United Kingdom Falkland Islands Trust

Incorporating

Shackleton Scholarship Fund

1998/9 Review and Activity Report

Registered in England as a Charity Number 282786

1999 REVIEW AND REPORT

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Photographs by Dr J McAdam and FIG archives
Front Cover: Swan Inlet, E Falkland, a typical small settlement

UNITED KINGDOM FALKLAND ISLANDS TRUST (UKFIT)

Incorporating
SHACKLETON SCHOLARSHIP FUND (SSF)

Patron - HRH Princess Alexandra

Development, Activities and Achievements 1999

Introduction

The Trust has now entered its nineteenth year of Charity activity in the Falkland Islands. The general pattern of work, as a pro-active group, is to provide consultancy, sponsor research and undertake project development in the Islands' forestry and land use sector, together with some civic assistance. The significant development in recent years has been the planned phasing of the Trust's original own effort towards a closer integration with the Falkland Islands Government Department of Agriculture (DOA) programmes, as supported financially by the Falkland Islands Development Corporation (FIDC). This constructive development has been aided by discussions between key persons during mutual visits to and from the United Kingdom and the Falkland Islands, together with continuing liaison with the FIDC representative, Mr Ian Cox, in London and the Trust's Sub-Committee in the Islands.

The Trust continues to meet quarterly at Falkland House, London, with its 86th Meeting being held in July 1999. Starting in 1981 as an unknown body, on the suggestion that assistance was required in the Falkland Islands, and additional support was needed in some of its requirements, the decision to concentrate on agriculture support in a totally sheep farming economy at that time proved correct. Despite the broadening of the economy since those earlier days, sheep farming remains the basis of the agricultural industry sector and no effort made into the several aspects affecting the industry is wasted. In fact, great progress is being made on the mutual basis described.

Since it first started work, it has taken time for the Trust to become known in the Islands and for its objective to be understood. However, the need was assisted greatly by the work of its two appointed consultants, one of whom, Dr Jim McAdam, has had long connections with the agriculture in the Islands. The co-ordinated project work of the two Trust Consultants and that of DOA is described elsewhere in this report.

Successive Governors of the Islands, in turn, have been very supportive and helpful in raising the profile of the Trust and by their personal interest in the project work in hand. In handing over the appointment to the present Governor,

Mr Lamont, Mr Ralph commented that he believed that the Trust's activities made a difference and that HRH The Prince of Wales was interested in the work outlined to him during his 1999 visit.

Personalia

Captain Paddy Vincent RN, Chairman, has completed his second year in Office and his appointment has been extended to February 2001. He visited the Islands at the end of 1998, accompanied by Dr Jim McAdam, Consultant, when he was able to review the Trust's activities on site, liaise with the various Government organisations and meet the several officials, farmers and others concerned with the Trust. Air Commodore Peter Johnson, former Commander of the British Forces in the Falkland Islands, has joined the Trust as a Trustee. Councillor Lewis Clifton retired as Trustee in May 1999, having served for eight years, to enable him to devote more time to his work in Government. (See Annex A)

Biographies for Mr David Stickland and Dr Jim McAdam (Trust Consultants) are at Annex C.

Mr David Tatham CMG, formerly Governor in the Falkland Islands, was appointed as a Trustee in July 1999. He took over, also, from Sir Rex Hunt CMG as Chairman of the Shackleton Scholarship Fund Management Committee.

Falkland Islands Government Office (FIGO)

This office plays an important part in the working of the Trust due to the personal support given by Miss Sukey Cameron, The Representative, Mr Ian Cox, FIDC Representative, use of the Conference Room for meetings and the general help of the FIGO staff. All this is appreciated greatly.

Secretarial

Mrs Doris Dodson, Administration Secretary of the Trust since its inception, has continued to provide the most valuable and dedicated work to ensure the efficient functioning of the secretariat. This work includes the book keeping and analytical responsibility for account handling of funds, including the FIDC Grant, together with co-ordination of the day-to-day correspondence and preparation of papers.

Meeting between UKFIT and General Manager FIDC

With the importance of close liaison between the Trust and the Falkland Government agencies, as already stressed, a meeting held in Falkland House, London, on 9 February was of particular value. Attended by the trustees, Mr Hugh Normand, General Manager FIDC, gave a run down on the current economic situation in the Islands covering the work of the Corporation, together with the oil, fisheries and agricultural situations. He mentioned that potential developments included a salmon egg market, shell fish and live stock farming, and possible reindeer farming in South Georgia. In discussing current Trust

projects, Mr Normand considered that they all had value, subject to the availability of funding which would be covered in the coming budget bids.

A lengthy discussion then followed on organic husbandry policy, particularly the marketing of organic wool, a subject covered elsewhere in the report. Current constraints were progress on construction of the abattoir, now going ahead, and commitment by farmers whilst understanding the premiums obtainable in the organic market in Europe, as well as possible conflict with present fertiliser distribution activity. However, progress has been made with these subjects since the meeting. The Chairman took the opportunity to thank FIDC on behalf of trustees for the generous annual grants which enabled the constructive support activity to continue. In return, Mr Normand confirmed his views on the usefulness of the Trust.

Financial Activities

The formal accounts for the Trust's financial year ending 5 April 1999 have not yet been audited. However, a summary of the Core Fund is given below. That for the Shackleton Scholarship Fund is included in their section of the Review.

In April 1999, net assets in the Core Fund stood at about £88,000 (1998 £80,000). The Shackleton Scholarship Fund stood at about £376,000 (1998 £338,000). In both cases, the increase is mainly because of growth in the value of underlying investments.

