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Important Bird Areas AMERICAS

DUTCH CARIBBEAN

Adam Brown, Natalia Collier, Adolphe Debrot, Adrian Del Nevo & Jeff Wells





Territory facts at a glance

No. of territories:	6
Total area:	992 km ²
Total population:	298,920
Number of IBAs:	23
Total IBA area:	45,024 ha
IBA coverage of land area:	28%
Globally threatened birds:	1
Globally threatened birds in IBAs:	1
Country endemics:	0

General introduction

The Dutch Caribbean is made up of the islands of Aruba and the Netherlands Antilles, all of which are part of the Kingdom of the Netherlands, albeit with different political status¹. Aruba, at 33 km long by 8-9 km wide, lies just off the Paraguaná peninsula on the north-west coast of Venezuela. The Netherlands Antilles is made up of two island groups; Bonaire and Curaçao off the coast of Venezuela, to the east of Aruba; and St Maarten, Saba and St Eustatius (or Statia) at the northern end of the Lesser Antillean chain, at more than 900 km from the three Dutch islands off the Venezuelan coast. St Maarten is part of the St-Martin/St Maarten island, divided into a northern, French half called St Martin and the southern, Dutch half of St Maarten. The Dutch and the French have shared the island – the smallest land mass in the world to be divided between two governments – for almost 350 years.

Aruba and Curaçao are the most populous islands with over 100,000 inhabitants, whereas Saba and St Eustatius have less than 5,000 each (Table 1). Tourism is important in the economy of the whole of the Dutch Caribbean, although other significant industries include trade, oil refining and transfer facility, banking and harbor related services.

Table 1. Summary information for territories in the Dutch Caribbean

Territory	Area (km ²)	Population	Capital	Altitude (m)	No of IBAs	Total IBA area (ha)	Percentage of total land area
Aruba	193	103,500	Oranjestad	0–188	4	612	0.3%
Bonaire	288	14,000	Kralendijk	0–240	6	23,830	53%
Curaçao	444	138,000	Willemstad	0–375	5	16,280	25%
Saba	13	1,420	The Bottom	0–887	1	2,000	39%
St Eustatius	21	3,000	Oranjestad	0–600	2	1,486	36%
St Maarten	33	39,000	Philipsburg	0–425	5	816	7.2%

Aruba has its geological origins as a former part of South America, whereas the other islands are volcanic in origin. Mount Scenery on Saba is the highest point in the Dutch Caribbean at 887 m.

Climate on Aruba, Bonaire and Curaçao is similar; generally warm and very dry with an average annual precipitation of approximately 500 mm. Aruba is the driest of the three islands. Saba, St Eustatius and St Maarten have a slightly wetter climate, with between 1000 and 1700 mm of rain, much of which arrives during the hurricane season in late summer and fall.

Vegetation is generally xeric shrubland with columnar cacti on the islands off Venezuela, with mangroves fringing some inland bays on Aruba, Bonaire and Curaçao where there are also several enclosed shallow, hypersaline lagoons providing important habitat for waterbirds. Dense secondary woodlands are recuperating from former agricultural impacts on Curaçao as a result of changes in agricultural activity. All islands except Saba have long sandy beaches, important for the growing tourist industry. The Lesser Antilles islands have vegetation consisting of thorny woodland, scrub, and transition to secondary rainforest at mid elevations and elfin woodland in the highest mountainous regions. Coral reefs are present on all islands but have suffered some damage from hurricanes, anchoring vessels and other human activities.

¹At some point in the near future the “Netherlands Antilles” will be dissolved. St Maarten and Curaçao will become separate countries within the Kingdom of the Netherlands (similar to the current status of Aruba). The islands of Bonaire, Saba and St Eustatius will be linked directly to the Netherlands as overseas territories.

Conservation and protected area system



Washington-Slagbaai National Park (AW009).
Photo: Rowan O. Martin

Provision for wildlife conservation differs within the Dutch Caribbean. On Aruba, the main protected area is the 3400 ha Parke Nacional Arikok. With no single government ministry responsible for environmental policy and implementation, wildlife conservation issues are not dealt with in a coordinated, efficient way. However, an island-wide Coastal Zone Management Plan is currently being developed and aims to identify areas of importance and those requiring protection and conservation. During a 2008 ‘Wild Aruba’ conference there was a consensus for the need of one environmental and management agency for the island.

