

Wildlife in the Falklands

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Ruthless exploitation of the seals and penguins and destruction by domestic stock of the tussac grass – which provides food and shelter for both wildlife and sheep – have characterised the Falkland Islands in the recent past. Today, however, the outlook is brighter and both the government and private individuals are creating reserves and sanctuaries, including the 14 islands of the Jason group which are one of the richest untouched wildlife areas. The author, a naturalist living in the islands, and responsible for much of the survey work he describes, pleads for a rational use of the wildlife so that a balance can be achieved. Fortunately, tourism is already showing that wildlife has a new commercial value.

The Falklands are not known ever to have had any native human population. The 2130 people who live there today are almost all of British descent. The first recorded landing was in 1690; and the first settlement was French under de Bougainville in 1764. But colonisation on a permanent basis did not start until 1842 when the British Crown undertook civil administration. The only effective economic exploitation of the islands has been of the grasslands. Until about 1860 wild cattle, introduced by the French, were the main stock, producing beef, tallow and hides. By 1880, however, sheep had replaced the cattle, and by 1899 there were more than 750,000 in the islands. In 1970 the stock return figure for sheep was 628,090, and the production of wool remains the only industry today.

The Environment

The Falklands lie some 400 miles (640 km) north east of Cape Horn, the southernmost point of South America, between 61° and 57° west and 51° and 52° south. An archipelago of over 230 islands, they range in size from small stacks of a few square metres to the two main islands of East and West Falkland which form the main land mass. They have a cool oceanic climate, owing to the depression belt formed in the Drake Passage and are thus classed as sub-Antarctic. The average mean temperature during the summer months of January and February is 49°F; in the midwinter months of June and July it is 36°F. The annual rainfall (Port Stanley) is about 25 ins. The prevailing winds are westerly, with an average mean of 16½ knots. The incidence of cloud is high with a fairly large proportion of overcast days. Atmospheric pollution, however, is very low.

Generally speaking the islands are treeless and rocky, with formidable coastlines, often deeply indented, and occasionally broken by large stretches of white quartz sand. The terrain is hilly except in the southern half of East Falkland where the plain of Lafonia rarely rises above 100 feet. The highest points are Mount Usborn in East Falkland

which is 2,312 feet (705 metres) and Mount Adam in West Falkland, 2,297 feet (700 metres). In the interior of West and East Falkland and some of the larger and higher islands, soil layers are usually thin. Ridges of quartzite break the landscape and the controversial 'stone runs', huge rivers of stone, sweep down into the shallow valleys. On the higher grounds, cushion plants *Bolax gummifera*, *Azorella selago* tend to predominate and could be described as feldmark formations. Extending down to the coastal regions, heath formations composed of the dwarf shrub crowberry *Empetrum rubrum*, 'fern beds' of *Blechnum* species and other plants grow in association with the most dominant plant, white grass *Cortaderia pilosa*. On these lower elevations extensive peat accumulations have formed a blanket over the rocky bed of the islands, while on the immediate coastal regions this blanket tends to give way to soils of a relatively high fertility. In the past much of the coastline supported a rich belt of tussac grass *Poa flabellata*. Today 'greens' comprising some of the finer grasses are more typical of the coasts, while tussac survives only in a few isolated patches where it has been protected from stock.

Many of the smaller islands, islets, knobs, stacks and rocks, which have not been grazed by domestic animals, exhibit a remarkable contrast to the large islands, especially in the vegetation, even though they may only be a few hundred metres from a mainland coast, and some also show physical differences. Many support pure stands of tussac, often three to four metres high. On some of the larger ones the coastal tussac belt runs out into a central plain, with stands of blue grass *Poa alopecurus*, wild celery *Apium australe*, and other species now uncommon on the main islands, showing the pattern of vegetation as it may have been on the large islands before stock was introduced.

Ocean Food

The cold Falkland current, an offshoot of the Southern Ocean current, flowing northwards past and between the islands, has little effect on their climate; its importance lies in its continuous supply of marine food. The islands act as a baffle to the current, and the otherwise great depths are often sharply reduced by underwater ridges causing strong tidal action and upwelling. The effect is a natural straining and funnelling of marine life to the surface layers, where it becomes more readily available to the archipelago's bird and animal life.