In the Core Fund, the trustee's policy remained to cover office expenses and other central overheads out of the income of the Fund, with the cost of projects in the Falkland Islands being covered by grants from FIDC.

Summarised for the financial year ending on 5 April 1999, a total of £21,370 was expended within a budget of £35,825 with the balance awaiting completion of the projects concerned. These activities are detailed at Annex B under the headings of Core Administrative Expenses, Agriculture and Forestry, Natural Resources, Agriculture Marketing Development and Civic support.

If required, account details for both the Core Fund and the Shackleton Scholarship Fund are available on application to the Administrative Secretary of the Trust.

The Trust and the Internet

Not to be left behind in the fast developing world network of communications, The Trust joined the Internet in 1998 by taking a page in the FIDC Web Site. Helped by Mr Ian Cox, FIDC London Representative, a promotion page was designed to give the background for the Trust's work, including projects of potential interest for agricultural research. While use of the Internet is in an early stage for UKFIT, there have been interested approaches from overseas. It may be appropriate soon to include details of some of the projects in hand to encourage further approaches which, in turn, can be of reciprocal research

value, such as the tree development trials in similar South Atlantic climate and soil conditions.

Agriculture and Marketing Development (Mr David Stickland, Consultant)

In the agricultural sector, the Trust has continued to help Falkland farmers with diversification by making use of sustainable assets, suggestions on marketing and help with seeds and other inputs.

Composting. The Trust's largest project was implemented during December 1998 in conjunction with FIDC, namely the setting up of a composting study, using an experienced UK firm, to assess the composting possibilities on the Islands.

The resultant report will be made available. The main thrust will be the making of compost in Stanley using the town's waste, abattoir by-products, seaweed and peat, and, out in the Camp, using culled sheep, peat, seaweed and any other material available.

The compost, if it proves economical and practical, can be used for improving pastures and vegetable production.

Marketing. The main effort with marketing has been to arrange for a qualified organic inspector, financed by FIDC, to inspect as many farms as possible with a view to them being approved as organic to European standards. The inspector's report is awaited, together with the decisions to be made by his approved organic sector body.

Once a satisfactory report is received, it should be possible to market certain Falkland wool as organic after two years, or so, of transition time.

Pigs. It is understood that the Large Black pigs the Trust sent out are doing their job efficiently and that pigmeat is becoming more available.

Cattle and Cattle Feed. Increasing importance is being placed on cattle production; a long term project that needs preparations to be started now. We understand that the potential market will be the international meat trade, maybe concentrating on Europe and the Far East. To produce cattle, with conformation that will result in meat that will compete satisfactorily with other beef, some concentrated feeding may be needed for the last two months, or so, before slaughter.

The ideal would be the production of finishing feeding on the Islands. With this in mind, the Trust has supplied grain seed for trials including wheat, oats and triticale.

But when it comes to a protein supply, the impact of soya from international traders would result in some soya being from Genetically Modified Soya Beans. That would straight away bar the meat from organic status as, at the moment, UK organic standards ban Genetically Modified crops. The premium for organic beef animals in the UK is overf £100 per animal. A very useful premium.

One answer in meeting this requirement is to try producing protein from crops grown on the Islands. That can be in the form of Spring Tic Beans, or winter beans, if suitable. A useful by-product of growing beans is the 30lb, or so, of nitrogen per acre that they leave behind.

Organic Produce. If the farms inspected by the inspector from organic Farmers and Growers Ltd are passed as organic, we can consider what assistance we can give to the Islands in producing organic crops, meat and wool.

All supermarkets are finding an increasing demand for organic food. That demand has been increased by the BSE fiasco, GM crop scares and the growing feeling that scientists food safety assurances are not always entirely reliable. Further, there is the spectre of the terrible global companies, so hated by the food scare activists and so well promoted by them, as seeking nothing but money without consideration for human safety.

Imagine, therefore, the beneficial image of the Falkland Islands, with no use of fertiliser or agro-chemicals, marketing under recognised organic standards.

Organic food is already worth several hundred million pounds, and that accounts for about 1% of UK food consumption. The market has hardly started. We suggest that the Falkland Island farmers should be in that market, cutting out their portion of the trade.

David Stickland

Tree Development and Connected Agricultural Activity (Dr Jim McAdam)

Following the Trust's initial work in this field, the tree development programme has been actively taken up by the Department of Agriculture in the Falklands. Largely through the efforts of the Senior Scientist, Aidan Kerr, it has now planted 5 major demonstration shelterbelts at key locations in the Islands. Advice for these locations comes through a steering group, the UK Falkland Tree Advisory Group on which the Trust is represented. The trials established by the Trust at Fitzroy, Keppel Island and Stanley continue to thrive and tree growth is regularly assessed. Most of the Trust's tree development work is concerned with identifying potentially valuable sources of trees in Southern Chile (largely through the University of Magallanes in Punta Arenas) and in testing a range of species and techniques. This latter work is carried out in the Trust's experimental plantation area at Port Howard (work by Ron Reeves and Robin Lee). Trees from Southern Chile have been distributed to local gardeners and farmers who have planted them in a range of locations and make observations for the Trust. A paper on the potential for trees to enhance the grasslands of the Falklands was presented at the European Grassland Federation meeting in May and is included at Annex D. The final text for a tree planting guide has been agreed and the booklet will be printed shortly. Successful application has been made to the Shackleton Fund for a specialist on Willow trees (Malcolm Dawson) to visit the Islands, provide advice and plant promising strains in appropriate places.

