

**CURRICULUM VITAE**

**Dr Michael J. Hill**

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## Teaching

2008 - present University of North Dakota: Earth System Science and Policy I (ESSP501) Fall Semester, 5.5 weeks, August 25 – September 30 (approx), (Biosphere Block) 17 lectures, 9 labs, student conference, and capstone project. Includes field visit and associated GIS labs on tallgrass prairie biodiversity.

2007 - 2010 University of North Dakota: Earth System Science and Policy II (ESSP502) Spring Semester, 5.5 weeks, Jan 12 – Feb 20 (approx), (Geosphere and Earth Observation) 18 lectures, 5 geospatial laboratories, student-led conferences, and major capstone project.

2010/2011 University of North Dakota, ESSP 599 Special Topics, “Grassland Biodiversity and Conservation Issues in the Northern Great plains”, 1 credit discussion courses, students prepare a journal paper for publication.

2008 University of North Dakota: Fall Semester 08 Special Topics: Land Use Management – Savanna Systems (ESSP594) - 1 credit reading course.

2007 University of North Dakota: Earth System Science and Policy I (ESSP501), Fall Semester 07-08 (Biodiversity Block) 3 lectures introducing the Semester, and the Biodiversity Block, 1 lab involving a visit to the UND Library and session on web-based searching tools.

2005: Provided 3 Powerpoint lectures with narration for Masters of Contemporary Science, ANU, 2005.

1998: Organised and hosted graduate course in “Spatial Information for Land Use Management” in the Mountain Research Center at Montana State University in Fall 1998 semester.

1988: Delivered a course of 8 lectures and 2 practical classes on pasture species and adaptation to 3rd year Rural Science students at University of New England.

1976- 1983: 8 years experience at Latrobe University and the University of Sydney teaching taxonomy and botany of crop and pasture species, plant anatomy, physiology and agronomy of crops, and agronomy and ecology of pastures.

## **International Work Visits and Fellowships**

### **Australia: May 20 – July 13, 2013.**

Working at CSIRO Canberra, Charles Darwin University, Darwin, NT, and Queensland Department Science Technology Innovation and the Arts on remote sensing of savannas and new international initiatives.

### **USA: April 5 – May 2, 2006.**

Visits to eight North American remote sensing centres: Jet Propulsion Laboratory (JPL), Pasadena; California State University (Calstate), Los Angeles; Carnegie Institution of Washington at Stanford University (Carnegie); University of Montana, Missoula (UMT); University of British Columbia, Canada (UBC); University of Maryland, Greenbelt (UMD); Goddard Space Flight Centre, Greenbelt (GSFC); Boston University; and the University of Texas (UT), Austin. Invited seminars to be presented at JPL, Carnegie, UMT, UBC, UMD, GSFC, BU and UT.

### **England: September 8 – October 31, 2003.**

Department of Geography, University of Southampton. University sanctioned position as Visiting Fellow. Nominally working with Professor Paul Curran, but also meeting with members of the Centre for Terrestrial Carbon Dynamics at University College London, and with colleagues at University of Wales, Swansea and ITC, Enschede, Netherlands.

### **USA: August - December 1998**

Distinguished Researcher in Residence - Mountain Research Centre, Montana State University (\$US19,800 stipend and allowances).

Main tasks: 1. Organise and chair weekly seminar series with invited participants from all over the USA and Canada on theme: "Spatial data handling and land use management". 2. Carry out research on land classification and analysis of land use.

### **Canada: July 1995**

Agriculture and Agri-Food Canada, Lethbridge, Alberta July 1995 - Fully funded invited visit to work with Dr David Major and Dr Anne Smith on aspects of using spatial information for monitoring prairie grasslands.

### **Scotland: April - July 1995**

Macaulay Land Use Research Institute, Aberdeen, Scotland working on spatial analysis in biogeography and error in land cover classification with Dr Richard Aspinall.

### **USA and Canada: February 1991 - January 1992**

Department of Agronomy, University of Georgia, Athens for 6 months working on legume agronomy with Prof. C. S. Hoveland; USDA-ARS Crops Research Laboratory, Fort Collins, Colorado for 2 months working on legume agronomy and adaptation with Dr C. E. Townsend; Agriculture Canada, Research Station at Lethbridge, Alberta, Canada for 3 months working on rangeland ecology, GIS and radar remote sensing with Dr D. J. Major and Dr W. D. Willms.

### **Conference/Meeting/Colloquium Organisation**

April 23 -27, 2012. Member of the Scientific Committee for the ESA Sentinel II Symposium, ESRIN, Frascati, Italy, April 23-27, 2012.

April 11, 2011. Double session (12 papers) at 34<sup>th</sup> ISRSE, Sydney, Australia. Ecosystem Function in Savannas: Measurement and Modeling at Landscape to Global scales; and Australian Savannas and Woody Measurement. Also member of the Scientific Committee for this meeting.

