

5. Grasslands and sheep farming

§ a. Introduction

The pattern of Falkland Islands agriculture has changed very little since the introduction of sheep farming in the mid-nineteenth century. The infertility of our soils coupled with the very windy and cool oceanic climate, and the great distance from the principal market in Britain, has ensured that wool remains the only agricultural export.¹

These words, written by the Director of Agriculture in the Islands in 1998, are not an accurate assessment of agriculture in the Islands. There have been some significant changes in the pattern of Islands' agriculture in the past twenty years - principally brought about by the sub-division of large farms and the growth of small owner occupied farms. But these changes in recent agricultural methods and techniques (see Shackleton Report 1976 & 1982 below) are minor in comparison with the large changes which have taken place in the natural environment of the Islands as the result of the human involvement since their discovery and settlement.

§ b. Grasslands and pasture

The vegetation of the Islands and South Georgia evolved without the influence of large mammalian herbivores - unlike the other major heathlands/grasslands of the world, *e.g.* South America and Africa. There is no evidence to suggest that the Islands were grazed by herbivores prior to the introduction of domestic animals by Louis Antoine de Bougainville in 1764.² It is also clear that the early pasturage of the Islands was very good (relative to their current state) - as recalled by Herbert Felton - an early eyewitness:

The Northern part of the West Falklands from Chartres and Hill Cove to White Rock was covered with grass bogs reaching to the rider's knees, interspersed

¹ Reid, R (1997); *FIG Department of Agriculture Annual Report 1996/97*; p5.

² Bougainville landed seven heifers and two bulls, plus a few pigs, sheep, three horses and a goat.

with fine grass and acres of celery. In many places, because of the growth, the camp was difficult to get through. In those days white grass camps as we now know them were considered valueless for grazing. Cattle were magnificent, enormously fat and very plentiful. This wealth of good fodder was destroyed during the fine summer of 1871 when it was fired, and the camp was burnt to the soil from Chartres to Port Purvis. It took fifteen years before there was a semblance of recovery; the blue grass was pulled up by the sheep as soon as it tried to grow, making the camp look like a hay field. Before this, stock kept fat summer and winter.³

There have been substantial changes to the vegetation of the Islands since the early days of human settlement. The make-up of the Islands vegetation is unique; like many remote oceanic islands it has evolved without legumes or large trees. Most of the land is covered by oceanic heath which is today dominated by Whitegrass (50%) and/or Diddle-Dee (*Empetrum rubrum*) (up to 35%) - with Tussac Grass, Fachine (*Chilotrichum diffusum*) and Marram Grass (*Ammophila arenaria*) making up the predominant remaining vegetation. Approximately 250 species of flowering plants and ferns are found in the Islands, and 164 are native plants. 14 plant species are endemic and are found nowhere else. It has been estimated that at least 176 plant species have been introduced - principally Meadow and Bent grasses, and also Yorkshire Fog (*Holcus lanatus*) (which has spread extensively).

The only major input of nutrients available for plants prior to the introduction of livestock was along the coastline - mainly through the influence of Penguins and Seals. Upland Geese may have helped to re-distribute nutrients inland, but principally at selected locations, e.g. ponds and valleys. After the introduction of livestock further re-distribution of nutrients took place, but this may be even more site-specific because of the tendency of sheep and cattle to congregate in valleys and along fence-lines/corners. The preference that stock show for the valleys because of better shelter has the effect of transferring fertility from the high ground to the valley bottoms.

³ Anonymous (1981) The Pioneer Farmers of Patagonia; *The Falkland Islands Journal*; p10.

By the beginning of the twentieth century concern grew about the deterioration of the native pasture. The most obvious indicator of the scale of the changes, which had taken place, was the steady decline in the stocking rate of sheep in the Islands. By 1898 the Colony carried 807,000 sheep, but by 1923 this had declined gradually to 647,000. The deterioration of the native pasturage, and thus the consequent decline in sheep numbers, was even more marked on some of the offshore islands. Weddell Island - the third largest island in the Falkland archipelago - grazed 23,518 sheep in 1895, but by 1920 it held only 7,500 sheep.