Composting

With considerable help from the Trust and its Trustees, Mr Mickey Pery of Eco Sci Ltd visited the Islands in 1998 to study the potential for composting waste materials. He concluded that it would be definitely advantageous to establish a composting plant at the new abattoir (utilising waste plus peat and kelp) and that some small scale trials on composting sheep carcasses with kelp and peat should commence in the Camp. (See Composting page 4)

Cereal Production

It is essential that the area of cereals grown in the islands increases substantially to support cattle finishing. The Trust has provided samples of seed of suitable varieties for trials and has provided advice on latest developments in machinery which is of help to Island farmers.

Science in the Falkland Islands

Following a request from the Chief Executive, Dr McAdam is providing background advice to FIG on how the documentation and dissemination of scientific activity can be improved in the Islands. The document will also suggest the potential value of science to the Islands and how it can be exploited in the future.

Erosion Control and Tussac Grass

The Trust's kelp development work has sourced a contact in Ireland who has produced a seaweed gel to help seed establishment in difficult locations. Dried material has been sent to the Islands for trials in conjunction with Department of Agriculture and Queen's University, Belfast. It is still felt that further work needs to be carried out to help develop the potential of tussac grass as a forage resource and the Trust will continue to promote activity in this area.

Community School Programme

The Falkland Islands Community School provides a broad education base for both young and mature students in the Islands. The Trust has been pleased to help the school in a small way over the past few years, particularly in relation to its horticultural and agricultural activities. Tangible assistance with practical skills in the form of gardening resources such as a shed, tools, polytunnel seeds etc., has been provided and on a more academic level, specialist text book purchase has been aided. It is planned to specifically tailor any of the development in the Science recording project (referred to above) towards the school sector so that children can access this material.

Report of the Shackleton Scholarship Fund Advisory Committee for the Year Ended 5th April 1999

SCHOLARSHIPS

£13,207 were spent on scholarships in the year ended 5th April 1999, bringing the total amount awarded since the start of the Fund in 1995 to £39,132, of which £19,811 went to academic scholars and £19,321 to 'quality-of-life' visitors.

A major academic award of £4,000 went to Dr Fiona Wilson for the preparation of a field guide to the grasses, sedges and rushes of the Falkland Islands. This had the full support of the Falkland Islands Director of Agriculture, Falklands Conservation, UKFIT consultant Dr McAdam and Queen's University, Belfast. Other academic scholarships included a geological examination of the Falkland Islands by Mr Chris Thomas (£2,000) and a short cartoonist course for a Falkland Islander living in London, Mr John Taggart (249). An award of £2,000 for lichen research in the Falkland Islands by Dr Kerry Dalby was postponed until the next financial year owing to administrative difficulties.

'Quality-of-life' visitors included a fly-fishing instructor (Mr Peter Lapsley), a netball coach (Mrs Anne Norman), a pianist and water-colour artist (Mr Ian Houston), a Latvian jazz trio and Folk-and-Country singer Mr Hank Wangford with the 'Lost Cowboys'.

FINANCE

Donations received in the financial year amounted to £930. Administrative costs were kept to £257 and Auditors' fees were £575. Bank interest was £816 (Standard Chartered, Stanley, £51 and the Bank of Scotland, UK £765). Dividends from investments amounted to £15,213, making the total income for the year £16,959 and giving a surplus of £2,920.

Against this must be set the printing costs of Mr Richard Munro's booklet, 'Place Names of the Falkland Islands', which amounted to £6,014. Sales have gone well in the Falkland Islands, amounting to £2,055, with sales in the UK much lower at £203. As a result, the Fund ended the financial year with a deficit of £836. The Advisory Committee is confident, however, that future sales will more than cover the printing costs.

INVESTMENTS

The changes in the Fund's COIF investments envisaged in last year's report were made in May in accordance with the advice given by the UKFIT's Honorary Treasurer, Mr John Dodwell. By the end of the year, the Fund had grown by about 20% overall since first investing three years ago.

PUBLICITY

Mr Richard Munro's booklet received favourable reviews on its publication in October. Dr Fiona Wilson had excellent publicity in the Falkland Islands with a public talk on her project, an article in the Penguin News and another in the Department of Agriculture's Wool Press magazine. Her identification booklet should be published in the next financial year.

Mr Chris Thomas gave a talk at Government House on Falklands geology and will meet the Advisory Committee and send a detailed report to the Falkland Islands Journal.

All the 'quality-of-life' visitors received excellent publicity in the Islands and their visits were highly successful. Peter Lapsley published a fascinating account of fly-fishing in the Falklands in the leading British fly-fishing magazine and produced a thorough report for the Shackleton Scholarship Fund.

Mr Hank Wangford's visit was a huge success and widely publicised. He was asked to present a copy of his book to the Stanley Library and also produced a film for the BBC Video Diaries Programme.

Mr Ian Houston kindly presented one of his paintings of Stanley harbour to the Shackleton Scholarship Fund. This work was valued at £1,450 by his London gallery.

The Latvian Jazz Trio was extremely well received by the Islanders and takings at various performances recouped almost half of their travel costs from Latvia to the Falkland Islands.

Committee members took every opportunity to publicise the Fund in the UK and more applications were received as a result. Mr Harold Briley published several articles in the Falkland Islands Association's Newsletter and also introduced the Fund to a larger audience in an excellent article that he wrote for the 'Geographical' magazine on Sir Ernest Shackleton's 1914-16 Trans-Antarctic expedition.

ADMINISTRATION

Costs were kept to a minimum in both the UK and the Falkland Islands and our thanks go once again to the many volunteers and sponsors who support the Fund. The importance of having a local sponsor was emphasised. We are also seeking to have more contact with scholars and 'quality-of-life' visitors after their return home.

