

Fellows of the Tropical Grassland Society of Australia Inc. 2010

The Society awards Fellowships to those within its membership who have made significant contributions to the understanding, use and improvement of tropical and subtropical pastures.

Michael David Hare

Michael Hare has been involved in research and development in tropical and temperate pastures in Thailand and New Zealand for almost 4 decades. His work on seed production in both tropical grasses and legumes has played a significant role in the establishment and utilisation of tropical pastures in south-east Asia.

Growing up on the family beef and sheep hill farm at Wanganui, New Zealand, Michael had a basic grounding in agriculture and completed a Diploma of Agriculture in 1972 and a Diploma of Valuation and Farm Management in 1973 from Lincoln College, Canterbury. Instead of returning to the family farm, he went to north-east Thailand in July 1974 as a New Zealand Volunteer (VSA) stationed at the Borabu Land Development Centre. Michael was responsible for the overall management of 200 Brahman cattle, pastures and seed production at the 130 ha Centre. Being unfamiliar with tropical forages, except for the very useful information in the book *Better pastures for the tropics*, Michael was on a steep learning curve and was most grateful for the advice and assistance from Max Shelton and Alan Robertson, who were working at Khon Kaen University. At Borabu, Michael introduced to Thailand, large-scale seed harvesting of Australian tropical grasses and legumes using both hand and machine methods. The main seed produced was Townsville stylo (*Stylosanthes humilis*) and he planned and implemented a village pasture programme based on the oversowing of Townsville stylo onto farmers' grazing land. He also assisted with the manufacture and development of two machines for harvesting seed of Townsville

stylo and buffel grass (*Cenchrus ciliaris*) and a machine for cleaning Townsville stylo seed.

In 1976, Michael transferred to the Thailand Department of Livestock Development on the World Bank/Thailand Northeast Livestock Development Project at Khon Kaen, where he was employed by New Zealand Foreign Affairs (Colombo Plan Adviser) as the Seed Production Adviser in tropical pasture grasses and legumes, working with Alan Robertson, who was the pasture expert. Michael had overall responsibility for seed production of 16 Australian grasses and legumes, obtained from the Australian tropical pasture program, and conducted the work on forage and livestock stations and in villages. He supervised the large-scale production of Verano stylo seed by more than 1600 farmers on their private land in 16 provinces, a village-based system pioneered by Max Shelton and colleagues at Khon Kaen University in 1975 with Townsville stylo. The project was very successful and became the largest source of pasture grass and legume seed in Thailand, expanding from 10 tonnes of Townsville stylo seed in 1976 to nearly 95 tonnes from 16 varieties of legumes and grasses in 1980. In 1981, 170 tonnes of Verano stylo seed were produced by village farmers, with large amounts used in the roadside oversowing programme developed by Alan Robertson. The Department of Livestock Development has continued to manage tropical forage seed production for over 30 years and this remains part of the Department's core business.

In late 1980, Michael returned to New Zealand, where he completed a Post-graduate Diploma in 1981 and a Master of Agricultural Science with First Class Honours in Plant Science in 1983 at Lincoln College. Armed with this new knowledge and skills, Michael commenced 10 years of research work with the Grasslands Division of DSIR based in Palmerston North, New Zealand in 1984. There he worked under Phil Rolston on grass seed production and received good advice from Peter Clifford on legume seed production.

Michael carried out intensive research on flowering, seed development, tillering, row spacing, plant density, harvesting techniques, methods and time of sowing, post-harvest management, closing date, fertiliser application and growth regulators as related to seed production in a range of temperate species.

In 1992, Michael completed his Ph.D. on tall fescue seed production from Massey University, New Zealand and returned to Thailand in 1994, where he accepted a job lecturing at Ubon Ratchathani University. In addition to lecturing in tropical pasture management and conducting pasture and seed research, Michael conducted a large pasture research program to improve dairy production funded by the Thailand Research Fund, commencing in May 1995. Trials involving pasture evaluation and seed research were conducted at 17 sites in 3 provinces in north-east Thailand and the project finished in April 2007. Two new cultivars (Ubon paspalum, developed by Michael from seed of *Paspalum atratum* supplied by Werner Stür in 1994, and Ubon stylo, produced from stylo seed supplied by Bert Grof in 1999) were released to industry from this project. The University honoured Michael with a special professorship in 2006, which was granted by his Majesty the King of Thailand.

