

SHOOTING OF MIGRATING SHOREBIRDS IN BARBADOS

MAURICE B. HUTT

4a Pavilion Court, Hastings, Christ Church, Barbados, West Indies

ABSTRACT

The small island of Barbados, the most easterly of the Lesser Antilles, situated 150 km east of St Vincent, is favourably placed geographically to serve as a way-station for thousands of migrant shorebirds undertaking long flights south and south-east from North American breeding areas to South American winter quarters. During the fall migration, from early July to mid-October, large numbers of these birds are shot each year in a number of mostly artificial shooting swamps by a small number of hunters (probably fewer than 100). This annual slaughter, little known outside Barbados, is arousing growing opposition amongst members of the Barbadian public.

The methods and techniques used to decoy the passing flocks are described, with a short history of the shooting from 1902 to the 1980s, with figures for the numbers of birds of different species shot and a review of those shorebird species that are the principal quarry of the hunters.

The failure of attempted conservation efforts is reported, particularly the refusal of the Barbados National Trust to support the cause of bird protection. Although committed by a resolution agreed to at the Trust's AGM in 1980 to campaign for the inclusion of all migrant shorebird species in a new, revised schedule to the existing 1907 Wild Birds' Protection Act, sufficient pressure has still not been placed on the government to end this annual slaughter.

A list of all migrant shorebird species is given, along with a brief note of four possible wildlife refuges for these birds.

INTRODUCTION

In recent years, much publicity has been given to campaigns against the annual slaughter of many western Palearctic migrants in a number of Mediterranean countries. There has been strong focus on the small island of Malta, where the killing of migrant birds is a way of life.

But for a hundred persons willing to support campaigns to stop the massacre in Portugal, Spain, France, Italy, Greece and Turkey, how many have even heard of the continued annual slaughter of thousands of migrating shorebirds from North America in a small West Indian island not much larger than Malta, with a population not much less?

These shorebirds, of more than a dozen species, mostly nesting in Canada on the far northern tundra, undergo long-distance migrations south and south-east to

winter quarters in various regions of South America (Bent 1927, 1929). In Canada and in transit through the U.S.A. these birds are fully protected by law, but when they arrive in Barbados, weary after traversing varying distances of open sea, they are blasted out of existence by waiting gunners.

Some 70-75 per cent of the estimated 15,000-20,000 shorebirds killed each year belong to two species with large populations, the Lesser Yellowlegs (*Tringa flavipes*) and the Pectoral Sandpiper (*Calidris melanotos*), while another 10-12 per cent are American Golden Plovers (*Pluvialis dominica*) (classification according to Hayman *et al.* 1986). But as all birds, except the small *Calidris* sandpipers – the Least, Semipalmated, Western and White-rumped (*C. minutilla*, *C. pusilla*, *C. mauri* and *C. fuscicollis*), the Spotted Sandpiper (*Actitis macularia*) and the Semipalmated Plover (*Charadrius semipalmatus*) are shot, regardless of species identity, when they fly into man-made artificial swamps, it has happened that members of endangered species have also been killed. The most notable example was the shooting, on 4 September 1963, at Fosters swamp in St Lucy, of an Eskimo Curlew (*Numenius borealis*), a species on the verge of extinction (specimen in the Hutt Collection at the Philadelphia Academy of Sciences).

BARBADOS: GENERAL NATURAL HISTORY

Barbados in the West Indies is a small island, 34 km north to south, 22 km east to west at the widest point, of relatively low relief, with hills rising to 338 m in the form of a raised plateau (Figure 1). It is situated about 150 km east of the Lesser Antillean island arc, equidistant from the islands of St Vincent, due west, and St Lucia, due west-north-west. With an area of 430 km² and a population of more than 250,000 persons, it is one of the most densely populated islands in the world, with an average density of 581 p/km².

In geological terms Barbados is very young. Six-sevenths of the island are covered with a blanket of raised coral limestone terraces, at least ten in number, successive coral reef tracts varying in age from the youngest, just above sea level, at 60,000 years B.P. to the uppermost at just over 300 m at c.1,000,000 years B.P. This coral rock capping is extensively fissured with a series of irregular longitudinal cuts up to 30 m deep and 100 m wide known locally as 'gullies'. The other one-seventh of the surface consists of a semi-circular erosional bowl adjoining part of the north-east coast, with irregular relief in the form of heavily eroded Tertiary rocks, and one small river system.

The climate is tropical, but as a result of the cooling effects of the prevailing east-north-east trade wind, temperatures rarely exceed 32°C. The average annual rainfall varies from about 1,150 mm on the coast to 1,900 mm in the hills, falling mostly during the rainy season from June to November.

Settled from Britain from 1627 onwards, by about 1665 practically all of the original forest cover had been destroyed to make way for sugar cane plantations which replaced the subsistence smallholdings producing low-grade tobacco and cotton for export. By that date the island, uninhabited in 1627, had a population of about 20,000 white settlers from Britain and about the same number of black slaves brought in from various regions of West Africa to work on the sugar cane plantations. Continuous cultivation of sugar cane remained the normal pattern of agriculture for more than three centuries from 1665; only in the 1980s has the acreage under cane shown a marked decline.

