

CAPE VERDE

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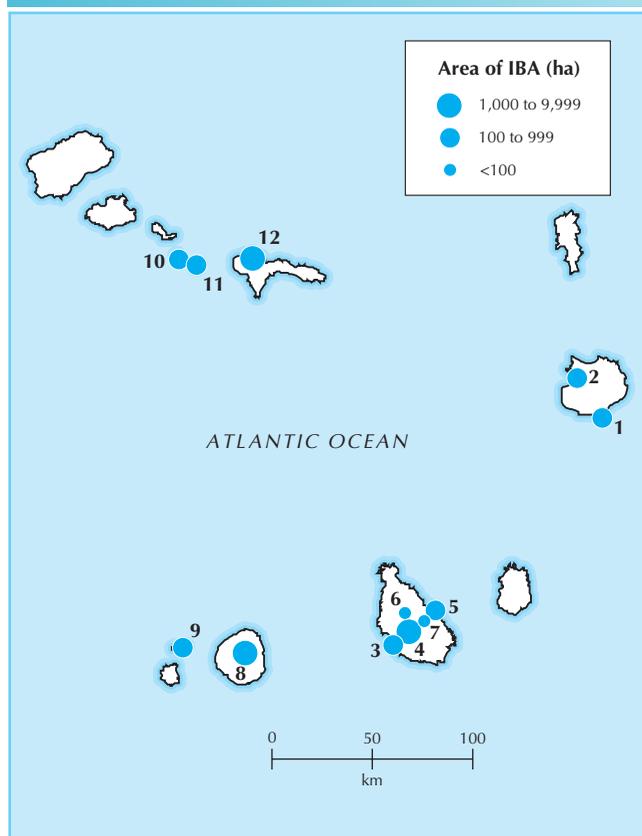
Raso Lark *Alauda razae*. (ILLUSTRATION: NIK BORROW)

GENERAL INTRODUCTION

The Republic of Cape Verde (República de Cabo Verde) is situated in the eastern Atlantic, within latitudes 14°48'N–17°12'N and longitudes 22°40'W–25°22'W, c.500 km west of Dakar, Senegal. The Cape Verde islands were uninhabited at the time of their discovery by European mariners around 1460. The archipelago, a former Portuguese colony, gained independence in 1975. There are 10 main islands (nine inhabited) and several uninhabited islets. Some of the islets (Branco, Raso, Ilhéus do Rombo) are entities of their own, while others are satellite rocks, lying off the main islands. The total land area is 4,033 km², scattered over 58,000 km² of ocean, and there is c.1,050 km of coastline. Island size varies from 991 km² (Santiago) to 35 km² (Santa Luzia). Brava (64 km²) is the smallest inhabited island and Raso (7 km²) is the largest islet. In 1997, the population was estimated at 406,000, implying an average density of 101 persons/km². However, this figure does not reflect the real situation, as about a quarter of the population lives in the two main cities, Praia (the capital, on Santiago) and Mindelo (the main port, on São Vicente), with c.160,000 on the island of Santiago as a whole. Some of the eastern islands are only sparsely populated, with Boavista (620 km²) having c.3,500 inhabitants and Maio (269 km²) c.5,000, implying a population density of 5.5 and 18 persons/km², respectively. The majority of the population is of mixed Afro-European descent. The international airport is situated on the north-eastern island of Sal. Formerly, there was a considerable salt industry on Sal (and also on Boavista and Maio) which provided the main export product and, although this has now largely been abandoned, the salt pans are still present. The country ranks among the poorest in the world, with c.44% of the population living below the official poverty level. The per capita gross national product (GNP) is c.US\$800; this figure is, however, rather artificial because about half of the total GNP comes from foreign aid and remittances from Capeverdians (c.650,000) living abroad. Since there are few natural resources, more than 85% of all goods have to be imported, while exports are negligible. The local economy depends largely on fisheries, agriculture and foreign aid.

The general topography in the three eastern islands is strikingly different from that of the more westerly ones. Whereas the eastern islands are generally rather flat with a small number of peaks reaching only a few hundred metres, the western islands are mountainous, reaching heights of 1,500 m and more. This reflects geological history: the eastern islands are postulated to be the more ancient, showing an advanced state of erosion and geophysical evolution. In particular, on Santiago, Santo Antão and São Nicolau there are large and rugged mountain ranges. The island of Fogo is a huge volcano rising to 2,829 m, the highest elevation in the islands; it is the only active volcano in the archipelago and, in April 1995, it erupted for the first time since 1951. In the eastern islands—and locally elsewhere—there are large tracts of a desert and semi-desert-like environment, with stony plains and areas covered with aeolian sands and sparse vegetation. Apart from a few brackish lagoons on Boavista and Santiago, there is no permanent, inland surface water. Only in the northern part of Santo Antão are there a few small permanent streams.

The Cape Verdes are, in effect, a continuation of the Sahelian zone of continental Africa, and the climate is warm and dry with only irregular rains, moderated by the cool Canary Current which reaches the islands from the north. The main rainy season, brought about by the south-west monsoon, extends from August to October, sometimes to November, and there are occasionally some localized rains in early spring. However, due to topographical features, particularly elevation, there is great spatial variation in the amount of rain. Total annual rainfall for the country as a whole is often quoted as being in the range of 100–900 mm, but it may vary locally from zero to 1,200 mm. The months of May–June are completely dry. At higher elevations, particularly at sites facing north-east, some precipitation in the form of mist or drizzle may occur at almost any time between August and March. Temperatures are relatively mild and constant, with a mean of 22°C at Praia in February, the coolest month, and 27°C in September, the warmest; minima and maxima are 17°C and 32°C, respectively. Elsewhere, however, maxima of up to 35–40°C may occur, especially in the interior of the arid eastern islands. For much of the year, especially between December–April,

Map 1. Location and size of Important Bird Areas in Cape Verde.