March 2-4 2010. Savanna Remote Sensing Workshop, Colorado State University, Fort Collins, Co. Niall P. Hanan and Michael J. Hill convenors. Workshop to scope a potential new research program in NASA Terrestrial Ecology to answer major science questions about savannas.

(<http://www.nrel.colostate.edu/projects/srs/workshop.html>).

January – April 2009. Northern Great Plains Center for People and Environment Colloquium Series – Spring 2009. Five speakers – Dr Andrew Millington (Geography, TAMU), Dr Kelley Crews (Geography and Environment, University of Texas at Austin), Mr Doug Olson (ESSP, UND) Dr Marinus Otte (NDSU Biology) and Dr Goeff Henebry (South Dakota State University, Geography and GISci CE).

January – April 2008 Northern Great Plains Center for People and Environment Colloquium Series – Spring 2008. Five speakers – Dr Tom Loveland (USGS/SDSU GISCE), Dr Rebecca Romsdahl (UND, ESSP), Dr Kelley Crews (Geography and Environment, University of Texas at Austin), Frank Kutka (USDA-ARS) and Dr Soizik Laguette (UND ESSP).

August -December 2007 – Organized a session (with Niall Hanan from Colorado State University) at the American Geophysical Union Fall Meeting (Dec 10-14) on “Savannas and Carbon: Regional Approaches to Assessment of Carbon Cycle Dynamics in Mixed Tree-Grass Systems”. 27 abstracts received and oral and poster sessions are programmed.

January – April 2007 - Northern Great Plains Center for People and Environment Colloquium Series – Spring 2007. Three speakers – Dr Rama Nemani (NASA Ames), Dr Michael Mann (UND Engineering) and Dr Brett Goodwin (UND Biology).

January 2006 – August 2006 – Member of organising committee for the 3<sup>rd</sup> Biennial Global Vegetation Workshop at University of Montana, Missoula, Montana, USA, 7-10 August.

Dec 2005 – March 2006 Member of organising committee for IWMMM4, International Workshop on Multi-angle Measurement and Modelling, Sydney, March 2006.

March - October 2005 – Organised a session (with R. J. Aspinall) at the 6<sup>th</sup> Open Meeting of the International Human Dimensions Program on Global Environmental Change in Bonn, Germany entitled “Spatial theory and methodologies for integrated socio-economic and biophysical analysis and modelling of land use change: an international test of theory and method and a comparative synthesis of change at local and regional scales.” This led to the development of a book “Land use Change: Science, Policy and Management” to be published December 17 2007.

June 2003 - Organized and conducted a 2 day national workshop involving rangeland experts from around Australia to review the development of the Range-ASSESS scenario analysis system for rangeland carbon stocks.

Sept. 2000 - Organised and conducted a 2 day workshop involving rangeland experts from around Australia to develop a knowledge base for analysis of carbon sequestration potential in rangelands at BRS, September 28-29.

1996 Organised and conducted national workshop for National Pasture Improvement Coordinating Committee on the outcomes of the MRC project M.499 “Determination of Benefits from Pasture Improvement” at Wool House in Melbourne on December 4..

1990-1992 Member of organising committee for 6th Australian Agronomy Conference, University of New England, Armidale, February.

#### **Conferences at which Papers/Posters were/will be presented**

2013, AAG Annual Meeting, Los Angeles, CA, April 18-22, 2013.

2012, ESA Sentinel II Symposium, ESRIN, Frascati, Italy, April 23-27, 2012.

2011 NASA Carbon Cycle and Ecosystems Joint Science Workshop, Alexandria, Virginia, October 3 – 7, 2011.

2011 World Climate Research Program Open Science Conference, Denver, Colorado, USA, October 24 – 28, 2011.

2011 International Symposium on Remote Sensing of Environment, Sydney, Australia, April 11-15, 2011.

2010 iLEAPS/ESA/EGU Joint Meeting, Frascati, Italy, 3-5 November 2010.

2010 Global Land Project: Open Science Conference, Arizona State University, Tempe, Arizona, USA, 17-19 October, 2010.

2010 NASA Terrestrial Ecology Science Team Meeting, La Jolla, California, March 15 – 17, 2010.

2009 4<sup>th</sup> Biennial Global Vegetation Workshop and CEOS Validation Meeting, University of Montana, Missoula, Montana, USA, June 15-19.

2008 NASA Carbon Cycle and Ecosystems Joint Science Workshop, University of Maryland, Adelphi, Maryland, USA, April 28-May 2, 2008.

2008 9th National Conference on Science, Policy, and the Environment (Theme: Biodiversity in a Rapidly Changing World), Washington DC, December 8-10.

2008 Hyperspectral Infrared Imager (HyspIRI) Science Workshop, October 21-23, Courtyard Marriott (Monrovia, CA).

2008 Association of American Geographers, Annual Meeting, Boston, Apr 15-19.

2007 American Geophysical Union, Fall Meeting, San Francisco, Dec 10-14.

2007 North American Carbon Program and Joint USA, Canada-Mexico Carbon Program, Colorado Springs, Co, USA Jan 28 – Feb 2.