Some caution should be used in respect of the accuracy of the figures, often quoted, of the maximum numbers of sheep carried in the Islands in the late nineteenth century. Frank Mitchell ⁴ has observed that intense rivalry between farm managers, combined with a passion for gambling based on farm statistics, may have led to a distortion of the true situation about stocking levels.

Reference has already been made earlier about the observations of Skottsberg about the changes brought about to the Falkland vegetation by open range grazing since the time of Joseph Hooker's description of Falkland flora. In 1922 the Manager of Port Howard Farm, R C Pole-Evans commented that 'blue bunch grass, the old kind the people before my time talk about could not be found in quantities - but only in odd bunches.'⁵

Skottsberg's account of his travels in the Islands in 1907 also provides testimony to the fact that, in common with most 19th century colonists throughout the world, there were only a few early residents in the Islands who were concerned for the natural environment. Of the then Governor (William Allardyce) he wrote:

⁴ F G Mitchell (b. 1923) has had a long and distinguished career within the Falkland Islands Company. He joined the Company in 1950 and retired in 1987. During this time he held the appointments firstly of Company Secretary, then London Manager and subsequently Managing Director. Mitchell became the first Honorary Secretary of the newly formed Falkland Islands Emergency Committee in 1968 when the sovereignty crisis developed.

⁵ Pole-Evans, R C letter to Matthews, E G; 14 October 1922; *Port Howard letter book 1922-1926*. It is not clear what plant is being referred to here by Pole-Evans; possibly Mountain Blue Grass (*Poa alopecurus*).

He is warmly interested in the material as well as the spiritual welfare of his colony, and we fully recognised his appreciation of our scientific work, which he tried to promote as far as lay in his power.⁶

Skottsberg's comments about Arthur Felton of West Point Island are a tribute to one man's pioneering attitudes and activities:

Mr Felton approximates very nearly to my ideal of a man. Ready to enjoy life and civilisation when there is a chance, he nevertheless lives in complete harmony with the wild camp life; he is interested in his work, he tries all sorts of grasses for his sheep, but is also - an exception to the general rule - intensely fond of nature itself and gifted with such a remarkable capacity for observation that many a naturalist by profession has reason to envy him. He knows every beast or plant on his island; he loves and nurses them, quite convinced that the human race can live at its ease without depriving living things which do him no harm of any chance of existence. I have never met anybody but him who tries to save one of the Falklands' finest adornments, the giant tussock-grass (*Poa flabellata*), which is nearly extinct wherever there are sheep, much to the detriment of the coast's appearance.⁷

Arthur Felton writing to Governor Sir Arnold Hodson in 1928, commented that:

[Fifty] years have passed since I first set foot on the West Falkland. Then hundreds of miles of land, which is now bare, bleak and silent, was covered with grass, more than foot in height, and the air ringing with the sound of small birds.⁸

§ c. Grassland degradation

⁶ Skottsberg, C; (1911) *The wilds of Patagonia: a narrative of the Swedish expedition to Patagonia, Tierra del Fuego and the Falkland Islands*; London: Edward Arnold; p15.

⁷ *ibid.*; p15.

⁸ CS187/27; Falkland Islands Government Archive; Felton, A; letter to Governor Hodson; 25 January 1928.