Table 1. Summary of Important Bird Areas in Cape Verde. 12 IBAs covering c.110 km²

IBA code	Site name	Administrative region	Criteria (see p. 11; for A2 codes, see Table 2)			
			A1	A2	A4ii	A4iii
CV001	Ilhéu de Curral Velho and adjacent coastal area	Boavista		✓		
CV002	Ribeira do Rabil	Boavista		✓		
CV003	Coastal cliffs between Porto Mosquito and Baía do Inferno	Santiago				✓
CV004	Serra do Pico da Antónia	Santiago	✓	✓		
CV005	Pedra Badejo lagoons	Santiago	✓	✓		
CV006	Kapok tree, Boa Entrada	Santiago	(✓)*			
CV007	Mahoganies at Banana, Ribeira Montanha, Ilha de Santiago	Santiago	(✓)*			
CV008	Volcano area, Ilha do Fogo	Fogo	✓	✓	✓	
CV009	Ilhéus do Rombo	Fogo	(✓)*	✓		✓
CV010	Ilhéu Branco	São Nicolau	(✓)*	✓	✓	✓
CV011	Ilhéu Raso	São Nicolau	✓	✓	✓	✓
CV012	Central mountain range of Ilha de São Nicolau	São Nicolau	✓	✓	✓	
Total number of IBAs qualifying:			9	9	5	2

* See Comments on the Inventory

Table 2. The occurrence of restricted-range species at Important Bird Areas in Cape Verde. Sites that meet the A2 criterion are highlighted in **bold**. Species of global conservation concern are highlighted in **bold blue**.

078 – Cape Verde Islands Endemic Bird Area

(four species in Cape Verde; nine sites meet the A2 criterion)

IBA code:	001	002	004	005	008	009	010	011	012
<i>Apus alexandri</i>			✓		✓				✓
<i>Alauda razae</i>								✓	
<i>Acrocephalus brevipennis</i>			✓	✓					✓
<i>Passer iagoensis</i>	✓	✓	✓			✓	✓	✓	
Number of species recorded:	1	1	3	1	1	1	1	2	2

the strong, dry North-east Trade Wind blows, while the harmattan, a hot, dry wind from the Sahara, may replace it, usually for short periods, from October to June. The harmattan sometimes fills the upper air mass with dust, causing a hazy atmosphere. Throughout the history of the Cape Verdes, including the recent past, there have been several periods of prolonged and catastrophic drought, causing famine in the country. Over the centuries, lack of water has been the predominant problem for human survival in the islands.

The vegetation is dominated by drought-resistant species. Today, it is virtually impossible to draw a clear picture of the original vegetation of the islands before human settlement. At present, a total of 621 species of higher plant are found, of which 85 are endemic while another 88 have a wider distribution, but are thought to occur naturally. Introduced species make up 42% of the total and another 30% are of questionable origin. Only three (perhaps five) tree species are thought to be indigenous and, at the time of the discovery of the islands, the lower elevations were probably mainly covered with herbaceous savanna or steppe vegetation, possibly with scattered acacias. During five centuries of settlement the natural environment has been almost completely altered, primarily due to poor agricultural techniques, the introduction of large numbers of alien plants, and the devastating effects of the large number of goats. During this century, and especially since independence, large areas have been afforested, mainly with exotic *Prosopis juliflora* and *Parkinsonia aculeata* on the dry plains and *Eucalyptus* spp. on the mountain slopes. Although large areas may be devoid of vegetation for much of the year, they may turn green almost overnight, with a variety of herbaceous plants, once rain falls. Beside lagoons the main shrub is *Tamarix senegalensis*, while coastal areas often have a vegetation dominated by halophytes.

About 40,000 ha are cultivated, the main crops being maize and beans. Only 5% of the cultivated area is irrigated and here sugarcane, banana, manioc and various vegetables are grown. Large numbers of goats were introduced to the islands soon after they were first settled and, especially in the eastern islands, but also in large parts of the others, overgrazing has degraded the natural vegetation to a disastrous extent.

Until the early twentieth century, Praia, and later São Vicente, were main ports of call for ships en route from Europe to South America, Africa and Asia, and many ship-board naturalists visited the islands for a day or so in transit. From the mid-1920s, the decline of passenger shipping meant that the islands were largely ignored by naturalists until independence in the 1970s.

ORNITHOLOGICAL IMPORTANCE

The total of species reliably recorded in the islands now stands at 171 (Hazevoet 1999). These include 36 species of breeding bird, nine of which are seabirds and 14 (including three seabirds) of which are endemic forms (*sensu* Hazevoet 1995). In addition, four species (none endemic) are thought to have bred formerly, but are now considered extinct, while a further four species are introduced. As an oceanic archipelago, it is not surprising that the main ornithological importance of the Cape Verde Islands lies in its seabird colonies and its endemic landbirds. It is likely that the present avifauna is merely a remnant of a much richer one, both in diversity and numbers, that existed before the advent of man. It is known that large-scale predation of seabird colonies by humans began as soon as the islands were inhabited during the mid-fifteenth century. There is the real possibility that undocumented species of birds have been rendered extinct within historical times.

About 40 species are regular passage migrants and/or winter visitors, but others—especially some of the smaller passerines—which are currently considered vagrants are likely to prove, upon further study, to occur more regularly. The vast majority of the visiting migrants (both regulars and vagrants) is of Palearctic origin; only nine migrant/vagrant species are of possible or certain Afrotropical origin, and seven of these are heron species. Moreover, only a few of the breeding species (e.g. *Halcyon leucocephala*, *Acrocephalus brevipennis*) have definite Afrotropical affinities. This is not to say that the remainder can be considered as ‘Palearctic’, because a large proportion consists of typically arid-zone species, aquatic birds and scavengers, all known to be nomadic or highly dispersive. Several others, including some that were formerly taken as ‘proof’ of the

Palaearctic affinities of the Cape Verde avifauna, are endemics whose ancestors probably lived in what is now the Sahara during the Pleistocene, at times when more pluvial conditions prevailed both there and in the Cape Verdes.