In the Netherlands Antilles, conservation mechanisms are embraced within the draft Island Nature Protection Ordinance which must be approved by each island’s government in order to facilitate the creation of island-specific conservation legislation. The process is currently at different stages on each island, with legislation in place and protected areas designated on Bonaire, Curaçao and St Eustatius. Protected areas have been proposed, but not approved, on Saba and St Maarten. Nevertheless, some areas benefit from a de facto conservation management to varying degrees (and government recognized in some cases) at different sites in the Dutch Caribbean. Marine protected areas are also present on Bonaire, Saba, St Eustatius and a proposed area exists on St Maarten. On the whole, protected areas (both marine and terrestrial) are managed by local non-governmental organizations such as STINAPA on Bonaire, CARMABI Foundation on Curaçao, Saba Conservation Foundation, St Eustatius National Parks Foundation and the Nature Foundation of St Maarten.

As well as the above organizations, a number of other NGOs have been established to address different environmental concerns, focusing on a variety of taxa and conservation issues. Activities carried out by NGOs include biodiversity inventories, species searches (e.g. Audubon’s Shearwater; *Puffinus lherminieri*), ecological studies (e.g. Purple-throated Carib; *Eulampis jugularis*), bird status and distribution studies, banding and monitoring, as well as more general activities not necessarily focused on birds, such as alien species control programs, vegetation mapping, awareness raising, guided tours and animal welfare programs.

Main threats to the Dutch Caribbean include unchecked urbanization, especially on Aruba, Bonaire and St Maarten. Areas affected are mainly on the coast although ponds and lagoons are regularly filled in and altered on St Maarten. Human encroachment and development is associated

“Alien invasive species are a serious threat in the Dutch Caribbean, especially on Saba, St Eustatius and St Maarten.”

with tourism and recreational activities, posing a threat to seabird nesting sites as well as leading to the loss of Aruba’s unique desert habitat. Alien invasive species are also a serious threat in the Dutch Caribbean, especially on Saba, St Eustatius and St Maarten. Species of concern include rats, feral cats, goats, dogs and mice, in addition to raccoon (*Procyon lotor*), mongoose (*Herpestes auropunctatus*) and green monkey (*Chlorocebus sabaesus*) on St Maarten. A related threat of overgrazing and direct destruction of vegetation exists on St Eustatius and Bonaire, although on the former island, enforcement of an animal registry program has begun. Oil spills and inappropriate refuse management also pose threats, especially to seabirds and other marine life on Statia. The capture and keeping of parrots and other birds for pets is a particularly important threat on Bonaire, especially with respect to the Yellow-shouldered Amazon (*Amazona barbadensis*). The intentional or accidental release of brown-throated parakeets that had originated on Curacao or Bonaire poses a threat to the island subspecies of brown-throated parakeet on Aruba.



Free-ranging donkeys are a major threat to Bonaire’s vegetation.
Photo: Bert Denneman



Ornithological importance

The majority of bird species recorded in the Dutch Caribbean are Neotropical migrants, with proportions of resident species ranging from just 23% on St Maarten to 48% on Statia. The ornithological make-up of the three islands off the coast of Venezuela (Aruba, Bonaire and Curaçao) includes species of both Caribbean and South American origin, most notably with species restricted to the Northern South America biome (NSA): Bare-eyed Pigeon (*Patagioenas corensis*) on all three islands and the Vulnerable Yellow-shouldered Amazon (*Amazona barbadensis*) on Bonaire.

Table 2. Numbers of bird species (including threatened and endemic species) per territory in the Dutch Caribbean

Territory	No of species	CR	EN	VU	NT	Endemics
Aruba	207	-	-	-	1	-
Bonaire	214	-	-	1	1	-
Curaçao	215	-	-	-	1	-
Saba	87	-	-	-	-	-
St Eustatius	54	-	-	-	-	-
St Maarten	164	-	-	-	1	-
Total nos. of species	-	0	0	1	1	0

Bonaire's endemic subspecies of Brown-throated Parakeet (*Aratinga pertinax xanthogenius*).
Photo: Bert Denneman