There are no easy answers to the question as to why the grasslands of the Islands have been degraded, and there are certainly no answers to such questions without controversy attached to them. At the end of the nineteenth century the Falklands experienced a variety of farming crises - the widespread problems of sheep scab, the shortage of skilled labour and the fluctuations in world wool prices. These crises all caused hotly debated discussion in the Colony about their effect on the productivity of the Islands. It is clear, however, that the principal agents of change in the natural environment were a combination of factors, namely - open ranch farming, the burning of grasses and Tussac Grass, the overstocking of the land by sheep and cattle, and the effects of introduced species (most notably pigs) by sealers. By the end of the nineteenth century the large-scale production of wool completed the transformation of the Islands. Given the state of knowledge in the 19th century about the results of the introduction of exotic species, and a general lack of awareness about the effects of the unintended consequences of such introductions, it is difficult to see how many of these adverse effects could have been avoided. The same pattern was repeated throughout the British colonies - and in particular wherever colonists adopted a primarily monocultural agricultural system. Tea plantations in Ceylon, Rubber plantations in Malaya, are just two examples where considerable degradation of natural habitats occurred following colonisation. In New Zealand ⁹ Australia ¹⁰ Patagonia ¹¹ and St. Helena ¹² similar effects on grasslands, and native species, are seen as the result of the introduction of sheep, cattle and pigs.¹³

It is clear that during the forty years that followed the tenure of Lt. Richard Moody as Governor, the development of the Colony was rapid and only partly controlled. By 1860 Pebble, Keppel and New Island had flocks of sheep, and in November 1867 James Waldron took up his lease at Port Howard and introduced sheep to West

⁹ Fraser, C; (1986); *Beyond the Roaring Forties*; Wellington, New Zealand: Government Printing Office.

¹⁰ Williams, J; (1990); [CSIRO Division of Soils; Canberra, Australia] *Search for sustainability: Agriculture and its place in the natural ecosystem*; Linnaean Society of London.

¹¹ See: McEwen, C and Borrero, L and Preto, A; (1997) *Patagonia – Natural History, Prehistory and Ethnography at the uttermost end of the earth*; The Trustees of the British Museum; p155: for an example of the effects of colonisation and sheep farming, upon the aboriginal inhabitants of Patagonia, as well as upon the flora and fauna.

¹² Ashmole P & M; (2000) *St. Helena and Ascension Islands*; Oswestry: Anthony Nelson; p53 (soil erosion) and p134 (degradation of native vegetation).

¹³ For an example of the human effects on sub-Antarctic islands see: Selkirk, P, Seppelt, R, and Selkirk, D; (1990) *Subantarctic Macquarrie Islands – environment and biology*; Cambridge University press; chapter 12.

Falkland Island. Between 1870 and 1872 the total sheep numbers rose from 64,675 to 124,690. By 1878 the numbers of sheep had risen to 312,300, and of these the Falkland Islands Company's flocks totalled 115,000. Within thirty years of Moody's first tentative steps, a large and extensive sheep ranching agricultural pattern had been established. With the benefit of hindsight it can be clearly seen that during this period, in common with other colonies, there was little regard for the environmental consequences of this rapid development.

By their very nature and history new Colonies like the Islands had the flavour of a 'boom-town' with a 'frontier-style' of entrepreneurial economics. They attracted larger-than-life men who were both powerful and ruthless, and who constantly sought greater profits through extending their monopolies.

The established farming leadership consistently resisted small farm tenure.¹⁴ The resistance to land reform can be seen, for example, when Governor Sir Roger Goldsworthy attempted to reform the tenure of the land on West Falkland when the original 21-year leases came up for renewal in 1892. His proposals to re-allocate portions of land as 'Government Reserves', to be offered for Public Auction, caused an outcry, and the furious response of the large established farming companies, dominated most of his service in the Islands. Goldsworthy's proposals were designed to enable more people to be able to farm the land, but established interests defeated him.¹⁵ Like a number of Governors of the Islands, Goldsworthy had particular problems with the Falkland Islands Company. In the last Despatch that he wrote from the Islands he commented:

This is probably the last communication which, as Governor, I shall address to any Secretary of State in connection with the Falkland Islands Company, but I can unhesitatingly affirm that a Governor can never hope to succeed in doing justice to the Colony where he finds himself handicapped on every side by the influence that the Falkland Islands Company can bring to bear - where they exercise a monopoly detrimental to the Colony's best interests and progress

¹⁴ Goldsworthy, R; Despatch No.12; Falkland Islands Government Archive; 16 February 1895.