Equally important in the ecological chain, and even to the physical structure of the islands, are the vast beds of 'kelp' which grow in the offshore waters of practically every stretch of coastline. The term kelp, perhaps loosely used, can refer to several species of seaweed found growing in different zones of the sublittoral fringe. In the deeper waters the true kelp *Macrocystis pyrifera* and species of *Lessoniae* form beds commonly hundreds of metres in extent; *Durvillea harveyi* and *D. antarctica* fringe the coasts at the low tide levels. All these species have a considerable buffering effect against the pounding seas, and also protect many seal colonies from damage. Moreover kelp, particularly the species of *Macrocystis*, is an important habitat for marine life, especially invertebrates, and thus plays an extremely important part in

the various food chains. Even when heavy seas pile kelp on the beaches the plant continues as a habitat for *Aphipoda* and insects on which several species of Falkland birds feed.

The Birds

The present check list of Falkland breeding birds records 63 species, of which 17 are regarded as Falkland races. A further 86 species have been recorded as non-breeding visitors and vagrants. The breeding list does not represent a great variety of species, but the populations of some of them amount to hundreds of thousands of birds – the largest colony of one species has been calculated at over two million. As would be expected the largest populations belong to those species dependent on the sea for their food, in this case the penguins. Rockhopper, gentoo and Magellan penguins are common, with the king and macaroni in small breeding numbers. Procellariiformes probably take second place in population figures, with large breeding colonies of the black-browed albatross, and nine or possibly ten shearwaters and allies, the latter including thin-billed prion, Wilson's petrel and Falkland diving petrel, with smaller colonies of sooty shearwater, white-chinned petrel and the more recently discovered colonies of greater shearwater and a race of the fairy prion.

Of the 63 breeding species, nearly three-quarters, if not wholly dependent on the sea for food, rely on it during some period of their feeding cycle. Shore birds such as black and pied oystercatchers, night heron, flightless and flying steamer duck, kelp geese and crested duck are common examples of those largely dependent on the shores for their food. Indirectly associated with the marine and coastal environments are a number of dissimilar species including Cobb's wren, Falkland thrush, tussac bird, short-eared owl, Johnny rock (striated caracara) and Falkland plover. It is highly important for the birds to be able to establish their breeding colonies close to these food supplies. The coastal regions, and particularly the offshore tussac islands, are the ideal localities, and of paramount importance for the bird's survival.

Many of the rich 'greens', which include some finer grasses, in the coastal belts are associated with fresh water, generally shallow ponds. These are the main habitat of those grazing species which through time have been instrumental in establishing this pasture, including two common species of geese, upland and ruddy-headed, while many ponds are the habitat of yellow-billed teal, pampa teal and small populations of Rolland's grebe. By comparison the interior zones have only a limited food supply and the bird life is limited to some twelve species, of which the ground tyrant, black-throated finch and Falkland thrush are probably the commonest, and the red-backed buzzard and Cassin's falcon are still fairly common.

The Mammals

The number of breeding mammals is not great, if we discount introduced species such as hare, rabbit, rat, mice, Patagonian fox and guanaco, and there are very few endemic species. Since the destruction of the warrah, or Falkland fox, over 100 years ago, and excluding true

marine mammals, the only ones left are four species of pinniped: the southern sea lion *Otaria byronia*, Falkland fur seal *Arctocephalus australis australis*, southern elephant seal *Mirounga leonina* and leopard seal *Hydrurga leptonyx*, the last now a very rare breeder and uncommon visitor. Sea lions and elephant seals are fairly widespread, but fur seals are restricted to some four regions.

Early Depredations

Regrettably very few records give us a clear picture of the size and extent of the original populations of birds and mammals before the islands were settled by man, but the accounts and journals of some early adventurers and sealers indicate that populations were large and certainly more widespread than they are today. The Falklands have a record of well over 100 years of wildlife depredation. The de Bougainville expedition was probably the first to engage in sealing and was followed by other French opportunists. About 1774 American whalers were working around the islands, and ten years later it was recorded that an American sealer took some 13,000 fur-seal skins. It is not clear, although probable, that fur seals had been taken before this; if so this one figure indicates a large population, and even if not, the number represents a large proportion of the total population today.

