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**2 December 1920 – 19 August 2010**



The passing of John Nicholls in Rotorua on 19 August 2010 marks the end of an era in New Zealand forest ecology. John was intimately involved in the National Forest Survey of 1946–55 and oversaw the subsequent Ecological Survey (1960–67) that filled gaps in the original survey. Though undertaken initially to assess remaining timber volumes, these initiatives also acquired a vast amount of ecological data. Through them and his own thirst for knowledge, John gained unparalleled insights into the compositional variation of New Zealand forests that were later to prove invaluable in his career in forest mapping, reserve designation, and biogeographic classification.

Born in the small Waikato spa town of Te Aroha, John probably inherited his capacity for systematic thought, a hallmark of his work, from his lawyer father. The untimely death of his mother saw him sent to board at Mt Albert Grammar School, where Robert Muldoon was a classmate. A career in journalism beginning with proof-reading at the *New Zealand Herald* offices in Auckland and foreshadowing a lifelong love of the written word was interrupted by the Second World War and five years of active service in the Fleet Air Arm of the Royal Navy, a period described by him as ‘the adventure of a lifetime’.

Upon his return to New Zealand, menial work in forestry at Waiotapu soon proved frustrating. On the advice of the headmaster of the local high school, John enrolled at Canterbury University College, majoring in botany and geology. Along with many other university students of the day, including some like Bill (later Sir William) Liley who were later to become leaders in their professions, John did field survey in the National Forest Survey during the long summer vacations. Vividly described by Julia Millen in *Through trackless bush* (Millen 2000), these huge undertakings that used bush tramways and Shanks’s pony rather than helicopters for transport recorded structure and composition in thousands of temporary plots placed systematically along transects across all larger remaining tracts

of native forest across the country. The vast dataset that resulted has proved something of a goldmine for younger researchers, enabling broad-scale computer analyses of variation in forest composition in relation to environmental variables.

Joining the steadily expanding Forest Research Institute in Rotorua in 1953, John was soon engaged with Peter McKelvey – later Foundation Professor of Forestry at the University of Canterbury – in preparing the first ecological classification of North Island native forests. Many years of detailed forest type mapping (at inch to the mile scale) and later broader forest class mapping and reclassification of North Island forests followed, constituting the first phase of his career and culminating in the publication of the 1:250 000 Forest Class Map Series. Although preceding the era of computer-based quantitative analysis, these classifications – based on physiognomically significant differences in structure and composition – have stood the test of time and are still in routine use by agencies like the Department of Conservation, as in its current Optimising Ecosystem Management project.

The National Forest Survey inspired a renewed focus on native forest ecology at FRI in the late 1950s, but in 1962 a new director reassigned promising colleagues like Roger Cameron and David Preest to other areas of research. John survived the purge, remaining with Tony Beveridge in a skeleton staff through the bleak years of the 1960s and the bitter conservation debates of the 1970s. A renaissance in the 1980s saw the appointment of several new ecologists to the group and a Regional Botanist for DSIR on the FRI campus, and morning tea again became the occasion for prolonged and vigorous debates about forest ecology.

The second phase of his career began in the early 1970s, with reserve recommendations for the ill-conceived Westland and Southland beech schemes that were to have such far-reaching consequences for the administration of public land in New Zealand. The decision of the Forest Service in the late 1960s to convert much previously logged state forest to exotic plantation had initiated a new era of native forest clearance. Setting aside examples of beech forest ecosystems in a network of representative reserves became a matter of urgency. With his comprehensive grasp of forest pattern, geology, climate, and ecological context, John was in an almost unrivalled position to make reserve recommendations. Extended to state forests throughout the country and even requested for scenic reserves and national parks, this led ultimately to the establishment of some 150 ‘Ecological Areas’ covering 300 000 ha, each described, mapped in detail, and approved by the high-powered, multidisciplinary Scientific Co-ordinating Committee. This magnificent achievement for conservation was ahead of its time. It was not until 1987 that most Crown land, including Ecological Areas, was transferred to management by the newly formed Department of Conservation. In the recent Optimising Ecosystem Management prioritisation exercise of the Department, it was no surprise that Ecological Areas were universally afforded the status of high priority sites, a testament to the thoroughness of the original assessments.

