

## Parrot conservation and ecotourism in the Windward Islands

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**Abstract.** The genus *Amazona* is represented on three islands in the Windward Islands. Since Europeans first visited the region in the fifteenth century, at least three parrot species have become extinct in the Windward Islands, and today all the extant parrots of the region are endangered. Several factors have contributed to the current plight of the parrots. The authorities in each of the islands of the Windward Islands that have endemic parrots have come to the realization that sound environmental management measures can complement rather than hinder national socioeconomic goals and objectives. Consequently, regional

governments have begun to explore and foster linkages between conservation and other sectors of the economy. This article examines current parrot conservation efforts in the Windward Islands and the linkages which are being fostered between tourism and other sectors of the economy. Policy and research implications of the region's current parrot conservation efforts and ecotourism programme are also considered.

**Key words.** *Amazona* spp., Dominica, ecotourism, Grenada, nature tourism, parrot conservation, St. Lucia, St. Vincent, Windward Islands.

### INTRODUCTION

The Windward Islands are located approximately between 12° N and 18° N and 60° W and 62° W (Fig. 1), and consist of Grenada, St Lucia, the Commonwealth of Dominica (hereafter referred to as Dominica), and St Vincent and The Grenadines (hereafter referred to as St Vincent), all former British colonies. The French islands of Guadeloupe and Martinique are also within the geographic boundaries described above, but the focus of this article will be on the former British territories because they are the only islands in the region with endemic, extant parrots. St Lucia (610 km<sup>2</sup> in area), Dominica (750 km<sup>2</sup>), Grenada (344 km<sup>2</sup>), and St Vincent (340 km<sup>2</sup>) are all small, independent island-nations (Central Intelligence Agency, 1991).

Four endemic *Amazona* species occur in the study area. These are the Imperial or Sisserou parrot (*Amazona imperialis* Richmond) and the red-necked or Jaco parrot (*A. arausiaca* Muller) of Dominica, the St Lucia parrot or blue-faced Amazon (*A. versicolor* Muller) of St Lucia, and the St Vincent parrot (*A. guildingii* Vigors) of St Vincent. The Sisserou (Fig. 2) measures up to 49 cm long and is the largest *Amazona* species in the world (Snyder, Wiley & Kepler, 1987; Evans, 1988). It appears that three parrot species from the region have gone extinct since Europeans first visited the area. The extinct species are *A. martinicana* (Clark) from Martinique, *A. violacea* (Gmelin) from

Guadeloupe (Greenaway, Jr., 1958; Snyder *et al.*, 1987), and an unnamed species from Grenada (Wiley, 1991; Snyder *et al.*, 1987). All the surviving, endemic parrots of the Windward Islands are presently threatened with extinction (Snyder *et al.*, 1987; Johnson, 1988). Island species in general are vulnerable to extinction; approximately 90% of the world's bird species that have gone extinct during the past several hundred years were island species. In addition, the majority of the world's endangered birds are found on islands (Snyder *et al.*, 1987).

This article examines the status of parrots in the Windward Islands. The current and potential role of endemic parrots in the development of ecotourism in the region are considered. Measures are proposed that are likely to enhance the parrots' status as an important component of the region's ecotourism resource base, while at the same time providing for adequate protection of the species. The article is based on a literature review and on information collected through correspondence with natural resource professionals in the Windward Islands, as part of a larger study (see Christian, 1991). These sources have been supplemented by the personal experiences and knowledge of the authors.

### STATUS OF PARROTS AND CONSERVATION EFFORTS IN THE WINDWARD ISLANDS

The Sisserou and red-necked parrots' populations have been estimated to contain about eighty and 300 birds respectively (Evans, 1991). Local resource managers are convinced, however, that figures of 300 and 1000 are currently more