Finally, the Advisory Committee would like to thank the UKFIT Trustees, the staff of the Falkland Islands Government Office in London and HE the Governor and members of his committee in Stanley for their continuing help and support.

Connections with the Cathedral

With its earlier support for the Cathedral, the Trust has been interested to hear from the Reverend Peter Millam who was Senior Chaplain during the politically hectic years from 1966 to 1970. Peter comes from Falkland Island stock and has many cousins living and working in the Islands. He was responsible for the 75th Anniversary Celebrations of the Consecration of the Cathedral in 1967 and the Centenary of the Bishopric in 1969. Those celebrations coincided with the completion of the restoration of the Cathedral fabric in 1992 for which the Trust made a donation

Historic Ships' Names on the Camber

CIVIC ASSISTANCE. Another small project which the Trust assisted with during the year was the refurbishment of the well-known ships' names outlined by white stones on Camber, the hillside opposite Stanley. They had become overgrown and faded. The clearing and repainting was done by Gurkha soldiers, Scouts and Sea Cadets with the cost of the paint covered by the Trust.

The Way Ahead - An Overview

We live in times of bewildering change in political shifts; in technology and communications, in international structures and markets, and in a world shaping up to all that the new Millennium can be expected to bring. All of these factors will continue to have their impact on the economy and lifestyle of the Falklands. The Trust has to ensure that it keeps abreast of these changing activities and demand which all of these entail. In particular, the last few decades have led to greater diversification and animal husbandry, calling for increased emphasis on vegetable production, cattle breeding with its commensurate need for the development of new animal feed crops and more effective shelter belts for the sheep.

Now the worldwide demand for organically raised foodstuffs and the possible future effects of the current debate on genetically modified products are also likely to have their impact on production in the Islands. The advent of the abattoir in 2000 will bring further change, including new opportunities stemming from animal waste products and increasing quantities of domestic waste.

Within this scenario, the Trust continues to play its part in assisting the authorities in the Islands with advice on current trends in methods and markets, together with detailed technical assistance, experimentation and research into best practices, including advice on the best seed, plant and tree species to meet the special soil and climatic conditions in the Falkland Islands. These are subjects which have been covered in more detail in this report.

The Trust has progressed all this work in a very close and happy relationship with the Department of Agriculture and other authorities in the Islands. It has been especially grateful for the generous financial support from the Falkland Islands Development Corporation, without which its contributions in these fields would have been severely limited. In this context, with the steady fall in interest rates, the Trust has been experiencing increasing difficulty in covering the necessary administrative costs from its investment income. Any contributions, financial or in kind, which commercial interests or individuals may wish to make towards the work of the Trust, as outlined in this report, will be appreciated greatly by the trustees and those in the Falkland Islands whom the Trust benefits.

The Trust has been much heartened by the reaffirmation which we have received from his Excellency the Governor, the General Manager of the Development Corporation, the Director of Agriculture and others in the Islands on the value which they attach to the Trusts' activities and we look forward to carrying these forward with renewed commitment into the next Millennium.

Paddy Vincent, Chairman

August 1999

Aiden Kerr and Louise Amos (DoA and QUB) study eroded pasture as part of revegetation studies.

Southern beech tree from Punta Arenas establishing successfully in the Port Howard Woodland plot.

Aiden Kerr (DoA) examines Lodgepole Pines over 2m tall at the Fitzroy site (Trees planted in 1990).

Dennis Middleton, a participant in the Trust "Small Tree Scheme" (with Macrocarpa trees, Stanley).

Mickey Pery (left) and Robin Lee examine the Trust's poster outlining activities in the Islands. (Port Howard)

Willow trees hold great potential for hedging. (R. Reeves garden, Port Howard)

Annex A

PERSONALIA
UNITED KINGDOM FALKLAND ISLANDS TRUST

Patron	HRH Princess Alexandra
Trustees	Rt Hon Lord Strathcona and Mount Royal - President
	Major General N St G Gribbon OBE - Vice President
	Captain P M C Vincent CBE RN - Chairman
	Sir Rex Hunt CMG - (Managing Trustee Shackleton Scholarship Fund to July 1999)
	Mr D G Ainslie - Honorary Secretary
	Mr J C Dodwell - Honorary Treasurer
	Air Commodore P G Johnson OBE (Appointed March 1998)
	Mr D Tatham CMG - Managing Trustee Shackleton Scholarship Fund (Appointed July 1999)
	Mr R M Lee) Trustee Sub-Committee in
	Mr T J D Miller) Falkland Islands
	Clr D L Clifton (Resigned May, 1999)

Principal Officers

Administration Secretary	Mrs D Dodson
Project Consultants	Mr David Stickland, Agriculture and Marketing Dr Jim McAdam, Department of Agriculture for Northern Ireland, & Queen's University, Belfast
Charity Number	282786
Auditors	DEKM, 5 Trinity Terrace, London Road, Derby DE1 2QS

SHACKLETON SCHOLARSHIP MANAGEMENT COMMITTEE (UK)

Mr D Tatham CMG - Managing Tustee
Sir Rex Hunt CMG
Mrs J Cox - Hon Secretary
The Hon Mrs Alexandra Shackleton
Mr H Briley OBE
Mr D C Thomas CMG
Miss S Cameron - Rep FIG
Captain P M C Vincent CBE RN - Chairman UKFIT

