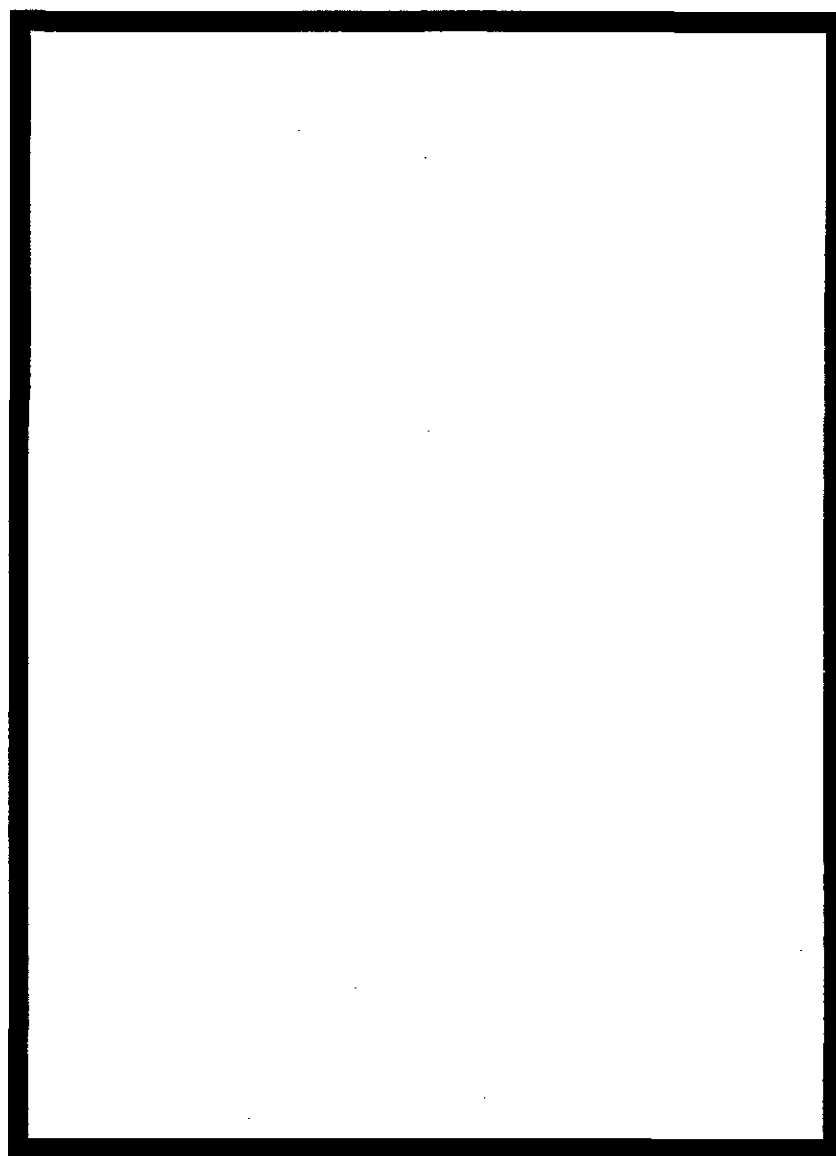




MAKING A MOVE ON MONTSERRAT



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September 17, 1989, will long be etched in the memories of the people of Montserrat. That day Hurricane Hugo spent ten hours over their tiny, 36 square mile island. Packing winds gusting 180 mph, Hugo left in its wake utter devastation—ten dead, virtually every building damaged, and the majority of Montserratians temporarily homeless.

What the hurricane could not destroy was the people's spirit. Within days the island reverberated to the sounds of hammers and men and women rebuilding their shattered lives.

Today, Montserrat is back on its feet. Electricity and telephones have been restored, roofs replaced and hotels open for business. What will take longer is the regeneration of its fragile environment.

New sounds too are filling the air—people are talking and children are singing, not of the great hurricane, but of their National Bird, the endemic oriole, *Icterus oberi*.

While this species is endangered, numbering less than 1000, its importance lies not only in its rarity, but also in its symbolic value. Previously unknown to most Montserratians, today it is to be found on posters, billboards, bumper stickers and featured in songs, sermons and carnival calypsos—it is cherished by all.

Recent surveys indicate more than 97% of Montserratians from communities across the country now know their National Bird and when asked as to the importance of its protection, 85% stated it to be important or very important for the Government to commit funds to its conservation.

This change in awareness is the direct result of the dedication of people like Franklin Margetson, President of the Montserrat National Trust; Gerard Gray, Chief Forester and last but not least Rose Willock MBE, Montserrat's Conservation Education Campaign Programme Coordinator.

This is their story, and this report attempts to bring the reader up to date with past work on the oriole, to catalogue the many activities and achievements of their Conservation Education Campaign and to provide recommendations for follow up action.

By generating pride for this black and yellow denizen of the forest, it is hoped that Montserratians will protect this bird, and that their Government will take the necessary actions to ensure the survival of both this species and its forest home—a resource critical not only as wildlife habitat but for water and soil conservation.

As Caribbean Programme Director to RARE *Center* for Tropical Bird Conservation—the principal sponsor of this project—I have had the honour to work with Franklin, Rose and Gerard. Their unstinting dedication is a credit to their island, and their achievements stand testimony to their enterprise.

The future of the oriole rests where it always has, and where it should, with the people of Montserrat. May it continue to survive free in the bamboo forests of Soufriere symbolizing the commitment of the island's people to sustainable development and of the uniqueness of their "Emerald Isle."

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Caribbean Programme Director
RARE *Center*
May 1991

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ACKNOWLEDGMENTS

It would be impossible to acknowledge all the persons and organisations who have assisted in the Montserrat Conservation Education Campaign for to do so would necessitate naming all the officers and personnel of the Forestry Division, teachers and principals of schools across the island, the staff of the library and the many musicians and artists who rallied to the cause.

The list would include all those sponsors and partners in protection listed in Section 7.0, as well as the staff and Board of RARE *Center*. I will therefore simply extend my sincere thanks to all those who assisted in this project for they will know who they are.

I should however like to name several key persons and agencies whose help has been invaluable: the Chief Minister's Office, the Director of Agriculture Mr. Franklyn Michael; Town Planner John Collins, Director of Tourism, Ernestine Cassel; Ms Sarita Francis; Mrs. Erica Gibbs; & Mrs. Clover Lea.

I am also indebted to RARE *Center's* President J.E. Earhart; Executive Director, John Guarnaccia; and Administrative Assistant, Christine Psomiades. Also to the following agencies and foundations without whose financial assistance this project would not have been possible: Homeland Foundation, Leo Model Foundation, David & Christine Pasant Foundation, Prospect Hill Foundation, US Fish & Wildlife Service, World Wide Fund for Nature—UK and World Wildlife Fund—USA.

Thanks also to the many past workers whose papers I have quoted extensively in order to provide the reader with comprehensive information about Montserrat's Oriole and its habitat. In particular to Wayne & Angela Arendt, Dr. Peter Evans, Robin Bovey *et al.*, and ECNAMP.

Special acknowledgment must be given to Chief Forester, Gerard Gray, whose unceasing help, support and friendship has been greatly appreciated.

Finally, I must extend my heartfelt thanks and sincerest congratulations to Trust President, Franklin Margetson and Project Coordinator Rose Willock. This report is dedicated to them for it is their work that the document summarises and without their unstinting efforts nothing would have been accomplished.

1.0 Montserrat's Make-Up

Montserrat is a small pear-shaped island located between 16.40 and 16.50 north and 62.9 and 62.5 west in the northern sector of the chain of islands that comprise the Eastern Caribbean.

A British dependency, Montserrat lies 27 miles, (43 kms) southwest of Antigua and 37 miles, (59 kms) northwest of Guadeloupe. It is 11 miles (18 kms) long, 7 miles (11 kms) wide having a land area of 39.5 square miles (102 sq kms).

Montserrat was first permanently settled in 1632 and today is home to about 12,000 inhabitants, most of whom are the descendants of African slaves. The capital of Plymouth, with 3,343 people, lies on the sheltered western side of the island which has an overall population density of about 300 persons per square mile (118 per sq kms). In 1982 the annual birth rate was 22.3 and the annual death rate was 9.9 per thousand respectively.

TABLE 1. 1980 census breakdown—population by sex and age class (Govt. statistics).

	<i>Male</i>	<i>Female</i>	<i>Total</i>
Under 15	1,800	1,852	3,652
15-54	2,794	2,742	5,536
55 +	988	1,430	2,418
Total	5,582	6,024	11,606

Montserrat is volcanic in origin having arisen from a series of eruptions that occurred during the Pliocene era approximately two to eleven million years ago. Volcanism is still in evidence in the form of sulphurous vents in the Galways area and in the various soufrieres where steam vents, sulphur deposits and bubbling mud flows occur.

The island can be divided into three main forest covered hill masses. The northernmost Silver Hills area which reach a maximum height of 1,323 feet (403 m) are the oldest, followed by the Centre Hills which include Katy Hill at 2429 feet (740 m) and Lawyer's Mountain. The youngest range, arising perhaps as recently as 23,000 years ago, are the Soufriere and South Soufriere Hills which are dominated by Chances Peak—the island's highest mountain at 3,002 feet (915 m). There is a small area of limestone at Roche's Estate in the Parish of St. Anthony.

The country experiences a tropical climate modified and influenced by the trade winds which temper extremes in heat and humidity. The climate is mild and there is little seasonal variation in temperature or rainfall. Average annual tempera-

tures range from lows of 70°F to 76°F (21°—24.5°C) to highs of 80°F to 86°F (27°—30°C). Rainfall averages about 66 inches or 167 cm although this varies considerably with elevation and location; such that the northern and south-eastern coastal lowlands are the driest with rainfall averages of less than 44 inches (110 cm) per annum, and Centre Hills the wettest, with a maximum precipitation of 84 inches (210 cms) per annum.

The island's vegetative cover is a reflection of its topography, volcanic soils and climate.

Bovey (1986) notes that "Before the advent of man on the island, nearly all of Montserrat was covered with forest" and adds that "The effect of human activity is vividly documented by the map drawn in 1673 for Colonel Stapleton, Governor of the Leeward Isles, which shows considerable areas of the island cleared for agricultural use, only 41 years after the settlement of Montserrat in 1632."

After three and a half centuries of human occupation little remains untouched by man. Today natural vegetation is confined to very small areas on the summits of Soufriere, South Soufriere and Centre Hills.

During the 1940's the forests of the Eastern Caribbean received considerable attention and the establishment of many of the sub region's Forestry Departments arose out of the work of J.S. Beard who described the resources and prescribed management guidelines for their subsequent administration.

Beard worked in Montserrat in the late 1940's and much of our present day knowledge of species composition is as a result of his pioneering study and that of J.S. Cater who worked on the island a few years earlier. In recent years follow up work has been carried out by the Arnold Arboretum at Harvard University and Bovey provides a composite summary of the current state of knowledge. This provides for 11 distinct vegetation types which can be summarised as:

1) Rainforest

On lands with rainfall greater than 70 inches (175 cms) per annum lower montane and montane rainforest represent the climax vegetative types. Tree Ferns (*Cyathea* spp), Sweetwood (*Nectandra* spp), White Cedar (*Tabebuia pallida*), Burrwood (*Sloanea* spp.), Yellow Prickle (*Zanthoxylum monophyllum*) and Trumpetwood (*Cecropia peltata*) are the primary tree species.

Clearing for agriculture has decimated this forest type and in 1948 Beard noted only a single area remained untouched. This comprised approximately 100 acres and was located on the west slope of South Soufriere Peak above O'Garra's Estate at an altitude between 1,600 feet and 1,800 feet (488—549 m). Bovey (1986) writes "The fact that much forest remains today is due to a variety of factors, but with the exception of the belated forestry legislation of 1932, it has nothing to do with good forestry techniques." He adds, "Perhaps the single most

important factor was the abolition of slavery in 1834 which meant that the steep, marginal land was suddenly no longer profitable."

Bovey notes that there are many areas of important secondary growth rain forest and attributes this to the introduction of the 1,500 foot contour as the lower boundary for forest exploitation. See Table 2.

TABLE 2. Vegetational diversity and composition at Jubilee Heights, Montserrat (Arendt 1984). Second growth rainforest.

<i>Relative Density +</i>			
<i>Species</i>	<i>Common Name</i>	<i>Trees *</i>	<i>Shrubs **</i>
<i>Cordia sulcata</i>	White Manjack	110.0	—
<i>Ocotea leucoxylon</i>	Sweetwood	54.9	60.5
<i>Prestoea montana</i>	Sierra Palm	27.4	5.4
<i>Drypetes serra</i>	Gummulingo	27.4	1.7
<i>Tapura latifolia</i>	Varital	27.4	—
<i>Phoebe elongata</i>	Sabaca Sweetwood	—	99.3
<i>F. occidentalis</i>	False Coffee	—	39.3
<i>Piper aequale</i>	Jointer	—	21.5
<i>Picramnia pentandra</i>	?	—	19.3

+ Number of trees of a species divided by the total number of trees of all species per hectare x 100.

* DBH > 7.62 cms

** DBH < 7.62 cms

2) Tree Fern Brake & Pioneer Forest

This vegetation dominates in areas that have seen past cultivation and is typified by species such as *Cyathea arborea* and *Hemitelia grandifolia*.

3) Lower Montane Rain Forest

Lower montane rainforest was also affected by clearance during the eighteenth and nineteenth centuries and only small patches in inhospitable areas remain. Species composition includes *Sloanea* sp., *Sapium caribaeum*, and *Dacryodes excelsa*.

4) Montane Thicket & Elfin Woodland

Good examples of montane thicket and elfin woodland could be found prior to the passage of Hurricane Hugo in 1989 on the summits of Chances Peak, Castle Peak and Katy Hill as well as in several of the less disturbed ghauts (steep sided ravines or gullies). Bovey (1986) states that "these may be the least disturbed forest habitats on Montserrat."

This vegetation is typified by being stunted, usually 13 feet (3.9 m) or less in height, and comprising of gnarled trees covered in moss and epiphytes. See Table 3. Bovey states a "feature of the montane forest on Montserrat is the huge gnarled bent stems of *Podocarpus coriaceus* up to 12 feet (3.6 m) in diameter."

TABLE 3. Vegetational diversity and composition at Chances Peak, Montserrat (Arendt 1984). Disturbed Elfin woodland.

Relative Density +			
Species	Common Name	Trees *	Shrubs **
<i>Prestoea montana</i>	Sierra Palm	201.1	45.2
<i>Hibiscus</i> spp.	Hibiscus	18.3	-
<i>D. attenuatum</i>	Matchwood	13.8	-
<i>Miconia prasina</i>	?	-	94.1
<i>Cyathea arborea</i>	Tree Fern	13.8	41.3

+ Number of trees of a species divided by the total number of trees of all species per hectare x 100.

* DBH > 7.62 cms ** DBH < 7.62 cms

5) *Palm Brake*

Palm brake is in evidence in exposed places on the mountainsides with *Euterpe globosa* being the predominant species.

6) *Fumarole Vegetation*

A specialised vegetation found in the vicinity of the volcanic vents in the Soufriere Hills.

7) *Semi-evergreen Seasonal Forest*

Inland from the deciduous seasonal forest, and occurring up to 1,000 feet (300 m) in elevation on the leeward coast and 1,400 feet (420 m) on the windward coast, is the semi-evergreen seasonal forest. This is characterised by Red Cedar, (*Cedrela odorata*), Locust (*Hymenaea coubaril*), Manjack (*Cordia sulcata*), Spanish Ash (*Inga laurina*) and Fig (*Ficus citrifolia*). Bovey notes that none of the semi-evergreen seasonal forest—which provides essential tree cover on some steep slopes—is afforded any protection from existing forestry legislation as it is all below the 1500 foot (450 m) contour.

8) *Deciduous Seasonal Forest*

These dry scrub woodlands dominate uncultivable lands on precipitous rocky slopes such as at Garibaldi Hill where luxuriant rainforest never existed. Rainfall averages about 60" (150 cm) per annum and dominant species include Turpentine, (*Bursera simaruba*), Red Cedar, (*Cedrela odorata*) and White Cedar, (*Tabebuia pallida*). See Table 4.

9) *Thorn Woodland*

Located in the driest areas with less than 50 inches (125 cm) of rainfall per annum. This zone is characterised by species such as Acacia, Logwood (*H. campechianum*), and Guava (*P. guajava*).

Today this vegetative type dominates the northern part of the island, around Silver Hills, and the dry coastal area of eastern Montserrat.

10) *Littoral Woodland*

This climax community is found on lands subject to salt blast and is typified by low trees that seldom exceed 26 feet (7.8 m) in height, and which include species such as the Sea Grape, (*Coccoloba univera*) and Manchineel, (*Hippomane mancinella*). This zone is typical of Montserrat's windward side although is less distinct in the north-west.

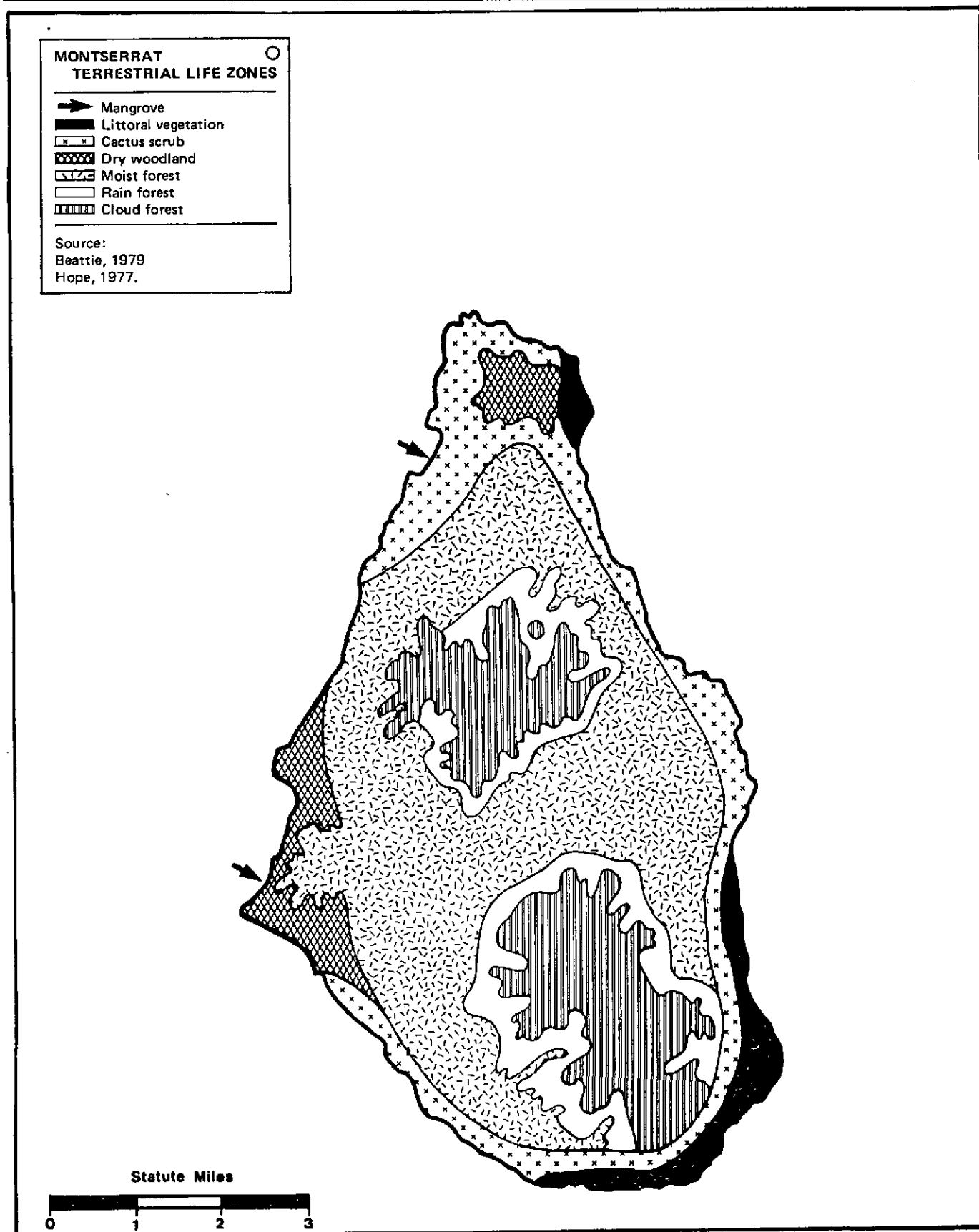
TABLE 4. Vegetational diversity and composition at Garibaldi Hill, Montserrat (Arendt 1984). Deciduous seasonal forest.

<i>Species</i>	<i>Common Name</i>	<i>Relative Density</i> +	
		<i>Trees</i> *	<i>Shrubs</i> **
<i>Pisonia fragrans</i>	Loblolly	133.4	4.0
<i>Tabebuia pallida</i>	White Cedar	79.1	—
<i>Bursera simaruba</i>	Turpentine	9.9	—
<i>Myrcia citrifolia</i>	Red (black) Birch	2.5	199.7
<i>Ocotea leucoxylon</i>	Sweetwood	2.5	8.9
<i>Eugenia ligustrina</i>	White Birch	—	7.4
<i>Eugenia lambertiana</i>	?	2.5	6.9
<i>Guettarda scabra</i>	White Alley	2.5	6.4
<i>Psychotria microdon</i>	?	2.5	6.2
<i>Randia aculeata</i>	Goat Horn	2.5	4.0
<i>Picrasma antillana</i>	Bitter-Ash	2.5	2.2
<i>Simaruba amara</i>	Tomta	2.5	0.7
<i>Lonchocarpus violaceus</i>	?	2.5	—
<i>Casearia sylvestris</i>	Ashwood	2.5	0.7

+ Number of trees of a species divided by the total number of trees of all species per hectare x 100.

* DBH > 7.62 cms ** DBH < 7.62 cms

RESOURCE DATA MAPS MONTSEERRAT



RESOURCE DATA MAPS MONTserrat

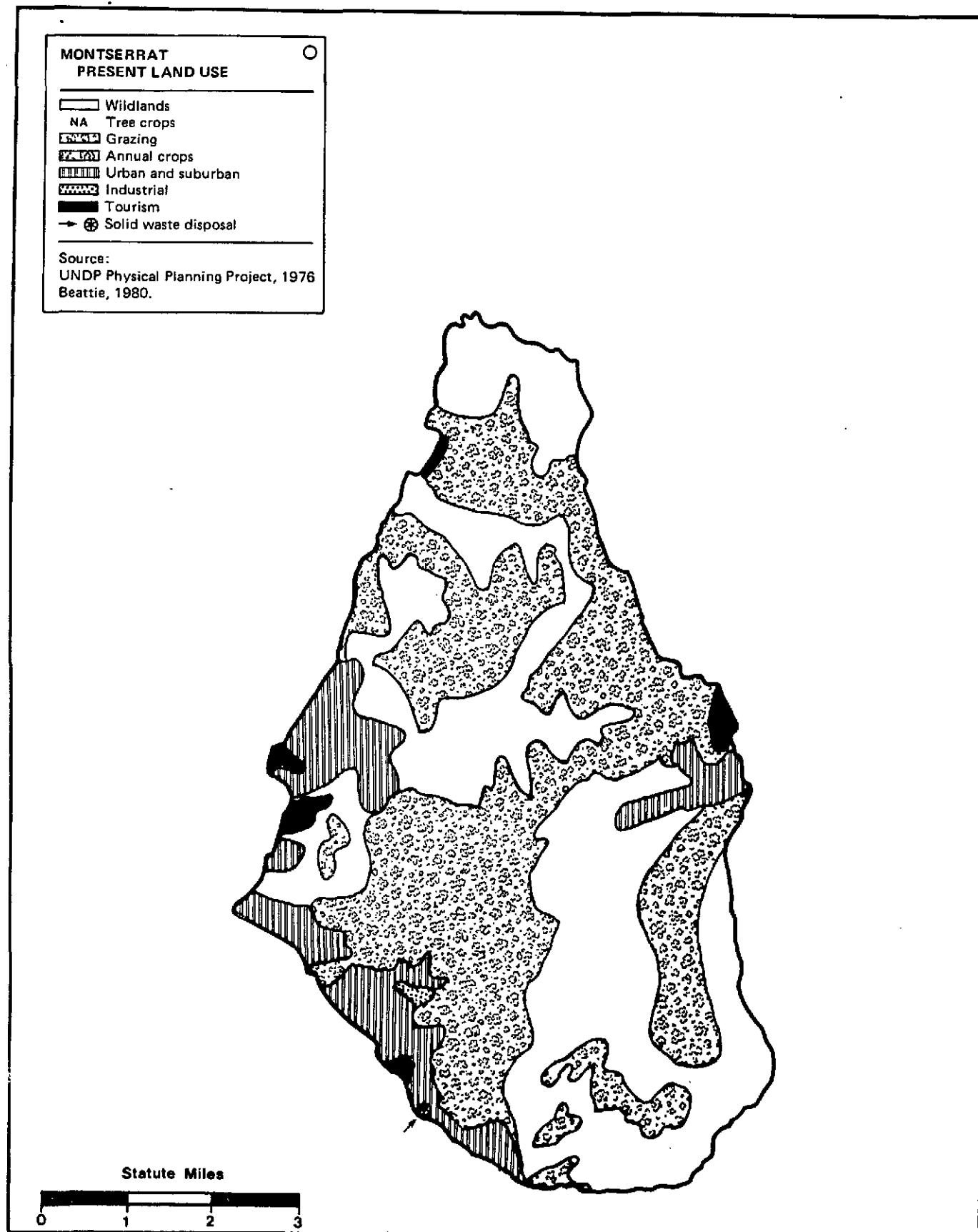
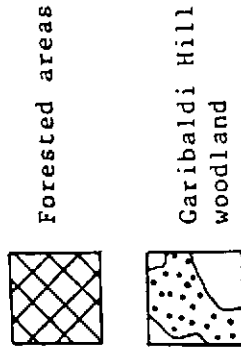
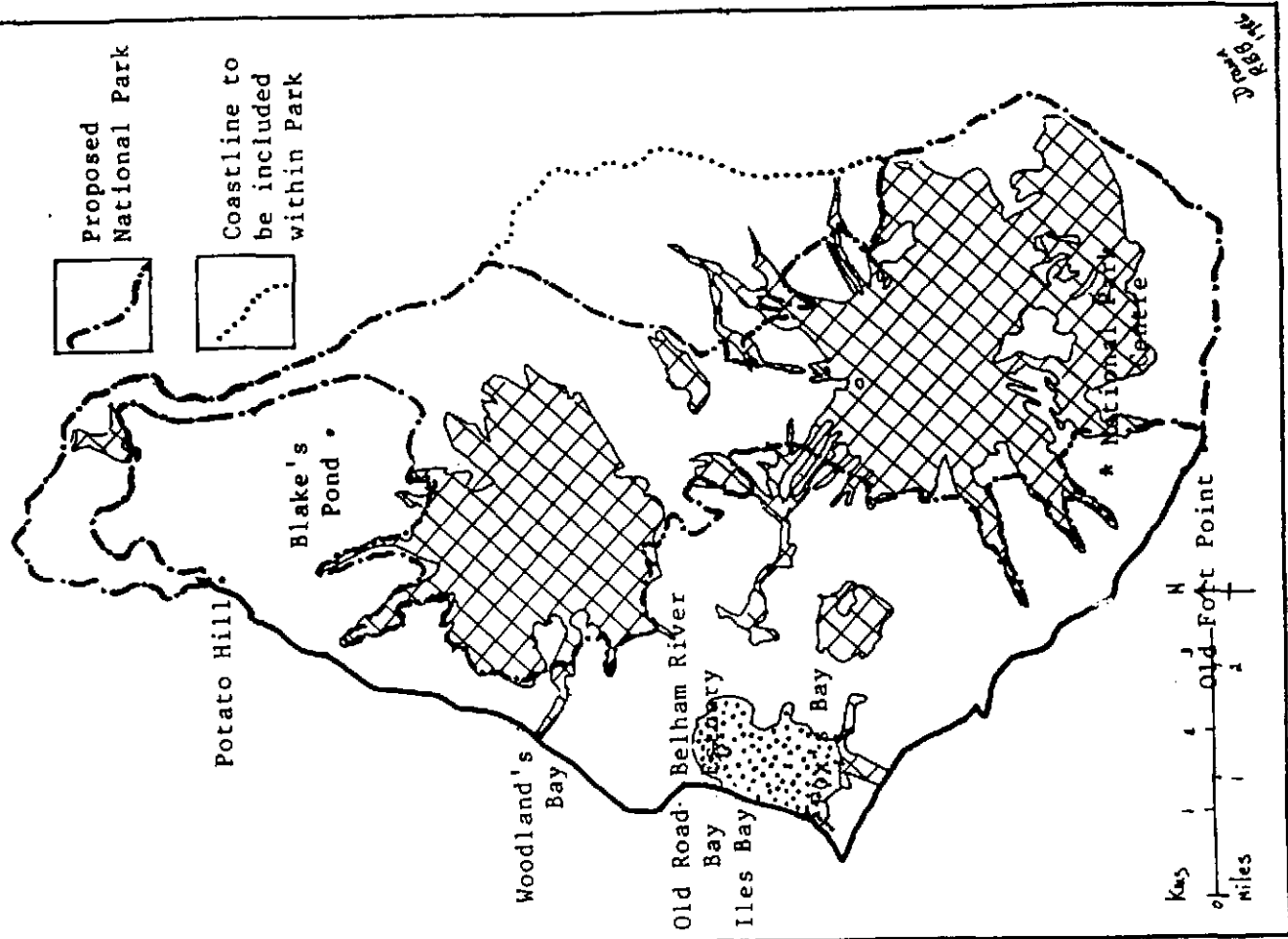


FIGURE 3 Montserrat Forest Areas (Bovey 1986)



Ref. Land Resources Development Centre, Land Use Map (Map 2). 1984.

All areas shown as woodland on the L.R.D.C. map (above) are shown on the adjacent map. In addition the woodland at Garibaldi Hill is shown; which is marked on the L.R.D.C. map as bushland. Although much of the forest is degraded through overgrazing and cutting, it is the best example of deciduous seasonal forest formation on Montserrat and some good areas remain on the western side of the hill.



There are also two areas of mangrove swamp on Montserrat, namely Foxes Bay which is six acres (2.43 ha) in extent and the Belham River Estuary which supports small patches of wetland scattered over 14 acres (5.67 ha). The former is protected under a land lease agreement to the island's National Trust, whilst the latter became part of the Montserrat Golf course some twenty-five years ago. Much of the vegetation was cleared at that time for the development of greens and fairways although strips of trees were left along the river banks. There is an additional small area of mangrove at Carr's Bay, where although in a degraded state, evidence of Black Mangrove (*Avicennia germinans*), Button Mangrove (*Conocarpus erectus*), and some White Mangrove can be seen. Figure 1 shows Montserrat's terrestrial life zones.

Agriculture

Montserrat's first colonists, English and Irish settlers, came from St. Christopher (St. Kitts) in 1632 and settled the island's coastal strip planting tobacco and indigo.

During the 1700's Sea Island Cotton was grown extensively on the island; but at the beginning of the 1800's, plantation-grown sugar cane became the foremost crop. Evidence of its dominance remains with the derelict mills that dot the landscape and the magnificent ruins of Galway's Estate near Soufriere.

After the 1850's, following the emancipation of slaves, sugar production declined finally petering out a century later. In 1949 Beard reported that less than 10% of the island's native vegetation remained.

Following the Second World War and the decline of sugar, Montserrat experienced a steady emigration of its people, with perhaps as much as one third of the population leaving for Europe and the USA. The resulting declines in agriculture and abandonment of lands has led to regeneration such that today secondary growth covers 2,000—3,000 acres (810—1,215 ha) of the country.

In recent years the government of Montserrat has stressed the need to diversify its economy and in the 1970's a programme was implemented to revive the cultivation of Sea Island Cotton. Today the focus is on the production of vegetables for export to neighbouring islands and for import substitution. However, only about 10% of the labour force remain in agriculture (OECS/NRM 1988).

Land Use/Land Husbandry

Although agriculture continues to play an important role in Montserratian life, it would appear to be in decline. The 1983 agricultural census puts total farmed land at 1,885 acres (763 ha) of which less than twenty percent is cultivated and more than 50% allocated to grazing. This compares to the more than 6,000 acres (2,430 ha) set aside for agriculture at the turn of the century.

The Ministry of Agriculture, Trade, Lands & Housing is charged with the responsibility for agricultural development as well as for the "conservation and protection of the natural environment."

Data quoted from the Land Development Authority and reported in the OECS/-NRM (1988) report suggests that 18,026 acres (7,300 ha) or 70.6 % of Montserrat's land is under forest including 30.1% woodland, 31% bushland and 9.5% bushed grassland. Of this 578 acres (243 ha) were classified as inaccessible land suitable only for natural forests and more than 14,000 acres (5670 ha) as being "suitable for forestry development."

Existing forest lands are used for charcoal, fuel wood and fencing materials with an unknown number of individuals making a full-time living from subsistence agriculture.

Forest management is the responsibility of the Forestry Division within the Ministry of Agriculture which presently employs one professional staff and three forest rangers to oversee the enforcement of the Forestry Ordinance (see Section 3.1.4).

Until the return of Chief Forest Officer Gerard Gray from training in 1990 there had been little recent effort to actively manage the forest or to reforest denuded areas. The Division lacks the financial and material support needed to fulfill its promise—its annual budget being EC\$ 92,000 of which \$72,000 is allocated to wages.

Figure 2 shows Present Land Use (From: ECNAMP Survey of Conservation Priorities [1980]). Figure 3 shows Forested areas (From Bovey 1986).

2.0 Montserrat's Marvels: Its Fauna

Isolated from the continents, and small in size, Montserrat hosts only a modest variety of animal life, a rather low total species diversity and level of endemism. Its mammals are restricted to rodents the largest of which is the Agouti, (*Dasipr-octa agouti*), which was introduced; and to seven species of bat, four of which are endemic to the region. One of these, a fruit bat, (*Ardops nichollsi*), is known only from three specimens—two from Montserrat and one from Guadeloupe. [Faaborg & Arendt 1985].