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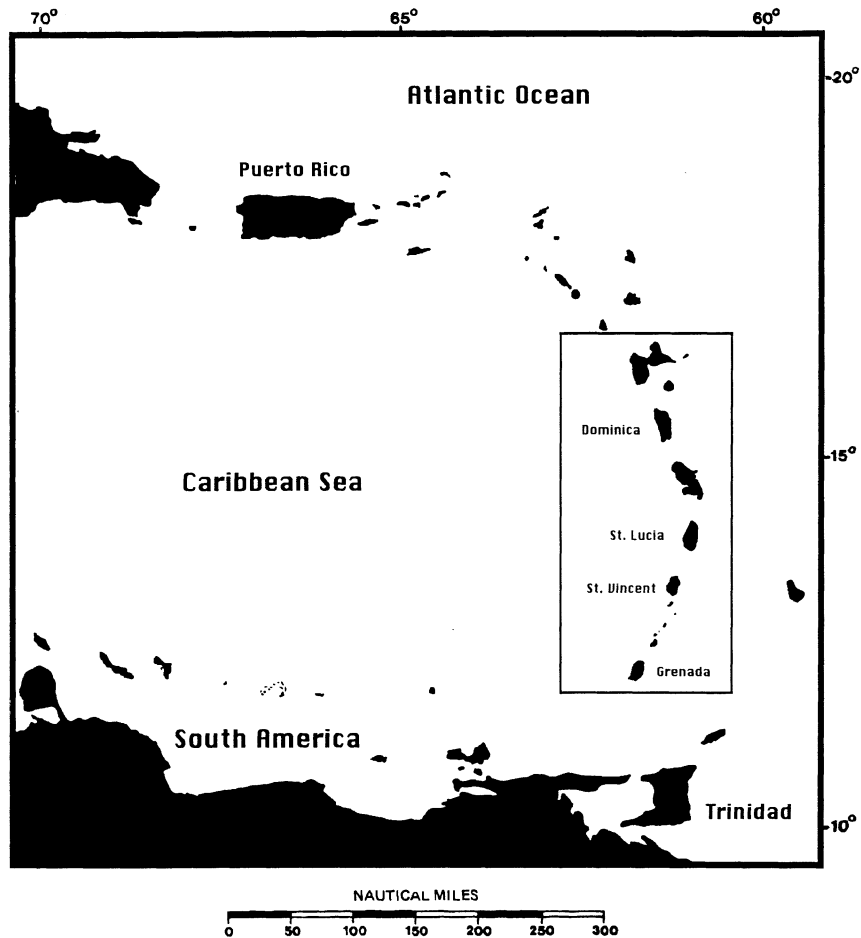


FIG. 1. Map of the study area. Members of the Windward Islands group are identified in the smaller box. (Source: modified from Eastern Caribbean Natural Area Management Programme, 1980.)

accurate (Christian, Zamore & Christian, 1994). In 1991 the St Lucia parrot's wild population was estimated at 325 birds (Donald Anthony, pers. comm.) whereas the St Vincent parrot's wild population was thought to be about 450 (Calvin Nichols, pers. comm.).

Although hunting, nest robbing, predation, and natural disasters have contributed to the current status of the region's parrots (Laidler, 1977; Lambert, 1983; Johnson, 1988), loss of habitat is thought to have had the greatest impact. In addition, the long-term effects of agricultural pesticides on the region's avifauna are yet to be fully evaluated. Parrots are very dependent on mature rain forests for food and nest sites (Zamore, n.d.; Evans, 1988, 1991). Through habitat protection, law enforcement, and environmental education the authorities in the region have been trying to reduce the threats to the parrots, with some measure of success.

Governments in the study area have come to the realization that sound environmental management is in the long-term interest of their society. Most important, however, is the realization that there is an important and inseparable link between conservation efforts and national socioeconomic development. Consequently, these islands have, as far as their limited resources will permit, begun to

explore and foster linkages between conservation and sectors of the economy. Planners and policy makers are '... seeking ways to make the conservation of biological diversity compatible with economic growth' (Laarman & Durst, 1987).

Recognition of the need to protect endemic parrots has resulted in the establishment of several national parks and reserves throughout the study area. As is the case in many other countries, these protected areas are now seen, not as obstacles to national development, but rather as important vehicles for '... maintaining the support systems necessary for human survival and [to] meet human aspirations' (Lucas, 1984). In addition to providing endemic parrots and other wildlife with a safe haven, the region's parks and reserves serve many other useful societal functions such as protecting vital watersheds, establishing reservoirs of genetic diversity, providing opportunities for environmental education and leisure, and helping to preserve natural vistas. Parks have the potential of emerging as 'cornerstones' of the islands' ecotourism programme.