After the death of his wife, Nitayaporn, from cancer in 2007, Michael stepped down from lecturing to work full-time on seed production and forage research. He became head of Ubon Forage Seeds, a commercial arm of the Faculty of Agriculture, which is funded by a Mexican Seed Company, Grupo Papatlotla, with a charter to produce seed of tropical forage species by contracting smallholder farmers in north-east Thailand. The main species are Mulato II hybrid brachiaria, Purple guinea, Mombasa guinea, Ubon paspalum and Ubon stylo and seed is exported to countries in Asia, Central America, South America and the Pacific. Ubon Forage Seeds also conducts the final hybrid *Brachiaria* evaluation trials of new accessions from CIAT for Grupo Papatlotla. Four of these new hybrids are currently undergoing final PVR applications in Australia by Don Loch. The seed program is expanding rapidly with more than 850 farming families in north-east Thailand and Laos under contract to hand-harvest in excess of 100 tonnes of seed in 2010.

Michael has been a prolific writer and has been senior author or co-author of more than 100 articles on various aspects of seed and forage

production in both temperate and tropical pastures. He is a permanent resident of Thailand and hopes to remain in Ubon Ratchathani working on tropical forage seeds for as long as he is able (at least another 20 years).

Michael Hare is a worthy Fellow of the Tropical Grassland Society of Australia Inc.

Nominated by H.M. (Max) Shelton

Terrence Hugh McCosker

Terry McCosker has had a significant influence on sustainable management of pastures in tropical, subtropical and temperate areas of Australia for more than thirty years. He joined the Queensland Department of Primary Industries as a Cadet in Agriculture Branch in 1967 and worked as an assistant to the Regional Agrostologist in the Moreton Region for four years on species evaluation and plant nutrition studies. He moved to South Johnstone Research Station in north Queensland in 1972 and obtained a Certificate in Rural Technology in that year. During the next seven years, he worked as an experimentalist on projects involving plant introduction, species evaluation, plant nutrition and grazing management for the wet coastal areas. During this time he researched pasture sampling techniques for tropical pastures and subsequently conducted training schools in Queensland and the Northern Territory on the use of a Visual Estimation Technique, which was developed from this research.

In 1978, Terry joined the staff of W.R. Grace Australia Ltd at Mount Bunday Station in the Northern Territory. In that year, he surveyed the improved pastures on the station (22 000ha) and assisted in the development of appropriate management strategies for these pastures. After being appointed as Officer-in-Charge of Research and Development in 1979, he designed and assumed complete responsibility for the beef cattle research program on the station, involving all aspects of animal and pasture management. He was promoted to Assistant General Manager in 1981.

Among his achievements on Mt Bunday were: the formulation and development of animal supplements subsequently registered by ICI to overcome the wet season protein deficiency he identified; the evaluation and release of Bunday

centro under flooded conditions; establishing correlations between individual native grasses and animal production; original work on bull fertility in an open-range, multiple-sire-mated situation; and detailed work on supplement intake using tri-itated water.

In 1985, Terry set up a company called Resource Consulting Services (RCS). Following visits to Africa and his experience in systems research on Mt Bunday, he perceived the need for a more holistic approach to property management in Australia and introduced the *Grazing for Profit School*, a one-week residential course on livestock, financial and resource management, in 1990. During the past 20 years more than 5000 graziers have attended these courses, with 10-15% of the participants in the past 3 years being children of producers who previously completed the course, a testimony to its long-term impact. As part of this systems approach, he developed a software package that integrated strategic, tactical and operational planning, nett worth and detailed stock-flow and cash-flow projections with subsequent management accounting and benchmarking.

One component of the systems approach he promotes is the Cell Grazing or time control management of pastures. When Terry introduced time control grazing into Australia in the late 1980s, it caused considerable controversy among the pasture scientific community. His philosophy is that pastures managed with an understanding of ecology and plant-animal interactions have greater biodiversity and are healthier and more productive than pastures which are continuously set-stocked. Many successful graziers are now implementing the principles which are promoted in the *Grazing for Profit Schools*, including cell grazing, and are adamant that their pastures are better than ever before and their annual profits are also better.

While Cell Grazing has been adopted by only 1000-2000 graziers in Australia, some of the concepts, rotational grazing and resting of pasture, are now adopted widely. A common outcome of the RCS training is that graziers have changed their focus to pasture management rather than cattle or sheep production, regardless of the grazing system they adopt. Terry has also developed a large-scale rotational grazing system for extensive northern beef producers, which is gaining ground as a method of reducing over-

head costs, while increasing gross margins and reducing land degradation.

