Fortress Falkla wildlife secure?

Ian Strange

Inevitably, wildlife suffered during the military conflict in the Falkland Islands in 1982. But after the sounds of battle died away and there was time to assess the extent of the damage to wildlife it was recognised that it could have been much worse. Ian Strange, an Islands' resident, who was present throughout the occupation and conflict, here records not only the effects of the war but also of the military presence that has been maintained since it ended. As a naturalist/conservationist he views with some disquiet the implications of the development aid that is pouring into the Islands and makes a plea that the Falklands be made an international reserve.

Two *Pucara* aircraft swung out over Port William and as I watched they commenced a dive. I saw the first of the bombs drop two miles away, followed by the most incredible fire-ball eruption and then a belch of black smoke. At first I thought the bombs were being dropped on the mainland, perhaps to destroy ordnance that the Argentinians had captured from the small garrison in the Falklands. But shortly after black smoke began to obscure the horizon, a friend higher up in the town telephoned to say that Top Island, in Port William, was being bombed by the Argentinians and that the tussock-covered islet was in flames. I do not remember now exactly what I said when I phoned the Argentinian Commodore now in charge of the Administration, but he got the message that I was extremely angry. Fortunately perhaps, he was a man whom we had known and respected from a more memorable time, some ten years ago, when the Argentinian military established the first external air link between the Islands and the mainland. He knew that my anger and concern for what was happening was genuine and promised he would contact the air force and try to stop the operation. Minutes later he called to say that there would be no more bombing of such islands.

By this time the nearby airport was almost obscured by smoke from the burning island, so I added the point that now the island was on fire they could expect it to remain alight for weeks, perhaps even months, so all attempts at keeping the airport blacked out would be rather pointless. The burning island would act like a beacon until all the peat had slowly burnt away. This clearly worried the Commodore and before many hours had passed I was informed that ships were alongside the island pumping water on to it with fire hoses. Tussock grass is extremely vulnerable to fire and burns fiercely, but it puzzled me that the whole island seemed to erupt into flames immediately the bombs had detonated. Weeks later, when we discovered that the occupying forces had stocks of napalm, we realised that we had witnessed a trial bombing with this lethal substance.

A year has gone by since the Argentine invasion, and now it is possible to assess the damage that was done to the Falklands environment and wildlife during the period of occupation and subsequent conflict. Following the invasion and occupation of places like Stanley, Darwin, Fox Bay, Port Howard and Pebble Island, defences were set up. Thousands of dug-outs scarred the

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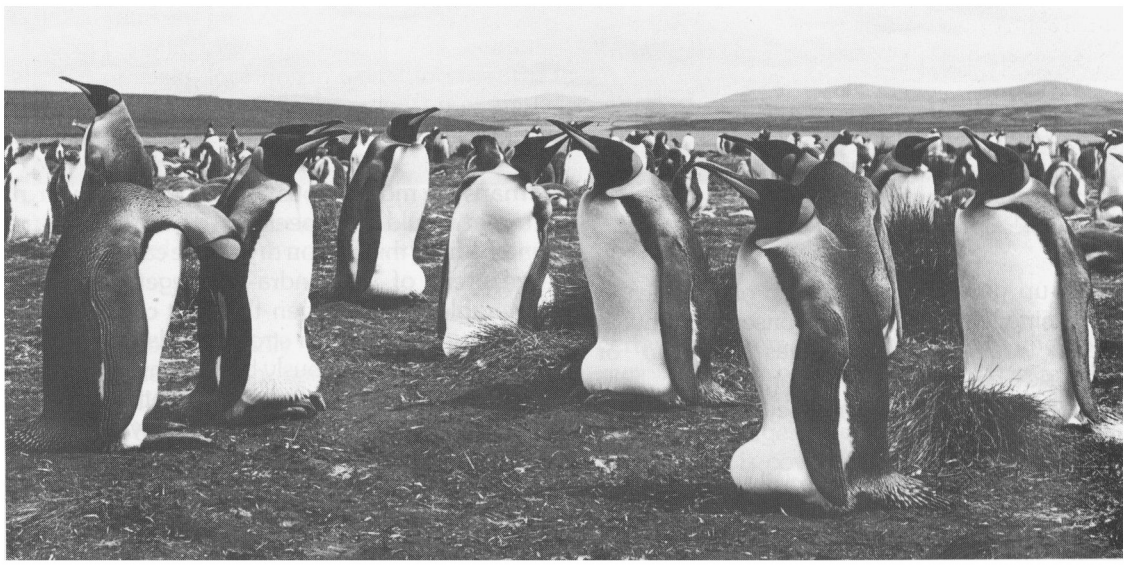
nds—but is its