There are 13 species of reptile including two harmless snakes and two endemic species of lizard. The galliwasp, *Diploglossus montisserrati*, is considered very rare and possibly extinct, whilst the green anole, *Anolis lividus*, remains widespread. There are no endemic amphibians, although one of the three species present, *Leptodactylus fallax*, or Mountain Chicken is known only from Montserrat and Dominica. This is one of the world's largest frogs and formally occurred on

at least six islands. Montserrat's relatively rich herptile fauna can be attributed in part to the absence of mongoose on that island.

Ninety two species of birds have been recorded on Montserrat between the years 1879 to 1982, (Siegal 1983), although only about 30 species of land bird actually breed on the island—one of which, the oriole, *Icterus oberi*, is endemic.

2.1 Meet Us In Montserrat: An Island Endemic

There are twenty-one species of orioles in the Genus *Icterus*, three of which are endemic to single islands in the Lesser Antilles: the Saint Lucia Oriole, *Icterus laudabilis*; the Martinique Oriole, *Icterus bonana* and the Montserrat Oriole, *Icterus oberi*.

The latter was first described in 1880 by George Lawrence, a taxonomist from the Smithsonian Institution. Classified *oberi* in honour of Fred A. Ober who, while collecting for the institution, secured seven specimens of the oriole in the spring of that year.

Lawrence first described *Icterus oberi* in the *Proceedings of the United States Museum* 1880(3):351 (1881), writing:

MALE: Head, neck, upper part of breast, back, wings and tail black; lower breast, abdomen, under tail-coverts, and rump light-brownish chestnut, with the concealed bases of the feathers of a clear light yellow; the thighs are yellow, with a wash of chestnut; edge of wing and under wing-coverts yellow; bill black, with the sides of the upper mandible bluish for half its length from the base; tarsi and toes black.

The female he describes thus:

FEMALE: Upper plumage of a dull greenish-olive, with a yellowish tinge, the front and rump inclining more to yellow; the tail feathers are yellowish-green; quills brownish-black; the primaries and secondaries are edged narrowly with dull, yellowish-gray; the tertiaries are margined with fulvous; wing-coverts dark brown, margined with fulvous; edge of wing yellow; the under plumage is of a rather dull dark yellow; the breast and under tail-coverts are of a deeper or warmer color; the sides are greenish-olive; bill and legs as in male.

Length (skin): 8 1/2"; wing 3 3/8"; tail 4."

Icterus oberi differs from the orioles of Saint Lucia and Martinique in having black shoulders instead of yellow or chestnut. It is, and always has been, endemic to Montserrat.

From the time of its classification by Lawrence more than a century elapsed with only passing references being made to this species.

Grisdale (1882) writing in *Ibis* notes that he secured two specimens during his travels to Montserrat which were obtained on "Chauces Peak." These were shot after being attracted to his hunting party by being called in through a process of whistling. Grisdale writes:

"The continued repetition of this call without result was becoming ludicrous, rather than monotonous, when at last from the depths of the forest, a faint response was heard, which coming nearer and nearer as our calls were repeated, at last appeared to proceed from the thick foliage high overhead. Careful inspection now revealed the dim outline of a bird, and I lost no time in firing a shot."

Danforth (1939) writing in the *Journal of Agriculture of the University of Puerto Rico* notes:

"This, [the Oriole] the only distinct species confined to Montserrat, occurs in forests on the Soufriere and also on Olveston Mountain in the Centre Hills, and down to as low as 800 feet elevation at Woodlands, so it is by no means confined in its distribution to the Soufriere Mountains, as has previously been supposed. A total of eight specimens were obtained on the Soufriere Mountain, Cassel's Peak, Chances Mountain, Rendezvous Mountain, Woodland Mountain and at Woodlands."

Of the specimens collected five were adult males, one an immature male and two believed to be females, for at the time doubts lingered about colour differences between the immature of both sexes and the colouration of adult females.

Commenting on the call of *Icterus oberi*, Danforth reported it to be similar to *I. portoricensis* although not quite as loud.

Describing the stomach contents of a single individual examined Danforth writes:

"[It] contained a rotten cane borer weevil (*Metamasius hemipterus*), 3 lepidopterous larvae, 6 cockroach oothecae, and some miscellaneous insect fragments."

Bond (1939) in *Auk* 56:2 writes:

"I have recently received a nest and eggs of this rare oriole. The nest is similarly constructed to that of *I. dominicensis* and was situated in a forest palm. One egg is white, heavily marked with chocolate and grayish brown. The second egg is pale greenish white, much more sparingly but more boldly spotted with brown and underlying markings of violet-gray; they average (to the nearest millimeter) 24 x 17 mm."

Bond adds, "I believe that this species is dimorphic, the adult female apparently never attaining the black and ochraceous-yellow plumage of the male."

Blankenship (1980) briefly treated this species in his assessment of Montserrat's wildlife reporting its population densities to be "somewhat low, mainly due to the destruction of essential habitat." Adding, "its range is limited...and it can be found in only three major areas: the bamboo forest east of Galways Soufriere; the leeward slopes of Chances Mountain, and an area above Woodlands Estate in the Centre Hills."

Siegal (1983) writes "It inhabits the forested regions of the Centre & Soufriere Hills", and adds "The best locations to observe the oriole are Chances Peak, the bamboo forest above Galways Soufriere on the footpath to Roche's Estate and at Olveston tapped spring on Runaway Ghaut."

He concluded that "preliminary studies...indicate that this oriole is peculiar about the selection of its nest site, consequently adult orioles in the breeding season can only be found in areas where the forest palm and banana plant occur in the mountain forest."

2.2 A Population Under Pressure

Montserratian wildlife in general, and the oriole in particular are threatened by a complex inter-relationship of adverse pressures as has been alluded to in the status comments given above. These may be catalogued as follows:

2.2.1 Natural

a: Natural disasters

Disasters such as earthquakes, floods, volcanic eruptions and hurricanes have been recorded on Montserrat since the early 1600's. During the last century the latter have hit the island four times 1899, 1924, 1928 and most recently on September 17th 1989. For a summary on the devastating effects of the 1989 hurricane see section 5.0.

Arendt (1984) notes that on a more frequent basis, but usually with less devastation, the northeastern Trade Winds blow affecting higher elevation vegetation such as that found on steep coastal bluffs and mountain slopes.

b: Predation and nest site competition

It is unlikely that adult orioles are eaten by any vertebrate predators with the exception of the American Kestrel (*Falco sparverius*). Arendt (1984) notes that kestrels hunt in edge habitats and under the closed canopy feeding on bats and birds. He reports observing a kestrel successfully capturing and eating a 100 g Pearly-eyed Thrasher at Woodlands.

The Shiny or Glossy Cowbird (*Molothrus bonariensis*), is a South American species which has recently colonised the Lesser Antilles north to Martinique and which appears to be under going range expansion. It has recently been recorded on Antigua and Marie-Galante and in the Greater Antilles as far east as the Virgin Islands.

It is a species of lowland open country and is parasitic, depositing its eggs sometime between December and July in the nests of other birds such as orioles and grackles. Several females may lay in the same nest, and usually the young of the host are unable to compete. Its status on Montserrat requires careful monitoring since it has had devastating results on the populations of *I. bonana* and *I. laudabilis* on the islands of Martinique and Saint Lucia respectively.

The Pearly-eyed Thrasher (*Margarops fuscatus*) is found throughout the Eastern Caribbean with the exception of the southernmost islands. Typically a denizen of the rainforest it is also to be found in secondary woodland vegetation and adjacent tree plantations. Unusually, in Montserrat the species also occurs in gardens and can be seen even in the Capital of Plymouth. Although it feeds principally on fruits from a variety of tree and shrub species it is omnivorous taking insects as well.

This species is aggressive competing for nest cavities with other birds and may eat the eggs and young of various species. This thrasher is undergoing a population explosion on some Caribbean islands and in a recent study on Montserrat it was by far the most common bird caught, with nearly 50% of all specimens netted being of this species.

2.2.2: Threats Caused By Man

The most important threat facing Montserranian wildlife today is that of habitat destruction. In many areas, particularly at the northern end of the island in the Silver Hills district, goats and other stock are allowed to run free. This is causing severe over-grazing and habitat destruction.

Silver Hill, a scrub-covered and highly eroded hill, was declared by Cater (1949) to be a "man-made desert." Whilst sizable tracts of second growth forest remain

west of the Centre Hills these are being cut and burnt by developers and agriculturalists.

Bovey (1986) estimated that grazing, both legal & illegal, was occurring over 75% of the island including much of the land classified for wildlands and tourism.

The OECS/NRM report (1987) states overgrazing "is the result mainly of the large goat population that roams the island without control, and has long-term impacts on soil erosion, as well as immediate impacts on private farming and government reforestation efforts. Muddy waters during heavy rainfall, extending for miles into the sea, are visible proof of the severity of soil erosion."

Local farmer, Peter Edwards, quoted in the March 15th 1991 issue of the *Montserrat Reporter* stated, "Since 1955 farmers have been complaining to the Government about the damages to farming caused by loose livestock. Now we are in the 90's and we are still complaining about the same thing." The article continues, "Mr. Brian Hollender hired two people for a month to plant fruit trees at Waterworks. A check a few days ago revealed that all the plants were destroyed by animals."

The extent of stand degradation diminishes as the 1,000 foot contour (450 m) is reached and all land above this has been declared a forest reserve (see Section 4.0). However despite such a declaration even the elfin woodland on the island's highest peaks continues to be cleared for agricultural development.

Montserrat's few wetland life zones were under pressure even at the turn of the century (Britton 1907 in Arendt 1984) and they continue to be in demand from coastal developers and agriculturists.

Whilst Montserrat's economy today places increasing emphasis upon real estate, construction and tourism there remains a strong agricultural component. The days of sugar are over and now principal crops include tomatoes, peppers, potatoes, carrots, lime and cotton. These would appear to have only a marginal effect on the environment although Bovey (1986) estimated that one third of the area under such cultivation is being carried out on steep slopes.

The cutting of timber on private and Crown lands, continues for firewood, charcoal, boat building and saw mill timber.

Hunting is not a major threat and is restricted to doves and a few migratory species.

2.3: All About The Oriole

The possibility of losing their only indigenous bird prompted the Montserrat Government, through the Montserrat National Trust, to seek assistance for an in-depth study into the status of this species and to make recommendations for its conservation.

This was undertaken in 1984 by Wayne and Angela Arendt of the USDA Forest Service. Their report provided a comprehensive review of the bird's status, distribution and reproductive ecology and remains the definitive text on *Icterus oberi*.

Arendts' study lasted about two and a half months with field work commencing 14th May 1984 and ending on July 29th.

Before undertaking site surveys Wayne and Angela interviewed a range of individuals to determine the current distribution of the species and based upon these they selected eight sample sites.

2.3.1 Distribution & Density

The distribution and density of orioles were estimated using mist nets (after Terborgh and Faaborg 1973) and variable-width line transects (after Emlen 1971, 1977).

In addition the Arendts' studied the vegetation within each of the sample areas with the abundance of dominant woody species (both shrubs and trees) being recorded. Two methods were employed, namely Arm length transects (after Rice & Penfound 1955/1957) and Circular plots (after Lindsey, *et al*, 1958).

The following eight study sites were utilised

1) *Runaway Ghaut*: Located at the Olveston trapped spring about ten minutes walk up the slope from the Woodland's telephone exchange. This site represented riparian vegetation and plantations with species including the Rubber Tree (*Ficus elastica*), Sweetwood (*Ocotea leucoxylon*), Ashwood (*Casearia sylvestris*) and Hogplum (*Spondias mombin*).

2) *Woodlands*: This site was located at the partially trapped spring behind Lawyer's water tank north east of Woodland's telephone exchange. The lower slopes of this site comprised garden plots and *heliconia spp*, whilst rainforest dominated the upper slopes with species such as (*Ficus elastica*), Sweetwood (*Ocotea leucoxylon*), and the Trumpet-tree (*Cecropia peltata*).

3) *Wilkie's Ghaut*: This site, located south east of Woodlands in the Centre hills, consisted of highly fragmented forest tracts in an advanced state of degradation. Common tree species included Manjack (*Cordia spp*), Spanish-oak (*Inga laurina*), and Mango (*Mangifera indica*).

4) *Jubilee Heights*: Located higher up on the mountain from site #3, and above the 500 m contour, this site was dominated by secondary growth rainforest showing signs of advanced regeneration as illustrated in Table 2.

5) *Garibaldi Hill*: Situated on Montserrat's west coast, north of Foxes Bay this xerophytic forest showed advanced signs of regeneration as illustrated in Table 4.

6) *Upper Pond*: Upper Pond is a local name for a marshy area above and to the south west of the Bamboo Forest at an elevation of 670 m in the South Soufriere Hills. The dominant vegetation at this site included *Miconia laevigata*, Sweetwood (*Ocotea leucoxylon*), Bitterbush (*Rauvolfia viridis*), and *Psychotria berteriana*.

7) *Chances Peak*: Arendt sampled the elfin woodland vegetation near Chances Peak which showed signs of man-made and hurricane disturbance. Much of the woody vegetation comprised Sierra Palm (*Prestoea montana*) and Tree Ferns (*Cyathea arborea*), as can be seen in Table 3.

8) *Killiekrankie Spring*: Located north of Windy Hill this site included abandoned agricultural plots where disturbances appeared frequent and recent. Common tree species included Almond (*Terminalia catappa*), White Cedar (*Tabebuia pallida*), Mahogany (*Swietenia macrophylla*) and Sweetwood (*Ocotea leucoxylon*).

Orioles are habitat generalists being found in a wide range of life zones from coastal environs to cloud forests. The sites selected by the Arendts provided a range of habitat types that allowed them to gain an insight in the species distribution bearing in mind the constraints of time, manpower and transportation.

The results of their study were revealing, confirming for the first time that the Montserrat Oriole was uncommon at lower elevations, especially in the arid zones. The authors neither caught nor observed *I. oberi* in either the secondary dry forest at Foxes Bay nor in the dry scrub woodlands at Silver Hills. They note in their report that although they did not record orioles in these locations there have been reports of birds occurring at low elevations and during interviews with local inhabitants, several respondents reported seeing orioles in ornamental trees and shrubs in residential areas such as Cork Hill and Salem.

Arendt and Arendt (1984), found the highest concentrations of orioles in the wet forest with as many "as eight breeding pairs per kilometer from 300 m to 600 m elevations in the South Soufriere Hills." They note that orioles were especially common near the "Bamboo Forest" along the footpath from Galways Soufriere to Roche's Estate. Lower concentrations of orioles were found in the Centre Hills

where 3 breeding pairs were recorded per kilometer in secondary forest on Olveston Mountain.

Arendt and Arendt concluded that on average there were about five breeding oriole pairs per kilometer in suitable habitat and that each pair was occupying about 200 m along their 1 km census route or an area of approximately 40,000 m². See Figure 4: Distribution of the Montserrat Oriole [Arendt] From Bovey (1986).

Drawing upon the data collected, the given assumptions for population densities, and that some 3,000 acres of suitable "woodland" habitat remained, the Arendts' stated:

"Given that there are 10,000 m² per hectare, there would be 0.4 oriole breeding pairs per hectare or 1,200 breeding pairs in the 3,000 ha "woodland" area. This suggests a total population of about 2,500 orioles on Montserrat."

However, they added that the 3000 ha is doubtless an over estimate and that the actual area representing suitable nesting habitat was probably considerably smaller. At the end of the study period they noted "There are probably about 1000 orioles remaining on the island."

Arendt & Arendt (1984) concluded that whilst the Montserrat Oriole was a threatened species it should not be considered to be in immediate danger of going extinct, but rather that it was highly vulnerable to the threat of continued deforestation within its relatively limited living space. The authors declined to use the word "habitat" since the oriole appears not to be a specialist being adaptable and found at varying densities in a range of life zones.

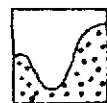
Their report listed six recommendations which were tabled before government for consideration. These recommendations were as follows:

- 1) Preserve existing natural habitats, with an emphasis on watersheds and vegetation associations in erosion prone areas.
- 2) Amend and update forest-use legislation and establish a strong law enforcement program to curtail illegal deforestation of government lands for private use.
- 3) Train and licence foresters in wildlife study techniques and law enforcement procedures, and equip them to patrol government lands and to be more effective in enforcing regulations.
- 4) Enhance public awareness of the importance of natural resources and their conservation through proper management by conducting environmental education classes in the schools and civic centers.

FIGURE 4 Montserrat: Distribution of Montserrat Oriole (Bovey 1986)



Sparse Oriole populations



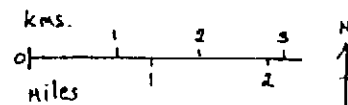
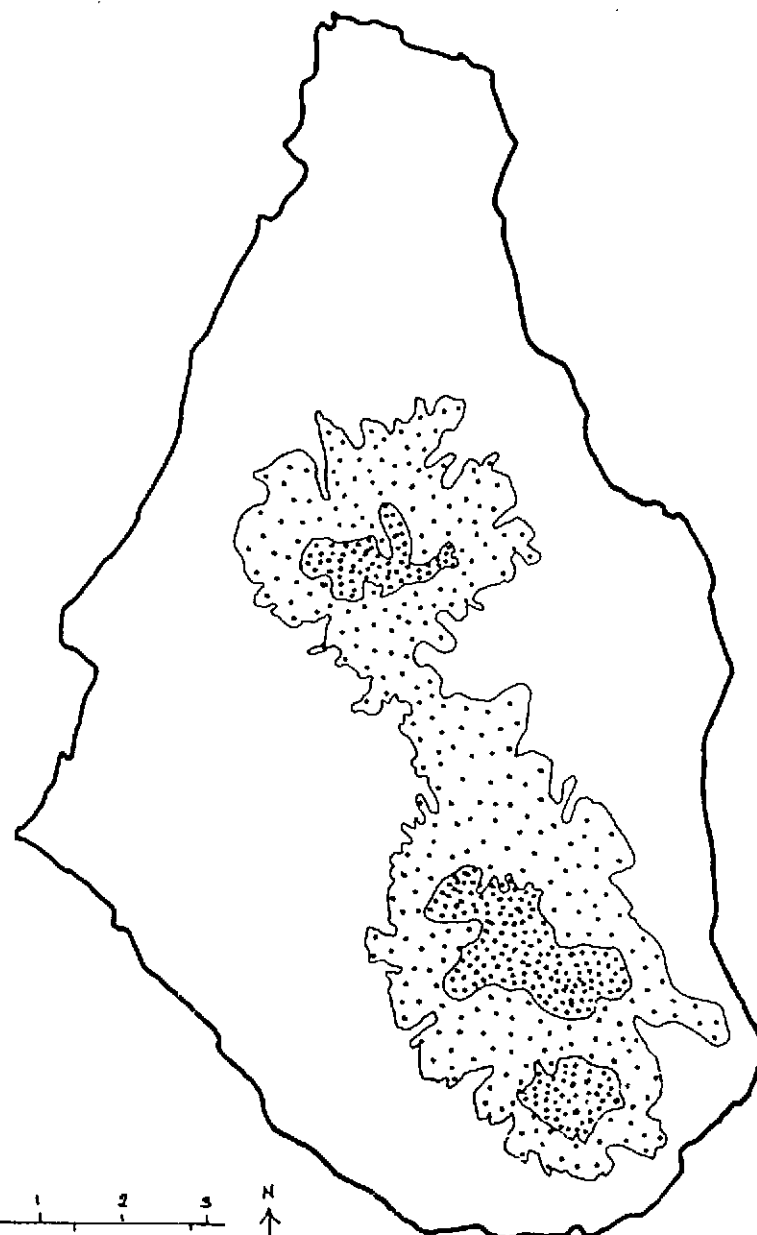
Concentrated Oriole populations

Ref. Arendt and Arendt 1985: Distribution, population size, status, and reproductive ecology of the Montserrat Oriole Icterus oberi.

The Montserrat Oriole is endemic to Montserrat.

There are sparse populations above the 305m (1000ft) contour and concentrated populations above 610m (2,000ft). This high forest species must be considered threatened with the present uncontrolled pressure on forest areas from existing agricultural and forest practises.

It is the National Bird of Montserrat and the symbol of the Montserrat National Trust.



- 5) Train teachers and other public educators in the methods used in teaching environmental education in their classes.
- 6) Continue to closely monitor deforestation and oriole population fluctuations island-wide for an early detection of drastically declining numbers.

Whilst the government made a number of steps toward implementing these recommendations, including initiating a legislative review and removing the Pearly-eyed Thrasher from the list of protected birds, levels of protection afforded Montserratian wildlife and wildlands remained woefully inadequate. See Sections 3.0 & 4.0.

Whilst the conservation education project described in this report, did not include the undertaking of biological or behavioural studies of *Icterus oberi*, mention is made here of some of the more important aspects which may be useful for subsequent management consideration. They are included here also for the sake of completeness and represent a synopsis of information provided by Arendt and Arendt in their 1984 report.

Arendt, W.J., and A.I. Arendt. 1984 Distribution, population size, status, and reproductive ecology of the Montserrat Oriole (*Icterus oberi*). USDA Forest Service, Southern Forest Experiment Station, Institute of Tropical Forestry, Call Box 25000, Rio Piedras, Puerto Rico 00928-2500. 184 pp.

2.3.2 Reproductive Ecology

Nest

The Montserrat Oriole constructs a basket-shaped nest from vines and strips of palm which is suspended under a Banana or Heliconia leaf or from the central rib of a palm frond. The structure is typically placed 2-7 m above the ground often in close proximity to the nest of the more pugnacious Forest Thrush (*Cichlherminia lherminieri*). The male selects the site whilst the female builds the nest which takes between 5 and 7 days and which Arendt reports takes up about 10% of her time.

Nest
[x, SD, Range]
(from Arendt & Arendt 1984)

Species	Height (m)	Depth (cm)		Diameter (cm)	
		Outside	Inside	Outside	Inside
<i>I. oberi</i>	6.87	9.76	7.70	9.36	7.72
	4.60	1.07	0.62	1.21	0.91
	2.21—13.72	9.0—11.2	7.0—8.46	9.0—10.8	7.15—8.35

Arendt noted nest construction taking place in June, although Evans (1990) reports the nesting season to extend from April through July.

Eggs

Two or three oval-shaped eggs are laid between April & July. They have a light background colour with brown markings varying both in extent and depth of colour. The eggs measure 24–27 mm and are incubated by the female over 12–14 days.

Brooding

The Arendts' report the nestling stage to be approximately 14 days although there may be some variation, and at no time did they observe the male attempting to brood the young.

Nestling feeding

Arendt & Arendt (1984) observed the feeding of nestlings throughout the fourteen day nestling period and at Woodlands, parent birds were reported to have fed their young 1,368 times over this period. Thus, each sex averaged about 96 feeding trips per day. On hatch day (day 1) the Arendts' note the female fed her young mostly by regurgitation although this technique diminished daily and was terminated by day 4 when the male oriole, who had not previously participated in the delivery of food to the nestlings, made his first trip to the nest with food.

From day 5 to day 14, when the nestlings fledged, both adults shared equally in feeding the young, averaging about eight trips per hour.

Arendt & Arendt add that feeding rates of fledglings during the first three days post-fledging were similar to feeding rates recorded while the young were still in the nest. By the end of the first week however, the adults were weaning them and forcing them to forage more often on their own.

2.3.3. Feeding Behaviour

Arendt & Arendt (1984) report that foraging by both sexes occurs in close proximity to the nest with most trips occurring less than 10 m from the nest, and the bird's seldom undertake flights of more than 20–30 m. At Woodlands Arendt observed both adults feeding constantly at clumps of heliconia with most foraging taking place in low vegetation.

Orioles glean insects off leaves as they move through the vegetation and Arendt reported "Runaway Ghaut" orioles spent more than 90% of their foraging time occupied in this activity. Both sexes were also observed probing into bark and chasing aerial prey.

Food items taken by foraging orioles and/or fed to oriole nestlings were also recorded by Arendt & Arendt (1984) who note

"At the Runaway Ghaut study site, of the 6,544 total foraging observations, identity of the food items was confirmed for 3,472 of the observations."

They add that of these, "3,470 were animal (mostly insects with an occasional arachnid)," and only two observations were of a male eating "a small yellow (unidentified) fruit."

3.0 Protecting Montserrat's Pride

In theory at least the Montserrat Oriole has been afforded absolute protection since 1912 (with the passage of the Wild Birds Protection Ordinance), and its habitat too was safeguarded by the declaration of lands over 1,500' as Forest Reserve. In reality these measures have served only as "paper protection" and wildlife habitat including that lying within "established" reserves continues to be denuded in the name of agricultural advancement, and development.

Much of the island's environmental legislation remains outdated and its forest reserves are neither demarcated on the ground nor afforded adequate protection under the law.

Indeed it is only during the past decade that any real consideration has been given to the island's natural heritage with such concerns being largely due to the determined efforts of the National Trust under the direction of individuals like its current President Franklin Margetson, and more recently the work of the Forestry Division under the leadership of Gerard Gray.

3.1 Legislation

Current legislation pertinent to environmental protection includes:

The Town & Country Planning Ordinance (No. 27, 1975); Montserrat Land Development Authority Ordinance (No. 9, 1971); The Pesticide Control Ordinance (No. 4, 1975); Animals (Trespass & Pound) Ordinance (No. 12, 1985); Mongoose (Prohibition of Import) (Cap. 109, 1889); Forestry Ordinance (Cap. 95, 1956); Beach Protection Ordinance (No. 9, 1970); Fisheries Ordinance (No. 18, 1982); Turtle Ordinance (Cap. 112, 1951); Resolution on Water Conservation

Areas (SRO 18/1985. No. 9, 1985); Wild Birds Protection Ordinance (Cap. 113, 1912); Wild Birds Protection (Amendment) Ordinance (1982); Wild Birds Protection (Amendment) Ordinance (no. 18. 1985); Wild Birds Protection (Amendment) Ordinance (No. 6, 1987); Endangered Animals & Plants Ordinance (No. 10, 1976); Endangered Animals & Plants Ordinance (Amendment) Order (No. 19, 1982); and the Convention on Migratory Species of Wild Animals Ordinance (No. 2. 1985).

Those Ordinances having specific relevance to *Icterus oberi* or its habitat and management are as follows:

3.1.1. Wild Birds Protection Ordinance (1912)

The Wild Birds Ordinance identifies birds which are to be totally protected (Schedule A), and birds which may be hunted during an open season—July 16th to January 31st—(Schedule B). These schedules included the following species:

Birds to be protected

- | | |
|-------------------------|-------------------|
| 1. Hummingbirds | 12. Coo-coo |
| 2. Yellow breast | 13. Tern |
| 3. West Indian Canary | 14. Crane |
| 4. Banana bird * | 15. Kingfisher |
| 5. Pea whistler | 16. Sour sop bird |
| 6. Blacksmith | 17. Pelican |
| 7. West India Robin | 18. Man o' War |
| 8. Chitty birds | 19. Booby |
| 9. Gaudings | 20. Water Witch |
| 10. Barbados black bird | 21. Egret |
| 11. Loggerhead | 22. Tropic Bird |

NOTE: * This is the oriole.

Schedule B:

- | | |
|----------------|-----------------------------|
| 1. Wild pigeon | 6. Coots (red & white seal) |
| 2. Partridge | 7. West Indian thrush |
| 3. Wood dove | 8. Wild duck |
| 4. Ground dove | 9. Mountain dove |
| 5. Quail | |

Section 7 reads:

"Every person convicted of an offence against this Ordinance shall be liable to a penalty not exceeding twenty-four dollars."

Whilst Section 13 affords the island's Administrator the power to extend or vary "by proclamation" the prohibited time for killing, wounding, taking, exposing or offering for sale any bird specified in Schedule B.

Amendments in 1982 increased the list of totally protected birds, substantially reduced the Schedule B list of partially protected birds, and increased penalties from a maximum of EC\$ 24 to EC\$ 500.

Section 2 of this amendment act reads: "Section 7 of the Wild Birds Protection Ordinance is hereby amended by deleting the word "twenty-four" and substituting the words "five hundred" in the second and third lines of the same section." OECS/NRM (1987) report states "A further amendment in 1985 (No. 18) appears to have missed the 1982 amendment and reverted to the original law, leaving questions as to its meaning."

The report adds, "Because of confusion over use of common names, it would seem advisable to further amend the ordinance, converting all lists to scientific names and requiring that in the case of a dispute the scientific names shall prevail."

The most recent amendment to this important ordinance was made in 1987 and goes some way to addressing the comments of the OECS/NRM report.

SCHECULE A: FULLY PROTECTED BIRDS

<i>Scientific name</i>	<i>English name</i>	<i>Local name</i>
<i>Podilymbus podiceps</i>	Pied-billed Grebe	Duck
<i>Podiceps dominicus</i>	Least Grebe	Duck
<i>Puffinus iherminieri</i>	Audubons Shearwater	—
<i>Phaethon aethereus</i>	Red billed Tropicbird	Trophic
<i>Phaethon lepturus</i>	Wh. tailed Tropicbird	Trophic
<i>Pelecanus occidentalis</i>	Brown Pelican	Pelican
<i>Sula leucogaster</i>	Brown Booby	Booby
<i>Sula sula</i>	Red footed Booby	White Booby
<i>Fregata magnificens</i>	Magnificent Frigate Bird	Man O War
<i>Ardea herodias</i>	Gt. Blue Heron	Grey Gaulding
<i>Butorides virescens</i>	Green Heron	Little Gaulding
<i>Florida caerulea</i>	Little blue Heron	Blue Gaulding
<i>Bubulcus ibis</i>	Cattle Egret	Cattle Bird
<i>Dichromanassa rufescens</i>	Reddish Egret	Gaulding
<i>Egreta alba</i>	Great Egret	White Gaulding
<i>Egreta thula</i>	Snowy Egret	White Gaulding
<i>Nyctanassa violacea</i>	Yellow cr. Night Heron	Crab Gaulding
<i>Plegadis falcinellus</i>	Glossy Ibis	Coco
Family <i>Anatidae</i>	Migratory Ducks	

Family <i>Accipitridae</i>	Migratory Hawks	
Family <i>Paltionidae</i>	Migratory Ospreys	Fish Eagle
Family <i>Falconidae</i>	Migratory Falcons	
<i>Porzana carolina</i>	Sora	Rail
<i>Porphyryla martinica</i>	Purple Gallinule	Coot
<i>Fulica caribaca</i>	Caribbean Coot	Coot
Family <i>Charadriidae</i>	Migratory Plovers, etc.	
Family <i>Scopopacidae</i>	Migratory Sandpipers, etc.	
Family <i>Laridae</i>	Gulls & Terns	
<i>Columbina passerina</i>	Common Ground Dove	Ground Dove
<i>Coccyzus minor</i>	Mangrove Cuckoo	Coo coo
<i>Crotophaga ani</i>	Smooth billed Ani	Blackbird
Family <i>Caprimulgidae</i>	Migratory Nightjars	
Family <i>Apodidae</i>	Migratory Swifts	
<i>Eulampis jugularis</i>	Purple th. Carib	Dr. Carcoo
<i>Sericotes holosericeus</i>	Green th. Carib	Dr. Carcoo
<i>Orthorhyncus cristatus</i>	Ant. crested Hummingbird	Sparrow
<i>Ceryle alcyon</i>	Belted Kingfisher	Kingfisher
<i>Tyrannus dominicensis</i>	Grey Kingbird	Loggerhead
<i>Progne subis</i>	Purple/Caribbean Martin	Swallow
Family <i>Hirundinidae</i>	Migratory Swallows	
<i>Margarops fuscus</i>	Scaly breasted Thrasher	Thrush
<i>Cinclocertjoa rifocaida</i>	Trembler	
Family <i>Parulidae</i>	Migratory Wood Warblers	
<i>Dendrolca petechia</i>	Yellow Warbler	West Indian Canary
<i>Coereba flaveola</i>	Bananaquit	Yellow Breast
Family <i>Icteridae</i>	Migratory Blackbirds	
<i>Icterus oberi</i>	Montserrat Oriole	Tannia Bird
Family <i>Thraupidae</i>	Migratory Tanagers	
<i>Tiaris bicolor</i>	Blk. faced Grassquit	Chitty Bird

SCHELE B: CLOSED SEASON BIRDS

<i>Gallinula chloropus</i>	Common Gallinule	Coot
<i>Columba squamosa</i>	Red necked Pigeon	Mountain Pigeon
<i>Zenaida aurita</i>	Zenaida Dove	Wood Dove
<i>Geotrygon mystacea</i>	Bridled Quail Dove	Partridge

NOTE: Spellings are as given in the Ordinance—some Latin names are misspelled and should be reviewed during any future legislative revision. See Section 10.0.

NOTE: This ordinance does not include the Pearly-eyed Thrasher which has been declared unprotected.

Despite the minor amendments made over the past decade or so this Ordinance is outdated, rarely enforced and in need of complete revision. See Section 10.1.

3.1.2 Endangered Animals & Plants Ordinance (1976)

This is an act to restrict the importation and exportation of certain animals, plants and products pertaining to the Convention on International Trade in Endangered Species (CITES). Whilst the oriole is not endangered by trade, its rarity and the desires of aviculturists to hold endangered species might make this bird a candidate for an Appendix III listing. A 1982 amendment order added to the schedules in accordance with decisions taken at the conference to the parties of CITES.

3.1.3 The Convention on Migratory Species of Wild Animals Ordinance (No. 2. 1985).

This is the legislative framework for the Bonn Convention on Migratory Species which was signed by the United Kingdom and is in force both in the UK and its dependent territories.

A fundamental principal governing this Convention states that parties should:

- promote, cooperate in, and support research relating to migratory species.
- endeavour to provide immediate protection for migratory species included in Appendix I.
- endeavour to conclude agreements covering the conservation and management of migratory species listed in Appendix II.

Signatories to the Convention, pledge with respect of Appendix I species, to:

- conserve, and where feasible/appropriate, restore habitats.
- prevent, remove, compensate for, or minimise the adverse effects of activities or obstacles that seriously impede or prevent the migration of species.
- prohibit the taking of animals belonging to such species.

Appendix II lists species which have an unfavourable status and which require international agreements for their conservation and management.

Whilst the oriole is not migratory it does share its habitat with several migratory species.

The OECS/NRM (1987) report states that both of the aforementioned conventions have not been implemented despite the fact that they have local obligations and implications and cites a primary shortcoming as being no specific unit or individual assigned such responsibilities. With regard to CITES a lack of training for front line enforcement officials, such as customs officers at points of entry, compounds this problem.