Only a few small residual areas of woodland survive, notably the 20-ha Turner's Hall Wood in St Andrew's parish, sited on a steep hill slope. In this relict

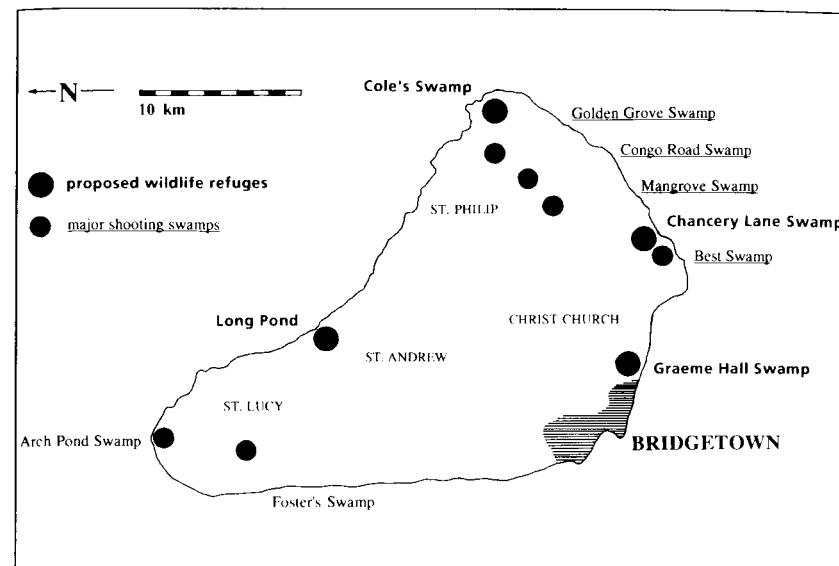


Figure 1: The island of Barbados (located 13°2'N, 59°30'W) showing the location of major shooting swamps and sites of wildlife refuges required.

woodland, just over 110 plant species survive, including over 30 trees, about 20 shrubs and a handful of lianas. It is a debased fragment of the original tropical mesophytic forest, of which other remnants survive as undercliff woods on the exposed eastern slopes below the 4.8-km-long Hackleton's Cliff inland escarpment system in St Joseph and St John (Gooding 1974).

Of a total of about 700 plant species, more than 150 are introduced naturalized species, many of them weeds of cane-fields.

THE BREEDING BIRDS

The relative geographical isolation of Barbados and its limited range of habitats contribute to the small number of breeding species, as does the brief period of its geological history (Bond 1954). There are no mountains and so no montane forest; no lakes, no rivers flowing all the year round, no estuary with saltings and mudflats and no real marshland. Endless fields of sugar cane, until recently covering about 35 per cent of the total surface area, hold no birds except a small finch, the Black-faced Grassquit (*Tiaris bicolor*).

The sole breeding seabird is Audubon's Shearwater (*Puffinus Iherminieri*), of which a few pairs nest in a coral rock stack close inshore off the north coast, in St Lucy's parish. The two resident species of heron and egret are the wide-ranging Green-backed Heron (*Butorides striatus* ssp. *virescens*) and the Cattle Egret (*Bubulcus ibis*) which began nesting in Graeme Hall swamp in Christ Church in 1972, increasing rapidly in numbers to 10,000+ by 1989.

There are no breeding anatids, no resident raptors and no nesting shorebirds. The endemic race, *barbadensis*, of the wide-ranging Common Moorhen (*Gallinula chloropus*) is much reduced in numbers by habitat destruction, down to c.30 pairs.

Very abundant are the small Common Ground Dove (*Columbina passerina*) and the medium-sized Zenaida Dove (*Zenaida aurita*), while the large Red-necked Pigeon (*Columba squamosa*), very rare in 1954, has increased markedly since about 1970, partly as a result of deliberate introductions.

The White-tailed Nightjar (*Caprimulgus cayennensis*) probably breeds in small numbers, but no eggs or nestlings have been found. The two resident hummingbirds, both common, are the small, straight-billed Antillean Crested Hummingbird (*Orthorhynchus cristatus*) and the larger, curve-billed, Green-throated Carib (*Eulampis holosericeus*). The two resident tyrant flycatchers are the common, conspicuous, Grey Kingbird (*Tyrannus dominicensis*) and the smaller, retiring, less numerous Caribbean Elaenia (*Elaenia martinica*).

The handsome, large Caribbean Martin (*Progne dominicensis*) nests in small numbers in buildings in Bridgetown, the capital, and sparingly on both seacliffs and inland crags. The birds are absent from the island from November to late February, migrating south to South America. The 23-cm Scaly-breasted Thrasher (*Margarops fuscus*) barely survives in the wilder, remoter parts of the island, in a few of the more inaccessible gullies, but the 17-cm Black-whiskered Vireo (*Vireo altiloquus*) is widespread in surviving woodland tracts and in gardens with clumps of thickly-foliaged trees, especially *Ficus* spp.

The endemic nominate race of the Yellow Warbler (*Dendroica petechia*) has declined in range and numbers over the years. Its preferred habitat is mangrove, both the Red Mangrove (*Rhizophora mangle*) confined to Graeme Hall swamp in Christ Church, situated just inland from the south coast 5 km east of Bridgetown, and the White Mangrove (*Laguncularia racemosa*) growing commonly in Graeme Hall swamp and in a few limited locations along the west coast. The Graeme Hall swamp is the stronghold of the species, with 12-15 pairs; the total population may be 35-40 pairs. Brood parasitism by the numerous Shiny Cowbird (*Molothrus bonariensis*), and habitat loss through tourist development along the west coast, have contributed to the low population level of this endangered endemic race of a species widely distributed through North and Central America, the Caribbean islands and northern South America.

