



## Coastal Parks as Development Catalysts: A Caribbean Example†

Richard A. Meganck

NSI Environmental Sciences, EPA Research Laboratory, 200 SW 35th Street,  
Cornvallis, Oregon 97333, USA

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### ABSTRACT

*The site of the proposed Pitons National Park comprises an area of 1600 acres of terrestrial and marine habitat that extends southward from the town of Soufriere on the west coast of St Lucia in the eastern Caribbean. The park has great potential as a focal point for the economic revitalization of this depressed region, particularly considering the diversity of natural and cultural attractions in its immediate environs. Total investment required for the establishment of the park is estimated at EC\$4.4 million (EC\$2.70 = \$US1.00) for land acquisition, a road system and visitors' center. Annual operating costs of EC\$0.7 million would be offset by an estimated income of EC\$1.07 million in the first year from concession operations, entrance fees and the sale of crafts and souvenirs. By the third year of operation, park income will double, while annual income to Soufriere from lodging and related expenses will reach an estimated EC\$23.8 million. Establishment of the park will create 400 permanent jobs and help to stabilize the local economy, including the long-term viability of the local fishing industry through sustained management of the reef systems. Without the establishment of the park, however, the economic future of Soufriere remains clouded. However positive this proposal sounds, the Government is also currently considering an alternative proposal to construct a large hotel-casino complex on the site of the proposed park, while accommodating a small guest-house within the park may be*

† The views presented in this article are the authors' and not necessarily representative of any group with which they have been associated.

*feasible, a large hotel development would certainly alter the concept of the Pitons as a public resource, and also directly affect the current proposal to manage the area's resources in an integrated fashion.*

## 1 THE PROBLEM

The problem of reconciling an inexorably increasing tourism flow to the Caribbean resort island of St Lucia with the conservation of some of that country's (and the Caribbean's) most spectacular natural scenery and the preservation of its tropical rainforest catalyzed a proposal to create a National Park around the Pitons near Soufriere, St Lucia (see Fig. 1). The scenic areas are dwindling under continued development pressure from loggers, banana farmers, untitled squatters and, more recently, the tourism industry itself.

A second chronic problem has been the need to keep employment and production expanding, especially in the still depressed area of Soufriere, and particularly in light of the loss of tariff preference for its bananas in the UK market after 1992, when the European Community plans to convert into a true common market. The tourism sector has expanded at a rate more rapid than that of any other sector in the St Lucia economy, and is seen as the most promising possibility for diversification. In the southwest of the country, Soufriere Bay provides



**Fig. 1.** The spectacular scenery of the Pitons National Park.

### 3 NATURAL AND CULTURAL RESOURCES

Terrestrial resources include the Gros and Petit Pitons. These are remnant volcanic peaks or plug-domes which rise abruptly from the sea to elevations of 2611 ft. (796 m) and 2438 ft (743 m) respectively. The Petit Piton has an apical angle of not less than 70° and, viewed from the southern side, is seen to be split by a NW/SW fissure. The more southerly Gros Piton, although higher, is less steep. Between the Pitons is a semi-circular natural amphitheater formed by a well-defined extinct crater, the western wall of which has collapsed into the sea forming a sandy bay. To the east, the crater is delimited by a continuous ridge of about 1000 ft (300 m) in height.

Topography is an important climate-determinant; enough, that is, in terms of temperature variations, to cool the air-mass as it rises up the Pitons, and to greatly impact the precipitation recorded at higher elevations. It is important to realize that in this small area, annual rainfall ranges between 35–115 inches (89–290 cm).