2006 3<sup>rd</sup> Biennial Global Vegetation Workshop and CEOS Validation Meeting, University of Montana, Missoula, Montana, USA, August 7-10.

2006 IWMMM4, International Workshop on Multi-angle Measurement and Modelling, Sydney, Australia, March 20 – 24.

2005 MODSIM05, International Congress on Modelling and Simulation, Melbourne, Australia, December 12-16.

2005 6<sup>th</sup> Open Meeting of Human Dimensions of Global Environmental Change Research Community, Bonn, Germany, October 9 – 13.

2004 II MODIS Vegetation Workshop, Missoula, Montana, USA, August 17-19.

2002 IWMMM3, International Workshop on Multi-angle Measurement and Modelling, Steamboat Springs, Colorado, USA, June..10 - 12.

2002 29<sup>th</sup> International Symposium on Remote Sensing of Environment, Buenos Aires, Argentina, April 8 – 12..

2001 MODSIM01 Int. Congress on Modelling and Simulation, Canberra, ACT.

1998 Radarsat ADRO Final Symposium, Montreal, Canada (October 11 -18).

1998 9th Australasian Remote Sensing and Photogrammetry Conf., Sydney, NSW.

1997 International Congress on Modelling and Simulation, Hobart, Tasmania.

1997 International Geoscience and Remote Sensing Symposium, Singapore.

1996 8th Australian Agronomy Conference, Toowoomba, Queensland.

1995 5th International Rangeland Congress, Salt Lake City, Utah, USA.

1994 7th Australasian Remote Sensing Conference, Melbourne, Vic.

1993 International Congress on Modelling and Simulation 1993, Perth, WA.

- 1993 2nd National Workshop on the Role of Alternative Legumes in Pastoral Agriculture, Coonawarra, SA (invited paper).  
1993 XVII International Grassland Congress, Palmerston N., New Zealand.  
1992 6th Australian Agronomy Conference, Armidale, NSW.  
1990 5th Australasian Remote Sensing Conference, Perth, WA.  
1990 Symposium on Climatic Risk in Crop Production, Brisbane, Queensland.  
1989 XVI International Grassland Congress, Nice, France.  
1987 4th Australian Agronomy Conference, Melbourne, Victoria.  
1985 XV International Grassland Congress, Kyoto, Japan.  
1982 2nd Australian Agronomy Conference, Wagga Wagga, NSW.  
1981 XIV International Grassland Congress, Lexington, KY, USA.

## **Publications**

### **Refereed Journals**

76. Hill, M. J. (2013). Vegetation index suites as indicators of vegetation state in grassland and savanna: an analysis with simulated SENTINEL 2 data for a North American transect. *Remote Sensing of Environment* (in press).
75. Hill, M. J., Renzullo, L., Guerschman, J-P., Marks, A. and Barrett, D. J. (2013). Use of vegetation index fingerprints from Hyperion data to characterize vegetation states within land cover/land use types in an Australian tropical savanna. *JSTARS* (in press).
74. Hill, M. J. and Olson, R. (2012). Possible future trade-offs between agriculture, energy production and biodiversity conservation in North Dakota. *Regional Environmental Change*, DOI: 10.1007/s10113-012-0339-9.
73. Thulin, S., Hill, M. J., Held, A. A., Jones, S., and Woodgate, P. (2012). Hyperspectral determination of feed quality constituents in temperate pastures: effect of processing methods on predictive relationships from partial least squares regression. *International Journal of Applied Earth Observation and Geoinformation* 19, 322–334.
72. FitzSimons, J., Pearson, C. J., Lawson, C. and Hill, M. J. (2012). Development of land use planning scenarios based on intrinsic characteristics and stakeholder values. *Landscape and Urban Planning* 106, 23– 34.
71. Romsdahl, R. J. and Hill, M. J. (2012). Applying the learning community model to graduate education: linking research and teaching between core courses. *Teaching in Higher Education* DOI:10.1080/13562517.2012.678325.