Whale and seal oil were probably the main cause of these depredations, and during the 1820s the large colonies of penguins attracted oil hunters. How many were taken is not known, but one report of an American sealer lying at West Point Island indicates that penguin oil was taken to supplement seal and whale oil. For many years the practice appears to have been discontinued – perhaps the sealers and whalers became aware of the even greater value of the birds' eggs and adopted their own conservation measures – but 1861-1862 saw a revival of the penguin oil industry, this time by the Falkland settlers. Exactly why this happened is again not clear, but it coincided with a period when seal stocks around the islands were seriously depleted. Dean, principal merchant in the islands at that time, started it when he cleared a newly-leased island of its penguin population, and his example was quickly followed by the newly-established Falkland Islands Company, which owned most of the southern part of East Falkland and its adjacent islands. Islands were leased from the Government and their penguin colonies destroyed. Only when the Company threatened to exterminate the rookeries in the vicinity of Port Stanley, which, Governor Moore wrote, provided eggs 'so necessary to the health and comfort of the inhabitants', was legislation passed to protect penguin rookeries, and then only those on East Falkland to the north of Port Stanley.

The industry reached a peak about 1864 by which time most of the accessible rookeries had been decimated. Smaller operators continued to take penguin oil from the further outlying islands, and for some years the remote Jason Island rookeries were worked. By 1871, when the industry came to a temporary halt, few rookeries had been spared. Some years later there was a revival but the trade never regained its importance and soon diminished.



ROCKHOPPER PENGUINS among the kel



SOUTHERN SEA LIONS, on Beauchêne Island, with tussock grass in the foreground.

KING PENGUIN COLONY





GENTOO PENGUINS come ashore

BEAUCHÊNE ISLAND: A dense throng of black-browed albatrosses and penguins





JOHNNY ROOK — the striated caracara — at a nest in the tussac *Falklands photographs by Ian Strange*

How many birds went into the try-pots will never be known; the penguins had little interest in statistics. But taking the generally accepted figure of eight rockhopper penguins (the most popular species) to one gallon of oil, the amount of oil registered as being brought in would require some 1¼ million birds. In practice the rough system of trying-out, and the custom of using penguin skins and bodies for firing the pots, more than likely resulted in nearer to 2 to 2½ million being killed during the period of operation – a large number of birds, but in fact not the figure often popularly reported.

Sealing continued in an erratic manner, depending on whether or not the seals were there for taking. No thought was given to their future preservation until 1881, when Government named a close season and naval patrols offered some protection to the rookeries during the summer months. In 1889 sealing was licenced and a tax placed on the industry. For some years fur sealing was taken up by local operators, but hauls were small and a quota of 100 to 200 skins was rarely reached. Continuous hunting through the years made the fur seal a particularly difficult creature to take, and the animal was soon restricted to the more inaccessible rookeries.

1901 saw the beginning of a new threat to the much diminished fur seal colonies, when Canadian pelagic sealers arrived off the Falklands. They hunted the seals on their feeding grounds, with results that were excellent for the sealers, but disastrous for the seals. Local hauls dropped, and two local sealers, having spent two months on Beauchene Island rookery, considered to be the finest fur seal ground in the archipelago, returned with only 11 skins. Eventually the Canadians, finding their catches unprofitable, left, but local sealers continued, and only the 1914-18 war gave the seals a long awaited rest. In 1921, following poaching by sealers from the South American coast, the fur seal was given full protection which still operates.

In the last thirty years the elephant seal, hunted extensively in the early years, and thought by 1871 to be extinct in the islands, has made a dramatic comeback without attracting the interest of the commercial exploiter. The sea lion, however, has continued to be the target of a number of sealing ventures up to the present day, all with little regard for the preservation of the species, and all ending in failure.

The Vegetation

The many changes that have taken place in the islands' natural vegetation can fortunately be studied in the few isolated unspoilt areas. Undoubtedly the greatest loss since the settlement of the islands has been the tussac grass. The early voyagers found it in a coastal belt round the main islands often several hundred metres in width and often covering the smaller ones completely. But in East Falkland much of this had been destroyed by the 1840s as a result of unrestricted grazing by the cattle, horses and swine introduced by de Bougainville. Elsewhere the stands were largely untouched, but with the advent of sheep farming in the 1860s the grass quickly disappeared from the main islands, and today little evidence remains to show its original extent.