The attractive small black and yellow Bananaquit (*Coereba flaveola*) is common and confiding, as is the highly gregarious Caribbean Grackle (*Quiscalus lugubris*) the common host of the Shiny Cowbird, the latter now widespread over most of the island. The Grassland Yellowfinch (*Sicalis luteola*), introduced probably about 1900 (Bond 1955), reached a population peak about 1955, declining in numbers rapidly from about 1965. Numerous sugar cane fires spreading into Sour Grass pastures where the birds nested, and later, predation of nestlings by Cattle Egrets, may account for the decline in numbers. Both the Lesser Antillean Bullfinch (*Loxigilla noctis barbadensis*) and the Black-faced Grassquit are common in most habitats.

Barbados, geographically isolated, geologically young, densely populated, with a limited range of habitats and with only c.25 breeding species, contrasts markedly with the neighbouring much older, volcanic, mountainous islands; both St Lucia and St Vincent, the two nearest islands to westward, have c.50 breeding species each, with a number of endemic species.

SHOOTING OF MIGRATORY SHOREBIRDS

Hunting techniques

The somewhat isolated position of Barbados makes it a favoured location for the occurrence, in varying numbers, of a considerable range of North American migrant shorebird species. These birds are transients through the island during the mid-July to late-October fall migration season, flocks and individuals en route from northern North American breeding areas to South American winter quarters. A majority of the birds on passage belong to species representing the family Scolopacidae, and are far-flying, long-distance migrants which, in the absence of coastal saltmarsh and mudflats, are attracted to the relatively small areas of surface water available.

Numbers of these transient shorebirds are shot each year in what are known locally as 'shooting swamps', which are carefully designed to offer major attractions to tired migrants seeking resting and feeding grounds on an island almost completely lacking coastal mudflats and either salt or freshwater marshes suitable for their needs. These artificial swamps vary in size, the larger ones having up to 2 ha of open water contained in a series of embanked enclosures formed with bulldozers and known as 'trays', with shallow water suited to shorebird needs, especially those of the most commonly shot species, the Lesser Yellowlegs.

Every possible device and stratagem is employed by the shooting men who own and operate the swamps to decoy passing flocks, smaller parties and single birds down to the 'trays', where the gunners wait, concealed from view in the shelter of a wooden shooting hut. Special flat mudbanks of limited size, known as 'lighting land', are constructed within easy shotgun range of the shooting hut. Live birds of all the species habitually shot are kept in wired enclosures close to the hut, so that they will 'mark' flocks approaching and passing overhead by uttering repeated calls. These birds are usually individuals slightly wounded by shotgun pellets which have subsequently recovered. A few are birds trapped at the cages.

To supplement the calls of the caged birds, most of the gunners use skilfully made whistles cut to imitate the calls of a particular species, usually those of the Lesser Yellowlegs, locally called the 'Longleg', which make up a little over half of all birds shot. Other whistles imitate the calls of the American Golden Plover, known locally in breeding plumage as the 'Black-breast Plover', for which specially prepared short grass areas are maintained close to the shooting hut in the larger swamps.

Since about 1960, such whistled calls have been supplemented by the use of amplified tape recordings of the calls of approaching flocks, broadcast through loudspeakers placed on top of the hut. These tapes are switched on when the live birds 'mark', or when the gunners spot such flocks, some of which, especially plover flocks, may be flying at heights of 450-500 m. In addition, artificial decoys made of wood, metal and plastic, painted to imitate the various species to be decoyed, are extensively used.

Historical development of shooting techniques

Between the two World Wars, and up to the 1950s, shooting swamps were small, the water sometimes drying out during the somewhat erratic rainy season extending from June to early December. In default of adequate rainfall, trays could be filled with water pumped up by means of unreliable wind-driven 'fan mills'. 'No water, no birds' was axiomatic.

Up to the 1950s, double-barrelled shotguns were used to kill the migrant shorebirds, and there did survive among many of the older gunners a tradition and code of sportsmanship by which, normally, only flying shots were taken. Even that code was forgotten on days of big flights, when the pressure to achieve a large score for the swamp, in order to get ahead of other, rival swamps, tended to become paramount.

In the 1960s came the adoption of the new pump-action and automatic shotguns, able to fire six cartridges with machinegun-like rapidity. With this new development came a new, callous, intensely competitive spirit, especially among the younger gunners, but including several of the older, more senior men who owned some of the larger swamps. This new attitude quickly replaced the older, more restrained sporting attitudes. Bird flocks, decoyed into the swamp, were allowed to alight on the special mudbanks close to the hut. On a given signal all the gunners present, often up to half a dozen at the larger swamps on good 'flight days', fired simultaneously at the densely crowded birds. The object was to kill all the birds that could be decoyed into the swamp, and it was considered a matter of much regret, almost a disgrace, if any got away.

This drastic change in attitude led to the enlargement of the bigger swamps, some owned by wealthy individuals, others by syndicates. Larger areas of water were impounded by bulldozing more 'trays'; large, powerful diesel-electric pumps were installed at several of the large swamps to keep the water levels constant and every effort was made to maximize the effectiveness of the methods used to call down passing flocks. Intense rivalry developed between the ten or so top shooting swamps to have the largest score of birds shot for the day, the week, and above all for the three months of the official shooting season, 15 July to 15 October. A number of swamps installed telephones and it became customary to call up rival swamps during the morning to ascertain their current scores.