Annex B

Financial Year 1998/99 Budget out-turn from 1 April 1998 to 31 March 1999

Serial & Item	Annual Budget	Expenses	Balance	Accruals
UK Core Expenses				
1. Admin Secretary	2,400	2,400		
2. Office Costs	500	719	-169	
3. Audit	800	611	189	
4. PR	600	240	98/99 Report	360
5. Sub Committee	300		VIP Visit	300
6. **Total**	**4,650**	**3,970**	**20**	**660**
Agriculture & Forestry				
7. Kelp & Organic Fertiliser	500	232	268	
8. Tree Species & Provenance select	1,500	1,489	11	
9. Tussac Grass	1,500	1,400	100	
10. Tech analysis of Materials	1,000	1,000		
11. Develop computer based agriculture course	1,000	1,125	-125	
Natural Resourses				
12. Calcareous base (DOA project)				
13. Travel/Visits	4,900	5,086	-286	
14. Consultancy	2,400	2,400		
15. **Total**	**12,700**	**12,732**	**-32**	
Agriculture Marketing Development				
16. Composting & Seaweed Usage (EcoSci)	8,500	262	EcoSci	8,238
17. Seaweed Usage for Livestock (EcoSci)	5,000		Project	5,000
18. Grain & Grass Trials	200	214	-14	
19. Vegetable Seed Trials	75	9	66	
20. Irrigation System (2,500-1997/8 Budget)				
21. Contingency/Travel	300	350	-50	
22. Consultancy	2,400	2,400		
23. **Total**	**16,475**	**3,235**	**2**	**13,238**
24. Aerial Survey Study	1,000	1,000		
Civic			Memorial Wood	
25. Contingency for local projects	500	293	37	100
26. School	500	500	Paint for Camber	50
27. **Total**	**1,000**	**793**	**57**	**150**
28. **Grand Total**	**35,825**	**21,730**	**47**	**14,048**

Annex C

Personal Profile: Dr Jim McAdam BSc, B Agr MAgr. PhD

Position: Principal Scientific Officer, Department of Agriculture for N. Ireland

Research Responsibilities

1. The biological and ecological interactions within agroforestry systems. This includes:- pasture agronomy, grazing ecology, biodiversity monitoring, livestock performance, tree growth and form, soil biology, and geochemistry and socio-econimic aspects of silvopastoral systems including farmer attitudes and on-farm monitoring.
2. Biological and landscape monitoring of agri-environment systems as a support for Policy division and a determination of management prescriptions.
3. Sustainable management of upland heathland communities.
4. Ecology and management of southern hemisphere cool - temperate heathlands, including biodiversity monitoring, tree selection and sustainable farming practices.

Teaching Responsibilities

Reader in the Department of Applied Plant Science, Queen's University Belfast.
Teaches on:-
Undergraduate courses in Environmental Management; Advanced Crop Science; Plants and Environment.
MSc Courses:- Rural Development Practice; Ecological Sampling and Data Analysis.
Supervises currently 4 PhD and MPhil and 3 MSc students on summer projects and 2 European sabbatical students on topics underpinning the research programmes detailed above.

Local Responsibilities

DANI Environmental Policy Review Group
Board of Committee of Management, Institute of Irish Studies
Scientific Committee, Ulster Museum
External Course Assessor, HND in Environmental Management, Causeway Institute

National Responsibilities

Chairman, UK Agroforestry Forum
MAFF Upland Research Steering Group

International Responsibilities

Scientific Adviser to Falkland Islands Government
Trustee, Falklands Conservation
Consultant, UK Falkland Islands Trust

Jim McAdam first went to the Falklands in 1976 when he spent 3 years helping to establish the Grassland Trials Unit. He has visited every year since 1983 and has wide knowledge of agricultural and other land issues in the Falklands. He has published numerous scientific articles and two books about the Falkland Islands and he currently edits the Falkland Islands Journal.

Personal Profile: Mr David Stickland, Agriculture and Marketing Consultant

I am one of those fortunate people who have managed to be involved all my life in what was always my ambition, farming or perhaps agriculture in it's broader sense. That and gardening have been my hobbies as well.

On leaving school in 1947, I helped run our small family farm until that was sold for building land. (Poor chalky soil much better for houses than trying to grow something).

There followed several jobs - farm secretary, seed salesman, six years with East Kent Packers Ltd., the largest fruit co-operative in Europe at that time, EKP started M&S in fruit other than bananas. From EKP we went to New Zealand to a sheep farm in the South Island, and then we bought a small farm in the North Island which was run organically. All that was done as a family with children.

From New Zealand we went to British Columbia to Kelowna in the Okanagan Valley. There I was in real estate responsible for selling orchards, worked for a fruit co-operative, and finally started an organic agricultural and horticultural journal. But the timing was too early and the huge chemical companies beat us.

Came back to England and worked for the Soil Association as editor, also registering their present symbol and starting the Soil Association Organic Marketing Company Ltd.

With the blessing of the SA Council, I started organic Farmers & Growers Ltd., a farmers co-operative for organic farmers. I ran OF&G for 23 years making it the largest organic producer group in Europe at that time. We had members all over the UK and also the Isle of Man, Africa, India and so on. OF&G was the first body to be approved by the UK Register of Organic Food Standards.

OF&G is still going with over 400 members, and was responsible for the organic inspections done in the Falklands.

Many years ago when starting OF&G, I created the International Institute of Biological Husbandry with a view to putting a scientific base behind organic farming. We had quite a number of scientific members with a very keen core who helped me run it. But we were too early and found it almost impossible to attract funds. Those were the days when agro-scientists were reigning supreme and fertilisers and agro-chemicals were going to make deserts bloom. DDT was the wonder insecticide and bagged nitrogen would grow crops to feed the world.