Using the taxonomy and threat status of Collar *et al.* (1994), three species of global conservation concern are known from the Cape Verdes, all of which breed. These are *Pterodroma feae* (VU), *Alauda razae* (EN) and *Acrocephalus brevipennis* (VU), of which the latter two are endemic (*A. razae* confined to a single, small island) while *P. feae* is shared as a breeding species with Bugio island in the Desertas, off Madeira. The breeding population of *P. feae* in Cape Verde is estimated to be a minimum of 310 pairs (Ratcliffe *et al.* 2000), while for *A. razae* it is c.45 pairs (Ratcliffe *et al.* 1999) and *A. brevipennis* 500 pairs (Hazevoet 1995). In addition, however, a further four endemic taxa were treated by Collar *et al.* (1994) as threatened subspecies which may be valid species. They were not assessed as to threat category and so are treated here simply as being of global conservation concern; the populations of all are, however, extremely small. These taxa are *Ardea (purpurea) bournei*, *Milvus (milvus) fasciicauda*, *Buteo* ('*buteo*') *bannermani* and *Falco (peregrinus) madens*. Of these, *Milvus (milvus) fasciicauda* has since been shown to be effectively extinct (Hille and Thiollay 2000), while the work of Clouet and Wink (2000) showed that, as predicted by Hazevoet (1995), *bannermani* is more closely related to *Buteo rufinus* than to *B. buteo*. Four of the endemics are considered restricted-range species whose distributions define the Cape Verde Islands Endemic Bird Area (EBA 078) (see Table 2).

CONSERVATION INFRASTRUCTURE AND PROTECTED-AREA SYSTEM

The first protected areas in Cape Verde were designated in 1990 under the National Parks and Protected Areas Programme (NPPAP). This programme was initiated in 1988, under the auspices of the Instituto Nacional de Investigação e Desenvolvimento Agrário (INIDA) and the then ICBP-Netherlands Section, now part of BirdLife International. The objectives of the NPPAP are: to establish a system of protected areas for the conservation of flora and fauna; to collaborate with local, regional and national organizations to develop and implement a meaningful programme for the management and conservation of wildlife; and to conserve natural resources, maintain biodiversity and enhance the quality of human life through the protection of natural areas. The programme emphasizes the development of educational initiatives and the training of locals as NPPAP staff and wardens.

In 1990, the Cape Verde government designated as Nature Reserves, under Law 79/III/90, the uninhabited islands of Santa Luzia, Branco, Raso and Ilhéus do Rombo, as well as Ilhéu de Curral Velho and Ilhéu de Baluarte (islets off Boavista). These sites may now only be visited under special permit and, consequently, any seabirds (eggs, young or adults) appearing for sale in markets can be considered to have been collected illegally and be confiscated. An important objective for the NPPAP is to make local authorities familiar with the new laws and raise their awareness of the need for wildlife conservation.

Other conservation legislation includes Article 17 of Decree 97/87, passed in 1987, which prohibits the capture of marine turtles between June and February. The forestry law of June 1989 gives responsibility to the Forest Service for environmental protection and conservation of species in areas for which the Service is responsible. These laws are a necessary and important first step towards a more comprehensive conservation policy, but there are no real means of enforcing them. In addition, apart from some old laws of unclear status, there is no legislation that provides effective protection for individual species.

Successful implementation of a protected-area programme necessarily requires not only the involvement of and collaboration between the relevant government agencies, including the Ministério das Pescas, Agricultura e Animação Rural (Ministry of Fisheries, Agriculture and Rural Extension), Ministério do Turismo (Ministry of Tourism) and the Instituto Nacional de Desenvolvimento das Pescas (National Institute of Fisheries Research), but also the local communities and national NGOs.

The NPPAP needs substantial financial support if progress is to be maintained and success achieved. Fortunately, some support is

being generated through implementation of plans launched by a new national agency, Secretariado Executivo para o Ambiente (SEPA), the main governmental agency responsible for the environment. It recently produced a national biodiversity strategy and action plan (SEPA 1999), in which proposals addressing the NPPAP are included.

Seabirds remain heavily exploited in Cape Verde. Chicks, eggs and even adults of boobies, tropicbirds, petrels and shearwaters are harvested annually from colonies on the main islands and small, uninhabited islets. Other birds reported to be eaten include herons, kestrels and egrets. Small songbirds are caught by children. On Santiago, the endemic barn owl *Tyto (alba) detorta* is thought to cure asthma.

INTERNATIONAL MEASURES RELEVANT TO THE CONSERVATION OF SITES

Cape Verde is a contracting party to the Convention on Biological Diversity, the Convention to Combat Desertification, the Convention on Climate Change and the World Heritage Convention, under which, however, no sites have been designated. Regionally, it is also a member of several international organizations through which environmental programmes can be implemented, including the Sahel Committee Against Drought (CILSS) and the Economic Community of West African States (ECOWAS). Cape Verde has also signed the Memorandum of Understanding Concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa (MT-AF), which falls under the framework of the Bonn Convention.

OVERVIEW OF THE INVENTORY

The inventory contains 12 Important Bird Areas (IBAs), covering a total area of c.110 km², equivalent to c.2.7% of the land area of the country (Map 1, Table 1). The sites include all the important habitats for birds, including seabird colonies on uninhabited islands and on coastal and inland cliffs on the main islands, and the main breeding sites of endemics, as well as lagoons and saltpans for wintering migrants and representative desert communities. Two sites, although very small, are of particular significance because they encompass the only known breeding sites of the endemic *Ardea (purpurea) bournei*, confined to a handful of trees in the interior of one island. Another critical site is the small island of Raso, to which the peculiar *Alauda razae* is entirely confined, and also holds important populations of seabirds and reptiles. Nine sites qualify for the globally threatened taxa they hold, and nine are selected under category A2 which, between them, hold all four species of the Cape Verde Islands EBA across their range (Table 2), while six are selected for their numbers of breeding seabirds.

COMMENTS ON THE INVENTORY

Sites which qualify under category A1 for the presence of the globally threatened taxa treated here, following Collar *et al.* (1994), as subspecies—*Ardea (purpurea) bournei*, *Milvus (milvus) fasciicauda*, *Buteo* ('*buteo*') *bannermani* and/or *Falco (peregrinus) madens*—and at which no other species of global conservation concern occurs, are shown in Table 1 as '(✓)' and in the site-account headers as '(A1)'.

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GLOSSARY

harmattan dry, cool, dust-laden, mainly south-westerly winds from the Sahara.
ilha island.
ilhéu islet.
NPPAP National Parks and Protected Areas Programme.
ribeira stream, valley.