Some was also destroyed by sealers, who, in their hunt for seals and pigs, would fire the grass.

Fortunately some pure stands of tussac survived, usually because they were confined to small and rather inaccessible islands which had no value to the farmers. Ironically, the tussac's great value as fodder and its importance for animal shelter has been recognised throughout the islands' history, yet nothing has been done to preserve it on a national scale.

Hooker, visiting the Islands in 1847, described many of the native grasses and other plants as abundant. Blue grass *Poa alopecurus*, mountain blue grass *Poa antarctica*, cinnamon grass *Hierochloe magellanicus* and wild celery were all recorded as covering large areas of the main islands. Today they are uncommon and only found on a few offshore islands where stock has never been introduced. Boxwood *Hebe elliptica*, largest of the islands' native shrubs, also at one time fairly common in the coastal areas of the West Falklands, is today only locally common where it has been protected from sheep.

Present Day Threats

The disappearance of tussac from the main islands was not only a great loss to agriculture. In some areas its loss led to erosion which remains today a serious problem. But by far its greatest value lies in the part it plays in the wildlife ecology. The tussac is the Falklands' most important habitat for birds and for some mammals too. About half the breeding birds benefit from it, either directly or indirectly, in their feeding or nesting, and certain species were directly affected when it disappeared from the main islands. Old petrel breeding grounds have been discovered where the birds had nested in and beneath the tussac bogs. With the destruction of the plant and subsequent erosion such nesting burrows were literally swept away by wind and rain. The same thing can be seen today. A very large population of Magellan penguins breed in burrows on the coastal strips. At one time a large proportion of these burrows lay beneath the tussac bogs, as they still do on the offshore tussac islands; the burrows remained stable, there was no soil erosion, and the birds enriched the soil with their droppings. Now, with the tussac gone, the penguins' burrowing makes the peaty ground unstable, the burrows cave in and erosion is speeded up. Ironically, the bird is blamed for what man has caused. There are notable exceptions where tussac has been preserved by farmers. On West Point and Carcass Island the carefully maintained tussac fringes are used by stock at certain times of the year; and by the penguins at other times – a system that benefits man, plant and bird.

It is difficult to assess the remaining tussac stocks, but calculations made of stands on offshore islands, which represent a very large proportion of the tussac areas, give an approximate acreage of from 11,500 to 12,000. Probably the acreage today remains constant, a balance being maintained between the diminishing acreage in certain areas and natural re-seeding in others. It is considered, however, that this balance is far too critical, being held in the hands of a fluctuating sheep industry, which at present is experiencing an economic decline;

the practice of stocking off-shore tussac islands no longer brings in high profits and the system is less popular. Largely owing to this, there appears to be renewed interest in investigations as to how the industry might be improved. Similar investigations by experts from outside the Colony were made in 1924, 1939, 1940, 1965-68 and 1969-70. All the investigators have spoken of the need for improvement and the importance of tussac, their words being echoed by a recent grasslands officer who reported that 'wool production in the Falkland Islands in 1898 was slightly greater than 1967. This sums up the complete lack of progress in the field of grassland improvement which has been made in these islands over the last 70 years. It is not through lack of advice but rather lack of initiative that this state of affairs has come to pass.'

The Geese a Scapegoat

Throughout the history of sheep farming in the Falklands it would appear that, as in other countries, farmers have had their 'scapegoat'. In the Falklands it is the wild geese. From early settlement days the upland goose and the ruddy-headed goose have been taken as food, and are still today an important item of diet. The first move to eradicate the geese occurred in 1903, shortly after the sheep population started to decline. The farmers' suggestion that 150,000 geese be destroyed annually and payment made for this at the rate of 15s per 100 beaks was accepted, and in 1905 the Livestock Ordinance was amended accordingly. This caused great controversy, especially as the bill was only passed by a narrow margin.