This characteristic, combined with humidity variations, a layering effect in salt-concentrations in the air mass, exposure and slope combine to influence the water retention ability and therefore the vegetation in the region, specifically on the Pitons. Indeed, the Pitons are so steep that very little water is captured either on the surface or subsurface. Moisture-laden air does, however, enhance the growth of mosses, lichens, orchids and bromeliads. According to the classic studies of Beard conducted in the 1940s, four life zones are found in the area proposed for the park: a Dry Belt (dry thorn scrub and cactus associations in exposed areas, and deciduous seasonal and dry evergreen forests in sheltered areas, 35–65 inches of rain); a Middle Belt (evergreen and semi-evergreen forests, 65–100 inches of rain); a Mountain Belt (montane moist and rainforest assemblages, in excess of 100 inches (250 cm) of rain); and a Upper Mountain Belt (elfin-dwarf woodland, in excess of 100 inches (250 cm) of rain, constant condensation). While almost all of the seasonal forest throughout the Caribbean has been degraded by man's influence, the Pitons remain relatively intact since steep slopes have prevented most forms of agriculture.

Information on the wildlife in the Pitons area is scarce. Five endemic bird species, including the Saint Lucia Parrot, are believed to feed in the area, but active nesting sites have not been located for many years. Eight species of bats are believed to inhabit the Pitons, but no documented surveys have been conducted.

Marine resources also figure importantly. Without question, the eleven reef systems and dive sites which ring the proposed park are

a foyer for a visit to the magnificent Pitons and the widely diverse ecological systems, as well as sites of archeological and historical significance. However, a balance must be sought between unrestricted growth in the industry and managing the very resources upon which a dynamic tourism sector depends.

The Government of St Lucia has sought to foster economic activity among the people (>9000) of the Soufriere District, especially via the realization of the area's tourism potential. In 1985, at the Government's request, the Organization of American States Department of Regional Development (OAS/DRD), prepared a *Draft Tourism Development Plan for the Soufriere Area*. A key proposal of the plan was the establishment of a national park surrounding the Pitons. The Government endorsed the park objective, but requested that a plan be prepared which would analyze its feasibility, particularly given the tight fiscal position in the country. The 1985 plan also encouraged the development of a small hotel/guest-house sector as the most logical means to maximize the economic development of the tourism service sector as opposed to a single large hotel in the area of the Pitons.

## 2 PARK OBJECTIVES

The objectives behind establishing the area adjacent to the Pitons as a national park include conservation, economic and tourism and social factors.

- Preserve and protect the Pitons together with the associated terrestrial and marine ecosystems in a manner that would maintain their quality as a tourist attraction.
- Maintain and enhance the biological diversity of the Park's ecosystems, especially in order to protect endemic, endangered and threatened species; re-establish healthy populations of finfish, conch, lobster and other species of commercial and tourism value.
- Manage the park as an integral element of the socio-economic development of the Soufriere region, providing attractions for local and foreign visitors and ensuring that the park fulfills its role as an attraction that is the key to the successful development of the Soufriere region for tourism.
- Increase sources of employment and improve income distribution in the Soufriere region.
- Help sharpen the awareness of environmental issues, and build a national constituency for protected areas and sound resource management.

The beauty of the situation is that with the park development, adjacent lands will undoubtedly become more valuable, and actually form the basis for an expanded tourism industry in the area.

#### **4.1 The terrestrial area**

With the aim of implementing the above noted management objectives, three management zones have been delimited which will help protect the area's natural resources (see Fig. 2).

##### *4.1.1 A wilderness zone*

Approximately 57% (900 acres) of the proposed park is included in this management category. It encompasses those areas least impacted by man, or where important wildlife habitat warrants protection, including the Piton spikes, the proposed parrot reserve and all slopes and ridges with a slope greater than 60%. The management objective is to preserve the natural environment while allowing for limited scientific, educational and primitive recreation uses.

##### *4.1.2 An intensive use zone*

This zone, centered in the Jalousie-Palm Beach area, represents 17% (275 acres) of the proposed park area. It consists mainly of altered forests with moderate slopes that can be developed for intensive visitor use. The restored estate house, sugar mill, rum distillery and the botanic gardens would be the main attractions in this part of the park. In addition, commercial concessions such as boat tours, marine sports equipment rental, refreshments and handicraft sales will be permitted.