In the final phase of his career, John played a critical role in the development with colleagues in the interdepartmental Biological Resources Centre of the biogeographic classification of New Zealand into ‘Ecological Regions and Districts’ in the early 1980s. For over 25 years and with only minor refinement, they have provided the context for assessing the significance of natural areas in the Protected Natural Area Programme of Lands and Survey and now Department of Conservation, and the Significant Natural Area survey programme of regional councils.

His vast correspondence, now catalogued and archived at Landcare Research, is testament to good interdepartmental relations, a salient feature of his career in an era when they were not always satisfactory. The State Forest Service had been split off from the Department of Lands in 1919 and the subsequent relationship between the two departments was often uneasy. With his uncanny memory for native forests, John could recall where he was and with whom on particular days on National Forest Survey. 'On Christmas Day in 1948, I was with...and...on a ridge in the Kaimanawas, just east of...' A steady succession of lay and professional people came to Silviculture House to enquire about forest pattern. With its rimu desks joined together for spreading large maps on and pine boxes jammed with the first aerial photography, his large sunlit office became something of a pilgrimage centre. As observed in *Characters of FRI* (Klitscher 1997): 'It is unlikely that John's encyclopaedic knowledge of New Zealand native forest composition and species distribution on a national scale will ever again be known by a single person.'

Like many civil servants of the day and contrary, perhaps, to popular view, he worked quietly but effectively for conservation within the confines of a department (and governments) whose views he did not always share, and while helping raise a large family. After formal retirement in 1985, John continued to do contract work for FRI and private consultancies in his old haunts. Lively discussion about forest pattern and process ended with the formation in the early 1990s of the Crown Research Institutes and the relocation elsewhere of his colleagues. During this period, John and his wife were caretakers of the Okataina Outdoor Education Centre east of Rotorua. Here, in an idyllic rural setting surrounded by tall kahikatea and rimu, John spent some of his happiest years, taking a keen interest in the natural world around him and contributing substantive articles on it to the journal of the newly formed Rotorua Botanical Society.

A shy, modest man, John never sought the limelight and only achieved recognition at retirement and beyond. The New Zealand Ecological Society, of which he was a long-time member, made him a Life Member in 1985, and in 2004 he was made a Member of the New Zealand Order of Merit for services to ecology and forest research in 'the surprise of a lifetime'.

John married Monica Moke from Whakarewarewa in 1953; they leave behind seven surviving children and numerous grandchildren and great grandchildren, to whom he was devoted. He will be affectionately remembered as a scholar and a gentleman.

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## Acknowledgments

Input from Anthony Beveridge, Bruce Burns, Beverley Clarkson, Bruce Clarkson, Christopher Ecroyd, John Herbert, John Innes, Mary McEwen, Elizabeth Miller, William Shaw and Gregory Steward is gratefully acknowledged.

## References

- Klitscher K ed. 1997. Characters of FRI. Rotorua, New Zealand Forest Research Institute. 163 p.  
Millen J 2000. Through trackless bush. The story of the New Zealand National Forest Survey 1946–1955. Rotorua, PF Olsen & Co. 137 p.

## Bibliography

- 1956: The historical ecology of the indigenous forest of the Taranaki upland. *New Zealand Journal of Forestry* 7 (3): 17–34.  
1957: (with PJ McKelvey) A provisional classification of North Island forests. *New Zealand Journal of Forestry* 7 (4): 84–101.  
1959: (with PJ McKelvey) The indigenous forest types of North Auckland. *New Zealand Journal of Forestry* 8 (1): 29–45.  
The volcanic eruptions of Mt. Tarawera and Lake Rotomahana and effects on surrounding forests. *New Zealand Journal of Forestry* 8 (1): 133–142.  
1963: Vulcanicity and indigenous vegetation in the Rotorua district. *Proceedings of the New Zealand Ecological Society* 10: 58–65.  
1966: Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N76. Rotorua. Forest Research Institute, New Zealand Forest Service.  
1967: Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N58. Tauranga. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N66. Matamata. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N67. Te Puke. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N75. Arapuni. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N77. Tarawera. Forest Research Institute, New Zealand Forest Service.  
1969: Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N68. Matata. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N78. Ruatoki. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N86. Galatea. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N87. Waimana. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N95. Te Whaiti. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N96. Maungapohatu. Forest Research Institute, New Zealand Forest Service.  
Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N104. Maungataniwha.