For nearly 70 years the goose has remained a subject of much argument. Many farmers feel that the bird does little harm; others will not commit themselves, but there is little doubt that those farmers in favour of eradication have done nothing new about their so-called problem. Interest is renewed whenever agricultural investigations are being made, as at present. Recently, at a meeting of the Sheep Owners' association, members were told that the most recent agricultural advisory team had implied that the 'geese have to go', and a vote showed strong support for eradication, with a further indication that some chemical means would have to be used for the destruction. The agricultural team that visited the islands in the summer of 1970-71 reported that, like other visiting teams, they had not been able to study the habits of the upland goose. However, they considered that geese were a 'major pest' on newly seeded ground and arable fields, and also on coastal 'greens', but they also felt that the problem should be studied in detail by a pest control-cum-conservation specialist. They recognised the ornithological value of the bird but thought that numbers could be reduced without endangering the species. It is important to stress that such a vote is unofficial. What is important is the suggestion of using chemical means for the eradication. Whether it be poison or a stupifier the farmers may well be handling something which could have far-reaching effects, both on other wildlife and perhaps their own stock.

The problem is complex. I believe that geese present a problem at certain times of the year on some areas of cultivated and sown ground,

and in these cases the farmers' antagonism is understandable. However, it is a notorious fact that the islands have had an almost continuous history of depredation. At no time has any exploitation been preceded by careful examination and study of the species in question, although Hamilton's work on the sea lion in the late 1920s may be construed as such. At present the islands face an economic crisis. The complete eradication of one bird is not going to solve it, nor would keeping the geese. But the bird is a proved asset if only for its food value, and should be conserved. In a world hungry for protein is it not feasible that wild geese populations should be farmed in such a way as to benefit man and bird equally?

Sealing Revived

In 1962 interest in sealing was revived and a licence granted to a local operator (renewed in 1963) to take 1500 sea lions for their pelts. The decision was largely based on the census report carried out by Hamilton in the 1930s, which gave a figure of 380,000 sea lions, including 80,000 pups. To base sealing activities on a census over thirty years old was in itself short-sighted, especially when preliminary investigations by the author in 1960-1962 had indicated a drastic decline in the herds since it was made.

It was apparent that a new census was required. Intensive investigations were made of the seal herds in certain regions, and in 1965 an extensive aerial survey of all known sea lion colonies was carried out, followed by a check survey in 1966, counts being recorded with a 4 x 5 in aerial camera. The total number counted and estimated in the 1965 survey was 18,876 of which 5,516 were pups; the 1966 check confirmed the counts. With various corrections and with all calculations on the optimistic side, the grand total for sea lion herds of all age groups was a maximum of 30,000 animals.

The reason for the decline is not yet known. Animal populations tend to fluctuate, and it is possible that Hamilton's figure was taken when the herds were at their peak. Have the complex food chains of our seas changed, bringing about a drastic reduction in the sea lions' main foods? Almost certainly exploitation is not the cause. However, one fact is clear. A project to exploit a species whose population was not even known ended in failure — a waste of money and also of animal life.

In 1951 Dr. Laws's survey of the islands' fur seal population estimated 'well over' 20,000 fur seals. In 1965 and 1966, during the sea lion surveys, fur seal colonies were also counted on the ground, using aerial photographs as a check. The total count was less than 14,000 fur seals, which was very close to Dr. Laws's figure for those rookeries he had visited; his additional numbers were an estimate for the apparently large colony on Beauchêne Island which he was unable to visit, and which in fact, had not been visited for over thirty years. Local reports of a large fur seal colony on the island proved, unfortunately, to be pure conjecture; in 1963 and subsequent years several visits were made to Beauchêne but not one fur seal was recorded. What the fate of this

particular colony has been will probably never be known, but the eleven skins recorded as taken on the island in the early 1900s were possibly the last of this population. Although the later survey shows a 'set-back' on paper, the indications from the surveys are that the fur seal numbers are stable.

The twenty-year period of protection for the fur seal that the Government decreed in 1951 is now completed, but unfortunately the herds do not appear to have increased to a point where sealing would be justifiable, and very little is yet known of this seal's habits. Perhaps these herds have a potential commercial value, but only for an industry which is going to work not just for the short term benefit of the operators but for the continuing survival of the animal.