¹⁵ Executive Council Minutes: 27 October 1892; Falkland Islands Government Archive. (Land reform has been a significant issue throughout the history of the Islands).

and where such monopoly is fostered and encouraged by facilities being afforded and advantages given to the Company which are not accorded to ordinary traders.¹⁶

Small farms were regarded as uneconomic by those who exercised power and influence both in Stanley and in London. The pattern of large open ranching methods of sheep farming had become the norm; this ranching style of land management was a contributory factor in the decline in the quality of nutritious pasturage.

The large scale farming companies faced other problems caused by their size; at various times there was a shortage of skilled labour and there were too few good shepherds. When this fact is combined with lack of adequate fencing during the early period, the result was a failure to supervise closely the flocks. Sheep management was more difficult with the large flocks of the big stations. The lack of adequate fencing was only resolved when sheep scab legislation was enforced at the turn of the century, but by this time much of the damage had already been done. The large companies, ever anxious to satisfy their shareholders, had also to face the considerable costs involved in fencing. Big profits were being made, but London based Boards of Directors were sometimes unwilling to spend profits on capital projects. F E Cobb, the Colonial Manager of the Falkland Islands Company (1867-1891) constantly struggled with what he regarded as an uncomprehending Board of Directors. An additional problem, which many farmers faced, was uncertainty about farm section boundaries. For many years there was reluctance on the part of some farmers to agree on the boundaries of their farms, and it became clear by the end of the nineteenth century that the land area was substantially mis-measured. It was not until the Hunting Air Surveys of the 1956 that this problem was finally resolved. Once the boundaries were fixed it was then possible to know how many sheep could, or could not, run on a particular camp, whereas before the survey there was always the possibility that more sheep were being carried on some farms because of over-estimated acreage. Both these two factors made close management of the flocks difficult - hence they contributed to grasslands decline. Once sheep farming had become established in the

¹⁶ Goldsworthy, R; Despatch No. 22, 27 March 1897; Outward Letters Book B24; Falkland Islands Government Archive; 1897.

Islands, stocking regimes became based on the traditional/historical carrying capacity of each camp. The principle governing this farming methodology appears to have been ‘what worked before, will work well again.’

There is some anecdotal evidence, which suggests that some of the small farms that did exist also had their pasturage difficulties. The great temptation for the early small farms was to overstock in order to maximise profits, and to keep up with their larger farming neighbours. Although the managers of the large farm companies have attracted criticism, it is generally true that they were the most able, albeit the most conservative, farmers. Whereas some of the smaller sections (*e.g.* near Stanley - the so-called ‘suburban farmers’) were being farmed by men who were not very able.¹⁷ Some of the smaller offshore island farms may have been overstocked *e.g.* Ruggles, Great and Beaver¹⁸ but others like Carcass Island and West Point Island were both economically profitable and managed appropriately. A better stewardship of the land, of the kind seen on Carcass and West Point, might have balanced short-term profitability with long-term sustainability, and thus have provided a more durable style of farming. Potentially the smaller islands were - before being overstocked - a stockman's paradise because sheep were more easily confined; they were safe in the winter and sheep had access to Tussac Grass and the shoreline. The large stations on the main islands had large areas of less nutritious white grass.

The late nineteenth century was a time of Victorian self-confidence and unrestrained growth, and a simple equation soon emerged in the Falklands Islands - large farms made large profits. There was also a need to make rapid profits. This was partly to finance the considerable costs of establishing the farmsteads in the first instance, and also to offset running costs. There was also a need to satisfy the requirements of absentee shareholders/landowners outside the Colony who had initially put up the venture capital. The profits made by absentee farming companies has been an issue in the Islands throughout the history of its farming industry until the sale of these farms during the 1980s.

¹⁷ G6; Falkland Islands Government Archive; Governor Allardyce; Despatch Colonial Office; 28 August 1905.

¹⁸ Evidence for this overstocking can be seen in the sheep stocking numbers of individual farms recorded in the Governor's Blue Books 1870-1890; also: C/11/35; *Sheep Farming statistics prepared for Governor Henniker-Heaton*; Falkland Islands Government Archive; 22 July 1935.