■ SITE ACCOUNTS

Ilhéu de Curral Velho and adjacent coastal area
CV001

Admin region Boavista

Coordinates 15°58'N 22°47'W

Area 600 ha Altitude 0–28 m

A2 (078)

Nature Reserve, Unprotected

■ Site description

Ilhéu de Curral Velho is a calcarous rock (0.5 ha), situated c.500 m off the southernmost point of Boavista and rising c.15 m above sea-level. The cliffs are heavily eroded and the extreme south-western part stands almost separate from the remainder of the islet. The islet is unvegetated, but fossilized roots of shrubs are plentiful. Due to the prevailing heavy seas, access to the islet is difficult and often impossible. The area on the opposite main island, centred around the deserted village of Curral Velho, consists of sand-dunes, a lagoon and an oasis with palm trees, *Acacia* spp. and *Tamarix senegalensis*. It has a typical arid-zone flora and fauna.

■ Birds

See Box and Table 2 for key species. There is a colony of c.100 pairs (1992 estimate) of *Sula leucogaster* on the islet. In addition, and more significantly, 2–3 pairs of *Fregata magnificens* breed amidst the boobies. The islet is one of only two breeding sites for *F. magnificens* in the Cape Verdes, indeed in the whole eastern Atlantic. There is also a small colony of *Calonectris (diomedea) edwardsii*. *Puffinus (assimilis) boydi* and *Oceanodroma castro* were reported to breed on the islet during the 1960s, but there is no recent information. A few pairs of *Phaethon aethereus* may still breed as the species was collected on the islet during the 1920s, and was observed again there on several occasions during the 1980s and 1990s. Birds breeding in the adjacent main island area include *Falco (tinnunculus) alexandri*, *Coturnix coturnix*, *Cursorius cursor*, *Charadrius alexandrinus*, *Eremopterix nigriceps*, *Ammomanes cincturus*, *Alaemon alaudipes*, *Passer hispaniolensis* and *P. iagoensis*. Although breeding of *Pandion haliaetus* was confirmed in 1986–1991, searches in 1998–1999 yielded no occupied nests. During migration periods, especially in autumn, the bushes in the area provide shelter to several species of Palearctic passerine migrants seldom encountered elsewhere in the islands.

Key species

A2 (078) Cape Verde Islands EBA: One of the four species of this EBA has been recorded at this site; see Table 2.

■ Other threatened/endemic wildlife

The sandy beaches of the Curral Velho area are important laying sites for sea turtles, in particular *Eretmochelys imbricata* (CR) and *Caretta caretta* (EN). Lizards occurring in the area include *Mabuya stangeri* and *Hemidactylus bouvieri*.

■ Conservation issues

The islet was designated a protected area by law in 1990, and may now only be visited under special permit, but in practice the law is difficult to enforce. Formerly, fishermen regularly visited the islet to collect the eggs and chicks of boobies (and, presumably, also frigatebirds) but, according to local informants, these activities have now almost ceased. This is probably due at least partly to the fact that the only other booby colony on Boavista, at Ilhéu de Baluarte, is easier to approach, and nest-robbery has continued to be more severe there. The adjacent main island area has been proposed as a protected area under the NPPAP. Its vegetation is heavily affected by the large numbers of goats that roam the area and, if protection is to be effective, it will need to be fenced off. An agreement has recently been developed between Cape Verde and Spain for major tourism development on the island of Boavista. This could eventually lead to increased pressure on this ecologically sensitive island and its surrounding islets, including Ilhéu de Curral Velho.

■ Further reading

Hazevoet (1994, 1995).

Ribeira do Rabil
CV002

Admin region Boavista

Coordinates 16°08'N 22°54'W

Area 300 ha Altitude 0–15 m

A2 (078)

Unprotected

■ Site description

The area is situated on the western side of Boavista, at the mouth of the Ribeira do Rabil, or Ribeira Grande, the main watercourse on the island. The site comprises an area extending c.7 km east from the coast to the road connecting Vila de Sal Rei (the island's main town) with the airfield and the village of Rabil. Surrounded by mobile sand-dunes and *Tamarix senegalensis* bushes, with a wide lagoon at the stream's outlet, the ribeira is scenically attractive. Following rain, the ribeira may swell to an impressive stream but, for most of the year, it consists of brackish pools which gradually dry out as the dry season advances. The lagoon, however, is filled with water all year. Besides tamarix, the vegetation is dominated by *Cyperus* spp., *Zygochloa* spp. and *Euphorbia* spp.

■ Birds

See Box and Table 2 for key species. The lagoon and adjacent ribeira usually hold good numbers of wintering migrant waders—16 species have been recorded. Numbers of waders usually do not exceed c.300 birds, but this is unusual in the islands. The only breeding wader is *Charadrius alexandrinus*. In addition, migrant herons (four species), *Platalea leucorodia*, and terns (four species) are regularly recorded in the area. Formerly, *Marmaronetta angustirostris* and *Gallinula chloropus* bred along the lagoon, but neither has been recorded in recent years. The bushes along the lagoon also provide a popular roost for *Bubulcus ibis*. A representative arid-zone avifauna occurs in the surrounding dunes and bushes and includes *Coturnix coturnix*, *Cursorius cursor*, *Ammomanes cincturus*, *Alaemon alaudipes*, *Sylvia conspicillata*, *Passer hispaniolensis* and *P. iagoensis*.

Key species

A2 (078) Cape Verde Islands EBA: One of the four species of this EBA has been recorded at this site; see Table 2.

■ Other threatened/endemic wildlife

The endemic lizards *Mabuya stangeri* and *Hemidactylus bouvieri* occur.

■ Conservation issues

The area has been proposed as a protected area under the NPPAP. Traditionally, *Tamarix* and other bushes are collected for firewood and fodder and, at times, considerable areas are cut down. In recent years a small tourist industry has been developing on Boavista, mainly involving beach recreation and wind-surfing. This is taking place on beaches adjacent to the lagoon area, and an increasing number of tourists are intruding upon the area, causing frequent disturbance to birds. Significant tourism development on Boavista is likely in the near future, and this may include enlargement of the airport to accommodate international flights. Such structural development may directly affect Ribeira do Rabil, which is close to the airport, while increased tourism will almost certainly lead to regular disturbance of the lagoon, which lies between the main airport road and a popular beach recreation area.

■ Further reading

Hazevoet (1992a, 1995).

