

ST VINCENT & THE GRENADINES

LAND AREA **389 km²** ALTITUDE **0–1,234 m**
 HUMAN POPULATION **102,250** CAPITAL **Kingstown**
 IMPORTANT BIRD AREAS **15, totalling 179 km²**
 IMPORTANT BIRD AREA PROTECTION **31%**
 BIRD SPECIES **152**
 THREATENED BIRDS **6** RESTRICTED-RANGE BIRDS **14**



LYSTRA CULZAC-WILSON (AVIANEYES)



Ashton Lagoon IBA on Union Island in the southern Grenadines.
 (PHOTO: GREGG MOORE)

INTRODUCTION

St Vincent and the Grenadines is a multi-island nation in the Windward Islands of the Lesser Antillean chain. St Vincent is the main island (c.29 km long and 18 km wide, making up c.88% of the nation's land area) and lies furthest north, c.35 km south-south-west of St Lucia. The chain of Grenadine islands (comprising numerous islands, islets, rocks and reefs) extends south for 75 km towards the island of Grenada, with Union Island being the most southerly. Other major islands of the (St Vincent) Grenadines are Bequia (which is the largest), Mustique, Canouan, Mayreau, Palm (Prune) Island and Petit St Vincent. The country is divided into six parishes, five of which (Charlotte, Saint Andrew, Saint David, Saint George and Saint Patrick) cover the main island of St Vincent, the sixth being the Grenadines. The capital, Kingstown (in St George parish on the south-east coast) supports c.25% of the country's population, while the Grenadines are home to about 8%.

St Vincent and the Grenadines were formed volcanically. The island of St Vincent is divided by a central mountain range which starts in the north with La Soufriere (1,234 m)—an active volcano and the island's highest point. The Morne Garu mountain range (with Richmond peak, 1,077 m and Mount

Brisbane, 932 m) lies to the south of La Soufriere, and then Grand Bonhomme (970 m), Petit Bonhomme (756 m) and Mount St Andrew (736 m) are south of this. A large number of very steep lateral ridges emanate from the central massif culminating in high, rugged and almost vertical cliffs on the (eastern) leeward coast, while the windward coast is more gently sloping, with wider, flatter valleys. In contrast to St Vincent, the Grenadines have a much gentler relief, with the mountain peaks on these islands rising to 150–300 m. There are no perennial streams in the Grenadines (although there is a spring on Bequia), and unlike much of the mainland, these islands are surrounded by fringing reefs and white sand beaches.

St Vincent's tropical climate has two distinct seasons: a dry season from December to May; and a rainy season from May through October. The average annual rainfall is 3,800 mm inland, and 2,000 mm on the coast. However, the forested interior of St Vincent can receive as much as 5,100 mm, while the Grenadines may receive as little as 460 mm. Natural vegetation corresponds to elevation, geology and rainfall, and includes rainforest (mostly between 300 and 500 m), elfin woodland and montane forest (above 500 m), palm break (between the rainforest and montane forest, and in disturbed areas), and mangrove (of which there is just c.50 ha in the

country, most of which is on Union Island with some on Mustique). The country is about 29% forested, with natural forest comprising 70% of this, and planted forest and agro-forest representing c.25% and 5% respectively. Although these forests are some of the most extensive unaltered tropical forests in the Lesser Antilles, they are being lost at a rate of 3–5% annually, due primarily to encroachment of banana cultivation and illegal farming. Tourism and agriculture are the major contributors to the country's economy. However, agriculture relies almost exclusively on banana plantations/industry and thus this sector is highly vulnerable to global economic fluctuations and natural disasters. St Vincent and the Grenadines have suffered considerably from natural disasters. In 1902, La Soufriere volcano erupted and killed c.2,000 people. It erupted again in 1979, this time without loss of life, but on both occasions extensive damage was caused to agricultural lands and thus the economy. Hurricanes hit the island hard in 1980 and 1987, destroying (amongst other things) banana and coconut plantations.

■ Conservation

St Vincent and the Grenadines' National Parks Act (2002) is the country's most comprehensive piece of protected area legislation under which a System of Protected Areas and Heritage Sites (SPAHS) has been developed to protect and manage existing and proposed protected areas. As a program, SPAHS has a comprehensive set of management aims including: scientific research, wilderness protection and landscape maintenance, preservation of species and genetic diversity, maintenance of environmental services, protection of specific natural features, promotion of recreation and tourism, education, sustainable use of natural ecosystems and maintenance of cultural and traditional attributes. However, the program is awaiting funding before full implementation can take place and, in the interim, the conservation of the country's biodiversity is being undertaken in a piecemeal fashion by several government agencies and statutory bodies (e.g. National Parks, Rivers and Beaches Authority. The main agencies and government departments involved biodiversity conservation include the National Parks Unit (NPU, a statutory body affiliated with the Ministry of Tourism, and the agency responsible for implementing SPAHS); Ministry of Health and the Environment (through its Environmental Services Unit, ESU, which is responsible for environmental monitoring, regulation and education but is currently not fully established or staffed); Ministry of Agriculture, Forestry and Fisheries (within which Forestry Department coordinates the protection and management of the country's forests and wildlife [including birds], conducts environmental education, the biennial census of St Vincent Amazon *Amazonia guildingii* and a captive-breeding programme for the species); Central Water and Sewerage Authority; and the Central Planning Unit (which, through its Physical Planning Unit, prepares development plans and administers planning regulations).

The legislation that speaks directly to the protection of birds is the Wildlife Protection Act (1987) which provides authority for the establishment of bird sanctuaries and wildlife reserves. The Act provides full protection for over 75 species of birds, but allows shorebirds and gamebirds to be hunted during an October–February open season. There are many other pieces of legislation that offer indirect protection to birds through the protection of habitats and biodiversity as a whole. These include the Marine Parks Act (which makes provision for the declaration of marine parks); the National Parks Act (allowing the establishment of national parks); the Mustique Company Ltd Act (which declares Mustique to be a conservation area); and others such as the Beach Protection Act, Fisheries Act, and the Forest Resource Conservation Act. Under these various Acts, 36 protected areas have been established (three forest reserves, 23 wildlife reserves, one marine park, one marine reserve and seven marine conservation areas). However, SPAHS proposes a system of 47 protected areas



Trinity Falls within the Richmond Forest Reserve IBA, a proposed forest reserve under SPAHS.
(PHOTO: LYSTRA CULZAC-WILSON)

(one national park, eight forest reserves, 16 wildlife reserves, three natural landmarks, seven cultural landmarks, one protected landscape/seascape, five marine parks, three marine reserves and three marine conservation areas) and will result in the reclassification or re-designation of a number of the existing protected areas to remove duplication or to change management objectives.

Major bird conservation actions in St Vincent and the Grenadines are generally implemented by the Forestry Department. Through its environmental education unit, pupils and community personnel are provided with information on the country's birds (mainly endemic) and their importance. Forestry Department also conducts guided tours to the Vermont Nature Trail (within the St Vincent Parrot Reserve) and other bird habitats, and manages the *A. guildingii* captive breeding programme at the Nicholl's Wildlife Complex in the Botanic Gardens. This programme is supported by the international St Vincent Parrot Conservation Consortium. The only national bird conservation NGO in the country is AvianEyes which aims to support nature conservation through birding, and conducts research, environmental education (e.g. as part of the Society for the Conservation and Study of Caribbean Birds', SCSCB's, West Indian Whistling-duck and Wetlands Conservation Program), and leads birding tours. In the Grenadines, the Mustique Company has stipulated protection for all its birds, and has developed a self-guided trail (with viewing hide) around the Lagoon wetland. On Union Island, a trail managed by the local NGO Union Island Ecotourism Movement is part of a conservation initiative for part of the Ashton Wetland (although the NGO does not have legal ownership of the area). This same wetland is the focus of a restoration project that will include the establishment of the site as a "Watchable Wildlife Pond" (under SCSCB's West Indian Whistling-duck and Wetlands Conservation Program). In spite of these efforts and initiatives, there is a clear need for: greater education and awareness (at all levels of society); the implementation of SPAHS; strengthened legislation and rigorous enforcement; and strengthened capacity for bird conservation.