70. Hill, M. J., Roman, M. O., and Schaaf, C. B. (2012). Dynamics of vegetation indices in tropical and subtropical savanas defined by ecoregions and MODIS land cover. *GeoCarto International* 27, 153-191.
69. Hill, M. J., Roman, M. O., Schaaf, C. B., Hutley, L., Brannstrom, C., Etter, A Hanan, N. P., (2011). Characterizing vegetation cover in global savannas with an annual foliage clumping index derived from the MODIS BRDF Product. *Remote Sensing of Environment* 115, 2008-2024.
68. Atkinson, L. M., Romsdahl, R. J. and Hill, M. J. (2011). Future participation in the Conservation Reserve Program of North Dakota. *Great Plains Research* 21, 203-214.
67. Edirisinghe, A., Hill, M. J., Donald, G. E., Henry, D. and Hyder, M. (2011) Quantitative mapping of pasture biomass using satellite imagery. *International Journal of Remote Sensing* 32, 2699-2724.
66. Harper, R. J., Gilkes, R. J., Hill, M. J. and Carter, D. J. (2010). Wind erosion and soil carbon dynamics in south-western Australia. *Aeolian Research* 1, 129-141.
65. Hill, M. J., FitzSimons, J., and Pearson, C. J.(2009). Creating land use scenarios for city greenbelts using a spatial multi-criteria analysis shell: Two case studies. *Physical Geography* 30, 353-382.
64. Guerschman, Juan Pablo, Hill Michael J., Barrett, Damian J., Renzullo, Luigi, Marks, Alan and Botha, Elizabeth. (2009). Estimating fractional cover of photosynthetic vegetation, non-photosynthetic vegetation and soil in mixed tree-grass vegetation using the EO-1 and MODIS sensors. *Remote Sensing of Environment* 113, 928-945
63. Hill, M. J., Averill, C., Z. Jiao, C. B. Schaaf and Armston, J. (2008). Relationship of MISR RPV parameters and MODIS directional reflectance indices to vegetation patterns in an Australian tropical savanna. *Canadian Journal of Remote Sensing* 34, (Supplement 2), S247-S267.
62. Schellburg, J., Hill, M. J., Gerhards, R., Rothmund, M. and Braun, M. (2008). Precision agriculture on grassland: applications, perspectives and constraints – a review. *European Journal of Agronomy* 29, 59-71.
61. Woldendorp, G., Hill, M. J., Ball, M. and Doran, R. (2008). Frost in a future climate: modelling interactive effects of warmer temperatures and rising atmospheric [CO<sub>2</sub>] on the incidence and severity of frost damage in a temperate evergreen (*Eucalyptus pauciflora*). *Global Change Biology* 14, 1-15.

60. Renzullo, L. J., Barrett, D. J., Marks, A. S., Hill, M. J., Guerschman, J-P., Mu, Q. and Running, S. W. (2008). Application of multiple constraints model-data assimilation techniques to coupling satellite passive microwave and thermal imagery for estimation of land surface soil moisture and energy fluxes in Australian tropical savanna. *Remote Sensing of Environment* 112, 1306-1319.
59. Nightingale, Joanne M., Hill, Michael J., Phinn, Stuart R., Held, Alex A. (2007). Comparison of Australian Tropical rainforest productivity derived from the 3-PG Forest Growth Model and MODIS Productivity Products. *Canadian Journal of Remote Sensing* 33, 278-288.
58. Nightingale, Joanne M., Hill, Michael J., Phinn, Stuart R., Davies Ian, D., Held, Alex A. and Erskine, Peter (2007). Use of 3-PG and 3-PGS to simulate forest growth and above ground carbon accumulation dynamics of Australian tropical rainforests. II. An integrated system for modelling forest growth and scenario assessment within the Wet Tropics Bioregion. *Forest Ecology and Management* 254, 122-133.
57. Nightingale, Joanne M., Hill, Michael J., Phinn, Stuart R., Davies Ian, D., Held, Alex A. and Erskine, Peter (2007). Use of 3-PG and 3-PGS to simulate forest growth and above ground carbon accumulation dynamics of Australian tropical rainforests. I. Parameterisation and calibration for old-growth, regenerating and plantation forests. *Forest Ecology and Management* 254, 107-121.
56. Hill, M. J., Asner, G. P. and Held, A. A. (2006). Hyperspectral Remote Sensing of Vegetation in Coupled Human-Environment Systems – Societal Benefits and Global Context. *Journal of Spatial Sciences*, 32, 49-66.
55. Harper, R. J., Beck, A. C., Ritson, P., Hill, M. J., Mitchell, C. D., Barrett, D. J., Tomlinson, R. J., and Smettem, K. R. J., (2006). The potential of greenhouse sinks to underwrite improved land management. *Ecological Engineering*, doi:10.1016/j.ecoleng.2006.09.025
54. Hill, M. J., Held, A. A., Leuning, R. Coops, N. C., Huges, D., Cleugh, H. (2006). MODIS spectral signals at a flux tower site: relationships with high resolution data, and flux and light use efficiency measurements. *Remote Sensing of Environment* 103, 351-368.
53. Hill, M. J., Senarath, U., Lee, A., Zeppel, M., Nightingale, J. M., Williams, R. T. and McVicar, T. (2006). Assessment of the MODIS LAI product in Australian ecosystems. *Remote Sensing of Environment* 101, 495-518.