Things have changed somewhat since then, and now that I have retired the organic market has really taken off.

David Stickland

Annex D

The potential for trees to improve the shrubby grasslands of the Falkland Islands

J. H. McAdam - UKFIT Consultant

Department of Applied Plant Science and UK Falkland Islands Trust, Queen's University, Newforge Lane, Belfast, BT9 5PX, UK

A paper presented to the European Grassland Federation in May 1999.

Summary

In the Falkland Islands land use is almost exclusively extensive sheep grazing and the vegetation is acid moorland with no indigenous tree cover.

Shelter from the strong cold winds would be extremely advantageous to sheep flocks and might allow crops to be grown in a diversified rural economy. In a preliminary experiment, plots in sheltered, unimproved shrub grassland and improved, reseeded pasture yielded 1.2 and 0.7t DM ha-1 more respectively than exposed plots.

Previous experience with more widespread tree planting was largely unsuccessful and pessimistic and in 1989 a programme of research commenced into factors affecting the establishment of conifers to act as initial windbreak protection on shelterbelts. A trial was established on a grassland and a heath site comparing the effect of ground preparation and nutrition on establishment and early growth.

On the wetter grassland site, Pinus contorta has proved more successful than *Picea sitchensis* and both species performed well on heathland. Pit planted trees grew significantly better than slit planted trees and nutrition effects were not noticed until 5 years after planting.

The trials have demonstrated that trees can be successfully established into native grassland in the Falkland Islands and that shelter is likely to have a significant impact on pasture production. The resultant soil improvement is likely to improve the chance of growing improved forage species and impact significantly on land development in the Falkland Islands.

Keywords: Falkland Islands; trees; grasslands; shelter.

Introduction

The Falkland Islands have a cool, dry climate with exposure to salt laden winds, high levels of incident sunshine and periodic dry spells. The soils are acid peats with low levels of mineralisation and poor drainage in many areas. Vegetation is dwarf shrub heath or Magellanic moorland and trees are virtually absent (Summers and McAdam, 1993). The flat or gently undulating landscape results in little opportunity for shelter from the cold winds (McAdam, 1985). The

inherently low soil fertility and the poor quality and productivity of the natural pastures result in levels of sheep production which are low due to the poor nutritional base and adverse climatic exposure (McAdam, 1980, 1985).

Agriculture has been traditionally dominated by sheep from wool-producing farming systems operating at a low level of input and output on large units. However, since the early 1980's a programme of agrarian reform has restructured farm ownership towards smaller, family operated units.

The Falkland Islands have always been dependent on a single product industry and on external supplies for feedstuffs and other products necessary for agricultural expansion. Hence there is a need to diversify the range of agricultural production and to consider wider land use issues in relation to a diversified rural economy. Such diversification might include an expansion in the use of beef cattle, horticulture and cereal production to provide livestock feed.

Trees, by enhancing soil quality, providing shelter and producing an industrial product for local use are an essential prerequisite to this view of an expanded rural economy. There are currently only a few hectares of established woodland on the Islands, largely as a result of soil and climate limitations, unenthusiastic advice and an unawareness of the availability of planting material of suitable provenance (Low, 1986).

Although it would be undesirable to clothe large areas in coniferous woodland and tree growth will always be slow in the Falkland Islands, there is a widespread need for shelter. Now that sheep flocks are smaller and the national flock is being substantially upgraded from improved stock imports, the need to reduce losses is all the more important. Strategically placed shelter around settlement farms or in breeding stock camps could be used over the critical periods of lambing and shearing to make a very significant impact on lamb survival and on sheep recovery after stress. The production of beef cattle is to be promoted following the decision to build a new abattoir and improved pasture and cereal or fodder cropping will be needed to sustain this stock.

There have been sporadic attempts to establish trees over the past 80 years or so. These have been largely unsuccessful (with a few exceptions) up until the recent programme initiated by the UK Falkland Islands Trust. A thorough review of these trials is documented by Low (1986) and McAdam (1982, 1996). This paper reports on trials to establish introduced conifers in grassland and on previous work demonstrating the effect of shelter on pasture growth in the Islands.

Materials and Methods

Experiment 1 The effect of shelter on pasture growth

In a preliminary investigation, a comparison was made between the growth of 'unimproved' (Cortaderia pilosa dominant) pasture and adjacent 'improved' *(Agrostis magellanica, Holcus lanatus, Poa pratensis dominant)* pasture in a sheltered and an exposed situation. The shelter was provided by a 15 m wide

belt of *Cupressus macrocarpa* (7 m tall), the 'Government Forest', which spanned the fenceline between both pasture types. Plots (0.25 m2) protected from grazing were pretrimmed in early September and 4 replicate plots cut on each of 3 occasions through the growing season. The plots were protected from grazing and the dry matter yields at each harvest calculated.

Tree planting and establishment was investigated on two sites, a shrub grassland and a shrub heath. Two species, lodgepole pine *Pinus contorta* and Sitka spruce *Picea sitchensis* were either slit (or notch) planted or pit planted (- small pit dug to disturb the soil). Plots of trees (10/plot) received either no fertiliser or phosphate only (80 kg P ha-1 equivalent), or kelp compost (in the pit).

Results

Overall yields were greater on the 'improved' than the 'unimproved' and on the 'sheltered' than the 'exposed' plots on all occasions (Table 1).

