

L. MacIntosh Ellis in France

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Abstract

Leon MacIntosh Ellis arrived in New Zealand in 1920 as the newly appointed first Director of Forestry. He brought with him wide experience and a broad vision of forestry obtained from working in Canada, France and Scotland, features which were reflected in his blueprint for New Zealand forestry which he produced remarkably quickly after his arrival. He placed emphasis on the sustained yield management of the indigenous forests but, for a range of reasons, his plans for these were not realised, with consequences for the forest conservation scene today.

On the afternoon of October 5, 1927 the small body of students at the first School of Forestry of (then) Canterbury University College sat down to listen to a riveting address from an eminent speaker. Leon MacIntosh Ellis, the first Director of Forestry of the State Forest Service, held their close attention while he talked about forestry and his forestry experiences in Canada, France and New Zealand, illustrating his talk with maps and photographs. The forceful, informal, almost racy manner of delivery captivated his audience. He finished on a high New Zealand note, emphasising the great future for forestry in this country and the importance of professional training. Before leaving the lectern to join the students in afternoon tea he presented to them for their library several personal copies of French forest working plans, covering tracts he had known, which had so impressed him that he had carried them around with him since World War 1 (Anon., 1927). (It is a great pity that recent extensive searching in the library of the University of Canterbury failed to locate the plans.)

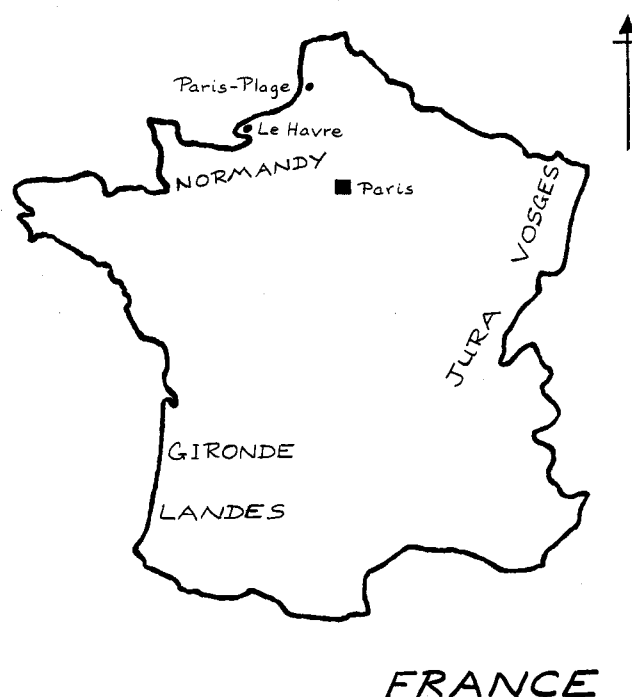
French Forestry

Ellis first saw French forestry at the age of 29 when he went to France with the Canadian Forestry Corps during World War 1 (Anon., 1919). The Canadians put in a great effort: felling, extracting, sawing and supplying the French with timber for trench fortifications, railway sleepers and for other military and strategic uses (Hill, 1919). But they did not have *carte blanche* in the forests. The French authorities insisted that their Commission Forestière d'Expertises had to mark all trees to be felled, presumably to prevent over-cutting and to safeguard the development of the all-important regeneration. The rest was over to the Canadians and they broke all sorts of logging and sawing records. Their operations were on a very large scale indeed. At the Armistice in 1918 there were over 12,000 Canadian forestry personnel in France. The Corps had produced 70% of the timber used by the Allied Armies on the Western Front (Nicholson, 1962). In all they had produced over 51 million sawn board metres, over 220,000 tonnes of

round material and over 600,000 tonnes of slab and fuel wood (Bird and Davies, 1919).

Lieutenant Ellis disembarked at Le Havre in France with the 20th Company of the Canadian Forestry Corps on January 2, 1917 (Anon., 1919). The Company was directed to work in some of the finest hardwood forests in France, the beech forests of Normandy. They commenced work in Bois Normande at Lyre, then moved to Blanchelande and then again to the Forest of Perseigne where they stayed to the end of the war (Bird and Davies, 1919). It seems that Ellis published nothing about his work in France, and so there is no record of his detailed impressions of the fine stands and superb landscape which he must have encountered every day. That part of Normandy is a region of splendid land use, agriculture on the richer alluvial soils fingering up the shallow valleys to break up the forest tract. Large game is plentiful, at least it was in the fifties: red deer and boar, with a few fallow and roe deer (Reed, 1954). It would have been a most insensitive forester who failed to appreciate the technical and aesthetic qualities in the managed beech forests of Normandy.