The one main group of king penguins *Aptenodytes patagonica* located some miles north of Stanley. There was concern for their safety during and after the conflict, but they do not seem to have suffered *(Ian Strange)*.

landscape, especially around Stanley, the capital of the Falklands. There was speculation that these dug-outs would eventually create erosion problems, but already they are becoming less obvious as wind and rain assist to fill them in. There have been exceptions of course, and the area around the airport is one example. Before the airport was built the area suffered from erosion, but extensive re-seeding when construction was completed stabilised the soil and the area became a model of land reclamation. Intensive bombing, shelling and movement over the region during and after the conflict completely destroyed all vegetation and erosion is once again a serious problem.

The laying of thousands of plastic mines by the Argentinian forces created a new problem, and large areas around Stanley—some in the camp—are now out of bounds. Mines laid on beaches caused concern for wildlife, it being anticipated that large numbers of penguins might suffer. There is little evidence of this, probably because even the small AP (anti-personnel) mine requires more weight to set it off than the average penguin attains. On the other hand seals, especially elephant seals, which more generally use sand or shingle beaches where mines might have been laid, would be very vulnerable. Fortunately many beaches known to be mined are not normally

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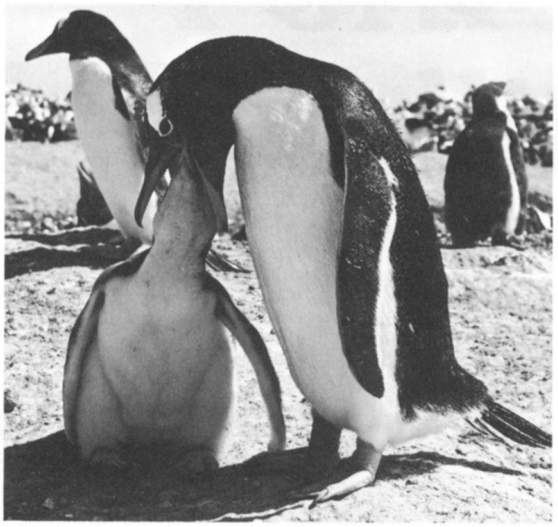

Gentoo penguins *Pygoscelis papua* are resident in the Islands all year round and may have suffered during the conflict, probably from 'scare' depth charges used by the occupying forces to deter attacks by frogmen *(Ian Strange)*.

hauling-up grounds for seal. No-one wishes to view a minefield as a credit to conservation but in an odd twist, very large areas of 'camp' or countryside have suddenly become places where no-one dares to tread and they have become sanctuaries for wildlife.

During the occupation, especially towards the end, it became evident that many of the occupying troops were getting insufficient food. This had its effect on bird life, especially in Stanley harbour, where virtually any form of bird was being taken for food. Several times we witnessed —and unsuccessfully attempted to stop—the shooting of steamer duck, crested duck and kelp geese. The fact that these species are not considered edible by the islanders made no difference to the hungry troops and few birds survived.

