Minister for approval.

(10)A management plan, once approved by the Minister,--

a. Shall come into effect upon publication in the Gazette of a notice advising of that approval;

b. Shall be published and made available for purchase by any person; and

c. Shall be binding in relation to the management and use of the subject-reserved land and related buffer zones.

(11) A management plan may be amended to replaced by a subsequent management plan prepared in accordance with this section.

Part V and the schedules of the act detail the protection of fauna and fauna under the act.

By having a clear conservation objective, the Wildlife and National Parks Act, 1993 can be regarded as complementary to and a reinforcement of the Forest and Reserves Act, 1983. There is no explicit statement of conservation objectives in the Forest and Reserves Act, although these are obviously addressed within the proscribed activities listed in the act.

There is no mention of powers of exclusion within the original Forest and Reserves Act; although this has been amended (July 2003) under paragraph 3A Control of Access to Nature Reserves: The authorized officer may prohibit or restrict access to any nature reserve, and shall cause signs to be displayed in the nature reserve indicating the prohibition or restriction of access. There is also no mention of zoning for management purposes or educational responsibilities that are mandated to the National Parks and Conservation Service.

There is also an implicit assumption that a National Park is different to the various reserves designated under the Forest and Reserves Act. An example of such was the declaration in 1997 of the Blue Bay Marine Park as a National Park, which states “WHEREAS land, under the said Act includes land covered by sea or other waters and the part of the sea or those waters covering the land”.

Finally, it should be noted that there is potential for uncertainty and even conflict between the Wildlife and National Parks Act and Forest and Reserves Act. The two different acts are seeking to protect areas of land according to different criteria and under the control of two different institutions. This is causing confusion and is potentially a major constraint and diversion to the agenda of the establishment of the Islets National Park. There is a strong argument for transferring the biodiversity conservation function of Nature Reserves to the NPCS, which has more experience, information and resources dedicated to conservation of such areas, whilst leaving the planting of trees for the preservation of ecosystem functions, such as soil stabilisation in the mountain reserves and on river banks, to the forestry authorities under the Forest and Reserves Act.

National Coast Guard Act 1988

The National Coastguard Act of 1988 established the National Coastguard; a specialist unit of the Police Force undo the command of the Commissioner for Police. Under section 6 of the Act the National Coastguard "shall be responsible for … the enforcement of any law relating to protection of the maritime zones, [and]….. the detection, prevention and suppression of any illegal activity within the maritime zones." These duties are "subject to .. any environmental law". In addition, under section 12, their powers include authority … to prevent any activity likely to constitute a threat to maritime zones including the seabed, the flora, the reefs."

Appendix IV: Summary National Biodiversity Strategy and Action Plan

National Parks and Conservation Service, Ministry of Agriculture, FT and Natural Resources in collaboration with UNEP and GEF (July 2001)

Page	Comment
xv	**National vision** "*By the end of year 2010, the safety of biotic wealth for the Republic of Mauritius will be ensured, its values appreciated by society at large. The biodiversity resources will be sustainably used and managed through improved comprehensive policies, legal frameworks, and appropriate conservation techniques so as to enhance their environment, social and economic contributions……"*
4-6	**Policy Framework - history** ***1985 "National Conservation Strategy" White Paper*** To ensure essential ecological processes, preserve genetic diversity and sustainable utilisation of species and ecosystems ***1991 "National Environmental Policy" White Paper*** Attain sustainable development which would safeguard welfare and pursue conservation, ecosystem quality and environmental quality. ***1997 – Vision 2020 – the National long Term Perspective Study*** Resource Management Approach of entire ecosystem. ***1999 – National Environmental Action Plan (NEAP 2)*** Goal "*To follow the principles of sustainable development by providing environmental services, encouraging responsible environmental practices and enforcing appropriate environmental standards in order the safeguard the health and welfare, conserve the heritage and enhance the quality of life of all the people of Mauritius*"
21	**Tourism growth** International visitors 180,000 in 1980, 375,000 in 1993 and 650,000 in 2000. Tourist income approximately Rs 15 billion in 2000. Islets expected to yield Rs 1 million per year.
22	**Value of maintaining environmental quality** Estimated from tourist revenues of ~ Rs 2.2 billion per year.
66	**Capacity** "*One of the main constraints facing organizations involved in Conservation of Biodiversity is the lack of resources – both human and financial. Both the National parks and the Conservation Service and the Forestry Service have a severe staffing problem, both at the technical and field staff levels."*
67	**Co-ordination** "*There is a lack of co-ordination between the various organizations involved in biodiversity and there is an urgent need for a lead organization to co-ordinate and disseminate information."*
70	**Need for Islet Management** "*As far as management of the offshore islets is concerned, conservation and restoration works are well underway on Round Island and Isle aux Aigrettes. However, it is felt that a coherent long-term plan for the remaining islets be drawn up, which will cater for the different demands in a coordinated way*".