In spite of recent accomplishments, a large percentage of known parrot habitats in the region is yet to be legally designated as protected. Such undesignated areas constitute about 20%, 30%, and 40% of known parrot habitats on



FIG. 2. Imperial parrot (*Amazona imperialis* Richmond) in aviary on Dominica, Windward Islands. [Photo by Arlington A. James]

St Lucia, Dominica, and St Vincent respectively (Donald Anthony, pers. comm.; Adolphus Christian, pers. comm.; Calvin Nichols, pers. comm.).

#### PARROTS AND ECOTOURISM IN THE REGION

In the recent past, nature tourism and ecotourism have emerged as principal options pursued by many countries, both developed and developing, for integrating national parks, reserves, economic growth and rural development on a sustainable basis (Stiles & Clark, 1989; Place, 1991; Ruschmann, 1992). Farrell & Runyan (1991) made a distinction between nature tourism and ecotourism. They regarded the latter as a 'subset' of the former. Nature and tourism are equal partners in ecotourism, and '... when the saving of an endangered species, a rain forest, or a wetland can be aided by cooperative strategies, this is ecotourism' (Farrell & Runyan, 1991).

Ecotourism can be further classified as being either 'hard' or 'soft'. Those who are driven to visit a given destination principally for scientific reasons, for example ornithologists, are considered to be 'hard ecotourists'. On the other hand, general interest naturalists such as bird watchers and nature photographers are said to engage in 'soft ecotourism' (Ruschmann, 1992). Based on the concepts outlined above, much of the tourism presently occurring and promoted in parrot habitats within the Windward Islands can be categorized as 'soft ecotourism'.

Parrots command high public appeal worldwide. Many nature lovers, bird-watchers, and ornithologists are willing to travel thousands of miles to see and study parrots in their natural habitats. Thus, islands with endemic parrots certainly have the natural resource base to support a sustainable ecotourism programme, within existing environmental and physical limitations. Analysis of a 1989 questionnaire survey of visitors to Dominica and responses from local tour operators to a similar survey '... clearly indicate that forest tours to the parrot area have considerable potential and that the area is already being utilized ...' (Butler, 1989). Similarly, St Vincent's proposed Parrot Reserve offers considerable potential for tourism (Butler, 1988).

The region's tourism potential was also acknowledged by Spinrad, 1982. He concluded that St Lucia attracted and had the potential to attract an increasing number of visitors because of the island's proximity to major tourist markets (North America, South America, and Europe), its stable politics, secluded harbours, varied scenery, and pleasant climate. The same is true of St Vincent and Dominica. In this connection it has been stated that '... Dominica's greatest asset is the magnificence of its forests, undoubtedly the finest in the Caribbean with a rich assemblage of plant and animal species ...' (Evans, 1986). Dominica's interest in ecotourism is reflected in the island's tourism policy, which emphasizes that the tourism marketing and promotion strategy will be based on the island's unique attractions—lush vegetation, rivers, forests (Tourism Division, n.d.).

Generally, very little reliable data on either income derived from ecotourism or the number of ecotourists to the region are available. However, Dominica's effort to attract ecotourists seems to be working, for a 1988 airport survey showed that 41% of visitors to the island visited at least one protected area during their stay (Boo, 1990). 61% of hotel guests questioned on Dominica had either visited or planned to visit one of the island's parrot habitat areas, and 60% of the local tour operators questioned occasionally took ecotourists to parrot habitat sites in the proposed Morne Diablotin National Park (Butler, 1989). Ecotourists are generally knowledgeable about their impacts on the environment and try to minimize such impacts.