- Forest Research Institute, New Zealand Forest Service. Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N105. Waikaremoana. Forest Research Institute, New Zealand Forest Service. Ecological survey of New Zealand's indigenous forests. Type Map Series No. 2. Sheet N114. Tutira. Forest Research Institute, New Zealand Forest Service.
- 1970: Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 10. Kaimanawa. Forest Research Institute, New Zealand Forest Service. Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 13. Ruahine. Forest Research Institute, New Zealand Forest Service.
- 1971: Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 3. Coromandel. Forest Research Institute, New Zealand Forest Service. Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 6. Raukumara. Forest Research Institute, New Zealand Forest Service. Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 7. Urewera. Forest Research Institute, New Zealand Forest Service.
- 1973: (with AP Thompson) Scientific reserves in New Zealand indigenous forests. *New Zealand Journal of Forestry* 18 (1): 17–22.
- 1974: Biological reserves in the West Coast and Southland beech forest management regions. *Proceedings of the New Zealand Ecological Society* 21: 5–10. Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 5. Rotorua. Forest Research Institute, New Zealand Forest Service. Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 14. Tararua. Forest Research Institute, New Zealand Forest Service. (with DA Franklin) Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 18. Grey. Forest Research Institute, New Zealand Forest Service. Hinau and pokaka. *New Zealand Nature's Heritage* 2 (23): 626–628. Establishing biological reserves in the West Coast project area. *Beech Research News* 2: 10–14.
- 1975: Biological Reserves and Forest Sanctuaries. What's New in Forest Research 21. Forest Research Institute, New Zealand Forest Service.
- 1976: Ecological mapping. In: Seminar on Science in National Parks. *Proceedings. National Parks Scientific Series* 6. Wellington, National Parks Authority. A revised classification of the North Island indigenous forests. *New Zealand Journal of Forestry* 21 (1): 105–132. Forest types of Waitutu State Forest and adjoining areas. *New Zealand Journal of Forestry* 21 (2): 215–238.
- 1977: A condensed classification of the native forests in New Zealand. In: Chavasse CGR ed. *Forestry handbook*. New Zealand Institute of Foresters (Inc.). Rare indigenous forest plants. *New Zealand Journal of Forestry* 22 (1): 155–161.
- 1978: Vegetation. In: Vucetich, CG, Wells N eds *Soils, agriculture and forestry of Waiotapu region, central North Island, New Zealand*. New Zealand Soil Bureau Bulletin 31.
- 1979: Ecological survey of New Zealand's indigenous forests. Forest Service Mapping Series 6. Sheet 4. Waikato. Forest Research Institute, New Zealand Forest Service. The concept of ecological districts: a possible framework for a national biological inventory. In: workshop on Biological Resources, 12–13 September 1979. Commission for the Environment. Pp. 77–79.
- 1980: The past and present extent of New Zealand's indigenous forests. *Environmental Conservation* 7: 309–310. Native forests of the Rotorua Lakes District. In: Chapman VJ ed. *Handbook of the Rotorua Lakes District*. Guardians of the Rotorua Lakes. Pp. 46–50.
- 1983: The extent and variability of the native lowland forests. In: Thompson K, Hodder APH, Edmonds AS eds *Lowland forests in New Zealand*. *Proceedings of a Symposium held at the University of Waikato, Hamilton, 27–28 May, 1980*. Hamilton, University of Waikato. Pp. 79–92.
- 1986: (with JW Herbert) A condensed classification of the native forests of New Zealand. In: Levack H ed. 1986: *Forestry Handbook*. New Zealand Institute of Foresters Inc. Pp. 4–6. A descriptive overview of the central North Island volcanic upland. In: Veale B, Innes J. eds *Proceedings of a workshop held at Pureora, 20–23 November 1985*. Rotorua, Forest Research Institute. Pp. 1–17.
- 1991: History of the vegetation. In: Clarkson BD, Smale MC, Ecroyd CE (compilers). *Botany of Rotorua*. Rotorua, Forest Research Institute. Pp. 12–14. Native forest. In: Clarkson BD, Smale MC, Ecroyd CE (compilers). *Botany of Rotorua*. Rotorua, Forest Research Institute. Pp. 16–22.
- 2002: History of the vegetation. In: BD Clarkson, MF Merrett, T Downs (compilers). *Botany of the Waikato*. Hamilton, Waikato Botanical Society Inc. Pp. 23–28.