52. Hill, Michael J., Lesslie Robert J., Donohue, Randall, Houlder, Paul, Holloway, Jane, Smyth, Jodie, (2006). Multi-criteria assessment of tensions in resource use at continental scale: A proof of concept with Australian rangelands. *Environmental Management* 37, 712-731.
51. Hill, Michael J., Roxburgh, Stephen H., Carter, J. O. and Barrett, D. J. (2006) Development of a synthetic record of fire probability and proportion of late fires from simulated growth of ground stratum and annual rainfall in the Australian tropical savanna zone. *Environmental Modelling and Software* 21, 1214-1229.
50. Hill, M. J., Roxburgh, S. J., McKeon, G. M., Carter, J. O. and Barrett, D. J. (2006). Analysis of soil carbon outcomes from interaction between climate and grazing pressure in Australian rangelands using Range-ASSESS. *Environmental Modelling and Software* 21, 779-801.
49. Barrett, D. J. , Hill, M. J., Hutley, Lindsay, Beringer, Jason, Xu, Johnny Cook, Garry, Carter, John, Williams, R, (2005). Prospects for improving savanna carbon models using multiple constraints model-data assimilation methods. *Australian Journal of Botany* 55, 689-714.
48. Hill, M. J., Roxburgh, S. H., Carter, J. O. and McKeon, G.M. (2005). Carbon changes in response to grazing, drought and fire in savanna woodlands of Australia: a scenario approach using 100 years of simulated annual fire and grassland dynamics. *Australian Journal of Botany* 53, 715 - 739.
47. Hill, M. J., Ticehurst, C., Lee, J. S., Grunes, M. R., Donald, G. E. and Henry, D. (2005). Integration of optical and radar classifications for mapping pasture type in Western Australia. *IEEE Transactions on Geoscience and Remote Sensing* 43, 1665-1681..
46. Hill, Michael J., Braaten, Robert., Lees, Brian and Veitch, Simon M. (2005). Multi-criteria decision analysis in spatial decision support: the ASSESS analytic hierarchy process and the role of quantitative methods and spatially explicit analysis. *Environmental Modelling and Software* 20, 955-976.
45. Hill, M. J., Donald, G. E., Hyder, M. W. and Smith, R. C. G. (2004). Estimation of pasture growth rates in South Western Australia from NOAA AVHRR NDVI and climate data. *Remote Sensing of Environment* 93, 528-545.
44. Boschma, S. M., Hill, M. J., Scott, J. M. and Rapp, G. G., (2003) Response to moisture and defoliation stresses and traits for resilience of perennial grasses on the Northern Tablelands of New South Wales, Australia. *Australian Journal of Agricultural Research* 54, 903-916.

43. Boschma S.P., Scott, J.M., Hill, M. J., King, J., and J. Lutton (2003). Plant reserves of perennial grasses subjected to drought and defoliation stresses on the Northern Tablelands of New South Wales, Australia. *Australian Journal of Agricultural Research* 54, 819-828.
42. Hill, M. J., (2003). Generating generic response signals for scenario calculation of management effects on carbon sequestration in agriculture: approximation of main effects using CENTURY. *Environmental Modelling and Software*, 18, 899-913.
41. Hill, M. J., Braaten, R. and McKeon G. (2003) A spatial tool for evaluating the effect of grazing land management on carbon sequestration in Australian rangelands *Environmental Modelling and Software*, 18, 627-644.
40. Hill M.J. and Donald, G.E. (2003). Estimating spatio-temporal patterns of agricultural productivity in fragmented landscapes using AVHRR NDVI time series. *Remote Sensing of Environment* 84, 367-384.
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38. Hill, M. J., Smith, A. M. and Foster, T. C. (2000) Remote sensing of grassland with Radarsat; case studies from Australia and Canada. *Canadian Journal of Remote Sensing* **26**, 285-296.
37. Hill, M. J., Willms, W. D and Aspinall, R. J. (2000). Distribution, abundance and biomass of grassland plants in southern Alberta. *Plant Ecology* **147** 59-76.
36. Hill, M. J., Donald, G. E., Vickery, P. J., Donnelly, J. R. and Moore, A. P. (1999). Combining satellite data with a simulation model to describe spatial variability in pasture growth at a farm scale. *Australian Journal of Experimental Agriculture* **39**: 285-300.
35. Hill, M. J., Vickery, P. J, Furnival, E. P. and Donald, G. E. (1999). Using of NOAA AVHRR NDVI and classified Landsat TM data to describe pastures in the temperate high rainfall zone (HRZ) of Eastern Australia. *Remote Sensing of Environment* **67**: 32-50.