Many of the early farmers were extremely hard working and well intentioned, and they cannot fairly be accused of deliberately causing environmental damage - nevertheless damage did occur. In the early days of sheep farming the Islands, there was a general lack of environmental awareness, and also a lack of scientific knowledge about native grasses. After Governor Middleton and Hugh Munro's Reports of the 1920s, and the Report of William Davies in 1939, there was no excuse of ignorance. The reasons why these Reports failed to effect change are complex, and will be discussed later in this dissertation. That certain farming practices continued after Munro and Davies (and to the present day) is a matter of regret. For example Munro challenged the practice of burning the camp in order to aid pasture improvement. Even today there are strong opinions about the deliberate burning of the grasslands in an attempt to improve the quality of the pasture. There is now general agreement that the tendency, during the early years of the farming industry's history, to burn in an unrestricted and uncontrolled manner has caused serious and long-term damage.²⁰ Nevertheless the belief held by some farmers that burning is essential remains strong, and there is resentment by those farmers if 'experts' challenge that belief. The diminution of Tussac Grass through deliberate and accidental burning compounded the problems caused by the practices of the sealers in the eighteenth and nineteenth century who fired Tussac Grass to drive seals out into the open for easier killing.

There were some early examples of good sheep husbandry and land management. Governor Allardyce wrote to the Colonial Office in 1909 about Arthur Felton of West Point:

He was one of the most successful and progressive sheep farmers of the Colony although in a comparatively small way as he has only 2,500 sheep. I found that he had extensive Tussac paddocks wherever the plant would flourish, that he had judiciously fenced off the land into small sections ... and

²⁰ The lack of awareness about the consequences of burning in the Colony can be traced back to the comments made by Governor Moody in 1842. See: CO399/2; *Colonial Office Outward Letter book; 1841-1853*; Colonial Office Records; Public Record Office; Kew; 1842.

that he has clipped a heavier than average fleece than any farmer in the Falklands.²¹

The comparison of West Point with other farms is not a fair one. West Point, in company with other small island farms has certain advantages; the abundance of coastal Tussac Grass, and also that fact that the soil in some of the small islands, in West Falkland, is generally more fertile. There is also a widespread popular belief that when sheep have access to beaches they benefit from the availability of trace elements in the kelp. Farms on the smaller islands had easier access to Tussac Grass and the shoreline. There were examples of good sheep farm management on the large farms. The innovative work of R C Pole-Evans at Port Howard was commended by a number of Governors. Despite these examples of good farming practice Bernhardson's overall conclusion that 'careless management and overstocking had caused serious environmental degradation'²² is hard to dispute.

It should be noted, at this point, that a former Managing Director of the Falkland Islands Company - Frank Mitchell - has challenged Bernhardson's conclusions:

The appointment of the New Zealander W. Wickham Bertrand, in 1868, as Camp Manager by the Falkland Islands Company was the turning point for the sheep farming industry. His appointment led to the eradication of scab - at least on Falkland Islands Company land. With the elimination of the wild cattle, despite Government protestations, and the introduction of sound breeding and stocking policies, the Company's flock rose to over 200,000. It is a slur on the Company and people like the Finlaysons and McCalls to imply that they were not energetic or resourceful ... the reduction in sheep flocks from 214,000 to 170,000 was a conscious decision by the Falkland Islands Company. The pastures were deemed not to be able to carry more ... the consequences of current overstocking (as the result of recent sub-division) are already becoming apparent ... It will be interesting to examine the ecological effects of sub-division in ten years time.²³

²¹ G9; Falkland Islands Government Archive; Governor Allardyce; Despatch to Colonial Office; 2 September 1909.

²² Bernhardson, W; (1989); op.cit.; p 436.

²³ The Falkland Islands Company reply to the 1976 *Shackleton Report*; Falkland Islands Company Archive at Bishops Stortford; (drafted by F C Mitchell, Managing Director of FIC).