##### *4.1.3 A recuperation zone*

Approximately 26% (420 acres) of the park are classified in this management category. In general, these areas have been altered by man and will be replanted. The objective is to stop further degradation, and eventually, to restore a forest canopy approximating the natural vegetation.

#### **4.2 The marine area**

In 1986, the Government designated a number of Marine Reserve Areas (MRAs) and Fisheries Priority Areas (FPAs). Accordingly, fishing, removal of flora and fauna, dredging, discharge of waste, and the erection of structures are prohibited within MRA's. Authorized fishing is permitted within the FPAs. Figures 3 and 4 give the relative

some of the most diverse and spectacular off St Lucia, if not in the eastern Caribbean. Four endangered species of sea turtles nest on the beaches of the proposed park including the Green, Hawksbill, Loggerhead and Leatherback. Surveys have indicated that 149 fish species, 40 hard coral species and a very large number of sponges are found within the proposed park. The area is noted for the richness of fauna that can be observed at night, particularly huge basket stars and arthropods.

At one time, the area embodied prime commercial fishing and lobster grounds, but uncontrolled harvesting has seriously impacted the numbers of marketable species. Physical damage caused by fishermen, boaters and divers has also had an impact on the marine areas identified for inclusion in the Pitons National Park.

Cultural resources are, again, important. Pre-Columbian Amazonian peoples travelled to and settled in St Lucia. Carib and Arawak Amerindian sites are relatively rich in the area of the Pitons. Rock scribings and petroglyphs are found just north of the Petit Piton. The Belfond site, east of the proposed park, includes ancient agricultural terraces and gravity-fed rock pools as well as many artifacts. Much more study needs to be undertaken in this area.

From the mid-17th through to the 18th century, the ownership of the island changed hands fourteen times between the English and the French. While much of the 'modern' construction was destroyed by either war or hurricanes, the ruins of several sugar mills still exist within areas near to the park. The town of Soufriere was the first permanent settlement in St Lucia and the island's most important port until the mid-20th century.

#### 4 THE PARK DEVELOPMENT PROPOSAL

The most immediate problem facing Government is how it intends to manage the 50% of the proposed 1600 acre park currently in private ownership. While outright acquisition would be the preferred mechanism, it may be neither economically nor politically feasible. The opinions of all involved parties must be solicited, and alternative solutions elaborated. Purchase, land exchange, tax or other economic incentives favoring divestment of land, etc. are all viable options for public acquisition. However, other arrangements including long-term Government leases or public concessions whereby the land remains in private hands should be examined. The fact is that Government must have direct and long-term control over the parcel to justify the major capital investments required, and to qualify for most loans or grants.