Habitat loss and fragmentation due to squatting for housing, agriculture, illegal marijuana *Cannabis sativa* farming and development are major factors threatening biodiversity in St Vincent and the Grenadines. Deforestation has been identified as a main factor impacting the country's national bird—the Vulnerable *A. guildingii*. A proposed "cross-country road" that would bisect the centre of the parrot's range (and primary rainforest habitats) would result in a new axis for deforestation across the centre of St Vincent. It would also provide increased access to the parrots for poachers and hunters. Poaching has been identified as one of the main threats to *A. guildingii*, with birds removed to (illegally) supply

the international pet trade. Hunting parrots as a source of food is an ongoing (although declining) threat. Wetland habitats (including beaches, mangroves, and marshland) are suffering as a result of developments such as hotels and marinas, but also due to illegal removal of beach (and dune) sand for the construction industry, and cutting of mangroves for charcoal production. The fragmentation of habitats and degradation of coastal ecosystems is making the country increasingly vulnerable to the impacts of natural disasters such as hurricanes, tropical storms, storm surges and heavy rains. Specific threats to birds include the removal of unfledged Scaly-naped Pigeon *Patagioenas squamosa* from the nest for meat, collection of seabird eggs (and taking adult seabirds for food), incidental poisoning of birds with agrochemicals (especially pesticides associated with the banana industry), legal but unregulated or monitored hunting of waterbirds, and predation from alien invasive mammals (mongoose *Herpestes auropunctus*, rats *Rattus rattus* and *R. norvegicus*, mouse *Mus musculus* and opossum *Didelphis marsupialis*).

■ Birds

Over 150 species of bird have been recorded from St Vincent and the Grenadines, 95 of which breed on the islands. Lesser Antilles EBA restricted-range birds (of which there are 38) are represented by 14 species (see Table 1), two of which—St Vincent Parrot *Amazona guildingii* and Whistling Warbler *Catharopeza bishopi*—are endemic to the main island of St Vincent. The Grenada Flycatcher *Myiarchus nugator* and Lesser Antillean Tanager *Tangara cucullata* are restricted to St Vincent and Grenada. A subspecies of Rufous-throated Solitaire *Myadestes genibarbis sibilans* is endemic to St Vincent, as is a subspecies of House Wren *Troglodytes aedon musicus*. Just two globally threatened species have been considered in the IBA analysis (see Table 1). However, six species have been recorded from the islands. The Critically Endangered Eskimo Curlew *Numenius borealis* was noted as a “rare migrant” prior to 1943; the Near Threatened Buff-breasted Sandpiper *Tryngites subruficollis* is a very rare migrant; the Near Threatened Caribbean Coot *Fulica caribaea* appears to be a recent colonist (post-1970s) and although it

breeds now in Mustique (and possibly elsewhere), the population is unknown; and the Near Threatened Piping Plover *Charadrius melodus* is recorded only as a vagrant. The two species that feature prominently in the IBA analysis are the two St Vincent island endemics—the Endangered *C. bishopi*, and the Vulnerable *A. guildingii*.

Catharopeza bishopi is endemic to mainland St Vincent where it is found primarily within the Colonarie and Perseverance valleys and at Richmond peak. It is most abundant in primary, elfin and palm brake forests (mostly between 300 and 600 m) of which there are c.80 km² that (in June–August 1988) supported an estimated 1,500–2,500 territorial males. There have been no estimates of the population in the last 20 years. Forest loss from illegal human activities and particularly eruptions of La Soufriere volcano is the main threat. Eruptions in 1902 and 1979 had a devastating effect on the warbler’s habitats on and around La Soufriere—after 1902 the species was seemingly extinct in the northern mountains. Potential confusion between the call of *C. bishopi* and the Brown Trembler *Cinclocerthia ruficauda* should be assessed, and with this in mind, a new population density estimate for the warbler made.

Amazona guildingii is St Vincent and the Grenadines’ national bird. It is confined to mature rainforest between 125 and 1,000 m, mostly in the upper reaches of the Buccament, Cumberland, Colonarie, Congo–Jennings–Perseverance and Richmond valleys, though birds do stray into nearby farmland and plantations to forage. The Forestry Department conducts a biennial census of the parrot, and in 2004 the population was estimated at 734 individuals. In 1987 the 4,400-ha St Vincent Parrot Reserve was established to protect the species, and in 2005 a 5-year Species Conservation Plan was developed for the bird. There is an ongoing captive breeding programme for the parrot at the Nicholl’s Wildlife Complex in the Botanic Gardens.

St Vincent and the Grenadines supports populations of 76 species of waterbirds (including seabirds). Three species of seabird breed on St Vincent (White-tailed Tropicbird *Phaethon lepturus*, Roseate Tern *Sterna dougallii* and Brown Noddy *Anous stolidus*), and an additional nine species nest on

The Endangered Whistling Warbler is endemic to mainland St Vincent. (PHOTO: ALLAN SANDER)



Grenada Flycatcher is endemic to St Vincent and the Grenadines, and Grenada. (PHOTO: GREGORY GUIDA)



Table 1. Key bird species at Important Bird Areas in St Vincent and the Grenadines.

Key bird species	Criteria	National population	Criteria	VC001	VC002	VC003	VC004	VC005	St Vincent and the	
				■	■	■	■	■	VC006	VC007
Magnificent Frigatebird <i>Fregata magnificens</i>	■	350–1,000								
Brown Pelican <i>Pelecanus occidentalis</i>	■	<50								
Red-footed Booby <i>Sula sula</i>	■	9,000								
Brown Booby <i>Sula leucogaster</i>	■	500–1,000								
Laughing Gull <i>Larus atricilla</i>	■	500–1,000								
Royal Tern <i>Sterna maxima</i>	■	500–1,000								
Sandwich Tern <i>Sterna sandvicensis</i>	■	100–250								
Roseate Tern <i>Sterna dougallii</i>	■	200–500								
Sooty Tern <i>Sterna fuscata</i>	■	10,000								
St Vincent Amazon <i>Amazona guildingii</i>	VU ■ ■	800		✓	43	✓	175	142	164	✓
Lesser Antillean Swift <i>Chaetura martinica</i>	■			✓	✓	✓	✓	✓	✓	✓
Purple-throated Carib <i>Eulampis jugularis</i>	■			✓	✓	✓	✓	✓	✓	✓
Green-throated Carib <i>Eulampis holosericeus</i>	■			✓	✓	✓	✓	✓	✓	✓
Antillean Crested Hummingbird <i>Orthorhynchus cristatus</i>	■			✓	✓	✓	✓	✓	✓	✓
Caribbean Elaenia <i>Elaenia martinica</i>	■				✓	✓	✓	✓	✓	✓
Grenada Flycatcher <i>Myiarchus nugator</i>	■			✓	✓	✓	✓	✓	✓	✓
Scaly-breasted Thrasher <i>Margarops fuscus</i>	■			✓	✓	✓	✓	✓	✓	✓
Brown Trembler <i>Cinlocerthia ruficauda</i>	■			✓	✓	✓	✓	✓	✓	✓
Rufous-throated Solitaire <i>Myadestes genibarbis</i>	■			✓	✓	✓	✓	✓	✓	✓
Whistling Warbler <i>Catharopeza bishopi</i>	EN ■ ■	3,000–5,000		✓	✓	✓	✓	✓	✓	✓
Lesser Antillean Bullfinch <i>Loxigilla noctis</i>	■			✓	✓	✓	✓	✓	✓	✓
Lesser Antillean Tanager <i>Tangara cucullata</i>	■			✓	✓	✓	✓	✓	✓	✓
Antillean Euphonia <i>Euphonia musica</i>	■			✓	✓	✓	✓	✓	✓	✓

All population figures = numbers of individuals.
 Threatened birds: Endangered ■; Vulnerable ■. Restricted-range birds ■. Congregatory birds ■.