Coastal cliffs between Porto Mosquito and Baía do Inferno
CV003

Admin region Santiago

Coordinates 14°59'N 23°43'W

Area c.160 ha Altitude 0–200 m

A4ii

Unprotected

■ Site description

The site comprises a c.8 km stretch of rugged cliffs along the south-western coast of the island of Santiago, from the fishermen's village of

Porto Mosquito to Baia do Inferno (Baia de Santa Clara), a large and relatively well-sheltered bay. The average height of the cliffs is c.30 m, but at Baia do Inferno they rise to 200 m and are exceedingly steep.

■ Birds

See Box for key species. The colony of *Sula leucogaster* on the southern cliffs of Baia do Inferno is the largest in Cape Verde and holds c.300 pairs (1988 estimate). Scattered pairs of *Phaethon aethereus* breed along this stretch of coast, the steepness of the cliffs explaining their survival. Together with some other scattered pairs which occur elsewhere along the coast, Santiago now holds about a quarter of the current total population of 100–125 pairs in Cape Verde. One or two pairs of *Pandion haliaetus* and some pairs of *Egretta garzetta* also breed along the cliffs.

Key species	Breeding (pairs)	Non-breeding
A4ii <i>Phaethon aethereus</i>	25–30	—

■ Other threatened/endemic wildlife

None known to BirdLife International.

■ Conservation issues

Fishermen regularly collect eggs and chicks from the *Sula leucogaster* colony. *Phaethon aethereus* is probably also affected by these activities, but the steepness of the cliffs is thought to have a moderating effect.

■ Further reading

Hazevoet (1994, 1995).

Serra do Pico da Antónia	CV004
Admin region Santiago	
Coordinates 15°03'N 23°39'W	A1, A2 (078)
Area 1,500 ha Altitude c.700–1,392 m	Unprotected

■ Site description

This site comprises the central mountain range of the island of Santiago and includes the island's highest peak (Pico da Antónia, 1,392 m). The terrain is, in general, rugged, and accessibility is limited, but there are some roads and several trails which lead to the summit. Large parts of the slopes and crest are forested with a variety of trees, in particular *Eucalyptus* spp. These woods are managed by the state forestry service. The higher parts are often shrouded in clouds and, during much of the year, are relatively well-watered by mist and drizzle. There is some cultivation of coffee on the higher slopes, while maize and beans are grown at lower altitudes. Part of the mountain's rim is a military zone, closed to the public, and there is also a telecommunications station.

■ Birds

See Box and Table 2 for key species. Endemic birds breeding in the area comprise *Puffinus (assimilis) boydi*, *Buteo ('buteo') bannermani*, *Falco (tinnunculus) alexandri*, *Falco (peregrinus) madens*, *Tyto (alba) detorta*, *Apus alexandri*, *Acrocephalus brevipennis* and *Passer iagoensis*. *Milvus (milvus) fasciicauda* used to occur, but is now extinct on Santiago (and is virtually so everywhere). In addition, *Pterodroma feae* was recorded breeding during the 1960s, but there is no recent information. Other breeding species include *Coturnix coturnix*, *Halcyon leucocephala*, *Sylvia conspicillata*, *S. atricapilla* and *Passer hispaniolensis*.

Key species	
A1	† <i>Milvus (milvus) fasciicauda</i> <i>Falco (peregrinus) madens</i> <i>Buteo ('buteo') bannermani</i> <i>Acrocephalus brevipennis</i>
A2 (078)	Cape Verde Islands EBA: Three of the four species of this EBA have been recorded at this site; see Table 2.

■ Other threatened/endemic wildlife

Endemic lizards *Mabuya stangeri spinalis*, *Tarentola darwini*, *T. rudis* and *Hemidactylus brooki angulatus* occur at the site. Endemic plants include *Euphorbia tuckeyana*, *Campanula jacobaea* and *Sonchus daltonii*.

■ Conservation issues

The population of *Buteo ('buteo') bannermani* is now extremely small, while *Milvus (milvus) fasciicauda* has recently become extinct on Santiago, but the exact reasons for their decline are poorly understood.

It is thought that pesticides have played a role (especially before 1975); also nest robbery by children may have contributed. Guns are rare amongst the population, but a few license holders regularly hunt *Numida meleagris*, an introduced species common in the area. It is unknown if, and to what extent, other birds are shot, but this is probably not a major threat today. In the past it may, however, have been considerable, because raptors are generally considered to be 'chicken thieves', and this may be at the root of the present rarity of large raptors. Specific research must be carried out to establish the present status of *Pterodroma feae* in the area (and on Santiago as a whole). The population of *Acrocephalus brevipennis* appears to be relatively stable, at least at this site. Tree-felling causes temporary disturbance.

■ Further reading

Hazevoet (1993, 1995), Hille and Thiollay (2000), Sangster (2000).

Pedra Badejo lagoons	CV005
Admin region Santiago	
Coordinates 15°08'N 23°32'W	A1, A2 (078)
Area 200 ha Altitude 0–15 m	Unprotected

■ Site description

The site comprises two lagoons and the surrounding area, situated south of the town of Pedra Badejo on Santiago, in an intensively cultivated area. Banana, sugar-cane, manioc and various vegetables are grown; there are also extensive stands of coconut-palm. The brackish lagoons, which hold water all year-round, lie at the mouth of three major watercourses (Ribeira dos Picos, Ribeira Montanha and Ribeira Seca), which are dry most of the year but may swell to violent torrents during the rains. Large quantities of mud and debris are then deposited in the lagoons and surrounding areas, attracting many waders and herons.

■ Birds

See Box and Table 2 for key species. About 20 species of wader have been recorded, numbering up to c.300 birds, exceptional in the Cape Verdes. The lagoons are also regularly visited by herons (eight species recorded—both migrants and residents—including *Ardea (purpurea) bournei*), and small parties of *Platalea leucorodia* are observed annually. *Acrocephalus brevipennis* is rather common in the cultivated areas. Other breeding species include *Halcyon leucocephala*, *Sylvia conspicillata* and *S. atricapilla*. *Gallinula chloropus* formerly bred, but has not been recorded since the late 1960s; this is, with site CV002, one of only two places in the Cape Verdes where the species has been known to breed.

Key species	
A1	<i>Acrocephalus brevipennis</i>
A2 (078)	Cape Verde Islands EBA: One of the four species of this EBA has been recorded at this site; see Table 2.

■ Other threatened/endemic wildlife

None known to BirdLife International.