Penguin Harvest

'Penguin egging' is a traditional pursuit that takes place annually, and the term covers the eggs of albatross, geese, ducks, gulls, terns, and any other wild bird egg which the collector considers edible. Penguin and albatross eggs are today taken only under licence, but anyone, on payment of five shillings per 100 eggs, can get permission to collect. Certainly some penguin rookeries receive far too much attention from egg collectors, and the legal season is sometimes unofficially extended. In rookeries that are plundered too often, the birds, particularly gentoo, become extremely nervous at the approach of humans thus making predation by other species easier. One noticeable point on such rookeries is the great variation in size of the young. Having been robbed, gentoos will continue to lay their usual pair of eggs until fairly late into the breeding season, but the resulting variation in size often means that the younger, smaller bird succumbs to the stronger chick. There is also a strong indication that in rookeries with very late chicks, there is high mortality among the fully fledged young. The possibility of a connection between the abnormally late hatching and the feeding cycle is not to be overlooked.

Carried out with due regard to conservation principles I see no harm in the collection of penguin eggs; in areas where land-owners claim that the Magellan penguin is causing excessive soil erosion, and have openly stated their wish to destroy such colonies, their thoughts might be turned to a system of rational commercial exploitation of the eggs, which in turn might lead them to tackle soil erosion problems, not by the destruction of the birds, but by replanting tussac.

Penguin egg collecting is certainly not so popular today as in the past, as is shown by statistics gathered from the licences issued over the last five years, even though they are not reliable as to numbers of eggs taken. There is a greater awareness among farm owners of the need to be more conservative about collecting; more of them now prohibit collecting by their employees, and themselves organise the collections, allocating a share to each house on their farms. In this way the rookeries suffer less disturbance and probably lose fewer eggs. There are also signs that more farms are prohibiting entirely the collection of gentoo penguin eggs, this species being regarded by many as extremely beneficial to the land.

Seaweed Harvest

The seaweeds around the Falklands could be of great commercial value in the future production of alginates. This was shown by a survey of the kelp beds in 1947 made for a British company Alginat Industries Ltd. In 1970 the company installed a small pilot plant at Port Stanley for the production of dry milled kelp. This having proved satisfactory, a larger factory is planned, and the company hope to produce 10,000 tons of dry milled kelp per year by the mid 1970's, and 30,000 tons by 1980, the latter figure an annual harvest of about 360,000 tons.

We know the kelp beds to be an important habitat and a link in the food chains of certain species. What is not known is what will be the long term effect on this life of harvesting the kelp. I do not believe the industry to be a threat to the islands' wild life, but many questions remain unanswered. Perhaps we shall learn from the industry much of the biology of kelp and obtain some answers. In the meantime, we can only recommend that certain steps might be taken, such as the prohibition of kelp harvesting on beds known to be important feeding grounds, beds in the region of reserves and those which protect the more vulnerable coastal regions and seal colonies.

Despite their remoteness, the Falklands are no longer free of the pollutants that afflict more populated parts of the world. DDT has found its way into penguins of Antarctica, and for many years Falklands sheep farmers have used chlorinated hydrocarbons. Over the last five years there has been a noticeable increase in oil pollution in the seas around the Falklands just when these seas have become of increasing interest to fishing fleets from Russia, Japan and others.

For islands that have had a long history of depredation, the Falklands have made some considerable steps towards the conservation of their fauna in the last ten years. But only after another fifteen to twenty years will it be possible to ascertain if these steps were taken in time.

The most significant recent step was the 1964 ordinance for the establishment of nature reserves (see *Oryx*, vol. VIII, 3, page 155). At the same time an existing law which provided for the protection of a short list of birds, many of them rare vagrants rather than breeding birds, was amended and made more realistic, and provision made for the establishment of animal and bird sanctuaries. In the same year a senior representative of the World Wildlife Fund toured the islands as part of an extensive trip through South America to view conservation measures. The ordinance stated that land should be reserved for the study and research of both flora and fauna, and that such lands should be virtually closed areas. Sanctuary status, however, while protecting the fauna from man's direct assault by shooting, trapping etc., does not prevent the land being stocked with ruminants, thus doing nothing to protect the vegetation, the destruction of which will mean the eventual disappearance of the wildlife. This is what has happened in some of the tussac islands which, after being given sanctuary status, were then stocked. The ordinance does, however, have the merit of allowing private landowners to use the title of sanctuary (this is also the case for reserves) for land they wish the law to protect. In the case of certain areas of private land now declared sanctuaries the owners have no wish

or intention to stock them so they may be said to have an unofficial status between that of reserve and sanctuary.