Ellis' military record (Anon., 1919) shows that on



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November 14, 1917 he was seconded as Acting Captain to the Headquarters of the Canadian Forestry Corps, presumably at Paris-Plage. When Ellis applied for the position of Director of Forestry in New Zealand in 1919 he described his military role in France as being (Ellis, 1919):

"...Assistant Chief Forest Officer in charge of the Forestry Division of the Canadian Forestry Corps in France. In this capacity I was responsible for all questions of forestry practice relating to the operations in the purely French Army areas: The formation and operation of the forest exploitation records: The primary examination of all areas submitted to the C.F.C. with regard to quality, quantity, economy, and suitability: The forest inspection of all exploitations."

While it is not possible, from the records available, to infer with certainty that Ellis did operate outside the Normandy region it is likely that he did so as Assistant Chief Forest Officer. The Canadian Forestry Corps supplied timber directly to the French Armies also from the mixed forests of the Vosges and Jura mountains and from the maritime pine dune forests in the Gironde and Landes regions (Hill, 1919). It is probable that Ellis visited all these areas in the course of his duties.

Assuming he did, he would have seen, in the mixed forests of spruce, fir, pine and beech in the Vosges and Jura, forest management with the dual objectives of timber and soil/water conservation. He would have noticed there the management of the many communal forests and the dependence of village industries on their sustained outputs. He could not have failed to observe the importance of tourism and lake-based recreation against a forest backdrop, and the populations of game in the forests, perhaps even le *Département des Eaux et Forêts* operating their fish hatcheries. He would have noticed in the Jura the alternating strips of pasture and forest, respectively in parallel troughs and salients – a sound pattern of land use resulting from centuries of husbandry. In the Landes he would have seen how the French harvested valuable crops of both resin and timber from stands established primarily to stabilise shifting sand. And perhaps he saw how, even in this grimmer environment, migratory birds provided a valuable game resource (Reed, 1954).

We know that Ellis left France with an admiration of French technical forestry (Anon., 1927). We know also that their orthodox forest management with its strict control of yield impressed Ellis, as it would have impressed other perceptive Canadian foresters, used as they were to more extensive Canadian logging with less emphasis on sustained yield (Poole, A.L., pers. comm.). It is likely that he would have been impressed too by other features of French forestry: the careful match of land use to soil fertility, the way that the many resources in the forests were handled to provide benefits for a range of people, and a forest authority which saw its role much wider than supplying only wood from the State forests. Indeed, his favoured organisational structure for the new Forest Service was based on exemplars which included the French system (Ellis, 1920). The monumental report he wrote soon after arriving in New Zealand – the blueprint for forestry in this country – showed that he was a strong advocate of management comprising sustained yield and multiple use, precepts which he saw applied well in France (Ellis, 1920).

Ellis should have been familiar with the principles of sustained yield forestry and multiple use even before he went to France, for he had been a forestry student in Canada in the first decade of this century when they were promoted strongly in North America. Those were heady days there when Gifford Pinchot and Bernhard Fernow played centre stage in the professional forestry scene and when President Theodore Roosevelt applied his prodigious energy and ability in support of Pinchot's drive for a field-effective US Forest Service to manage the American National Forests on scientific lines. Roosevelt and Pinchot pushed for "wise use" of the forest resources to

provide "the greatest good for the greatest number for the longest time". This was to be achieved with Pinchot's concept of "conservative forest use", a management amalgam of timber production on a sustained yield basis, watershed management and range management (Dana and Fairfax, 1980). Fernow was of similar mind and supported Pinchot's approach (Rodgers, 1986).

Fernow must have had an influence on Ellis in the latter's formative years for he was Ellis' professor. In 1907 the University of Toronto established a Faculty of Forestry and appointed Fernow as Dean. The first intake of students entered the Faculty in 1908. They numbered five and included Ellis (Rodgers, 1968). It is significant that later, in his application for the post of Director of Forestry in New Zealand, Ellis stated that his forestry degree from Toronto was "... recognised as one of the highest in North America or in the English speaking world," and that his Dean had been Dr. B.E. Fernow (Ellis, 1919). Ellis' obvious pride in his alma mater suggested that the influence of Fernow was positive.

Impressive Background

When Ellis stepped ashore in New Zealand in 1920 to be the first Director of Forestry we had recruited a forester with an impressive background, even though he was only 33 years of age. He had gained much practical experience in addition to that in the French forests. While at University, where he spent five years earning a B.Sc. (Forestry) degree with honours, he supported himself with a range of dirt forestry jobs during the summer vacations with L'aurentine Pulp and Paper Company of Canada, the Forests and Lands Department of Ontario, the James Bay and Canadian Pacific Railway Companies, and the Hood Lumber Company of British Columbia where he was involved directly in logging. In 1910, the year before his graduation, he joined the staff of the Canadian Pacific Railway and spent six varied years with them in forest management, protection, utilisation, silviculture and economics (Anon., 1942). He did well in the CPR and was Assistant Superintendent when he enlisted to go to France. One of his obituarists considered that his association with that great company "... imbued him with the idea of carrying out forestry projects on an ambitious scale" (Anon., 1942). Also, after the war, he worked for a few months as an advisory forestry officer with the Board of Agriculture of Scotland (Ellis, 1919).