78	**Public Participation** *"Public participation in the management of reserve areas could be legally strengthened. Although the public may make written representations in relation to a draft management plan, under section 13(7) (of the Wildlife and National Parks act 1993), these do not have to be taken into account…the process of drawing up plans could be made more transparent and participatory than it currently is in the law*".
79	**NPCS status** "*One of the most pressing gaps at the Institutional level is that though established in 1994, all the staff except the Director are on secondment at the NPCS and there is not any official organogram for this Department. The NPCS is currently understaffed and available posts for high-level staff needs to be advertised. The Organizational structure requires and urgent expansion to cater fore the increasing workloads*".
82	**Public awareness** "*Any conservation and utilization programme require the cooperation and support from the public. However activities on public awareness is practically non-existent in this sector*".
95	**Eco-tourism definition used** "*responsible travel that protects the natural environment and sustains the well being of the local population*"
99	**Marine protection enforcement** "*The creation of a Special Marine Protection Squad to ensure a permanent surveillance of marine resources should be of prime importance in the wake of a re-definition if intervention and the role of the National Coast Guard….In this breadth, the responsibilities of the National Coast Guard should be revisited and focused, among other, and essentially on safety and security issues*".
104	**Rodrigues – institutional co-ordination** *"The Coastal and Marine resources are managed in a somehow fragmented manner. Lack of collaboration between the Departments managing the coastal and marine resources has made room for duplications and conflicts in management of these resources*"
107	**Salient "Guiding Principles" for BSAP** Appropriate Institutional strengthening and legal frameworks coupled with capacity building through formal and non formal education, training, research are the requisite for good sustainable management of biodiversity resources. Biodiversity conservation require concerted actions and close collaboration amongst all stakeholders at the National Level. Public Sensitization and Awareness is one of the best approaches to minimize anthropogenic impact on biological diversity.
109	**Strategic Goal of Terrestrial Biodiversity** "*ensure that native Mauritian biodiversity survives, flourishes and retains its genetic diversity and its components are optimally utilized for the continued progress and socio-economic growth of the country*" Strengthen ongoing conservation activities by: • Bringing ecological sensitive Offshore islets under the responsibility of NPCS • Increasing the capacity of NPCS to prioritize, plan, co-ordinate, monitor and report • Maximizing the role of NGO's to undertake specific projects

	• Increasing the involvement of the private sector and the public in conservation activities • Identifying options for income to fund management activities.
109-114	**Terrestrial Biodiversity – operational objectives:** • Ensure adequate institutional and proper human resource capacity for sustainable management of terrestrial biodiversity resources. • Provide training in specialized areas for proper biodiversity management. • To devise a comprehensive database for sustainable management of biodiversity resources. • Review legal framework and policies for sustainable biodiversity management. • Ensure public awareness and national sensitization to preserve biodiversity. • Upgrade infrastructure facilities for terrestrial biodiversity management. • Improve offshore islet management • Encourage research and community involvement in biodiversity management. • Emergency response plan to face threats with biodiversity losses. • Promote national and international technical cooperation to enhance biodiversity activities. • To ensure adequate protection and management of the ecologically important caves and wetlands of Mauritius.
112-113	**From operational objective 7 "Improve offshore islet management":** • Bring all ecologically sensitive islets under NCPS. • Construction of permanent field stations on islets classified as strict nature and potential reserves. • Complete inventory of all existing biological resources. • Eradication and management plan of invasive species and introduction of native species. • Preparation of management plans.
130	**Operational Objective 5 for Freshwater and Marine Aquatic Biodiversity** ***"Water surrounding Offshore Islets to be surveyed and proclaimed as new Marine Protected Areas"*** The water around Islets, which are not presently MPAs, need to be surveyed and as appropriate to be declared as MPAs together with a preparation of a management plan.
131	**Operational Objective 10 for Freshwater and Marine Aquatic Biodiversity** ***"To harmonize the enforcement capacity among the different Ministries."*** More than 10 pieces of legislation that aim to control coastal zones enforced through Fisheries protection Service (through MoF), National Coast Guard, Environment Police (MoE), Ministry of shipping, Mauritius Oceanography Institute and Local Authorities.
134	**Operational Objective 6 for Strategies to Bridge the Gap** ***"Strict Control of Pleasure Craft Operations"*** Presently inadequate mechanism for the control of boat activities on the offshore islets, including littering.

Appendix V: Summary of National Environmental Strategy and Action Plan (NEAP2)

The *strategic objectives* for the environment at a national level have been set and are presented in the *National Environmental Strategy and Action Plan* 1999. The sections on *Terrestrial Biodiversity and Coastal Zone Management* are particularly relevant, describing the important aspects that need to be considered and incorporated into any strategic planning for the *Islets National Park.*

Relevant recommended initiatives include:

Institutional

- Bring management of all protected areas under the responsibility of the NPCS; and
- Establish a coastal zone unit within the Department of Environment that should coordinate other government agencies in a unified approach.