3.1.4. The Forestry Ordinance (1951)

This Ordinance makes provision for the Governor to appoint a Forestry Board which can declare any land to be Protected Forest and afforded appropriate restrictions on its use. The Board may further recommend the purchase of lands by the Crown to serve as forest reserve. The clearing of land, cutting of trees, starting fires or grazing livestock are prohibited in protected forests except where written permission is given by the Secretary of the Board.

The OECS/NRM (1987) report writes "The (Forestry) Board has been less active than previously, meeting only three times in the past two years." It continues, "Only one official forest reserve appears to have been declared under the law—the Silver Hills Forest Reserve—an area of approximately 75 acres in the Parish of St. Peter (Forest Reserve Proclamation Cap 95)."

It would appear that no regulations have been promulgated under this Act although the OECS/NRM report postulates that forestry regulations from earlier legislation (SRO's 13/1941, 42/1952.) are probably still valid and notes that these prohibit certain activities and provide for the application of permits for clearing. Attempts to locate copies of these early SRO's proved futile. Neither the Attorney General's office nor the Clerk of Council could locate same and it appears that these records may have been destroyed in the devastating courthouse fire of 1972.

Administratively forests above the 1,500 foot altitude line are considered protected and the Ordinance has clear and stringent powers to deal with land clearing. However, these powers have apparently not been invoked and such lands have yet to be demarcated on the ground and their boundaries Gazetted. The recent sale of a parcel of land at the summit of Chances Peak to Cable & Wireless Ltd. could set an unfortunate precedent in so much as it could pave the way for future usage of lands above the 1,500 foot contour.

Arendt & Arendt (1984) make reference to the existence of five forest reserves comprising 16.8 square miles or 18% of the total land area. If these exist they too not been demarcated and serve only as paper protection.

The author can find no reference to these areas although one possibility is the fact that for management purposes forests have been divided into five districts and it is these that have mistakenly been referred to as "reserves." Alternatively

there are five principal mountain massifs, (Soufriere, Centre, St. Georges, Gari-baldi & Silver), and Arendts' reference may have pertained to these.

In 1987, under the auspices of the Food & Agricultural Organisation (FAO), consultants Thomas Mc Henry and Michael Gane prepared a draft Forestry & Wildlife Ordinance that if passed would replace existing Forestry & Wild Birds Ordinances. This draft act places responsibility for the management of forests and wildlife under a single governmental department—the Forestry & Wildlife Division.

It makes provision for the establishment of such a Division and the appointment of a Chief Forest & Wildlife Officer together with a support staff of forest technicians, forest rangers and forest guards. The Ordinance charges the Chief Forest and Wildlife Officer with preparing a biennial National Forest Plan, and provides for the establishment of a Forestry & Wildlife Board appointed by the Governor in Council to review this plan and to be responsible for reviewing the work of the Chief Forest & Wildlife Officer.

The Ordinance makes further provision for the establishment of forest reserves, which are defined as being "areas of forest land under permanent or long term government control to be kept in forest for the production of water and timber and for recreation and other values." The draft Ordinance provides for all Crown and private lands above 1,500' to be declared forest reserve.

A second category, that of "protected forest" is defined in the Ordinance, and the law would authorise the Chief Forest and Wildlife Officer to enter into voluntary agreements with private land owners for the management of forested lands below the 1500' contour.

A third management category, that of "conservation areas" provides for the control of activities on critical areas of private land which threaten the destruction of natural resources through flooding, soil erosion, etc. On lands declared "conservation areas" the need for the payment of compensation is waived and activities such as land clearance, uncontrolled burning and the use of chemicals is prohibited.

The draft Forestry & Wildlife Ordinance proposed by Gane and Mc Henry provides for the establishment of a "forestry development fund" which is to be used to encourage protective and productive forestry.

It also affords two major provisions with regard to the management of wildlife in Montserrat. The first being the power of the Governor-in-Council to declare wildlife reserves on Crown and private lands within which hunting and taking of wildlife is banned. The second provision being the division of wildlife into three categories: protected, partially protected and unprotected. Protected wildlife may not be hunted at any time and covers more than fifty species including the Montserrat Oriole. Partially protected wildlife may not be hunted during the

"closed season" and includes the Common Gallinule, Red-necked Pigeon, Zenaida Dove and the Bridled Quail Dove. Unprotected wildlife can be hunted or taken at any time.

The draft Ordinance empowers forest and wildlife officers to arrest offenders against the act, to seize property used in the commission of an offence and provides for increased penalties and the payment of compensation by offenders.

NOTE: The draft Ordinance provided by Gane & Mc Henry does not specify the fines.

Under the initiative of the Ministry of Agriculture and the legal affairs department, with inputs from the Forestry Division and the Montserrat Trust this draft was reviewed and it has been proposed that penalties of EC\$ 5,000 be included.

At the request of the Director of Agriculture, the author further reviewed this legislation making a number of suggestions based on his experiences in assisting in drafting wildlife legislation on Saint Lucia and Saint Vincent. These recommendations were included and, at the time of writing, the Ordinance is under final review. (See Section 10.1)

Another law related to both forest and agricultural land—Bush Fires Ordinance Cap. 260, of 1925—prohibits the setting of fires except in accordance with a licence from the Police. The Agricultural Ordinance of 1958 provides the basic legislation for the conservation of agricultural land and includes the protection of forest and vegetation on ridges and steep slopes.

There is no substantive legislation in Montserrat for establishing and managing natural areas for either the conservation of fauna and flora or the declaration of terrestrial or marine parks, although the Montserrat National Trust Ordinance (No. 11 1969) does create a statutory body to address the issues of historic and natural preservation in the country (See Appendix 1).

4.0 Parks and Preserves

Bovey (1986) states "There is no protected site system for the island of Montserrat's natural areas with the exception of a small bird sanctuary run by the Montserrat National Trust."

The latter at Foxes Bay, was established in 1979 and covers some 15 acres of mangrove. It is noted for its nesting colony of Cattle Egrets, *Bulbulcus ibis*, and populations of Caribbean Coot, *Fulica caribaea*, & Yellow-crowned Night Heron, *Nyctanassa violacea*. Also to be seen are both Ringed, *Ceryle torquata*, and Belted Kingfishers, *Ceryle alcyon* and occasionally the Pied-billed Grebe, *Podilymbus*

podiceps. Access to the area has been made relatively easy with marked trails established by the Trust in 1980.

This is not to say that the Government has not realised the value of its "green image" and the Tourist Board in conjunction with others in the Tourism industry promote the following trails:

- 1) The Great Alps Falls
- 2) Galways Soufriere
- 3) The Old Fort at St. Georges Hill
- 4) Foxes Bay Bird Sanctuary
- 5) Galway's Estate Ruins & Bransby Point fortifications
- 6) Bamboo Forest Trail

In 1985 N.C. Pennington proposed, in a document entitled "A strategy for the development of a Trails system for Montserrat," that the Government improve and build on the existing system of trails to provide a wide variety of walks catering to a broad cross section of the public.

Forty three trails were proposed:

North of Plymouth on the Leeward coast

1. Foxes Bay through Bransby Point to Water Pond
2. Isles Bay to Foxes Bay
3. Fogart's to Cooper's Point
4. Little Bay to Rendezvous Bay (over Bluff)
5. Little Bay to Rendezvous Bay
6. Rendezvous Bay to Valentines Ghaut

South of Plymouth

7. Amersham Estate to Spring Ghaut
8. Broderick's to Spring Estate
9. Spring Estate to Chances Peak
10. White River to Great Alps Falls
11. White River to Fergus Mountain
12. O'Garro's to Swana Ghaut

Soufriere Hill area

13. Gages to Gages Lower Soufriere
14. Gages to Gages Upper Soufriere
15. Rileys southward
16. Paradise Estate
17. Long Ground to Tar River Soufriere
18. Tar River to Roche's Yard

19. Tar River to Galways Soufriere
20. Galways Soufriere to Bamboo Forest

Centre Hills Area

21. Salem to above Olveston & Woodlands
22. Fogaty's south-eastwards
23. Baker Hill south-eastwards in ghaut
24. Baker Hill south-eastwards along ridge
25. Barzey's Yard to Ginger Ground spring
26. Mango Hill to Bottomless Ghaut spring
27. Dick Hill to Bottomless Ghaut Spring
28. Windy Hill to Corbett Spring
29. Windy Hill to Killiecrankie Spring
30. Windy Hill to Molyneaux
31. Molyneaux
32. Waterworks Estate Yard to Molyneaux
33. Weekes to Molyneaux (bottom)

Silver Hill Area

34. Gerald's to Rendezvous Village
35. Gerald's through Thatch Valley & Old Quay to Gerald's

Windward Coast area

36. St John's to Blackburne
37. Lookout Yard to Marguarita Bay
38. Blake's Yard to Cat Ghaut
39. Mig to Bottomless Ghaut
40. Trants to New Windward Estate
41. Trants to Locust Valley
42. Farm Village to Bugby Hole
43. Farm Village to Farm Village

Considering the costs of trail construction, their up keep and the limited amount of usage many of these trails would see, Pennington's proposal seems a trifle ambitious. Since his recommendations have been made little activity has taken place with regard to the establishment of new trails. Indeed several of the long established trails need maintenance particularly as a result of damage caused by Hurricane Hugo.

In the early 1970's Montserrat participated in a regional UNDP physical planning project whose recommendations were published in a document entitled: "Montserrat—The Environment" (1975). In April of the following year the President of the Montserrat National Trust, Mr. McChesney, visited Guadeloupe and toured that island's parks system. It was from these early beginnings that the idea of a

National Park for Montserrat emanated. Late that same year WWF—UK undertook a study to determine the viability of such a development; its author Robin Bovey recommended a reserve be declared to include the following:

All remaining areas of rainforest especially that occurring above O'Garra's including tree fern and secondary growth as well as all montane forest formations including lower montane rainforest, montane thicket, elfin woodland as well as palm brake and fumorole vegetation.

Also proposed to be included was most of the remaining seasonal forest formation and areas representative of littoral growth and woodland. All Soufriere and vegetated ghauts should be included in the park as should the coastal wetlands at Foxes Bay and Belham River, the ponds at Silver Hill, Blakes & Chances Peak together with the coastline extending from Potato Hill north to Old Fort Point as well as the following beaches: Foxes Bay, Old Road Bay, Ile Bay and Woodlands Bay.

Bovey (1986) also proposed a marine Park, and that all lands from 1,000—1,500 feet in elevation be liable to strict management, whilst lands outside the reserve but above 1,500 feet be Forest Reserve and absolutely protected.

Only moderate strides have been made towards the goal of Park's establishment. Table 5, compiled from comments by Trust President Franklin Margetson, provides an overview of status to date. See Figure 5: Parks & Protected Areas (From ECNAMP Survey of Conservation Priorities [1980]).

RESOURCE DATA MAPS MONTserrat

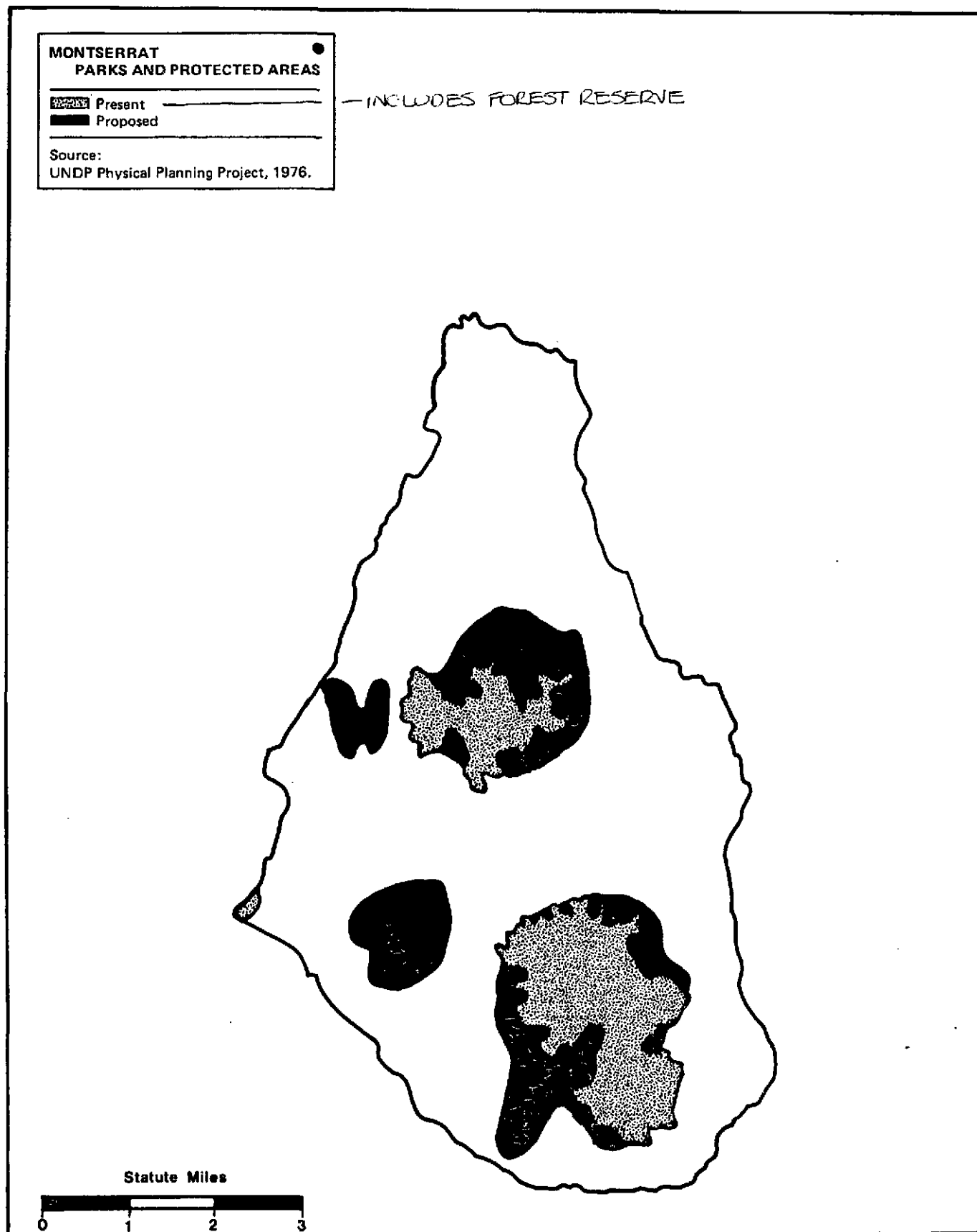


TABLE 5: Current status of protected areas in Montserrat.

<i>Location</i>	<i>Acreage</i>	<i>Status</i>	<i>Year</i>	<i>Comment</i>
Silver Hills FR	74.0	Forest Dept.	1959	Proclaimed
Mountain lands*	462.0	Vested in MNT	1980-89	Various parcels
Foxes Bay	15.0	Leased to MNT	1979	
Carr's Bay Battery	0.2	Vested in MNT	1985	
Bransby Point	0.5	Vested in MNT	1981	
St. George's Hill	2.0	Tourism/MNT	1990	Crown Land
Woodlands Beach	0.2	Vested in MNT	1980	
Galway's Estate	5.0	Vested in MNT	1990	
Galways Soufriere	10.0	Vested in MNT	1990	
Great Alps Falls		Tourism Dept.	1990	Falls divide Crown Land from private land
[Museum]	0.2	Vested in MNT	1980	

MNT = Montserrat National Trust
from: Margetson (pers com.)

* Margetson states "It is now extremely urgent to designate the boundaries of the (National) Park, and to devise, enact and enforce legislation for the protection of forest products, wildlife, soil and water, tourist attractions, and the general environment."

5.0 Montserrat's Misery

Hurricane Hugo struck Montserrat on September 17th 1989 packing sustained winds of 140—150 miles per hour and gusts over 180 mph. It was one of the most violent hurricanes to ever hit the island nations of the Eastern Caribbean. This immense storm lingered for ten hours over Montserrat leaving ten dead, 98% of its homes damaged, (including 20% completely destroyed), and damage in excess of US\$ 300 million.

Virtually all crops were totally devastated with coconut, mango and banana trees down; damage to Montserrat's forests were no less severe. Defoliation of trees in all major forest types and at all elevations was virtually complete with preliminary estimates indicating 80—90% of the trees lost their foliage and more than 60% sustained structural damage.

Hugo destroyed or severely damaged a number of Montserrat's historic sites and areas of natural attraction.

Margetson, writing in November 1989, about the proposed National Park at Soufriere stated, "The mountain peaks once covered with lush vegetation, are reduced to a stubble of brown sticks. The position is now understandably desperate, and there are many who are in a frantic hurry to aggravate the damage using slash and burn activities on unstable slopes."

Commenting on nearby Galway's Plantation, Margetson adds: "The end walls of the boiling house finally collapsed, perhaps ending speculation that the building could someday be restored." The situation on the coast was no better and the reserve at Foxes Bay sustained considerable damage for Margetson notes:

"Most of the large trees at the Bird Sanctuary...were toppled or uprooted...The beach itself has been reduced to a narrow strip, with the waterline perilously close to the trees."

In view of the widespread destruction of the forest it was obvious that a follow up census and assessment of forest bird populations was required with emphasis on the oriole.

Such a request was made by the Montserrat National Trust to RARE *Center* for Tropical Bird Conservation in late January 1990. Thanks to generous support by World Wildlife Fund US and the US Forest Service we were able have Wayne Arendt in the field by March 13th.

His terms of reference were to:

Assess the impact of Hurricane Hugo on the numbers and distribution of the Montserrat Oriole and other forest birds and determine the extent of disturbance to forest bird habitats.

6.0 Post-hurricane Oriole Census

Arendt spent two weeks in Montserrat revisiting sites sampled in 1984 (see section 2.3.1). To ensure result comparability the same census techniques were replicated. In addition a third technique—fixed radius point count—was also employed, as was the use of play back vocalisations to ensure optimal detection of orioles.

Hurricane damage was assessed in the wet and dwarf forest using a fixed width transect method (Arendt 1990).

Arendt (1990), noted the impact of Hurricane Hugo on Montserrat's forests was severe. He states:

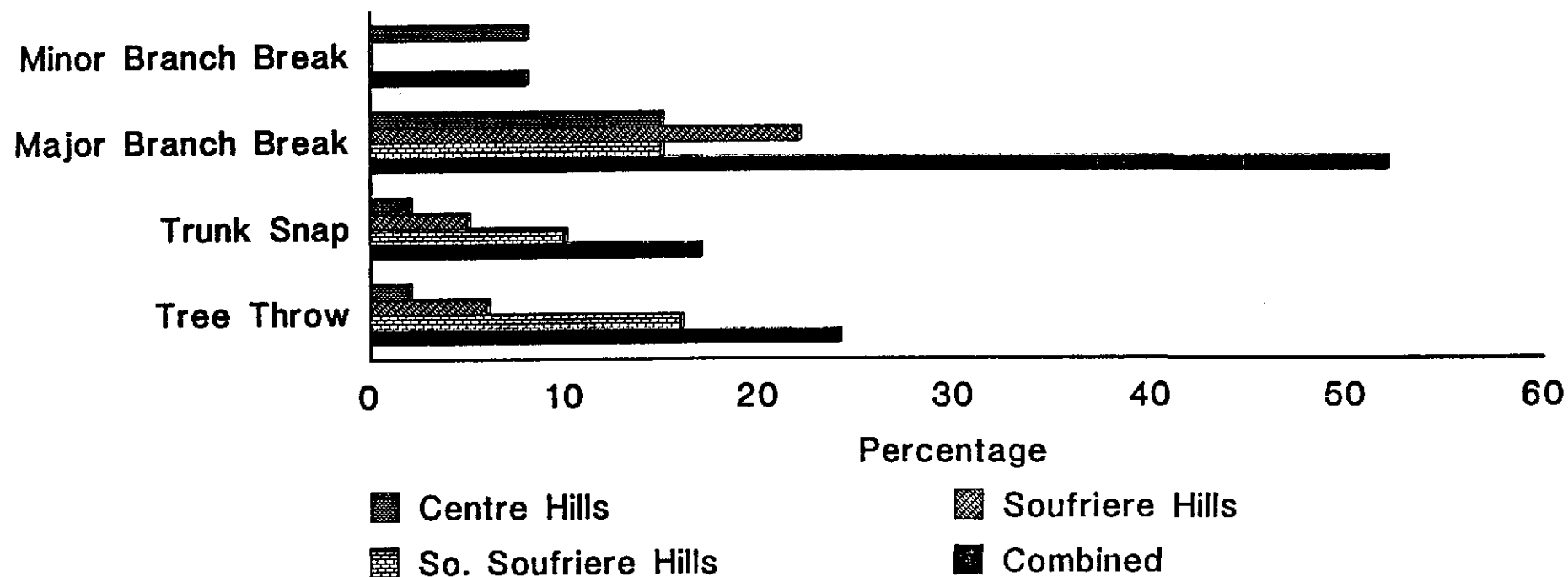
“Most forest trees throughout the island's three interior mountain ranges (Centre, Soufriere, South Soufriere Hills) suffered damage to their primary branches (those originating from the main trunk), but were left standing (52% of trees sampled in montane forest). However, in the dwarf forest on the upper slopes of the South Soufriere Hills, the hardest hit by Hugo, damage to most trees resulted in extreme throw (leaning) of tree trunks, with many individuals being uprooted (63% of the trees sampled).”

This is summarised in Figure 6 (from Arendt 1990).

During his two week visit Arendt observed more than one hundred orioles indicating that the total population is still in the hundreds. Whilst he found that the oriole's general habitat and elevational distribution to be similar to results obtained in 1984, there were two very important differences:

- 1) Prior to Hugo, dwarf forest represented a prime environment for *Icterus oberi* with relatively high densities being recorded in this habitat. Post hurricane, because the storm virtually destroyed the dwarf forest of the South Soufriere Hills, orioles made an elevational shift down into the deep sided ghauts which afforded a measure of protection from the hurricane and in which vegetation regenerated rapidly.
- 2) Ghauts were not the only sites recording concentrations of orioles. Arendt reported observing many pairs in the narrow belts (400—700 m) of regenerated wet forest in the Centre and Soufriere Hills.

FIG. 6 Impact of Hurricane Hugo on forest trees in the three major forested areas of the interior mountains, six months after the storm.



Orioles detected by Arendt during the census were usually paired and post-hurricane reproduction was confirmed with the sighting of an oriole pair feeding two recently fledged young.

Arendt concluded by listing five recommendations:

- 1) Maintain and enforce the law prohibiting deforestation above 1500'.
- 2) Preserve the vegetation and insularity of the major ghauts now found throughout the foothills of all three interior mountain ranges.
- 3) Prohibit land-use (including deforestation and all other types of alteration to the natural vegetation) along the proposed road leading to the Chances Peak communication tower—should the latter be built.
- 4) Pass legislation finalizing the designation and establishment of proposed national parks.
- 5) Implement public education programmes including the production of videos to augment public awareness and appreciation of the natural environment.

A second survey was conducted in May 1990 by Dr. Peter Evans under the auspices of the International Council for Bird Preservation.

Evans carried out 500 censuses using the variable circular plot method at ten different localities. These covered all major vegetation types and were chosen for their geographical spread around the island. In his preliminary report, dated June 1990, Evans lists these sites as follows (vegetation type in parentheses):

- 1) O'Garra's Estate & lower reaches of Castle Ghaut (Croton scrub).
- 2) Drummond, Silver Hill & Brimm's Ghaut (Croton scrub).
- 3) Foxes Bay & Garibaldi Hill (dry forest, scrub and swamp).
- 4) Fergus Mountain & White River (dry forest and scrub).
- 5) Spring Ghaut (semi-evergreen forest).
- 6) Woodlands, Olveston, Runaway Ghaut and Cassava Ghaut (semi-evergreen forest).
- 7) Killiekrankie, Waterworks and Belham River (mostly lowland wet forest).
- 8) Underwood Estate and Dick Hill (moist lowland forest).

- 9) Paradise and Mosquito Ghauts (montane moist forest).
- 10) Bamboo Forest and Chances Peak (montane moist forest).

Evans found the oriole to be widely distributed throughout the island in small numbers. He noted that each ghaut visited in the Centre and Soufriere Hills usually had between 5—10 singing males whilst the species was also present in smaller numbers (1—5 singing males) in the wooded valleys of the coastal areas including those of Garibaldi Hill, St. George's Hill, Silver Hill and Castle Ghaut.

Evans adds, "Extrapolation to a total population estimate has not yet been made, but we consider that there are definitely more than 500—750 birds on the island and that the original estimate [by Arendt & Arendt 1984] of 1,200 birds may have been too low."

He concludes "Hurricane Hugo has not damaged the oriole population to any substantial extent, and that extensive areas of suitable habitat in reasonable condition still exist."

Evans recommended:

- 1) National Park or Forest Reserve should be established to encompass the best representative areas of each habitat and that these should not be confined exclusively to upland regions.
- 2) The need for a clear land use policy and the preparation of a management plan for the island's remaining wetland areas.
- 3) The initiation of educational programmes to raise public awareness of wildlife and conservation issues focusing on government and civil service as well as the public.
- 4) Institutional support for the Montserrat National Trust.

In light of recommendations made, and in response to a request from Montserrat seeking assistance in conservation education, RARE *Center* for Tropical Bird Conservation rallied to the cause signing a memorandum of understanding on March 9, 1990.

7.0 Partners in Protection

RARE *Center's* Conservation Education Campaign was to focus attention on the Montserrat Oriole and aimed, through the development and use of innovative techniques and materials, to develop a sense of pride for Montserrat's national bird and an understanding and concern for both its plight and that of the environment within which it lives.

After discussions with the island's Chief Minister, the Honourable John Osborne, the Montserrat National Trust was selected as the lead agency, (see Appendix 2).

The benefits to be accrued from this project were summarised as follows:

- 1) From the conservation point of view the programme would be valuable because the public support generated could be used by the government to implement those initiatives necessary to protect the forest which is critical not only as wildlife habitat but also as watershed.

Initiatives that might subsequently be considered by the government are the strengthening of Forestry & Wildlife legislation, and the declaration of a National Park.

- 2) The training of local personnel in conservation education should make the programme sustainable beyond the initial involvement of RARE *Center*, and might be subsequently adapted to cover other environmental concerns such as litter, mangrove destruction etc.
- 3) The anticipated financial assistance from local businesses in the form of programme sponsorship for some of the less expensive material components would link this community to conservation—therefore extending its benefits beyond the duration of external involvement. It was however realised that the passage of Hugo would probably limit the ability of many companies to contribute financially to the project.
- 4) The international publicity garnered by the programme would assist in tourism promotion particularly amongst the growing number of nature-orientated visitors. Tourism is a vital sector of Montserratian development and in need of a positive boost after the devastating effects of Hurricane Hugo.

Under the Memorandum of Understanding RARE *Center* agreed to provide:

- 1) The part time services of its Caribbean Director for a period of one year, twelve weeks of which would be spent on Montserrat training and assisting the designated counterpart.
- 2) All travel and expenses incurred by the Caribbean Director in the performance of his duties.
- 3) A four wheel drive Suzuki Samurai Jeep for the project, thereafter being donated to the lead agency for use in its conservation work.
- 4) An initial one year salary for the project counterpart to be paid monthly and being free of all taxation.
- 5) The following materials:
 - 1,000 Colour posters of the Montserrat Oriole
 - 2,500 Colour badges
 - 2 Billboards

In addition US\$ 3,000 would be provided to cover the costs of other materials as and when needed.

The level of funding for the project being estimated at US\$ 48,189 as defined in Appendix 2.

The Montserrat National Trust agreed to:

- 1) Assist in the selection, together with the participation of RARE *Center's* Caribbean Director, of a Montserratian counterpart.
- 2) To provide for the maintenance and upkeep, including gasoline, of the project vehicle.
- 3) To ensure duty free import of all project equipment and supplies.
- 4) To provide the occasional services of a typist and secretary.

The philosophy behind the provision of assistance by RARE *Center* can be summarised as follows:

- Wildlife protection through legislation and the establishment of reserves is not sufficient if the laws are not effective, enforced and well understood by the local people. Usually, the general public is apathetic toward environmental issues and ignorant of local laws protecting wildlife and its habitat.

RARE Center's broad based education project is designed to generate a pride in the environment that will lead to a greater appreciation and understanding of the laws and respect for reserves.

- Any conservation programme relying exclusively on foreign aid is often doomed to failure when funds are exhausted. To ensure continued funding RARE Center encourages local businesses to support efforts through their financing conservation materials that link them to the cause.
- Reliance on external assistance does not provide local conservationists with lasting tools to enact or continue their work. Involving and training local personnel in every aspect of the project promotes greater local commitment that lasts long after foreign agency involvement ceases.

To facilitate this, RARE Center has produced, and provided to the Montserrat National Trust, a comprehensive training manual which serves as a project guide, leading the designated counterpart through a series of activities that help to develop an awareness and appreciation for the target species, in this case the Montserrat Oriole which is known locally as the Tannia Bird. All sectors of the society were targetted as shown in Figure 7.

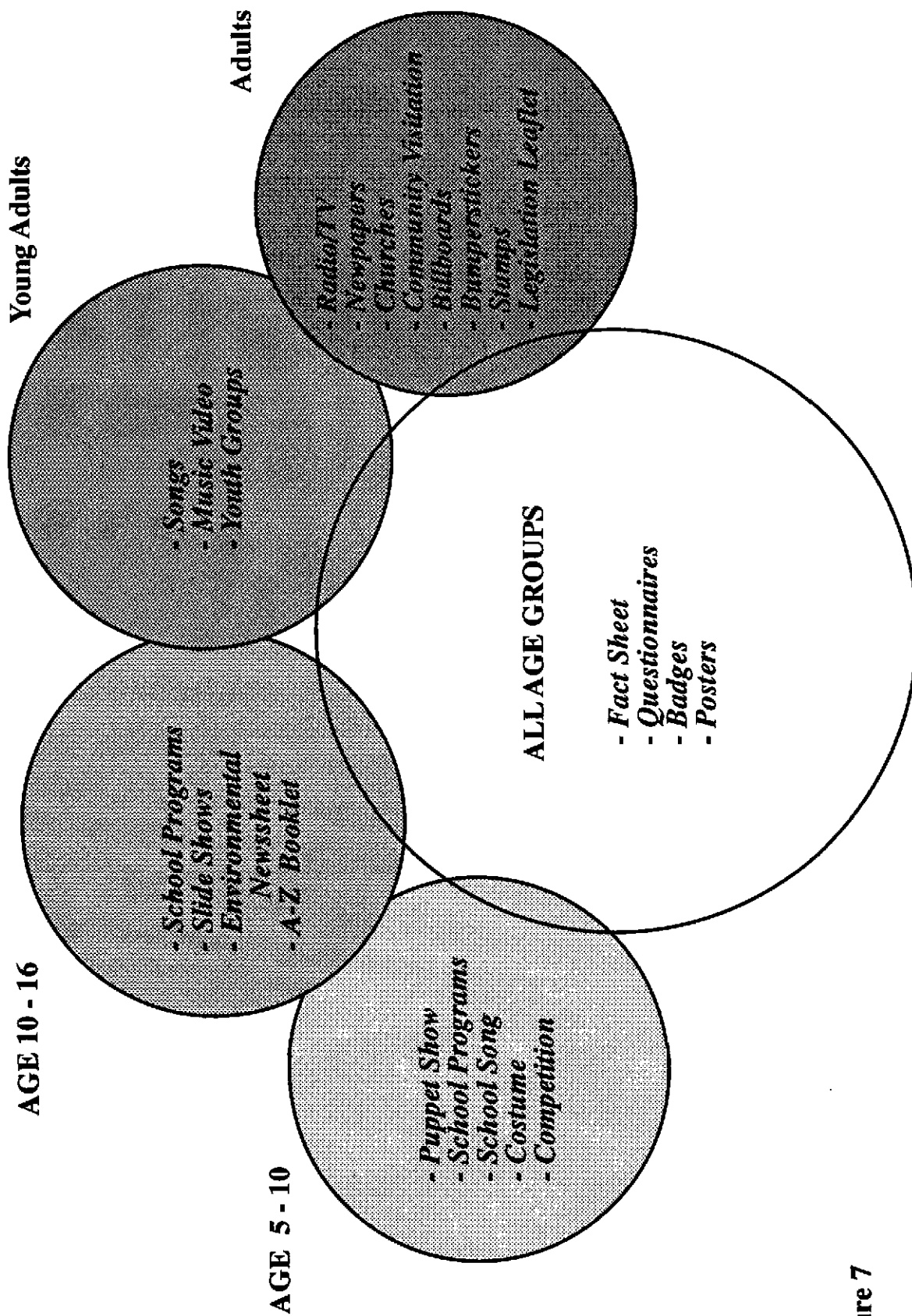
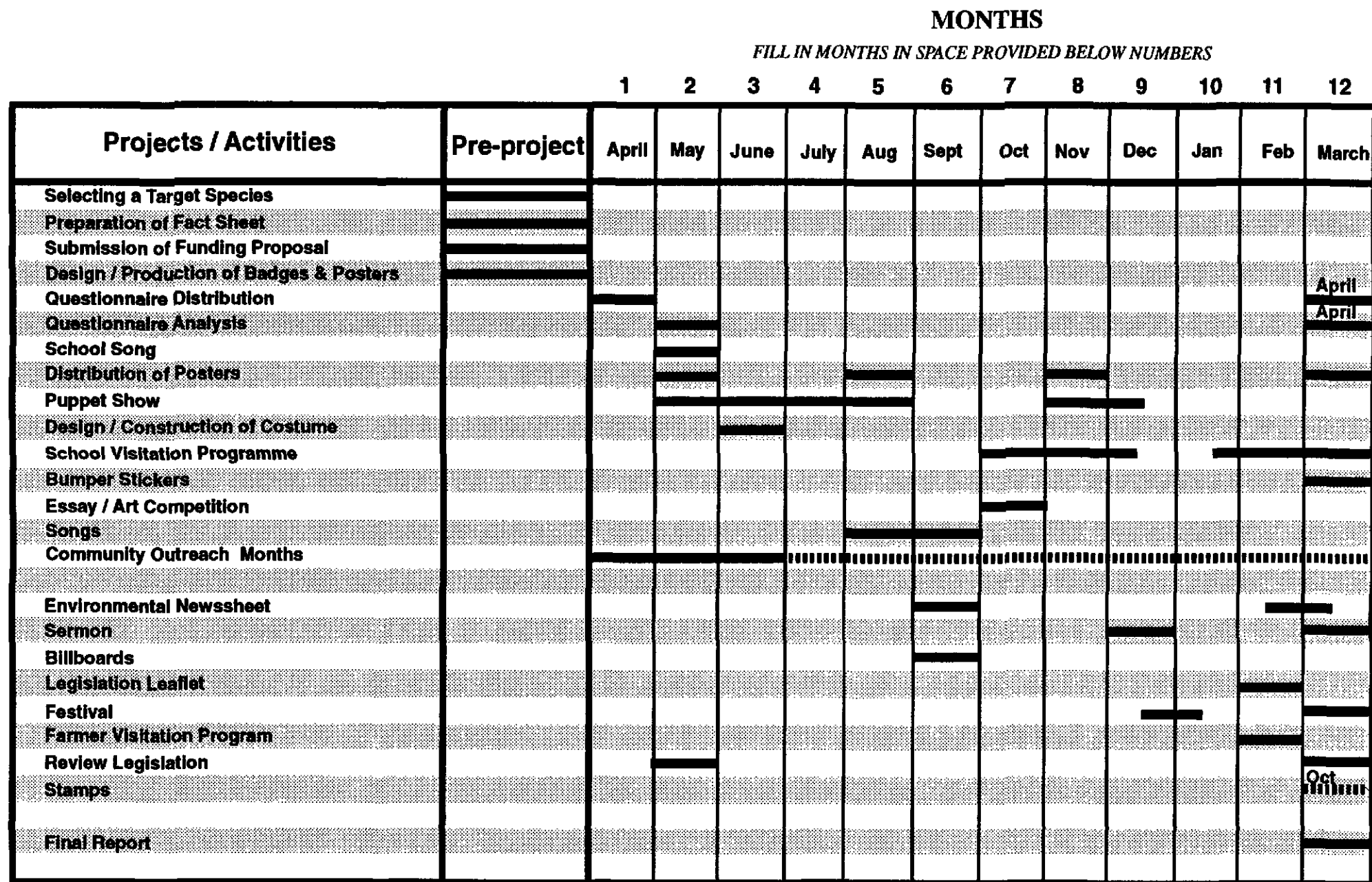


Figure 7

FIGURE 8 : Summary of Major Activities by Month



Ms. Rose Willock MBE (see Appendix 3 for CV) was selected to serve as project counterpart and the project commenced on April 15th 1990.