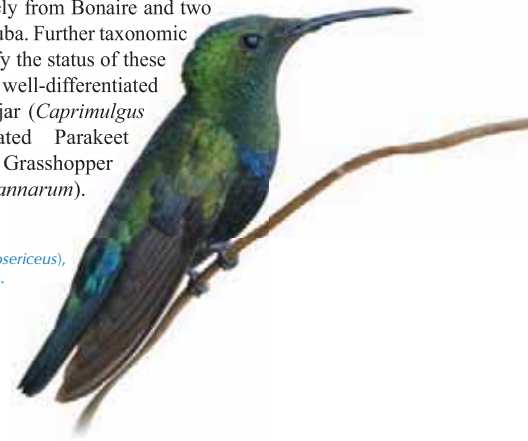
The Yellow-shouldered Amazon is also one of three restricted-range species within the Netherlands Antilles Secondary Area (SA 015), the other two being Caribbean species, namely Caribbean Elaenia (*Elaenia martinica*) and Pearly-eyed Thrasher (*Margarops fuscatus*). Saba, St Eustatius and St Maarten all lie within the Lesser Antilles Endemic Bird Area (EBA 030) and share a total of nine species. A further restricted-range species, Antillean Euphonia (*Euphonia musica*) was once present on Saba but has not been recorded since 1952 and is probably extirpated. The restricted-range Bridled Quail-dove (*Geotrygon mystacea*) may also be heading for extinction on this island, having declined dramatically over the last 10 years as a result of hurricane impacts and predation.



Saba coastline (AN006) at Spring Bay. The island's whole coastline is an IBA, including land 400 m inland and sea areas up to 1 km from the coast.
Photo: Bert Denneman

There are no endemic birds in the Dutch Caribbean. Nevertheless, at least 16 subspecies have been described from Aruba, Bonaire and Curaçao, including four exclusively from Bonaire and two from each of Curaçao and Aruba. Further taxonomic research is warranted to verify the status of these subspecies, in particular the well-differentiated forms of White-tailed Nightjar (*Caprimulgus cayennensis*), Brown-throated Parakeet (*Aratinga pertinax*) and Grasshopper Sparrow (*Ammodramus savannarum*).

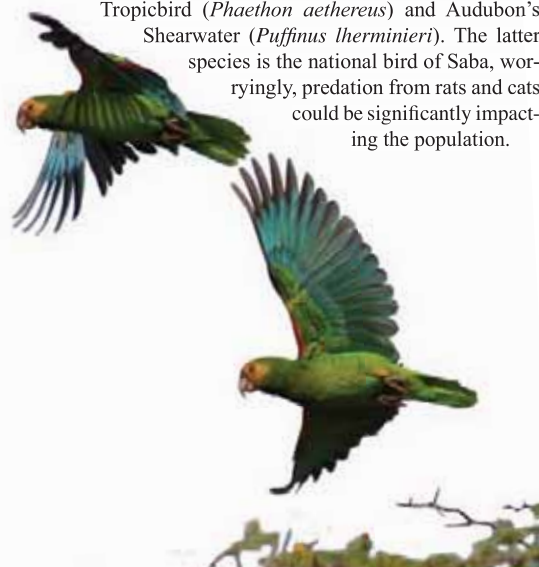
Green-throated Carib (*Eulampis holosericeus*), one of Statia's restricted-range birds.
Photo: Brenda and Duncan Kirkby



“Over 300 globally threatened Yellow-shouldered Amazons were illegally caught for the local pet trade between 1998 and 2002.”

The only threatened species in the Dutch Caribbean is the Vulnerable Yellow-shouldered Amazon (*Amazona barbadensis*) on Bonaire. However, this species was formerly common on Aruba but had been extirpated by the 1940's apparently from shooting and poisoning. Although no study of habitat suitability has been performed, habitat for the species may remain in several areas, including within Arikok National Park. Its estimated population on Bonaire is 650, of clear importance within a global population estimated at 2500 - 9999 individuals. However, over 300 parrots were illegally caught for the local pet trade between 1998 and 2002 which has presumably halted any potential population growth on the island. The Near Threatened Caribbean Coot (*Fulica caribaea*) is found on three islands (Table 2, 3).

The Dutch Caribbean Islands are important for waterbirds and sea-birds, with over 50 species recorded, although only eight are present in sufficient numbers to trigger global IBA criteria, including two nesting terns, Common Tern (*Sterna hirundo*) and Least Tern (*Sterna antillarum*), Caribbean Flamingo (*Phoenicopterus ruber*), Red-billed Tropicbird (*Phaethon aethereus*) and Audubon's Shearwater (*Puffinus lherminieri*). The latter species is the national bird of Saba, worryingly, predation from rats and cats could be significantly impacting the population.