By the end of 1970 seventeen sanctuaries had been created covering 9500 acres. Two embrace fairly extensive areas on the East Falkland mainland, the remainder being offshore islands varying in size from 42 to 946 acres. Eight are on private land, the remainder belonging to the Crown. There are four Wild Life Reserves totalling 1306 acres, to which can be added the 5424 acres of two large islands in the Jason group recently acquired privately as wildlife reserves. A large proportion of these reserves and sanctuaries are in the Jason Island group in the north-west, undoubtedly one of the richest areas in the Falklands for wildlife and vegetation. All fourteen islands have now been set aside as a virtually undisturbed area.

In the selection of these reserves and sanctuaries, islands which have no history of stocking or depredation and had a high ecological value were recommended for reserve status. Areas were also classed according to the populations and the variety of fauna: an island supporting pairs of the endangered Johnny Rook, striated caracara, has a high placing. Care has also been taken to establish reserves in different parts of the archipelago, covering a wide range of habitat.

Looking Ahead

What of the future? The sanctuary acreage will undoubtedly rise, especially on private land, for sanctuary status does not deprive the owner of the right to stock. Any increase in reserves, however, is dependent on Government land, unless private owners give land, which is understandably difficult. Crown land, much of it in the form of small offshore islands, is not extensive, and the amount which would be suitable for reserves is now small. But there is still a strong need for more reserves, and the only course left is by purchase of private land.

Faced with economic problems, the Government in recent years have been unable to engage in any programme of conservation investigation, and this work has been carried out privately on a freelance basis, with some success. The Royal Navy and F.I. Government have assisted greatly with logistic support, and the WWF has made two generous grants, although where possible the aim has been to make the project self-supporting.

Unquestionably the Falkland Islands have in their natural life an asset of vast potential value. Recently the islands have been brought to the notice of the wildlife tourist. Five years ago the suggestion that the Falklands could be a major attraction to the outside world was openly scorned. Today with the establishment of a specialised tourist business visiting the islands to view this wildlife, there is an increasing awareness of its value. For the wildlife conservation idea to make any impact in the islands, its commercial values have to be shown. The tourist potential is there, but even this has its dangers and very careful handling and continued study must be paramount, if the Falkland Islands' most valuable natural asset is to survive.

Breeding Birds in the Falklands

King penguin	<i>Aptenodytes patagonica</i>
Gentoo penguin	<i>Pygoscelis papua</i>
Rockhopper penguin	<i>Eudyptes crestatus</i>
Macaroni penguin	<i>Eudyptes chrysolophus</i>
Magellan penguin	<i>Spheniscus magellanicus</i>
Rolland's grebe	<i>Podiceps rolland*</i>
Silver grebe	<i>Podiceps occipitalis</i>
Black-browed albatross	<i>Diomedea melanophrys</i>
Giant petrel	<i>Macronectes giganteus</i>
Thin-billed (Belcher's) prion	<i>Pachyptila belcheri</i>
F. Is. fairy prion	<i>Pachyptila turtur†</i>
White-chinned petrel	<i>Procellaria aequinoctialis</i>
Sooty shearwater	<i>Procellaria griseus</i>
Greater shearwater	<i>Procellaria gravis†</i>
Wilson's petrel	<i>Oceanites oceanicus</i>
Grey-backed storm-petrel	<i>Garrodia nereis</i>
Falkland diving petrel	<i>Pelecanoides urinatrix berard*</i>
Rock shag	<i>Phalacrocorax magellanicus</i>
King shag	<i>Phalacrocorax atriceps albiventer</i>
Night heron	<i>Nycticorax n. cyanocephalus*</i>
Ruddy-headed goose	<i>Chloephaga rubidiceps</i>
Upland goose	<i>Chloephaga magellanica*</i>
Ashy-headed goose	<i>Chloephaga poliocephala*</i>
Kelp goose	<i>Chloephaga hybrida malvinarum*</i>
Black-necked swan	<i>Cygnus melanocoryphus</i>
Crested (grey) duck	<i>Anas cristata</i>
Cinnamon teal	<i>Anas cyanoptera</i>
Chiloe wigeon	<i>Anas sibilatrix</i>
Yellow-billed teal	<i>Anas flavirostris</i>
Brown pintail	<i>Anas spinipectus</i>
Pampa teal	<i>Anas versicolor</i>
Flightless steamer duck	<i>Tachyeres brachypterus*</i>
Flying steamer duck	<i>Tachyeres patachonicus</i>
Turkey vulture	<i>Carthartes aura jota</i>
Johnny Rook	<i>Phalcobaenus australis</i>
Carancho	<i>Caracara p. plancus</i>
Cassin's falcon	<i>Falco peregrinus cassini</i>
Red-backed buzzard	<i>Buteo polyosoma</i>
Pied (Fuegian) oystercatcher	<i>Haematopus leucopodus</i>
Black oystercatcher	<i>Haematopus ater</i>
Falkland Island plover	<i>Charadrius falklandicus</i>
Winter plover (Dotterel)	<i>Zonibyx modestus</i>
Paraguayan snipe	<i>Capella paraguaiae</i>
Strickland's snipe	<i>Capella stricklandi</i>
Common seed-snipe	<i>Thinocorus rumicivorus</i>
South American tern	<i>Sterna hirundinacea</i>
Pink-breasted gull	<i>Larus ridibundus maculipennis</i>