Rose's first job was to establish a work plan based around the following 26 tasks that are described in the manual.

- 1: Design & production of posters and badges *
- 2: Preparation of a fact sheet
- 3: Distribution of pre-project questionnaire
- 4: Analysis of pre-project questionnaire
- 5: Production of a school song
- 6: Distribution of Posters
- 7: Production of a puppet show
- 8: Design & construction of an oriole costume
- 9: School visitation programme (Primary & Secondary)
- 10: Bumper Stickers
- 11: Essay/Art Competition
- 12: Songs
- 13: Community outreach
- 14: Oriole population census
- 15: Environmental News sheet
- 16: Sermon
- 17: Billboards
- 18: Legislation leaflet
- 19: Music Video
- 20: Farmer visitation programme
- 21: Review of legislation
- 22: Stamps
- 23: A—Z of Bird life
- 24: Post-project Questionnaire distribution
- 25: Post-project questionnaire analysis
- 26: Final report & recommendations

* A pre-project task coordinated by RARE *Center*.

See Figure 8.

8.0 Taking on the Tasks

8.1: Production of Posters and Badges

The production of posters and badges were coordinated by RARE *Center* as part of the pre-project activities and were funded under the grant detailed in Section 7.0. Basic designs were prepared by Butler following standard RARE *Center* format and as have been employed previously on the islands of Saint Vincent, Dominica and Saint Lucia and subsequently on the Cayman Islands and the Bahamas. The comments and suggestions of Montserrat's Environmental Education Committee, Franklin Margetson and Rose Willock were taken into consideration and these individuals and organisations made final decisions as to slogans and textual content.

Artwork was provided gratis by US artist Tracy Pederson and production was carried out by Deans Graphics of Mt. Holly, New Jersey (Posters) and Impax Marketing of Philadelphia, Pennsylvania (Badges).

8.1.1 Posters

Posters proved ideal for initially drawing people's attention to the Montserrat Oriole and its plight. Their design not only highlighted the bird itself—shown in full colour with both the male and female of the species illustrated—but also highlighted its uniqueness, the threats with which it is faced and its designation as the island's National Bird.

The poster's title (printed in green to represent the "Emerald Isle") reads "Meet Me in Montserrat" striving to identify the bird with its island home. This theme is reinforced in the opening paragraph which confirms its endemic status, its rarity and the fact that the species is under threat of extinction *from the effects of* habitat destruction and the passage of Hurricane Hugo.

The State seal flanks the opening words in attempt to link the lesser known national symbol with one more familiar and to forge a sense of national pride in the bird.

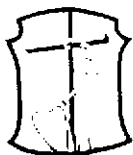
The body of the text is necessarily brief, printed in black it emphasizes what the people can do to help their National Bird, namely:

- Display the poster prominently
- Join the Montserrat National Trust
- Support measures to protect Montserratian wildlife
- Report illegal cutting of forests

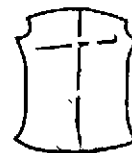
The poster concludes with the summary statement (printed in green) "To protect your National Bird is to love our country."

Sponsoring and collaborating agencies are acknowledged with their logos.

MEET ME IN MONTSERRAT



Found only here, the Tannia Bird or Montserrat Oriole is fighting for its survival. Habitat destruction and Hurricane Hugo have reduced its numbers, and today our National Bird flickers on the edge of extinction.



IT DESPERATELY NEEDS YOUR HELP!



Montserrat Oriole
Icterus oberi
OUR NATIONAL BIRD

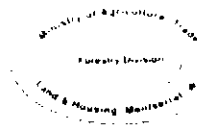
PLEASE:

Display this poster prominently.
Join the Montserrat National Trust.
Support measures to protect Montserranian wildlife.
Report illegal cutting of forests (tel. 2075 or 3086).

TO PROTECT YOUR NATIONAL BIRD IS TO LOVE OUR COUNTRY

Poster courtesy of
Tracy D. Pedersen

UTHO IN U.S.A.



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A total of one thousand posters were provided to the National Trust. (See Figure 9 and Section 8.3).

8.1.2 Badges

Badges featuring the black and yellow male Montserrat Oriole and the wording "All My World—Montserrat" in red and green helped to advertise the target species and convey the message that Montserrat was the bird's home as well.

RARE *Center* provided the Trust with 2,500 badges, two thousand of which were used in the school visitation component of the project (see Sections 8.9) the balance were given to respondents completing the pre and post project questionnaire survey. (see Sections 8.3 & 8.24).

8.2: Fact Sheet

Utilising information gleaned from a review of Arendt's 1984 study together with species descriptions from the early work of Lawrence, and post hurricane population data a two page fact sheet was prepared and reproduced.

This sheet (see Appendix 4) included information on the Montserrat Oriole's current distribution, behaviour and favoured habitat. It identified threats to the species survival, summarised laws protecting it and pleaded for public support for the Trust's efforts to protect it.

This sheet has been given to media, artists participating in writing songs, and to schools, providing recipients with a factual summary of the oriole.

8.3: The Pre-project Questionnaire

Prior to the conservation education programme described in this report little effort had been made to educate Montserratians about the oriole. This species was declared the island's National Bird in 1982 and shortly thereafter several news releases were issued and a small pamphlet produced by the National Trust on Montserratian Wildlife.

This was followed in 1983 with a booklet on the "Birds of Montserrat" produced by Allan Siegal who served as a US Peace Corps attached to the Montserrat National Trust. This booklet was provided to schools and sold through the Trust's office in Plymouth and the small museum located at Richmond Hill.

This booklet was augmented in 1989 by the distribution of the CCA "Birds of Our Island" posters—a four poster series funded by the US Fish & Wildlife Service which depicted, in full colour, some forty species of birds found on Montserrat. These posters included:

- Birds of the Seashore
- Birds of the Roadside
- Birds of the Town & Garden
- Birds of the Swamp

No attempt had been made to gauge the effectiveness of these education initiatives or to ascertain local knowledge of, and attitudes towards, Montserrat's wildlife, the environment in general, or the National Bird in particular.

It was for this reason that one of the first priorities of the project was to conduct a nationwide questionnaire survey. (See Appendix 5).

This questionnaire served:

- 1: To determine levels of knowledge existing within communities island wide, in six principal areas:
 - What is the National Bird?
 - Is it only to be found in Montserrat?
 - How scarce is the National Bird?
 - What is the main reason for the National Bird becoming scarce?
 - What is the penalty for hunting/shooting the National Bird?
 - What is the penalty for illegally clearing lands in the forest reserve?

To enable the Montserrat National Trust to resurvey at the end of the project and to ascertain changes in attitude over its duration the following was also asked:

- Is our National Bird a good choice?
 - Is it important (and why) for the government to spend time and money protecting the National Bird?
2. To determine the percentage of the population that listen to the radio and/or read the newspaper—in order to ascertain the type and format of educational materials to be developed. Information concerning favourite programmes was solicited in order that these could be targetted in the educational component of the project.
 3. To involve Trust members and the general public in the conservation programme at the outset of the project by giving them questionnaires to distribute among the communities within which they live.

4. To begin developing an interest in the National Bird.

A total of 250 questionnaire forms were distributed, and after their completion the respondents were informed by the enumerators the correct answers and the status and plight of their National Bird. In addition each respondent was given a colourful badge as described earlier. (8.1.2).

8.3.1 The Questionnaire

The basic questionnaire format was taken from the manual provided by RARE Center and edited/amended by Franklin Margetson and Rose Willock. The questionnaire was deliberately kept short because with 15 % illiteracy on Montserrat, the respondents would in some cases need to have the questions read to them and their responses taken note of by the enumerator—a lengthy process.

The questionnaire was composed of eight questions:

Question 1: What is the National Bird of Montserrat?

This was an open question with a blank space provided for the respondent's answer. During analysis responses were collated under five categories:

- Oriole/Tannia Bird
- Pigeon/Dove
- Egret
- Other
- Don't Know

The correct response being Oriole/Tannia bird.

Question 2: Is it only to be found on Montserrat?

Three options were given as a possible response:

- Yes
- No
- Don't Know

For those respondents answering "No", a space was left for them to state where else they believed it to be found.

The correct answer is Yes.

Question 3. How scarce is our National Bird?

Six options were given as a possible response:

- Less than 100
- 101—250
- 251—500
- 501—1500
- 1501 +
- Don't Know

The correct answer being 501—1500

Question 4. What is the main reason for the National Bird becoming scarce?

This was an open question with a blank space provided for the respondent's answer. During analysis responses were collated under six categories:

- Hunting/shooting
- Capture/pet trade
- Deforestation
- Hurricanes/natural disasters
- Other
- Don't Know

The correct answer for the long term decline in oriole populations is deforestation and habitat destruction although, as we noted in Section 5.0, Hurricane Hugo has played its part too.

Question 5. Do you think the National Bird is a good choice?

Three options were given as a possible response:

- Yes
- No
- Don't Know

There is no "correct" answer.

Question 6. What is the fine for hunting/shooting the National Bird?

Six options were given as a possible response:

- EC \$ 24
- EC \$ 48
- EC \$ 250
- EC \$ 2500
- EC \$ 5000
- Don't Know

The correct answer is \$ 500.

The substantive act protecting wild birds notes the penalty for protecting species included in Schedule A to be \$24. The most recent legislative amendment (#6 of 1987) makes no reference to penalties and early discussions with representatives of the Trust, Agriculture and Forestry noted that the fine remained \$24.

Subsequent to the distribution of the pre-project questionnaire, and after a thorough review of all pertinent acts, ordinances and SRO's it was found that a little known amendment had in fact increased penalties from \$24—\$500. This option was thus included in the post-project questionnaire.

Question 7. What is the fine for clearing forest reserve lands?

Four options were given as a possible response:

- EC \$ 48
- EC \$ 240
- EC \$ 720
- Don't Know

The correct answer is \$ 240

Question 8. Protecting our National Bird is going to cost money—money that could be used for other things. Do you think that it is important that our government spend time and money on our National Bird?

Four options were given as a possible response:

- | | |
|------------------|--------------|
| • Not important | • Important |
| • Very Important | • Don't Know |

There is no "correct" answer. However space was provided to elaborate as to "why" a particular response was given. These responses were categorised for analysis into:

- National symbol/national pride
- Uniqueness/rarity
- Culture/tourism value
- Future generations
- Other

In those instances where "Not Important" was checked, the reasons given were typically that the government should allocate money toward rebuilding after the hurricane, the physical development of Montserrat, improvements in health care or education, and reducing unemployment.

In addition to the above questions, respondents were asked to provide the following bio-data and other personal details. It should be noted here that the questionnaires were anonymous.

1. What is your age?

For the purposes of analysis, the responses were collated in the following groupings:

1—11 years	12—16	17—25	26—35
36—45	46—55	56—65	65+

2. What is your job?

For the purposes of analysis, responses were collated into the following groupings:

- Government employee (which included teachers, police, nurses and other civil servants on a monthly salary)
- Farmer/labourer (which included government daily paid labour, farmers, fishermen and other “unskilled” workers)
- Private sector (which included store keepers, bus and taxi drivers, hotel and shop employees, clerks etc)
- Unemployed
- Housewife
- Students
- Other

3. Do you listen to the radio?

Three options were given:

- Every day
- Occasionally
- Never

In addition the respondents were asked to identify their favourite programmes. For the purposes of analysis, responses were placed in the following groupings:

- News
- Phone-In programmes
- Music
- Sport
- Government Information Service
- Religious programmes
- Other

4. Do you read the local newspaper?

Two options were given:

- Yes
- No

8.3.2. Questionnaire Distribution

During the pre-project phase, two hundred and fifty questionnaires were distributed. Prior to distribution a workshop was held for those enumerators involved in this exercise. It was emphasised:

1. That the enumerators should take their questionnaires back to the communities within which they resided and that they should distribute them randomly to a broad cross-section of the people living within the various settlements there.
2. That if the respondent, was illiterate, the enumerator should slowly read each question and record the respondent's answers and that they should not prompt answers or indicate any bias.
3. That under no circumstances should the enumerators forge responses. It being better they return five completed questionnaires that were authentic than ten fakes.
4. That the enumerators should politely introduce themselves prior to questioning and that if an individual showed a strong resistance to being interviewed that the enumerator not force them into doing so.
5. That the questionnaires were anonymous and were numbered only for collation purposes and to monitor return rates.
6. That once all questions had been answered by a respondent that he/she be given an oriole badge and informed as to the correct answers. A sheet listing the questionnaire format and correct responses was provided to each of the enumerators who were given 10 days to complete and return the questionnaires allocated to them.

Two hundred and fifty questionnaires were distributed (representing a sample size of approximately 2%) and the island was divided into 13 zones based roughly on divisions developed for usage by the "Best Village Competition."

A total of 29 interviewers were used and questionnaire distribution commenced on April 20th 1990.

Table 6 illustrates pre-project questionnaire distribution.

Of the two hundred and fifty forms distributed, two hundred and forty-three were returned by the scheduled date (April 30th) representing a return rate of 97.2 %.

TABLE: 6. Pre-project questionnaire distribution.

<i>Zone</i>	<i>Communities</i>	<i># Distributed</i>	<i># Returned</i>	<i>% of Total Returned</i>
1	Parsons, Jubilee, Fort Barrington Webbs, Boston, Dagenham, Plymouth	50	50	20.57
2	Kinsale, Trials, Gingoos	20	20	8.23
3	Cork Hill, Weekes, Delvins, Belham	20	20	8.23
4	Salem, Hope, Frith, Flemmings	20	20	8.23
5	Woodlands, Old Towne, Foxes Bay	20	17	7.00
6	Cudjoe Head	10	10	4.11
7	Blakes, Dick Hill, Gerald's, St. Johns	20	20	8.23
8	St. George's Hill	10	10	4.11
9	Molyneaux, Dyers, Lees	20	17	7.00
10	Windy Hill, Streathams	10	10	4.11
11	Harris' Garden Hill, Lookout, Bridgefield	20	20	8.23
12	Trants, Farms, Tuitts, Long Ground Bramble's Village	20	19	7.81
13	St. Patrick's	10	10	4.11
		250	243	100.00

TABLE 7: Pre-project Questionnaire Results by Community. Refer to TABLE 6.

QUESTION	% RESPONSE	1	2	3	4	5	6	7	8	9	10	11	12	13	Island Wide
What is your National Bird	1) Oriole	58	55	40	15	41.2	60	20	60	17.6	100	85	36.8	30	47.58
	2) Pigeon/Dove	2	10	0	0	0	10	0	0	17.6	0	0	10.5	20	5.39
	3) Egret	4	0	0	0	5.9	0	0	0	5.8	0	0	0	0	1.20
	4 Other	6	10	0	5	17.6	0	0	0	5.8	0	0	5.3	40	6.90
	5) Don' know	30	25	60	80	35.3	30	80	40	53.2	0	15	47.4	10	38.90
Is it endemic	Yes	58	60	45	35	52.9	60	15	40	35.3	60	70	52.6	40	47.97
	No	14	15	20	5	29.4	20	30	50	23.5	20	15	21.1	40	23.30
	Don't know	28	25	35	60	17.6	20	55	10	41.2	20	15	26.3	20	28.70
How scarce	10	36	57.9	20	10	11.8	0	25	40	29.4	80	52.6	21.1	0	29.52
	101-250	20	5.3	45	35	29.4	40	30	30	5.8	0	31.5	15.7	50	25.97
	251-500	14	10.5	20	20	17.6	60	5	10	23.5	10	15.8	21.1	10	18.26
	501-1,500	16	5.3	5	5	17.6	0	15	10	17.6	0	0	31.6	20	11.00
	1,500+	4	10.5	0	0	5.9	0	0	0	5.9	0	0	5.3	20	3.96
	Don't know	10	10.5	10	30	17.6	0	25	10	17.6	10	0	5.3	0	11.23
Reasons for Decline	Hunting	10	20	20	0	0	10	30	0	0	0	10	15.8	30	11.21
	Capture/Trade	2	0	0	0	0	0	0	0	0	0	0	0	0	0.15
	Deforestation	6	15	15	0	5.9	0	5	10	5.8	0	20	10.5	20	8.70
	Hurricanes	36	30	35	40	17.6	10	5	30	35.3	50	35	31.6	30	29.65
	Other	12	10	5	10	29.4	10	10	40	17.6	10	25	0	10	14.53
	Don't Know	34	25	25	50	47.1	70	50	20	41.2	40	10	42.1	10	35.72
Good choice for National Bird	Yes	86.2	100	100	66.6	85.7	83.3	50	83.3	33.3	100	100	85.7	66.6	80.05
	No	3.4	0	0	0	0	0	0	16.7	0	0	0	0	33.3	4.10
	Don't Know	10.4	0	0	33.3	14.3	16.7	50	0	66.6	0	0	14.3	0	15.81

TABLE 7: Pre-project Questionnaire Results by Community. Refer to TABLE 6.

QUESTION	% RESPONSE	1	2	3	4	5	6	7	8	9	10	11	12	13	Island Wide
Fine Protecting National Bird	1) \$24.00	18.0	0.0	10.0	10.0	5.9	0.0	0.0	0.0	6.3	10.0	0.0	21.1	22.2	7.96
	2) \$48.00	6.0	10.0	10.0	10.0	5.9	0.0	10.0	10.0	6.3	20.0	10.0	10.5	11.1	9.21
	3) \$250.00	32.0	35.0	45.0	25.0	17.6	50.0	25.0	40.0	37.4	30.0	40.0	31.6	33.3	33.99
	4) 2,500.00	4.0	5.0	5.0	5.0	0.0	0.0	15.0	20.0	6.3	10.0	0.0	10.5	11.1	7.06
	5) \$5,000.00	12.0	20.0	0.0	15.0	17.6	30.0	10.0	10.0	6.3	0.0	0.0	5.3	0.0	9.70
	6) Don't know	28.0	30.0	30.0	35.0	52.9	20.0	40.0	20.0	37.4	30.0	50.0	21.1	22.2	32.04
Fine for clearing forest	1) \$48.00	14.0	10.5	15.0	10.0	5.9	0.0	10.0	0.0	6.3	10.0	0.0	21.1	10.0	8.67
	2) \$240.00	40.0	10.5	35.0	35.0	29.4	0.0	25.0	30.0	31.3	40.0	20.0	42.1	40.0	29.10
	3) \$720.00	12.0	31.6	15.0	15.0	17.6	30.0	20.0	40.0	12.5	0.0	15.0	5.3	30.0	18.76
	4) Don't know	34.0	47.4	40.0	40.0	47.1	70.0	45.0	30.0	50.0	50.0	65.0	31.6	20.0	43.46
Importance of National Bird	1) Not important	10.0	30.0	10.0	10.0	5.9	10.0	10.0	20.0	0.0	0.0	20.0	21.1	0.0	11.30
	2) Important	48.0	35.0	45.0	35.0	35.3	40.0	30.0	60.0	53.0	30.0	30.0	42.1	50.0	39.81
	3) Very important	30.0	35.0	45.0	25.0	47.1	30.0	35.0	10.0	29.4	70.0	45.0	5.3	40.0	36.39
	4) Don't know	12.0	0.0	0.0	30.0	11.8	20.0	25.0	10.0	17.6	0.0	5.0	31.6	10.0	12.50
Why important	1) National Pride/ Bird	33.3	25.0	40.0	25.0	41.7	0.0	30.7	30.0	25.0	66.7	58.80	23.1	33.3	33.27
	2) Rare/Unique	15.4	15.0	33.3	16.7	25.0	0.0	23.1	0.0	16.7	0.0	23.50	23.1	0.0	14.75
	3) Tourism/Culture	12.8	15.0	13.4	16.7	0.0	20.0	7.7	20.0	25.0	22.2	5.88	0.0	33.3	14.76
	4) Future Generation	10.3	5.0	0.0	0.0	0.0	60.0	7.7	0.0	8.3	0.0	0.0	0.0	0.0	7.02
	5) Other	28.2	40.0	13.3	41.7	33.3	20.0	30.7	40.0	25.0	0.0	11.76	53.8	33.3	28.54
	6) Don't know	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	11.1	0.0	0.0	0.0	1.62
Age	1) 1-11	4.0	15.0	5.0	12.5	0.0	0.0	15.0	0.0	0.0	0.0	5.0	10.5	22.2	6.86
	2) 12-26	10.0	5.0	5.0	6.3	20.0	11.1	10.0	0.0	12.5	20.0	20.0	10.5	33.3	12.59
	3) 17-25	16.0	15.0	35.0	37.5	33.3	44.4	25.0	50.0	18.8	0.0	45.0	42.1	11.1	28.70
	4) 26-35	22.0	30.0	15.0	31.2	13.3	22.2	20.0	50.0	31.1	40.0	20.0	10.5	0.0	23.48
	5) 36-45	10.0	0.0	0.0	6.3	0.0	11.1	0.0	0.0	12.5	0.0	5.0	5.3	11.1	4.71
	6) 46-55	18.0	15.0	10.0	0.0	6.7	11.1	5.0	0.0	6.3	40.0	5.0	5.3	11.1	10.26
	7) 56-65	6.0	5.0	20.0	0.0	6.7	0.0	10.0	0.0	6.3	0.0	0.0	10.5	11.1	5.81
	8) 66+	14.0	15.0	10.0	6.3	20.0	0.0	15.0	0.0	12.5	0.0	0.0	5.3	0.0	7.54

TABLE 7: Pre-project Questionnaire Results by Community. Refer to TABLE 6.

QUESTION	RESPONSE	1	2	3	4	5	6	7	8	9	10	11	12	13	Island Wide
Employment	1) Government	36.0	26.3	25.0	18.75	13.3	55.5	25.0	0.0	31.3	22.2	25.0	15.8	20.0	24.16
	2) Farmer/ Labourer	8.0	5.3	5.0	0.00	6.7	0.0	10.0	10.0	12.4	0.0	0.0	10.5	0.0	5.22
	3) Private	22.0	5.3	30.0	12.50	20.0	0.0	20.0	40.0	6.3	44.4	35.0	26.3	0.0	20.13
	4) Unemployed	4.0	0.0	15.0	12.50	0.0	11.1	0.0	30.0	12.4	0.0	0.0	5.3	0.0	6.94
	5) Housewife	12.0	10.5	0.0	6.25	26.7	0.0	5.0	0.0	12.5	0.0	0.0	10.5	20.0	7.95
	6) Student	16.0	31.6	20.0	25.00	26.7	33.3	30.0	10.0	18.8	33.3	35.0	21.1	50.0	26.98
	7) Other	2.0	21.1	5.0	25.00	6.7	0.0	10.0	10.0	6.3	0.0	5.0	10.5	10.0	8.58
Listen to the radio	1) Every day	60.4	60.0	65.0	43.7	40.0	77.7	26.3	30.0	62.5	30.0	50.0	63.2	60.0	51.44
	2) Occasionally	37.5	40.0	35.0	56.3	46.7	22.2	73.7	60.0	37.5	70.0	45.0	36.8	40.0	46.20
	3) Never	2.1	0.0	0.0	0.0	13.3	0.0	0.0	10.0	0.0	0.0	5.0	0.0	0.0	2.33
Favourite Programme	1) News	32.4	31.3	29.4	42.9	42.9	0.0	30.7	85.7	23.0	28.6	50.0	25.0	0.0	32.45
	2) Music	32.3	43.8	41.2	14.3	14.3	75.0	30.7	0.0	46.1	42.9	50.0	50.0	30.0	36.20
	3) Sports	2.9	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.70
	4) GIS/ Community	17.6	12.5	11.8	28.6	0.0	0.0	7.7	0.0	0.0	14.3	0.0	0.0	30.0	9.42
	5) Religious	5.9	6.2	11.8	14.3	26.8	0.0	30.7	0.0	23.0	0.0	0.0	25.0	20.0	12.73
	6) Other	8.8	6.2	0.0	0.0	14.3	25.0	0.0	14.3	7.7	14.3	0.0	0.0	20.0	8.50
Newspaper Readership	1) Yes	91.5	90.0	85.0	93.7	93.3	88.8	68.4	90.0	81.3	100.0	90.0	68.4	100.0	87.40
	2) No	4.5	10.0	15.0	6.3	6.7	11.1	31.6	10.0	18.7	0.0	10.0	31.6	0.0	11.96

8.4: Analysis of Pre-project Questionnaire

Questionnaire analysis followed procedures laid down in RARE Center's training manual and results were coded first by zone (community), and then consolidated to give an island wide average.

A lack of computer software meant that this analysis, which was coordinated by Rose Willock, with assistance from Trust member Sarita Francis, had to be carried out long hand. The results were however tabulated in a coded format and have been held on file such that they can easily be inputted into a computer and subjected to additional analysis should such facilities become available at a later date.

Table 7 summarises questionnaire results by community. These were then consolidated to give the following island wide results:

8.4.1. Results of Pre-project Questionnaire (April 1990)

ISLAND WIDE DATA

Question 1: What is the National Bird of Montserrat?

Response:	Oriole/Tannia Bird	Pigeon/Dove	Egret	Other	?
% :	47.58	5.39	1.2	6.9	38.9

n = 243

Less than half of the island's population knows Montserrat's National Bird to be the oriole or Tannia Bird, although there is some variation depending upon the area sampled with a low of 15% in Salem and a high of 100 % at Windy Hill—Streathams. In the case of the latter the high percentage may be attributable to the sampling carried out by the enumerator who unlike all the other interviewers asked mainly students and civil servants—the two groups perhaps most likely to give the correct response.

If this zone is discarded the average correct response rate falls to 43.2 %

In excess of one-third of respondents replied "Don't Know." Species recorded under the category of "other" included Hummingbird, Killy Hawk (kestrel) and Blackbird (grackle).

Question 2: Is it only found in Montserrat?

Response:	Yes	No	Don't Know
%	47.97	23.30	28.70

n = 243

Once again less than half knew the oriole to be endemic to Montserrat and almost one-third responded "Don't know." Over 20% believed the bird to be found elsewhere with respondents quoting Antigua, USA, Saint Lucia, and England.

Included amongst those checking "No" were many who had correctly checked "oriole" in question 1.

Question 3: How scarce is the National Bird?

Response:	> 100	101-250	251-500	501-1,500	1,501+	?
%	29.52	25.97	18.26	11.00	3.96	11.23

n = 241

As can be seen more than 50% of respondents believed there to be less than 250 birds remaining, a reflection perhaps of the general paucity of bird life following Hurricane Hugo and the assumption that the birds have "all gone" as one respondent wrote. Only 11% correctly stated or guessed 501—1,500 in line with Arendts' post-hurricane census results.

Question 4: What is the main reason for the National Bird becoming scarce?

Response:					
Hunting	Capture	Deforestation	Hurricane	Other	?
11.21	0.15	8.70	29.65	14.53	35.72

n = 243

More than one-third of the respondents did not know the reason for the decline of the national bird. Of those that gave a specific answer almost one-third attributed the decline to the passage of Hurricane Hugo which undoubtedly had a serious effect.

In recent years, however the cumulative effects of deforestation and habitat alteration have probably had a more serious effect yet less than 10% of respondents realised this.

It should be noted that many of the 5% who checked "Dove" as the National Bird in question 1, checked "hunting" as the cause of decline. Of those who checked "other," responses included "acid rain," "government apathy", etc.

Question 5: Do you think the National Bird is a good choice?

(Note: Only those respondents who checked "oriole" in question 1 were analysed here.)

Response:	Yes	No	Don't Know
%	80.05	4.10	15.81

n = 116

There was almost universal island wide approval for the oriole being the National Bird with less than 5% believing it to be a poor choice.

Question 6: What is the fine for hunting the National Bird?

Response:	\$24	\$48	\$250	\$2,500	\$5,000	?
%	7.96	9.21	33.99	7.06	9.70	32.04

n = 241

One-third stated that they did not know the penalty. See notation in Question 6 in section 8.3.1.

Question 7: What is the fine for clearing forest reserve?

Response:	\$48	\$240	\$720	?
%	8.67	29.10	18.76	43.46

n = 241

Almost 50% of respondents did not know the correct penalty for illegally clearing forest reserve lands (\$240), with a considerable proportion believing the fine to be greater than it actually is.

Question 8: Is it important to protect the National Bird?

Response	Not important	Important	Very important	?
%	11.30	39.81	36.39	12.50

n = 243

There was an overwhelming support for the protection of the island's National Bird with 75% believing it to be important or very important to protect it. This augured well for the project.

When asked why? Respondents gave the following reasons:

Response	National pride/symbol	Rare/Unique	Tourism/Culture	Future generations	Other
%	33.27	14.75	14.76	7.02	28.54

BIO - DATA

The questionnaire surveyed a broad section of the community, both in age and employment categories. The results broadly reflected the "real" situation where 27% of the population are aged 12—25; 20% are in government service and 15% reside in Plymouth and its environs.

1. Age:

Response:	1—11	12—16	17—25	26—35	36—45	46—55	56—65	65+
%	6.86	12.59	28.70	23.48	4.71	10.26	5.8	17.5

2. Employment category:

Response:

Govt.	Farmer/labourer	Private	Unemployed	Housewife	Student
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24.16	5.22	20.13	6.94	7.95	26.98
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In addition 8.58% stated "other."

Other biographical information obtained gave an insight into media use. For example:

Question: Do you listen to the radio?

Response: Every day Occasionally Never

%	51.44	46.20	2.33
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When asked about programme preference, the following results were obtained:

Response: News Music Sports GIS Religious Other

%	32.45	36.20	0.7	9.42	12.73	8.50
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Question: Do you read the newspaper?

Response: Yes No

%	87.74	11.96
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This clearly indicates the important role the newspaper has to play, and even if each individual does not actually purchase a copy, the paper is passed from hand to hand and information contained will reach a considerable proportion of the population.

Naturally a questionnaire survey such as this is only as good as the enumerators used. No evidence was found of cheating or forging answers and the responses should give a representative indication of pre-project levels of awareness and knowledge.

For post-project questionnaire responses see Section 9.1.

8.5: Production of a School Song

Teaching a song about the Montserrat Oriole proved to be one of the most successful components of Montserrat's Conservation Education Programme. Arising out of work carried out in previous island's Canadian musician Ted Jordan kindly donated a catchy ballad entitled "Oriole of the Emerald Isle" (the words to which are given below).

Oriole of the Emerald Isle

by Ted Jordan 1990

Chorus: Monty lives in Montserrat
Far out in the forest wild
National Bird of our Country
Oriole of the Emerald Isle
Oriole of the Emerald Isle

Verse 1: He wears a suit of black and yellow
Used to be a happy fellow
Hugo brought him misery
The same as you and me

Chorus: _____

Verse 2: He weaves his nest all 'round & 'round
And like a basket, hangs it down
'neath the wild banana tree
He used to live carefree

Chorus: _____

Verse 3: Let's make him happy once again
Let's make him know that he has friends
We'll save his forest habitat
Right here in Montserrat

Chorus: _____

Rose invited local musicians to a meeting and provided them with complimentary fact sheets, posters and badges and the invitation to sign on to the programme and assist in getting our conservation message across to their "fans."

As a direct result of this meeting local musician/Evangelist Clover Lea produced a second and more applicable school song. This was subsequently recorded free of charge by Flamboyant Studios and has been taught to Primary School children across the island.

This tune, entitled the "Montserrat Oriole Song" is also regularly aired on Radio ZJB and has proved very popular being requested by children and adults alike.

The words to Clover's "Montserrat Oriole Song" are as follows:

When God created man he put the animals into the plan
He say "look after dem good boy, and dey will look after you"
Now theres a bird in Montserrat
The mountains are his habitat
But Hugo made a mess of dat
And now dey's jus a few

Chorus

Oh — the Oriole — Oh — the Oriole
Yellow, gold and black as coal, The Montserrat Oriole

The man's a black an yellow bird
Woman is yellow-green
And if we nar look after dem
Dey never more be seen

For Montserrat's the only land
These Orioles are found
And if we nar look after dem
Dey will not be around

Chorus

They live in wild banana trees
In places cool and green
And weave a pretty basket nest
To hatch their babies in

They have a right to live de life
They were created for!
And if we will look after them
Their future we ensure

Chorus

"Tannia Bird" is another name
For the oriole, he is just the same
No matter how you call his name
de bird is ours alone

He eats beetles and butterflies
And helps keep our gardens nice
So if we would be very nice
We will preserve his home

Chorus

When God created man he put the animals into the plan
He say "look after dem good boy, and dey will look after you"
Our Country has one all its own
The oriole, this is his home
He does not live any place else on earth
But here with you!