As a deterrent to underwater attacks by British frogmen, scare depth charges were used and became a familiar sound throughout every night of the occupation. The detonation of these charges was so powerful at times that the shock waves would travel through the town's sewer system, often making us wonder if the explosion was taking place beneath our own house. It is possible that some damage was done to populations of dolphin, porpoises, and perhaps even whales, and I expect that resident colonies of gentoo penguins in the outer harbour of Port William may have suffered from the shock waves while feeding in the sea close by. The lack of evidence in the form of dead birds does, however, suggest that losses were minimal.

During the conflict itself some damage may have been done to wildlife in specific areas, but not sufficient to have a long-term effect on the total Falkland populations. Because the conflict took place during the winter a very large percentage of the Islands' breeding species were absent. Had the conflict taken place during the summer, the situation would have been very different indeed. Furthermore, most action took place in regions where there were no large concentrations of wildlife, so damage to penguin colonies, for example, was much less serious than it might have been. Perhaps the most serious consequence of a war in summer would have been fire. The predominant winds during this season dry off the camp, making large areas of the tundra-like vegetation more vulnerable to fire. Given the right conditions of dry peaty ground with strong winds, the Islands might have been seriously burnt. However, looking back and evaluating the situation now, it would seem that very little damage was done to the environment and the wildlife during the period of conflict. What the situation might be in the immediate future could be a very different story.

The Falkland Islands have suddenly become a territory that is no longer protected solely by its isolation and remoteness; it has become another part of the world that has to be defended by man's weapons. Ever since the conflict came to an end in June 1982, men, equipment and supplies worth millions of pounds have flooded into the Falklands. The result of this is that the environment in the immediate vicinity of Port Stanley has already suffered. The almost landlocked inner harbour of Port Stanley is showing signs of pollution as the natural flushing out of the harbour's waters by the tide cannot cope with the sewage and fuel spillage from both town and ships. Populations of kelp geese and steamer ducks, which suffered during the occupation, have not been replaced by incoming

A breeding group of elephant seal *Mirounga leonina* on a sand beach north of Port Stanley. Elephant seals are probably the only wildlife affected by the mining of such beaches *(Ian Strange)*.

birds, almost certainly because their feeding grounds have been spoilt. Extra waste has brought in large numbers of gulls and in some areas the birds are considered a serious threat to the safety of military aircraft. So a conflict situation has been created which was not known before. This is a comparatively minor problem that could be corrected, but it is a 'red light' warning of how problems could develop in the very sensitive Falklands environment.

The role of the military in the Islands at present demands a very high degree of alertness and this in turn means continuous training. The Forces have already acknowledged that the Falklands present one of the finest training grounds they have ever had, a statement guaranteed to make any conservationist wince. Fortunately they also appreciate the value of the Islands as a unique wildlife area and from the outset local knowledge and expertise were drawn upon to establish training areas in places where the minimum damage would be done to wildlife and habitats. There were bound to be conflicts with the natural environment in any part of the Falklands, but of all those available, taking into consideration certain requirements of the military, the interior regions of the two main islands of East and West Falkland were best suited for training. These regions are largely rugged and hilly and much of the ground is covered with rocky outcrops and 'stone runs', the latter resembling giant scree, which cuts down fire risk and the danger of unexploded ordnance remaining. Bird life is not so prolific here so they were also ideal from the conservationist's point of view. However, ranges and land targets were needed by ships of the Royal Navy. Ideally a small and remote islet was needed for use as a hard impact area for shells.