34. Hill, M. J., Vickery, P. J., Furnival, E. P. and Donald, G. E. (1999). Relating radar backscatter to biophysical properties of temperate perennial grassland. *Remote Sensing of Environment* **67**: 15-31.
33. Vickery, P. J., Hill, M. J. and Donald, G. E. (1997). Landsat derived maps for pasture growth status: association of classification with botanical composition. *Australian Journal of Experimental Agriculture* **37**, 547-562.
32. Hill, Michael J., Aspinall, Richard J. and Willms, Walter W. (1997). Knowledge-based and inductive modelling of rough fescue (*Festuca altaica*, *F. campestris* and *F. hallii*) distribution in Alberta, Canada. *Ecological Modelling* **103**, 135-150.
31. Hill, Michael J. (1996). Potential adaptation zones for temperate pasture species as constrained by climate: A GIS-based modelling approach. *Australian Journal of Agricultural Research* **47**, 1095-1117.
30. Hill, M. J., Donald, G. E., Vickery, P. J. and E. P. Furnival (1996). Integration of satellite remote sensing, simple bioclimatic models and GIS for assessment of pasture suitability for a commercial grazing enterprise. *Australian Journal of Experimental Agriculture* **36**, 309-321.
29. Hill, M. J. (1996). Defining the white clover zone in eastern Australia using a model and a GIS. *Ecological Modelling* **86/2-3**, 245-252.
28. Major, D. J., Smith, A. M., Hill, M. J., Willms, W. D., Brisco, B. and Brown, R. J. (1994). Seasonal radar backscatter and visible infrared reflectance of a short-grass prairie. *Canadian Journal of Remote Sensing* **20**, 71-77.
27. Smith, A. M., Major, D. J., Hill, M. J., Willms, W. D., Brisco, B., Lindwall, C. L. and Brown, R. J. (1994). Airborne synthetic aperture radar analysis of rangeland revegetation of a mixed prairie. *Journal of Range Management* **47**, 385-391.
26. King, J. R., Hill, M. J. and Willms, W. D. (1998). Temperature effects on regrowth of *Festuca altaica*, *F. campestris* and *F. hallii*. *Journal of Range Management*. **51**: 463-468.
25. Hill, M. J., Mulcahy, C. and Rapp, G. G. (1996). Perennial legumes for the high rainfall zone of eastern Australia. II. Persistence and potential adaptation zones. *Australian Journal of Experimental Agriculture* **36**, 165-175.
24. Hill, M. J., Mulcahy, C. and Rapp, G. G. (1996). Perennial legumes for the high rainfall zone of eastern Australia. I. Evaluation in single rows and selection of

superior Caucasian clover material. *Australian Journal of Experimental Agriculture* **36**, 151-163.

23. Hill, M. J. and Mulcahy, C. (1995). Seedling vigour and rhizome development in *Trifolium ambiguum* M. Bieb. (Caucasian clover) as affected by density of companion grasses, fertility, drought and defoliation in the first year. *Australian Journal of Agricultural Research* **46**, 807-19.

22. King, Jane R., Hill, Michael J. and Willms, Walter D. (1995). Growth response of *Festuca altaica*, *Festuca hallii* and *F. campestris* to temperature. *Canadian Journal of Botany* **73**, 1074-80

21. Hill, M. J., Hockney, M. J., Mulcahy, C. A. and Rapp, G. G. (1995). The effect of season, cyanide concentration and morphology on the relative acceptability to sheep of white and Caucasian clover herbage. *Grass and Forage Science* **50**, 1-9.

20. Duarsa, M. A. P., Hill, M. J. and Lovett, J. V. (1993). Soil moisture and temperature affect tannin concentration and growth of *Lotus corniculatus* and *Lotus pedunculatus*. *Australian Journal of Agricultural Research* **44**, 1667-81.

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15. Hill M. J. and Luck R. (1991). The effect of temperature on germination and seedling growth of temperate perennial pasture legumes. *Australian Journal of Agricultural Research* **42**: 175-89.

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11. Wheeler, J. L. and Hill, M. J. (1990). Shrub/arboreal legumes for forage in temperate Australia. *Australian Plant Introduction Review* **21**: 1-5.
10. Hill M. J. and Watson R. W. (1989). The effect of differences in intensity and frequency of defoliation on the growth of Sirolan phalaris in the field. *Australian Journal of Agricultural Research* **40**: 345-352.
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Hill, Michael J. and Hanan, Niall P. eds (2011). Ecosystem Function in Savannas: Measurement and Modeling at Landscape to Global Scales. (CRC Press, Boca Raton, Florida) 559 pp.

Aspinall, Richard J. and Hill, Michael J. eds (2008). Land Use Change: Science, Policy and Management. (CRC Press, Boca Raton, Florida) 185 pp.

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Lesslie, R., Hill, M.J., Woldendorp, G., Dawson, S. and Smith, J. (2006). Towards Sustainability for Australia's Rangelands: Analysing the Options, Australian Government, Bureau of Rural Sciences, Canberra.

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**Presentations and Seminars (since 2006)**

November 2012, Dynamics, Metrics, Services and Scenarios for Tree-Grass Ecosystems. Invited seminar (fully funded), Rochester Intstitute of Technology, Rochester, NY. November 7, 2012.

April 2012, State and transition modeling with remote sensing: a synergistic future for MODIS, VIIRS and SENTINEL 2. Sentinel 2 Preparatory Symposium, ESA-ESRIN, Frascati, Italy, 25 April, 2012.

February 2012, Dynamics, Metrics, Services and Scenarios for Tree-Grass Ecosystems. Invited seminar (fully funded), University of Massachusetts, Boston, MA, February 15, 2012.

2011 World Climate Research Program Open Science Conference, Denver, Colorado, USA, October 24 – 28, 2011. Oral Presentation. “A Global Change Scenario Analysis for North Dakota: potential future trade-offs between agriculture, energy and grassland conservation”.