Both of the above have been initiated.

- Train NPCS staff to enable them to fulfil their responsibilities;
- Develop pest control strategy and techniques and train key personnel, e.g., customs officers, park wardens, *coast guard and environmental police*[23].

Policy

- Increase stakeholder participation in resource conservation to raise public awareness, reduce poaching and encourage sustainable cultivation of commercial species;
- Encouraging the extensive participation of stakeholders, including communities, civic groups, NGOs, economic sectors, and other public interests and increase the transparency of the decision-making process that impacts on the coastal zone;
- Increasing the involvement of the private sector and the public in conservation activities;
- Increasing the capacity of the NPCS to prioritise, plan, co-ordinate, monitor and report, and coordinate with NGOs;
- Maximise the role of the NGOs to undertake specific projects (provision of support e.g., duty free imports, work permits for expatriate staff).

Legislative

- Review existing laws, regulations and codes, and agency mandates in order to facilitate a coastal zone management inter-agency partnership by reducing ambiguity, amending legislation, strengthening guidelines, filling gaps, minimizing duplication, and streamlining review and approval processes;
- *Review existing laws, regulations and codes, and agency mandates and responsibilities in order to ensure sufficient enforcement to provide full protection to species proscribed in the Wildlife and National Parks Act 1993 and Wildlife Regulations 1998[1];*
- Review taxes, permit charges and other levies for the use of coastal zone by private sector enterprises;
- Prepare and implement clear and unambiguous standards and guidelines;

[23] Additions to original report

- Introduce national standards for waste and transportation licensing; and
- Increased fines for littering and waste dumping.

Information

- Monitor protected areas to determine the state of the resource (biotope mapping, % land under native species, numbers of threatened species, etc.), pressures (exotics, number of visitors, levels of illegal collection etc,), and perceived value (public awareness, satisfaction, willingness to pay);
- Carry out ecological survey of privately owned land and the riverine environment to inform work on Environmentally Sensitive Areas.

Finance and Investment

- Identify options for income generation to fund management activities (e.g., sponsorship, entrance levies, etc.);
- Consider the application of economic instruments to encourage conservation and preservation of lands with biodiversity resources.
- Build further facilities for captive breeding;

Research into management methods to control and eradicate exotique

Appendix VI: Feasible Management Options Considered by the Islet Task Force

Recommended Options	Implications	General Remarks
Entrust management responsibility to NGOs.	• Source of funding through grants, donations eco-tourism fee and other charges; • Experienced in management especially those with biodiversity value; • Also applicable to islets with exclusively touristic or recreational potential; • May not be viewed favourably by general public.	• Successfully applied to *Ile aux Aigrettes;* • Internationally recognized practice, with many successful examples.
Create an **Islets Authority** or a dedicated division in a Ministry to manage the Islets	• The establishment and operational implementation of this institution could take a relatively long time; • Creates a single authority for an integrated approach.	• This could be a long-term objective which needs to be seriously considered to enable a more effective approach
Follow-up the recommendations of the already available plans: NPDP; "Bell Report" (1994-98); National Environmental Strategy (1999)	• Plans and policies contain valuable recommendations, which, if implemented, will lead to significant environmental improvement of the islets; • Plans may be very restrictive *(plans can be changed prior to implementation without undue cost)*.	• The NPDP and the NES are the adopted government strategies and policies. • The Bell Report is fairly comprehensive in terms of eco-description and pertinent management recommendations
Maintain the existing Nature Reserves, i.e.: i. Round Island; ii. Ilot Gabriel; iii. Flat Island; iv. Gunner's Quoin; v. Ile aux Mariannes; vi. Iles aux Aigrettes; vii. Ile aux Serpents.	• The present management system for conservation works will continue; • This option conflicts with the recommendations of the NES, 1999, which states that the islets recovery and restoration programme shall be under the NPCS and MWF; • Marine resource cannot be proclaimed under the Forest and Reserves Act, 1983	• There are presently 7 islets declared as Nature Reserves in the *Second Schedule of the Forest and Reserves Act 1983;* • The Nature Reserve Board a agreed to entrust management of all islets of conservation importance to the NPCS.

Designate the selected Islets as a **National Park**	• Selective not all islets can be designated a National Park; • The concept of national park has public appeal; • A strategy plan can be developed and implemented through detailed management plans for each islet or group; • A single dedicated authority would have control over the islets. Other authorities could participate through an inter-ministerial committee; • Planned zoning; • Possibility of raising funding through regulation of boats, divers, and controlled access; • Relatively easy to control development.	• Unauthorized access and activities needs to be policed and regulations effectively enforced; • The existing Wildlife and National Parks Act 1993 can be used to designate the national Park; • A 1 km area around the islets should be proclaimed as marine reserve, where applicable and incorporated into the National park; • This concept is in line with NES recommendations.