Bonaire has a globally important population of the Vulnerable Yellow-shouldered Amazon (*Amazona barbadensis*).
Photo: Rowan O. Martin

IBA overview



A total of 23 IBAs, covering 45,024 ha have been designated in the Dutch Caribbean (Table 3, Figure 1, 2), of which 13 IBAs have some sort of formal protection at present.

Nine IBAs have been confirmed under the A1 criterion (see methods section for further explanation): four sites for the Vulnerable Yellow-shouldered Amazon (*Amazona barbadensis*) on Bonaire and six sites

for the Near Threatened Caribbean Coot (*Fulica caribaea*). In total, 13 sites have been confirmed under the criterion A2, these include six sites covering nine species corresponding to the Lesser Antilles Endemic Bird Area (EBA 030) and seven sites covering the three species of the Netherlands Antilles Secondary Area (SA 015). Two species present on Aruba, Bonaire and Curaçao are restricted to the Northern South America Biome (NSA) and trigger IBA criteria at 10 sites. IBAs

Figure 1. Location of Important Bird Areas in Aruba, Curaçao and Bonaire

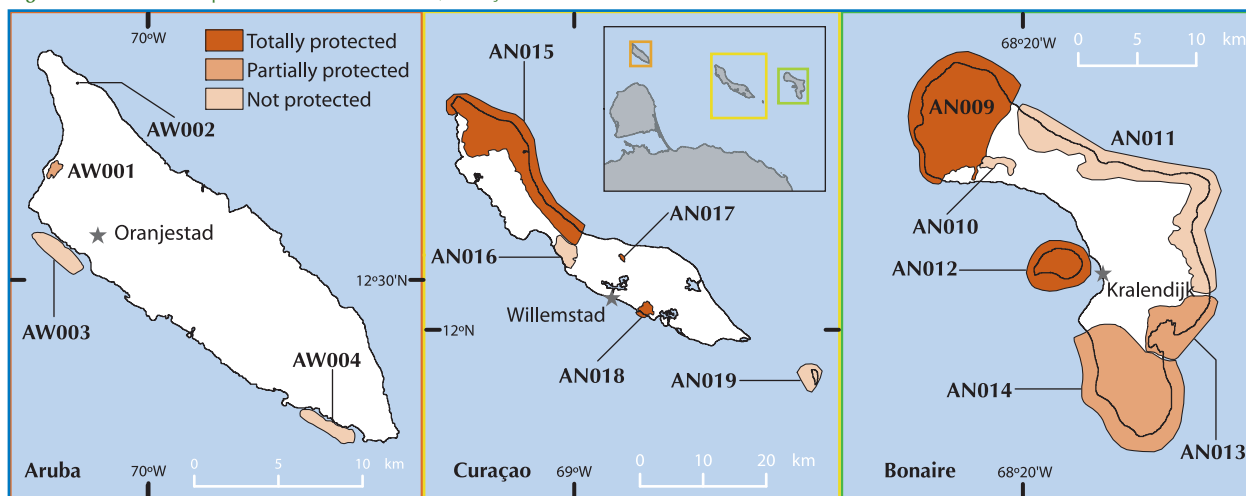
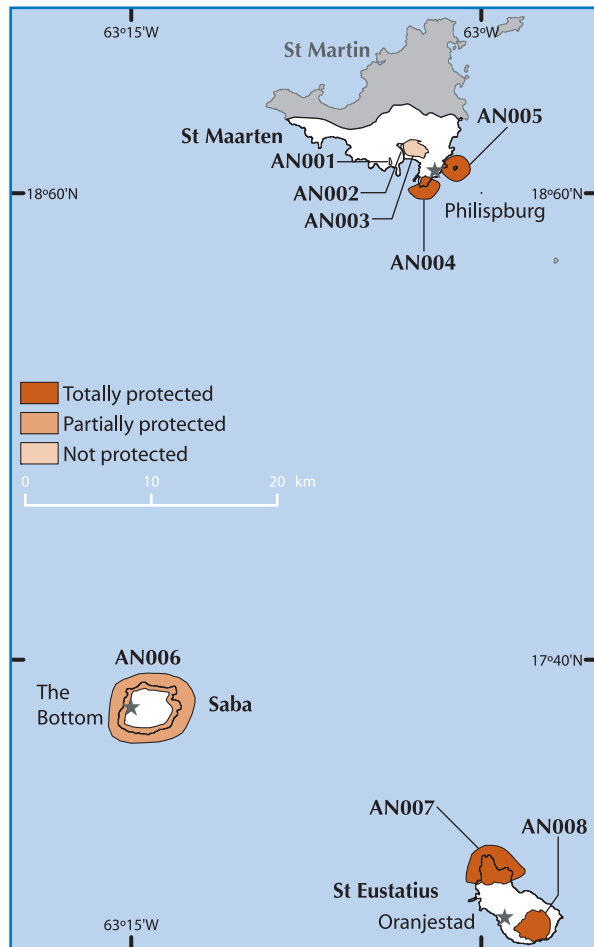