In the nineteenth century a law had been passed by the Legislature prohibiting any shooting on Sundays, and this had been adhered to for many years, even if Sunday produced a notable shorebird passage. But in the early 1960s this law was 'reinterpreted' by a lawyer who was himself a keen shooting man. Henceforward the law was ignored by most of the gunners. No action was taken by the authorities, probably because the Premier, who became the first Prime Minister when Barbados achieved independence within the Commonwealth in 1966, was himself a keen shooting man.

The number of shooting swamps reached a high point in the 1960s, when more than 20 were being operated, chiefly in the parishes of St Lucy, in the north of the island, and in Christ Church and St Philip, in the south and east respectively, with a few in other parishes, including St Michael in the south-west. Of these, about ten were major establishments. The big swamps had an average membership of five to six gunners, who shared the operating expenses, with others turning up on big flight days. Such swamps were, and still are, normally manned each day of the shooting season from dawn until about noon, the time of day when most birds fly, especially from August through to early October. If a flight was being sustained at midday, some gunners would stay on until darkness fell. In a number of the larger swamps, members not present that morning were notified by telephone around 9.00-10.00 am if a heavy flight was in progress, so they could take time off work to go to the swamp and join in the shooting.

The standard ambition at any swamp was to have 'a hundred day', with over 100 individuals of all shootable species killed. By the early 1960s the ambition was to achieve 'two-hundred days' and more. The old record for one day's shooting at any swamp stood at 522 birds killed at the old Rockley swamp in Christ Church,

later a nine-hole golf course, now a large tourist hotel complex. This was broken in the early 1970s when over 700 birds were shot in one day at the Friendship swamp in St Lucy.

NUMBERS OF BIRDS SHOT

A number of scores of shooting swamps available over varying periods give valuable information on the numbers of birds shot and the seasonal variations. They are analysed in the remainder of this paper.

The Chancery Lane swamp in eastern Christ Church adjoins the south-east coast of the island where the coastal configuration funnels flocks moving southwards over Inch Marlowe Point out to sea, bringing about a concentration of flylines. It is a saltmarsh complex of c.20 ha lying just inland of a sand-dune area well covered with coastal scrub, and a low oblique coral limestone escarpment. In the July-November rainy season it accumulates shallow surface water, making it attractive to many shorebirds. Close to the south is an area of open Sour Grass pasture attractive to the American Golden Plover. From around 1960, housing has been built on the north and west sides in increasing densities, but before that date almost no houses existed. Since the Second World War, when an airstrip was built close to the northern side of the swamp area, increasing airport usage by numbers of wide-bodied jets has produced an increasing disturbance factor, as has tourist developments to both north and south.

The Chancery Lane swamp scores of birds shot for the years 1902-1921 inclusive total 30,376, an annual average of 1,518. Variations were very marked, attributable to differences in rainfall and the passage of cyclonic weather, and to the extent to which shooters were present day by day during the mid-July to mid-October shooting season.

For the period of 20 years, the total number of Lesser Yellowlegs shot, 16,371, made up 54 per cent of all birds killed, but this proportion varied annually between 38 per cent and 78 per cent. Pectoral Sandpipers were accounting on average for 33 per cent (29-53 per cent) or 10,073 birds shot. A good passage of both species was needed to produce high totals. During these years, American Golden Plovers were scarce, totalling only 1,066 (3.5 per cent of all birds shot), a very different pattern from that of the 1950s and 1960s when the species had recovered from the heavy shooting pressure in North America in earlier decades (*Figure 2*). Greater Yellowlegs totalled 1,583 (5.3 per cent). Stilt Sandpipers (*Micropalma himantopus*) and Short-billed Dowitchers (*Limnodromus griseus*) were not scored separately, being included in a 'Various' column. Ruddy Turnstones (*Arenaria interpres*) were listed in a separate column: as Chancery Lane is a coastal swamp, the birds occur quite commonly there.

A notable Christ Church swamp was situated at Rockley, a few hundred metres inland from the south coast in an area of c.4 ha of flat grassy pasture, an artificial swamp well designed and maintained by the owner. The coastal zone between the open pastureland and the coast was much built up from the 1920s on, and further encroachment of built-up areas brought about the closing down of the swamp in 1947. By that time a nine-hole golf course had been set up on part of the pastureland.

Detailed scores for the Rockley swamp, kept by Charles Manning and his son, the late Eric Manning, cover the years 1921 to 1947. Rockley Swamp was the leading swamp, in numbers of birds shot, during the earlier years, but declined rapidly after 1939. The run of scores from 1921 to 1939 only are analysed. During