The total stay-over arrivals to Dominica increased by 60% from 1988 to 1979. Over the same period St Vincent increased 93.9%, and St Lucia 56.3% (Weaver, 1991). With respect to St. Lucia, it has been estimated that '... tourism, directly and indirectly, generated approximately 18.2% of all government revenues ...' for fiscal year 1978–79 (Spinrad, 1982). Spinrad further calculated that each dollar earned from tourism generated \$0.14 in government revenues. With respect to Dominica, it is speculated that the local 'multiplier' for tourism is higher than in most other Eastern Caribbean destinations partly because of the higher amounts of locally produced agricultural crops and agro-products utilized by the island's tourism sector (Caribbean Conservation Association, 1991). Assuming that these ratios are correct and considering that ecotourists are likely to spend more money at their destination than other tourists

(Boo, 1990), the socioeconomic impact of ecotourism in these islands can be readily appreciated.

Tourism to protected areas demonstrates the value of natural resources to tourists, rural populations, resource managers, and government officials (Boo, 1990). Furthermore, the provisions of direct economic opportunities to, and the active involvement of, rural people help to foster and sustain a high level of trust, cooperation, and understanding between natural resource managers and local residents (Place, 1991; Snyder, Francis & Beissinger, 1992). Such a relationship is critical for long-term national parrot conservation efforts, as well as for providing justification for the use of ecotourism as one of the primary reasons to protect forest habitat and birds (Snyder *et al.*, 1992).

St Lucia's Forestry Division has tried to connect tourism and conservation, to the creation of new jobs. For some years now the Division has organized weekly rain forest walks. These walks through parrot habitat, have been very popular with tourists, and all funds generated from these walks have been used to support conservation (Butler, 1980; Jeggo, 1986).

Dominica currently has two national parks, Morne Trois Pitons National Park (MTNP) in the south-central part of the island and Cabrits National Park (CNP) along the north-west coast. As a result of the commission of a cruise ship berth at CNP in 1992, tourists to Dominica can step directly into a national park from their cruise ship. The construction of the cruise ship berth at CNP indicates the island's interest in fostering linkages between conservation, tourism, and socioeconomic development. A third park, Morne Diablotin National Park (MDNP), located in the north-central part of the island, has been proposed and is being developed as part of a project called 'Project Sisserou'. The threat of logging in part of the proposed MDNP helped to crystallize and accelerate plans for the establishment of the park. The RARE Centre for Tropical Bird Conservation (RARE) and BirdLife International (formerly International Council for Bird Preservation [ICBP]) are collaborating with the Dominican Government in Project Sisserou.

MDNP, which is being established principally for the protection of endemic parrots and their habitat, contains some of the island's best stands of mature rain forest, and is one of the primary strongholds of the endemic parrots. It is envisaged that MDNP, when fully developed, will attract significant numbers of ecotourists, as it '... would offer a prime attraction to nature tourists visiting the island ...' (Forestry Division, 1991). In an effort to ensure that the island derives the maximum benefits from its tourism programme as well as to encourage all sectors of the population to cooperate in this effort, the Government of Dominica, through its Tourism Division, embarked on a national education and sensitization programme as of the first quarter of 1993. This programme will also attempt to minimize the overall negative social and environmental impacts of ecotourism.

Throughout the region facilities such as improved access, interpretive and directional signs, and rain shelters have either been provided at or are proposed for parrot habitat areas, to attract larger numbers of ecotourists.

It is evident from the forgoing that regional authorities are adopting measures which will help to promote sustainable ecotourism to parrot habitats, protect endemic parrots, and build local support for conservation measures.

## POLICY AND RESEARCH IMPLICATIONS

Bananas, the main export of the Windward Islands, face an uncertain future on the European market. This prospect has helped to hasten changes in the islands' approach to development. Alternative revenue and employment generating sources are being explored by regional governments. Ecotourism is seen as one of the most promising alternatives to agriculture, and is actively being developed. Several practical courses of action that the islands should consider, in order to ensure sustained socioeconomic benefits from parrot conservation efforts and ecotourism, are presented below.