■ Conservation issues

In view of the location of the site and its heavy use by local people and domestic livestock, protection of the lagoons will be difficult, perhaps impossible, to implement. In the past, the edges of the lagoons were lined with reedbeds, but these have apparently been cleared during the last decades—presumably a (or the) reason for the disappearance of *Gallinula chloropus*.

■ Further reading

Hazevoet (1992a, 1993, 1995).

Kapok tree, Boa Entrada	CV006
Admin region Santiago	
Coordinates 15°07'N 23°40'W	(A1)
Area 0.1 ha Altitude c.400 m	Unprotected

■ Site description

The site consists of a single, huge, 25-m-high kapok tree, *Ceiba pentandra*, near the village of Boa Entrada in Santa Catarina (Assomada) region

on the island of Santiago. The area is intensively used for agricultural purposes, in particular for the cultivation of sugar-cane, and there are many mango *Mangifera indica* trees in the surrounding area. The kapok grows in the valley bottom, and a steep track leads down this valley from the town of Assomada.

■ Birds

See Box for key species. This site is, with CV007, one of only two known breeding colonies of the endemic *Ardea (purpurea) bournei*. Formerly, a third colony existed at São Domingos, but was destroyed when the trees used for nesting were felled in the early 1970s. In 1993, the total population of *A. (purpurea) bournei* numbered 20–25 pairs at most. Between 1988–1993, 4–6 pairs bred at this site, but in 1998–2000 this had declined to only 1–2 pairs. Nesting takes place in the crown of the tree. During the 1960s, nests were also found in mango trees not far from the kapok, but this has not been observed since. *Acrocephalus brevipennis* breeds in the area.

Key species

A1 *Ardea (purpurea) bournei*

■ Other threatened/endemic wildlife

The kapok is easily the largest tree on the island of Santiago and, probably, the whole country; it is worthy of preservation even without the presence of the heron colony.

■ Conservation issues

The tree, or at least the ground on which it stands, is privately owned and thus its survival is partly dependent upon the good will of the owner, although under national legislation it is illegal to cut down large trees. Although the tree lies in a rural area, it does attract international and national visitors at times. The heron colony itself is severely threatened by local disturbance, in particular by birds being shot at and by boys collecting eggs. Information leaflets about the tree and its herons have been distributed among the people in the area and similar actions should be continued, particularly among schoolchildren. An information board, explaining the importance of the site, should be erected. The possibility of renting or buying a small area, including the tree itself, ought to be investigated.

■ Further reading

Hazevoet (1992b, 1995, 1997, 1999).

Mahoganies at Banana, Ribeira Montanha, Ilha de Santiago

CV007

Admin region Santiago

Coordinates 15°05'N 23°35'W

Area 0.1 ha Altitude c.400 m

(A1)

Unprotected

■ Site description

The site consists of two mahogany *Khaya senegalensis* trees of moderate height, standing together on private farmland in a valley bottom, near the village of Banana, in eastern-central Santiago. The area is intensively farmed; mainly maize, beans and sugar-cane.

■ Birds

See Box for key species. This is one of only two known breeding sites for the endemic *Ardea (purpurea) bournei* (see site CV006). This colony was only discovered in 1991. In 1991–1993, there were c.20 nests but, due to their position in the crowns of the trees and the thick foliage, it was not possible to accurately determine the number occupied. In March 2000, eight adults and 10 juveniles were counted in the colony, and 13–15 nests were observed in December 2000. *Acrocephalus brevipennis* breeds in the area.

Key species

A1 *Ardea (purpurea) bournei*

■ Other threatened/endemic wildlife

None known to BirdLife International.

■ Conservation issues

As with site CV006, the trees are privately owned. An agreement with

the landowner is needed to ensure they are left undisturbed. Information leaflets about the trees and the herons have at times been distributed among the people in the area, and similar actions should be continued, particularly among schoolchildren. An information board, explaining the importance of the site, should be erected. In early 2000, villagers stated that they had caught about 10 herons for human consumption.

■ Further reading

Hazevoet (1992b, 1995, 1997, 1999).

Volcano area, Ilha do Fogo

CV008

Admin region Fogo

Coordinates 14°57'N 24°23'W

Area 5,000 ha Altitude 1,000–2,829 m

A1, A2 (078), A4ii

Unprotected

■ Site description

The site comprises the highest parts of the island of Fogo, including the *bordeira* (outer rim), *caldeira* (inner floor) and cone of the volcano, Pico Novo. The cone reaches a height of 2,829 m, and the rim c.2,700 m; the lowest elevation of the floor of the *caldeira* is 1,625 m. The volcano is the only one remaining active in the islands and erupted last in April 1995. There are, within the *caldeira*, two villages which were evacuated during the last eruption. Traditionally, grapes are grown on the inner slopes of the *bordeira* and there is some subsistence agriculture on the *caldeira* floor. The scenery of the whole area, with many old and new lava-flows, is fascinating, and is of great geological, botanical and zoological interest.

■ Birds

See Box and Table 2 for key species. Fogo is one of four islands in the archipelago where the endemic *Pterodroma feae* is known to breed, and the island is thought to have the second-largest population of the species. Of particular importance are the breeding sites on the inner walls of the *bordeira*, although the species has also been found breeding at lower altitudes on the outer slopes. Surveys in 1998 gave an estimate of c.80 pairs breeding on Fogo, although it was thought likely that there remain further colonies to be discovered. *Puffinus (assimilis) boydi* breeds on Fogo, probably on the outer slopes of the *bordeira*. Of all the islands, *Apus alexandri* is commonest on Fogo and nearby Brava; it has been observed at the highest elevations of Fogo and probably breeds here. Other breeding species include *Halcyon leucocephala*, *Sylvia conspiciillata*, *S. atricapilla* and probably *Falco (peregrinus) madens*.

Key species

A1 *Pterodroma feae*

A2 (078) Cape Verde Islands EBA: One of the four species of this EBA has been recorded at this site; see Table 2.

A4ii	Breeding (pairs)	Non-breeding
<i>Pterodroma feae</i>	c.80 (1998)	—

■ Other threatened/endemic wildlife

The endemic plants *Echium vulcanorum* and *Erysimum caboverdeanum* are only known to occur on the outer rim of the volcano.