Other major benefits have included increased utilisation of pasture through improved water distribution and stock control and lower overheads through reduced labour, vehicle mileage and helicopter mustering. Adopters in southern Australia have been able to maintain carrying capacity while eliminating fertiliser, grain, silage and hay inputs, thus significantly increasing profitability and simplifying operations. Reduced run-off has been evidenced by the inability to fill dams after the introduction of time control grazing, in all environments.

In his role as a consultant, Terry has been involved in numerous projects, a significant one being the search for a solution to the major stock losses caused by Georgina gidyea poisoning. He instigated studies on mechanisms for detoxifying the toxic principle, sodium monofluoroacetate, in the rumen, by genetically modifying rumen microflora. This resulted in the patenting of the world's first usefully modified rumen bacteria for detoxifying the fluoroacetate.

Terry has been a prolific writer over the years and has been senior author or co-author of more than 40 papers on aspects of animal and pasture production. He wrote and presented a 20-minute video *Animal nutrition in northern Australia* in 1987 and in 1993, co-authored a manual on *Phosphorus nutrition of beef cattle in northern Australia*, which was launched at Beef 94 in Rockhampton. He has spoken at industry functions throughout Australia, being noted for a passionate but blunt, honest style of communication.

In addition, Terry served as Chairman of Beef 97 Expo, Vice-Chairman of Beef 2000 Expo, and a Conference Committee member of Beef 2006 and Beef 2009 Expos. He was an inaugural member of the Advisory Committee to the CSIRO Division of Tropical Animal Science, inaugural member of the NTDPP Kidman Springs Research Station Advisory Committee and a member of the Northern Territory Herbage Plant Liaison Committee. He was a finalist in the Beef Achiever of the Decade at Beef 2000, and has been a Red Meat Achiever finalist in 2004, 2006 and 2007.

Terry McCosker is a worthy Fellow of the Tropical Grassland Society of Australia Inc.

Nominated by Lyle Winks

Campbell Kennedy McDonald

Cam was involved in agriculture from an early age, being raised in a farming family on the western Darling Downs near Miles. He joined CSIRO in 1969 as a technical assistant in pasture research at Gatton. He left for a short time during 1974 before rejoining as a technical assistant on a project studying the stability of grasslands in the Northern Territory, subjected to a range of management inputs such as tree killing and sowing of legumes. He played an important part in setting up and running a large grazing trial about 50 km west of Katherine and also participated in detailed autecology studies of native grasses and *Stylosanthes*. He was closely involved with the designing and testing of a machine to break dormancy in *Stylosanthes* seed by applying heat.

From 1979 he was heavily involved in a comprehensive grazing trial initiated by the late John Tothill at Narayen Research Station near Mundubbera in Queensland. Cam's involvement culminated in the recent publication of four papers in *Tropical Grasslands* presenting the project's key results. Characteristic of Cam's commitment, most of this writing up was done in his own time as his "official" working time was fully (and probably over-) committed. In 1982 he assumed the role of farm overseer at Narayen until he was transferred to Brisbane in 1984.

During the subsequent period, Cam provided valuable assistance to staff in making the change from main frame computers to PCs before returning to work in pasture agronomy. He played a key role in many projects, including: participating in a team examining the grazing behaviour of small numbers of cattle in experimental grazing herds; assisting with the characterisation of the *Macroptilium atropurpureum* collection; and in a project to elucidate how the persistence of tropical legumes is affected by stocking rate and climate. Cam's key contributions in the 1980s and 1990s, however, were related to his skills in mathematics, modelling and numerical or pattern analysis. He played a key role in updating the BOTANAL package, now widely used in Australia and overseas, which allows the measurement of pasture composition in terms of yield, percentage dry weight, frequency and spatial variability through visual estimation, thus significantly reducing the high labour input required for the conventional harvesting and sorting method. He visited South America to train pasture scientists in those coun-

tries in the use of this technique. Cam was also involved in developing climatic indices for plant growth and developing a way of estimating feed intake by animals from their liveweight gains. His involvement in demographic studies led to his being awarded a M. Sc. Agr. degree in 1999. The subsequent publications from this work broke new ground in developing models to predict the complex relationship between seed production of Wynn cassia and shrubby stylo in relation to plant age and size, grass competition, rainfall and grazing pressure.

After 2000, Cam joined a team studying the sustainable use of pastures for animal production, both in Australia and overseas. He was heavily involved in the design, data collection and analyses of a study of land condition in 30 small catchments in the Crows Nest district of south-east Queensland. He also worked in a joint project with QDPI (now DEEDI) on the effects of cell grazing (time control grazing) on pasture composition and animal production of commercial properties.