### Elimination of hunting in the vicinity of parrot habitats

Hunting in and near parrot habitats should be completely eliminated. The rationale for this proposal is that many hunters fail to observe all the conditions under which their hunting licenses were granted (Christian, 1991). A restricted buffer zone of at least 3 km around the range of endemic parrots should be imposed. This will help both to keep hunters out of parrot habitats and to reduce the negative effects of the sound of gun shots on the birds. In addition, many ecotourists would object to the sight of hunters and the sound of gun shots in the vicinity of parrot habitats. Wiley (1980) reported that the 1974 imposition of a 1 km no hunting zone in part of the Puerto Rican parrot's (*A. vittata* Boddaert) range has resulted in a reduction in shooting within the forest.

Some hunters have been reported to poach endemic parrots during their hunting trips on Dominica, where it is currently legal for licensed hunters to hunt throughout the Northern Forest Reserve, one of the primary habitats of the island's endemic parrots. Part of that Reserve will be incorporated into the proposed MDNP. The proposed measure may not be popular with hunters, but if implemented it will reduce the potential danger to the Amazons, ecotourists, and local visitors to parrot habitats. Research to monitor and determine the long-term effects of this measure will be necessary.

### Habitat protection and consolidation

The Imperial parrot may cover as many as 25.9 km<sup>2</sup> per day (Zamore, n.d.), and both the Imperial and red-necked parrots '... depend upon reasonably large tracts of intact forests ...' (Evans, 1986). In the case of the St Lucia parrot, Butler (1980) cited a study which indicated that the species had an estimated range of 65 km<sup>2</sup>. In support of such daily movements of parrots, Snyder *et al.* (1987) reported that the daily flights of West Indian parrots may involve scores of kilometres each way between roosting and foraging sites. It is clear from these estimates that the Amazons in the

TABLE 1. Parrots either exported or held in captivity: 1975–1991. (Source: based on data supplied by Donald Anthony of St Lucia, Adolphus Christian of Dominica, and Calvin Nichols of St Vincent)

Island	Approved exports		Parrots in captivity	
	Chicks	Adults	Locally	Overseas
St Lucia	5*	2*	3	21
St Vincent	0	0	78	80
Dominica	0	4†	9	4
Totals	5	6	90	105

\*Were exported during 1975–79 to Jersey Wildlife Preservation Trust (JWPT) in the U.K.

†Were exported during 1975–79 to research facilities in Texas, U.S.A.

region utilize large tracts of forests. In these circumstances it would be advisable to consolidate parrot reserve areas, rather than protect scattered small parcels (Christian, 1993). Consolidation minimizes the possibility of conflicts between humans, particularly hunters and farmers, and the parrots. Furthermore, large tracts of habitats that can sustain viable populations of animals are superior to smaller ones (Raffaele, 1989).

Consolidation of parrot habitats may necessitate the phased acquisition of critical forest tracts as recently occurred on Dominica. Reforestation, using appropriate local tree species, in parts of the parrots' ranges may also be necessary. In the event that public ownership of such habitat areas is not feasible, the management and land uses practiced on these privately held lands should come under some degree of legislative control (Christian, 1991). Currently unprotected critical habitat areas should be incorporated into the islands' forests and national parks protected areas network (Christian *et al.*, unpubl. manuscript).

### Need for a ban on parrot export

Many live parrots have been taken out of the Windward Islands in the recent past (Table 1). Thus, a total ban on the export of regional Amazons is recommended (Christian, 1993). Export of parrots from the region both directly and indirectly contributes to further decline in the wild populations and also reduces the region's overall ecotourism appeal. The collection of live parrots from the wild usually results in the death of some birds and the occasional destruction of nesting cavities. Birds exported are not available to replenish the wild flock and only help to fuel the international demand for exotic species. Furthermore, endemic parrots kept in foreign zoos or other facilities generate revenues and research opportunities for the foreign countries concerned, and very little, if any, benefits for the Windward Islands.

### Environmental education

During the 1980s RARE embarked on intensive, island-wide environmental education programmes in St Lucia,

St Vincent, and Dominica (Butler, 1988, 1989). RARE's activities, which generally lasted for 9–12 months on each island, have complemented local efforts, and an overall high level of public support has been stimulated in the Windward Islands through environmental education. However, there is a need for a more comprehensive, integrated, and continuous environmental education campaign throughout the region. Unless the public is sensitive to their environment and actively takes an interest in environmental issues, the long-term future of the islands' endemic parrots, sustainable ecotourism, and indeed the islands' socioeconomic well-being, cannot be assured. Environmental education is vital in realizing these goals.