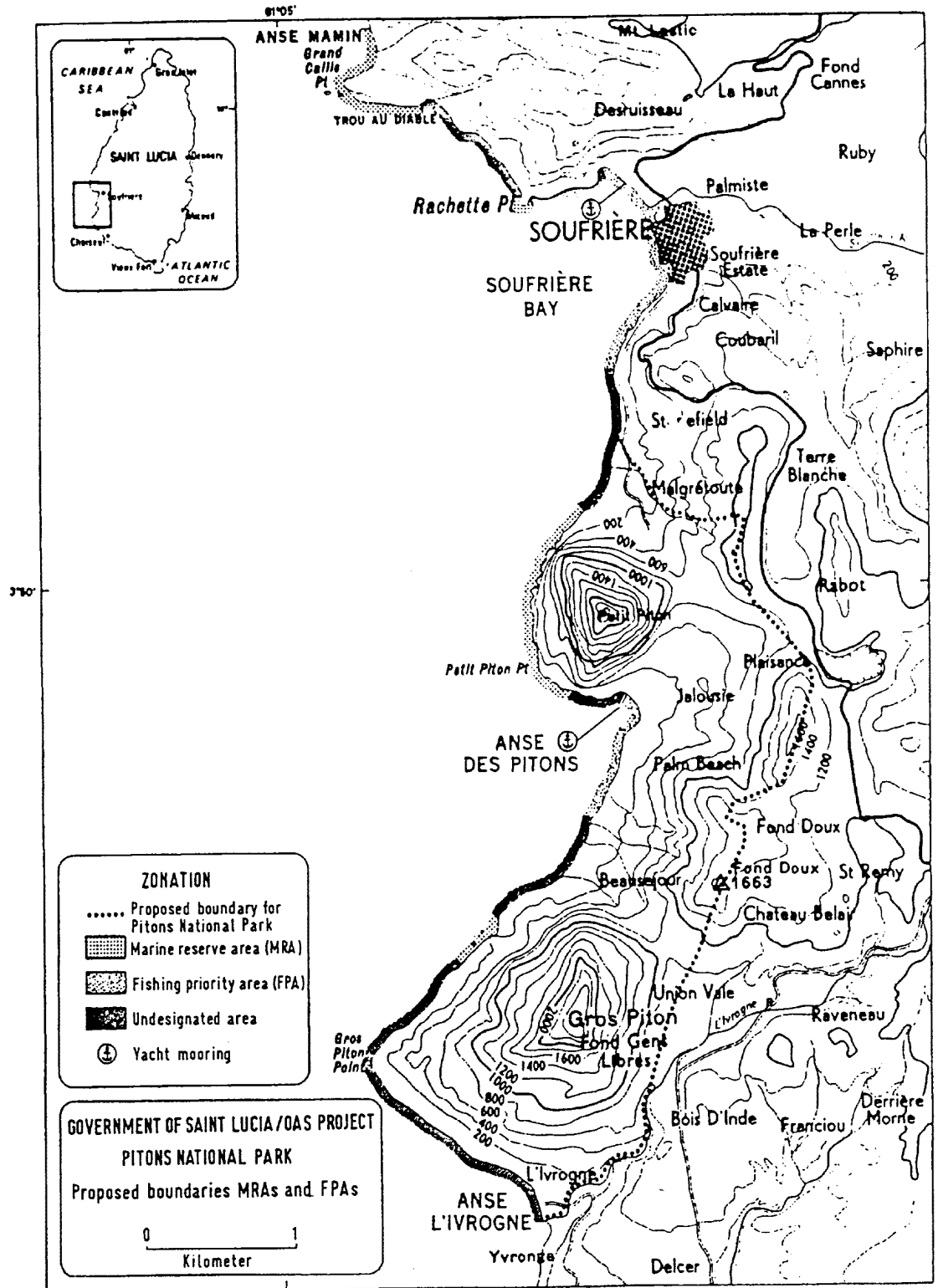


Fig. 3. Pitons National Park: proposed boundaries MRAs and FPAs.