Table 3. Important Bird Areas in the Dutch Caribbean

IBA code	IBA name	Adm unit	Area (ha)	A1				A2		A3				A4			
				CR	EN	VU	NT										
Aruba																	
AW001	Bubali Wetlands	Aruba	53			1			X								
AW002	Tierra del Sol Salina	Aruba	2			1			X								
AW003	Oranjestad Reef Islands	Aruba	309												X		
AW004	San Nicolas Bay Reef Islands	Aruba	248												X		
Bonaire																	
AN009	Washington-Slagbaai National Park, Bonaire	Bonaire	6,900	1				X	X	X					X		
AN010	Dos Pos, Bonaire	Bonaire	235	1				X	X								
AN011	Washikemba-Fontein-Onima, Bonaire	Bonaire	5,960	1	1			X	X								
AN012	Klein Bonaire, Bonaire	Bonaire	1,810					X	X								
AN013	Lac Bay, Bonaire	Bonaire	2,075	1				X	X								
AN014	Pelkermeer Saltworks, Bonaire	Bonaire	6,850												X		
Curaçao																	
AN015	North-east Curaçao parks and coast, Curaçao	Curaçao	13,555						X	X							
AN016	Malpais-St Michiel, Curaçao	Curaçao	1,100			1		X	X	X					X		
AN017	Muizenberg, Curaçao	Curaçao	65			1									X		
AN018	Jan Thiel Lagoon, Curaçao	Curaçao	430												X		
AN019	Klein Curaçao, Curaçao	Curaçao	1,130							X	X						
Saba																	
AN006	Saba coastline, Saba	Saba	2,000						X						X		
St Eustatius																	
AN007	Boven, Sint Eustatius	St Eustatius	1,016					1							X		
AN008	The Quill, Sint Eustatius	St Eustatius	470						X								
St Maarten																	
AN001	Little Bay, Sint Maarten	St Maarten	8						X								
AN002	Fresh Pond, Sint Maarten	St Maarten	14						X								
AN003	Great Salt Pond, Sint Maarten	St Maarten	188												X		
AN004	Fort Amsterdam, Sint Maarten	St Maarten	278						X								
AN005	Pelikan Rock, Sint Maarten	St Maarten	328												X		

For information on trigger species at each IBA, see individual site accounts at BirdLife's Data Zone: www.birdlife.org/datazone/sites/

Figure 2. Location of Important Bird Areas in St Maarten, Saba and St Eustatius



have also been triggered by A4 criteria for eight species of waterbird or seabird. There are 10 sites for A4i and two for A4ii.

Aruba's four IBAs cover just 610 ha, but between them they support over 30,000 seabirds and a number of other significant bird populations. Tierra del Sol Salina IBA (AW002) is set within a privately-owned golf course and is unprotected. The other three IBAs are state owned with differing levels of protection afforded them.

Four of six trigger species on Aruba are breeding seabirds and are confined to the San Nicolas Bay Reef Islands IBA (AW004) and Oranjestad Reef Islands IBA (AW003), highlighting the critical importance of these islands for maintaining Aruba's biodiversity. There is a proven between-year movement of breeding Sandwich (Cayenne) Terns (*Sterna sandvicensis eurygnatha*) between the colonies at the San Nicolas Bay IBA and Oranjestad Reef Islands IBA showing that these two IBAs should really have shared conservation management plans.

Of **Bonaire's** six IBAs, Washington-Slagbaai National Park IBA (AN009), Klein Bonaire IBA (AN012) and most of Lac Bay IBA (AN013) are formally protected within the national system of protected areas, the latter as part of the Bonaire National Marine Park. Parts of Washikemba–Fontein–Onima IBA (AN011) and Pekelmeer Saltworks IBA (AN014) have been identified as proposed protected areas within the Bonaire Nature Management Plan, but these recommendations have not been acted upon. However, the latter two IBAs are designated Ramsar sites, offering them formal recognition of their importance.