Dalaway Forest Reserve IBA, a protected stronghold for the St Vincent Amazon.
 (PHOTO: LYSTRA CULZAC-WILSON)



Grenadines IBAs							
VC008	VC009	VC010	VC011	VC012	VC013	VC014	VC015
■	■	■	■	■	■	■	■
			119	250–500	<50	250–500	
			9,000				
			600	100–250		250–500	
			400	100–250		250–500	
				250–500	50–100	250–500	
					50–100		
				100–250		100–250	
						10,000	
✓	✓	✓			✓		✓
✓	✓	✓			✓		✓
✓	✓	✓			✓		✓
✓	✓	✓			✓		✓
✓	✓	✓			✓		✓
✓	✓	✓			✓		✓
✓	✓	✓			✓		✓
✓	✓	✓			✓		✓

uninhabited or undisturbed islets in the Grenadines (namely Red-billed Tropicbird *Phaethon aethereus*, Magnificent Frigatebird *Fregata magnificens*, Masked Booby *Sula dactylatra*, Red-footed Booby *S. sula*, Brown Booby *S. leucogaster*, Laughing Gull *Larus atricilla*, Royal Tern *Sterna maxima*, Bridled Tern *S. anaethetus* and Sooty Tern *S. fuscata*). The current breeding status of Audubon's Shearwater *Puffinus lherminieri* in the country is unknown (although it certainly used to breed). In fact the current status and population of most of the country's seabirds is poorly known, although poaching of seabird eggs by fishermen is a common (but neither regulated nor policed) tradition practiced on the smaller islets, and could be significantly impacting on a number of species. Similarly, the populations of waterbirds (ducks, shorebirds) are poorly known, but many are listed as game birds that can be hunted between 1 October and 28 February. This hunting is not policed or regulated—numbers of individuals of each species shot and therefore the impact on species populations is unknown.

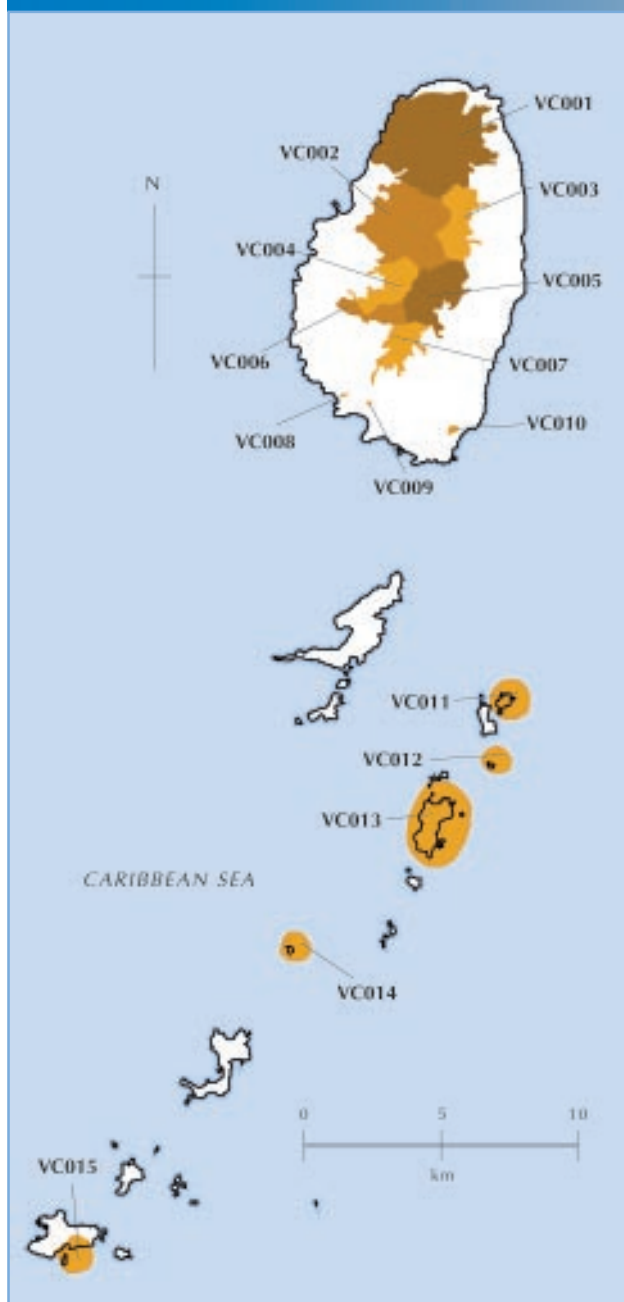
IMPORTANT BIRD AREAS

St Vincent and the Grenadines' 15 IBAs—the country's international site priorities for bird conservation—cover 179 km² (including marine areas) and about 35% of the land area. They have been identified on the basis of 23 key bird species (listed in Table 1) that variously trigger the IBA criteria. These 23 species include two (of the six: see above) globally threatened birds, all 14 restricted-range species and nine congregatory waterbirds/seabirds. Ten of the IBAs are on St Vincent and five are scattered throughout the Grenadines islands. Of the St Vincent island IBAs, seven are contiguous with each other in the forested interior where they form the proposed (under SPAHS) Central Forest Reserve. These seven

Battowia Island IBA, one of a number of seabird colonies in urgent need of surveys and monitoring.
(PHOTO: LYSTRA CULZAC-WILSON)



Figure 1. Location of Important Bird Areas in St Vincent and the Grenadines



IBAs (which comprise the existing Cumberland Forest Reserve, five individual proposed forest reserves and a proposed national park) embrace the majority of the country's remnant primary rainforest, secondary forest, elfin woodland and palm brake, and thus significant portions of the ranges of endemic species such as the St Vincent Parrot *Amazona guildingii*, Whistling Warbler *Catharopeza bishopi* and St Vincent blacksnake *Chironius vincenti*. They also cover watersheds that produce over 90% of the country's potable water and a significant proportion of its hydroelectric power. However, only Cumberland Forest Reserve IBA (VC004) and Dalaway Forest Reserve IBA (VC006) are formally protected at the present time. Protection for the remaining IBAs and for the whole Central Forest Reserve (which encompasses prime gaps in the range of *A. guildingii* that existed after the creation of the St Vincent Parrot Reserve in 1987) requires the implementation of SPAHS. Thus, only 31% of the area covered by the St Vincent and Grenadines IBAs is currently under formal protection and active management/regulation is minimal.

Five of the country's IBA have been documented for the Grenadines. They include four entire islands that are significant for their congregatory waterbirds and seabirds and which are formally designated as protected areas. However, they all variously suffer from poaching of seabird eggs, illegal burning of vegetation or disturbance, and law enforcement is essentially non-existent. There is very little information related to the seabird populations on these (and indeed other Grenadines islands). Estimates have derived from fishermen and other boat operators (some involved in the annual poaching of eggs) and thus require verification before monitoring can start. Mustique Island IBA (VC013) with its Lagoon wetland, and Ashton Wetland IBA (VC015)—both in the Grenadines—are the country's largest wetlands and together represent 80% of the nation's wetland habitat. As with the seabirds, very little has been recorded concerning species presence and abundance at these or other wetlands in the country. There is a clear and urgent need for surveys of wetlands and seabird colonies to establish a baseline against which to monitor and from which additional IBAs could possibly be described.

The existing parrot monitoring program (implemented by Forestry Department) could be usefully expanded to include field assessments (surveys and subsequent monitoring) for *Catharopeza bishopi* and potentially the seabird populations. All monitoring results should be used to inform the annual assessment of state, pressure and response variables at each of the country's IBAs to provide an objective status assessment and highlight management interventions that might be required to maintain these internationally important biodiversity sites.

KEY REFERENCES

- ANDRLE, R. F. AND ANDRLE, P. R. (1976) The Whistling Warbler of St Vincent, West Indies. *Condor* 78: 236–243.
- AVIANEYES BIRDING GROUP (1999) Birds of Mustique: a report of a bird study conducted on Mustique, 22–24 January, 1999. (Unpublished report).
- BUTLER, P. J. (1988) The St Vincent Parrot *Amazona guildingii*: road to recovery. Philadelphia, Penn.: RARE Center for tropical Conservation (Unpublished report).
- CARR, M., FOSTER, J., GITTINGS, T. AND MORRIS, R. (1988) Distribution and abundance of St Vincent's Whistling Warbler and other endemics. Norwich, UK: University of East Anglia (Unpublished expedition report).
- CARIBBEAN CONSERVATION ASSOCIATION (1991) *St Vincent and the Grenadines: country environmental profile*. St Michael, Barbados: Caribbean Conservation Association.
- CHRISTIAN, C. S. (1993) The challenge of parrot conservation in St Vincent and the Grenadines. *J. Biogeogr.* 20: 463–469.
- COLLAR, N. J., GONZAGA, L. P., KRABBE, N., MADROÑO NIETO, A., NARANJO, L. G., PARKER, T. A. AND WEGE, D. C. (1992) *Threatened birds of the Americas: the ICBP/IUCN Red Data Book*. Cambridge, UK: International Council for Bird Preservation.
- CULZAC-WILSON, L. (2005) *Species conservation plan for the St Vincent Parrot Amazona guildingii*. Puerto de la Cruz, Tenerife: Loro Parque Fundación.
- DAUDIN, J. (2003) *A natural history monograph of Union Island*. Martinique: Desormeaux.
- DEPARTMENT OF TOURISM (2006) *The ins and outs of St Vincent and the Grenadines*. St Thomas, Barbados: Miller Publishing Company, Ltd.
- EVANS, P. G. H. (1990) *Birds of the eastern Caribbean*. London: Macmillan Education Ltd.
- FAABORG, J. R. AND ARENDT, W. J. (1985) *Wildlife assessments in the Caribbean*. San Juan, Puerto Rico: Institute of Tropical Forestry.
- FORESTRY DEPARTMENT (2004) St Vincent Parrot census, 2004. Kingstown, St Vincent and the Grenadines: Forestry Department, Ministry of Agriculture, Forestry and Fisheries. (Unpublished report).