Oh — the Oriole — Oh — the Oriole
Yellow, gold and black as coal, The Montserrat Oriole

© Clover Lea. 1990

As can be seen this tune skillfully includes many of the facts given in the fact sheet such as: commentary on the colouring of the sexes, the habitat within which the species lives, its diet and nesting habits as well as its plight and uniqueness. By singing the tune over and over, and hearing its message reinforced on the radio, the information is indelibly imprinted into the child's awareness in a fun and enjoyable format.

Song sheets were given to schools island wide, and Clover's tune has been used when discussing other aspects of the environment, music and topical issues.

Prior to Rose's visits cassette copies of the song were given to school principals, thanks to the donation of blank tapes by the following hardware and electrical stores in Montserrat:

W.L. Wall & Co. and BBC Radio & TV.

8.6: Distribution of Posters

Throughout the duration of the project more than 800 copies of the oriole poster—described in Section 8.1.1—were distributed.

These have been displayed island wide in post offices, banks, police stations, churches, clinics, hotels, gas stations, ports of entry, government offices, major shops, restaurants, bars and other locations frequented by the public.

The posters have proved very popular and were often removed from public view and taken into people's homes—not the original intention perhaps, but a reflection of the growing awareness of, and appreciation for, this symbol of national pride.

As a result of this demand for posters by Montserratians at home and abroad, and from tourists wishing to purchase copies as souvenirs, the Trust is now considering commissioning an additional printing with all proceeds going to conservation.

A second set of posters produced by the Caribbean Conservation Association with funding from the US Fish & Wildlife Service complimented RARE *Center's* oriole Posters. The four poster set, entitled "Birds of Our Island" cover more than forty of Montserrat's commoner birds including species living in swamp, scrub, shore-line and garden habitats. These posters have been supplied to schools across the island and also compliment Siegal's "Birds of Montserrat" booklet—see Section 8.23.

8.7: Production of a Puppet Show

"A puppet is an inanimate object moved by a human agency in some kind of theatrical show...In an impersonal theater such as that of a puppet show, where the projection of an actor's personality is lacking, the essential rapport between the player and his audience must be established by other means. The audience must work harder; the spectators must no longer be mere spectators they must bring their sympathetic imagination to bear and project upon the impersonal mask of the player the emotions of the drama.

Spectators at a puppet show will often swear they saw the expression of the puppet change. They saw nothing of the kind; but they were so wrapped up in the passion of the piece that their imaginations lent to the puppets their own fears, laughter and tears."

Encyclopaedia Britannica (15)

Puppets were used in Montserrat's Conservation Education programme to illustrate the problems facing the island's National Bird and to get young children to actively participate in the programme.

In accordance with RARE *Center's* training manual hand or glove puppets were used. These have a hollow cloth body that fits over the manipulator's hand; his/her fingers fit into the head and arms to give them motion and the figure is viewed from waist up having no legs.

The puppets followed design guidelines laid down in the manual and were made by local resident Rosalie Granger. A total of sixteen puppets were made including several depicting Montserratian children, a tourist and male and female orioles.

The puppet frame was donated by local Architect, Alick Inglis and was built by Allen's Furniture. Construction materials including 1/2" PVC piping and cloth was donated by three local stores namely: Astrids (a clothing store), O.R. Kelsick and Sylvia Sejous (general store).

The puppet show was taken in turn to each of the island's nursery, infant and selected primary schools. At each the principal was given a sample script and a fact sheet. Assisted by Rose teachers and children alike participated in the writing of a new story-line, choreographed the production and put on a performance in front of the entire school. Emphasis was placed on the puppets as a learning experience not only for teaching about the oriole but also teaching speaking and presentation skills. The puppets provided a fun new learning experience that proved to be especially popular with the younger children.

Children would each be given turns at puppeteering whilst others assisted in painting backdrop scenery or preparing poems and skits about their National Bird. Some schools included the oriole in their social studies programme and complimented the puppet show by having the children write essays or poems about the bird.

By the conclusion of the project the puppet show had been used in the following schools:

Nursery

Brades, Kinsale, Salem, Lees, St. Patricks, Cloverdale
and St. Georges.

Primary

St. Johns, Bethel, Brades, Kinsale, Salem, Cork Hill, Lees, Seventh Day Adventist, Plymouth Primary and St. Georges.

Below is a sample script, from that prepared by the kids of Bethel school. It is an example of the children's active involvement in these productions:

THE ORIBIRD SHOW CHARACTERS

- | | |
|-----------------|--------------------------------|
| 1. M.C. Oriole | 5. Petite Oriole |
| 2. D.J. Oriole | 6. Madame Oriole |
| 3. 1st Bird | 7. The audience (boys & girls) |
| 4. Daddy Oriole | |

Theme: Know about the oriole, Montserrat's National Bird

M.C. Oriole: Boys and girls of Bethel School, welcome to this first addition of the ORIBIRD show sponsored by the Montserrat National Trust. We have plenty in store for you.

D.J. Oriole: Yes boys and girls. This show is bad! This show is great! This show is dy-no-mite! For today we are featuring a beautiful bird called the oriole, a bird which can only be found here in Montserrat.

M.C. Oriole: You are going to learn about them. You are going to see them in action and you are just going to love them.

D.J. Oriole: So my little angels, just sit back and relax as the show is about to unfold before your very eyes.

Both Speakers: Five, four, three, two, one...Here is the Oribird show!

[Oriole puppet enters]

First Bird: Hello there. Before your very eyes is a species of bird known as the oriole. On this Oribird show we are going to tell you about us, we are going to perform for you. Yes boys and girls we are going to have fun together.

M.C. Oriole: Here's our first bird to talk to you. Oriole bird tell us about yourself.

First Bird: Chirp...chirp...chirp...Let me first say how honoured I feel to be part of this show. I am a proud oriole, indigenous only to this country. You can find me nowhere else. My home is the bamboo forest near Galway's Estate. I live in a beautiful nest built under a heliconia leaf about ten feet above the ground.

D.J. Oriole: Oriole, are you happy?

First Bird: Chirp...chirp...chirp Ha Ha Ha Happy, yes of course I'm happy. I'm young and free and I'm Montserrat's National Bird. I'm an oriole, I belong only to Montserrat. Yes I am Happy chirp...chirp.

M.C. Oriole: Boys and girls give our first bird a clap. Now here's another bird. Lets lend an ear.

Daddy Oriole: Well M.C. Bird I'm Daddy Oriole. I'm the proud father of three oriole boys. As you can see I'm mainly black with golden-yellow streaks in my feathers and on my stomach. My family and I live in the South Soufriere Hills as we prefer to dwell in the mountains.

M.C. Oriole: What do you do during the day Daddy Oriole?

Daddy Oriole: I work. My family loves insects, so I hunt for moths, butterflies, beetles and spiders to feed my family. I'm a very busy bird.

D.J. Oriole: Why did you agree to appear on this show?

Daddy Oriole: Well, I thought this would be a good opportunity to educate the Montserrat public on their National Bird. I feel its time we are given the honour that is due to a National Symbol like us.

D.J. Oriole: Hooray for you Daddy Oriole. Boys and girls lets hear it for Daddy Oriole.

M.C. Oriole: And now children we are going to be entertained by a very beautiful oriole. She is petite and she wears a gorgeous yellowish olive - green dress. She is going to sing a song for us.

Put your hands together for Petite Oriole.

Petite Oriole: Thank you, thank you. You know boys and girls Orioles love to sing. We sing when we are happy and when we are sad. Even when Hurricane Hugo devastated the forest where we live, and destroyed so many of us, we still sang.

My song is entitled "Preserve de Orioles"

De Montserrat Oriole Bird,
Is a rare and special specie;
So go and spread de good word,
Its black and gold and yellowy.
It lives on Heliconia leaves in de mountains,
The forest is important for its survival.
They were killed and knocked badly
About by the hurricane.
But with love and good care we
Could rise from the fall
Preserve de Orioles, preserve de oriole birds

Preserve de Orioles, preserve de oriole birds
There are only about seven hundred and fifty
Eating beetles, butterflies and de spiders
They make Montserrat proud so she must share their beauty
Conserve their habitat and therefore their future

Preserve de Orioles, preserve de oriole birds, Preserve de
Orioles, preserve de oriole birds

Everybody: Preserve de Orioles, preserve de oriole birds

[Petite Oriole bows and leaves]

M.C. Oriole: Wow, What a performance! Let's hear it for Petite Oriole.

D.J. Oriole: Boys and girls let's greet our final guest on this Oribird Show. She is Madam Oriole and shes from the forest at Paradise. Let's give her a warm welcome.

Madam Oriole: Oh thank you very much. I'm very proud to be here today. You've heard of the Orioles, but we are locally called Tannia Birds. We build our nest from vines and strips of palm and shape it like a basket. There are laws to protect us here in Montserrat.

M.C. Oriole: Madam Oriole, do you love Montserrat?

Madam Oriole: What kind of question is that? Of course me love me land!
Listen to this...

[Madam Oriole starts to sing]

Montserrat nice, Montserrat nice...
Montserrat nice and its cool and bright.

D.J. Oriole: So children there you have it. You must do your part to protect your
new friends the Orioles and all the other birds. Don't stone then
when you see them. They are ours alone.

M.C. Oriole: Now let's give all our participants a resounding round of applause.

Both hosts: Saying bye bye until our next show. Bye Everyone

The puppet show was also used in the public library summer programme, in which more than 200 children participated; at the Montserrat Christian council summer programme at St. Peters, St. Georges & Plymouth as well as in the Pentecostal and SDA summer schools. In addition, children from the Red Cross school for special needs gave a presentation under the patronage of His Excellency Governor Taylor.

8.8: Costume Design and Construction

To make the school visitation component of the programme (see section 8.9) more memorable and following guidelines laid down in format 2 of RARE *Center's* training manual, a Montserrat Oriole costume was designed and constructed. Materials were donated by O.R. Kelsick, Sylvia Sejous and Astrids.

Subsequently a second, more elaborate costume was made with assistance from J.R. Farrel's Sewing *Center* and RARE. This costume depicted a male oriole and comprised a black body suit with yellow scalloped feathers on the underside. The head piece was originally a simple hood with beak attachment although this was subsequently upgraded with assistance from St. Lucian costume designer Adrian Augier.

The oriole costume has been used by Rose in the following schools:

Nursery

Brades, Kinsale, Salem, Lees, St. Patricks, Cloverdale & Happy Hearts.

Primary

St. Johns, Bethel, Brades, Kinsale, Plymouth, Salem, St. Georges, Cork Hill, Lees, St. Augustine, St. Christopher and the Seventh Day Adventist.

In these schools the costume was either worn by Rose herself or more usually by one of the teachers or children. The costumed bird was used to present badges and posters to those who participated in the programme.

The costume has also featured in a major Christmas/New Year festival and in the Saint Patrick's Day celebrations—see Section 8.19.

8.9 : School Visitation Programme

The objective of the school visitation programme was to visit all of Montserrat's nursery, primary and secondary schools and to introduce their children to the island's National Bird.

In many instances these visits were concurrent with the puppet show programme described in Section 8.7. In others, a differing approach was adopted—one which highlighted not only the oriole but also some of Montserrat's other fauna as well as the importance of its forest habitat.

Using the 'The Town & Garden Birds' poster produced by the CCA with funding from the US Fish & Wildlife Service, the children were introduced to a selection of commoner species that they may see around their school or home. The kids were asked to name some of them and correct answers or valiant attempts were rewarded with a Montserrat Oriole badge.

Rose presented interesting facts about some of these birds for example that hummingbirds are the only species that can fly backwards, that they have long tongues used to obtain nectar and that they play an important role in flower pollination. These questions served to involve participating children and make the session interactive and not simply a dull talk. It also afforded the kids an opportunity to win a badge which was presented to them by the mannequin oriole.

Emphasis was placed on the fact that Montserrat's birds are really feathered friends and like all friends they help Montserratians out in so many ways. Some, such as the flycatchers, feed on pests and help to keep the latter under control; whilst others like the hawk eat rats, or the cowbird that feeds on ticks.

The children were then told of the laws that protect Montserrat's wildlife and urged not to kill birds with their slingshots (catapults).

Having introduced the children to some of the types of bird with which they are familiar, Rose then proceeded to discuss the oriole, stressing that it is their National Bird and unique to the island. RARE Center's poster provided the kids with a visual of this species and mention was made of its decline and the threats it faces.

This led to the second section of Rose's talk where she described the multiple benefits of the rainforest. It was explained that this habitat is not simply a wild place where birds and animals live but that we too need it as it supplies us with a renewable source of wood for furniture and construction, as well as for firewood and charcoal. It guards our soils and provides us with water for domestic and industrial purposes.

Children were invited to plant a tree in celebration of their birthday and told that they can take a seed such as a mango and put it in a can with some soil, that if they water it regularly it will grow and could be planted out in their garden. As it grows it will provide shade, fruit and a home for their new found feathered friends.

This led to the third section of Rose's presentation—the teaching of Clover Lea's song. See section 8.5.

The words to this song were printed on to sheets of bristol board which were pinned to the school's blackboard. Children were then asked to read the words out loud. The song's first few verses were then played using a cassette recorder and the kids were invited to listen to the music to get its beat. The tape was then rewound and all the children joined Rose in singing the oriole song.

This served as a way of re-enforcing the message given, and was an exciting and memorable conclusion to the visit. Children were encouraged to sing louder by Rose's saying that the last school visited sang louder. Once they got the idea of the words and tune they were asked to clap as well as sing.

These talks concluded by congratulating the kids, thanking the teachers and presenting the principal with some extra posters and badges.

The entire programme typically lasted no longer than 45 minutes and its content varied depending upon the ages of the children. In those instances where the puppet show was an integral part of the programme several visits were made to the same school.

A complete record was kept of the schools visited and numbers of students spoken to. See Table 8.

TABLE: 8. Schools visited during CEC Programme in Montserrat.

Nursery

	<u>#</u> <u>On roll</u>	<u>#</u> <u>Addressed</u>	<u>%</u> <u>Total</u>
Brades	60	60	100%
Kinsale	60	60	100%
Salem	70	70	100%
Lees	36	36	100%
St. Patricks	24	24	100%
Cloverdale	80	80	100%
Happy Hearts			

Infant/Primary

	<u>#</u> <u>On roll</u>	<u>#</u> <u>Addressed</u>	<u>%</u> <u>Total</u>
St. Johns	117	117	100%
Bethel	95	95	100%
Brades	102	102	100%
Kinsale	167	167	100%
Plymouth Infant	124	124	100%
Plymouth Primary	316	264	84%
Salem	116	116	100%
St. Georges	78	78	100%
Cork Hill	156	156	100%
Lees	82	82	100%
St. Augustine	184	+	
St. Christopher	42	*	
SDA	66	66	100%

+ = School presently being rebuilt

* = Data missing

The format adopted for the secondary schools differed from that used in the primary schools. This was for several reasons: Firstly, because older children might have viewed the costumed oriole with humour rather than affection, and secondly, because they were generally more knowledgeable and better able to handle discussions on more complex concepts.

Typically, Rose quizzed the children about the oriole and aspects of the broader environment and then provided supporting information about the bird and its habitat. Copies of the poster were distributed and badges were given on request. Many of the children already knew Clover's song having heard it on the radio.

To avoid clashing with end of term, O level and CXE exams, secondary schools were visited between February and April. Because of the large size of these schools and their fairly rigid syllabus structure, it was not possible to address entire campuses of the Montserrat Secondary School, rather vice principals were asked to select a few students from each class to participate or talks were given to specific groups such as biology or social studies classes.

Once again a complete record was kept of the schools visited and numbers of students spoken to. See table 9.

TABLE: 9. Secondary schools visited during CEC Programme in Montserrat.

Secondary

	# <i>On roll</i>	# <i>Addressed</i>	% <i>Total</i>
SDA Secondary	48	48	100%
Montserrat Sec			
Church Rd	421	45	10%
Dagenham	245	100	41%
Salem	149	100	67%

8.10: Bumper Stickers

Bumper stickers are an ideal way to promote conservation messages and have been used with considerable success in RARE *Center* assisted programmes on Saint Lucia, Saint Vincent and Dominica. Early indications were that the local Toyota dealership would be prepared to assist in the production of these items and Rose held discussions with both management and local graphic artists.

Despite receiving provisional approval this task remains on hold at the time of writing.

The National Trust did however follow through using core funds to develop and print 1000 two-colour stickers. The production of these was coordinated by RARE Center and facilitated by The Eastland Group of Philadelphia, Pennsylvania.

The 12" x 3" sticker carried the poster art work of the male oriole within a circle bearing the words "Save the Montserrat Oriole," the Montserrat National Trust's logo and the slogan

Mad about Montserrat
Our Emerald Isle
Protect Our Environment

These stickers were delivered to Montserrat in mid March and were distributed free to members of the public through the Texaco and N&B gas stations in Plymouth and the Lindsey Gas Station in St. Johns.

Additional stickers were handed out at the Police Station's Traffic Department, the public library and at Government Headquarters. Both Rose and Franklin presented stickers to individual drivers all of whom were asked to display them prominently. In some cases stickers were placed inside vehicles and children placed them on exercise books and school satchels. Others were seen on trash cans, telephone posts and even inside offices and people's homes. Indeed more probably ended up in these "non-traditional" venues than did on the bumpers of the island's cars.

8.11: Competition

To re-enforce the schools programme, which was completed in April 1991, Rose plans an art & essay competition over the summer vacation. This will be directed at the entire school population. Posters, book prizes and a ceramic oriole (from Dutcher's Studio) will form the principal prizes.

In the interim, Alicia Forbes writing in the youth/education section of the October 19th issue of the *Montserrat Reporter*, held a competition featuring aspects of Montserrat's heritage. The following sections focused on the oriole:

1) Write an essay on the Montserrat Oriole.

- a: Include four places where it can be found on the island.
- b: Its local name and what it feeds on.

- c: Where it makes its nest, the time of year its eggs are laid, how many days they take to hatch and describe its nest.
 - d: Before Hugo approximately how many birds were in existence?
- 2) On which other two islands in the Caribbean can you find other oriole species?
- 3) True or False?
- a: Despite being declared the National Bird of Montserrat in 1982 few Montserradians were aware of its existence and plight?
 - b: Today the oriole numbers between 500—750 after the devastation of Hugo?
 - c: Before Hugo the estimated amount was 1,200 birds?
 - d: Its mainly found in the wet forest area?

The winning entries were announced in the October 26th issue of the *Reporter*. E. Cassandra Douglas won with 98% and received a EC\$ 100 gift certificate from Romeo's Wayside Store. Runners up included Keval Desai (87%) and Russelle Meade (84%).

8.12: Songs

To attract a wider audience, and to carry the conservation message out into the community, local musicians and artists were invited to lend support to the programme and to donate their time and talents with the production of songs and poems etc.

During the first month of the project Rose invited over 40 of the island's leading "artists" to a meeting to discuss the Oriole project and to solicit their assistance. About 25 individuals participated including the OECS Calypso King (Hero); Calypsonian, Clyde [Organiser] Weekes; Singer Pat Ryan; singer/song writers David & Clover Lea; puppeteer Mrs. Granger; Artist Paula Dutcher; designer Shirley Osborne; and boutique owner Jadine Glitzenhern.

At this meeting it was explained that the most difficult group to reach are those who have just left school—the young and restless—and who are unfortunately often unemployed. It was emphasised that music and the performing arts had proven to be one of the best methods to reach out to these individuals, especially when the conservation message is packaged in a catchy and popular format.

The objectives of the project were reviewed and copies of conservation songs produced on neighbouring islands played. A number of individuals pledged their support and have subsequently rendered assistance. These included: Jadine

Glitzenhern of Jus' Looking Boutique (oriole T shirts); Montserrat Tapestries (wall hangings); Mr. Maynard (glass painting); and Dutcher's Studios (ceramic orioles). The latter additionally pledged 10% of sale receipts for the oriole project. In addition Rosalie Granger assisted in puppet production as described in Section 9.1.

Musicians also rallied to the cause and as we have seen in Section 8.5 David & Clover Lea produced a school song that was subsequently taught to more than 1,350 children across the Country. This was re-recorded as a gospel version and played over Radio ZJB. Recording studio time was provided gratis by Flamboyant Studios.

Singer Pat Ryan provided a second song which was utilised in radio jingles and as a filler. The lyrics to this being:

The Oriole

They say you are a secret bird
You build your home up high in the mountains
In leaves of heliconia
They say that Hugo cut your numbers
Sent you down below to find shelter
Food and shelter to survive

Oriole, oriole
How I love to hear your early morning call
Oriole, oriole
Let us see you, know you, love you oriole.

© Pat Belonger Ryan 1990

Calypsonian Clyde (Organiser) Weekes provided the music and lyrics for a third song which was also recorded at Flamboyant studios and played on Radio ZJB. The lyrics to this Calypso being:

The Montserrat Oriole

The Montserrat Oriole is the National Bird
Its a gift of Nature
We all should be proud
We should Cherish it, don't let it die
Keep the birds alive
Save the wildlife to live on forever

Chorus:

Save the oriole
Montserrat's Oriole
It's a very rare species
Found no where else in this world
How can we ever ignore it
Save the National Bird
It is the National Bird

We must remember, to protect our forest trees
For more information check the authorities
In the bamboo trees, the Soufriere hills
Their natural habitat
At Lawyers mountains and Tar river, the birds are found there

Chorus (twice)

So the habitat is gone
Caused by Hugo's devastation
Now we can't afford no more
My people I implore
Save the oriole, Montserrat's Oriole
It is part of our heritage...

◦ Clyde Weekes 1990

Calypsonian Rachel Collis wrote a fourth oriole song which was played live at the St. Patrick's day festival on March 17th.

In addition, during the filming of the Audubon TV production (see Section 8.13) a generalised environmental song by Eloise Lynch was utilized. The words to this being:

Through the Eyes of Love

Look in the sky,
A new day's dawning
Sun in my eyes,
A nation rising.

Got to see where beauty lies,
Where the sea meets the skies
By the river
Leaves are falling
In the water.
Fishes swimming.

Birds sing, their sweetest melody,
The wind blows in perfect harmony.

Birds, yes they're singing
Bees hear them humming
Babies cry
A mother sighs
A gentle lullaby
Can't you feel, can't you feel

Chorus

Through the eyes of love I see your beauty,
Through the eyes of love, you're calling to me
Can't you feel, can't you feel
Love is real

My tropical paradise,
Portrait of endless beauty
God made a sacrifice.
Love surrounds me

See it in the rushing waterfall,
and in each mountain standing green and tall.

Montserrat my jewel in the sea,
In my heart your always home to me.

Birds, yes they're singing
Bees hear them humming

Babies cry
A mother sighs
A gentle lullaby

Can't you feel, can't you feel

Through the eyes of love I see your beauty,
Through the eyes of love, you're calling to me

Through the eyes of love I see your beauty,
Through the eyes of love, you're calling to me...

©Eloise Lynch. 1991

8.13: Community Outreach

Community outreach programmes comprised making maximum use of the audio, visual and print media as well as targeting specific target groups.

Rose met and talked to the following:

- Representatives of the Media
- Musicians & Artists
- Board of National Trust
- Lions
- Rotary
- Pathfinders
- Duke of Edinburgh Award Scheme
- National Youth Council
- Chamber of Commerce
- Pentecostal Youth Group
- Methodist Youth Group

In her discussions with the press, emphasis placed on the symbolic value of the oriole as the island's National Bird and an overview of its plight was given. Copies of posters and fact sheets provided and the media representatives were asked to assist by giving maximum coverage to any press releases given out under the auspices of the project.

In the case of service clubs and the Chamber of Commerce brief presentations were made during one of their regular luncheon or evening meetings. Once again a historical overview of the oriole's decline was given as was a description of its

habitat, habits and the Trust's Conservation Education programme. Each member present was given an oriole poster and all were invited to suggest ways of making Rose's work more effective and create their own programmes to heighten environmental awareness in the island.

Rose noted that one of her objectives was to develop linkages between local business and the promotion of national pride in conservation and this led to a number of companies donating supplies and materials to the project including Astrids, Piper's Drugs & Variety, O.R. Kelsick, BBC Radio Shack & TV, Cable & Wireless, Sylvia Sejous, etc. See Section 9.1.

Media coverage was considerable. The weekly *Montserrat Reporter* newspaper (circulation 2,000) carried articles on the project, the pre-and post-project questionnaire and the assistance rendered by musicians and local businesses. Articles were also carried in the Montserrat National Trust newsletter, *The Visitor*, and in the prestigious *Caricom Perspective*, a regional news magazine that is widely read by decision makers.

Rose's position as General Manager of Radio ZJB allowed for the production, and virtual daily airing, of radio jingles featuring the oriole as well as the playing of the various songs described in Section 8.12. Montserrat's FM GEM Radio also covered the programme.

Pre-project questionnaire studies showed that 97% of Montserrat's population listen to the radio.

Some examples of Rose's radio jingles include:

1:

[Music]

Wouldn't it be nice to see the passage of a wildlife protection Act? Wouldn't it be a wonderful achievement to see the declaration of a National Park around Soufriere, Galway's, Bamboo Forest and the Central Range?

This can only happen if we show an interest in our natural heritage. If we care about our wildlife and their habitat. Let's come together to protect what's ours and show we care about our environment. Let's be proud Montserratians and protect our heritage.

[Music]

2:

[Music]

Did you know that our National Bird is unique? That it is found only in Montserrat? Did you know that the bird is a beautiful black and gold and that the female is yellowish-green in colour? Did you know that our National Bird makes its nest mostly on the plant that is our National flower, the heliconia or wild banana? The Montserrat Oriole our National Bird and part of our heritage.

[Music]

3:

[Music]

The Montserrat Oriole is our National Bird. It is found only on Montserrat. Some of us call it the Tannia Bird. A shy bird it lives mostly in the bamboo area of Galways Soufriere, the Runaway Ghaut area, La Rose Mountain and Paradise. The Montserrat Oriole builds its nest mostly on the wild banana tree or the heliconia plant—our National Flower. The Montserrat Oriole is another of our National Symbols be proud of it and us. A reminder from ZJB.

[Music]

4:

[Music]

You see posters of our National Bird all over the island. But did you know that our National Bird and its home is protected by law? That the Montserrat Oriole now numbers about 750 and that deforestation is the biggest single threat to its existence? Our National Bird, the Montserrat Oriole needs our protection. Lets come together to make sure this bird, another of our national symbols, remains forever as part of our heritage. ZJB a link between our National Bird and you.

[Music]

5:

[Music]

The Montserrat Oriole, our National Bird, can only be found in a few places on Montserrat. The oriole and its forest home are protected by law and persons found guilty of killing, wounding or capturing the bird can fined five hundred dollars...that's right five hundred dollars, and two hundred and forty dollars for illegally cutting down our forest.

The oriole is an important part of our natural heritage. Let's be proud of it and do all we can to protect the bird and its habitat. By so doing we will be accepting our responsibility towards the protection of our environment and display our pride in our natural heritage.

Let's continue to care for our national symbols and our island home! Let's continue to care for our wildlife and our forests...they cannot be replaced.

[Music]

6:

[Music]

The Montserrat Oriole, our National Bird, can only be found in just a few places in Montserrat. It is a rare bird found only in our island, Montserrat.

Did you know that its habitat is protected by law, as is the oriole? Did you know you can be fined \$240 for illegally cutting down our forest?

Now you know...let's do all we can to protect our wildlife and our forest.

Remember a bird in the hand breaks the law of the land.

[Music]

These are just several examples of the numerous public information jingles produced by Rose during the project.

The oriole achieved additional international coverage being included in a major US television documentary sponsored by National Audubon TV. This 45 minute programme featured *RARE Center* and conservation programmes being implemented in the Eastern Caribbean.

Narrated by US actor Lou Gossett Junior—star of such films as “Firewalker,” “The Deep” and “An Officer and a Gentleman”—it will be aired in spring 1992. Being shown four times on Super Station TBS and four times on PBS it will reach an estimated 20 million viewers.

Footage taken on Montserrat included a school visitation programme, posters, bumper stickers, billboards as well as Brother Roger Wade giving a sermon and the island’s musicians in action. Rose’s involvement with Radio ZJB will also be highlighted.

8.14: Oriole Population Census

A census of *Icterus oberi* was carried out under the auspices of this project—with funding from World Wildlife Fund US—by Wayne Arendt in March 1990. The results of which are documented in Section 6.0.

Note: Audubon TV also captured on film both male and female orioles foraging at Lawyer’s mountain.

8.15: Environmental News Letter

To supplement the school’s programme and to maintain the momentum of the project the production of an environmental news letter was considered an important component of the project. This was circulated to schools island wide providing teachers with follow up materials.

This concept follows the successful use of similar newspapers elsewhere in the Eastern Caribbean. A summary of each is given here for comparability.

1) Saint Lucia: *Bush Talk*

This is the forerunner of all three listed examples and was the brain child of Saint Lucian educator Maria Grech. *Bush Talk* was initiated in November 1981 and comprised a four page news sheet written by Ms. Grech who was contracted by, and nominally under the editorial guidance of, that island’s Forestry Department. The publication appeared monthly in the National newspaper, (*The Voice*), and a further one thousand copies were produced for use in the schools. *Bush Talk* continued for more than eight years and back issues are now being compiled into a series of seven booklets for use as school text books.

A different theme was selected each month and over its eight year existence an enormous range of environmental topics have been covered from water to soil conservation; legislation to geology; wildlife to tree crops, reefs to pesticides.

The monthly production costs were met through sponsorship from a local super-market and a small subvention from the Forestry Department.

2) St. Vincent & The Grenadines: *Vincie's Nature Notes*

Vincie's Nature Notes is also a four page monthly environmental news sheet, although in this case it is researched, written and produced by three pupils from the Kingstown Girls High School with assistance from an officer of the Forestry Division. Once again the island's national newspaper, in this case the *Vincentian*, includes the news sheet as a regular supplement. An additional 1000 copies are produced for the Forestry Division and circulated through the Ministry of Education to schools island wide. Now in its third year all production costs are met by the Saint Vincent Brewery.

3) Dominica: *VWA Diablotin*

This publication had its origins in 1982, and followed a format similar to *Bush Talk* and *Vincie's Nature Notes*, being a four page monthly environmental news sheet having the following objectives:

- To make people more aware of their environment and to educate them on how to relate to and react with it.
- To show people, especially children, just how important their natural resources are and how they affect their day to day life.
- To educate people as to how to manage their natural resources in a sustainable manner.

VWA Diablotin was originally compiled by US Peace Corps volunteers assisted by local forestry officers and funded by a combination of external and local funding. A total of 11,000 copies were produced and distributed through the school system with the goal of ensuring that one copy was available to each household. The publication carried a composite of articles pertaining to Dominica's environment and the text was supplemented by line drawings, sketches, crossword puzzles, games and competitions. Unfortunately after less than a dozen issues the publication folded, possibly because it over-extended itself and relied too much on external assistance.

In March 1989 the publication was resurrected, and today it is produced wholly by local forestry staff who prepare the camera ready copy, which is then forwarded to the local printer for production.

Vwa Diablotin is included as a monthly supplement in the *New Chronicle* newspaper and 1,000 extra copies are printed for the Forestry Division which posts them directly to schools island wide. The monthly production costs are covered by donations from two local firms.

Because of the difficulties of soliciting sponsorship from a community still reeling from the devastating effects of Hurricane Hugo it was decided to try to attempt not a monthly four page news letter, but rather a quarterly production of similar format and length. It was also decided to cover the production costs of the first issue from core funds (ie funds provided by RARE Center). In the hope that once produced local donors would see its potential and value to the community.

The inaugural issue was published in March 1991 with copies being distributed to schools island wide—posted by mail from the Trust—and to the central library. Additional copies were forwarded to the Chamber of Commerce to keep them apprised of the project and in the hope that they will contribute toward future issues.

The inaugural edition (see Appendix 6) commenced with an open letter introducing the news letter and the oriole. The second page included letters from the President of the Trust and the Chairperson of the Environmental Education committee. The balance of the news letter was dedicated to the children themselves and included poems about water written by Danielle Weekes (10 years old), Danielle Jeffers (13 years), Sharon Galloway and Nerissa Browne.

It is envisaged that future issues of the *Oriole Newsletter* will continue to rely heavily on contributions from the island's youth, as well as featuring articles on various aspects of the environment. (See Section 10.5.1)

8.16: Sermon & Services

Throughout the Holy scriptures of all religious denominations reference is made to the Earth's environment, the rational use of its fauna and flora and strong endorsements are given to the conservation ethic—the Church is therefore a powerful ally for any conservation programme.

In December, a letter was sent to the Montserrat Christian Council and copies forwarded to all those churches affiliated to the council, (Pentecostal, Anglican, Methodist, and Roman Catholic). This letter requested support for the project

and their active participation by involving their respective congregations through the presentation of sermons. Copies of the oriole fact sheet and a sermon outline were provided.

The Council gave its commitment to help but have yet, at the time of writing, to follow through.

Brother Roger Wade of the Cudjoe Head Pentecostal Church did feature the environment and the oriole in a fiery presentation on the "Voice of Salvation," and evangelist broadcast aired over Radio ZJB.

Some excerpts of his message:

"The Bible is the final authority when you are searching for real truth ... Holy scripture makes it emphatically clear that in the beginning God created the heavens and the earth ... The Bible says that God took man and placed him in the garden of Eden. The assignment was that he should dress this garden and keep it. Therefore God is the rightful owner of it and placed man in control...Man should care for what has been placed unto him."

"Man has failed this responsibility...man has sinned...man has constantly being destroying God's creation."

"We should be careful of how we treat God's creation. It is immoral to abuse nature...man has not learned to conserve. Our National Bird, the Montserrat Oriole...I am saying to you that seeing we just have a few of these birds left we should care. God has placed these birds in our country to beautify it and I am sure they are there for a purpose. Everything that God has placed in this world is there for a purpose."

I'm calling on you...from today onward to call on God to help discipline yourself...God has a redeeming force...he is the God of the second chance ...because of a Christian life man can save himself and protect the environment. Let's conserve. Take care of God's creation...stop abusing God's creation...In Jesus name...Amen, amen."

NOTE: Many churches were badly damaged by Hurricane Hugo and are still in the process of being renovated.

8.17: Billboards

Using core funds, two eight by four foot, colourful fibre glass billboards were constructed and erected at the following locations:

- On Church Road, within the compound of Radio Antilles in central Plymouth.
- On the slip road leading to Blackburne Airport in the Parish of Saint Georges.