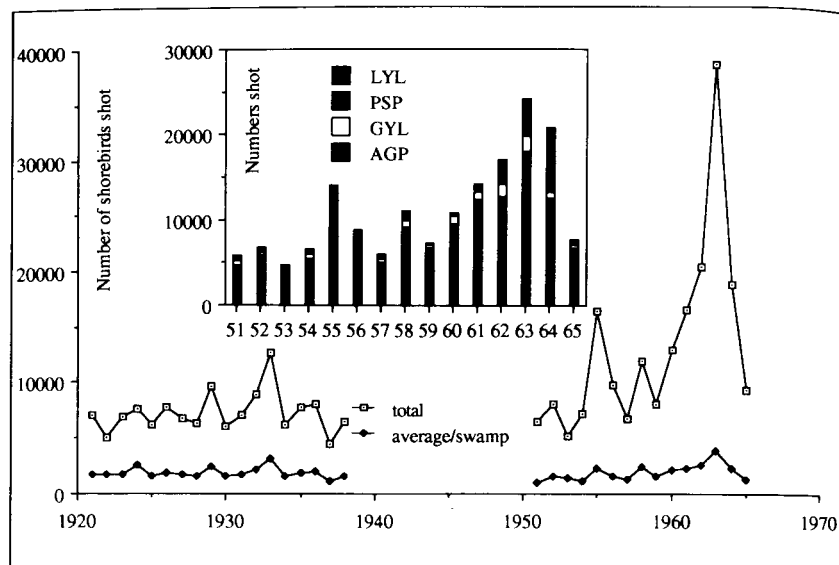


Figure 2: Annual shorebird shooting scores for the period 1921-1938 (four swamps) and 1951-1965 (varying number of four to ten swamps). The scores for the four most commonly shot species are given for the period 1951-1965. LYL = Lesser Yellowlegs (*Tringa flavipes*); PSP = Pectoral Sandpiper (*Calidris melanotos*); GYL = Greater Yellowlegs (*Tringa melanoleuca*); AGP = American Golden Plover (*Pluvialis dominicana*).

this period of 19 years inclusive, a total of 57,284 birds were shot and recorded, giving the high annual average of 3,014 ranging from 2,463 in the drought year 1934 following a year with notable hurricanes, to a maximum of 4,980. Lesser Yellowlegs shot totalled 28,996 birds (51 per cent), followed by Pectoral Sandpipers which totalled 18,198 (32 per cent). Good Pectoral flights in late September and early October were hoped for by the shooting men to boost the scores accumulated from modest Lesser Yellowlegs flights in the period 15 August to 15 September, the peak period for the movement of this species through the island.

American Golden Plovers shot over the period totalled 3,107 (5.4 per cent).

Shooting patterns after the war

The closing down of the successful Rockley swamp in Christ Church was partly compensated for by the development of Phinney's Hill, in St Philip, from 1932, by the neighbouring Golden Grove swamp, and by the gradual establishment of a successful shooting swamp at Fosters, in St Lucy. For the five-year period 1946-1950, the total number of birds shot for which records are available was 31,244, an average per annum of 6,248 per annum.

The next five-year period, 1951-1955, produced a total of 43,875 birds killed, an average per annum of 8,775. Much of this increase came from the massive score of 16,393 for 1955, a total to which weather-affected flights contributed a good deal.

Of the 1955 record score, the Lesser Yellowlegs shot numbered 8,907 (54 per cent), a total second only to that of the great hurricane year, 1933, which

yielded 9,056. The Pectoral Sandpiper score, at 4,086, was slightly more than the 3,935 of 1933, making up 25 per cent. A marked increase was seen in the number of American Golden Plovers shot, numbering from 534 to 965 in the years 1946-1950, reflecting the recovery in the breeding population in North America. The total for the period 1956-1960 was 49,553 with an annual average of 9,911 birds shot. The appreciably higher average of birds shot was attributable to the extension and improvement of several of the larger swamps, with the installation of better pumps, the more regular manning of several swamps, the increasing use of pump-action and automatic shotguns and the growth of competition between the leading swamps. The year 1960 produced the highest score with 12,986 birds shot: 1958 was a close second with 11,990.

The early sixties

During the five-year period 1961-1965, the average number of birds shot per annum in the major swamps, which had climbed rather slowly from around 7,275 in the years from 1921 to 1938 and had risen to just under 10,000 in 1956-1960, doubled to the enormous figure of 20,000 (Figure 2). This massive increase was attributable to a number of factors.

Some of older swamps were much altered. The Golden Grove swamp was completely resited on a low hill about 600 m south of the old location. Fosters swamp was much extended with improved water pumping facilities, emerging as a tremendous draw for birds coming into the island from the north-west, probably on passage from the Vieux Fort swamp complex in south-west St Lucia, studied by the author in 1955-1956. A completely new swamp was established at Mangrove, near Six Cross Roads in St Philip, with ample surface water, proving to be very much 'in the line' of birds on passage overland through the eastern part of the island, and a rival to Golden Grove and neighbouring Phinney's Hill swamps. The old-established Chancery Lane was more efficiently managed, while Best Swamp, between Chancery Lane and Inch Marlowe, emerged as a major shooting swamp.

Of this massive five-year total of 103,717 birds shot, no fewer than 38,514 were killed in the peak year, 1963. (If an estimate is included for birds shot in swamps for which no formal records are available, the 1963 total for the whole island would probably exceed 46,000.)

Although several of the flights for 1963 were plainly affected by weather patterns, the greatest sustained flight ever known in the island, which lasted from 23-29 August and produced a total of 7,687 birds shot in the major swamps, was not obviously produced by bad weather in the vicinity of the island. Figure 3 summarizes the three major flights in 1963. The great flight of 23-29 August was primarily a migration of Lesser Yellowlegs. The three days of 2-4 September were primarily a plover flight, while the last period 30 September-2 October is a good example of a flight of Pectoral Sandpipers.

After 1963

The very heavy flights of 1963 encouraged swamp owners to undertake more extensions and improvements. A large new swamp was created at Friendship in St Lucy, on the site of a traditional 'plover pasture'. But the two following seasons, especially 1965, were disappointing to the shooting fraternity while costs were rising rapidly.