- FROST, M. D., HAYES, F. E. AND SUTTON, A. H. (in press) Saint Vincent, the Grenadines and Grenada. In P. E. Bradley and R. L. Norton eds. *Breeding seabirds of the Caribbean*. Gainesville, Florida: Univ. Florida Press.
- GOREAU, T. J. AND SAMMONS, N. (2003) Water quality in Ashton Harbour, Union Island, St Vincent and the Grenadines: environmental impacts of marina and recommendations for ecosystem and fisheries restoration. Downloaded from www.globalcoral.org/Water%20Quality%20in%20Ashton%20Harbour.htm (23 January 2006).
- VAN HALEWYN, R. AND NORTON, R. L. (1984) The status and conservation of seabirds in the Caribbean. Pp 169–222 in J. P. Croxall, P. G. H. Evans and R. W. Schreiber, eds. *Status and conservation of the world's seabirds*. Cambridge, U.K.: International Council for Bird Preservation (Techn. Publ. 2).
- IVOR JACKSON AND ASSOCIATES (2004) Master Plan: System of Protected Areas and Heritage Sites, St Vincent and the Grenadines. St John's, Antigua: Ivor Jackson and Associates (Unpublished report).
- JEGGO, D. (1990) Preliminary international studbook: St Vincent Parrot *Amazona guildingii*. Jersey: Jersey Wildlife Preservation Trust. (Unpublished report).
- JUNIPER, T. AND PARR, M. (1998) *A guide to the parrots of the world*. Robertsbridge, UK: Pica press.
- LACK, D., LACK, E., LACK, P. AND LACK, A. (1973) Birds of St Vincent. *Ibis* 115: 46–52.
- OVERING, J. AND CAMBERS, G. (1995) Mustique environmental inventory, 1. (Unpublished report for the Mustique Company).
- OVERING, J. AND CAMBERS, G. (2004) 2004 update on environmental management in Mustique. (Unpublished report for the Mustique Company).
- RAFFAELE, H. WILEY J., GARRIDO, O., KEITH, A. AND RAFFAELE, J. (1998) *A guide to the birds of the West Indies*. Princeton, New Jersey: Princeton University Press.
- REID, COLLINS AND ASSOCIATES (1994) Watershed management plan for the Colonarie river basin. Vancouver: Reid, Collins and Associates. (Unpublished report to the Ministry of Agriculture, Industry and Labour—Forestry Division).
- SIMMONS AND ASSOCIATES, INC. (2000) National Biodiversity Strategy and Action Plan for St Vincent and the Grenadines. St Michael, Barbados: Simmons and Associates, Inc. (Unpublished report).

ACKNOWLEDGEMENTS

The author would like to thank Adrian Bailey (Forestry Department), Amos Glasgow (Forestry Department), Andrew Wilson (National Parks Unit), AvianEyes Birding Group, Carlton Thomas (Forestry Department), Cynthia Robertson (Surveys Department), Cornelius Richards (Forestry Department), Darnley Hazell (The Mustique Company), Edward Bess (Bequia), Father Mark Da Silva (Mayreau), Fitzroy Springer (Forestry Department), Kyron Bynoe (Bequia), Lennox Quammie (The Mustique Company), Matthew Harvey (Union Island Environmental Movement), Orton King (Old Hegg Turtle Sanctuary, Bequia), Peter Ernst (The Mustique Company), and Rudolph Ragguette (retired fisherman/current tour operator, Mustique), for their contributions to this chapter.

VC001 La Soufrière National Park

COORDINATES 13°20'N 61°11'W
ADMIN REGION Mainland St Vincent
AREA 4,990 ha
ALTITUDE 0–1,220 m
HABITAT Rainforest, montane forest



Unprotected

THREATENED BIRDS	2
RESTRICTED-RANGE BIRDS	13
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

Site description

La Soufrière National Park IBA encompasses St Vincent's youngest volcano, and much of the northern quarter of the island (including part of the north-west coast). La Soufrière is an active volcano (and one of the country's main tourist attractions), historically first erupting in 1718, and most recently in 1979. As a result of the volcanic eruptions the surrounding area supports a unique successional ecosystem with a mixture of secondary rainforest and volcanic pioneer vegetation. Various tributaries and waterfalls emanate from the steep slopes, while the foothills support some agriculture (particularly banana cultivation) and, at lower elevations, several forest plantations established by the Forestry Department. High rainfall, along with loose volcanic deposit makes the area vulnerable to erosion and landslides.

Birds

This IBA supports populations of 13 (of the 14) Lesser Antilles EBA restricted-range birds, including the Endangered Whistling Warbler *Catharopoea bishopi* (considered "occasional") and the Vulnerable St Vincent Amazon *Amazona guildingii* (considered "rare"). Following the 1979 eruption, the entire population of parrots disappeared, returning around 1999. The IBA is important for Rufous-throated Solitaire *Myadestes genibarbis*, particularly in the higher elevation, well-forested parts of the park.

Other biodiversity

The Critically Endangered St Vincent blacksnake *Chironius vincenti* and the Endangered (endemic) tree frog *Eleutherodactylus shrevei* occur, as do a number of other endemic reptiles, namely the lizards *Anolis griseus* and *A. vincentiana*, and the regionally endemic congo snake *Mastigodryas bruesi*. A number of island-endemic plants are present in the IBA.

Conservation

La Soufrière National Park is state-owned. It is a proposed national park under the System of Protected Areas and Heritage Sites, and also part of the proposed Central Forest Reserve. Eruptions of La Soufrière have previously destroyed large tracts of forest with the impacts (including on the avifauna) lasting many decades (e.g. the disappearance of *A. guildingii* in 1979). Volcanic activity is monitored by the Seismic Unit (Ministry of Agriculture) in association with the University of the West Indies in Trinidad. Rats (*Rattus* spp.), opossum *Didelphis marsupialis* and mongoose *Herpestes auropunctatus* are all present in the area and presumably impacting bird populations. Marijuana *Cannabis sativa* is illegally farmed (at the expense of natural forest) within this proposed reserve. Illegal squatting and hunting also occur.

VC002 Richmond Forest Reserve

COORDINATES 13°17'N 61°11'W
ADMIN REGION Mainland St Vincent
AREA 3,020 ha
ALTITUDE 9–1,077 m
HABITAT Rainforest, montane forest



Whistling Warbler

Unprotected

THREATENED BIRDS	2
RESTRICTED-RANGE BIRDS	14
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

■ Site description

Richmond Forest Reserve IBA is in west-central St Vincent, immediately south of and abutting La Soufrière National Park (IBA VC001) and west of Mount Pleasant Forest Reserve (IBA VC003). It is an area of rugged terrain and spectacular mountain scenery (including St Vincent's second highest peak—Richmond) overlooking the Caribbean Sea that supports several of the country's rivers and waterfalls of recreational importance. The IBA is within a major hydropower catchment area. Forest is predominantly rainforest with montane forest and elfin forest on the upper slopes, and secondary and dry scrub forests at lower elevations. Loose volcanic material is washed towards the coast by the Richmond River, then collected and sold on the beach by locals (for use in the construction industry).

■ Birds

This IBA supports populations of all 14 Lesser Antilles EBA restricted-range birds, including the Endangered Whistling Warbler *Catharopeza bishopi* and Vulnerable St Vincent Amazon *Amazona guildingii*. Deforestation (particularly for marijuana *Cannabis sativa* cultivation) has reduced the population of the parrot in this reserve: an estimated 43 individuals are thought to be present. The Brown Trembler

Cinclocerthia ruficauda, Scaly-breasted Thrasher *Margarops fuscus*, Rufous-throated Solitaire *Myadestes genibarbis sibilans* and Antillean Euphonia *Euphonia musica* are confined to the higher elevations, primarily above 305 m.