Moreover we had recruited a forester with a breadth of vision of forestry. Only a person with experience and vision could have produced so readily the comprehensive and apposite report for the New Zealand Government, "Forest conditions in New Zealand and proposals for a New Zealand forest policy" (Ellis, 1920). It included, inter alia, analysis of New Zealand's known forest resources against a background of world forestry; a philosophy for New Zealand forest policy, with emphasis on sustained yield management of the indigenous forests; an outline of a Forests Bill; an organisation and a structure for a Forest Service which would manage also the national parks and scenic reserves, and administer the fish, bird and game resources; proposals for reform of timber sales, technical training and research, fire protection, protection forestry, assistance for private tree growing, a forest development fund, an economic survey of the timber industry, and national inventories of forest resources, forest lands and soils. It reflected the all-embracing concept of forestry advocated by Fernow (Dana and Fairfax, 1980; Rodgers, 1986), the comprehensive role of a forest authority like le *Département des Eaux et Forêts* and sustained yield multiple-use forestry which Ellis saw so much of in France. It was an impressive plan which was largely accepted by the Government and which Ellis set about to implement with tremendous energy, with a leadership which inspired the fledgling Forest Service, and with such propagandistic skills that Gifford Pinchot could have been the exemplar.

Ellis' achievements in the twenties as Director of Forestry,

before his abrupt and unexpected resignation in 1928, form a long and multi-faceted story which is yet to be told in detail, but it is one quite outside the scope of this brief study. However it is useful to consider here a facet where Ellis was unsuccessful, a recommendation of his which was rejected by the Massey Government. It is a facet which has been associated with controversy and conflict in this country, right up to the present. Ellis wanted national parks and scenic reserves to be the responsibility of the proposed Forest Service. Roche (1983) has described how Sir Francis Dillon Bell, the first Commissioner of State Forests, opposed this because he considered that the management of production forestry and 'scenery protection' would be an incompatible mix for one organisation. Roche suggested too that, because of his pressing for the Forest Service to look after all Crown indigenous forests including national parks and scenic reserves in order to achieve co-ordinated use of forest land, Ellis unwittingly prepared the way for later conflict in the State forests between conservationists with a 'utilitarian' bent and preservationists. He cited the arguments in the forties over Waipoua State Forest as an example of such conflict which has continued into the seventies and eighties. Certainly, the preservation movement has frequently criticised State foresters for proposing full multiple use, including sustained timber production, of extensive areas of indigenous forest and so, in their view, according insufficient importance to the values of untouched forest ecosystems.

Conservation Philosophies

This idea of Ellis setting the Forest Service on a collision course with preservationists could be germane, perhaps pivotal, to an understanding of forest conservation in New Zealand and so it warrants examination, preferably with an historical perspective. In this respect it is interesting to look at the forest conservation philosophies which developed in France and Germany and which were later exported to North America to take root there near the end of the last century – philosophies which impinged on Ellis before he came to New Zealand, directly through his sojourn in France and indirectly through the influence on him of Fernow and probably others also, including Pinchot.

The perspective can be viewed from the appearance of effective forest management in western Europe, first in France in the 14th century. The French foresters led the way until the latter part of the 18th century when there were major advances in Germany and Austria, including the introduction of schools of forestry (Osmaston, 1968). Dana and Fairfax (1980), in their definitive text on American forest policy, pointed out that in the 18th century German foresters developed an approach to forest management which was a response to a scarcity of wood, a stable demand for wood, a scarcity of land, abundant capital and labour, and the consequent imperative that forest yields be sustained. (Much the same conditions applied then in France.) They suggested that such an approach was exported to the United States when professional forest management was introduced there in the latter part of the 19th century.

Prominent among those who initiated scientific forestry in America were Fernow, who was trained at Munden in Prussia (Rodgers, 1986), and Pinchot who was trained at Nancy in France (Pinkett, 1970) and then undertook extensive field studies in Germany (Dana and Fairfax, 1980). Other leading American foresters of the time were also trained in Germany: Schenk, Schurz and Graves (Dana and Fairfax, 1980). Dana and Fairfax pointed out that conditions in the United States then were vastly different from those on the Continent as land and timber were not scarce, new resources ever becoming available. In their view the legacy of this mismatch at the embryonic stage of American forestry was too much emphasis



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on timber production without sufficient consideration of the costs involved.