Table 1. Mean dry matter (kg ha-1) at each harvest (each value being the mean from four plots) from unimproved and improved pasture in a sheltered and an exposed situation

Treatment	Date	Sheltered	Exposed
Unimproved	21 Nov	330	210
	27 Jan	2610	1820
	28 April	2960	1790
Improved	21 Nov	660	310
	27 Jan	3280	2620
	28 April	4140	3410

On the 'improved' plots in spring, the yield was twice as great in the 'sheltered' as in the 'exposed' situations. These results must be treated with some caution as confounding effects such as the higher level of soil fertility in the plots leeward of the trees due to stock habitually sheltering there may have some enhancement effect. However, from experience from other sites of the effects of varying soil fertility on yield, it was thought unlikely that all of the observed differences could be accounted for by factors such as fertility.

In view of the relative harshness of the climate and very low levels of available soil nutrients it is likely that the effects of shelter on spring grass growth would be more pronounced in the Falkland Islands than in other locations. This small trial demonstrates some of the potential benefits which shelter could bring to agricultural production in the Falkland Islands.

On the grassland site, Sitka spruce did not grow well and this species was eventually abandoned (McAdam, 1996). Both species grew on the heathland site but growth was poorer than on the grassland site (Figure 1). The effect of

planting method can be compared from both sites (Figure 1). Overall, tree growth (Lodgepole pine) was significantly greater from pit planted trees than slit planted trees at the grassland site. Seven years after planting mean height of slit planted trees was 52 cm and of pit planted trees, 64 cm. There was no significant effect of planting method on tree health, but all surviving trees on this site were healthy (McAdam, 1996). In the fifth year of growth, (94-95) trees grew approximately the same amount from both planting techniques (14-15 cm), the reduced growth from slit planting occurring in the first few critical years of establishment. On the heathland site, response to pit planting was less clear and overall this site is less suitable for tree growth.

There was good growth response to phosphate in the slit planted trees in the heath site. Trees were significantly higher in this treatment and were higher than any other treatment. Early response to fertilisers at the grassland site had disappeared five years after planting and growth in the fifth year was similar over all treatments (Figure 1). On this site, composted kelp in the pit at planting was beneficial, resulting in trees approximately 5 cm taller overall and between trees grew slighter faster (by 1 cm per annum) where kelp had been applied than where no kelp was applied.

Discussion and conclusions

Shelter can enhance grass growth in the Falkland Islands and the subsequent effects on livestock performance and production are likely to be substantial.Trees can be grown satisfactorily on shrub grassland sites. Lodgepole pine is a better species to use than Sitka spruce over a wide range of sites. Pit planting is strongly recommended for adequate tree survival and growth. Trees which have been slit planted seem to subsequently grow satisfactorily once established. Where trees are pit planted some form of moisture retention such as provided by kelp compost should be used, its beneficial effects are carried into the second year after establishment and beyond.

Although it will take some time for the real benefits of shelter to be demonstrated, and the improvement in soil quality which will allow improved forage grasses, legumes and cereals to be grown, the indicators are that trees can be successfully grown in the shrub grasslands of the Falkland Islands and have the potential to make a significant impact on land use. This small trial programme has now been greatly expanded by the Department of Agriculture who have planted a series of demonstration and trial shelterbelts throughout the Islands.

