

## 4. MARINE CONSERVATION

In July, the Marine Parks and Reserves Service and the Coastal Zone Management Divisions were merged into the Marine Conservation Division and was assigned the following main responsibilities: management of the two marine parks, review of Environment Impact Assessment (EIA) and Preliminary Environment Reports (PER), post EIA monitoring and ecological surveys for coastal development projects and tourism related activities

### 4.1 Blue Bay Marine Park

#### 4.1.1 Management

Daily surveillance over the Blue Bay Marine Park was carried out to control permissible activities such as glass bottom boating, snorkelling, diving, water skiing, swimming and fishing.

During the year, 74 new permits were issued to the different users of the park and 280 permits were renewed against payment of Rs. 325 800. The details are shown in table 5.1.

**Table 4.1: Number of permits issued and fees collected**

Type of Permit	First issue	Renewal	Permit fees (Rs.)
Boat/vessel	31	93	100 000
Basket trap	2	15	200
Line fishing	29	77	17 600
Commercial activities	2	11	65 000
Recreational	9	84	93 000
Interference	1	Nil	50 000
<b>Total</b>	<b>74</b>	<b>280</b>	<b>325 800</b>

*Permits issued to registered fishermen for line fishing and basket trap fishing are free of charge.*

Maintenance work was carried out to ensure that the mooring structures and buoys used for demarcating and delimiting the different zones were in good condition. Missing and damaged conical demarcation buoys of the traffic lane, the mooring zone and the conservation zone were replaced by pillar shaped buoys, the latter being more stable and resistant to rough sea conditions.

An underwater survey was undertaken for the demarcation of a swimming zone in the lagoon opposite the Blue Lagoon Beach Hotel.

25 picked-up cases comprising basket traps (9), spear-gun and underwater fishing equipment (4), nets with undersized mesh (4), pole and line (7), a bundle of fishing line were recorded. Six contraventions were established in connection with illegal fishing.

#### 4.1.2 Visits/events

Visitors were provided with information on the marine parks. Authorisation was granted in November to the Mauritius Tourism Promotion Authority to hold part of the events of the “Raid Amazone” Competition in the park.

#### 4.1.3 Coral reef ecosystem monitoring

Long-term monitoring was carried out at the five established stations. Data were collected on the seabottom substrate in terms of corals, macro-algae, marine invertebrates and fish. As usual coral cover was recorded at stations 2 and 3 while macroalgae, seagrass and sand were present at the other stations. Results on the percentages of substrate cover and fish counts are shown in table 5.2 and 5.3.

**Table 4.2: Percentages of substrate cover at the monitoring stations**

<b>Life form categories</b>	<b>Station 1</b>	<b>Station 2</b>	<b>Station 3</b>	<b>Station 4</b>	<b>Station 5</b>
Acropora branching	-	10.4	26.5	-	-
Acropora digitate	-	6.7	12.2	-	-
Acropora tabular	-	42.3	40.8	-	-
Coral foliose	-	13.6	2.1	-	-
Coral submassive	-	17.7	0.7	-	-
Mushroom coral	-	-	1.1	-	-
<b>Total live coral cover</b>	-	<b>90.7</b>	<b>83.3</b>	-	-
Sand	8.3	2.1	-	80	30

Rock	5.2	-	-	-	45
Dead coral	64.1	7.3	16.7	-	-
Macroalgae	15.8	-	-	3	25
Sea grass	-	-	-	17	-
Zoanthid	0.3	-	-	-	-

Table corals were the dominant species in the park. Compared to the preceding year, there has been an increase in branching coral cover and a decrease in the tabular coral cover at station 2. Live coral cover is still high and in good health at both stations 2 and 3. The fish species comprised mainly acanthuridae, labridae, scaridae, mullidae, chaetodontidae, mugilidae, pomacentridae and plotosidae and details are given in table 5.3.

**Table 4.3: Number of fish/100 m<sup>2</sup>**

<b>Family</b>	<b>Station 1</b>	<b>Station 2</b>	<b>Station 3</b>	<b>Station 4</b>	<b>Station 5</b>
<b>Fast fish</b>					
Acanthuridae	8	22	<i>school</i>	0	0
Aulostomidae	0	4	6	0	0
Balistidae	5	2	0	0	4
Blenniidae	0	0	0	3	1
Chaetodontidae	3	7	6	0	0
Gobiidae	0	0	0	3	1
Labridae	12	15	9	8	0
Lethrinidae	2	5	3	0	0
Monacanthidae	1	2	0	0	0
Mugilidae	3	0	0	6	2
Mullidae	8	7	4	0	6
Scaridae	16	4	9	0	3
Serranidae	1	2	2	0	1
Sparidae	0	4	2	0	0
Zanclidae	1	3	2	0	0
<b>Sedentary Fish</b>					
Plotosidae	0	0	0	156	0
Pomacentridae	27	56	48	0	0

## **4.2 Balaclava Marine Park**

### **4.2.1 Management**

Enforcement of the Marine Protected Areas Regulations was carried out by officers of the Fisheries Protection Service based at the Trou aux Biches Fisheries Post. Coast and afloat patrols were conducted for surveillance in connection with poaching at sea.