The majority of trigger species occur in two or more IBAs. However, the Near Threatened Caribbean Coot (*Fulica caribaea*) only occurs on the freshwater reservoirs in Washikemba–Fontein–Onima IBA (AN011). Perhaps of greater concern is the fact that c.60% of the Vulnerable Yellow-shouldered Amazon (*Amazona barbadensis*) population occurs outside of formal protected areas, leaving the species

totally exposed to capture for the local pet trade. For example, Dos Pos IBA (AN010) contains some of the most important breeding and roosting sites for the species on Bonaire but receives no protection from future development (although there are no immediate threats to this area) or poaching.

One of **Curaçao's** five IBAs, makes up 83% of the total IBA area on the island: Northeast Curaçao parks and coast IBA (AN015) and embraces Curaçao's two terrestrial national parks (totaling c.2300 ha). The remainder of the IBAs have varying to zero degree of protection and suffer from a lack of active management. The five trigger species all occur in two or more IBAs, however, the majority of the Near Threatened Caribbean Coot (*Fulica caribaea*) occur in the threatened and unmanaged Muizenberg IBA (AN017).

The **Saba** coastline IBA (AN006) covers 2000 ha of critical terrestrial and marine habitats that support the entire island's population of breeding seabirds, and also the full complement of the restricted-range birds that still occur on the island. The lack of legal protection for the majority of terrestrial areas is a concern that must be addressed to facilitate pro-active conservation of Saba's terrestrial biodiversity (including breeding seabirds).



Boven IBA (AN007).
Photo: Nicole Esteban

Statia's two IBAs, covering 41% of the island's land area are both formally designated as protected areas—the terrestrial components are covered within the Quill–Boven National Park, and the marine component within the St Eustatius Marine Park. The Quill IBA (AN008) embraces the island's forest-dependent species (restricted-range species), while Boven IBA (AN007) supports nesting habitat for Red-billed Tropicbird (*Phaethon aethereus*).



Great Salt Pond (AN003) and Fresh Pond (AN002) in Philipsburg.
Photo: Jay Havisser

Of the five IBAs on **St Maarten**, Pelikan Rock (AN005) is protected within the St Maarten Marine Park, and Fort Amsterdam (AN004) is protected as a historical site. The IBAs are centered on wetland and marine sites being primarily significant for their populations of Laughing Gull (*Larus atricilla*) and the Near-Threatened Caribbean Coot (*Fulica caribaea*). However, shrublands in three IBAs support populations of the four restricted-range species known to occur in the country. The protection afforded Fort Amsterdam (Historical Site) and Pelikan Rock (Marine Park) IBAs appears to be preventing site-based threats although factors outside of these areas are having negative impacts such as disturbance to the mainland pelican nesting colony from jet skis, dive boats, and parasail boats. Over-fishing, oil spills, and plastics entanglement are constant threats to the marine-based seabirds and waterbirds.

Opportunities



Some priority actions are outlined below to improve the conservation of birds and their habitats on each of the islands in the Dutch Caribbean.

“There is a need to set up monitoring programs of key bird species in the Dutch Caribbean IBAs.”

It is important to build **Aruba’s** three state-owned IBAs (AW001, AW003 and AW004) into a formalized legislative framework for national conservation and protected area establishment, which would help facilitate much needed conservation action and management. In particular, the designation of a national marine park would assist in the protection of Aruba’s seabird nesting sites (AW003 and AW004) and their large and diverse seabird (tern) populations. Bird monitoring studies suggest that land bird populations may be negatively effected by introduced predators such as rats, and particularly cats. Concern has also been expressed regarding the presence of introduced boa constrictors on the island.

On **Bonaire**, there is an urgent need to establish secure, protected areas for breeding terns (*Sterna* spp.) through the eradication of cats and rats where possible, signage, fencing, and regular patrols (e.g. AN012 AN009 and AN014). Such proactive management would likely see a dramatic increase in the breeding tern (and plover *Charadrius* spp.) populations. More attention should also be given to balancing the management of Pekelmeer Saltworks IBA for its ecological values in addition to its economic value. Washington-Slagbaai National Park IBA would benefit from a concerted program of removing goats, donkeys and pigs that are so dramatically impacting the vegetation.