■ Other biodiversity

The Critically Endangered St Vincent blacksnake *Chironius vincenti* and the Endangered (endemic) tree frog *Eleutherodactylus shrevei* occur. Endemic flora in the IBA includes *Begonia rotundifolia*, the epiphytic *Peperomia cuneata* and *P. vincentiana*, forest orchid *Epidendrum vincentinum* and the giant fern *Cyathea tenera*.

■ Conservation

Richmond Forest Reserve IBA is a state-owned, proposed forest reserve under the System of Protected Areas and Heritage Sites. It is also part of the proposed Central Forest Reserve. Illegal marijuana *Cannabis sativa* cultivation has been responsible for a significant loss of forest habitat. This habitat loss, combined with heavy rains and steep terrain, has resulted in increased rates of soil erosion and the area's susceptibility to landslides. Illegal hunting of opossum *Didelphis marsupialis*, agouti *Dasyprocta agouti* and armadillo *Dasypus novemcinctus* occurs.

VC003 Mount Pleasant Forest Reserve

COORDINATES 13°16'N 61°08'W
ADMIN REGION Mainland St Vincent
AREA 1,185 ha
ALTITUDE 19–885 m
HABITAT Rainforest



Lesser Antillean Swift

Unprotected

THREATENED BIRDS	2
RESTRICTED-RANGE BIRDS	14
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

■ Site description

Mount Pleasant Forest Reserve IBA is in north-central St Vincent, south-east of and abutting La Soufrière National Park (IBA VC001), and east of Richmond Forest Reserve (IBA VC002). It is bordered to the south by Colonarie Forest Reserve (VC005). The IBA is characterised by an undulating landscape supporting a rich diversity of flora and fauna and many scenic mountain vistas. Rainforest (some of which is secondary) and palm brake are the dominant vegetation formations. The reserve encompasses the Perseverance water catchment that produces c.5% of the country's annual water output. Agricultural activities are concentrated along the IBA's eastern boundary.

■ Birds

This IBA supports populations of all 14 Lesser Antilles EBA restricted-range birds, including the Endangered Whistling Warbler *Catharopeza bishopi* and Vulnerable St Vincent Amazon *Amazona guildingii*. Other species of note include Common Black-hawk *Buteogallus anthracinus*, Scaly-naped Pigeon *Patagioenas squamosa*, Short-tailed Swift *Chaetura brachyura* and the threatened endemic race of House Wren *Troglodytes aedon musicus*.

■ Other biodiversity

The Critically Endangered St Vincent blacksnake *Chironius vincenti* occurs, as do a number of other endemic reptiles, namely the lizards *Anolis griseus* and *A. trinitatus*, and the regionally endemic congo snake *Mastigodryas bruesi*. Several endemic plants are found including *Begonia rotundifolia*, the epiphytic *Peperomia cuneata* and *P. vincentiana*, forest orchid *Epidendrum vincentinum* and giant fern *Cyathea tenera*.

■ Conservation

Mount Pleasant Forest Reserve IBA is a state-owned, proposed forest reserve under the System of Protected Areas and Heritage Sites. It is also part of the proposed Central Forest Reserve. Illegal marijuana *Cannabis sativa* cultivation has been responsible for a significant loss of forest habitat. This habitat loss, combined with heavy rains and steep terrain, has resulted in increased rates of soil erosion and the area's susceptibility to landslides. Illegal (agriculture-related) squatting occurs. A major concern is the continued poaching of *Amazona guildingii*.

VC004 Cumberland Forest Reserve

COORDINATES 13°14'N 61°12'W
ADMIN REGION Mainland St Vincent
AREA 1,020 ha
ALTITUDE 25–913 m
HABITAT Rainforest, montane forest

**Forest Reserve**

THREATENED BIRDS	2
RESTRICTED-RANGE BIRDS	14
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

■ Site description

Cumberland Forest Reserve IBA is in central St Vincent, bordered to the north by Richmond Forest Reserve (IBA VC002), to the east by Colinarie Forest Reserve (IBA VC005), and to the south by Dalaway Forest Reserve (IBA VC006). The IBA supports portions of the last remaining stand of primary rainforest and montane forest (including elfin forest) in the country. The reserve also has secondary and coastal scrub forest at lower elevations, and some plantation forests (e.g. *Hibiscus elatus* and *Pinus caribaea*). Cumberland Forest Reserve's numerous rivers and streams (an important source of hydroelectric power) add great diversity to these species-rich, relatively intact forests. Farming is practiced in the valley areas but does not adversely affect the forest.

■ Birds

This IBA supports populations of all 14 Lesser Antilles EBA restricted-range birds, including the Endangered Whistling Warbler *Catharopeza bishopi* and Vulnerable St Vincent Amazon *Amazona guildingii*. It is a stronghold for *A. guildingii*, which numbers around 175 individuals (about a third of the total population) and can be found foraging within valleys and near agricultural lands. The parrots also move between the mountain peaks surrounding the valleys. Other species of

note include Scaly-naped Pigeon *Patagioenas squamosa* and Short-tailed Swift *Chaetura brachyura*.

■ Other biodiversity

The Critically Endangered St Vincent blacksnake *Chironius vincenti* and the Endangered (endemic) tree frog *Eleutherodactylus shrevei* occur. Other endemic reptiles include the lizards *Anolis griseus* and *A. trinitatus*, and the regionally endemic congo snake *Mastigodryas bruesi*. Several endemic plants are found.

■ Conservation

Cumberland IBA is a state-owned, currently established forest reserve, and is also part of the Central Forest Reserve as proposed under the System of Protected Areas and Heritage Sites. Also proposed is a scenic nature trail that will traverse a variety of biodiverse habitats, and will be supported by overnight camping and lodging facilities. Illegal hunting of opossum *Didelphis marsupialis*, agouti *Dasyprocta agouti* and armadillo *Dasypus novemcinctus* occurs within the reserve and is a major concern along with the poaching of *Amazona guildingii* nests. Also, burrows of *D. novemcinctus* (e.g. under trees) often result in soil exposure, tree falls and increased erosion, and this is quite evident within the reserve.

VC005 Colinarie Forest Reserve

COORDINATES 13°14'N 61°10'W
ADMIN REGION Mainland St Vincent
AREA 1,590 ha
ALTITUDE 223–914 m
HABITAT Rainforest

**Unprotected**

THREATENED BIRDS	2
RESTRICTED-RANGE BIRDS	14
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

■ Site description

Colinarie Forest Reserve IBA is in central St Vincent encompassing the mid and upper reaches of the Colinarie watershed. The Colinarie River is the longest watercourse (with the second largest catchment area) on St Vincent and is a main source of potable water and hydro-electricity. The IBA is bordered to the north by Richmond (IBA VC002) and Mount Pleasant (IBA VC003) forest reserves and to the west by Cumberland Forest Reserve (IBA VC004). In the upper reaches of the reserve, above 300 m, watercourses have cut deeply into ash agglomerates and basaltic bedrock resulting in a landscape of irregular, complex and steeply-sloping landforms. However, much of the IBA is covered by primary rainforest. The steepness of the terrain (combined with high rainfall) is responsible for the high rates of erosion and landslide hazards.

■ Birds

This IBA supports populations of all 14 Lesser Antilles EBA restricted-range birds, including the Endangered Whistling Warbler *Catharopeza bishopi* and Vulnerable St Vincent Amazon *Amazona guildingii*. It is a traditional stronghold for *A. guildingii*, which numbered 142 individuals in 2004 (about 25% of the total population). Other species of note include Common Black-hawk *Buteogallus anthracinus*, Scaly-naped

Pigeon *Patagioenas squamosa*, Short-tailed Swift *Chaetura brachyura* and the threatened endemic race of House Wren *Troglodytes aedon*.

■ Other biodiversity

The Critically Endangered St Vincent blacksnake *Chironius vincenti* occurs. Other endemic reptiles include the lizards *Anolis griseus* and *A. trinitatus*, and the regionally endemic congo snake *Mastigodryas bruesi*. Several endemic plants are found.