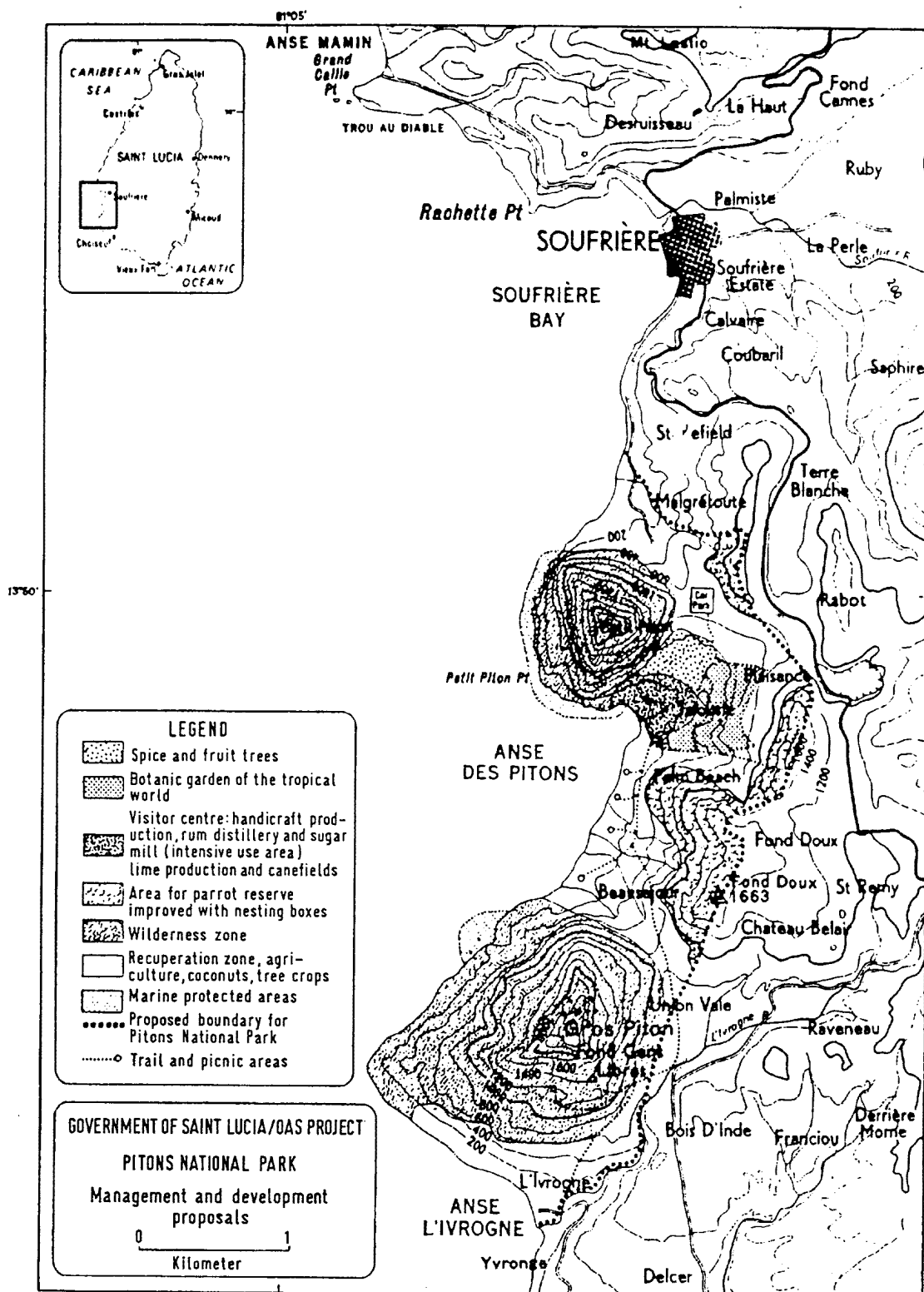


Fig. 2. Pitons national Park: management and development proposals.



location and extension of these areas as follows: MRAs—Gros Piton, Petit Piton (adjacent to terrestrial component of the park), Rchette Point, Grande Caille and Anse Chastanet (north of the terrestrial component of the park); FPAs—Soufriere Bay, Anse des Pitons.

The principal management concerns for the FPAs are the maintenance of fish populations while ensuring unimpeded access by fishermen. Approximately 47% of the coastline within the proposed park remains undesignated. In every case, MRAs are separated from FPAs by undesignated areas. Some of these areas are suitable for snorkeling and diving, while others are already in use by pot fishermen.

### **4.3 Construction of facilities and visitor use**

The park headquarters will be constructed on the site of the old Jalousie Estate House. In addition to administrative offices, this facility will function as the visitor and interpretation centers and will include restrooms and a souvenir shop. Other facilities in the park will include a botanical garden, a spice and fruit tree plantation, a small jetty, a restaurant, museum and parking facilities. Visitor use will include picnicking and camping, hiking, recreational boating, diving and fishing as well as a number of educational activities.