April 2011. Remote Sensing and Modeling of Savannas: The State of the Dis-Union. Oral. 34th International Symposium on Remote Sensing of Environment, April 10-15, 2011, Sydney, Australia.

February, 2011. Dynamics, Metrics, Services and Scenarios for the Northern Great Plains. Invited seminar . University of Arizona, Tuscon, AZ. February 24, 2011.

November 2010. Challenges and opportunities for improved remote sensing and modeling of global savannas. Poster. Earth Observation for Land-Atmosphere Interaction Science, ESA-EGU-iLEAPS Joint Meeting, Frascati, Italy, 3-5 November, 2010.

October 2010. A preliminary, spatially-explicit ecosystem services assessment for Grand Forks County, North Dakota. Oral. Global Land project Open Science meeting, Arizona State University, Tempe, Arizona, USA, October 17-19 2010.

October 2010. A global change scenario analysis for North Dakota: Initial results. Oral. Global Land project Open Science meeting, Arizona State University, Tempe, Arizona, USA, October 17-19 2010.

October 2010. Assessing Landscape-Scale Ecosystem Processes using MODIS Product Time Series: case studies at land validation cores site in forest, grassland and savanna. Oral. Global Land project Open Science meeting, Arizona State University, Tempe, Arizona, USA, October 17-19 2010.

October 2009. Savanna remote sensing and model integration: a work in progress. Department of Geography, University of Maryland, October 29.

Mar 2009. Dynamics of Global Savanna Ecosystems: A Spatio-Temporal View with Special Reference to Australia. Department of Geography, Boston University, Boston, MA, March 27, invited seminar.

Feb 2009. Dynamics of Global Savanna Ecosystems: A Spatio-Temporal View with Special Reference to Australia. Department of Geography, Texas A&M University, College Station, Texas, February 19, 2009, invited presentation.

Dec 2008. Department of Geography, Texas State University, San Marcos, Texas, December 3, 2008.

Apr 2008. Creating Land Use Scenarios for City Greenbelts using a Spatial Multi-Criteria Analysis Shell, Urban Sprawl Session, Association of American Geographers Annual Meeting, Boston, MA, April 15, 2008.

Apr 2008. Transformation Science to Support Management and Decision-Making in the Coupled Natural-Human System: a Grassland/Savanna Perspective. Department of Ecosystem Science and Management, Texas A&M University, April 9, 2008.

Dec 2007. American Geophysical Union, Fall Meeting, San Francisco, December 11, 2008, Session Co-Chair and Convenor.

Dec 2006 - In Pursuit of Simple Vegetation Structure Indicators with MISR and MODIS BRDF Model Parameters - The opportunity offer by EOS Land validation Core Sites, MISR Team Meeting, CalTech, Los Angeles, December 2006.

29 Apr, 2006 - Remote Sensing for Model-Data Assimilation: A Carbon Cycle Case Study in Australian Tropical Savannas Department of Geography and the Environment, University of Texas, Austin, Texas, USA.

25 Apr, 2006 - Remote Sensing for Model-Data Assimilation: A Carbon Cycle Case Study in Australian Tropical Savannas Department of Geography, Boston University, Massachusetts, USA.

21 Apr, 2006 - Remote Sensing for Model-Data Assimilation: A Carbon Cycle Case Study in Australian Tropical Savannas Goddard Space Flight Center, Greenbelt, Maryland, USA

20 Apr, 2006 - Remote Sensing for Model-Data Assimilation: A Carbon Cycle Case Study in Australian Tropical Savannas Department of Geography, University of Maryland, College Park, Maryland, USA

11 Apr, 2006 - Remote Sensing for Model-Data Assimilation: A Carbon Cycle Case Study in Australian Tropical Savannas Carnegie Institution of Washington at Stanford University, Palo Alto, California, USA

7 Apr, 2006 - Remote Sensing for Model-Data Assimilation: A Carbon Cycle Case Study in Australian Tropical Savannas Department of Biological Sciences, Cal State University, Los Angeles, California, USA

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10 Feb, 2006 - Hyperspectral Remote Sensing of Vegetation in Coupled Human-Environment Systems - Societal Benefits and Global Context (M. J. Hill, G. P. Asner and A. A. Held) Workshop on Hyperspectral Remote Sensing and Field Spectroscopy of Agricultural Crops and Forest Vegetation, University of Southern Queensland, Toowoomba, Queensland

### **Compact Discs**

Australian Temperate Pastures Database. Compiled by M. J. Hill and G. E. Donald for the National Pasture Improvement Coordinating Committee. CSIRO Animal Production, Floreat, WA, 1998.

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Hanan, N. P. and Hill, M. J. (2012). "Savannas in a Changing Earth System" The NASA Terrestrial Ecology Tree-Grass Project: Outline for a Coordinated NASA Field Campaign for Earth Observation and Modeling in Mixed Tree-Grass Ecosystems. Final Report to NASA Terrestrial Ecology Program, Contract NNX09AH56G, 56 pp.