■ Conservation

Colinarie Forest Reserve IBA is a state-owned, proposed forest reserve under the System of Protected Areas and Heritage Sites. It is also part of the proposed Central Forest Reserve. Encroachment, land settlement and (agriculture-related) squatting are serious threats to the remaining primary forest. The lower slopes of the IBA have, in the past, seen intensive exploitation for agriculture. Deforestation for agriculture (cultivation and livestock) and charcoal production is a major concern as it leads to erosion, slope instability and sedimentation in the streams. The lack of riparian buffers exacerbates these problems. River poisoning to harvest crayfish is a common Easter-time practice in nearby communities causing the death of much of the aquatic fauna.

VC006 Dalaway Forest Reserve

COORDINATES 13°12'N 61°12'W
ADMIN REGION Mainland St Vincent
AREA 576 ha
ALTITUDE 294–970 m
HABITAT Rainforest, montane forest

**Parrot Reserve/Unprotected**

THREATENED BIRDS	2
RESTRICTED-RANGE BIRDS	14
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

■ Site description

Dalaway Forest Reserve IBA is in central south-west St Vincent, south of and abutting Cumberland Forest Reserve (IBA VC004) and west of Colinarie Forest Reserve (IBA VC005). The IBA encompasses forested watersheds that supply c.45% of the country's potable water. The forest comprises both primary and secondary rainforest and montane forest. Several forest plantations were established by the Forestry Department as a soil conservation initiative on abandoned farmlands. Thus agricultural crops can be found interspersed between secondary vegetation.

■ Birds

This IBA supports populations of all 14 Lesser Antilles EBA restricted-range birds, including the Endangered Whistling Warbler *Catharopeza bishopi* and Vulnerable St Vincent Amazon *Amazona guildingii*. It supports prime habitat for *A. guildingii* and is another stronghold for the species (with 164 individuals estimated as present in 2004). Other species of note include Scaly-naped Pigeon *Patagioenas squamosa*, Short-tailed Swift *Chaetura brachyura* and the threatened endemic race of House Wren *Troglodytes aedon*.

■ Other biodiversity

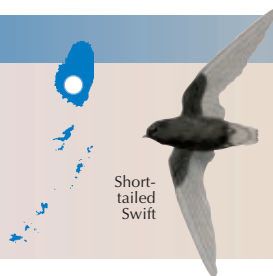
The Critically Endangered St Vincent blacksnake *Chironius vincenti* occurs. Other endemic reptiles include the lizard *Anolis griseus* and the regionally endemic congo snake *Mastigodryas bruesi*. Several endemic plants are found including *Begonia rotundifolia*, the epiphytic *Peperomia cuneata* and *P. vincentiana*, forest orchid *Epidendrum vincentinum* and giant fern *Cyathea tenera*.

■ Conservation

Dalaway Forest Reserve IBA is a state-owned, proposed forest reserve under the System of Protected Areas and Heritage Sites. It is also part of the proposed Central Forest Reserve. Over 90% of the IBA falls within the designated 4,401-ha St Vincent Parrot Reserve. The 3.5-km Vermont Nature Trail (in the south of the IBA) is a major tourist attraction, allowing visitors to observe the parrot in its natural habitat. Educational tours, and patrols by the Forestry Department staff are regular and ongoing, and have limited the impact of threats such as poaching of parrots or hunting of other animals. Boundary encroachment and squatting are periodic problems, and armadillo *Dasypus novemcinctus*, cats and dogs are all having an impact on the area.

VC007 Kingstown Forest Reserve

COORDINATES 13°11'N 61°11'W
ADMIN REGION Mainland St Vincent
AREA 835 ha
ALTITUDE 244–899 m
HABITAT Rainforest, shrubland

**Unprotected**

THREATENED BIRDS	2
RESTRICTED-RANGE BIRDS	14
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

■ Site description

Kingstown Forest Reserve IBA is in south-central St Vincent, adjoining and immediately south of Colinarie Forest Reserve (IBA VC005) and Dalaway Forest Reserve (IBA VC006). The IBA encompasses four watersheds (together producing over 25% of the country's potable water) and includes the island's highest southerly peak—Mount St Andrew—which overlooks the capital. This IBA, which maintains primary and secondary rainforest and dry scrub woodland, contains portions of St Vincent Amazon *Amazona guildingii* habitat and range that were omitted during the establishment of the St Vincent Parrot Reserve in 1987.

■ Birds

This IBA supports populations of all 14 Lesser Antilles EBA restricted-range birds, including the Endangered Whistling Warbler *Catharopeza bishopi* and Vulnerable *A. guildingii*. Other species of note include Common Black-hawk *Buteogallus anthracinus*, Scaly-naped Pigeon *Patagioenas squamosa*, Short-tailed Swift *Chaetura brachyura* and the threatened endemic race of House Wren *Troglodytes aedon*.

■ Other biodiversity

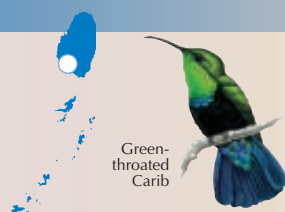
The Critically Endangered St Vincent blacksnake *Chironius vincenti* occurs. Other endemic reptiles include the lizards *Anolis griseus* and *A. trinitatus*, and the regionally endemic congo snake *Mastigodryas bruesi*. Several endemic plants are found including *Begonia rotundifolia*, the epiphytic *Peperomia cuneata* and *P. vincentiana*, forest orchid *Epidendrum vincentinum* and giant fern *Cyathea tenera*.

■ Conservation

Kingstown Forest Reserve IBA is a state-owned, proposed forest reserve under the System of Protected Areas and Heritage Sites. It is the most southerly part of the proposed Central Forest Reserve. Due to its close proximity to the capital (and thus c.25% of the human population) human activities (including illegal squatting, hunting, farming and marijuana *Cannabis sativa* cultivation) have encroached across the forest reserve's boundaries.

VC008 Campden Park Forest Reserve**Unprotected**

COORDINATES 13°10'N 61°14'W
ADMIN REGION Mainland St Vincent
AREA 15 ha
ALTITUDE 0–76 m
HABITAT Dry forest, shrubland



THREATENED BIRDS ☐
RESTRICTED-RANGE BIRDS **7**
 BIOME-RESTRICTED BIRDS ☐
 CONGREGATORY BIRDS ☐

■ Site description

Campden Park Forest Reserve IBA is in south-west St Vincent, near the coast adjacent to the Campden Park River. It shares its western borders with the compound of the Forestry Department's headquarters. The majority of the remaining boundary lies adjacent to human settlement and boundary encroachment has been a serious challenge to the Forestry Department. The area comprises dry scrub woodland with dominant tree species including *Bursera simaruba*, *Swietenia mahogany* and *Tabebuia pallida*.

■ Birds

This IBA supports seven (of the 14) Lesser Antilles EBA restricted-range birds, namely those species that associate with the relatively dry tropical woodland found in the reserve such as Caribbean Elaenia *Elaenia martinica*, Grenada Flycatcher

Myiarchus nugator and Lesser Antillean Tanager *Tangara cucullata*.

■ Other biodiversity

The endemic lizards *Anolis griseus* and *A. trinitatus*, and the regionally endemic congo snake *Mastigodryas bruesi* occur.

■ Conservation

Campden Park Forest Reserve IBA is a state-owned, proposed forest reserve under the System of Protected Areas and Heritage Sites. Being adjacent to the Forestry Department headquarters this site is often used for staff field training and public education. However, due its proximity to human settlements, squatting, bushfires and use of the site by domestic animals (cats, dogs and chickens) is common. The iguana *Iguana iguana* is sometimes hunted within the IBA.

VC009 Botanic Gardens Natural Landmark**Wildlife Reserve/Bird Sanctuary**

COORDINATES 13°10'N 61°14'W
ADMIN REGION Mainland St Vincent
AREA 18 ha
ALTITUDE 61–76 m
HABITAT Shrubland, forest, exotic vegetation



THREATENED BIRDS ☐
RESTRICTED-RANGE BIRDS **8**
 BIOME-RESTRICTED BIRDS ☐
 CONGREGATORY BIRDS ☐

■ Site description

Botanic Gardens Natural Landmark IBA is in southern St Vincent, at the foot of Mount St Andrew, the island's highest southern peak. It includes the Botanic Gardens (8 ha), Government House grounds (the 10-ha residence of the Governor General) and the Nicholls Wildlife Complex (a breeding aviary for St Vincent Amazon *Amazona guildingii* established in 1988). The Botanic Gardens were established in 1765 as an outstation of the Royal Botanic Gardens Kew (London) and are the oldest in the western hemisphere. The vegetation is a mixture of dry scrub woodland, plantation forest, horticultural and agricultural crops, and also the exotic plants of the Botanic Gardens themselves.