During the last seven years Cam has played a key role in developing forage systems and modelling animal production and reproduction in a number of overseas countries including Indonesia, Vietnam and southern Africa. These studies have addressed complicated feeding systems and have involved an holistic approach by considering factors such as whole farm economics, labour demand and local practices. As is stated on the CSIRO website – "...he was the major contributor in the development of an integrated tool for Indonesian smallholders and a whole farm model for South African rangeland farms." Cam's model is of such theoretical and practical value that it is being adapted for use in China, Vietnam, Pakistan and Laos.

As mentioned above, Cam has devoted significant effort to writing up his work and his long career has produced many publications. He was senior author or co-author of 40 research papers and other documents. Seven of the papers have presented the results of long-term grazing trials, which involved the very difficult task of analysing and interpreting large complicated data sets.

Although Cam has contributed in many areas of pasture science, his unique contribution has been in developing models which have contributed to both our understanding of how various factors affect pasture growth and survival and animal production from pastures, and the prac-

tical application of this knowledge. It is this rare combination of a deep appreciation of real-life farming situations, technical skills, research ability and mathematical and modelling skills that have made his contributions so valuable. An important factor that has enhanced his contribution has been that Cam was and remains a great team player as shown by his willingness to help colleagues in all situations, and his hard work, diligence and patience, traits that have made him such a great bloke to work with.

Last, but by no means least, has been Cam’s significant contribution to the activities of the Tropical Grassland Society of Australia Inc. He has served terms on the Management Committee, as Secretary from 1992 to 1995, and has refereed numerous manuscripts. He took responsibility for book sales in 1996 and has filled this role until the present time. Not only has he maintained and managed book stocks but also has filled orders

from around the world and taken copies of the various publications to field days, conferences and scientific meetings for sale to those attending. Farmers, scientists and students from many corners of the globe have been kept informed through this process and the Society’s finances have also benefitted. Cam could be forgiven for wondering for whom he worked at times as during his 41 years of pasture research with CSIRO the name of his Division has changed seven times. However, this has not affected his approach to his work as he always remained focussed on the ultimate goal, the development of sustainable management systems for tropical pastures to ensure a viable farming community.

Cam is a worthy Fellow of the Tropical Grassland Society of Australia Inc.

Nominated by R.M. Jones

Tropical Grassland Society of Australia Inc. Fellows and Pasture Management Award Winners 1985–2010

Year	Fellows	Pasture Management Award (ANZ 1987–1993; MLA 1994–1999) Winners
1985	Pulsford, J.S. and Harrison, R.E.	
1986	nil	
1987	Addison, K.B., Ebersohn, J.P., Henzell, E.F. and Humphreys, L.R.	Joe and Pat Olive, ‘Granite Vale’, St Lawrence
1988	Evans, T.R., Kleinschmidt, F.H. and Wilson, J.R.	John Rains, ‘Southedge Seeds’, Mareeba
1989	Cameron, D.G.	Bernie Von Pien, ‘Hareward’, Dalby
1990	Catchpoole, V.R.	Bruce and Helen Chapman, ‘Rowanlea’, Calliope
1991	Jones, R.M. and Murtagh, G.J.	Red Daley, M.B. Daley P/L, Millaa Millaa
1992	Jones, R.J. and Walker, B.	Robin and Vicki Horn, ‘Yallamundi’, Millmerran
1993	Minson, D.J., Edye, L.A. and Hopkinson, J.M.	Scott and Margo McGhie, ‘Minnie Plains’, Blackwater
1994	Tohill, J.C., Meares, P.T. and Miller, C.P.	Grant Morris, ‘Hazelmere’, Cooktown
1995	Clements, R.J., Kerridge, P.C. and Scattini, W.J.	Rob Anderson, ‘Maneroo’, Moree
1996	Wildin, J.H., Kretschmer, A.E. and Lowe, K.F.	Nev and Kath Mills, ‘Melrose’, Morinish
1997	Shelton, H.M. and Schultze-Kraft, R.	Jim and Rosemary Blomfield, ‘Strathbogie’, Gumlu
1998	Mannetje, L.’t and Cook, B.	David Illing, ‘Hillview’, Pittsworth
1999	Rains, J., Bishop, H.G. and Date, R.A.	Stuart Coaker, ‘Lindley Downs’, Orion
2000	Burrows, W.H.	
2001	Partridge, I.J. and Grof, B.	
2002	nil	
2003	nil	
2004	nil	
2005	Glatzle, A.	
2006	nil	
2007	Lloyd, D.L.	
2008	nil	
2009	nil	
2010	Hare, M.D., McCosker, T.H. and McDonald, C.K.	