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Zone (HRZ) Of Eastern Australia. A report to the Meat Research Corporation on project M.496. 92 pp.

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Taylor, Robin (1993) Sustaining our temperate pastures. *Rural Research* 160, 24-27. (About the Armidale group using supplied text)

Vickery, P. J. and Hill, M. J. (1994) Modelling possible global climate change impacts on pasture production in eastern Australia. *Climate Change Newsletter*, 6 (1) 3-4.

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Hill, Michael J. (1995) Farming gets a helping hand from outer space - Remote sensing and geographic information systems can provide a more objective basis for farm management. *Grow!* Winter 1995, 22-24.


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**School Text Books**

Mraz, J. (1996) Jacaranda SOSE Geography Text for the National Curriculum Studies of Society and Environment. Chapter 5 Section 6 pp 120 - 123. Cooplacurripa Case Study.

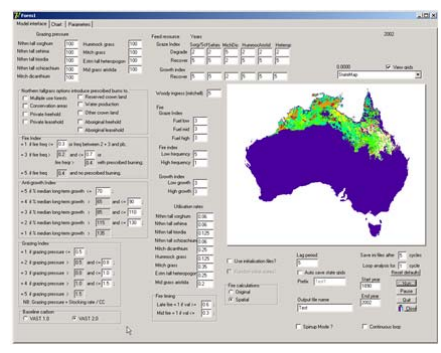
**Software**

**Range-ASSESS**

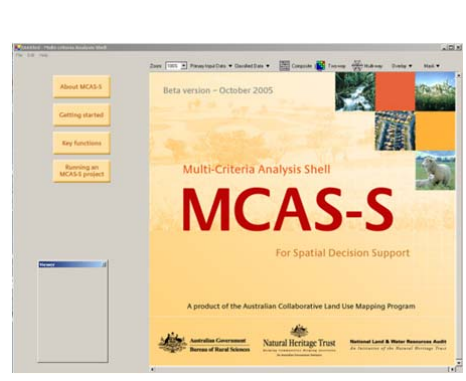
	<table border="1"> <tr> <td data-bbox="657 1608 844 1732">Description</td> <td data-bbox="844 1608 1421 1732">Range-ASSESS is a state-and-transition based expert system for assessing the impact of changing land management practices on soil and biomass carbon across the Australian rangelands.</td> </tr> <tr> <td data-bbox="657 1732 844 1795">Documentation</td> <td data-bbox="844 1732 1421 1795">Published papers Hill et al. 2003; 2005. User Guide in preparation</td> </tr> <tr> <td data-bbox="657 1795 844 1858">Developers</td> <td data-bbox="844 1795 1421 1858">Concept and Design – M. J. Hill and S. H. Roxburgh Programming – S. H. Roxburgh</td> </tr> <tr> <td data-bbox="657 1858 844 1890">Language</td> <td data-bbox="844 1858 1421 1890">Borland Delphi 7.0</td> </tr> <tr> <td data-bbox="657 1890 844 1913">Requirements</td> <td data-bbox="844 1890 1421 1913">Windows 95 or greater</td> </tr> </table>	Description	Range-ASSESS is a state-and-transition based expert system for assessing the impact of changing land management practices on soil and biomass carbon across the Australian rangelands.	Documentation	Published papers Hill et al. 2003; 2005. User Guide in preparation	Developers	Concept and Design – M. J. Hill and S. H. Roxburgh Programming – S. H. Roxburgh	Language	Borland Delphi 7.0	Requirements	Windows 95 or greater
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Language	Borland Delphi 7.0										
Requirements	Windows 95 or greater										

	Program size	16Mb (installation package); 125Mb (installed)
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**AuSavan**

	Description	State and transition-based model for assessing carbon dynamics in the tropical savanna region of Australia. The model has an annual time step and uses 113 years of spatial data on fire incidence, annual rainfall and simulated annual grassland growth.
	Documentation	Paper describing the model and preliminary analysis of carbon dynamics Hill et al. (in review)
	Developer	Concept and Design – M. J. Hill and S. H. Roxburgh Programming – S. H. Roxburgh
	Language	Borland Delphi 7.0.
	Requirements	Windows 95 or greater
	Program size	1.4 MB executable; 1.20 Gb input data

**MCAS-S – Multi-Criteria Analysis Shell - Spatial**

	Description	Multi-criteria analysis shell. The shell enables flexible classification, combination, and two-way and multi-way comparison of spatial data with reporting with full masking and reporting functions.
	Documentation	Paper describing the MCAS-S shell (Hill et al., 2005), paper describing continental scale analysis of tensions in Australian rangelands (Hill et al., 2005) and paper describing ASSESS and issues with MCA (Hill et al., 2004).
	Developer	Concept and design – M. J. Hill and R. J. Lesslie Programming –A. Barry
	Language	C++ and Microsoft .Net
	Requirements	Windows 95 or greater
	Program size	800 kb executable, 14Mb with DLLs