I had surveyed many of the remote small islands and I knew that selecting even the smallest of rocky islets was bound to result in some form of conflict with wildlife. Comparatively speaking most coastal areas are rich in wildlife; the smaller offshore islands are both rich and, in many cases, ecologically perfect. Due to their small size, remoteness and the difficulty of landing on many, such islands have remained largely untouched by farming operations. A number of the more remote islands, until I surveyed them in recent years, had probably remained untouched since

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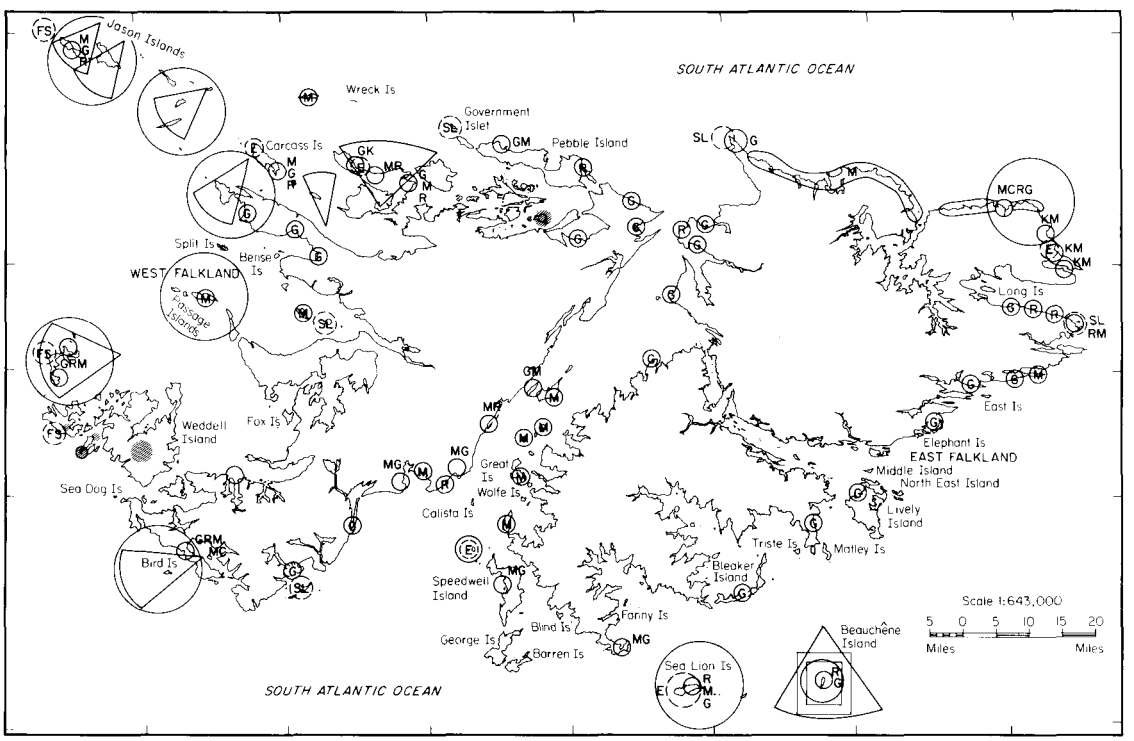
the 1800s when they were of interest to sealers. Eventually, after a number of on-site investigations, a small rocky islet was chosen, but its use by a small number of elephant seals for breeding means that the Navy is only in a position to use it during the winter when the seals migrate.

Most offshore islands and islets support not only large concentrations of animal life but also the Falkland's last remaining stands of tussock grass *Poa flabellata,* which frequently attain a height of over 2 m. Forming individual pedestal-like tussocks, from the top of which grows a profusion of leaves, stands of this grass are the Islands' most important natural habitat. Many bird species nest in the individual tussocks or within the shelter of the leafy skirt and species of ground-burrowing petrels make nest chambers beneath. In total

Areas of intense wildlife activity



Key

Albatross. Colonies comprise many tens of thousands in breeding season Sep–Apr individual birds weigh up to 8lb. Birds soar up to 2000 ft from western facing coasts.

Prions/Petrels. Intense flying Sep–Mar between sunset/sunrise. Bird completely nocturnal in nesting phase. Birds attracted by lights thus night flying helos at risk.

Penguins. Last known position of colonies avoid over flight.