Aside from illustrating the oriole both bill boards carry the sponsors' logo and the following message:

Conservation Education Prpject

Protect your pride
The Montserrat Oriole
Its habitat is part of your natural heritage.
Take care of it...so those who come after you can see your
pride...their pride... the nation's pride.
That's Caring

By making use of resident artists (Barbara Tipson & David Jackson) funds expended on this aspect of the project were kept in the local community.

8.18: Legislation Leaflet

When education fails, legislation is a conservationist's fall back position. But laws are only as good as their application and enforcement—all too often those persons enforcing them do not know their pertinent sections or penalties. This is especially the case when the officers involved have little to do with the day to day application of the Act, for example, the Police dealing with a Forestry Division's Wildlife Protection Act. This problem is exacerbated when the law is outdated and little used—since its passage in 1912 no individual has ever been charged under the Wild Bird Protection Ordinance, (Margetson 1991 pers. com.).

This was clearly the case in Montserrat where pre-project questionnaire results showed more than 32% checking "Don't Know" when asked about the penalties for hunting wildlife and an even greater 43% responding "Don't Know" to questions about current levels of protection afforded to the forest.

Whilst the penalties remain little deterrent—\$ 240 in the case of the Forestry Ordinance it is important for enforcement officials to be aware that some protection does exist. Even the knowledge that such fines are unrealistically low can serve to gander support for their revision.

In light of the foregoing, the author reviewed existing ordinances a prepared a brief, one page summary leaflet which was forwarded to Rose. This was subsequently photocopied and passed to Inspector James of the Police Department for onward distribution to senior officers of the force. (Appendix 7).

A copy of this leaflet was also posted on the notice board at Police Headquarters; and as we have seen in section 8.13, the radio was used to highlight the existence of legislation and the penalties pertaining to forest and wildlife protection.

NOTE: This document was deliberately kept brief so that it could be easily carried in an officer's wallet.

8.19: Music Video

Resulting from destruction caused by the passage of Hurricane Hugo, Montserrat still lacks a local Television Station and up to now reception is either via Cable or from neighbouring Antigua. Because of this, the task of producing a music video for show on local television was abandoned and Rose concentrated instead on the huge Christmas and St. Patrick's Day festival celebrations.

Rose's troupe consisted of some 120 children—representing 1% of the entire country—dressed as orioles and heliconias (the National Flower). The group paraded through the streets of Plymouth carrying the message of environmental protection. Margetson estimated that more than half of the island's entire population witnessed the parade and notes that the troupe won first prize.

Rose not only had to coordinate the children but also made many of the costumes. The Christmas celebrations included the traditional Festival Queen competition.

Marie Ryan who was first runner up in the overall competition presented a poem about wildlife, asking why the focus only on the oriole? when all birds should be protected and cherished.

Melinda Hixon's elaborate ensemble featured a male oriole as an integral part of the costume. When she was presented, the announcer described the bird and its plight. Contestant, Allison Hodd's costume featured both orioles and heliconias.

8.20: Farmer's Programme

The plight of many endangered Caribbean species can be directly attributed to habitat destruction which all too often is the direct result of poor agricultural practices being carried out by a nation's farmers. Whilst the oriole's decline has as much to do with the passage of Hurricane Hugo, deforestation has and continues to play its part.

As we have seen agriculture remains an important, if apparently declining, part of Montserrat's economy. This makes the farming community a vital sector for targeting by the Conservation Education Campaign.

Rose visited farmers around the island at Whites, Riley's Estate, St. Johns, St. Patricks, Brodericks and Ryner's Village, holding one on one discussions with land owners and members of the agricultural community. Most were aware of the oriole, although knew it better by its local name—the Tannia Bird.

This task also featured as a component of an Agricultural Awareness Week in February when an exhibition was held featuring a booth maned jointly by representatives from the National Trust and the Forestry Division. This booth included displays pertaining to the oriole, children's artwork on the forest, forest produce etc.

Rose, Franklin and Gerard Gray were on hand to answer questions. The entire proceedings were broadcast live including interviews with key personnel and visitors to the booth. A second exhibit of similar format was presented at the St. Patrick Day celebrations on March 17th.

Radio ZJB's call-in programme, "Night Talk," has throughout the year, covered various topics of an environmental nature. This show carries a large audience, including many individuals living in rural communities.

8.21: Legislation Review

The author thoroughly reviewed existing Ordinances pertaining to Wildlife and habitat protection, see Section 3.1 and made a number of recommendations that were submitted to the Trust and copied to the Director of Agriculture and the Town Planner. These can be found summarised in Section 10.1.

8.22: Stamps

Stamps are an important medium to use in any conservation education programme as they are purchased by a broad cross section of the community and through their use on both local and overseas letters, cards and parcels they can carry a message not only across the length and breadth of the country but also around the world.

In Montserrat stamps are also used to endorse receipts and for the payment of local duties and taxes and; in the philatelic business stamps depicting wildlife—especially birds—are enormously popular. This is important as the sale of stamps to collectors is an important source of revenue and foreign exchange.

Rose held discussions with the local director of Montserrat's Philatelic bureau, Mr. Bramble, who indicated a willingness to release an October issue depicting the oriole. RARE Center's John Guarnaccia has been in contact with the UK printers who handle the issuing of Montserrat's stamps viz a viz the use of poster artwork.

At the time of writing it is unsure whether one or a series of stamps will be released and whether an entire issue will feature the oriole or whether it will be a series on endangered species.

8.23: A—Z of Wildlife Booklet

In view of the fact that the Montserrat National Trust has already published a booklet of similar nature as well as a leaflet on Montserrat's Wildlife this task was waived by Rose.

Allan Siegal's *Birds of Montserrat* is a 48 page booklet describing 42 species of the island's birds. Each is treated with a description of its worldwide distribution, size, general colouration, feeding and breeding habits. Most are depicted through line drawings prepared by James E. Willock. English, scientific and alternate names are given, and the booklet concludes with a record of all those species that have been sighted on Montserrat between the years 1879—1982. This booklet is sold for EC\$ 10.

The National Trust is in the process of printing a second wildlife publication entitled *The Wildlife of Montserrat*. This 100—page booklet, written by Jay Blankenship in 1982, is the most comprehensive account of the island's fauna to date. It was scheduled to have been published in December 1990, but has been delayed due to mechanical problems at the printery and a shortage of suitable paper. It is

hoped that it will be available by May/June 1991 when it will be sold for about EC\$ 30. Copies will be donated to secondary schools, the public library and the radio station.

A third publication on island birds is scheduled for production. This is being coordinated by the Caribbean Conservation Association (CCA) and will serve as an accompanying text for the "Birds of our Island" posters. Between 250—500 copies will hopefully be available for distribution to schools and for sale to the general public.

8.24: Post-project Questionnaire Distribution

See Section 9.1.

8.25: Post-project Questionnaire Analysis

See Section 9.1.

8.26: Final Report

This document serves as a final report to the Montserrat National Trust's/RARE *Center's* Conservation Education Campaign. As stated in the forward the principal objectives of this report are:

- To provide the Montserrat National Trust and the government with a comprehensive account of the RARE *Center's* Conservation Education Project for Montserrat.
- To provide recommendations for future action which might be addressed by the government, the National Trust or external funding agencies.
- To provide, in a single document, a synopsis of all that has been written about the oriole and thus serving as a reference text.

This report will be sent to those funding agencies that have helped make this project a reality and will give them a detailed account of the oriole, its status and the efforts made by the implementing agency during the project.

The document is authored by RARE *Center's* Caribbean Programme Director with editorial assistance from Mr. Franklin Margetson (National Trust President)

and Rose Willock MBE (Project coordinator). Its content has been derived from a review of existing literature, Rose's monthly reports and field trips that served to monitor the project's progress.

9.0 Signs of Success

This section should be read remembering that 1990 was a year of reconstruction and recovery for the tiny island of Montserrat. The Hurricane of September 1989, as we saw in Section 5.0, left widespread destruction and people's efforts and Government's attention was naturally focused on rebuilding.

9.1 Marketing the Message

In April 1991 Rose Willock carried out the post-project questionnaire survey replicating exactly the methodology employed in the pre-project census. (See section 8.3).

Two hundred and fifty questionnaires were distributed (representing a sample size of approximately 2%) and the island was again divided into 13 zones based on divisions developed by the "Best Village Competition."

Table 10 illustrates post-project questionnaire distribution.

Of the two hundred and fifty forms distributed, two hundred and thirty-eight were returned by the scheduled date. This represents a return rate of 95.2%.

TABLE 10. Post-project questionnaire distribution.

<i>Zone</i>	<i>Communities</i>	<i># Distributed</i>	<i># Returned</i>	<i>% of total returned</i>
1	Parsons, Jubilee, Fort Barrington, Webbs, Boston, Dagenham, Plymouth	50	49	20.59
2	Kinsale, Trials, Gingoos	20	20	8.40
3	Cork Hill, Weekes, Delvins, Belham	20	19	7.98
4	Salem, Hope, Frith, Flemmings	20	17	7.14
5	Woodlands, Old Towne Foxes Bay	20	19	7.98
6	Cudjoe Head	10	10	4.20
7	Blakes, Dick Hill, Gerald's, St. Johns	20	17	7.14
8	St. George's Hill	10	10	4.20
9	Molyneaux, Dyers, Lees	20	17	7.14
10	Windy Hill, Streathams	10	10	4.20
11	Harris' Garden Hill Look Out, Bridgefield	20	20	8.40
12	Trants, Farms, Tuitts, Long Ground, Bramble's Village	20	20	8.40
13	St. Patrick's	10	10	4.20
		250	238	100.00

9.1.2 Analysis of Post-project Questionnaire

Unlike the pre-project questionnaires, this survey was analysed using a computer and software provided by RARE Center. This was less time-consuming and allows for a more in depth analysis should this be required. All inputted data is held on disc and available for scrutiny or additional examination.

Because the software only allows ten sectors to be analysed simultaneously, a certain amount of condensing was required. After discussions with Mr. Margetson it was decided to lump data in sector 2 with 13; 6 with 7; and 8 with 9. Thus reducing the number of sectors from 13 to 10.

Because of this care must be taken when DIRECTLY comparing Table 7 with Table 11 and reference needs to be made to the sectoral breakdown given in Table 6 and Table 10 (revised) which is shown below:

TABLE 10. (REVISED) Post-project questionnaire distribution.

<i>Zone</i>	<i>Communities</i>	<i># Distributed</i>	<i># Returned</i>	<i>% of total returned</i>
1	Parsons, Jubilee, Fort Barrington, Webbs, Boston, Dagenham, Plymouth	50	49	20.59
2	Kinsale, Trials Gingoes, Saint Patricks	30	30	12.60
3	Cork Hill, Weekes, Delvins, Belham	20	19	7.98
4	Salem, Hope, Frith, Flemmings	20	17	7.14
5	Woodlands, Old Towne Foxes Bay	20	19	7.98
6	Cudjoe Head, Blakes Dick Hill, Geraldts, St. Johns	30	27	11.34

<i>Zone</i>	<i>Communities</i>	<i># Distributed</i>	<i># Returned</i>	<i>% of total returned</i>
7	St. George's Hill, Molyneaux, Dyers, Lees	30	27	11.34
8	Windy Hill, Streathams	10	10	4.20
9	Harris' Garden Hill, Look Out, Bridgefield	20	27	8.40
10	Trants, Farms, Tuitts, Long Ground, Bramble's Village	20	20	8.40
		250	238	100.00

TABLE 11: Post-project Questionnaire Results Summary (1)

WARNING: Do not compare Tables 7 & 11 directly without having referred to section 9.1.2

QUESTION	%	RESPONSE	1 PLY	2 KIN	3 COR	4 SAL	5 WOO	6 CUD	7 ST.	8 WIN	9 HAR	10 TRAN	Island Wide
What is your National Bird		Oriole	98	100	100	100	100	100	85.2	100	95	100	97.8
		Pigeon/Dove	0	0	0	0	0	0	0.0	0	0	0	0.0
		Egret	0	0	0	0	0	0	0.0	0	0	0	0.0
		Other	0	0	0	0	0	0	3.7	0	0	0	0.4
		Don't know	2	0	0	0	0	0	7.4	0	5	0	1.4
		Blank	0	0	0	0	0	0	3.7	0	0	0	0.4
Is it endemic		Yes	81.6	93.3	73.7	76.5	73.7	96.3	63.0	90	85	100	83.3
		No	10.2	0.0	0.0	0.0	10.5	3.7	18.5	10	5	0	5.8
		Don't know	8.2	6.7	26.3	23.5	15.8	0.0	18.5	0	5	0	10.4
		Blank	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	5	0	0.5
How scarced		0-100	4.1	10.0	5.3	11.8	15.8	11.1	11.1	10	30	0	10.9
		101-250	8.2	10.0	5.3	11.8	5.3	44.4	7.4	10	35	0	13.7
		251-500	26.5	30.0	31.6	29.4	21.1	25.9	18.5	30	10	10	23.3
		501-1500	46.9	46.7	57.9	41.2	42.1	18.5	55.6	40	20	90	45.9
		1501+	4.1	0.0	0.0	0.0	0.0	0.0	3.7	10	5	0	2.3
		Don't know	4.1	0.0	0.0	5.9	10.5	0.0	0.0	0	0	0	2.0
		Blank	6.1	3.3	0.0	0.0	5.3	0.0	3.7	0	0	0	1.8
Reasons for decline		Hunting	2.0	0.0	26.3	0.0	0.0	3.7	7.4	10	10	5	6.4
		Capture/Trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0.0
		Deforestation	38.8	46.7	5.3	17.6	26.3	14.8	11.1	40	35	25	26.1
		Hurricanes	42.9	36.7	26.3	29.4	26.3	66.7	51.9	30	40	60	41.0
		Other	4.1	3.3	0.0	5.9	0.0	7.4	7.4	0	0	0	2.8
		Don't know	10.2	6.7	42.1	23.5	36.8	7.4	22.2	10	15	10	18.4
		Blank	2.0	6.7	0.0	23.5	10.5	0.0	0.0	10	0	0	5.3
Good choice for National Bird		Yes	81.6	80.0	78.9	76.5	89.5	100	81.5	100	75	90	85.3
		No	4.1	6.7	21.1	0.0	5.3	0	0.0	0	20	0	5.7
		Don't know	14.3	10.0	0.0	5.9	0.0	0	18.5	0	5	10	6.4
		Blank	0.0	3.3	0.0	17.6	5.3	0	0.0	0	0	0	2.6
Fine to protect National Bird		\$24	2.0	3.3	0.0	0.0	0.0	0.0	0.0	0	0	0	0.5
		\$48	6.1	3.3	0.0	5.9	10.5	14.8	3.7	0	5	10	5.9
		\$250	8.2	26.7	15.8	23.5	5.3	3.7	14.8	50	15	0	16.3
		\$500	73.5	66.7	84.2	52.9	31.6	37.0	63.0	30	65	90	59.4
		\$5000	4.1	0.0	0.0	5.9	10.5	14.8	0.0	0	10	0	4.5
		Don't know	6.1	0.0	0.0	11.8	42.1	7.4	18.5	10	0	0	9.6
		Blank	0.0	0.0	0.0	0.0	0.0	22.2	0.0	10	5	0	3.7

TABLE 11: Post-project Questionnaire Results Summary (1)

WARNING: Do not compare Tables 7 & 11 directly without having referred to section 9.1.2

QUESTION	% RESPONSE	1 PLY	2 KIN	3 COR	4 SAL	5 WOO	6 CUD	7 ST.	8 WIN	9 HAR	10 TRAN	Island Wide
Fine for Clearing the Forest	\$48 \$240 \$720 Don't know Blank	2.0 65.3 12.2 20.4 0.0	3.3 76.7 3.3 16.7 0.0	5.3 89.5 5.3 0.0 0.0	11.8 64.7 5.9 17.6 0.0	10.5 36.8 10.5 42.1 0.0	11.1 25.9 29.6 18.5 14.8	0.0 81.5 3.7 14.8 0.0	0.0 80.0 0.0 20.0 0.0	5.0 40.0 20.0 35.0 0.0	0.0 95.0 5.0 0.0 0.0	4.9 65.5 9.6 18.5 1.5
Importance of National Bird	Not important Important Very important Don't know Blank	12.2 42.9 40.8 4.1 0.0	3.3 43.3 40.0 13.3 0.0	31.6 47.4 15.8 5.3 0.0	0.0 58.8 35.3 0.0 5.9	0.0 42.1 52.6 5.3 0.0	3.7 25.9 70.4 0.0 0.0	7.4 29.6 48.1 14.8 0.0	0.0 20.0 70.0 10.0 0.0	10.0 50.0 30.0 10.0 0.0	0.0 30.0 65.0 5.0 0.0	6.8 39.0 46.8 5.8 0.6
Why important	Symbol/pride Unique/rare Tourism/culture Future generation Other Don't know Blank	34.7 14.3 14.3 0.0 22.4 2.0 12.2	23.3 20.0 6.7 0.0 10.0 0.0 40.0	10.5 5.3 5.9 0.0 63.2 0.0 15.8	17.6 35.3 5.9 17.6 5.9 0.0 17.6	10.5 21.1 5.3 0.0 26.3 0.0 36.8	74.1 3.7 3.7 0.0 11.1 0.0 7.4	18.5 25.9 14.8 3.7 22.2 0.0 14.8	10.0 30.0 20.0 0.0 0.0 0.0 40.0	5.0 25.0 20.0 0.0 35.0 0.0 15.0	20.0 30.0 30.0 0.0 15.0 0.0 5.0	22.4 21.1 12.6 2.1 21.1 0.2 20.5
Age	1-11 12-16 17-25 26-35 36-45 46-55 56-65 66+ Blank	18.4 12.2 26.5 14.3 14.3 6.1 2.0 6.1 0.0	6.7 23.3 20.0 13.3 0.0 16.7 10.0 6.7 3.3	15.8 10.5 10.5 10.5 15.8 21.1 10.5 5.3 0.0	17.6 5.9 29.4 23.5 0.0 5.9 5.9 11.8 0.0	0.0 15.8 0.0 5.3 0.0 5.3 15.8 57.9 0.0	37.0 14.8 37.0 0.0 3.7 3.7 0.0 3.7 0.0	25.9 7.4 14.8 7.4 14.8 11.1 14.8 3.7 0.0	10.0 30.0 50.0 0.0 10.0 0.0 0.0 0.0 0.0	5.0 25.0 35.0 10.0 10.0 5.0 5.0 5.0 0.0	15.0 15.0 20.0 20.0 20.0 0.0 0.0 5.0 0.0	15.1 16.0 24.3 10.9 8.9 7.5 6.4 10.5 0.3

TABLE 11: Post-project Questionnaire Results Summary (1)

WARNING: Do not compare Tables 7 & 11 directly without having referred to section 9.1.2

QUESTION	% RESPONSE	1 PLY	2 KIN	3 COR	4 SAL	5 WOO	6 CUD	7 ST.	8 WIN	9 HAR	10 TRAN	Island Wide
Employment	Government	38.8	3.3	31.6	29.4	0.0	18.5	7.4	0.0	20.0	5.0	15.4
	Farmer/Labourer	16.3	16.7	5.3	5.9	0.0	0.0	14.8	0.0	5.0	10.0	7.4
	Private	2.0	26.7	15.8	17.6	5.3	0.0	14.8	30.0	25.0	35.0	17.2
	Unemployed	2.0	3.3	10.5	11.8	0.0	11.1	7.4	10.0	10.0	10.0	7.6
	Housewife	2.0	13.3	5.3	5.9	47.4	7.4	7.4	0.0	0.0	10.0	9.9
	Student	32.7	36.7	26.3	23.5	15.8	59.3	37.0	50.0	40.0	30.0	35.1
	Other	6.1	0.0	5.3	5.9	31.6	3.7	11.1	10.0	0.0	0.0	7.4
Listen to Radio	Everday	51.0	46.7	68.4	29.4	26.3	51.9	40.7	50.0	25.0	55.0	44.4
	Occasionally	49.0	50.0	31.6	70.6	63.2	44.4	59.3	50.0	70.0	45.0	53.3
	Never	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0	5.0	0.0	1.6
	Blank	0.0	3.3	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.7
Favourite Programme	News	26.5	16.7	21.1	5.9	21.1	11.1	7.4	20.0	15.0	5.0	15.0
	Music	18.4	23.3	31.6	5.9	0.0	3.7	11.1	30.0	30.0	20.0	17.4
	Sports	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.4
	GIS/community	6.1	0.0	5.3	0.0	0.0	25.9	0.0	30.0	10.0	0.0	7.7
	Religious	8.2	3.3	15.8	0.0	0.0	0.0	14.8	0.0	5.0	10.0	5.7
	Other	4.1	10.0	26.3	29.4	5.3	29.6	14.8	10.0	10.0	0.0	14.0
	Blank	36.7	46.7	0.0	58.8	73.7	25.9	51.9	10.0	30.0	65.0	39.9
Newspaper Readership	Yes	89.8	70.0	42.1	58.8	94.7	88.9	48.1	80.0	90.0	70.0	73.2
	No	10.2	26.7	42.1	35.3	0.0	11.1	48.1	20.0	10.0	30.0	23.4
	Blank	0.0	3.3	15.8	5.9	5.3	0.0	3.7	0.0	0.0	0.0	3.4

Table 11 summarises questionnaire results by community. These were then consolidated to give the following island wide results:

Results of post-project questionnaire (April 1991)

ISLAND WIDE DATA

Question 1: What is the National Bird of Montserrat?

Response:	Oriole/Tannia Bird	Pigeon/Dove	Egret	Other	?
%	97.8	0.0	0.0	0.4	1.4

One year after the project's commencement, the percentage of respondents correctly identifying the National Bird to be the Oriole has risen from less than 50% to an almost universal 98%.

Question 2: Is it only found in Montserrat?

Response:	Yes	No	Don't Know	—
%	83.3	5.8	10.4	0.5

In the pre-project survey less than half knew the oriole to be endemic to Montserrat. This figure has now risen to more than 80%

Question 3: How scarce is the National Bird?

Response:	>100	101-250	251-500	501-1500	1501 +	?	—
%	10.9	13.7	23.3	45.9	2.3	2.0	1.8

In the pre-project survey more than 50% of respondents believed there to be less than 250 orioles remaining, a reflection perhaps of the general paucity of bird life following Hurricane Hugo. Only 11% correctly stated or guessed 501—1500 in line with Arendts' post-hurricane census results. In the April 1991 survey almost 50% correctly checked 501—1500, and the number checking 251—1500 was 69%.

Question 4: What is the main reason for the National Bird becoming scarce?

Response:

Hunting	Capture	Deforestation	Hurricane	Other	?
6.4	0.0	26.1	41.0	2.8	18.4

Blank = 5.3

The majority of respondents still believe that Hurricane Hugo is the prime cause of the oriole's scarcity. This is perhaps understandable in light of the near absolute devastation rendered by this massive storm. Nevertheless the number checking deforestation—which is probably a more serious threat—has risen from 9% to 26%.

Question 5: Do you think the National Bird is a good choice.

Response:	Yes	No	Don't Know	—
%	85.3	5.7	6.4	2.6

There was almost universal island wide approval for the oriole being the National Bird with only 6% believing it to be a poor choice.

Question 6: What is the fine for hunting the National Bird?

Response:	\$24	\$48	\$250	\$500	\$5000	?	—
%	0.5	5.9	16.3	59.4	4.5	9.6	3.7

See notation in Question 6 in section 8.3.1.

The remarkably high percentage correctly noting the penalty is almost certainly due to the effectiveness of the radio jingles—see Section 8.13—which have been aired almost daily informing the public as to the levels of protection afforded wildlife and their forest habitat.

Question 7: What is the fine for clearing forest reserve?

Response:	\$48	\$240	\$720	?	—
%	4.9	65.5	9.6	18.5	1.5

Again the remarkably high percentage (65.5%) correctly noting the penalty is almost certainly due to the effectiveness of the radio jingles—see Section 8.13—which have been aired almost daily informing the public as to the levels of protection afforded wildlife and their forest habitat.

Question 8: Is it important to protect the National Bird?

Response	Not important	Important	Very important	?
%	6.8	39.0	46.8	5.8

When asked why? Respondents gave the following reasons:

There has been a decrease in the percentage responding that it is “not important” to protect the National Bird, and a corresponding increase in those believing it to be “very important.” In excess of 85% of those sampled now believe it to be either “important” or “very important” for government to spend time and money protecting the National Bird.

Response	National pride/symbol	Rare/Unique	Tourism/Culture	Future generations	Other
%	22.4	21.1	12.66	2.1	21.1

Some examples of comments made by respondents in the post project questionnaire survey:

IMPORTANT/VERY IMPORTANT

It is one of the things that Montserrat can proudly call its own and no other country can claim. Therefore it is in our interest to preserve it as much as we could for as long as we can. (Government Employee 17-25 years old from Salem)

It puts Montserrat on the map. (House wife 66 + years old from Plymouth)

Because its a friend. (5 year old school child from Lees)

NOT IMPORTANT

God will protect them. (Unemployed 46-55 year old from Weekes)

Hurricane could come again and kill them all. (Student 12-16 years old from Weekes)

Many people in our area are suffering from Hugo's effects. Their house are not completed. Money should not be spent on birds but on human life. Money should be used to build a bridge for our village. (17 year old student from Webbs)

BIO—DATA

As was the case in the pre-project survey those sampled represented a broad cross section of people from a wide variety of age and employment classes. Interviewers were asked to be random in their sampling technique and for the most part they appeared to have complied.

1. Age:

Response:	1-11	12-16	17-25	26-35	36-45	46-55	56-65	65+
%	15.1	16.0	24.3	10.9	8.9	7.5	6.4	10.5

2. Employment category:

Response: %

Govt.	Farmer/labourer	Private	Unemployed	Housewife	Student
14.5	7.4	17.2	7.6	9.9	35.1

In addition 7.4% stated "other."

Question: Do you listen to the radio?

Response:	Every day	Occasionally	Never	-
%	44.4	53.3	1.6	0.7

When asked about programme preference, the following results were obtained:

Response:	News	Music	Sports	GIS	Religious	Other
%	15.0	17.4	0.4	7.7	5.7	14.0

Almost 40% did not specify their favourite programme.

A number of school age children wrote the Oriole Song in the space allocated for favourite programme!

Question: Do you read the newspaper?

Response:	Yes	No	—
%	73.2	23.4	3.4

Such changes in perception, and the general heightened awareness about the oriole and concern for its plight, are I believe a true reflection of the public's increased knowledge about *Icterus oberi*. Such changes represent but one "sign of success," and are the result of the unstinting efforts of all concerned.

Not only were changes in attitude recorded but throughout the year there was an outflow of support for the programme with many individuals rallying to the cause. These individuals who freely gave their time, talents and as well as materials, included:

Ms. Edrisse Allen; Patricia Allen; Ruth Allen; Sarah Allen; ARC Board Chairman; Astrids; Lloyd Aymer; Lisa Bass; BBC Radio Shack & TV; Neville Bradshaw; Mr. A. Bramble; Delores Bramble; Sharon Burns Lenroy Cabey; Cable & Wireless Ltd., Equipment & Supplies; Grace Cassell; Sarah Cassell; Mrs. Joyce Chambers; John Collins; James Daly; Joseph Dowdye; Donelda Dublin; Neville Dublin; Mrs. Eileen Edwards; J.R. Farrell; Bruce Farara; B. Fenton; Adella Francis; Sarita Francis; Patrick Foley; Erica Gibbs; Rosalie Granger; Gerard Gray; Jane Grell; Mildred Hackshaw; Frances Hazel; Mrs. M. Hickson, Dr. Hileman, Mrs. Henrietta Hixon; Joyceline Hogan; Alick Inglis; Mrs. M. Irish; Inspector James; Valerie James; John Jeffers; O.R. Kelsick & Co.Ltd; Clover Lea; Rose-Ann Lee; Yvette Lee; Lees Action Group; Hyacinth Lindsey; John Martin; Mr. Maynard; Franklyn Michael; Montserrat Festival Committee; Montserrat Land Authority; The Montserrat Printery; Montserrat Youth Council; Anesta Moore; The Honourable Stanley Moore; Valerie Morgan; Melissa O'Garro; E.

Karney Osborne; Joy Pond; Mr. Payne; Ms. Juanita Perkins; Shirley-Ann Queeley; the staff of Radio ZJB; Collin Riley; Valerie Romeo; Pat Ryan; SDA Choir; Sylvia Sejous; Eugene Skerritt; Summer school coordinators; Mrs. Brenda Thomas; Lesley Thomas; Vereen Thomas; W.L. Wall & Co. Ltd; Clyde Weekes; Rupert White; Yasmin White; Cheverlyn Williams; Eric Williams; and Sean Willock.

Of particular note is the action of Mr. Neville Bradshaw who has recently opened a 12 room hotel in central Plymouth and named it the Oriole Plaza.

Commenting on changing environmental perceptions, the March 15th 1991 editorial of the *Montserrat Reporter* noted:

"We are now talking seriously about the environment, and the preservation of those things nature has bestowed on us. In doing so, we are thinking about the future and of the kind of Montserrat we would like to leave to our children and grand children...We are concerned about our forests, soil erosion and preservation, watershed, wildlife...and on and on"

Finally, in their December 1990 Newsletter the Montserrat Chamber of Commerce called upon the Government stating:

"We urge that legislation be enacted and programmes implemented to take care of concerns vital to the preservation of our environment such as forestry, wildlife and National Parks..."

9.2: Looking at the Law

As we have noted earlier, the Government of Montserrat is presently considering updating its Forestry & Wildlife legislation, bringing it more into line with other islands in the Eastern Caribbean. This includes not only reviewing penalties but also the mechanisms by which the Acts are implemented, including the strengthening of organisations such as the Forestry Division which is presently under the dynamic leadership of Gerard Gray.

Suggestions proposed by the author (see Section 10.1) have been taken into consideration. These embrace the inclusion of clauses pertaining to the declaration of National Parks. The draft document is under final review and should shortly be forwarded to Crown Council and the Attorney General's office for follow up action.

9.3: Declaration of Protected Areas

As we have noted in Section 4.0 a small number of areas were set aside in 1990. These include Galway's Plantation, Galways Soufriere and the Great Alps Falls. The former being vested with the Montserrat National Trust, the latter with the Tourism authorities. Whilst only small in acreage it is a start towards the comprehensive protection of areas of natural, cultural and historic importance. It is essential that consideration be given to the full declaration of a National Park as outlined in Section 10.2.

One interesting development that augers well for the future is the ongoing work on the production of a National Physical Plan for Montserrat, being prepared by the UN Center for Human Settlements. Conversations with Town Planner, Mr. John Collins, indicate that this will include recommendations for the setting aside of protected areas that take into cognizance land capability, watershed protection and the preservation of critical habitats. Work on this document commenced in 1990 and is scheduled to be presented to Montserrat's Executive Committee in 1992.

A second development is that of Montserrat's active participation in the FAO Tropical Forestry Action Plan. In March 1991 a consulting team met with government officials to discuss existing problems in the forest sector, to determine feasible solutions and to assist in drafting projects for funding. The team, under the direction of Selwyn Dardine, included specialists in bio-diversity, agroforestry and environmental legislation.

The author met with consultant Richard Howard to discuss CEC recommendations laid down in Section 10, and many of these are to be incorporated into the FAO report. The legislation specialist—Mr. Pollard—was provided with the author's suggestions as to necessary legislative amendments.

Finally, the approval in October 1990 of a grant by World Wildlife Fund UK to assist the Montserrat National Trust with Park development and institution building should serve as an additional catalyst for progress in developing a series of protected areas in the months and years to come.

This grant provides for UK£ 13,330 per annum for two years and a summary of the Project's aims and objectives reads as follows:

To consolidate achievements made to date with respect of establishing an integrated system of parks and protected areas in Montserrat.

In September 1987 WWF-UK provided assistance for the first phase of this work and since then some 462 acres have come under the control of the Montserrat National Trust and additional areas are under consideration.

Liaising closely with the Forestry Division, trails have been developed and maintained at Foxes Bay, Great Alps Falls, Soufriere and the Bamboo Forest. Major outreach initiatives have been launched and three legislative Acts prepared (National Parks Act, Wildlife Act and Historic Sites Act). The National Trust has grown to 450 members representing 4% of the population. Unfortunately, as a direct result of Hurricane Hugo, their local funding base has shrunk at a time when rehabilitation work has spiraled. The Trust seeks institutional support to build upon the important foundations already laid.

The project will, through the setting aside of additional protected areas and the development of education initiatives [with assistance from RARE Center], promote sustainable development and secure representative ecosystems to ensure the conservation of fauna and flora. The further development of trails and rehabilitation of sites damaged by the Hurricane will promote eco-tourism, illustrating to the people of Montserrat that the environment can secure economic benefits.

The project will further strengthen the National Trust, Montserrat's only conservation orientated NGO, and will tide it through the difficult post-hurricane Hugo period when its resources are stretched to breaking point.

Funds were requested, and approved, to cover rental of office space at Parliament Street in Plymouth; the provision of basic office facilities, utilities, and the employment of office staff and for the coordination of the Parks Programme.

10.0 Moving on in Montserrat

Recommendations:

When a species number falls to as low as that of the Montserrat Oriole, *Icterus oberi*, its future lies as much in the hands of fate as it does in the hands of conservationists and resource managers. The passage of another hurricane or the opening up and development of critical habitat could further endanger this unique species and push it to extinction joining other Caribbean birds such as the Grand Cayman Thrush and, nearer to home, the bullfinch formerly found on St. Kitts.

The Trust with active support from the Forestry Division and technical/material assistance provided by US based RARE Center for Tropical Bird Conservation have begun to lay the ground work for the preservation of this beautiful bird. The Montserratan public is now much more aware as to the existence of this endemic species, its plight and importance as a national symbol.

The completion of this phase of the work represents not an end to efforts but a beginning...it has served as a catalyst for actions that must be ongoing.

Generalised recommendations such as the critical need for vehicles for the Forestry Division, the need for institution building both for the Trust and Forestry are omitted not because they are not believed to be of the highest priority but because they fall outside of the author's terms of reference. Thus, the suggestions that follow are confined to follow up actions required to continue the promotion of wildlife conservation in general and the protection of *Icterus oberi* in particular.

10.1: Legislation & Institution Building

10.1.1 Conservation Committee

A multi-disciplinary committee should be established to strengthen linkages between the various users and managers of existing and proposed protected areas. This committee or commission should include representatives from the Forestry Division, National Trust, Tourism, Environmental Health, Water Authority, Communications & Works and Planning.