■ Birds

This IBA supports populations of eight (of the 14) Lesser Antilles EBA restricted-range birds, primarily those affiliated with dry forest habitats, but also (due to the IBAs location at the foot of Mount St Andrew) several species more normally found in rainforest (e.g. Purple-throated Carib *Eulampis*

jugularis). Other species of note include Common Black-hawk *Buteogallus anthracinus*, Scaly-naped Pigeon *Patagioenas squamosa* the threatened endemic race of House Wren *Troglodytes aedon*.

■ Other biodiversity

The endemic lizard *Anolis griseus* and the regionally endemic congo snake *Mastigodryas bruesi* occur.

■ Conservation

The Botanic Gardens Natural Landmark IBA is state-owned, and both an existing bird sanctuary and wildlife reserve. It is a proposed natural landmark under the System of Protected Areas and Heritage Sites. The aviary currently houses 36 *A. guildingii* and annually produces an average of two chicks. The Botanic Gardens are one of the most visited sites by tourists on the island. However, inadequate awareness and operating procedures means that nesting birds are disturbed and snakes (none of which are poisonous) often killed.

VC010 King's Hill Forest Reserve

COORDINATES 13°09'N 61°10'W
ADMIN REGION Mainland St Vincent
AREA 41 ha
ALTITUDE 122–183 m
HABITAT Forest, shrubland, coast, mangrove

**Forest Reserve/Wildlife Reserve/Bird Sanctuary**

THREATENED BIRDS ☐
RESTRICTED-RANGE BIRDS **7**
BIOME-RESTRICTED BIRDS ☐
CONGREGATORY BIRDS ☐

■ Site description

King's Hill Forest Reserve IBA is in southernmost St Vincent, just north of the highway at Stubbs Bay. It is an area of light sandy soils supporting dry woodland. The IBA is the oldest forest reserve in St Vincent and the second oldest in the Western Hemisphere, established in 1791 to "attract the clouds and rain" and thus provide rain for surrounding areas that were otherwise dry and windswept. Due to its age and historical significance (it contains a vegetation sample plot established by Beard in 1949), the site is sometimes used by the Forestry Department for research, school visits and dendrology training. However, use of the site is restricted and legally requires the permission from the Director of the Forestry Department.

■ Birds

This IBA supports populations of seven (of the 14) Lesser Antilles EBA restricted-range birds, primarily those often affiliated with dry forest habitats, including Caribbean Elaenia *Elaenia martinica*, Grenada Flycatcher *Myiarchus nugator* and Lesser Antillean Tanager *Tangara cucullata*. Other species of

note include Common Black-hawk *Buteogallus anthracinus* and Scaly-naped Pigeon *Patagioenas squamosa*.

■ Other biodiversity

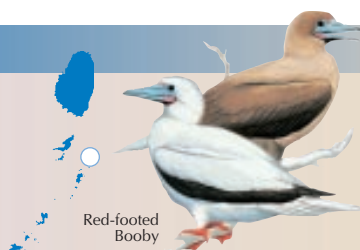
The endemic lizards *Anolis griseus* and *A. vincentiana*, and the regionally endemic congo snake *Mastigodryas bruesi* occur. It is possible that endemic plant species are also present.

■ Conservation

King's Hill Forest Reserve IBA is state-owned and designated as a forest reserve, wildlife reserve and bird sanctuary. Being located close to the highway the forest is easily accessible to local residents and tourists, and human pressure is a significant concern. All species are protected year-round within this site but illegal hunting is a major issue and wild yams and other plant material are harvested, threatening the integrity of the ecosystem. It is thought that domesticated animals (cats, dogs, chickens and small ruminants) use the IBA. Dry season fires are always a threat and forest management should take this into account.

VC011 Battowia Island

COORDINATES 12°58'N 61°08'W
ADMIN REGION The Grenadines
AREA 750 ha
ALTITUDE 0–183 m
HABITAT Rocky areas, sea, shrubland

**Wildlife Reserve**

THREATENED BIRDS ☐
RESTRICTED-RANGE BIRDS ☐
BIOME-RESTRICTED BIRDS ☐
CONGREGATORY BIRDS ☒

■ Site description

Battowia Island IBA (which includes the islet Battowia Bullet) is the most easterly of the Grenadine islands and is immediately adjacent to the island of Baliceaux. It lies c.10 km south-east of Bequia (the largest Grenadine Island), c.8 km north-east of Mustique (IBA VC013) and c.5 km north-east of All Awash island IBA (VC012). Because of its location, Battowia is constantly exposed to the Atlantic Ocean and therefore the island is sparsely covered along the coast (north, west and east), particularly during the dry season. Vegetation comprises coastal grassland interspersed with patchy coastal dry scrub woodland, the healthiest stands of which are found within the few sheltered coves on the west coast and central and southern slopes. The 60-ha island is steep-sided making access difficult in most areas except the south. The IBA includes marine areas up to 1 km from the island.

■ Birds

This IBA is regionally significant for its breeding population of c.3,000 pairs of Red-footed Booby *Sula sula*. Battowia is a key roosting and nesting site for a number of seabird species including Magnificent Frigatebird *Fregatta magnificens*, gulls and boobies. However, as with many of the other Grenadines islands, data on their populations are non-existent. The island

could prove to be of global importance for its seabirds. It appears to support the second largest seabird colony in the country.

■ Other biodiversity

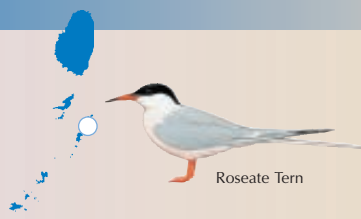
It is believed that the regionally endemic congo snake *Mastigodryas bruesi* occurs on the island. However, there is little information available concerning the biodiversity.

■ Conservation

Battowia Island IBA is privately owned but designated a wildlife reserve. A number of management objectives have been identified and include habitat and wildlife protection, biodiversity conservation, research, recreation, education and heritage tourism. However, the extent to which any of these are being implemented is unknown. Some hunting occurs on the island: young seabirds are taken for their meat and eggs are taken. The impact of this "harvest" has not been quantified. A population of goats is present on the island and will be impacting both the vegetation and the seabirds. It is unknown if rats *Rattus* spp. are present, but this should be determined. Birdwatchers and photographers visit the island on a private tour operated from Mustique—it is unknown if this causes any disturbance to the seabirds.

VC012 All Awash Island

COORDINATES 12°56'N 61°09'W
ADMIN REGION The Grenadines
AREA 365 ha
ALTITUDE 0–55 m
HABITAT Rocky areas, sea, shrubland



Wildlife Reserve

THREATENED BIRDS ☐
RESTRICTED-RANGE BIRDS ☐
BIOME-RESTRICTED BIRDS ☐
CONGREGATORY BIRDS ☒

■ Site description

All Awash Island IBA is a small (3 ha), uninhabited island in the northern Grenadines, c.3 km south of the island of Baliceaux, and 5–6 km north-east of Mustique (IBA VC013). The vegetation comprises degraded and wind-swept dry scrub woodland although it is particularly sparse along the water's edge in the north and east of the island which, as a result, is relatively accessible. A saddle separates the thicker westerly vegetation from the more sparsely-vegetated eastern sector. Marine areas up to 1 km from the island are included within the IBA.

■ Birds

This IBA is significant for its seabirds, and probably represents the country's third largest seabird colony. Globally important numbers of Roseate Tern *Sterna dougallii* nest along with regionally significant populations of Magnificent Frigatebird *Fregata magnificens*, Brown Booby *Sula leucogaster*, Laughing

Gull *Larus atricilla* and Royal Tern *Sterna maxima*. Outside of the breeding season, seabirds forage in the surrounding waters, and use the island for roosting.

■ Other biodiversity

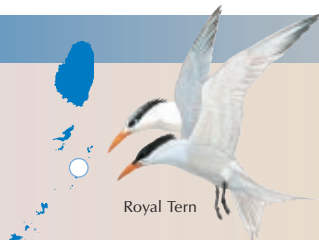
Nothing recorded.

■ Conservation

All Awash Island IBA is a state-owned wildlife reserve. However, the nesting seabirds attract annual raids by fishermen, who begin to frequent the site from around April to poach seabird eggs. This is believed to have a considerable impact on the breeding success of the species involved. The presence of humans on the island causes disturbance to all the breeding seabirds resulting in possible nest abandonment. The waters surrounding the island are a scuba-diving attraction which may also cause disturbance.