## **5 PARK DEVELOPMENT FINANCING PLAN**

An underlying strategy for the development of tourism in Soufriere has been to emphasize and improve the area's unique attractions as a complement to the island's tourism industry. Some lodging would be built/remodeled in the town, but the bulk of the visitors would continue to be lodged in the prime beach resorts on the northwest coast and the southern tip of the island. The great majority of these tourists were found to be sun-sea-sand resort motivated. Benefit to the Soufriere area from the tourism industry would be derived mostly from the entrance fees, purchase of tourism amenities, and local lodging costs. Nature-oriented tourists including divers, bird-watchers, hikers, etc. are expected to provide an increasing market for local hotels and guest houses. The creation of a health spa/guest house complex was also recommended, particularly considering the extensive hot fresh water and mineral springs in the area.

The demand for visiting the Park was estimated to derive from three broad groups: beach-oriented tourists lodged elsewhere in St Lucia, nature-oriented tourists lodging mainly in the Soufriere area and St

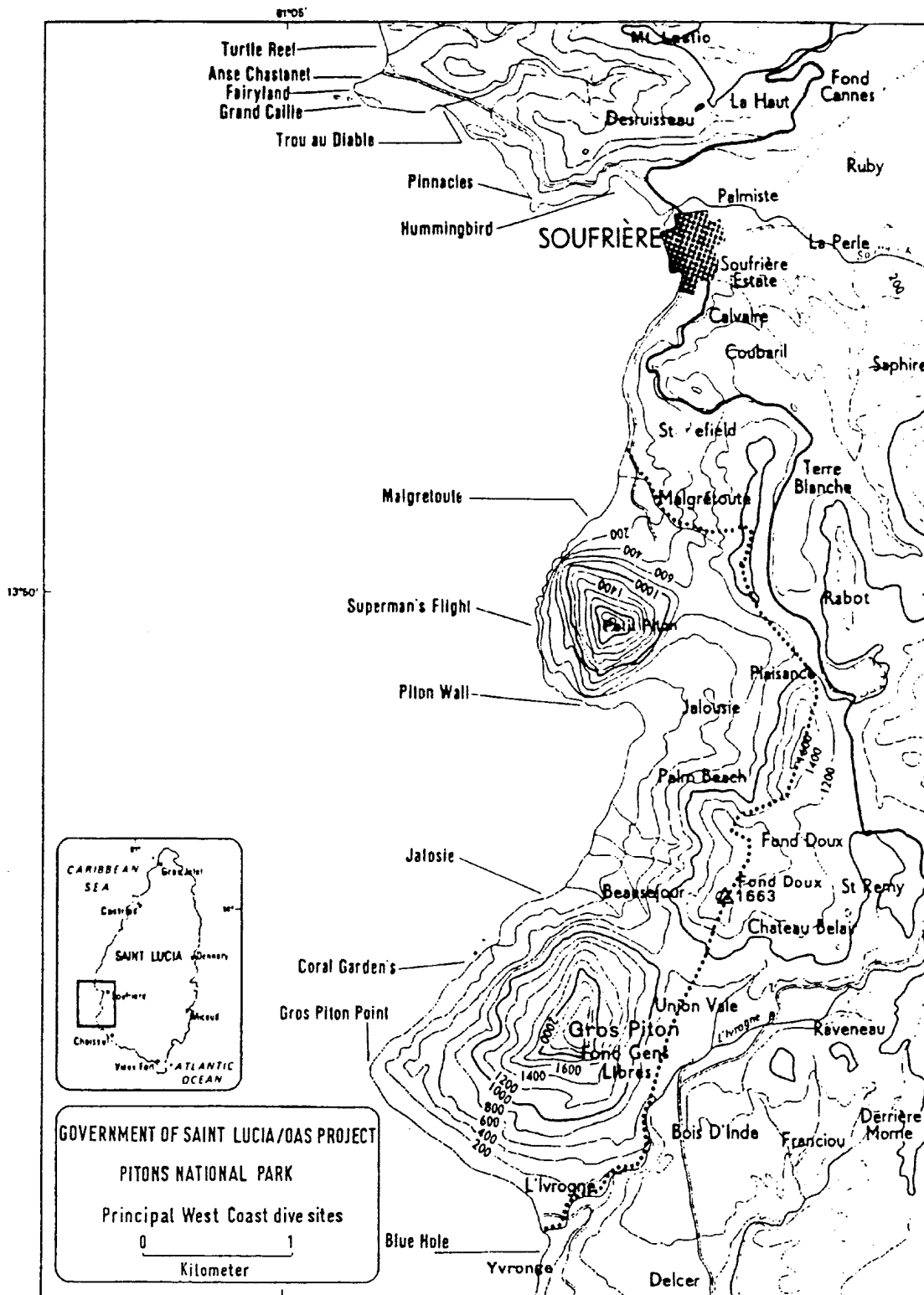


Fig. 4. Pitons National Park: principal west coast dive sites.

the expected income to the project, the net present value and internal rate of return of the low side of the demand model only drops to -EC\$1.1 million and 6.7%. A 'worst case scenario' with a 10% reduction in the income and a 10% increase in costs, indicate the criteria values to be -EC\$1.9 million and 3% for the low side of the demand model.

In any case, the project has the potential to be auto-financing and contribute in a substantial way to the economic development of the region. The project is likely to generate about 1000 new jobs, approximately 130 of these in park and the balance in the Soufriere region. In an administrative area of some 9200 people, and with a labor force of nearly 3600, it is evident that the generation of 1000 new jobs would mean significant economic development.

## 6 CURRENT STATUS OF THE PROPOSAL

The OAS/DRD proposal was presented to Government in February of 1989. As was noted above, at least one other development plan was prepared by a group of private entrepreneurs, that consisting of a major hotel-casino private resort. In mid-1990 the Government made a final determination in favor of building the hotel. The most sensitive areas of the Pitons will be protected and managed for their natural values.