In various swamps, new 'trays' were added, shooting huts were resited in more favourable locations within the swamp complex and more members were recruited to share the additional expense. Competition among the major swamps was greatly

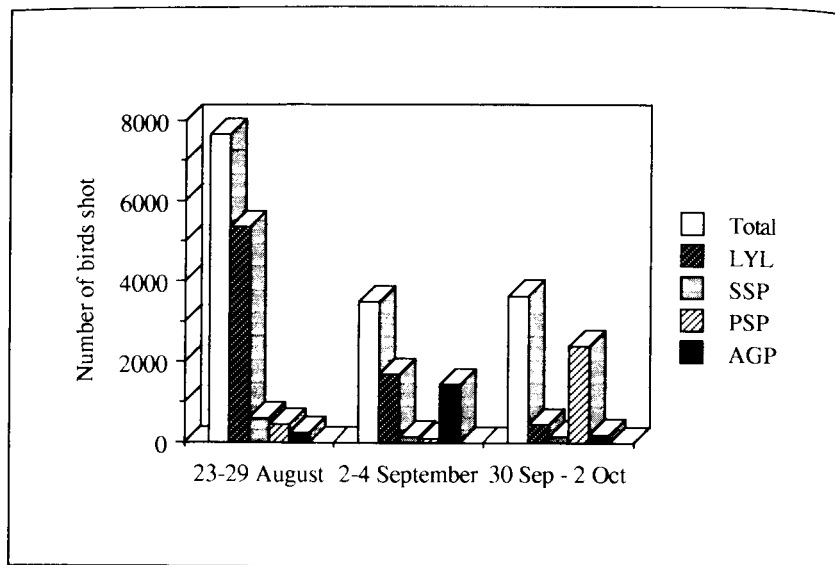


Figure 3: Total shooting scores and scores of selected species shot during the exceptionally large flights of the 1963 migrating season. LYL = Lesser Yellowlegs (*Tringa flavipes*); SSP = Stilt Sandpiper (*Calidris himantopus*); PSP = Pectoral Sandpiper (*Calidris melanotos*); AGP = American Golden Plover (*Pluvialis dominicana*).

intensified, and all remaining scruples about shooting birds on the ground, known as 'ground bouncing', were abandoned. While no subsequent year produced quite the same combination of favourable factors for the gunners, in the later 1960s and in the 1970s totals shot each year stayed in the 15,000 to 20,000 range, and each of the three or four leading swamps reckoned to score 4,000 birds per annum. However, swamp operating costs have escalated, from the cost of shotgun cartridges to water pumping expenses, and a number of the older swamp owners have died, leaving no successors. Graeme Hall swamp complex, once with a 30-ha mosaic of mangrove and sedge, the foremost wetland of Barbados, ceased to operate as a shooting swamp after 1970. Increased housing to the west and north-west has also affected adversely the pattern of migrant shorebird flights to the swamp.

To sum up the current situation, five large shooting swamps are still operating; Golden Grove, Congo Road and Mangrove in St Philip, Fosters in St Lucy, and Best swamp in Christ Church. Hunters in each of these swamps aspire to kill up to 4,000 and more birds each shooting season. A figure of 15,000 to 20,000 birds killed per annum is realistic, most birds being shot by about 50 men who are financial partners in one of the major swamps, gunners invited for a day's shooting, and casual gunners – mostly young men who take a day off work when birds are flying.

MIGRANT SHOREBIRD SPECIES SHOT IN BARBADOS

The bird most commonly shot is the Lesser Yellowlegs, which makes up about half of all birds shot. These birds commonly arrive in small flocks of 10-15

individuals, but in heavy weather may occur in flocks of 50 plus, and exceptionally 200 plus. They occur from mid-July through to late September, first arrivals being the adults, followed later in the season by immatures – known to the gunners as 'second flight Longlegs'. Birds of this species decoy easily to the swamps and tend to alight in close company on the special 'alighting land' mudbanks. The immature birds are easy prey, decoying readily, to be blown up on the ground in patterns of slaughter highly offensive to any person of sensibility and concern for wildlife. It is unusual for large numbers to occur after about 15 September in a normal year.

Often flying in mixed flocks with the Lesser Yellowlegs is the smaller, Stilt Sandpiper, known in Barbados as the 'Cue' from the single 'whu' flight call. These birds are almost always seen in non-breeding plumage.

The larger Greater Yellowlegs (*Tringa melanoleuca*), known locally as the 'Pica' or 'Piker', makes up about 7-8 per cent of birds shot. They usually fly in flocks of less than a dozen individuals, but sometimes up to twenty birds; in heavy weather they may occur in large mixed flocks with Lesser Yellowlegs, Stilt Sandpipers, Short-billed Dowitchers (*Limnodromus griseus*) and Pectoral Sandpipers, known locally as the 'Chirp', from its harsh, reedy 'churk' flight call. Pectoral Sandpipers are common fall transients in Barbados, occurring as single individuals, small parties and flocks, the latter usually of no more than about 25 birds, but sometimes larger. This species makes up, on average, about 25 per cent of all birds shot.

Pectoral Sandpiper flights are particularly dependent on weather patterns, the birds occurring in varying numbers all through the three-month mid-July to mid-October shooting season. As with most species of migrant shorebirds in Barbados, the adult birds pass through first, followed later by the birds of the year. In some years, if there is heavy weather during the first two weeks of October, there may be extensive flights of immature Pectorals, known as 'October Chirp'. During a heavy flight there may be flocks of 10-25 birds coming into a swamp, such as Best swamp, every 15-20 minutes for some hours after dawn, pitching down in a compact mass, often forward on their breasts, while they are shot at by the gunners. In the absence of heavy weather at the critical migration time, there may be virtually no passage of these 'October Chirp'. The birds probably pass well out in the Atlantic to the east of the island. The slightly smaller (200-210 mm) Sanderling (*Calidris alba*), known in Barbados as the 'Sandy Snipe', is found along sandy beaches, and in one or two coastal swamps.