VC013 Mustique Island

COORDINATES 12°36'N 61°26'W
ADMIN REGION The Grenadines
AREA 2,470 ha
ALTITUDE 0–150 m
HABITAT Inland wetland, shrubland



Conservation Area

THREATENED BIRDS ☐
RESTRICTED-RANGE BIRDS 6
BIOME-RESTRICTED BIRDS ☐
CONGREGATORY BIRDS ☒

■ Site description

Mustique Island IBA is in the northern Grenadines, c.28 km west-south-west of Barbados. The island (565 ha) is 4 km long (north to south) and up to 2.4 km wide with hills rising to 150 m (the Southern Hills and Central Cambell Hills). It supports three small (natural) wetlands: Lagoon (the second largest wetland in the country), Bird Sanctuary and Macaroni; several man-made ponds; and coastal dry scrub vegetation. Surrounding the Lagoon wetland (which has been well protected by the Mustique Company and remained relatively intact since the 1950s) is a mixed mangrove woodland, and a large stretch of sea-grass and coral reefs.

■ Birds

This IBA supports populations of six (of the 14) Lesser Antilles IBA restricted-range birds (including Grenada Flycatcher *Myiarchus nigrator* and Lesser Antillean Bullfinch *Loxigilla noctis*) and regionally significant numbers of breeding Brown Pelican *Pelecanus occidentalis*, Royal Tern *Sterna maxima* and Sandwich Tern *S. sandvicensis*. Other seabird species breed (e.g. *Sula* spp.) but the populations are unknown. Similarly, the Near Threatened Caribbean Coot *Fulica caribaea* is a common breeder at the Bird Sanctuary, but the numbers involved are unknown.

■ Other biodiversity

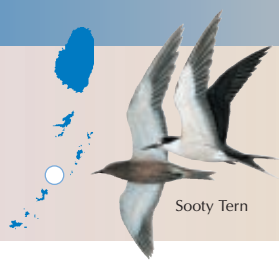
The Critically Endangered hawksbill *Eretmochelys imbricata* and leatherback *Dermochelys coriacea* turtles nest on several of Mustique's beaches, and the Endangered green turtle *Chelonia mydas* forages within its waters. A population of the regionally endemic congo snake *Mastigodryas bruesi* occurs (although its status is unknown).

■ Conservation

Mustique Island IBA is a privately-owned conservation area. Custodianship of the island was granted to the Mustique Company under the Mustique Company Limited Act (1989). Regulations of the Act afford protection to the island and marine areas to at least 1 km offshore. Pet cats roam freely on the island and there is a growing feral population estimated to be in the hundreds which will be impacting the island's breeding waterbirds and seabirds. Cat numbers appear to be increasing in spite of an ongoing neutering programme. Opossum *Didelphis marsupialis* and iguana *Iguana iguana* are illegally hunted on the island, and introduced exotic (invasive) plants are impacting the native flora. Soil erosion caused by house and garden construction is a problem. A rise in sea level will seriously impact coastal areas which are also hurricane-prone. Hurricanes such as Lenny (1999) and Ivan (2004) damaged east coast coral reefs and beaches.

VC014 Petit Canouan

COORDINATES 12°48'N 61°17'W
ADMIN REGION The Grenadines
AREA 420 ha
ALTITUDE 0–55 m
HABITAT Grassland, shrubland



Sooty Tern

Wildlife Reserve

THREATENED BIRDS	<input type="checkbox"/>
RESTRICTED-RANGE BIRDS	<input type="checkbox"/>
BIOME-RESTRICTED BIRDS	<input type="checkbox"/>
CONGREGATORY BIRDS	<input checked="" type="checkbox"/>

■ Site description

Petit Canouan IBA is a small (15 ha), uninhabited island located c.8 km north-north-east of Canouan in the middle of the Grenadines island chain. Originally supporting dry scrub woodland, the island has in recent times been converted mostly to coastal grassland, with few shrubs intermixed. Parts of the island have been left bare and eroded. The conversion to grassland is a result of the annual burning regime implemented by fishermen to facilitate poaching of seabird eggs (Petit Canouan is known among poachers as the island for the “egg birds”). The island is identified as a scuba-diving site under the System of Protected Areas and Heritage Sites. The IBA includes marine areas up to 1 km from the island.

■ Birds

This IBA is significant for its breeding seabirds with up to 20,000 individuals breeding on the island in the late 1990s. Abundance information is poor, but the numbers of Laughing Gull *Larus atricilla* and Roseate Tern *Sterna dougallii* are thought to be globally important, while those of Magnificent

Frigatebird *Fregata magnificens*, Brown Booby *Sula leucogaster*, Royal Tern *S. maxima* and Sooty Tern *S. fuscata* (thought to be c.10,000) are regionally so. Seabird numbers appear to have declined dramatically over the last 5–10 years.

■ Other biodiversity

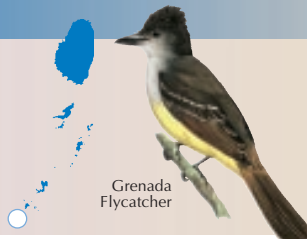
Nothing recorded.

■ Conservation

Petit Canouan IBA is a state-owned wildlife reserve. However, enforcement of this protective designation is very limited. Law enforcement and biodiversity awareness is generally poor on Grenadine islands. Without regulation, the practice of collecting huge quantities of seabird eggs continues unimpeded and provides a rewarding return for the fishermen involved. Vegetation is burnt just prior to the first eggs being laid (March/April) and has significantly degraded the landscape and exposed the already poor soils to increased erosion. It is not known whether rats *Rattus spp.* are present on the island, but this should be determined as a matter of priority.

VC015 Ashton Wetland

COORDINATES 12°53'N 61°11'W
ADMIN REGION The Grenadines
AREA 605 ha
ALTITUDE 0–2 m
HABITAT Wetland, mangrove, shrubland



Grenada Flycatcher

Unprotected

THREATENED BIRDS	<input type="checkbox"/>
RESTRICTED-RANGE BIRDS	6
BIOME-RESTRICTED BIRDS	<input type="checkbox"/>
CONGREGATORY BIRDS	<input type="checkbox"/>

■ Site description

Ashton Wetland IBA is part of Ashton Harbour on the south coast of Union Island, at the southern end of the Grenadines. The wetland supports a diverse (25-ha) stand of mangrove, tidal mud flats, salt ponds, sea and some dry scrub forest. On the seaward side of the mangroves were (originally) diverse sea-grass beds and coral reefs (fringing, patch, and barrier reef). Much of this coral lagoon system (the largest in the Grenadines) has been devastated by an unfinished but now abandoned marina development. The marina developed connects the mainland to an offshore island (Frigate Island) that was previously important for birds.

■ Birds

This IBA supports populations of six (of the 14) Lesser Antilles EBA restricted-range birds, including Grenada Flycatcher *Myiarchus nugator* and Lesser Antillean Tanager *Tangara cucullata*. The wetland itself supports good numbers of migratory shorebirds and also species such as Laughing Gull *Larus atricilla*, Magnificent Frigatebird *Fregata magnificens* and Brown Pelican *Pelecanus occidentalis*. However, the numbers involved are not known but should be assessed at the next opportunity.

■ Other biodiversity

The recently discovered (2005) endemic gecko *Gonatodes daudini* appears to be endemic to Union Island and may occur in the IBA. The regionally endemic congo snake *Mastigodryas bruesi* occurs on Union Island although its distribution and abundance are unknown.

■ Conservation

Ashton Wetland IBA is state owned. The harbour is a marine conservation area designated under the Fisheries Act of 1986. Despite official designation (and a damning environmental impact assessment) a 300-boat marina project began at the lagoon in 1994, compromising the entire ecosystem. The development company declared bankruptcy in 1995 and the half completed marina was abandoned. Ashton Wetland is threatened by a range of factors including: grazing by cows and goats (released during the “let-go season” to allow them to feed freely during periods of drought and food scarcity); development pressures; cutting of trees for fuelwood; pollution from run-off; and indiscriminate dumping of garbage. Ashton lagoon is the focus of a restoration project being proposed by the Society for the Conservation and Study of Caribbean Birds and that also aims to develop the wetland as a Watchable Wildlife Pond.