K..... King penguin
G..... Gentoo penguin
R..... Rockhopper penguin
M..... Magellan penguin
Mc..... Macaroni penguin

Fox

Seals

FS..... Fur seal
E..... Elephant seal
SL..... Sea lion

Guanaco

Birdstrikes

Birdstrikes can ruin your whole day and most of your aircraft.

The risk is always present but can be minimised as follows:

1. Avoid areas of intense bird activity.
2. Avoid flying around dawn/dusk.
3. Do not fly lower or faster than necessary.
4. Cross coasts at right angles above 2000 ft if possible.
5. Avoid ships if possible – birds follow them.
6. Avoid bright green grassy areas – they attract birds.
7. Report large concentrations of birds on landing.

Map drawn up with the assistance of Ian Strange to help the British military forces in avoiding bird strikes and disturbing breeding colonies.

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some 25 of the 63 species which breed in the Islands will use this habitat for nesting. When man first settled in the Falklands and introduced stock in the late 1700s and early 1800s, much larger areas of tussock existed than is the case today. Many coastal sites on the two main islands of East and West Falkland also had stands of tussock but these larger islands took the attention of the settlers first and uncontrolled grazing by pigs, goats, cattle and eventually sheep soon destroyed the grass. As farming expanded so the medium-sized islands suffered the same fate. Only economics and the difficulty of working saved the smaller islands. During the last 10–15 years many tussock islands were set aside as wildlife reserves or sanctuaries and thus had gained some measure of protection. But a new threat may now be emerging.

During the occupation we saw how at least one tussock island was destroyed by the actions of the Argentinian military. Later, when British forces were establishing their defences, another island nearby was set on fire. In the past eight months four islands have been wholly or partly destroyed by fire even though recommendations had been made that all tussock islands should be placed out of bounds for military training and recreation. By contrast, between 1960 and April 1982 there was only one record of a tussock island being destroyed by fire and this was most probably from a lightning strike. The military has taken a positive step towards preventing such destruction by appointing a training officer who is also a conservation officer, with a duty to organise the education of troops stationed in the Islands on matters relating to the conservation of wildlife and general country codes. However, a tour of duty for many soldiers may last only four months and the problem of educating every new soldier on such matters is clearly difficult. Eventually, the military plan to produce video tapes illustrating the Islands' wildlife and incorporating a series of 'do's and don'ts'.

To reduce the risk of bird strikes on military aircraft and also to minimise disturbance by low-flying aircraft over major breeding areas, I was asked to assist in drawing up maps showing 'areas of intense wildlife activity'. Although these were initially for the Air Force and Army Air Corps, they have now been incorporated in general training regulations and conservation notes which are issued to all units.

Prior to the invasion of the Falklands by Argentina there was considerable talk of development in the Islands. While hopes of some form of settlement over the sovereignty dispute was possible, it seemed that some time in the forseeable future, oil exploration and deep sea fishing were the larger development programmes most likely, perhaps even as co-operative developments between Great Britain and Argentina. Fishing may still continue, but the prospects for oil exploration are now more distant and concern for its environmental impact has lessened. But now the question is, have we been put in deeper water? The British Government has decided that these small islands are to be the recipients of an unprecedented £30 million, to be spent on development over the next five years. Much of this aid will go into infrastructure which is badly needed and other aid will go into small development programmes. But perhaps one of the most significant changes now taking place and, as I believe, largely resulting from the new development aid, is the purchase and subdivision of some of the larger farming estates in the Falklands.

In 1976 Lord Shackleton and a team of experts at the request of the British Government carried out a socio-economic survey of the Falkland Islands. One of their main conclusions was that in order to encourage more reinvestment in agriculture and to stem the flow of funds from the Islands, there was need to create opportunities for independent Falkland Islanders who wished to own their own farms. It was proposed that smaller farm units be created by dividing up larger estates. For some years the economics of the Falklands wool industry, the only form of agriculture practiced, has been met with a mixture of cautious optimism and doubt. Much of the land in the Falklands is marginal and suited best for extensive sheep ranching and this is a point which would be contrary to the proposed idea of subdivision and a more intensive system. Since the 1976 Shackleton Report was published, however, two large farming companies sold out their holdings to the Falkland Islands Government. These were subsequently subdivided into smaller units and resold to new owners. Since the conflict and the

Above: The smaller offshore tussock islands are rich in wildlife and, in many cases, ecologically intact. The author pictured during a survey of one such island in a remote part of the Falkland archipelago *(Ian Strange)*.