It should be advisory in function and meet monthly as a forum for discussion and the exchange of views. It should strive to highlight the importance of environmental protection to the economy and report to the Minister responsible for lands.

Recommend: That the Montserrat National Trust together with the Forestry Division request the Hon. Minister of Lands establish this committee.

10.1.2. Contributions to Conservation

Visitors to Montserrat presently pay an airport departure tax of EC\$ 15 when leaving the island. It is proposed that a small additional exit tax be levied on departing OVERSEAS visitors amounting to EC\$ 5. This would be collected at their point of departure and paid into a conservation fund for expenditure on environmental projects.

The receipt given might take the form of a colourful stamp (depicting a scenic site such as the Great Alps Falls), which could be stuck in the recipient's passport to serve as a permanent reminder of their visit to the "Emerald Isle."

A random sampling of ten tourists indicated support for such a proposal and none were adverse to the idea.

Recommend: Montserrat's Executive Committee consider and implement this recommendation.

There is a critical need for a comprehensive review and amending of the Wild Birds Protection Act, first to bring it in line with legislation enacted on other Eastern Caribbean Islands and to include mammals and reptiles which at present receive absolutely no protection. Montserrat has a healthy population of iguanas, in part because the island lacks the ubiquitous mongoose. Iguanas are spectacular creatures that do little harm and can serve as a tourist attraction. Post-hurricane reports talk of visiting Guyanese recovery teams killing and eating these defenseless reptiles—something that is not presently illegal.

Changes in legislation will also serve to bring penalties in line with present day costs and give enforcement officers greater powers. Provided here is a suggested Wild Life Protection Act styled upon legislation in place in Dominica, Saint Vincent and Saint Lucia. It should serve as a useful reference.

MONTSERRAT

No. __ of 19 __

An Act to make provision for the protection, conservation and management of wildlife in Montserrat.

BE IT ENACTED by the Queen's most Excellent Majesty, by and with the advice and consent of the Legislative Council of Montserrat, and by the authority of the same, as follows:

PRELIMINARY

1 : This Act may be cited as the Wildlife Protection Act 19__ and shall come into force on a date to be appointed by the Governor by Proclamation published in the Gazette.

2 : In this Act unless the context otherwise requires:

"close season" means any period specified in Schedule 2 and declared under Section 15 of this Act, during which no hunting is allowed;

"court" means a court of summary jurisdiction;

"deleterious substance" means any substance which if added to water would endanger the subsistence and maintenance of fish and other aquatic life residing in water;

"fishing" means fishing for or catching fish by any method;

"fishing licence" means a licence issued under Section 23 of this Act;

"gun" includes an air gun, pellet gun, sling shot and any device capable of propelling shots, bullets or missiles;

"hunt" means to seek, stalk, shoot, pursue or to attempt to seek, stalk, shoot or pursue;

"hunting licence" means a licence issued under Section 23 of this Act;

"Minister" means the Minister of Government responsible for matters relating to wildlife;

"officer" means a forestry and wildlife officer appointed by or under this Act;

"open season" means a period during which a specified species or group of species may be hunted or taken;

"partially protected wildlife" means any species of wildlife specified in the Second Schedule of this Act and which are subject to an open and closed season;

"protected wildlife" means any species of wildlife specified in the First Schedule of this Act and which may be hunted at no time of the year;
"specially protected species" means the National Bird of Montserrat, the Montserrat Oriole, as declared under Section 29 of this Act;
"take" means to kill, capture, snare, trap, net, carry away or attempt to kill, capture, snare, trap, net, carry away or take by any means other than a means specified in Section 18 of this Act;
"territorial sea" means a distance of twelve nautical miles around the shores of Montserrat;
"unprotected wildlife" means any species of wildlife which is specified in the Third Schedule;
"wildlife" means any species of the following groups living beyond the control of man:

- a: mammals and the young thereof;
- b: birds and the eggs thereof;
- c: frogs and the eggs thereof;
- d: reptiles and the eggs or young thereof;
- e: fishes; their fry and eggs; and
- f: crustaceans and the eggs or young thereof;

"wildlife reserve" means any area declared as such under this Act.

PART 1: ADMINISTRATION

- 3 i: There shall be established in the Ministry of Agriculture a Division of Forestry and Wildlife which shall consist of a Chief Forestry and Wildlife Officer, Forestry and Wildlife Officers and any such other employees as are deemed necessary for carrying out the provisions of this Act.
- ii: There shall be appointed a Chief Forestry and Wildlife Officer whose office shall be a public office and who shall be charged with the duties and possess the powers conferred by or under this Act. He shall act under the authority of the Minister and under the general direction of the Permanent Secretary and Director of Agriculture of the Ministry.
- 4i: The Chief Forestry and Wildlife Officer shall have supervision of all other forestry and wildlife officers and may delegate in writing to any such officer the powers, functions or duties conferred or imposed on the Chief Forestry and Wildlife Officer by this Act, other than the power of delegation conferred by this subsection.

- ii: A delegation made under subsection i of this Act:
 - a: is revokable at any time by the Chief Forestry and Wildlife Officer, and;
 - b: shall not prevent the exercise of those powers or the performance of functions or duties by the Chief Forestry and Wildlife Officer.
- iii: There shall be appointed such other public officers to be known as Forestry and Wildlife Officers as are necessary for the purposes of this Act. Every Forestry and Wildlife Officer shall perform such duties and possess such powers under this Act as may be assigned to him by the Chief Forestry and Wildlife Officer.
- 5 : The Chief Forestry and Wildlife Officer and other employees of the Division, except casual labourers, shall be appointed by the Public Service Commission.
- 6 : For the purpose of carrying out the provisions of this Act, every Forestry and Wildlife Officer shall have the authority, privileges and protection of a Police Constable conferred or granted by any law in force in Montserrat.
- 7 : The duties of the Chief Forestry and Wildlife Officer and other officers and employees of the Division shall be to promote wildlife conservation and management in Montserrat.

For those purposes they shall be:

- a: Enforce the laws and regulations relating to wildlife and inform the public as to the provisions of such laws and regulations.
- b: To carry out research or surveys for the protection, control or disposition of wildlife or wildlife products including the establishment of laboratories, zoos and other related services.
- c: Recommend annually to the Minister desirable modifications in the Schedules of this Act to permit rational utilization of the wildlife resource.
- d: To advise the Minister on the establishment of wildlife reserves and their subsequent management.
- e: To issue licences for hunting and fishing, as hereinafter provided, and collect and account for all funds derived there from.

- f: To advise the Minister on the issuing of permits for the collecting of wildlife and for keeping wildlife in captivity, and specifying conditions under which such wildlife shall be kept, and disposed of.
- g: To provide facilities for visitors to wildlife reserves, zoos and other related establishments.
- h: To gather, print and circulate information and reports pertaining to wildlife.
- i: To enter into contracts with individuals, agencies or companies for the construction of trails, roads, boundary marks, building hatcheries and other works for wildlife.
- j: To engage in all other activities necessary for the purposes of this Act.

PART: 2

WILDLIFE MANAGEMENT, PROTECTION & CONTROL

- 8 : Wildlife, both resident and migratory, native and introduced including captive wild species having their origins in Montserrat but excepting fish, frogs or crustaceans in private ponds; are the property of the Crown and may be hunted, taken or possessed only at such times and in such manner as is provided by this Act.
- 9 i: The Minister may, upon the recommendation of the Chief Forestry and Wildlife Officer, the Permanent Secretary and Director of Agriculture:
 - a: declare any area of land or water or territorial sea to be a wildlife reserve in which the hunting, fishing or taking of one or more species of wildlife shall be prohibited. Such a declaration shall be published in the official Gazette.
 - b: lease, exchange, buy or sell any property for use as a wildlife reserve.
 - c: alter the limits and boundaries of any wildlife reserve.
- ii: The Chief Forestry and Wildlife Officer shall define, mark out and maintain the boundaries of all wildlife reserves in Montserrat.
- 10: No land shall be granted, devised, sold or leased within a wildlife reserve.

- 11i: The Minister may, by order published in the official Gazette, provide for the payment of a fee for visiting a wildlife reserve.
- ii: Any fee paid for visiting a wildlife reserve and any voluntary contributions made in respect thereof shall be paid into the conservation fund established under Section 41 of this Act.
- 12i: The owner of any land may, with a view to the conservation of wildlife thereon, represent in writing to the Chief Forestry and Wildlife Officer his desire:
- a: that his land be supervised or managed on his behalf as a wildlife reserve.
- b: that any or all of the provisions of this Act or rules made there under be applied to his land.
- ii: Where a representation under sub section i is made, the Minister, on the advice of the Chief Forestry and Wildlife Officer may, by order published in the official Gazette, apply to the land, provisions of this Act or rules made there under and as are suitable to the circumstances and as may be agreed upon by the owner of the land.
- 13i: Except as provided under Section 24, any person who:
- a: hunts or is a member of a party engaged in hunting in any wildlife reserve;
- b: is found within a wildlife reserve under circumstances showing that he was hunting any wildlife;
- c: carries in a wildlife reserve any gun or other weapon or device capable of being used to hunt wildlife;
- d: hunts, fishes or takes any mammal, bird, reptile, amphibian, fish, crustacean or any other animal or plant specified as being protected in a wildlife reserve;
- e: disturbs, damages or destroys the nest, egg, fry or young of any wildlife within a wildlife reserve,

Commits an offence against this Act and is liable upon summary conviction in the case of a first offence, to a fine of \$2,000, and in the case of a second or subsequent offence, to a fine of \$4,000 or to imprisonment for a term of one year or both.

ii: A person found in a wildlife reserve in possession of any wildlife shall be deemed to have hunted that wildlife in that wildlife reserve unless the contrary is proved, the onus of which proof shall lie upon the person charged.

iii: Subject to sub section iv, any person who within a wildlife reserve:

a: fells, cuts, girdles, marks, lops, tops, uproots, burns, strips the bark of, or otherwise injures any tree;

b: clears, cultivates, or breaks up any land for cultivation or for any other purpose;

c: pastures livestock or permits trespassing of livestock;

d: kindles, keeps or carries any fire;

e: removes any forest produce

Commits an offence and is liable upon summary conviction in the case of the first offence, to a fine of \$2,000 and in the case of a second or subsequent offence, to a fine of \$4,000 or to imprisonment for a term of one year or to both.

iv: The Chief Forestry and Wildlife Officer may, with the approval of the Minister, authorize an individual to perform any of the acts otherwise prohibited under sub section iii of this Act if, in his opinion, it is necessary for the better management of the wildlife reserve.

v: Any Forestry and Wildlife Officer may seize any livestock found trespassing in a wildlife reserve if the owner of that livestock cannot be immediately found.

vi: All livestock seized under sub section v may be dealt with under the Stock Trespass Act.

14: Wildlife is hereby divided into three categories, namely Protected Wildlife as specified in the First Schedule; Partially Protected Wildlife as specified in the Second Schedule and Unprotected Wildlife as specified in the Third Schedule.

15i: The Minister may by statutory instrument:

a: add to, vary, or delete from any of the species specified in any of the said schedules;

- b: make provision for the protection or control of any species of wildlife listed in any of the said schedules;
 - c: declare a Close Season for any of the species of wildlife specified in the Second Schedule.
 - ii: The power of the Minister under this Section shall include the power by statutory instrument as aforesaid to declare, for any period not exceeding five years in the first instance, a Close Season in respect of any or all of the species of wildlife specified in the Second Schedule.
- 16: Except by authority of a licence or permit issued under Section 24 of this Act, any person who:
- a: hunts, or takes any Protected wildlife or the eggs, fry or young thereof;
 - b: damages or destroys the nest, fry or young of any protected wildlife

Commits an offence and is liable upon summary conviction in the case of a first offence, to a fine of \$2,000 and in the case of a second or subsequent offence, to a fine of \$4,000 or to a term of imprisonment for a term of one year or both.

17: Any person who during a Close Season:

- a: takes or hunts any Partially Protected wildlife; or
- b: damages or destroys the nest, egg, fry or young of any Partially Protected wildlife

Commits an offence and is liable upon summary conviction to a fine of \$2,000 or to a term of imprisonment of six months or both.

18: Any person who:

- a: sets in any position any electrical device designed to frighten any Protected or Partially Protected wildlife;
- b: sets in any position any article of any nature which is likely to cause or is calculated to cause injury to any Protected or Partially Protected wildlife;
- c: sets in any place any noxious substance for the purpose of killing, taking, injuring or stupefying or which is likely or calculated to kill, injure or

stupefy or is otherwise injurious to any Protected or Partially Protected wildlife;

- d: for the purpose of killing or capturing any Protected or Partially Protected wildlife, uses any live animal or any decoy or appliance whatsoever;
- e: uses any form of artificial light for the purpose of killing or capturing any Protected or Partially Protected wildlife;
- f: deposits or permits the deposit of any deleterious substance of any type in water frequented by fish, shrimps or crabs or in any place where such a deleterious substance may enter such water;
- g: constructs or excavates or maintains any pit for the purpose of catching or killing Protected or Partially Protected wildlife;
- h: engages in logging, lumbering, land clearing and who puts or permits to be put any slash, stumps or other debris into any water frequented by fish, shrimps or crabs

Commits an offence against this Act and is liable upon summary conviction to a fine of \$2,000 or to a term of imprisonment not exceeding six months or to both.

19i: Any person who:

- a: except by authority of a licence issued under Section 24 of this Act, has in his possession or control any Protected wildlife;
- b: exposes or offers for sale or purchases any protected wildlife or any part of such wildlife or the eggs, fry or young thereof;
- c: has in his possession or control any Partially Protected wildlife or any part of any such wildlife or the eggs, fry or young thereof during the Close Season;
- d: exposes or offers for sale or purchases any Partially Protected wildlife or the eggs, fry or young thereof during the Close Season
- e: imports or exports any wildlife into or from Montserrat without first having obtained a licence

Commits an offence against this Act and is liable upon summary conviction to a fine of \$2,000 or to a term of imprisonment not exceeding six months.

- ii: Where a person has in his possession or offers for sale any Partially Protected wildlife or parts or eggs, fry or young thereof at any time after the third day following the commencement of the Close Season for that species until the commencement of the Open Season, it shall be his responsibility to answer any charges made against him that the wildlife, parts or eggs thereof were taken before the commencement of the Close Season.
- 20i: Subject to the provisions of this Act and of any other law, it shall be lawful to hunt or to take any species of wildlife specified in the Third Schedule; but no such species of wildlife shall be kept in captivity without a licence issued by the Minister under Section 24 of this Act.
- ii: Any person who keeps in captivity any species of wildlife listed in the Third Schedule without having obtained a licence shall be guilty of an offence under this Act.
- 21i: Where Protected or Partially Protected wildlife during the Close Season is alleged to be causing damage to any crops, land or other private property, the owner or occupier thereof may report same to the Minister who shall expeditiously take such action as may be considered necessary including the granting of any licence to kill such wildlife.
- ii: Wildlife killed under subsection i shall remain the property of the Crown and shall be disposed of only as authorised by the Chief Forestry and Wildlife Officer.

PART 3: LICENCES

- 22: Excepting species listed on the Third Schedule no person may hunt mammals or birds without a valid hunting licence and no person of the age of fourteen years or older may fish in freshwater streams or lakes without a valid fishing licence.
- 23: Licences for hunting Partially Protected wildlife during the Open Season and for fishing in freshwater streams or lakes shall be issued at the office of the Chief Forestry and Wildlife Officer, or at any sub office so designated by him, and shall be as in Form 1 and Form 2 of Schedule 4 respectively of this Act.

- 24i: The Minister may upon the advice of the Chief Forestry and Wildlife Officer, and on application made to him in writing, issue licences for any of the following purposes:
- a: to hunt or to take wildlife in a wildlife reserve;
 - b: to hunt or to take any Protected wildlife listed in the First Schedule;
 - c: to hunt or to take any Partially Protected Species listed in the Second Schedule during the Close Season;
 - d: to import or export any wildlife into or out of Montserrat;
 - e: to keep any wildlife in captivity.
- ii: A licence issued under subsection i may contain any additional such conditions as the Minister may think fit.
- 25i: All licences for hunting and fishing issued under Section 23 of this Act shall expire on the last day of the Open Season and must be renewed prior to any subsequent Open Season.
- ii: A licence issued under Section 24 of this Act shall be valid only for the period during which it is issued and shall in any event expire on the last day of December following the date of issue.
- iii: Every licence shall be valid only in respect of the person to whom it is issued and shall not be transferable.
- iv: Every holder of such licence shall carry it with him when engaged in any activity authorised by it, and shall show such licence upon request to any Forestry and Wildlife Officer.
- 26i: The Chief Forestry and Wildlife Officer may at any time suspend or revoke any licence issued, and where a licence is cancelled the Chief Forestry and Wildlife Officer shall so inform the licence holder by letter addressed to his last known place of residence.
- ii: Where any licence has been lost, stolen or destroyed a duplicate may be issued by the appropriate authority upon payment of the prescribed fee.
- 27: The fees for all licences shall be established by the Minister and shall be published in the Official Gazette. Separate fees and forms may be established to distinguish between nationals and non nationals.

- 28: A licence issued under the provisions of this Act shall not confer upon the holder thereof any right to enter upon any private lands or waters.

PART 4: SPECIAL PROVISIONS

- 29: For the purposes of this Act Montserrat's National Bird, the Montserrat Oriole (*Icterus oberi*), shall be declared a Specially Protected Species.
- 30: Notwithstanding the provisions of Section 13 a person who has a Specially Protected Species in captivity and can show that he has possessed that Specially Protected Species prior to the first day of January 1985, may keep that species in captivity if it is registered in accordance with Part 4 of this Act.
- 31: Notwithstanding the provisions of Section 30 any person found to be hunting, taking, purchasing, possessing, selling or disturbing the nest eggs or young of a Specially Protected Species shall be guilty of an offence and shall upon summary conviction be liable to a fine of \$5,000 or to imprisonment for a term of one year or to both.
- 32: Any person found to be exporting or attempting to export any Specially Protected Species shall be guilty of an offence against this Act and shall be liable upon summary conviction to a fine of \$5,000 or to imprisonment with hard labour for a term of one year or to both.

PART 5: ENFORCEMENT

- 33i: Any Forestry and Wildlife Officer where he has reasonable grounds to believe that a person has committed an offence under this Act may;
- a: require that person to produce for inspection any wildlife in his possession or any licence issued to him under this Act;
 - b: stop and search the person and any vehicle boat or other conveyance in the possession of that person or in which that person happens to be, and open and search any baggage or other things in his possession;

- c: enter and search any premises in the occupation of that person but no premises used exclusively as a dwelling house shall be entered except in the presence and with the consent of the owner or occupier thereof;
 - d: seize any wildlife, carcass or meat thereof which he has reason to believe has been taken in the commission of the offence, or is being possessed in contravention of this Act;
 - e: under the authority of a warrant issued by a Magistrate enter and search any dwelling house in the occupation of that person and seize any wildlife or articles which he has reason to believe has been taken or used in the commission of the offence.
- ii: A Forestry and Wildlife Officer in exercise of any of the powers conferred on him by this Section shall, on demand, produce such means of identification as may be necessary to show that he is a Forestry and Wildlife Officer.
- 34 i: A Forestry and Wildlife Officer may, where he finds a person committing an offence under this Act require that person to state his name and place of abode and may arrest that person without a warrant if;
- a: that person refuses to state his name and place of abode to the satisfaction of the Forestry and Wildlife Officer;
 - b: that person states a name or place of abode which the Forestry and Wildlife Officer believes to be false; and the officer shall cause every person so arrested to be carried forthwith to the nearest police station and to be placed in the custody of the officer on duty.
- ii: A person who when required to state his name or place of abode under subsection i refuses to state his name or place of abode or who gives a name or place of abode which is false commits an offence and is liable upon summary conviction to a fine of \$750 or to imprisonment for a term not exceeding three months or to both.
- 35 : Any person who assaults, hinders, or obstructs a Forestry and Wildlife Officer in the execution of his duty under this Act commits an offence and is liable upon summary conviction to a fine of \$2<000 or to imprisonment for a term of six months or to both.
- 36 i: All complaints for offences against this Act shall be laid in the name of an officer.
- ii: Where an officer makes a complaint against another person for an offence against this Act any other officer may appear on his behalf before the

Court hearing the said complaint; and he shall have the same privileges as to addressing the Court and as to examining witnesses as if he were the Complainant.

- iii: Any police officer may conduct the prosecution of any complaint under this Act notwithstanding that such complaint was not laid by a member of the police force.
 - iv: In any proceedings before the Court the statement of a Forestry and Wildlife Officer that the species of wildlife in issue is one of the species of wildlife listed in any of the Schedules to this Act shall be evidence of that fact.
- 37 i: Where an offence is committed on the sea coast or within the territorial waters of Montserrat, it may be tried by a Court in any district abutting such sea coast or adjoining such sea.
- ii: Where any offence against this Act is committed in or from any water forming the boundary between any two Courts it may be tried in either of such Courts.
- 38 i: Where a person is convicted of an offence under this Act, any wildlife, part or product thereof, or any gun, weapon, dog, boat, vehicle or other conveyance, or other article used in the commission of the offence is liable to be forfeited to the Crown by order of the Magistrate or to be otherwise dealt with as the Magistrate may seem just.
- ii: Forfeiture under subsection i may be in addition to any other penalty prescribed for such offence under this Act.
- iii: Where the carcass or meat of any wildlife is seized under subsection i, the Magistrate before whom such carcass or meat is brought, shall if in his opinion it cannot be adequately preserved, forthwith order the same to be tendered as an exhibit and shall thereafter make such order with respect to its disposal as may seem to him just and reasonable.
- 39 : Upon any conviction under this Act the Magistrate may order that a part of any fine imposed not exceeding a moiety, be paid to any person or persons whose information led to such a conviction.
- 40 : A person convicted of an offence under this Act for which no penalty is expressly provided is liable upon summary conviction to a fine of \$750 or to imprisonment for a term not exceeding three months or to both.

PART 6: MISCELLANEOUS

- 41 : The Minister shall establish a special fund to be used only for the conservation of wildlife and their natural habitats including wildlife reserves. Any fees charged for entry into a wildlife reserve, for hunting partially protected wildlife or for permits issued under this Act, as well as any voluntary contributions by individuals or organisations shall be paid into this fund.
- 42 : The Minister may by statutory instrument:
- a: prescribe the scale of fees payable for licences issued under this Act;
 - b: make provision for the control and administration of any wildlife reserve;
 - c: make provision for the protection or control of any species of wildlife listed on any of the Schedules to this Act; including the amendment of dates for the Close Season which will be notified through the official Gazette;
 - d: *do all other such things as may be necessary for the fulfillment of the purposes of this Act.*
- 43 i: The Minister may, from time to time, by writing under his hand, empower an officer:
- a: to accept from any person who has admitted in writing or in the presence of at least one witness not being an officer that he has committed an offence against this Act, a sum of money not exceeding \$750 by way of compensation for such offence.
 - b: When any property has been seized under this Act, to release the same on payment of the value thereof as estimated by such officer.
 - ii: On payment of such a sum of money or such value, or both, as the case may be, to such officer, the person so admitting the commission of such offence, if in custody, shall be discharged, the property, if any, shall be released, and no further proceedings shall be taken against such person or property in respect of such offence.
 - iii: All monies received by such officer under this Section shall be paid promptly into the Treasury by the officer receiving same.
- 44 : The Wild Birds Protection Ordinance is hereby repealed.

FIRST SCHEDULE

Protected wildlife includes the following species which can be hunted at no time of the year:

BIRDS

<i>Scientific Name</i>	<i>English Name</i>	<i>Local Name</i>
<i>Podilymbus podiceps</i>	Pied-billed Grebe	Duck
<i>Podiceps dominicus</i>	Least Grebe	Duck
<i>Puffinus iherminieri</i>	Audubons Shearwater	—
<i>Phaethon aethereus</i>	Red billed Tropicbird	Trophic
<i>Phaethon lepturus</i>	Wh. tailed Tropicbird	Trophic
<i>Pelecanus occidentalis</i>	Brown Pelican	Pelican
<i>Sula leucogaster</i>	Brown Booby	Booby
<i>Sula sula</i>	Red footed Booby	White Booby
<i>Fregata magnificens</i>	Magnificent Frigate Bird	Man O War
<i>Ardea herodias</i>	Gt. Blue Heron	Grey Gaulding
<i>Butorides virescens</i>	Green Heron	Little Gaulding
<i>Florida caerulea</i>	Little blue Heron	Blue Gaulding
<i>Bubulcus ibis</i>	Cattle Egret	Cattle Bird
<i>Dichromanassa rufescens</i>	Reddish Egret	Gaulding
<i>Egreta alba</i>	Great Egret	White Gaulding
<i>Egreta thula</i>	Snowy Egret	White Gaulding
<i>Nyctanassa violacea</i>	Yellow cr. Night Heron	Crab Gaulding
<i>Plegadis falcinellus</i>	Glossy Ibis	Coco
Family <i>Anatidae</i>	Migratory Ducks	
Family <i>Accipitridae</i>	Migratory Hawks	
Family <i>Paltionidae</i>	Migratory Ospreys	Fish Eagle
Family <i>Falconidae</i>	Migratory Falcons	
<i>Porzana carolina</i>	Sora	Rail
<i>Porphyrula martinica</i>	Purple Gallinule	Coot
<i>Fulica caribaca</i>	Caribbean Coot	Coot
Family <i>Charadriidae</i>	Migratory Plovers, etc.	
Family <i>Scopopacidae</i>	Migratory Sandpipers, etc.	
Family <i>Laridae</i>	Gulls & Terns	
<i>Columbina passerina</i>	Common Ground Dove	Ground Dove
<i>Coccyzus minor</i>	Mangrove Cuckoo	Coo coo
<i>Crotophaga ani</i>	Smooth billed Ani	Blackbird
Family <i>Caprimulgidae</i>	Migratory Nightjars	
Family <i>Apodidae</i>	Migratory Swifts	

<i>Eulampis jugularis</i>	Purple th. Carib	Dr. Carcoo
<i>Sericotes holosericeus</i>	Green th. Carib	Dr. Carcoo
<i>Orthorhyncus cristatus</i>	Ant. crested Hummingbird	Sparrow
<i>Ceryle alcyon</i>	Belted Kingfisher	Kingfisher
<i>Tyrannus dominicensis</i>	Grey Kingbird	Loggerhead
<i>Progne subis</i>	Purple/Caribbean Martin	Swallow
Family <i>Hirundinidae</i>	Migratory Swallows	
<i>Margarops fuscus</i>	Scaly breasted Thrasher	ThrushCinclocertjoa
<i>Cinclocertioa rifocaida</i>	Trembler	
Family <i>Parulidae</i>	Migratory Wood Warblers	
<i>Dendrolca petechia</i>	Yellow Warbler	West Indian Canary
<i>Coereba flaveola</i>	Bananaquit	Yellow Breast
Family <i>Icteridae</i>	Migratory Blackbirds	
<i>Icterus oberi</i>	Montserrat Oriole	Tannia Bird
Family <i>Thraupidae</i>	Migratory Tanagers	
<i>Tiaris bicolor</i>	Blk. faced Grassquit	Chitty Bird

REPTILES

All 13 species of reptiles including the Iguana *Iguana iguana*, the galliwasps, *Dipologlossus montisserrati*, and the Anole *Anolis lividus*. All amphibians except the Mountain Chicken, *Leptodactylus fallax*.

SECOND SCHEDULE

Partially Protected wildlife includes the following species which are protected year round within designated wildlife reserves, but outside of which are subject to an Open (hunting) Season and a Close (no hunting) Season:

MAMMALS

<i>Scientific Name</i>	<i>English Name</i>	<i>Local Name</i>
<i>Dasiprocta agouti</i>	Agouti	Agouti

BIRDS

<i>Scientific Name</i>	<i>English Name</i>	<i>Local Name</i>
<i>Gallinula chloropus</i>	Common Gallinule	Coot
<i>Columba squamosa</i>	Red necked Pigeon	Mountain Pigeon
<i>Zenaida aurita</i>	Zenaida Dove	Wood Dove
<i>Geotrygon mystacea</i>	Bridled Quail Dove	Partridge

AMPHIBIANS

<i>Scientific Name</i>	<i>English Name</i>	<i>Local Name</i>
<i>Leptodactylus fallax</i>	Mountain Chicken	Mountain Chicken

THIRD SCHEDULE

Unprotected species may be hunted year round and include:

<i>Scientific Name</i>	<i>English Name</i>	<i>Local Name</i>
<i>Rattus spp.</i>	Rats	Rats
<i>Musculus spp.</i>	Mice	Mice
<i>Margarops fuscatus</i>	Pearly-eyed Thrasher	Thrush

NOTE: Spellings of Latin names confirmed.

SCHEDULE 4

Form 1: Hunting licence:

SCHEDULE 5

Licence for the keeping in captivity of a Specially Protected Species:

NOTE: Copies of licences can be obtained from the author at PO Box 1537, Castries, Saint Lucia.

In view of the fact that Montserrat is currently combining its Wildlife and Forestry Acts and amending a draft submitted by Mr. Gane & Mr. Mc Henry it is proposed that the most valuable sections of the foregoing be extracted and compiled into the draft under consideration. In line with this the following letter was sent to Mr. F. Michael (Director of Agriculture) copied to the Chief Forest Officer. "My Act" refers to the foregoing, "your act" to the draft Mc Henry/Gane Act.

**SOME COMMENTS ON THE DRAFT FORESTRY & WILDLIFE
ORDINANCE OF MONTSERRAT**
(See preceeding note)

JUSTIFICATION

Your Act Part II Section 3	Replace with My Act Part I Sections 3i, 3ii & 4i, 4ii, 4iii	This gives the Chief Forstry Officer legal jurisdiction over his subordinates, powers of delegation and defines to whom he is responsible
	Include My Act Part I Section 6	This confers upon Forestry Officers the authority, privileges and protection of a police contable.
Your Act Part II Section 4	My Act Part I Section 7 substitute your (s) with my (b) include my (g) & (i)	This allows for the establishment of trails, mini zoos, etc.
	Include my (e)	Provides for hunting/ fishing licences.
Your Act Part II Section 6	Include (c), (d) and (f) from my Part I Section 7	This allows the Forestry Board to advise on changes in schedules, establishment of reserves, and issuance of licences.
Your Act Part VIII Section 29	Replace with My Act Part 2 Section 8	Includes migratory and captive wild species, excludes fish/frogs in private ponds.
Your Act Part VIII Section 31	Replace with my Part 2 Section 9i, 9ii & 10 with necessary wording	Provides for the lease, buying, of rental of property for reserves.

amendments

	Include my Part 2 Section 11i & 11ii	Allows for the establishment of a fee for reserve visitation.
	Include My Act Part 2 Section 12i & 12ii	Allows private land owners to seek assistance in applying legislative provisions to their land for the purposes of a Wildlife Reserve.
Your Act Part VIII Section 32	Replace with My Act Part 2 Section 13i—13vi	More comprehensive and allows CFWO to permit certain prohibited activities in a reserve if they are in its best interest.
Your Act Part VII Sections 35,36,37,& 38	Replace with My Act Part 2 Section 16—21ii	This clearly defines what is illegal, details prohibited hunting techniques, covers import/export & the sale of partially protected wildlife products in the closed season as well as provides for action i the case of protected wildlife causing damage to private property.
	Include My Act Part 3 Sections 22—28	This makes provision for the issuance, renewal & revoking of hunting/ fishing licences and the charging of fees.
	Include My Act Part 4 Sections 29—32	Makes special provision for the protection of Montserrat's National Bird, <i>Icterus oberi</i> .

**Your Act
Part X
Section 46**

**Include My
Act Part 5
Section 36iv**

**Strengthens preparation
of court cases re:
species identification**

**Include My
Act Part 5
Section 39**

**Allows for the payment
of rewards for
information given.**

**Include My
Act Part 6
Section 41**

**Allows for the
establishment of a
conservation fund to
promote conservation
works.**

10.2: Declaration of a National Park

In the words of Franklin Margetson, "It is now extremely urgent to designate the boundaries of the [National] Park, and to devise, enact and enforce legislation for the protection of forest products, wildlife, soil, and water; tourist attractions, and the general environment all of which existed in a vulnerable and fragile state even before the hurricane. The position is now understandably desperate..."

Why a National Park Now?

Hurricane Hugo destroyed not only much of Montserrat's infrastructure and her buildings, but also its natural landscape. Arendt (1990) estimates that upwards of 80% of the island's trees were stripped with many sustaining major structural damage.

Fallen trees have left the mountainsides prone to erosion, the rivers and streams liable to siltation and the interior open to access and unsustainable shifting agriculture.

Further clearing of these fragile areas will do irrevocable harm to Montserrat's environment, threatening watersheds and her development.

Montserrat's future relies on its pristine environment—thrusts in agriculture require year round supplies of water and fertile soils; tourism and expatriate

house construction relies on the island's beauty with its scenic attractions, forests, waterfalls and lush vegetation.

At present, aside from a few coastal sites managed by the National Trust, Montserrat has no system of protected areas. Her forests are "protected" only by a seemingly unwritten convention that sets aside lands over 1,500 feet as reserve. These lands are undemarcated and supporting legislation is outdated and largely unenforced.

Historical, archaeological sites and artifacts—precious remnants of the island's past—are open to desecration, removal and export, being protected by neither convention nor law.

A Park is needed now because:

- The Government presently has the services of a trained Town Planner who could assist in determining those sites best suited to be declared part of a National Park system.
- The recent post project questionnaire survey of Montserratians from communities across the island shows strong support (85%) for Government action to protect the island's National Bird and the habitat within which it lives.
- Much of the groundwork for the establishment of a Parks system has already been done by Bovey in 1986, but his report has been pending since that date.

Where should the National Park be?

It is proposed that, as an initial step, the Government of Montserrat declare the following areas to be components of a National Parks system:

- 1: Carr's Bay, Bransby Point, St. George's Hill, Foxes Bay and Woodlands Beach. These are already defacto parks in everything but name and are presently under the control of the National Trust. Their declaration as "National Parks" would give them added recognition whilst having no negative effects.
- 2: All government lands over 1,500 feet. These are by convention "protected" and cannot be cleared but this is apparently unwritten. Their declaration *?would allow for their development re the construction of trails whilst at the same time ensuring the island with the protection of critical water-

sheds. These should be surveyed and demarcated using natural and physical features whenever possible.