* Falkland races

† Recently discovered colonies. May be distinct races.

Dominican gull	<i>Larus marinus dominicanus</i>
Magellan (dolphin) gull	<i>Leucophaeus scoresbii</i>
Falkland skua	<i>Stercorarius skua</i> *
Short-eared owl	<i>Asio flammeus sanfordi</i>
Red-footed owl	<i>Strix rufipes</i>
Barn owl	<i>Tyto alba</i>
Tussac bird	<i>Cinclodes antarcticus</i> *
Garnot's ground-tyrant	<i>Muscisaxicola m. macloviana</i> *
Grass wren	<i>Cistothorus platensis hornensis</i> *
Cobb's wren	<i>Troglodytes musculus cobbi</i> *
Falkland thrush	<i>Turdus f. falklandii</i> *
Falkland pipit	<i>Anthus correndera trayi</i> *
Military starling	<i>Pezites militaris falklandicus</i> *
Siskin	<i>Carduelis barbatus</i>
Black-throated finch	<i>Melanodera m. melanodera</i> *
House sparrow	<i>Passer domesticus</i>

Death in the Jungle

The Bolivian delegate, to an FAO meeting of foresters in Rome last year, Federico Bascope, told this story.

'Eight years ago, 600 people in the village of San Ramon in Beni State, deep in the Bolivian jungles, died of a strange disease. Appealed to by the authorities, the American Institute of Tropical Diseases in Panama sent a party of researchers who, after a two-year stay in San Ramon, diagnosed haemorrhagic fever, an extremely dangerous disease, widespread in small mammals, which had most probably been brought into the village by the numerous rats, mice and other rodents.

'Further investigation revealed that the unusual number of rodents both in the village and in the jungle around it was probably caused by a sharp decrease in the numbers of their natural predators. Jaguars, pumas and ocelots were once abundant in the jungles of this region but are now almost extinct thanks to continual, ruthless hunting by local people who sell the skins to foreign tradesmen. These traders, mainly from Argentina, can land their own aircraft unnoticed at any time on one of the 600-odd airstrips of the Amazon region and take off again with a pleneload of skins. Two years ago Bolivia passed a law prohibiting the hunting of these jungle cats, but the profits are too tempting to poor peasants. Between 3,000 and 4,000 jaguars are killed by poachers each year in Bolivia.'

Mr. Bascope urgently requested FAO to help, demanding action at the international level. As the frontiers of three other countries – Argentina, Chile and Peru – meet Bolivia on the high plateau the problem called for common planning and participation, and Bolivia, he said, was trying to interest the others in a joint request to FAO to establish a wildlife protection programme in the region. The problem became even more pressing when haemorrhagic fever struck again at San Ramon. Thirty cases were reported, 20 people died, and the village was quarantined. 'But how long can the disease be isolated?' Mr. Bascope asked. 'The cause is still widespread over the whole region. Jaguars and other felines are still being decimated.'