Meetings with fishermen, hoteliers, boat operators and the public at large were carried out to inform and sensitize the park users on the MPA Regulations and on the importance of preserving the marine ecosystem.

### **4.2.2 Zoning of the park**

The tender document for the manufacture, supply and installation of pillar type demarcation buoys and inverted pyramidal mooring structures for the park was reviewed in the light of new recommendations from the Ministry of Public Infrastructure, Land Transport and Shipping.

Underwater surveys were undertaken to determine the new dimensions and limits of the seven swimming zones with their respective buffer zones and in connection with the demarcation of the conservation zone of the park, which extends 100 metres beyond the fringing reef towards the open sea. The proposed locations of demarcation buoys were surveyed and their GPS positions, depth and land marks recorded.

### **4.2.3. Marine Park Centre**

In November a plot of land of 3 530m<sup>2</sup> was vested in the Ministry for the construction of the marine park centre.

### **4.2.4 Coral reef ecosystem monitoring**

Long-term monitoring was carried out at three established stations. Data were collected on the sea-bottom substrate, coral cover, macro-algae, marine invertebrates and fish. Details of results are shown in table 4.4.

**Table 4.4: Percentage of coral cover**

<b>Life form</b>	<b>Station 2</b>	<b>Station 4</b>	<b>Station 6</b>
Acropora branching	24.7	58.1	35.0
Acropora tabular	1.0	2.0	0.0
Coral encrusting	0.7	0.6	0.8
Coral foliose	0.5	0.7	0.7
Coral massive	13.9	1.5	1.0
Coral submassive	12.3	1.7	4.6
<b>Total live coral cover</b>	<b>53.0</b>	<b>64.4</b>	<b>45.6</b>
Rubble	2.3	1.7	39.4
Rock	0.0	0.6	0.3
Sand	0.0	0.0	2.6
Turf algae	1.5	4.8	2.7
Macroalgae	1.8	1.2	1.3
Coralline algae	4.0	0.9	1.5
Dead coral	36.7	25.7	6.9

The most abundant live coral species was branching *Acropora*. The largest diversity of corals was found at station 4.

The fish counts at the different stations are presented in table 4.5.

**Table 4.5: Number of fish/100m<sup>2</sup>**

<b>Family Fast fish</b>	<b>Stn 2</b>	<b>Stn 4</b>	<b>Stn 6</b>
Acanthuridae	37	477	3
Chaetodontidae	4	0	0

Labridae	10	373	20
Scaridae	27	7	0
Serranidae	0	2	1
Siganidae	2	1	0
<b>Sedentary fish</b>			
Holocentridae	3	3	0
Pomacentridae	148	129	<i>school</i>

Acanthuridae, labridae and pomacentridae were the most abundant fish species.

### 4.3 Network of Marine Protection Areas

The Indian Ocean Commission (IOC) has set up a project entitled “Marine Protected Areas Network of the Indian Ocean Commission Countries” to conserve marine biodiversity and maintain marine ecosystems productivity. The duration of the project is three years with a financial contribution of 1.9 million euro. The project will support the establishment of a Marine Reserve at Rivière Banane, Rodrigues. The first steering committee was held in June in Mauritius.

### 4.4 Partnership for Marine Protected Areas (MPAs) in Mauritius and Rodrigues

The project ‘Partnership for Marine Protected Areas in Mauritius and Rodrigues’, which started in 2005, is funded under the Global Environment Facility (GEF), the United Nations Development Programme (UNDP) and the Government of Mauritius. The main objectives of the project are to:-

- (a) develop an enabling policy and an institutional framework to sustainably co-manage MPAs throughout the Republic of Mauritius.
- (b) develop and adapt innovative co-management arrangements for MPAs at a representative site in Rodrigues.

A project coordinator and a project technical advisor were appointed under the project in July.

### 4.5 Activities and development in the coastal zone

Underwater surveys were carried out to identify sites for firework displays. 15 sites in the lagoon were surveyed around the island and a total of 61 displays were authorised. 22 underwater ecological surveys

were carried out with respect to proposed projects and ongoing costal zone development activities. The list of surveys carried out is at appendix 8.

Ecological underwater surveys were carried out at three sites at Grand Bay and Trou aux Biches in connection with undersea walk activities. The surveys indicated that the activities were adversely affecting the marine environment. A status report on the undersea walk activities at those three sites was submitted to the Ministry of Environment and National Development Unit and the Tourism Authority to initiate corrective measures.

#### **4.6 Environment Impact Assessment (EIA)**

Sixty-six EIA applications were examined and recommendations forwarded to the Department of Environment. Thirty-four projects involved major coastal works such as dredging of the lagoon, opening of channels, hotel development and construction of breakwaters and Integrated Resort Schemes. Details are given in appendix 9.