Acknowledgements

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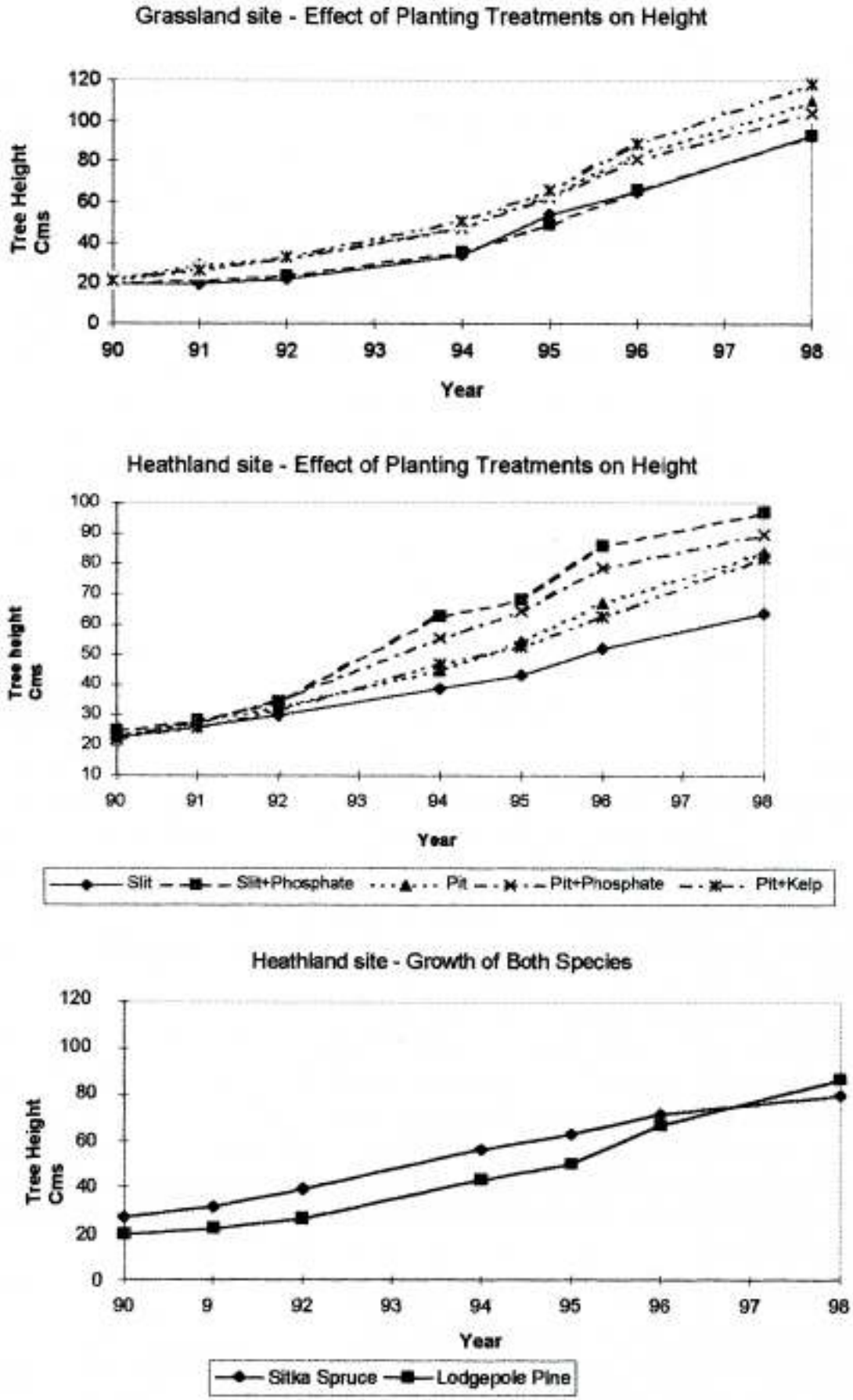
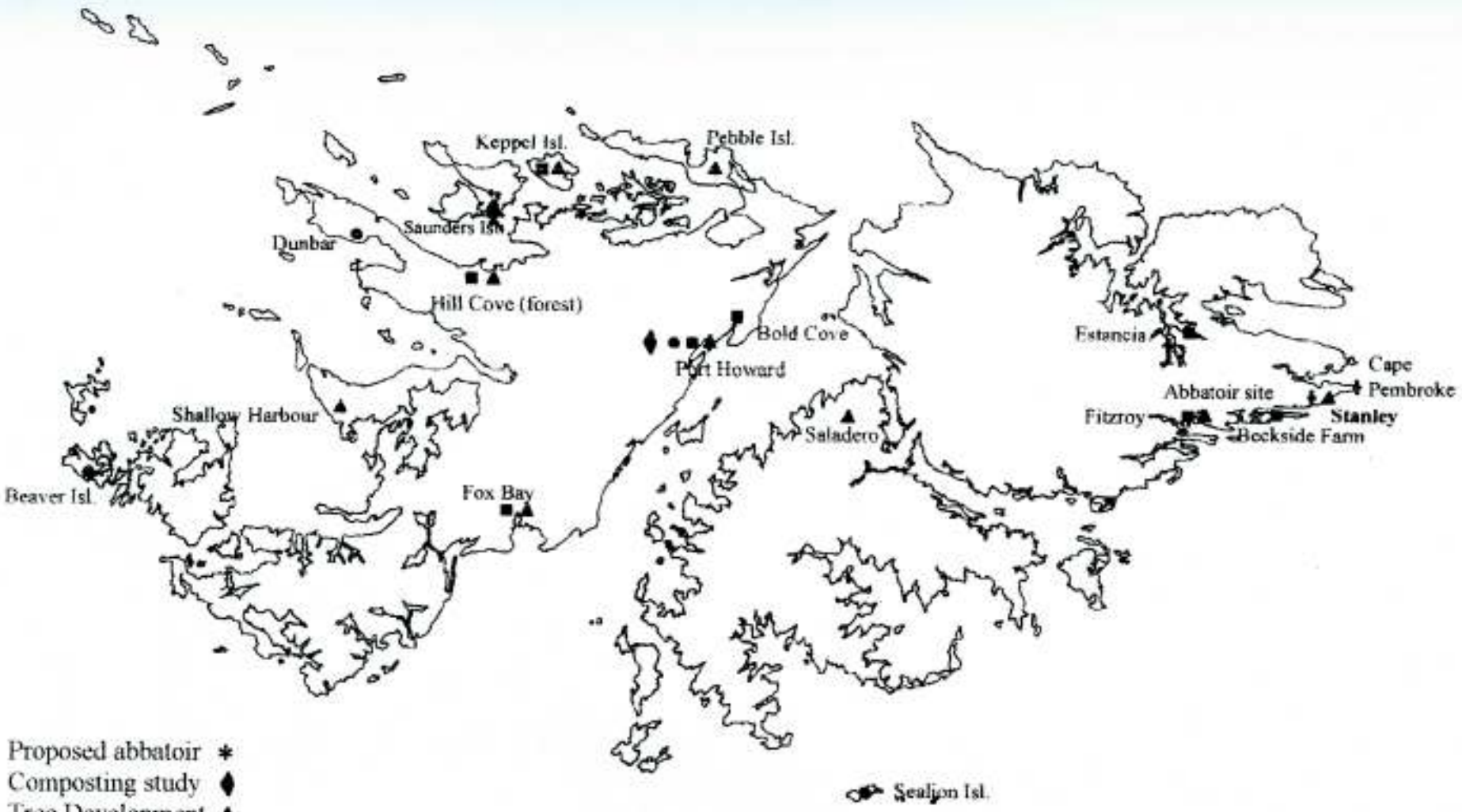


Figure 1. Tree growth at the grassland and heathland sites 1990-1998 (1998 measurements courtesy of Grant Munro, Dept of Agriculture, Stanley)



Map showing the locations of sites where UKFIT have been involved in research/development or civic support work 1998