They considered that Pinchot had not given sufficient weight to 'aesthetic conservation'. Indeed he did not go unchallenged; an alternative forest conservation ethic was advanced by John Muir who became the first president of the Sierra Club. It was the ethic of the preservation of the pristine, a precept rooted in the transcendentalist philosophy of men like Thoreau and Emerson (Dana and Fairfax, 1980). It was a precept which could flourish in the New World, remote from the risks of timber shortages. As early as the 1890s the viewpoint of the emerging preservation lobby predominated during controversy over the future of reserves in the American Adirondack forests. However, until the late sixties in America, the protagonists of sustained yield management and multiple use generally carried the day.

Support for Preservation

But from that time on there was steadily growing support in the United States for the preservation ethic. Dana and Fairfax (1980) associated this with parallel trends in related factors: a change in emphasis from economic to amenity values; greater consideration of aesthetics and non-use of resources; a proliferation of new concerns (environmental quality, endangered species, historical and cultural values, rights of native Americans). Conflict inevitably intensified as competition for the use of a finite resource of forest land increased, conflict due in their view to fundamental disagreements over the management priorities for public forest land. Such trends are not unfamiliar to us in relation to New Zealand indigenous forests. Ellis was following the multi-objective path and the use/renewal ethic of

forest conservation when he planned the development of New Zealand forestry. Have the battles in our indigenous forests been simply conflict between the preservation and use/renewal ethics, the latter a discordant application of the forest conservation philosophy of 18th and 19th century Europe, as claimed to have occurred in America?

Overriding Concern

It has been much more complicated than that. Ellis' overriding concern, when he first faced up to the demanding job he had sought, was to make the country self-sufficient in wood. He thought initially that within a generation the New Zealand population would probably exceed five million, when the annual consumption of timber would be about 90 million board metres. The only way to meet this need, in his judgement, was to put as much as possible of the Crown indigenous forests on a sustained yield management basis (Ellis, 1920). Later he came to understand better the difficulties associated with managing the indigenous forests for timber, including slow growth and insecurity of tenure, and turned to afforestation with exotic species on a grand scale, recommending successfully to the Government that the area of the State plantations be increased to 120,000 ha by 1935. His early population forecast was astray but his later prediction of the national timber demand as far ahead as 1965 was remarkably accurate (Allsop, 1973). Cutting continued in the indigenous forests at a higher rate than Ellis had predicted (Allsop, 1973). Now the indigenous cut is much reduced and it appears that soon it will provide only a trickle of wood.

The fundamental conservation issue in the merchantable State indigenous forests has not been between the use/renewal ethic and the preservation ethic; rather it has been between the latter and straight exploitation. For, despite good silvicultural research undertaken by the Forest Service in kauri, beech and podocarp forests, and despite valiant attempts by State foresters to introduce sustained yield systems into the terrace podocarp stands of Westland, sustained yield management of indigenous species has never been implemented and maintained on a significant scale, for political reasons (Bassett, 1987; Chavasse, 1986; Levack, 1988). Certainly, extensive areas of indigenous State forest have been converted after logging to exotic stands, patently an application of the use/renewal ethic. But these represent only about 12% of the total area of logged forest (Anon., 1979, 1986a, 1986b). In the State indigenous protection forests, which form 66% of the whole State indigenous forest estate (Anon., 1986b), the management objectives have always followed the preservation ethic.

There is another consideration: the outstanding success of the large-scale exotic afforestation which Ellis pioneered shielded the State indigenous forests from demands for timber which would otherwise have been much heavier. The result is that now there are still large areas of lowland forest to preserve.

It is significant that in 1925, when he had given up the idea of managing the indigenous forests for timber and had turned towards the expansion of the State plantations, Ellis was still recommending to the Government that the national parks and other forest reserves be placed under the control of the Forest Service (Ellis, 1925). He would have known that management of those lands could follow only the preservation ethic. It is significant too that in the same annual report to Parliament Ellis announced the policy of assisting recreational use of the State forests by providing permanent camping and hut sites, indicating the further development of his support for multiple use. It does seem that Ellis understood both the preservation and use/renewal ethics and he sought to apply them to meet the needs of the times as he saw them. He was, for the twenties, a liberal and far-sighted forester.

It is difficult now, some 69 years on, to try to gauge the influence on the development of New Zealand forestry of Ellis' experience in France. It is clear that he was impressed by much of the French forestry he saw and it is possible to make informed guesses about particular features which influenced him from the content of his 1920 report to the Government: probably strict yield control, matching land-use to soil capability, multiple use, the management together of habitat and animals. With his aura of competence and his ebullient personality Ellis must have made an impact on his new colleagues in the Forest Service. Part of his role would have been educative. Almost certainly he would have told them, as he told the students at the first Canterbury School of Forestry, about French forestry. Any broadening of mental horizons which followed could only have helped the new organisation.

Acknowledgements

Helpful comments from Mr. A.L. Poole, Dr. M.M. Roche and Professor G.B. Sweet are gratefully acknowledged.

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