Environmental education should be introduced into the region's primary and junior secondary school curriculum. The RARE's Director for Conservation Education considers environmental education aimed at school children to be the most important activity for successful parrot conservation efforts in the Windward Islands (Paul Butler, pers. comm.). Environmental education aimed at the same target population is second only to the protection of parrot habitats on BirdLife International's priority list for long-term regional conservation efforts (Martin Kelsey, pers. comm.). It is significant that both organizations attach such a high priority to environmental education. Sensitization of adults, particularly hunters, farmers, politicians, and those involved in the ecotourism business, is also critical for the long-term survival of the region's *Amazona* species. Visitors to parrot habitats should be exposed to a brief programme of environmental education prior to visiting parrot habitats. The goal of that programme should be to influence visitors' behavior so as to minimize their negative impacts on the parrots. Another important educational aspect is the training of park guides and tour guides. Guides with a knowledge of natural history and a strong environmental ethic can influence tourists by imparting these values. Government sponsored training programmes for resource protection officers and tour guides should be an important part of any ecotourism programme.

### Linkages between tourism and other sectors

The importance of emphasizing and demonstrating linkages between conservation and sustained social and economic progress can not be overstated (Christian, 1993). The Windward Islands have very limited natural resources. On many islands, the greater part of the available natural resources has already been severely degraded. It is only sensible that no efforts are spared in ensuring the wise use of remaining resources. This, however, will be a very challenging task.

Ecotourism, if properly planned, developed, and marketed, has the potential of making significant contributions to the social and economic welfare of the region. Ecotourism could create jobs (particularly in agriculture and the service industry), generate badly needed foreign exchange, contribute towards the conservation of unique flora and fauna, and generally support sustainable development. The challenge then, is for regional governments to identify and adopt creative ecotourism as

well as overall national development strategies which will, in the long-term, result in the maximum, sustained, socioeconomic benefits. The continued protection of the West Indian *Amazona* species is an integral component of ecotourism activities on the Windward Islands.

## CONCLUSION

The small island-nations of the Windward Islands have begun to take increasing interest in the wise use and proper management of their limited resources. The current economic realities in the world, such as trade protectionism, barriers to emigration from the region, and the continual decline in the price of agricultural produce and raw material from the region, have resulted in severe difficulties for the predominantly agricultural export-oriented economies of islands, thus forcing governments to consider and explore alternative employment and revenue generating opportunities. Ecotourism is one of the alternatives being pursued. In this regard, regional authorities are now viewing endemic parrot populations and their habitats as very important, unique assets. Many national parks and reserves have been and are being established in the region, some for the principal purposes of protecting endemic parrots and their habitats and providing opportunities for ecotourism development.

Natural resource managers, tourism officials, and policy makers must never lose sight of the fact that if not properly planned and monitored, ecotourism can result in very serious and costly negative social and environmental effects. The destruction of the vast Bucco Reef on the island of Tobago as a result of trampling by 'unskilled snorkeling enthusiasts' is a clear example of the negative consequences of a poorly planned, monitored, and managed ecotourism programme. Thus, each regional government involved with ecotourism in parrot habitats should immediately establish baseline studies in these habitats, for the purpose of monitoring environmental impacts, for setting standards for determining limits of acceptable change (LAC) in resource conditions, and for instituting timely management actions to address any negative impacts. For example, it may eventually be necessary to restrict visitation to parrot habitats during the breeding season.

While the goal of realizing maximum social and economic benefits from ecotourism is understandable and important for the overall wellbeing of these small islands, the primary long-term goal of protecting endemic parrots and their habitats should always be given priority over economic gains. Obviously, the best scenario would be to try to achieve a balance between the two slightly conflicting goals. The ultimate degree to which these islands succeed in this regard, will to a large measure depend on their ability to adopt sound conservation, ecotourism, and integrated national development measures.

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