■ Conservation issues

The fat of *Pterodroma feae* is believed by residents to cure rheumatism. In 1988–1990, inhabitants of the *caldeira* confirmed that the birds were still used for this purpose, though less often than in the past. The number of petrels now taken is thought to be small but, according to local people in 1998, several birds were still being taken each year. The distribution of alternative medicines may eventually eliminate the problem. Predation of nesting birds by feral cats is a further threat. Many recommendations have been made for designating the volcano and surrounding region a protected area under the NPPAP, in which the areas including the outer crater wall, the inner crater and the volcano peak would be designated a reserve or natural monument. The reserve would include almost all endemic plants on the island as well as the main breeding sites of *P. feae*. Within the reserve, an area including both sides of the south-western portion of the outer crater *bordeira*, has been proposed for strict protection. The area has good potential for tourism.

■ Further reading

Hazevoet (1995), Ratcliffe *et al.* (2000).

Ilhéus do Rombo

Admin region Fogo

Coordinates 14°58'N 24°40'W

Area 500 ha Altitude 0–96 m

CV009

(A1), A2 (078), A4iii

Nature Reserve

Site description

The Ilhéus do Rombo, situated north-east of the island of Brava, consist of two main islets of low elevation, Ilhéu Grande (3 km²) and Ilhéu de Cima (1.5 km²), and several smaller rocks and stacks. All are barren or almost so, and only the larger islets support scattered, sparse, grassy vegetation. The group is uninhabited, but Ilhéu Grande has been used by goat-farmers and whalers in the past. Ilhéu de Cima is famous for its seabird colonies, but no seabirds breed on Ilhéu Grande, although there must have been large colonies once, as thick layers of guano are present.

Birds

See Box and Table 2 for key species. The most abundant breeding species on Ilhéu de Cima is *Pelagodroma marina* (several thousand burrows in 1989) followed, in numerical order, by *Puffinus (assimilis) boydi*, *Oceanodroma castro* and *Bulweria bulwerii*. The large numbers of *Sula leucogaster* and *Phaethon aethereus* (1,000s and 100s respectively) reported 100 years ago have declined dramatically, due to excessive human predation. In 1986–1990 there were only 50 pairs of *S. leucogaster* and 5–10 pairs of *P. aethereus* remaining. Little is known of the birds breeding on the rocks and stacks; some (e.g. Ilhéu Luiz Carneiro) are known to hold small numbers of *O. castro*, *S. leucogaster* and *P. aethereus*. Among landbirds, Ilhéu de Cima is a breeding site of the rare endemic *Falco (peregrinus) madens*, of which nests were found in the mid-1960s. The total population is not thought to exceed 15–20 pairs.

Key species

A1 *Falco (peregrinus) madens*

A2 (078) Cape Verde Islands EBA: One of the four species of this EBA has been recorded at this site; see Table 2.

A4iii More than 10,000 pairs of seabirds have been recorded at this site.

Other threatened/endemic wildlife

Turtles (species undetermined) are known to lay on the small, sandy beaches of Ilhéu de Cima.

Conservation issues

Due to continuous human persecution, the populations of *Sula leucogaster* and *Phaethon aethereus* on Ilhéu de Cima have almost been wiped out and only small remnants persist today. Some *Pelagodroma marina* and *Puffinus (assimilis) boydi* are probably also taken, but a more serious threat appears to be the trampling and collapse of burrows when fishermen visit the islet to collect *Sula leucogaster* and *Phaethon aethereus* or to search for shellfish and debris on the coast. Due to the presence of goats and the activities of whalers on Ilhéu Grande, its seabird colonies were eliminated years ago. The Ilhéus do Rombo were designated a Nature Reserve in 1990, but because there are no wardens or other means of enforcing the law, fishermen continue to visit the islets and plunder the seabird colonies.

Further reading

Hazevoet (1994, 1995).

Ilhéu Branco

Admin region São Nicolau

Coordinates 16°39'N 24°41'W

Area 300 ha Altitude 0–327 m

CV010

(A1), A2 (078), A4ii

Nature Reserve

Site description

The island is a large, oblong rock, rising precipitously from the sea to a height of 327 m. A ridge runs the length of the island, dropping steeply to the coast which, with the exception of an area of dunes on the western side and a small area of level ground in the extreme east, is entirely rocky. The seas around the island are turbulent for much of the year, making landing difficult.

Birds

See Box for key species. Branco is one of the major sites for breeding

seabirds in the Cape Verdes. Together with the nearby islet of Raso (site CV011), it holds the main breeding population of *Calonectris (diomedea) edwardsii*, and there are also significant numbers of *Puffinus (assimilis) boydi* and *Oceanodroma castro*, and a colony (c.250 pairs) of *Pelagodroma marina*. Other breeding taxa include *Egretta garzetta*, *Pandion haliaetus*, *Falco (tinnunculus) neglectus* and *Tyto (alba) detorta*; the rare *Falco (peregrinus) madens* is suspected to breed.

Key species

A1 *Falco (peregrinus) madens*

A2 (078) Cape Verde Islands EBA: One of the four species of this EBA has been recorded at this site; see Table 2.

A4ii		Breeding	Non-breeding
	<i>Calonectris (diomedea) edwardsii</i>	5,000–7,500 (1988–1992) [with site CV011]	—

Other threatened/endemic wildlife

The endemic giant skink *Macroscoincus coctei* (males up to c.65 cm in length), which only occurred on Branco and Raso and lived alongside the breeding seabirds in clefts and holes, is considered extinct. It has not been seen since the early twentieth century and is thought to have been wiped out through over-exploitation. Its skin was used for making shoes, while ‘criminals’ marooned on Branco in the past by the colonial Portuguese authorities, and who had to fend for themselves, caught them for food, as did visiting fishermen. The endemic giant gecko *Tarentola gigas* is still present in good numbers.

Conservation issues

The island was designated a Nature Reserve by law in 1990 and may now only be visited under special permit. In practice, however, the law is difficult to enforce: large numbers of young *Calonectris (diomedea) edwardsii* are still taken for food every year, and trampling of burrows of *Pelagodroma marina* often occurs when fishermen visit the island in search of shellfish and debris. To prevent further over-exploitation of *C. (diomedea) edwardsii*, some form of wardening during the critical period (September–October, just before fledging) is necessary.

Further reading

Hazevoet (1994, 1995), Schleich (1982).