- 3: The area including Galway's Estate, Soufriere, Great Alps Falls and the Bamboo Forest should be designated National Park sites. These are principal tourist sites and in the case of the latter home to the island's National Bird.

The areas proposed include all those areas critical for watershed protection, principal historical and archaeological sites and major tourist areas. Their declaration will not conflict with development as the lands are already protected either by the Trust or unwritten convention.

It is further proposed that a National Parks Act be passed, or that components pertaining to same be included in the Forestry & Wildlife Act presently under review. This would allow for the subsequent declaration by Government of other areas once the benefits of a parks system are proved. The proposed legislation outlined below includes an escape clause whereby vested lands may be developed at a later date if it is deemed in the national interest.

NATIONAL PARKS
& PROTECTED AREAS

MONTSERRAT

Act No __ of ____

AN ACT RESPECTING NATIONAL PARKS AND PROTECTED AREAS
FOR MONTSERRAT.

BE IT ENACTED by the Queen's Most Excellent Majesty, by and with the advice and consent of the House of Assembly of Montserrat and by the authority of the same as follows:

1. This Act may be cited as the

NATIONAL PARKS AND PROTECTED AREAS ACT, ____.

2. In this Act,

"Council" means the National Parks Advisory Council established under Section 8;

"Crown Lands" means lands belonging to Her Majesty or of which the government of Montserrat has the power to dispose, including any waters on or flowing through the said lands and the natural resources of the said lands;

"Director" means the Director of National Parks appointed pursuant to sub-Section (1) of Section 7;

"Minister" means the Minister charged with the responsibility for the national parks system;

"National Parks System" means the lands described in Sub-section (1) of Section 3;

"park" means any national park of Montserrat;

"park ranger" means a person appointed as park ranger pursuant to sub-section (1) of Section 7;

"plan" means a plan described in Section 11;

"protected area" means any Crown Lands set apart under Section 5.

3.
 - (1) All lands in the parks and all lands set apart as protected areas shall constitute the national parks system and are hereby vested in the Crown and dedicated to the people of Montserrat for their benefit, education and enjoyment.
 - (2) Notwithstanding any other Act, the lands within the national parks system shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations.
 - (3) The Minister shall have the administration, management and control of the national parks system and shall exercise such control through the establishment of a National Parks Authority under Section 7(2).
 - (4) For the purposes of the administration, management and control of the national parks system, the Minister may borrow money and any money borrowed pursuant to this subsection shall be secured and repayable out of the consolidated fund.
4.
 - (1) Subject to subsection (3), the lands described in the Schedule constitute the National Parks of Montserrat.
 - (2) The Governor may by order
 - a) add to any park any Crown Lands and any lands leased to the Crown, and
 - b) add to any park any private lands donated for the purpose of preservation and protection, and
 - c) effect the purchase of any lands deemed critical for protection and inclusion in the national parks system, and
 - d) amend the Schedule by altering the description of the park therein to include any lands, added to the park pursuant to paragraphs (a), (b) and (c), and any lands so added may be contiguous to or separate from the park.

- (3) Upon the expiration of the term of any lease to the Crown of any lands added to the park pursuant to paragraph (a) of subsection (2), such lands cease to be part of the park and the Governor may therefore by order amend the Schedule by altering the description of the park therein to exclude such lands.
5. (1) The Minister may by order set apart any Crown lands as protected area for the purpose of
- (a) preserving the natural beauty of such area, including the fauna and flora thereof;
 - (b) creating a recreational area;
 - (c) commemorating an historic event of national importance; or
 - (d) preserving any historic landmark or any area or object of historic, pre-historic, archaeological or scientific importance.
- (2) The National Parks Authority as established under Section 7(2) shall define, mark out and maintain the boundaries of all parks.
6. (1) Except as provided by this Act, no Crown lands within the national parks system shall be granted, sold or otherwise disposed of and no persons shall settle, use or occupy any lands within the national parks system.
- (2) No right, title or interest in or to any lands within the national parks system may be acquired by any person by prescription.
- (3) The Minister, may, subject to such terms and conditions as he thinks fit, with respect to any Crown lands within the national parks system grant
- (a) any right of way necessary for the construction and maintenance of any roads or for any public utility; and
 - (b) any lease, licence or agreement of occupation for locating and maintaining any exchange, office, substation or other necessary installation connected with any public utility.
7. (1) A Director of National Parks, who shall exercise administrative control of the other persons who may be appointed under this subsection and of the park rangers and such other officers and employees as are necessary for the proper administration of the national parks system shall be appoint-

ed by the Minister on such terms and conditions as may be stipulated by him from time to time.

(2) The Director of National Parks, park rangers and such other officers and employees appointed pursuant to subsection (1) constitute the National Parks Authority.

(3) The Director may employ such casual workers as he deems necessary for the administration of the national parks system, in keeping with such terms and conditions for their employment as may be provided by the Minister.

8. (1) There shall be a council, to be known as the National Parks Advisory Council, consisting of

(a) the person from time to time holding the office of Director of National Parks; and

(b) three members appointed by the Minister; and

(c) one member appointed by the Minister on the recommendation of the Montserrat National Trust.

(2) Each member of the Council appointed under paragraph (b) of subsection (1) shall hold office for a term not exceeding three years and is eligible for re-appointment.

(3) Any person appointed as a member of the Council under paragraph (b) of subsection (1) shall, as far as is reasonably practicable, be qualified to act as a member of the Council by reason of his interest, training or occupation.

9. (1) The Director is the Chairperson of the Council, but in the event of his absence or incapacity or if the office of Director is vacant the other members of the Council shall elect one of their number to act as Chairperson for the time being.

(2) Each member of the Council, other than the Director, shall be paid fees and expenses for attendance at meetings of the Council as may be authorised by law.

(3) Three members constitute a quorum of the Council.

10. (1) The Council shall advise the Minister on matters relating to the administration, management and control of the national parks system and any other matters related to the national parks system that he may refer to it.

(2) The Director shall furnish to the Council all information necessary for it to carry out its functions under this Act.
11. (1) The Director may, with respect to any area within the national parks system, prepare a plan of management for submission to the Minister.

(2) A plan shall contain a scheme of operations, not inconsistent with the purposes of this Act, that it is proposed to undertake in respect of the area within the national parks system to which the plan relates.

(3) If the Minister proposes to adopt a plan, he shall cause notice of such plan to be published in the official Gazette specifying
 - (a) the address of the place where the plan may be inspected; and
 - (b) the address to which representations respecting the plan may be sent.

Within one month of publication of a notice as required by subsection (3) or within such longer period as may be specified in the notice, any person may send representations respecting the plan to the address specified in the notice.

12. (1) Upon expiration of one month from the day of publication of a notice referred to in subsection (3) of Section 11, or such longer period as may be specified in the notice, the Director shall refer to the Council the plan to which the notice relates, any comments and representations that he has received from any person or organisation with respect to the plan.

(2) The Council shall consider the plan and the comments, recommendations and representations, if any, that have been referred to it under subsection (1) and, upon completion of its considerations, shall transmit the plan together with its recommendations to the Minister.

(3) Upon receipt of the recommendations of the Council the Minister may
 - (a) adopt the plan, with such modifications, if any, as he deems necessary in the light of any recommendations made by the Council; or

(b) refer the plan back to the Director for further consideration and re-submission to the Minister upon such terms and conditions as he deems necessary.

(4) Upon re-submission of a plan pursuant to paragraph (b) of subsection

(3), the Minister may adopt the plan, with such modifications, if any, as he deems necessary.

13. (1) Subject to subsection (2), the Minister may amend or cancel any plan or substitute a new plan for an existing plan.

(2) Where, pursuant to subsection (1), the Minister proposes to make a major amendment to a plan or substitute a new plan, he shall instruct the Director to prepare an amended plan or a new plan, as the case may be, and subsections (3), (4) and (5) of Section 11 and Section 12 apply, with such modifications as the circumstances require.

(3) Where a plan is in force in relation to any area within the national parks system,

(a) such area shall be operated in accordance with the plan; and

(b) no activity contrary to such plan shall be carried out in such area.

14. (1) The Minister, may with respect to the national parks system, make regulations for carrying out the purposes of this Act and, limiting the generality of the foregoing, may make regulations providing for

(a) the preservation of Montserrat's fauna and flora;

(b) the regulation of hunting and fishing;

(c) the preservation and maintenance of water supplies and any water catchment area;

(d) the granting of leases and licences of occupation upon Crown lands within the national parks system for the purpose of providing accommodation and other services to visitors to the national parks system;

(e) the prevention of squatting, trespass or encroachment;

- (f) the prevention of soil erosion, landslides, the formation of ravines and torrents and the deposit of mud, silt, stones and other material in any water;
- (g) the prevention and control of fire;
- (h) the making of surveys of lands and the protection of boundary and survey marks;
- (i) the entry and control of movement of persons and animals;
- (j) the construction, maintenance, operation and administration of roads, ways, public works and utility services;
- (k) the regulation and control of transportation within the national parks system;
- (l) the regulation and control of any trade, occupation or business within the national parks system;
- (m) the regulation and control of development, construction and building within the national parks system, and

(2) Notwithstanding paragraph (d) of subsection (1), no lease or licence of occupation may be granted in any area of the national parks system where such lease or licence or the granting thereof is contrary to or inconsistent with a plan in force in respect of that area.

(3) The Minister may, by order published in the official Gazette provide for the payment of a fee for visiting a park within the national parks system.

(4) Any fee paid for visiting a park in pursuant to subsection (2) of Section 14, and any voluntary contributions made in respect thereof shall be paid into a National Park Development Fund established under Section 15 of this Act.

15. The Minister shall establish a special fund to be called a National Park Development Fund and to be used solely for the development and improvement of the national parks system. Any fees charged for entry into a park as well as any voluntary contributions by individuals or organisations made in respect of any park shall be paid into this fund.

16. (1) A park ranger or police officer, or any other authorised individual may, where he has reasonable grounds to believe that a person has committed an offence under this Act
- (a) interrogate any person found in possession of any flora or fauna or article of historical or archaeological value within any park;
 - (b) call upon any person to produce any licence or permit required by the regulations;
 - (c) stop and search the person and any vehicle, boat or other conveyance in the possession of that person or in which that person happens to be, and open and search any baggage or other things in his possession;
 - (d) enter and search any premises in the occupation of that person but no premises used exclusively as a dwelling house shall be entered except in the presence and with the consent of the owner or occupier thereof;
 - (e) under the authority of a warrant issued by a Magistrate enter and search any dwelling house in the occupation of that person and seize any wildlife or articles which he has reason to believe has been taken or used in the commission of the offence;
 - (f) arrest any person that he reasonably suspects of being concerned in a contravention of this Act or a regulation of this Act and who refuses to give his name and address or who gives a name and address that he reasonably believes to be false;
 - (g) arrest any person that he reasonably suspects of being concerned in a contravention of this Act or a regulation of this Act if he has reason to believe that such person will abscond.
- (2) Where any thing has been seized by a park ranger or a police officer or any other authorised officer pursuant to subsection (1), it shall, without undue delay be taken before a Magistrate who may, upon satisfactory proof that the thing was in the possession of the person from whom it was seized in contravention of this Act or the regulations order the thing to be forfeited to Her Majesty and upon making such an order the thing is forfeited and may be disposed of at the direction of the Director.
- (3) Where any person has been arrested by a park ranger or a police officer or any other authorised officer that officer or ranger shall cause

every person so arrested to be carried forthwith to the nearest police station and to be placed in the custody of the officer on duty.

17. (1) Every person who assaults or obstructs a park ranger or any person assisting a park ranger or performing the duties of a park ranger under this Act is guilty of an offence and is liable on summary conviction to a fine not exceeding one thousand dollars or to imprisonment for six months or to both such fine and imprisonment.

(2) Every person who hunts, traps or kills any animal or who picks or takes any flower, shrub or plant or who removes or defaces any historical, or archaeological artifact is guilty of an offence and is liable on summary conviction to a fine not exceeding two thousand dollars or to imprisonment for six months or to both such fine and imprisonment in the case of the first offence and to mandatory imprisonment for six months in the case of a second or subsequent offence.

(3) Every person who contravenes any provision of the regulations is guilty of an offence and is liable on summary conviction to a fine not exceeding two thousand dollars or to imprisonment for three months or to both a such fine and imprisonment.

Passed in the House of Assembly this ____ day of ____.

SCHEDULE

Description of boundaries of National Park

What is the cost of a National Park?

Costs should be minimal, the lands proposed are already managed by either the Trust or Forestry and they should continue to be so. As stated, the highlands should be demarcated on the ground, this could perhaps be done using physical boundaries or by the Survey's Department through grant aid.

The subsequent development of trails could be coordinated by a committee including Forestry, Planning, The Tourist Board and the National Trust, see Section 10.1.1. Approaches being made to international conservation organisations such as World Wildlife Fund, ICBP or RARE for fiscal and technical support.

The benefits would be considerable. A system of parks will attract tourists and provide important areas for local recreation, whilst at the same time ensuring the conservation of Montserrat's physical and natural resources.

10.3: Training

Training in parks development (2 weeks)

Training in parks development through a regional study tour including Saba, Puerto Rico and areas of the southern USA.

This should be provided for the Chief Forestry Officer to illustrate the potential of parks, and the role they can play in national development through serving as tourist attractions and areas for local recreation.

Recommend: Approach World Wildlife Fund US, 1250 24th Street NW Washington DC 20037

Training in tour guiding and the principles of nature interpretation (3 weeks)

With the proposed development of nature trails it is recommended that a forest officer receive training in tour guide techniques and the principles of nature interpretation. Such training is offered in Guadeloupe and has been particularly useful for Saint Lucia.

Recommend: Approach the Government of France for tour guide training with the Forestry Department of Guadeloupe.

Training in trail construction and human relations viz a viz guiding children in protected areas (6-8 weeks).

Training in park recreation/trail construction is available as an attachment course in the USA & Canada through the Atlantic Center for the Environment. This training focuses on placing the trainees with work crews and as an interpreter on wilderness tours for young people.

Recommend: Approach Atlantic Center for the Environment, 39 South Main Street, Ispwich, Massachusetts, USA.

Training in the care & maintenance of a small animal collection (16 weeks).

In Section 10.6 it is proposed that there be established a small aviary housing one or two pairs of orioles. Although essentially an educational exhibit rather than a captive breeding facility, it is vital that if constructed the birds be properly cared for. Jersey Wildlife Preservation Trust in the UK offers an outstanding 16 week training course that covers feeding, housing and basic veterinary techniques for birds and other small animals.

Recommend: Approach Jersey Wildlife Preservation Trust, Les Augres Manor, Trinity, Jersey, Channel Islands, UK.

10.4: Monitoring of Oriole Populations

Monitoring of the oriole population should be carried out at least biannually by a team comprising members of the Forestry Division and the Montserrat National Trust. To ensure comparability the techniques used by either Arendt or Evans (see Section 2.3.1 & 6.0) should be replicated as exactly as possible.

10.5: Education

The principal focus of the project this report summarises has been to raise levels of awareness for and about the Montserrat Oriole. The continuation of this component is deemed essential for the long term success of the project. The oriole, a proud national symbol should now be utilised as a "spokesperson" for the wider environment and to promote the declaration of a Park. Linkages forged with local businesses need to be built upon and strengthened.

The latter is an excellent source of financial assistance for small projects and its integration into the conservation process not only reduces government outlays and the need to "beg" from the international community, but also enhances grass roots support for conservation. In order to achieve same, close liaison should be maintained with the Chamber of Commerce, business houses, service groups and the media.

10.5.1 News Letter

The production of the news letter (see Section 8.15) should continue on a quarterly basis funded from solicitations garnered from the local community. It provides an important source of local information for primary school teachers and complements the school visits. It should also continue to use the oriole as a "spokesperson" for conservation. Future issues might examine topics such as:

Local trees, exotic trees, litter, forest folklore, coral reefs, mangroves, town & garden birds, coconuts, birds of the roadside, the urban environment, Carib & Arawaks, turtles, indigenous wildlife, legislation, water, hurricanes, earthquakes, family life, bananas, beaches, legislation, birds of the seashore, cacao, limes, charcoal, birds of the swamp, insects, reptiles, pesticides, marine resources, migratory birds, mammals, geology, birds of the forest, and orchids.

School children should be encouraged to submit articles, drawings and poems for inclusion into future issues of the news letter.

10.5.2 Environmental Comic Book

Linkage should be continued with Saint Lucia *viz a viz* their environmental comic book "Jacquot". This production is specifically designed for younger children and incorporates comic strips, cross word puzzles and essay competitions. Inter island collaboration reduces costs and helps the islands of the Eastern Caribbean to learn about one another.

10.5.3 School Visits

To maintain the strong linkages forged with schools it is recommended that the school visitation programme continue with particular emphasis on the Secondary Schools.

10.5.4 Radio "Soap"

Building on the excellent linkages developed between the Trust, Radio ZJB and the oriole Project, it is recommended that the production of a weekly five-minute radio 'soap' featuring wildlife be considered. This could be used to introduce the listening public to many other conservation issues and could feature various Montserratian birds in feature roles with the oriole as the lead character.

10.6: Aviary Facilities

The oriole as we have seen is a shy and retiring bird and whilst endangered is not critically threatened. Few Montserratians will ever see an oriole in the wild and yet many are eager to say they have seen "their" bird. Indeed many still mistake the bananaquit for the oriole due to its similar colouration albeit vastly smaller size.

The construction of a small aviary, located near the Forestry Office at the Groves and the capture—by mist netting—of a pair of orioles would probably be more advantageous than undesirable, for it would afford local people an opportunity to view their National Bird.

It must be stressed that if this suggestion is adopted the aviary must be built to correct standards, the birds caught by a trained individual and the complex managed by an officer who has received training at an appropriate institution (see Section 10.3).

Recommend: Approach Jersey Wildlife Preservation Trust, Les Augres Manor, Trinity, Jersey, Channel Islands, UK.

10.7: Control of Pearly-eyed Thrasher Populations

The Pearly-eyed Thrasher is expanding its population at an alarming rate, especially since the passage of Hurricane Hugo and is beginning to cause problems not only through competing with, and predating upon, local species but also in causing extensive damage to agricultural crops.

It is proposed that:

- A study be undertaken to determine thrasher densities.
- An assessment of damage losses to fruit be undertaken.
- An assessment of possible non-lethal and lethal management methods be made. With emphasis upon those that are safe to the environment and other non target wildlife.
- The implementation of a small-scale trial, and an analysis of the results obtained.

An initial costing for this is estimated at US\$ 14,000.

Recommend: Approach US Fish & Wildlife Service to fund same which could be implemented by Denver Wildlife Research Center. Building 16, PO Box 25288, Denver Federal Center, Denver Co. 80225-0266

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APPENDIX 1

THE MONTSERRAT NATIONAL TRUST

The Montserrat National Trust, selected as project lead agency, is essentially a non government organisation which was established under the Montserrat National Trust Ordinance of 1969 (#11); setting itself the following objectives:-

- a: To conserve and enhance the beauty of Montserrat;
- b: To conserve historic sites and the fauna & flora of the Island;
- c: To make the public aware of the island's heritage;
- d: To pursue a preservation policy and act in an advisory capacity to Government;
- e: To acquire property for the benefit of the island;
- f: To attract members and funds to support the overall programme.

Today the Montserrat National Trust comprises 441 members, (each of which pay EC\$ 20 in dues); employs one full time secretary and a part time employee (Franklin Margetson) who is responsible for coordinating National Park activities.

In 1988 its income was EC\$ 69,000, including an annual EC\$ 10,000 subvention from the Government, and an expenditure of EC\$ 50,000. Total assets were estimated at EC\$ 155,000.

The Trust rents a small office in the centre of Plymouth and maintains a small bird sanctuary at Foxes Bay and other sites of historic/recreation value. It is also involved in archaeological work, environmental education and runs a museum at Richmond Hill.

PRESIDENT: Mr Franklin Margetson

ADDRESS : Parliament Street, Plymouth, Montserrat.

TELEPHONE: 809 491 3086

APPENDIX 2

CEC PROJECT BUDGET

As provided by RARE Center for Tropical Bird Conservation

	<u>1990</u>	<u>1991</u>	<u>TOTAL</u>
	<u>In US\$</u>		
Director Salary & Benefits	7,090	1,418	8,508
Local Counterpart	7,500	1,500	9,000
Travel & Expenses			
Airfares	\$2,400		
Perdiem	\$6,300		
	7,250	1,450	8,700
4WD Suzuki Jeep	10,000		10,000
Materials:			
1000 Colour Posters	= \$ 1,500		
2500 badges	= \$ 1,100		
2 Billboards	= \$ 1,000		
Misc. materials	= \$ 3,000		
Final Report	= \$ 1,000		
	6,300	1,300	7,600
Project Management	3,814	567	4,381
TOTAL:	41,954	6,235	48,189

APPENDIX 3

Rose Willock's Curriculum Vitae

NAME Margaret Rosalind (Rose) Willock, MBE

EDUCATION Certificate Radio Production BBC (1971)
Diploma Mass Communication UWI (1975)
Certificate Media Management CARIMAC/CBU 1982

WORK EXPERIENCE

1966 Radio Announcer, producer, journalist for Radio Montserrat

1975 News journalist & presenter for Radio St. Vincent

1976 Act. General Manager, Radio Montserrat

1977 Head of Entertainment programmes for Radio Antilles

1979 Deputy Programme Manager for Radio Antilles

1981 Programme Manager for Radio Antilles

1990 Project coordinator Montserrat CEC

1991 General Manager for Radio Montserrat

MONTSERRAT ORIOLE FACT SHEET

The Lesser Antilles are home to three endemic orioles of the genus *Icterus* -- the Saint Lucia Oriole (*Icterus laudabilis*), the Martinique Oriole (*Icterus bonana*) and the Montserrat Oriole (*Icterus oberi*). The males are mainly black and the species differ from one another by having varied amounts of yellow and orange.

The rarest of the three is the Montserrt Oriole, the male measures 8 inches, is jet black with a golden-yellow lower breast and rump. The female is slightly smaller, and yellowish, olive-green in colour.

This bird is found nowhere else in the world but on Montserrat.

It is uncommon at lower elevations and probably absent in the dry scrub areas such as Foxes Bay and Silver Hills. Elsewhere it is sparsely distributed being occasionally seen in areas such as Runaway Ghaut, Wilke's Ghaut, Jubilee Heights, Olveston and Chances Peak.

It is most common in the wet forest area of the South Soufriere Hills and in the bamboo forest near Galway's Estate.

The Montserrat Oriole, known locally as the Tannia Bird, feeds mainly on insects and the bulk of its food comprises moths, butterflies, beetles and spiders and as such it is a friend of the farmer.

It makes its nest about six to ten feet above the ground in palms or more often on the underside of a wild banana (*Heliconia*) leaf. The nest is hollow, basket-shaped and woven from vines and strips of palm. One to three oval, whitish and brown eggs are laid in April or May, and take 12 to 14 days to hatch.

Adult orioles probably have few natural enemies except possibly the American Kestrel (Killy Hawk). However, the Pearly-eyed Thrasher (Thrush) may take the eggs and young of this species.

Arendt (1984) concluded that the Montserrat Oriole was a threatened species, which although not in immediate danger, was highly vulnerable due to the continued deforestation of its relatively limited living space. Its pre-hurricane population was estimated at 1200 birds.

Hurricane Hugo devasated Montserrat's forests and with it the populations of several bird species. Today the oriole numbers about 750, making it one of the rarest birds in the world.

The species is absolutely protected under the Wild Bird Protection Ordinance (\$500 fine) as is its forest home under the Forestry Ordinance (\$240 fine).

Despite being declared the National Bird of Montserrat in 1982, few Montserradians are aware of its existence and plight.

Its future lies in our hands, we need to conserve its forest habitat not only to secure its future but our own.

Montserrat's forests provide us with year round supplies of water, a sustainable source of timber, protection of our soils and a place for recreation.

Please do your part and help the Montserrat National Trust preserve the pride of our beautiful country.

Reference: "Distribution, population size, status and reproductive ecology of the Montserrat Oriole." (1984) by W. & A. Arendt. USITF internal report.

**MONTSERRAT NATIONAL TRUST
QUESTIONNAIRE**

Dear Friend,

As Montserratians we should cherish our natural environment and protect it. Symbolic of our Island's natural beauty is its National Bird, and by answering the following questions you will help us to protect it, and ensure that we never lose our National Pride.

(1) What is the National Bird of Montserrat?

_____ 5. Don't Know ()

(2) Is it only to be found in Montserrat?

1. Yes () 2. No () 3. Don't Know ()

(2a) If "No", where else does it live? _____

(3) How scarce is our National Bird?

- 1. Less than 100 remain ()
- 2. 101-250 remain ()
- 3. 251-500 remain ()
- 4. 501-1500 remain ()
- 5. More than 1501 remain ()

(4) What is the main reason for our National Bird becoming scarce?

_____ 5. Don't Know ()

(5) Do you think that our National Bird is a good choice?

1. Yes () 2. No () 3. Don't know ()

(6) What is the fine/penalty for hunting/shooting our National Bird?

1. \$24 () 2. \$48 () 3. \$250 () 4. \$500 () 5. Don't Know ()

(7) What is the fine/penalty for illegally clearing lands in the Forest Reserve?

1. \$48 () 2. \$240 () 3. \$720 () 4. Don't Know ()

(8) Protecting our National Bird is going to cost money. Money that could be used for other things.
Do you think that it is important that your Government spend time and money on our National Bird?

1. Not Important () 2. Important () 3. Very Important () 4. Don't Know ()

(8a) Why? _____

BIO - DATA

A: Where do you live? _____

B: What is your age?

1. 1-11 years () 2. 12-16 () 3. 17-25 () 4. 26-35 () 5. 36-45 ()
6. 46-55 () 7. 56-65 () 8. 66+ ()

(12) What is your job?

1. Govt. Employee () 2. Farmer/Labourer () 3. Private Sector () 4. Unemployed ()
5. Housewife () 6. Student () 7. Other: _____

(13) Do you listen to the radio?

1. Everyday () 2. Occasionally () 3. Never ()

(14) What is your favorite radio programme? _____

(15) Do you read the local newspaper?

1. Yes () 2. No ()

YOU DO NOT NEED TO WRITE YOUR NAME ON THIS FORM

Please return to:

**Montserrat National Trust
Parliament Street
PLYMOUTH**

THANK YOU FOR YOUR HELP



The Oriole Newsletter

Vol. 1 No.1

MARCH 1991

Dear Reader,

This is me, your National Bird, The Montserrat Oriole !! Thank you for your interest in me and many thanks to RARE Centre and the Montserrat National Trust for spearheading efforts to ensure every one learns about me... about us.

We are only found in Montserrat - nowhere else in the world !! That makes us an important integral part of your natural heritage. So by taking an interest in the protection of our natural habitat and the preservation of the environment you are guaranteeing our longevity - and your national pride.

As you go through

this first Newsletter, you will read about two important resources - water and trees. These two are just as important to us as they are to you, so you see we have something in common.

And, did you know that anyone who kills any one of us can be fined EC\$ 500!!

We hope you will join those other boys and girls and adults who have written the articles and poems and send your written lines to -

**The Oriole Newsletter,
Montserrat National Trust,
Plymouth, Montserrat.**

If you like, you can make drawings of us and send those in too. Some of you might even have some questions to ask. Please feel free to do so because we will

be happy to hear from you.

So until our next issue please read and enjoy, and share our National pride.

Yours always,

MONTSERRAT ORIOLE

What's inside

A letter from the President of the Montserrat National Trust.

Page 2

A message from National Trust Environment Education Committee.

Page 2

Songs, poems and other interesting articles.....

Pages 3 - 4

A LETTER FROM THE PRESIDENT OF THE MONTSERRAT NATIONAL TRUST

Franklyn Margetson

The Montserrat National Trust has adopted the motto "Preserving the Past, Protecting the Present, Enriching the Future."

The tasks involved in preserving the past involve costly archaeological projects, and protecting the present means constant vigilance and enforcement of laws to safeguard our historic sites, our forests, soil and water, beaches and wildlife.

Enriching our future depends on you, the young people of today, who will be the leading citizens of tomorrow. But no costly projects or law enforcement programmes are needed. What we all need is to take a little time to think about the importance of the environment. Think of what it meant to our forefathers, what it means to us today, and what the world could be like for you when you are grown up, and you children and grandchildren, if there were no trees and rivers and soil and fresh running water - no wild flowers, no beaches - no fish in the sea !

Indeed there would be no world ! So each and every one of us, whether old or young must do something to save our environment, our country and our world !!

Come and talk with us at the Montserrat National Trust. Together we can truly enrich the future.

A message from The National Trust Environment Education Committee

The National Trust Environment Education Committee was formed as a branch of the Montserrat National Trust some three years ago. Its main function is to educate and motivate the public on environmental concerns and generate action towards the conservation and preservation of our environment.

During the first two years the Committee focussed on problems of sand mining and garbage storage and disposal. Art, essay and poetry competitions were also mounted in the schools around the island.

In an effort to replace the trees which were destroyed by Hurricane Hugo the Committee focussed on the theme - "Trees and their

uses" and co-opted with the Forestry Division of the Department of Agriculture in getting and distributing trees to schools, community groups and other interested persons. Trees were planted at the Glendon Hospital, Margetson Memorial Home and the Montserrat Secondary School - Church Road Campus.

The Best Village competition was another initiative of the National Trust Environment Education Committee in an effort to get villagers taking more pride in their immediate environs by cleaning up and beautify-

Cont'd on Page 3

Cont'd from Page 2

Message from NTEEC

ing their villages. Several villages responded through community groups with full support provided by the Health Department and Public Works Department.

Town Hill emerged overall winners with Salem and Harris' in the first and second runners up positions.

The Best Village Competition for 1991 is now on and all villages are asked to start working on their own areas so that they will stand the chance of being winners.

Let us work together to Keep our community litter free !! Pride in our country means pride in ourselves !!

Sarita Weekes-Francis
Chairperson

Send in your articles,
poems etc. to
The Oriole Newsletter
TODAY !!!

Theme song : WATER Pat "Belonger" Ryan

Water, water for everyone
Sometimes not a drink
Water, water everywhere
Do you ever stop to think?
Where would we be
without it ?

It is precious as the air
we breathe
Use it wisely, don't abuse it
For water serves you in
time of need

CHORUS

Call it agua,
Call it eau.
Call it wasser,
When we don't have it
Water come to we eye
Have respect for H₂O
You will never miss it
Till the well run dry

All living things need
water
In order to be their best
Try doing without water
You will never pass that test
Can you imagine just one
day
When you wouldn't need
water at all
Even if the stand pipe
lock off
You will pray for the rain
to fall

Repeat CHORUS
Call it agua....

&& POEMS &&

The poems and water proverbs came out of the 1990 Children's Summer Workshop organised by the Public Library. The theme was WATER - a major resource.

The Water Authority of
Montserrat
Supplies water clean and
pure
We use it to wash and
we use it to bathe
Can't do without it for sure
So let's not waste the water
Or the trees and birds
won't survive
Please don't waste our water
Otherwise we Montserratians
won't stay alive

Danielle Weekes (10 yrs.)
St. Johns

Water is a flowing river
A beautiful waterfall
Water is a thirst quencher
A refreshing drink
Water makes you feel re-
freshed, relaxed and revived
Water is a gift from God
So before you waste it
Think ! because water is
essential

Danielle Jeffers (13 yrs.)
MSS (Salem Campus)

Cont'd on Page 4

WHERE TO FIND US IN MONTSERRAT



LAWYERS SPRING (X)

RUNAWAY GHAUT (X)

PARADISE (X)

TAR RIVER (X)

BAMBOO FOREST (X)

TREES

There I stand, tall and high
Stretching my body towards the sky
My trunks are solid as a rock
My leaves rippling like a brook.
There I stand firm and strong.

I cause the rain to fall
For the good of us all
I preserve life and health
With my medical strength
Where I stand tall and high

I am made into paper
Also pencils and furniture
I beautify the world
Giving shade and shelter untold
Where I stand tall and high

Houses use me
Boat builders dress me
Sportsmen handle me
People sit on me ...
Why destroy me ??

Sharon Galloway
Bethel Primary School

&&& POEMS &&&
cont'd

++++ WATER PROVERBS +++++

You never miss the water till the well runs dry.

Blood is thicker than water.

Still waters run deep.

Where water runs once, it will run again.

When you see cockroach flying, Rain ah go come.

A small leak will sink a whole ship.

Water can't go up hill.

You no ask duck if e could swim.

Boy stop waste de water
Why you abuse the water so ?
Water, we need water boy
You don't know that Hugo
Blow away plenty trees
And de water run white
White like goat pan Redonda
rock.

You still a poun an de pipe
for fun ?

No let me tell you so again.

Nerissa Browne
St Augustine School

A BIRD IN THE HAND BREAKS THE LAW OF THE LAND

Montserrat's wildlife is under threat from habitat destruction, hunting and the effects of Hurricane Hugo.

If we are to ensure the beauty of our island and the protection of our native fauna and flora we must all work together and report offences to the appropriate authorities.

Do you know the laws pertaining to our forests and wildlife?

1. *Wild Birds Protection Ordinance (1912)*

This ordinance, and its subsequent amendment, affords absolute protection to more than 50 species of birds including all sea birds, the yellow breast, sparrow, hummingbirds, killy hawk and our National Bird -- the Montserrat Oriole or Tannia Bird. These species are protected all year and in all parts of the island.

2. *Endangered Animals & Plants Ordinance (1976)*

This act restricts the importation and exportation of certain animals, plants and products into or out of Montserrat including turtle shell, whale products, orchids and some types of coral.

3. *The Forestry Ordinance (1951)*

This Ordinance makes provision for the Governor to appoint a Forestry Board which can declare any lands to be Protected Forest and affords appropriate restrictions on its use. The Board may further recommend the purchase of lands by the Crown to serve as Forest Reserve. This law has clear and stringent powers making it illegal to clear any land above 1500 feet.

By obeying the laws and helping to enforce them, Montserrat will protect its forest and wildlife not only for our overseas visitors but more importantly for our children.

Forests supply us with a renewable sources of timber, year round supplies of clean, potable water and a place for recreation. Our wildlife is a source of wonder and an integral part of our natural heritage.

Report illegal land clearing, or hunting and when in doubt contact your local Forest Officer or call the Forestry Division, Ministry of Agriculture (2075). Alternatively contact the Montserrat National Trust (3086).

WE NEED YOUR HELP TOO!