A shorebird species shot regularly in varying numbers, especially in the coastal swamps, is the Short-billed Dowitcher, known in Barbados as the 'Duckleg'. The birds usually arrive as single individuals or in small parties of up to 5-10, only rarely in flocks.

Other large shorebirds occurring in Barbados in small numbers, and which are regularly shot, are the American race of Whimbrel, or Hudsonian Curlew (*Numenius phaeopus hudsonicus*), named 'Crookbill' in Barbados from its decurved bill, and the Willet (*Catoptrophorus semipalmatus*), known misleadingly as the 'White-tailed Curlew'. Whimbrels occur chiefly as single birds and in small parties of up to half a dozen birds. While they may be observed at any time during the migration season, my records over more than thirty years indicate the peak passage period to be 10-19 September, thus substantiating the traditional designation by the gunners of 12 September as 'Crookbill Day'. The birds occur chiefly at swamps near the coast. Willets occur uncommonly, usually fairly early in the season, in July-August, mostly at coastal swamps but also inland.

The Hudsonian Godwit (*Limosa haemastica*) occurs uncommonly at the south-eastern tip of the island, from which birds take off on the c.480-km over-ocean

flight to northern South America. Godwits are seen only during or just after heavy weather; normally the flyline is well out in the Atlantic to the east of Barbados.

The Ruddy Turnstone (*Arenaria interpres*) is a regular fall transient, flying in small parties of up to half a dozen individuals, and alighting chiefly in the coastal swamps.

Apart from the Scolopacids, one species of the plover family, Charadriidae, is a prime target of the Barbadian gunners, and that is the handsome American Golden Plover (*Pluvialis dominica*), known in Barbados as the 'Black-breast Plover' in adult plumage, and as the 'Grey-breast Plover' in winter dress and for birds of the year. This species is even more subject to variations in occurrence patterns and numbers than the Pectoral Sandpiper, particularly the immatures. The period from 25 August to 20 September is the time of the plover passage, while single adults may occur from about 10 August.

The long-distance over-ocean flight from Nova Scotia to northern South America of c.3,860 km passes well to the east of Barbados, but some flocks pass over the island even in fine weather, with the east-north-east trade wind blowing. Flocks of 50-75 birds, and sometimes up to 200 plus birds, can be observed flying straight over the island at heights of 460-615 m, chiefly from the parishes of St Philip and eastern Christ Church in the south-east parts of the island.

Heavy weather resulting from the passage in a westerly to north-westerly direction of tropical depressions, some of them incipient hurricanes, will force the plover flocks westwards to Barbados, and bring them down on to the open grassy pastures and freshly ploughed ground. After really severe weather conditions which coincide with the 25 days peak of the plover migration, with strong winds and torrential tropical rain (up to 150 mm in 12 hours and more), there may be hundreds of plover scattered in flocks over much of the island, including the playing fields of Harrison College, not far from the centre of Bridgetown, the capital. As the passage period lasts for no more than three to four weeks, in the absence of low pressure tropical easterly waves, relatively few plover will be shot, while in other years with suitable weather conditions, large numbers may be killed.

A few Black-bellied Plover (*Pluvialis squatarola*), known in Barbados as 'Squealer Plover' or 'Loggerhead Plover', are shot in coastal swamps, always as single birds. The balance of birds shot include such uncommon if fairly regular transients as Wilson's Phalarope (*Phalaropus tricolor*), Buff-breasted Sandpiper (*Tryngites subruficollis*) and Killdeer (*Charadrius vociferus*). A few Solitary Sandpipers (*Tringa solitaria*), known as 'Blackbacks', are shot, as is the American race of Snipe (*Gallinago gallinago delicata*), mostly in October and in November, after the official shooting season is over. A few of these birds may winter in Graeme Hall and Chancery Lane swamps.

A shorebird of great appeal is the finely streaked and chevroned Upland Sandpiper (*Bertramia longicauda*), known as the 'Cotton Tree Plover', which occurs as single birds, small parties and flocks of up to 15 individuals. Single birds fly over at heights of 90-150 m, uttering at regular intervals the far-carrying 'kip-ip-ip' call. Very early dates are 4 August 1942 and 8 August 1927, but 15-20 August covers most early occurrences, the bulk of the passage taking place in September, with stragglers in October (19 October 1957 was a late date, and 20 November 1964 exceptionally late). Fortunately the bird prefers dry grassland to muddy swamp margins, and does not respond to decoy whistling, but the gunners pursue them on rough grassland.

In heavy weather a few Red Knot (*Calidris canutus*) may occur – mostly at coastal swamps, and mainly during the last week of August and the first two weeks of September.

POSSIBLE CONSERVATION MEASURES

In Barbados the Wild Birds' Protection Act dates from 1907, with a very short schedule including only a handful of local breeding species considered to be beneficial to agriculture, and the attractive regular winter resident Parulid Warbler, the American Redstart (*Setophaga ruticilla*), locally known as the 'Christmas Bird'.

As a founder member of the Council of the Barbados National Trust, established in 1961, I drew up a revised schedule to the act in 1976, in which I included 46 species of resident, transient and winter resident bird species. I did include four shorebird species, as a very modest first instalment (as I hoped) of protection for the group. These were the Buff-breasted Sandpiper (*Tryngites subruficollis*), a rare visitor to coastal pastures, many of which are being built over for housing; the Ruff (*Philomachus pugnax*), a transatlantic migrant which occurs regularly in small numbers; the uncommon Hudsonian Godwit and the Upland Sandpiper.