Ilhéu Raso

Admin region São Nicolau

Coordinates 16°37'N 24°36'W

Area 700 ha Altitude 0–164 m

CV011

A1, A2 (078), A4ii, A4iii

Nature Reserve

Site description

The island of Raso is primarily flat, with some small peaks in central-northern parts of the island, which rise to a maximum of 164 m. The entire south-western area is a flat, rocky plain, parts of which are covered with large boulders. Dry riverbeds cross the island. There is little vegetation except for a grassy area in the south-west. The coastline is entirely composed of rocky cliffs.

Birds

See Box and Table 2 for key species. The most famous bird of the island is, without doubt, the endemic *Alauda razae*, which is entirely confined to Raso and has a total population of c.45 pairs. The species roams all over the island, but breeding is largely confined to the grassy area in the south-west. *Calonectris (diomedea) edwardsii* is the most numerous seabird on the island, with thousands of pairs breeding on the cliffs along the southern shore and more breeding inland in holes under boulders. Other breeding procellariids are *Puffinus (assimilis) boydi*, *Bulweria bulwerii* and *Oceanodroma castro*. There is a colony of c.125 pairs of *Sula leucogaster* and 25–40 pairs of *Phaethon aethereus*, numbers which are only a shadow of those recorded c.100 years ago. *Egretta garzetta*, *Pandion haliaetus*, *Falco (tinnunculus) neglectus*, *Tyto (alba) detorta* and *Passer iagoensis* also breed.

Key species

A1 *Alauda razae*

A2 (078) Cape Verde Islands EBA: Two of the four species of this EBA have been recorded at this site; see Table 2.

Key species ... continued

	Breeding	Non-breeding
A4ii <i>Calonectris (diomedea) edwardsii</i>	5,000–7,500 (1988–1992) [with site CV010]	—
<i>Phaethon aethereus</i>	25–40 (1986–1992)	—
A4iii	More than 10,000 pairs of seabirds have been recorded at this site.	

Other threatened/endemic wildlife

The endemic giant skink *Macrosclincus coctei* is thought to have become extinct early in the twentieth century (see site CV010). The endemic geckos *Tarentola cabovertiana* and *T. gigas* still occur in good numbers. Other lizards include *Mabuya stangeri* and *Hemidactylus bouvieri*.

Conservation issues

The island was designated a Nature Reserve by law in 1990 and may now only be visited under special permit. In practice, however, the law is difficult to enforce. Large numbers of eggs and young of *Calonectris (diomedea) edwardsii* are still taken each year for food, as are young and adults of *Sula leucogaster* and *Phaethon aethereus*. The frequency of visits by fishermen carries the associated risk of the introduction of rats, cats or other domestic animals, which could be fatal to the ground-breeding *Alauda razae*. This risk was illustrated in February 1994, when a stray dog was seen on the island. Such an introduction could (or may have had) serious consequences for ground-nesting birds, including the lark and the boobies, as well as the endemic reptiles. Indeed, the extinction of the giant skink has been, at least partly, ascribed to the introduction of dogs during the first decade of the twentieth century. Abundant cat faeces, containing many bird remains, were found on Raso in February 1998. To prevent further over-exploitation of *C. (diomedea) edwardsii*, some form of wardening during the critical period (September–October, just before fledging) is necessary.

Further reading

Hazevoet (1989, 1994, 1995), Ratcliffe *et al.* (1999), Schleich (1982).

Central mountain range of Ilha de São Nicolau
CV012

Admin region São Nicolau

Coordinates 16°39'N 24°21'W

A1, A2 (078), A4ii

Area 1,750 ha Altitude c.750–1,312 m

Unprotected

Site description

The site consists of a chain of rugged mountains in the western part of the island of São Nicolau, roughly situated between the villages of Fajã de Baixo and Praia Branca, and includes the peaks of Tope de

Moca (1,057 m) and Monte Gordo (1,312 m). Maize and beans are grown in many places on the lower slopes. Some of the higher parts are forested with a variety of tree species; this is particularly so in the Monte Gordo area, where precipitation levels from mist and drizzle are relatively high and trees are thickly covered with lichens.

Birds

See Box and Table 2 for key species. The site is an important breeding area of *Pterodroma feae* (and the type-locality of the species). Surveys in 1998 gave an estimate of c.30 pairs. *Puffinus (assimilis) boydi* breeds rather commonly in the mountains. The endemic raptors *Milvus (milvus) fasciicauda* and *Buteo ('buteo') bannermani*, which formerly occurred, had not been reported from São Nicolau since the 1960s, but in the 1990s there were a couple of sightings of *B. ('buteo') bannermani*, involving single birds only. If any *M. (milvus) fasciicauda* should still survive, this site appears to offer the most suitable habitat. The rare endemic *Falco (peregrinus) madens* has been collected and observed in the area and probably breeds. *Sylvia conspicillata*, *Sylvia atricapilla* and the endemic *Apus alexandri* are all common. In February 1998, a small population (c.8 pairs) of *Acrocephalus brevippennis*, thought to be extinct on São Nicolau since 1924, was rediscovered.

Key species

A1	<i>Pterodroma feae</i>	<i>Acrocephalus brevippennis</i>
	<i>Falco (peregrinus) madens</i>	
A2 (078)	Cape Verde Islands EBA: Two of the four species of this EBA have been recorded at this site; see Table 2.	
A4ii	Breeding (pairs)	Non-breeding
	<i>Pterodroma feae</i>	c.30 (1998) —

Other threatened/endemic wildlife

The Fajã area and adjacent mountain slopes are the main centre of occurrence of the tree *Dracaena draco* (V), a Macaronesian endemic, in the Cape Verdes. The endemic lizards *Mabuya fogoensis* and *Tarentola cabovertiana* are common.

Conservation issues

Colonies of *Pterodroma feae* now appear confined to cavities in precipitous cliffs, inaccessible to humans, so direct exploitation is probably no longer a problem. There remains, however, continuing threats posed by feral cats and rats. A telecommunications station has been constructed on the summit of Monte Gordo and this may have caused disturbance to the breeding grounds of *P. feae*, although the species mainly breeds at somewhat lower elevation and was probably not affected by the construction itself.

Further reading

Hazevoet (1993, 1995), Hazevoet *et al.* (1999), Ratcliffe *et al.* (2000).

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