Left: A stand of tussock grass *Poa flabellata* on an offshore island *(Ian Strange)*.

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promise by the British Government of the £30 million for development, a further two large estates have offered their farms to the Government. One of these has already been purchased for subdivision.

It is too early to say how these new farms will develop and prosper in the long term, but if these smaller holdings are to be more intensive and thus hold more sheep per unit, the changes brought about by sheep farming in the Islands over the years are bound to be exacerbated. Intensive grazing on some natural vegetation can improve pastures from a sheep farming point of view, but there is also much evidence to suggest the reverse. There is also a great deal of truth in the belief that extensive farming systems require nowhere near the skill of that needed on the smaller intensive unit!

From a social and perhaps economic standpoint, although the latter has yet to be proved in the long term, there may be merits in the scheme for subdivision. But the implications of subdivision could possibly be a new threat for the Falklands wildlife. There are bound to be changes in the natural vegetation on the areas subdivided, but perhaps the most serious threat is again to the smaller offshore tussock islands. Some of the larger estates own such islands, but as we have seen over the years these were largely disregarded as uneconomic or too difficult to work. That situation has now changed and already new owners are showing interest in such offshore islands. The danger will not be from fire, but from the slower but equally effective destruction of the grass by overgrazing.

While the Falklands remained comparatively obscure and isolated from the rest of the world and its inhabitants were prepared to adopt a simple life style, it seemed that the Islands' natural environment was becoming increasingly important as an integral part of that life. The environment and its wildlife were attaining the recognition they deserved; gradually it was being realised that such things were now rare in the world and were an important asset to the Falkland Islands. Specialised wildlife tourism had become increasingly important over the ten years or so that it had been in operation, and many referred to the Falklands as a southern Galapagos.

Perhaps the most significant achievement was the increasing number of suggestions being made, in many places, including Argentina, that the solution to the Falklands problem could be found through its wildlife. Was it not possible, for example, that the Falklands could be turned into some form of international wildlife reserve, with the Islanders as trustees? The prestige alone of such a move in the eyes of the rest of the world would surely have been tremendous and could even have been a viable scheme. Now, however, the Falklands have experienced a war and there have been changes. We have a situation known as 'Fortress Falklands' and behind this there is the overpowering call for sudden development of the islands. Hopefully this can be guided in the right direction and the importance of the natural environment taken into account.

In the long term there has to be an alternative to 'Fortress Falklands' and for this to happen there must eventually be a return to peaceful relations with the Argentinian neighbours. What the final solution might be to the sovereignty issue, which seems to be a prerequisite for 'normal relations' with Argentina, is at present not clear. Before the conflict there were suggestions for a form of lease-back arrangement whereby sovereignty might have been ceded to Argentina, with Great Britain taking back a lease; this solution now seems remote. Perhaps some form of trusteeship under the United Nations is a possible answer. Returning to the international reserve proposal, is it not possible that the Antarctic Treaty could be extended to include the Falklands, thus freezing claims to sovereignty and, more important, to demilitarise the area? It would seem that over a period of time all signatories of the Treaty, especially the major powers, would come to see this as an acceptable way of ending a dangerous situation.

It is claimed that time heals wounds. We can only hope that wounds heal quickly, for the longer the present situation exists the more danger of a wound that may never heal being inflicted on the Falkland Islands' delicate environment.

Ian J. Strange, Stanley, Falkland Islands.

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