I did not include in the proposed new schedule any of the shorebirds normally shot in some numbers, being well aware that if this was done, the amendment to the act would have been voted down in the Legislature. The shooting men are a small but influential lobby, many of them wealthy, able and willing to exert a great deal of behind-the-scenes pressure in many fields. Nevertheless, the new schedule was accepted by the Legislature and became law in 1977; but the protection afforded the four rare shorebird species remains a dead letter, with no attempt made to enforce it.

Further efforts for bird protection

In 1980, when a vice-president of the Barbados National Trust, I succeeded in carrying at the Annual General Meeting a resolution in favour of placing all the shorebird species known to visit Barbados on a proposed new revised schedule to the Wild Birds' Protection Act. This thus became the official policy of the National Trust.

I campaigned for an end to the annual slaughter in my two weekly columns in the local newspaper, *The Barbados Advocate*. One, entitled 'The Need for Conservation', was published from 1975 on; the other, 'Barbadian Nature Diary', from 1977 (Hutt 1979, 1986). Unfortunately, the powerful hunters' lobby succeeded in terminating these columns, and after 1981 the National Trust executive tacitly abandoned any attempt to press the cause of bird protection on the government. In response to this situation, in 1983 I founded a pressure group, the Barbados Wildlife Protection Association, to campaign for the total abolition of bird shooting in the island. Barbados is the only island in the English-speaking Caribbean where migrant shorebirds are shot systematically. All the shorebird species habitually shot on the island receive total protection at all seasons both in Canada and in the U.S.A., where they breed in various habitats from Arctic tundra to muskeg swamps.

RECOMMENDATIONS FOR THE FUTURE

A simple amendment to the existing Wild Birds' Protection Act of 1907, bringing in a new schedule of totally protected species listing all the species of migrant shorebirds which have been recorded in Barbados, including common, uncommon, rare species and vagrants, so as to leave no loophole, would suffice. Once such a revised schedule to the act, listing the species included in the Appendix below, is accepted by the Legislature and effectively and consistently enforced, Barbados

could take its place as a community willing to join those nations of the world which do more than pay mere lip service to the need for effective conservation measures.

The next step

Wildlife Refuges, established primarily to preserve all birdlife – resident species, winter visitors and transients – should be set up at the following locations (cf. Hutt *In* Scott & Carbonell 1986):

1. Graeme Hall Swamp in Christ Church: c.31 ha.
2. Chancery Lane Swamp in Christ Church: c.20 ha.
3. Long Pond in St Andrew: c.20 ha.
4. Cole's Swamp in St Philip: c.8 ha.

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APPENDIX

(to be included in a revised schedule to the
Wild Birds' Protection Act, 1907)

<i>Haematopus palliatus</i>	American Oystercatcher
<i>Himantopus himantopus</i>	Black-necked Stilt
<i>Recurvirostra americana</i>	American Avocet
<i>Pluvialis dominica</i>	American Golden Plover; Black-breast Plover; Grey-breast Plover
<i>Pluvialis squatarola</i>	Black-bellied Plover; Squealer Plover; Loggerhead Plover
<i>Charadrius semipalmatus</i>	Semipalmated Plover; Ringneck Plover
<i>Charadrius wilsonia</i>	Wilson's Plover; Thick-billed Plover
<i>Charadrius vociferus</i>	Killdeer
<i>Charadrius melodus</i>	Piping Plover
<i>Charadrius alexandrinus</i>	Snowy Plover
<i>Charadrius collaris</i>	Collared Plover
<i>Limosa haemastica</i>	Hudsonian Godwit
<i>Numenius borealis</i>	Eskimo Curlew; Chattering Curlew
<i>Numenius phaeopus</i>	Whimbrel; Hudsonian Curlew; Crookbill
<i>Bartramia longicauda</i>	Upland Sandpiper; Cotton Tree Plover
<i>Tringa melanoleuca</i>	Greater Yellowlegs; Pica; Piker
<i>Tringa flavipes</i>	Lesser Yellowlegs; Longleg
<i>Tringa solitaria</i>	Solitary Sandpiper; Blackback
<i>Catoptrophorus semipalmatus</i>	Willet; White-tailed Curlew
<i>Actitis macularia</i>	Spotted Sandpiper; Wag
<i>Arenaria interpres</i>	Ruddy Turnstone; Sandy Plover; Redleg
<i>Phalaropus tricolor</i>	Wilson's Phalarope
<i>Gallinago gallinago</i>	Common Snipe

<i>Limnodromus griseus</i>	Short-billed Dowitcher; Duckleg
<i>Limnodromus scolopaceus</i>	Long-billed Dowitcher; Duckleg
<i>Calidris canutus</i>	Red Knot; Rock Plover; Silverwing
<i>Calidris alba</i>	Sanderling; Sandy Snipe
<i>Calidris pusilla</i>	Semipalmated Sandpiper; Nit
<i>Calidris mauri</i>	Western Sandpiper; Nit
<i>Calidris minutilla</i>	Least Sandpiper; Nit
<i>Calidris fuscicollis</i>	White-rumped Sandpiper; Grey Nit
<i>Calidris bairdii</i>	Baird's Sandpiper
<i>Calidris melanotos</i>	Pectoral Sandpiper; Chirp
<i>Micropalama himantopus</i>	Stilt Sandpiper; Cue
<i>Tryngites subruficollis</i>	Buff-breasted Sandpiper
<i>Philomachus pugnax</i>	Ruff; Reeve (female)

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