Lucians on day excursions. Seventy percent of St Lucia's visitors are expected to visit the proposed Park; amounting to approximately 90 000–98 000 foreign users during the first year of operation. This figure is expected to grow at a rate of 3% annually. In addition, approximately 10 000 St Lucians are expected to visit the park during the first year of operation, and to increase by 2–4% each year.

A basic management principle recommended in the park development proposal was that of a user or entrance fee. The fee would be charged on all days except Sundays and public holidays. Registered school, church and community-service groups will not be charged. It is expected that this arrangement will both generate funds and permit use by St Lucians of all income levels. A fee of EC\$5.00 (US\$1.00 = EC\$2.70) was recommended. It was estimated that by the third year of operation, income from admission fees would be between EC\$580 000 and EC\$640 000 annually, representing about 40% of all income anticipated. Approximately one-third of total income would come from licensing of concessions (museum, botanic gardens, spice and fruit tree plantation, mini-zoo, glass-bottom boat, and restaurant) and a tax on gross sales. The balance of the income would be derived from the sale of post-cards, posters, etc. Apart from the operation of the concessions noted above, and which will operate inside the park, demand for other goods and services will be generated in the town of Soufriere.

The proposed Pitons National Park would be a major step in the conservation of a unique natural setting and landmark as well as diverse ecological systems. Thus, it would help meet the Government's environmental and social objectives, and thereby justify the capital investment of public funds. The distinguishing feature of this proposal, however, is the recommended operating arrangement whereby the Park would be auto-financing via the expenditures by foreign tourists.

The total investment for the establishment of the park was estimated at EC\$4.4 million; the three largest sums for purchase of the land, EC\$1.3 million; road construction, EC\$1.0 million; and for attractions and amenities for visitors, EC\$1.1 million. Most of the latter represents the cost of reconstruction of the old estate house as a visitor facility. Annual operating costs were estimated at EC\$0.7 million during the first three years.

The estimates generated during this planning process indicate that for the 'low demand scenario', the internal rate of return would be 10.9%. Using an interest rate of 12%, the net present value would be EC\$240 000. Applying the 'high demand estimate', the internal rate of return would be 15.9% and the net present value EC\$900 000. Applying an economic sensitivity analysis, with a reduction of 10% in