Mitchell misunderstands Bernhardson's conclusions. He is not suggesting that the early farmers were lacking in energy or resourcefulness. What Bernhardson does say is that the results of their hard work, and management methods they used, has proved, in the long-term, to have had serious detrimental effects on the grasslands of the Islands.

In its trenchant defence against some of the conclusions contained in the Shackleton Report of 1976 (the conclusions of the Report are very similar to those of Bernhardson) the Falkland Islands Company stated that it:

Did not accept that mismanagement and lack of understanding were generally responsible for the fall in production potential, where it has occurred. We do not deny that it has occurred in some areas, but we have evidence showing that vigorous and enlightened efforts failed to arrest it.²⁴

Some of the decline of natural pasturage and habitat can also be seen as being the direct result of the monocultural production of a highly valued international commodity - *i.e.* wool in a small island environment.²⁵ There are other examples of this phenomenon from other parts of the British Empire. Rubber production in Malaya, Tea in Ceylon, Sugar cane and Bananas in the Caribbean Islands and Coffee production in Kenya, all produced large profits for British-based companies, but at considerable environmental cost.

Bernhardson²⁶ observed that in economic and ecological terms the prosperity and welfare of the Islands at the beginning of the 20th century was very fragile. The major challenges that the Colony faced were the fluctuations of the world price of wool, and the also the declining quality of the natural environment which threatened sheep stocking levels. By the beginning of the 20th century farmers had become aware that there was a problem which had to be faced collectively. There was general agreement

²⁴ The Falkland Islands Company reply to the 1976 *Shackleton Report*.

²⁵ Kerr, J; (2002) *Environmental and management factors affecting the sustainability of native pastures under sheep grazing in the Falkland Islands*; Ph.D. Thesis; Faculty of Agriculture and Food Sciences, the Queen's University of Belfast; (Kerr's researches show that a number of native species of grass (*e.g.* Mountain Bluegrass, Annual Meadow Grass, Small Fern, Christmas Bush become significantly less abundant after only five years of grazing).

²⁶ Bernhardson, W; (1989); *op.cit.*; p486ff.

that the pastures and stocking rates were declining, but there was no similar agreement as to the solution to the problem.

One of the first casualties of this lack of agreement about what do about the declining quality of the pasturage was the Upland Goose (*Chloephaga picta leucoptera*) whose grazing habits competed with the sheep for the most succulent grasses. What was caused in reality by overgrazing and poor management found a convenient scapegoat in the Upland Goose. Legislation was enacted to permit the Upland Goose to be culled. A bounty was paid for the beaks of the unfortunate goose, and 'despite the lack of reliable data over their impact on Falklands pasture over 500,000 Upland Geese were destroyed between 1905 and 1912.'²⁷

Questions have been asked about the practice of culling Upland Geese as recently as 1976.²⁸ It is at least arguable that the growth in the population of Upland Geese is a symptom of the problem of the deteriorating grassland rather than the cause of it. In a pers. comm. with Bernhardson, W W Blake, a former manager of Hill Cove farm, suggested that sheep farming was the primary cause of the increase in the populations of the Upland Goose because it encouraged short green grasses to flourish where sheep graze heavily. Blake knew better than anyone about the scale of the problem of Upland Geese grazing newly sown grasslands, but the deleterious effect of Upland Geese grazing does make the farmer's antagonism towards the birds understandable.

World War I provided a brief respite from the financial consequences of the decline in the biological productivity of the Falkland's grasslands; wool prices were high and this provided substantial profits. But after the end of the War wool prices began to fall again, and there was considerable alarm in the Colony amongst both the farming community and the Government. A series of independent Reports were commissioned by the Islands Government between 1924 and 1971. An outline of these Reports and the reaction to their conclusions and recommendations now follows. Many of the sensible and practical recommendations contained within the following Reports were 'shelved' and were rarely acted upon.

²⁷ Bernhardson, W; (1989); op.cit.; p495.

²⁸ Harradine, J; (1976) Geese in the Falkland Islands; *The Falkland Islands Journal*; pp.5-16.