Yellow-shouldered Amazon (*Amazona barbadensis*) would benefit from increased patrolling of the Washington-Slagbaai National Park IBA in an effort to stop poaching, although this would be difficult and costly. A public awareness campaign will be implemented in 2009 by STINAPA together with Salba Nos Lora Foundation. The campaign aims to raise local pride in combination with enforcement of the laws prohibiting the possession of unregistered birds, thereby reducing local demand for wild-caught birds. Ideally this would reach beyond Bonaire to the neighboring island of Curaçao as a (currently unknown) proportion of parrots poached on the island are exported to Curaçao. Yellow-shouldered Amazon on Bonaire is perceived by many as an agricultural pest. A detailed study to determine the extent of agricultural damage caused by the parrot, accompanied by measures to address this conflict with humans is also needed. Periodic starvation due to a depauperate island flora and consequently vulnerable food supply may be addressed by reforestation with a diversity of native berry-producing hardwood tree species. In 2009 a pilot habitat restoration scheme with fruit trees will be implemented to recover food sources, as part of the above awareness campaign, funded by Vogelbescherming Nederland (BirdLife in the Netherlands). Further research to determine the factors limiting the parrot population on Bonaire is required for informed management decisions within the IBAs.

All of **Curaçao’s** IBAs have urgent management requirements if the populations of the birds for which they are internationally important are to thrive. However, securing disturbance free zones around the tern nesting colonies appears to be one of the greatest needs. If implemented effectively, the tern populations would increase dramatically (as seen at the protected colonies on Aruba) and perhaps some of the 1200 pairs of Sandwich (Cayenne) Tern (*Sterna sandvicensis eurygnatha*) that used to breed (pre-1962) at Jan Thiel Lagoon IBA might return and/or facilitate inter-island use and movement by this species.

On **Saba**, it seems that the globally significant populations of Audubon’s Shearwater (*Puffinus lherminieri*), Red-billed Tropicbird (*Phaethon aethereus*) and the restricted-range Bridled Quail-dove (*Geotrygon mystacea*) in the IBA are declining (or are at least limited) as a result of predation from cats and rats (exacerbated by trampling and grazing from goats). Saba is small enough that complete eradication of some invasive species may be feasible, given sufficient funding, time and local support. In anticipation of both formal protection of terrestrial habitats within Saba’s IBA, and a possible eradication program, there is an urgent need to determine the population of Audubon’s Shearwater and Bridled Quail-dove, and to continue monitoring the population of Red-billed Tropicbird.

The recently resolved land dispute within Boven IBA (AN007) on **St Eustatius** has enabled the effective management of grazing which should lead to the recovery of vegetation within the park. A trail system has also been established and research and monitoring are being implemented. It is hoped that these measures will also facilitate the control of goats, cats and rats which almost certainly represent limiting factors for the breeding population of Red-billed Tropicbird (*Phaethon aethereus*). Enforcement of an animal registry program within the Quill IBA (AN008) should decrease the incidence of grazing in the park, but both goats and chickens are often present around and within the volcano and presumably impact the native fauna. Surveys to assess the population of each of the IBA trigger species should be a priority.

St Maarten’s wetland IBAs of Little Bay Pond, Fresh Pond and Great Salt Pond all face similar, multiple threats such as land reclamation for development, inappropriate development, use for landfill, pollution and contamination from runoff and sewage, inappropriate water management (e.g. maintaining water levels by pumping in sea water), alien invasive predators and disturbance. The Nature Foundation of St Maarten and Environmental Protection in the Caribbean (EPIC) have variously planted mangroves, constructed bird observation towers and installed educational signage at Little Bay Pond and Fresh Pond IBAs, but it is clear that enforced legislation is critical if the biological integrity of these wetlands is to be maintained in the long term.

There is a need to set up monitoring programs of key bird species in the Dutch Caribbean IBAs in addition to existing small-scale monitoring schemes, for example, those set up by Dutch Caribbean Nature Alliance. Existing monitoring data can be used to inform management decisions and thereby assist the sustainability of these internationally important biodiversity sites.



The islands within St Nicolas Bay (AW004) are globally important for their seabird colonies. Photo: Adrian Del Nevo

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Rainforest Ravine at "Thissell Park" within Saba's only IBA (AN006). Saba Conservation Foundation owns this 35 ha privately protected park which includes a complete altitudinal gradient of Mount Scenery, from the crater to the sea.
Photo: Bert Denneman

²For a fuller list of references for each individual island, see BirdLife International (2008).